

RATING METHODOLOGY

Moody's Consolidated Global Bank Rating Methodology

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Analyst Contacts:
NEW YORK +1.212.553.1653

Gregory W. Bauer +1.212.553.1498
Managing Director – Global Banking
 gregory.bauer@moodys.com

Mark LaMonte +1.212.553.0455
Managing Director – Chief Credit Officer
Financial Institutions
 mark.lamonte@moodys.com

David Fanger +1.212.553.4342
Senior Vice President
 david.fanger@moodys.com

M. Celina Vansetti +1.212.553.4845
Managing Director – Banking
 celina.vansetti-hutchins@moodys.com

Robert Young +1.212.553.4122
Managing Director – Financial Institutions
 robert.young@moodys.com

Michael Foley +1.212.553.2835
Managing Director – Global Financial
Institutions
 michael.foley@moodys.com

Barbara Havlicek +1.212.553.7259
Senior Vice President
 barbara.havlicek@moodys.com

>>contacts continued on the last page

Summary

In this report we have consolidated into a single document the three primary methodologies used by Moody's in the rating of bank deposits and other debt securities and preferred stock issued by banks to make those methodologies more easily accessible to the users of Moody's bank ratings. Included in this report are:

- » *Bank Financial Strength Ratings: Global Methodology, February 2007.* Moody's Bank Financial Strength Ratings (BFSRs) reflect Moody's opinion of a bank's intrinsic, or stand-alone, financial strength relative to all other rated banks globally. This rating methodology sets forth the key analytical factors that explain Moody's BFSRs.
- » *Incorporation of Joint-Default Analysis Into Moody's Bank Ratings: Global Methodology, March 2012.* This rating methodology describes our approach for incorporating expectations related to various forms of external support into our ratings of banks.
- » *Moody's Guidelines for Rating Bank Hybrid Securities and Subordinated Debt, November 2009.* This methodology describes Moody's approach for rating hybrid securities and subordinated debt issued by banks.

No changes have been made to the underlying methodologies in the process of combining the individual methodology documents into a single report.

This methodology is no longer in effect. For information on rating methodologies currently in use by Moody's Investors Service, visit www.moodys.com/methodologies

RATING METHODOLOGY

Bank Financial Strength Ratings: Global Methodology

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Introduction

In September and December 2006 Moody's published Requests for Comment proposing to update its methodology for assigning Bank Financial Strength Ratings. This proposal was made in connection with Moody's proposal to incorporate joint-default analysis (JDA) into Moody's ratings for banks and other deposit-taking institutions to reflect the various sources of external support that may benefit bank creditors. We greatly appreciate all of the comments we have received. Based on those comments, Moody's has now finalized this updated methodology and will be implementing it in conjunction with the implementation of Moody's JDA framework for banks.

Moody's Bank Financial Strength Ratings (BFSRs) reflect Moody's opinion of a bank's intrinsic, or stand-alone, financial strength relative to all other rated banks globally. Assigning a BFSR is the first step in Moody's bank credit rating process, but Moody's BFSRs are not credit risk ratings. BFSRs do not address either the probability of timely payment (i.e. default risk) or the loss that an investor may suffer in the event of a missed payment (i.e. severity of loss). Instead, BFSRs are a measure of the likelihood that a bank will require assistance in order to avoid a default.

Moody's other ratings for banks, including its bank deposit and debt ratings, are determined by considering both a bank's BFSR and the likelihood that the bank will receive such external support, as well as the external risk that sovereign actions may interfere with a bank's ability to honor its domestic or foreign currency obligations. Moody's has published a separate rating methodology describing how these other factors are combined with the BFSR to determine Moody's other bank ratings, called "Incorporation of Joint-Default Analysis into Moody's Bank Rating Methodology" (February 2007), which was superseded by "[Incorporation of Joint-Default Analysis Into Moody's Bank Ratings: Global Methodology](#)" (March 2012).

This rating methodology sets forth the key analytical factors that explain Moody's BFSRs. This methodology is not an exhaustive treatment of all factors reflected in Moody's ratings, but it should enable the reader to understand the key considerations and financial ratios used by Moody's in the final rating determination. The methodology focuses on the key operational, financial, and environmental aspects that Moody's believes to be the critical cornerstones of a bank's performance and its ability to remain competitive and service its debt obligations without relying upon external support.

Importantly, we recognize that, although the scorecard included in this methodology has produced a close reasonable fit with Moody's ratings, it is only a tool to help Moody's analysts and rating committees in arriving at a rating decision. We will continue to expand and improve this methodology on an ongoing basis in an effort to both increase the transparency of our ratings as well as to improve and expand our quantitative metrics.

About Moody's Bank Financial Strength Ratings

Bank credit risk is a function of a bank's (i) intrinsic financial strength, (ii) the likelihood that it would benefit from external support in the case of need, and (iii) the risk that it would fail to make payments owing to the actions of a sovereign. Moody's assigns credit risk ratings to banks and their debt obligations using a multi-step process that incorporates both a bank's intrinsic risk profile and specific external support and risk elements that can affect its overall credit risk.

Moody's Bank Financial Strength Ratings (BFSRs) represent Moody's opinion of a bank's intrinsic safety and soundness. Assigning a BFSR is the first step in Moody's bank credit rating process.

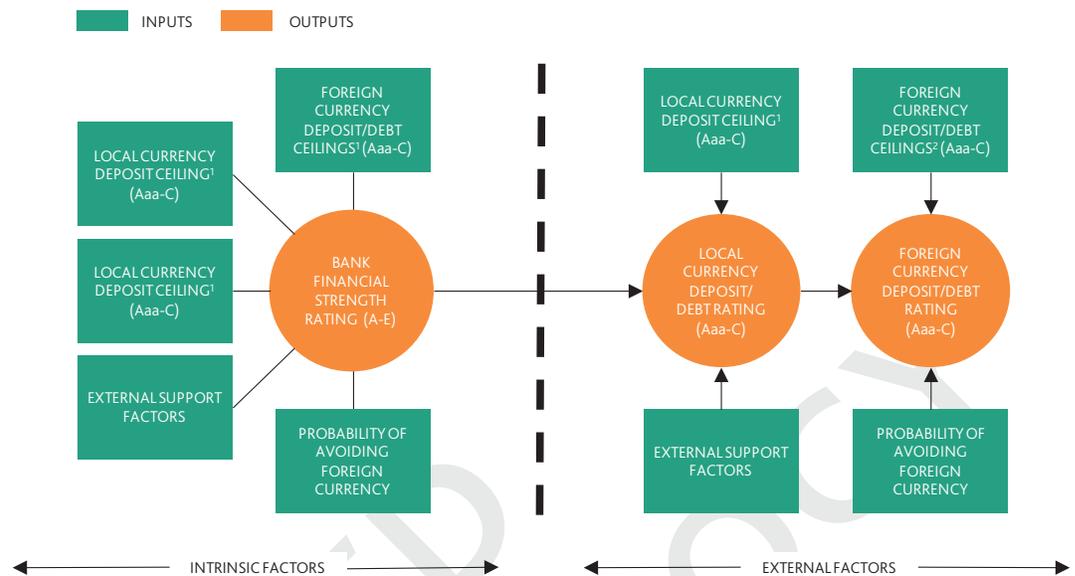
Unlike Moody's deposit and debt ratings, BFSRs do not address either the probability of timely payment (i.e. default risk) or the loss that an investor may suffer in the event of a missed payment (i.e. severity of loss). Instead, BFSRs are a measure of the likelihood that a bank will require assistance from third parties such as its owners, its industry group, or official institutions, in order to avoid a default. BFSRs do not take into account the probability that the bank will receive such external support, nor do they address the external risk that sovereign actions may interfere with a bank's ability to honor its domestic or foreign currency obligations.

In order to differentiate Moody's BFSRs from our bank deposit and debt ratings, we use different rating symbols. Moody's BFSRs range from A to E, with "A" for banks with the greatest intrinsic financial strength and "E" for banks with the least intrinsic financial strength. A "+" modifier may be appended to ratings below the "A" category and a "-" modifier may be appended to ratings above the "E" category to identify those banks which are placed higher (+) or lower (-) in a rating category.

Moody's introduced BFSRs in 1995, and currently assigns them to over a thousand banks and deposit-taking financial institutions worldwide. The factors considered in the assignment of BFSRs were described in Moody's last bank rating methodologies published in 1999, and continue to form the basis of this updated methodology. These include bank-specific elements such as financial fundamentals, franchise value, and business and asset diversification, as well as risk factors in the bank's operating environment, such as the strength and prospective performance of the economy, the structure and relative fragility of the financial system, and the quality of banking regulation and supervision.

The following diagram shows how BFSRs fit into Moody's overall approach to assigning bank credit ratings.

Moody's Bank Rating Methodology



1. Measures ability of a government to support troubled banks and the risk of a local currency deposit freeze.
2. Measures the risk of a foreign currency deposit or foreign currency debt moratorium.

The left side of the diagram shows the principal factors that are used to determine a bank's BFSR. This report describes how these are measured and analyzed to derive a BFSR. The right side summarizes the specific external support and risk elements that are combined with the BFSR to determine Moody's local currency and foreign currency deposit and debt ratings. Moody's has published as a separate methodology a report describing how it uses BFSRs together with joint-default analysis to incorporate those external support factors and risk elements into its bank deposit and debt ratings (see ["Incorporation of Joint-Default Analysis Into Moody's Bank Ratings: Global Methodology,"](#) March 2012)).

About the Rated Universe

Moody's currently assigns BFSRs to over 1,000 financial institutions globally. These financial institutions generally fall under the category of deposit-taking institutions, including commercial banks, savings banks, building societies, cooperative banks, thrifts, and government-owned banks. Moody's BFSRs may also be assigned to other types of financial institutions such as multilateral development banks, government-sponsored financial institutions and national development financial institutions.

In a number of countries Moody's also assigns BFSRs to a variety of other financial institutions (such as mortgage banks or other specialized banks) that, although they do not take deposits, are still chartered and regulated as banks and usually obtain some funding from the interbank market.

BFSRs are generally assigned to individual banks, including those that are subsidiaries or affiliates of another bank. Therefore, there are some banking groups that have a multiple number of banks with different BFSRs.

The rated universe is spread throughout the world, with the highest concentrations in Europe, followed by the Americas, Asia (excluding Japan), Japan and the Middle East. Rated banks range in size from nearly \$2 trillion in total assets to as small as \$150 million. Some may be truly diversified global institutions, while others may operate on an extremely limited scale in a small local market.

The inherent riskiness of the banking business - as characterized by high leverage (equity capital of only 5-10% of total assets), illiquid assets (loans) financed by short-term liabilities (deposits), and a cyclical business environment - makes it difficult for all but a select number of banks that are generally extremely large and diversified to achieve and maintain a BFSR in the range from A to a high B. Solid, diversified and sustainable franchises as well as excellent management are also necessary attributes of A and B BFSRs.

However, barring systemic stress and provided there is reasonable client confidence, banking, if conservatively managed without excessive risk-taking, is also a business allowing a stable generation of interest and fee income, albeit perhaps at a lower level of overall profitability. Therefore, BFSRs in the C category are generally available to a large number of banks even if they have limited scale and franchises, and average financials. Many institutions fall under this category. BFSRs of D are generally assigned to those that either are exhibiting modest capital, earnings, or business franchise, thus limiting their ability to deal with asset quality problems or other potential balance sheet risks, or are subject to unpredictable and unstable operating environments. BFSRs of E are typically restricted to those institutions that are under pressure to maintain their capital due to external and internal factors such as a highly volatile operating environment, recurring losses and asset quality problems, or a very high risk profile. However, regulatory forbearance can allow even insolvent banks to operate for an extended period of time, until the regulatory authorities arrange for either a rescue or a restructuring, or place the bank into liquidation.

Framework for Assigning Bank Financial Strength Ratings and the Role of the Scorecard

Moody's bank ratings reflect our opinion of long-term relative risk and are, of necessity, forward-looking in nature because they apply to liabilities that may pay out over long periods of time. Historical experience has shown that looking only at the current financial condition of a bank is not always an accurate predictor of its future financial performance and financial strength. We believe there are significant qualitative factors which play an important role in determining the stability and predictability of a bank's financial performance over time. Thus Moody's analytical approach includes significant qualitative analysis in addition to quantitative analysis, and incorporates the opinions and judgments of experienced analysts.

The factors considered in the assignment of Bank Financial Strength Ratings were described in Moody's last bank rating methodologies published in 1999¹, and remain at the basis of the updated methodology. We focus on five key rating factors that we believe are critical to understanding a bank's financial strength and risk profile. They are:

1. Franchise Value
2. Risk Positioning

¹ "Bank Credit Risk -- An Analytical Framework for Banks in Developed Markets," April 1999 and "Bank Credit Risk in Emerging Markets -- An Analytical Framework," July 1999.

3. Regulatory Environment
4. Operating Environment
5. Financial Fundamentals

In the following sections we review the five key rating factors and discuss why each factor is important to our BFSRs. To assist Moody's analysts and clients we have also developed a BFSR scorecard that is designed to provide an estimated BFSR that will be used as a first step by analysts and rating committees when deciding upon a bank's BFSR. The following sections also describe how each of the key rating factors is measured in Moody's BFSR scorecard.

Some of the metrics in the scorecard are purely quantitative, while others include elements of qualitative judgment or - where hard data is not reasonably accessible - educated estimates. For those involving a qualitative assessment, we have provided qualitative descriptions that we believe help to differentiate among risk profiles at different banks. To dampen the cyclical nature of the industry, most of the financial metrics we use are three-year averages.

For each of these factors, we outline in a summary mapping table either the range of financial metrics or the qualitative description that would typically correspond with a given BFSR level, ranging from A to E.

Our choice of factors for the scorecard was designed to reflect those factors which Moody's analysts and rating committees focus upon most closely today, subject to the caveat that they be easily measured or described in a globally consistent manner, and based upon publicly available information wherever possible. Where we felt that rating committees currently weighted certain elements more heavily than others, we tried to mimic those weightings; where we were less certain about those weightings, we usually reverted to equal weighting for all sub-factors within a category. We also conducted correlation testing and validations to assess the scorecard's ability to predict our current BFSRs.

As noted above, the BFSR scorecard is intended only as a tool to assist Moody's analysts and rating committees in arriving at a rating decision. It is also intended to provide greater transparency to Moody's clients and help to improve the consistency and comparability of Moody's BFSRs globally. However, neither the rating committee nor the analyst are bound by the scorecard if they believe that it does not provide an accurate reflection of Moody's opinion of the bank's prospective credit risk profile relative to all other rated banks. Moody's BFSRs will continue to be determined by Moody's rating committees.

We fully anticipate that there will be some banks whose BFSRs are not consistent with the scorecard estimate. The scorecard is designed to fit reasonably well for the 1,000 banks currently assigned BFSRs, but may not fit equally well for every one of those banks. There are a variety of reasons why a given bank's BFSR might differ from the scorecard estimate. Such reasons could include aspects of the bank's accounting and reporting, its business model, or its regulatory or market environment that limit the comparability of certain key factors and metrics. In evaluating BFSRs that may differ from the scorecard estimate, Moody's analysts and rating committees will consider whether or not the scorecard inputs for a particular bank accurately measure the bank's risk profile on a globally comparable basis, or whether there are other important factors that the scorecard does not adequately consider, always with a forward-view of the bank's evolving credit profile. Moody's will endeavor to compare such banks to banks with similar profiles globally, to ensure that we maintain global consistency in our

BFSRs. Moody's will also publish in its research a discussion of the key factors for each bank as well as the rationale for any assigned ratings that differ from the scorecard estimate.

While the BFSR scorecard is based primarily upon traditional retail banking and lending, it is intended to be applicable to all deposit-taking banks, regardless of the specific business models a bank pursues. To the extent that an analyst or rating committee believes that a bank's risk profile is not adequately captured by the scorecard because of a bank's business model, they may look at adjustments to existing metrics or other metrics as long as such analysis is done within the context of global comparisons and not just local ones.

In addition, the large number of factors in the scorecard does cause some dilution, which makes it difficult to achieve BFSR estimates at the extremes of the ratings scale. However, since the scorecard is only intended to be a ratings tool, we believe that rating committees will still be able to identify those few banks which, on a globally comparable basis, should receive ratings at the extremes of the BFSR ratings scale.

Notwithstanding the scorecard's shortcomings, we believe that it provides a transparent and useful tool for analysts and Moody's clients. As currently configured, the scorecard should be able to provide an estimate of a bank's BFSR within two notches in most cases. However, there is no requirement that a BFSR must be within two notches of the scorecard estimate.

Evaluating Outliers

It is unlikely that every bank's BFSR will be consistent with the rating level guidelines for every rating factor in the scorecard. This is because a bank typically has a variety of strengths and weaknesses which combine to reflect its overall financial risk profile. For those banks that show up as frequent outliers for their respective rating category, there could be several different explanations. There could be a change in the bank's risk profile that is putting pressure on its BFSR, either up or down. But there also may be unique characteristics of the bank's accounting, regulatory or market environment that limit the comparability of certain key factors and metrics. And finally, some elements of the bank's business or financial profile may receive greater weight in our analysis.

In measuring a bank's performance under the key rating factors in the scorecard, we have intentionally selected quantifiable metrics that are available for most banks globally from publicly reported financial statements. However, while these metrics may be globally available, they are not always globally comparable. Local differences in accounting conventions, Basel risk-weightings, and asset quality definitions can make it difficult to compare these metrics across countries and regions. Therefore, in the last section of this report we also provide examples of where additional adjustments may be required, or additional metrics may be considered to improve comparability. In this regard, the analyst's interpretation of such metrics, as well as the consideration of regional/supplemental metrics, provides further insight and analysis. Furthermore, we anticipate that there may be modifications to the ratios over time as Basel II is implemented.

Relative Importance of the Key Factors Can Vary

To maximize the transparency and consistency of our rating approach, this methodology is applied to all banks globally. However, the relative importance of the different key rating factors varies among banks globally in several important ways.²

First, Moody's believes that banks in developing markets face a substantially different set of challenges than banks in mature markets. Banks operating in mature markets generally benefit from more effective financial reporting and regulatory environments that allow outside observers to ascribe more weight to available disclosed financials in making credit decisions. On the other hand, the higher degree of economic volatility in developing markets, as well as the potential for weaker regulatory oversight and less reliable financial reporting, indicates the relative riskiness of relying heavily on the current disclosed financial numbers for banks in developing markets.

Therefore, while Moody's puts a heavy emphasis on financial fundamentals in assigning BFSRs to banks in mature markets, this is significantly less the case for banks in developing markets. As discussed in greater detail later on in this methodology, in the BFSR scorecard we assign a 50% weighting to financial fundamentals for banks in mature markets, with the four other key rating factors receiving a combined weighting of 50%. However, for banks in developing markets, this weighting is changed, so that financial fundamentals are only weighted at 30%, with the four other key rating factors receiving a combined weighting of 70%.³

Second, within the four other key rating factors (the qualitative factors) Moody's also shifts the emphasis between banks in mature markets and banks in developing markets. As noted above, the regulatory environment is often more uncertain in developing markets, and the operating environment is typically more volatile. Therefore, within the qualitative rating factors in the BFSR scorecard, Moody's puts relatively more weight on the regulatory and operating environments in assigning BFSRs to banks in developing markets.

Finally, in determining a bank's relative risk profile within each of the five key rating factors, each relevant metric or "sub-factor" is generally assigned equal weight in the scorecard (there are some exceptions to this, which are described in the sections below). However, especially with Risk Positioning, Moody's believes there are some metrics or sub-factors for which a high risk profile should receive extra weight. These include situations where a bank has a very high concentration to individual borrowers or to an industry, a very high level of related-party loans, or where a bank has weak controls and senior management has a poor awareness of the risks of the firm. In such circumstances, we believe that these high risk elements should negate other potentially more positive aspects of the bank's risk profile, and the relative importance of the sub-factors in the scorecard is adjusted accordingly.⁴

² More detail is on the weightings in the scorecard are provided later in this methodology. A full set of the basic weights used in the scorecard can be found in the Appendix.

³ Although there are many ways to make a distinction on this issue, Moody's will base its distinction on the level of the foreign currency (FC) deposit ceiling for each country. If the FC deposit ceiling of the country is Aaa or Aa1, we will regard such market as mature. If not, we will regard such market as developing.

⁴ This is discussed more fully under Rating Factor 2: Risk Positioning.

Key Rating Factors for the BFSR

Rating Factor 1: Franchise Value

Why It Matters

The assessment of a bank's Franchise Value is a central element in our analysis. Franchise Value is about the solidity of a bank's market standing in a given geographical market or business niche. A solid and defensible Franchise is a key element underpinning the ability of an institution to generate and sustain recurring earnings, to create economic value and, thus, to preserve or improve risk protection in its chosen markets. As such, institutions with strong Franchise Value should be better positioned to withstand prolonged difficult market conditions.

OUTDATED
METHODOLOGY

In the scorecard Moody's looks at four sub-factors to assess an institution's Franchise Value:

1. Market Share and Sustainability
2. Geographical Diversification
3. Earnings Stability
4. Earnings Diversification

Market Share and Sustainability

The first sub-factor we consider is an institution's market share and its long-term sustainability. Large market shares suggest an entrenched market positioning with strong brand name recognition that tends to come hand in hand with high pricing power. These elements act as barriers to entry to other players and as such are indicative of the likely sustainability of a bank's positioning and its ability to defend itself from competition.

The relevant market(s) for this sub-factor should be determined based upon where the bank makes the majority of its net income. It is usually based on geography, product, and customer. For banks operating in many different geographies and/or with many different lines of business, we will attempt to estimate a weighted market share.

The size and scope of a market for any given business line depends upon the nature of the customer, the products, and the existence (or lack) of legal or de facto barriers to entry. The relevant market for many retail banking products may be local or regional, while for other products it may be national or international in scope. The relevant market may also include nonbank competitors depending upon the product.

Depending upon the nature of the market, a bank need not be large to have a large market share. A small bank that is dominant in a small but protected market may have substantial franchise value which could translate into greater earnings stability. On the other hand, another similarly sized or even larger bank which competes primarily in global markets could have a more limited market share.

However, we also recognize that banks' market positions may change over time. Recent trends will also be considered, as well as the specific characteristics of the particular market. Some markets may exhibit considerable "stickiness" which allows for only gradual shifts in market shares over time, while other markets may experience more frequent swings in market shares. Such markets may also be perceived to provide less sustainability to any current market leaders in light of the volatility of market shares over time.

Geographical Diversification

The second sub-factor we assess is an institution's degree of geographic diversification. In general, excessive concentration on lending in a single geographic area with relatively undiversified economies heightens an institution's credit risk profile and plays an important role in weakening asset quality. Conversely, good diversification across geographies that enjoy highly diversified economies enables an institution to ride through business cycles without undue harm to its asset quality.

To the extent that a small bank is in a single geographic area, we believe that such a bank is more likely to suffer earnings volatility than one that has greater geographic diversification across regions. Smaller geographic areas are frequently more dependent upon a smaller number of industries, with less diversified economies than larger regions. Economic diversification enables banks operating in larger

regions, or in multiple regions, to ride through business cycles with less harm to asset quality. However we recognize that there may be exceptions. Some small regions may still be highly diversified, whereas some larger regions may be less so.

Earnings Stability

The third sub-factor we take into account is the degree of predictability of an institution's main business lines. In this regard, we favor retail-based institutions given their highly predictable risk-adjusted earnings stream which is an invaluable asset in times of volatility or stress. This earnings stability is usually a result of strong customer relationships, higher switching costs for customers, and highly granular loan portfolios frequently found in traditional retail banking. On the other hand, banks with wholesale/corporate banking or trading often have more volatile results that may vary significantly in very short periods of time, driven by market factors that tend to be outside banks' control. A more sophisticated customer base, lower switching costs, lower barriers to entry, and less granular loan exposures also contribute to the greater volatility often found in these businesses.

Banks that are highly reliant on less predictable earnings (e.g. wholesale and corporate banking, trading) tend to have more volatile results that may vary significantly in very short periods of time, driven by market factors that tend to be outside banks' control. We note that the analysis of the predictability of a bank's main business lines is an integral component of an assessment of its risk management and positioning as, in most instances, volatility indicates risk.

Earnings Diversification

The fourth sub-factor we analyze is the degree of diversification of an institution's main business lines. In the scorecard we focus on whether there is an absence of diversification, penalizing "monoline banks" that are overly dependent on one business line. Excessive reliance on one business line can make an institution highly vulnerable to potential changes in market dynamics which could be sudden and unpredicted with no offsetting earnings stream to protect the institution's economic solvency.

In the scorecard we define a bank as monoline if it derives more than 80% of its net income from a single business activity or product. Examples would include institutions that generate more than 80% of earnings from credit card operations, leasing, auto finance, factoring, mortgage banking, project finance, lending to municipalities, securities servicing, or capital markets operations. Traditional retail banking which, by its nature, is diversified between lending and deposit-taking, would not be considered a monoline business. If the bank is a monoline, then it receives an "E" score on this sub-factor. If the bank is not a monoline, then the bank gets no score on this measure and the weight is distributed evenly over the other three sub-factors in Franchise Value.

If a monoline bank benefits from strong market shares and stable earnings, those positive elements will still be reflected in those sub-factors. However, we believe that a lower score for earnings diversification remains appropriate since such banks remain vulnerable to potential changes in market dynamics with no offsetting earnings stream to protect the institution's economic solvency.

Summary of Factor Mapping – Franchise Value

	A	B	C	D	E
Market Share and Sustainability*	Dominant in a broad (multi-product) business line with very strong, largely unthreatened market position and pricing power (i.e. tier 1). Institutions should have a very high share of the customer's business (typically above 4 products per customer), enjoy strong brand name and display very high sustainability.	Important but not dominant (i.e. tier 2) institutions with a high share of the customer's business (typically 3-4 family products per customer), OR tier 1 institutions in a niche product line. All banks in this rating category should enjoy strong brand name and display very high sustainability.	Good national or regional market positioning but neither tier 1 nor tier 2 player, OR a tier 2 institution in a niche product line; OR institutions with a price- or service-sensitive customer base.	Marginal players nationally, regionally or in a niche product line; OR institutions with a highly price- or service-sensitive customer base.	Institutions without recognized brand name; OR institutions with insignificant market share; OR institutions with unclear market positioning.
Geographical Diversification**	Significant operations in at least one major and at least two large markets. No major or large market constitutes > 50% of profits. Markets must also be lowly correlated and enjoy highly diversified economies.	Significant operations in (i) one major market or (ii) multiple large markets where >25% of profits from outside primary market. Markets must also be lowly correlated and enjoy highly diversified economies.	Significant operations in (i) one large market or (ii) multiple mid-sized markets where >25% of profits from outside primary market. Markets must also be lowly correlated and enjoy well-diversified economies.	Significant operations in one mid-sized market or multiple local markets. Markets must also be lowly correlated and enjoy reasonably diversified economies.	Significant operations in one mid-sized market that does not enjoy a diversified economy, or in one local market.
Earnings Stability***	Combined earnings from the Retail Banking/Consumer Lending, Asset Management, and Fiduciary/Transaction Services business lines are > 80% of total profits.	60% - 80%	40% - 60%	20% - 40%	less than 20%
Earnings Diversification	A monoline business is defined as single business or product line. Institutions are considered to be monoline if they derive more than 80% of net income from a single business activity or product. Examples include credit cards, mortgage banking, factoring, leasing, securities servicing, project financing, capital markets operations, municipal or public sector lending, ship finance, etc. Traditional retail banking which, by its nature, is diversified between lending and deposit-taking, would not be considered a monoline business.				Bank is a monoline: More than 80% of net income is from a single business activity or product. See examples below.

* The relevant market(s) for Market Share and Sustainability should be determined based upon where the bank makes the majority of its net income. The geographic size and scope of a market for any given business line depends upon the nature of the customer, the products, and the existence (or lack) of legal or de facto barriers to entry. The relevant market for many retail banking products may be local or regional, while for other products it may be national or international in scope. The relevant market may also include nonbank competitors depending upon the product. A dominant or "tier-1" bank should have a market share substantially greater (usually at least 50% greater) than lower-ranked competitors. In some highly competitive markets no bank may be dominant, while in others there could be 2 or 3 dominant banks. We would expect that a dominant player would have pricing power. An important or "tier-2" bank usually ranks among the top 5 banks in a market but is not dominant as defined above.

** For the Geographical Diversification sub-factor, a geographic market is defined based on economy, NOT based solely on political boundaries. A single market may consist of a region within a larger country (for example, the western United States), or may include one or more smaller countries (for example the Nordic countries). A major market has GDP > \$US1 trillion. A large market has GDP of \$300 billion - \$1 trillion. A mid-sized market has GDP of \$100-300 billion. A local market has GDP under \$100 billion.

For operations in a market to be "significant" they must be profitable and have a strong representation (i.e. more than just a token presence) throughout the entire market. If a market does not qualify because it is not highly diversified, the bank should be assigned the next lower score.

*** Based on division of the bank's pre-tax net income into the following 6 business lines: (1) Wholesale/Corporate, Investment Banking, & Trading, (2) SME/Middle Market Banking, (3) Retail Banking/Consumer Lending, (4) Asset management, (5) Fiduciary/Transaction Services (incl. Cash Management + Custody), and (6) Insurance.

Rating Factor 2: Risk Positioning

Why It Matters

A bank's risk positioning is a fundamental qualitative factor in Moody's credit analysis. The majority of revenue for most banks is compensation for taking calculated risks. Management's approach to managing risks – be they credit, market, trading, reputation, or operational, to cite a few – are key ingredients underpinning their strategic decisions and the chance of such decisions succeeding. We look to see to what extent risk discipline is aligned with the bank's strategy. Our view is that the more integrated risk management is with the bank's overall operating philosophy, the more likely it is that different operating units will make the discipline an integral part of how operations are managed.

In our analytical approach, our starting premise is that a framework that relies on a combination of qualitative and quantitative assessments can provide great insights about a bank's risk management discipline and ultimate effectiveness. Risk management should aim to reduce or control the risks that banks face – be these customary (day-to-day activities), cyclical or event-driven – or take advantage of them, when beneficial to the bank. Taken together, these risks impact the core profitability and earnings predictability and may even, at an extreme, severely damage a bank's credit standing in a matter of days if they are not managed appropriately (e.g. Barings Bank, Allfirst Bank, Bawag PSK).

In the scorecard we use six sub-factors in assessing Risk Positioning and aggregate these six sub-factors into a single score which then forms part of the qualitative assessment of the bank. They are:

1. Corporate Governance
2. Controls and Risk Management
3. Financial Reporting Transparency
4. Credit Risk Concentration
5. Liquidity Management
6. Market Risk Appetite

Corporate Governance

Corporate governance of a bank is an important analytical consideration. High-quality corporate governance reduces the likelihood of future problems and speeds remediation when problems occur. Moody's sets a high standard for bank governance, because we believe that financial institutions generally are more confidence-sensitive than corporates, particularly in their funding. Corporate governance focuses not only on the relationship between the boards of directors (also known as supervisory boards, hereinafter referred to as the "board"), management and shareholders, but also on the degree to which the board and management team have shown that they effectively balance shareholder *and* creditor interests.

Within the global BFSR scorecard, we focus on particular aspects of corporate governance which are fairly easy to observe or measure and which we consider to be potential 'red flags'. When one of these governance issues is identified, the bank will be assigned a D or E on this sub-factor, depending on the severity of the problem. Where none of these red flag issues are identified within a bank, corporate governance is considered neutral, and contributes neither positively nor negatively to the BFSR. The factors the scorecard considers in evaluating a bank's corporate governance are:

- a) Ownership and Organizational Complexity
- b) Key Man Risk
- c) Insider and Related-Party Risks

(a) Ownership and Organizational Complexity. Moody's believes that when ownership control is concentrated within a bank or where the ownership structure is complex (such as through multiple minority ownership interests or pyramid structures), it can be more difficult for the board to exert independent oversight over the controlling shareholder. Arguably, large shareholders, particularly family owners, can encourage long-term decision-making. Nevertheless, the board of directors of a controlled entity must manage potentially difficult conflicts of interest between the controlling shareholder's interests and those of the minority shareholders (whose interests are analogous to those of creditors, in governance terms). The task of the board is made more difficult when the organizational structure is highly complex and/or when the controlling shareholder holds key management positions.

(b) Key Man Risk. Moody's overall assessment of management quality is embedded in a range of BFSR factors, for example, the bank's strategic positioning and financial track record. A critical additional element of such an assessment is the degree to which the bank is highly dependent on a single executive or group of executives, particularly where these individuals dominate key decision-making positions. To the extent that there are such dependencies, we believe this can create "key man" risk, whereby the loss of such talent could adversely affect the bank's future fundamentals. Moody's believes boards would be challenged to cope with the loss of key executives in such a context, even where management succession planning processes are robust.

(c) Insider and Related-Party Risks. A strong independent credit approval process is essential to a bank's creditworthiness. We believe that significant extensions of credit to "insiders"—so-called related-party loans⁵—can suggest that underwriting standards are circumvented, or at a minimum create the appearance that underwriting standards are not applied uniformly. Such loans can also create credit concentrations that are more difficult for the board or management to handle than other such concentrations because of the inherent conflicts of interest. These loans are particularly worrisome, in our view, when they are to a controlling shareholder or bank executives (or entities associated with either). We believe that low board independence also increases a bank's risk profile, because there is limited independent oversight of insiders, including management or the controlling shareholder.⁶ For this reason, Moody's believes that some independent director presence on the board is important and will score poorly those banks that do not appoint independent directors, regardless of the ownership structure.

⁵ Related-party loans as defined locally, but to include loans to: (a) executive officers – including top 5 to 10 senior managers, their immediate family members, and any companies in which they control more than a 5% interest; (b) board members – including all non-executive or supervisory board members (and any executive or management board members not included in (a) above), their immediate family members, and any companies for which they work or in which they control more than a 5% interest; (c) major shareholders – including any company or person controlling more than a 5% interest in the issuer; (d) non-controlled affiliates – including any minority-owned or non-consolidated affiliate or subsidiary in which the issuer controls more than a 5% interest; and (e) public sector entities/municipalities/regions when the bank is government-owned or controlled.

⁶ For the purpose of the BFSR, a director would not be considered independent if he or she: (1) is currently or was formerly an executive of the bank or its affiliates; (2) is or was formerly affiliated with a major shareholder; (3) is a family member of a past or current executive of the bank, its affiliates or a major shareholder; (4) is designated formally by a major shareholder; (5) has or had within the last five years a commercial relationship with the bank or its affiliates (this does not include lending relationships because these would be captured under related-party loans, when such loans are significant in the aggregate); or (6) receives or received within the last five years consulting or other fees from the bank or its affiliates, in addition to typical director compensation arrangements.

Controls and Risk Management

We regard a well-functioning and deeply imbedded system of controls and internal checks and balances as a means of reducing operational risk and the overall risk profile of the bank. We note that control issues at banks have increased in recent years, reflecting the higher complexity of their business mix, the growing importance of trading activities at some banks, the effect of technology advances, financial liberalization, and changing regulation. At the same time, banks are investing greater resources in the measurement of control and operational risk issues since under Basel II they will be required to hold regulatory capital against their operational risk.⁷

The scorecard considers the following two factors separately:

- a) Risk Management
- b) Controls

(a) Risk Management. The overall score for “risk management” is based on the assessment of the four pillars of Moody's risk management assessment (RMA) methodology: risk governance, risk management, risk measurement and risk infrastructure and intelligence. Irrespective of the size of the bank, there are certain features, such as checks and balances between senior executives and the supervisory board, and between risk and business line units, a sound limit system, the regular use of stress tests and, most importantly, the full independence of the Chief Risk Officer (CRO) and risk function which should be present in all institutions considered to have an excellent or very good risk management framework. In small institutions, where a CRO per se may not exist, the executive responsible for risk management should not be responsible for a business line. The key features here are the independence of the executive who oversees risk management from the business lines and the comprehensive view of all risks. In all banks, risk management information systems, measurement tools and practices should be consistent with and support the bank's particular size, structure, risk appetite and profile.

(b) Controls. We consider the existence of past control issues or qualified audits.

Financial Reporting Transparency

The transparency of financial reporting is an important consideration in our analysis of the bank's strategy and risk position, as financial and operating data reported by banks form a starting point of our credit analysis. In addition, poor financial reporting often hides risks within a bank that may have a negative bearing on the bank's credit profile. We believe that reliable, transparent and timely financial information is consistent with banks with strong BFSRs.

The factors considered by the scorecard in evaluating the bank's financial reporting transparency are:

- a) Global Comparability of Reported Financial Information
- b) Frequency and Timeliness of Reporting
- c) Quality of Financial Information Reported by Banks.

(a) Global Comparability. Financial information reported by banks needs to be globally comparable in order for us to be able to draw a meaningful comparison between the financial fundamentals of banks operating in different countries and to ensure that financial ratios calculated by Moody's are largely

⁷ Operational Risk is defined for Basel II purposes as “the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events. This definition includes legal risk but excludes strategic and reputation risk.”

globally consistent. Moody's believes that financial reports are globally comparable when they are prepared under IFRS, US GAAP or substantially similar national accounting standards, and audited by a globally recognized accounting firm. Any significant deviations from this benchmark would likely result in a lower score on the financial reporting transparency element of our assessment.

(b) Frequency and Timeliness. The timeliness of reporting by banks is very important, as unduly outdated financial reports lose their relevance. Management needs to balance the relative merits of timely reporting and the provision of reliable information. From our point of view, prompt dissemination of financial information on a quarterly basis within several weeks of a reporting date is a desirable reporting practice, although we accept that in some jurisdictions with strong banking systems (e.g. the UK, the Netherlands, Australia) banks report twice a year with extensive reporting in the interim and supplemented with quarterly trading updates. On the other hand, banks that are unduly late with their quarterly or annual reporting would not achieve a high overall rating for financial reporting transparency.

(c) Quality of Financial Information. The quality of financial information varies significantly between rated banks. We generally expect that banks should present their financial reports in a user-friendly manner, disclosing all the important information – such as loan granularity and concentration, level of problem loans, PL coverage by loan loss provisions, risk-weighted assets (RWAs), Tier 1 ratio, performance by business line, funding structure, use of derivatives for trading and hedging purposes and other key information. We also look for the management analysis in the MD&A (Management Discussion and Analysis) to provide a full insight into the business and financial performance of the bank and to give a comprehensive and customized description of the level of risk carried by the bank in issuer-specific language (including exposures to credit risk, interest rate, FX risk, and also VaR and stress-testing information). In cases where we find that the quality of financial information is not as high as we would hope, or the information is lacking altogether, we factor any such deficiencies in financial reporting into our ratings. For example, if the bank does not disclose the level of its PLs, RWAs or Tier 1 ratio, its performance on financial reporting transparency would be given a D or E for this sub-factor.

Credit Risk Concentration

Moody's believes that large credit concentrations within the lending, trading and investment portfolios increase the credit risk of a bank. Conversely, highly granular credit portfolios are leading indicators of better credit quality over the cycle. As with any concentration risk, we believe that large exposures to single obligors, industries, or regions are a potential source of earnings volatility. While credit cycles are inevitable, the greater the diversification of a bank's credit exposures, the lower the likely volatility and extent of its credit losses as a percentage of earnings or Tier 1 capital. Ultimately good diversification across economic sectors and geographic areas enables the bank to ride through business cycles without undue harm to asset quality.

The metrics that we use to measure credit risk concentration are:

- a) Borrower Concentration
- b) Industry Concentration

(a) Borrower Concentration. In order to assess the risks associated with a bank's largest exposures, we look at its top 20 customer or group exposures (excluding Aaa rated Sovereign exposures) relative to Tier 1 capital and pre-tax-pre-provision income. Sometimes a bank may have a significant share of its

credit exposure to only a few large borrowers, which heightens the risks associated with one or more of these borrowers running into financial problems.

(b) Industry Concentration. To assess industry concentrations, we look at a bank's aggregate exposures to a particular sector or industry relative to Tier 1 capital. Industry concentrations can also be a source of risk. Examples of risky industry concentrations include commercial real estate, shipping, or oil and gas. Industry concentration in this context refers to exposures to borrowers (or counterparties or investments) in specific industries or sectors of the economy. While some banks may also have product or business line concentrations, such as home mortgages or credit cards, we do not include those as industry concentrations. They are already factored in franchise value under earnings diversification. For example, a bank's exposure to the housing industry would certainly include its exposure to home builders and to construction, but would not include its exposure to owner-occupied residential mortgages.

Liquidity Management

Moody's believes that banks fail first and foremost because of illiquidity. When a bank runs out of money, it can no longer function. On the other hand, strong liquidity can help an otherwise weak institution to remain adequately funded during difficult times. Therefore, one of Moody's principal aims in bank analysis is to assess the institution's ability to finance itself under stress.

We regard liquidity risk as a function of the unique structure of a bank's assets and liabilities. Moody's analysis of bank liquidity risk management starts with an assessment of the degree to which a bank's illiquid assets (primarily loans) are funded by core liabilities that are stable (primarily customer deposits, long-term debt and equity). Banks with stable core funding in excess of their illiquid assets generally face low liquidity risk. Liquidity risk increases to the extent that illiquid assets are being funded by more confidence-sensitive funding sources such as short-term capital markets funding or interbank funding.

Access to market funding (including interbank deposits, commercial paper, bank notes and bonds, and derivatives) is not typically based on long-term relationships but rather on perceptions of creditworthiness: any adverse news or other information can put a bank at risk of abrupt "name resistance." Therefore, our analysis of a bank's liquidity management focuses on the ease with which it can access liquidity to funding requirements in the event the bank's access to market funding is disrupted. We also focus on the potential impact to the bank's business activity under such circumstances. We assess the rigor of a bank's liquidity monitoring and control system, the diversification of its funding, as well as its contingency planning and liquidity stress testing. And we take into account its funding profile and overall risk management – in particular with regard to liquidity risk arising from new and complex instruments.

This assessment will also complement the Liquidity ratio used in the Financial Fundamentals.

Market Risk Appetite

In assessing a bank's market risk appetite, our starting premise is that the fundamental relationship between risk and expected return indicates that for a greater risk appetite, one expects on average to achieve a greater return. As the expected return increases, the volatility of the returns, and so the size of potential unexpected losses, increases. As the expected return decreases, the volatility of the returns, and so the size of potential unexpected losses, decreases.

Fixed income investors are concerned about unexpected events that could impair the value of their holdings by significantly damaging core earnings capacity, increasing earnings or cash-flow volatility or reducing capital. Therefore, the market risk appetite of an institution is a key element in assessing its financial strength.

Arguably, rigorous risk management practices enable management to choose a risk profile compatible with the firm's overall financial objectives and the credit rating it wishes to maintain. Moody's Risk Management Assessment initiative aims at assessing the relationship between an institution's risk appetite and its risk management capacity.⁸ Because of the increased reliance of many large banking institutions on market-based (wholesale) resources, market risk equally permeates their liquidity and balance-sheet management practices.

Our focus in market risk is to assess the sensitivity of both the trading and non-trading (i.e. banking) books to major changes in key financial variables (including interest rates, equity prices, foreign exchange rates, and credit spreads). We consider the results of a bank's own stress tests or economic capital measures, or if not available, look for other measures of market risk such as VaR or interest rate sensitivity analyses, recognizing that these measures may not be comparable and can reflect a variety of underlying assumptions.

Summary of Factor Mapping – Risk Positioning

	D	E
Corporate Governance*		
Ownership and Organizational Complexity	Complex ownership structure, e.g. multiple minority ownership interests, consortium banks, cross-shareholdings, pyramid structures, or circular shareholdings OR > 50% ownership by an individual legal person (including the government) or family.	Complex or private ownership as described for D, AND either (i) a complex organizational structure (i.e. one that is hard for the board or outside observers to understand) OR (ii) family shareholders or government officials dominate management.
Key Man Risk	Lack of management depth (management dominated by one or two people at most, no apparent successor, lack of succession planning, etc. – e.g. a "one-man shop") OR dominance of a single generation within the ranks of senior management.	Lack of management depth AND dominance of a single generation within senior management.
Insider and Related-Party Risks	Total related-party loans between 25% and 40% of Tier 1 capital OR less than 25% of supervisory board is independent.	Total related-party loans > 40% of Tier 1 capital OR no one on the supervisory board is independent.

* If not a D or E, scoring on individual component is neutral and contributes neither positively nor negatively to the BFSR.

⁸ Please see Moody's Rating Methodology "Risk Management Assessments," July 2004, and "[Risk Disclosures of Banks and Securities Firms](#)," Special Comment, May 2006.

Risk Management and Controls

Risk Management

A Excellent risk management practices

Very high awareness of the key risks of the firm by both supervisory board and senior executives that together, and on an annual basis, establish the firm's risk appetite and discuss all risk issues at least quarterly. Executives discuss risk issues including the largest credits and investment portfolios and their respective internal limits monthly and on an ongoing basis, e.g., through an Asset/Liability Committee (ALCO) and a Credit Risk Committee. High effectiveness of governance structure supported by a dedicated Chief Risk Officer (CRO), who reports independently to the supervisory board. The CRO will have regular sessions with the Board without other senior management to ensure full independence. Risk function is fully independent from business line management, is empowered with veto power, and proactive. Risk management is a key component of the decision-making process of the bank.

Very high quality and robust information systems and practices, commensurate with the bank's risk appetite and profile. All risks, including credit, market (both trading and banking books), and operational risk are estimated both individually and using a measure of total aggregate risk (e.g. economic capital). Market risk exposures can be extracted real-time and credit risk exposures can be extracted the same day. Uniform credit and market risk limits in place and enforced throughout the institution; limit breaches reported the same day. Development of proprietary systems as additional support to risk control decisions. Quarterly credit portfolio reviews as well as topical customer or industry credit reviews conducted on a regular basis, including both portfolio exposures and assessments of expected loss and economic capital. Stress analyses done regularly on all the risks of the firm. Risk-adjusted performance measures (e.g. RAROC) are used throughout the firm.

Note: To achieve an A score, all of the above criteria must be met.

B Very good risk management practices

High awareness of the key risks of the firm by both supervisory board and senior executives that together, and on an annual basis establish the firm's risk appetite and discuss all risk issues at least quarterly. Executives discuss risk issues including the largest credits and investment portfolios and their respective internal limits monthly and on an ongoing basis, e.g., through Asset/Liability and Credit Risk Committees. Effective governance structure supported by a dedicated Chief Risk Officer (CRO) that may report independently to the supervisory board. The CRO is not necessarily a member of the management committee. The risk management function is independent from business line management but may have more of an advisory role rather than being fully empowered with veto power. Risk management is a key component of the decision-making process of the bank.

High quality information systems, measurement tools and practices that are commensurate with the bank's risk appetite and profile. Credit, market (both trading and banking books), and operational risk exposures are measured and reported to executives regularly. Market risk exposures can be extracted real-time and credit risk exposures can be extracted the same day. Uniform credit and market risk limits in place and enforced throughout the institution; limit breaches reported the same day. Semi-annual credit portfolio reviews as well as topical customer or industry credit reviews conducted regularly, including both portfolio exposures and assessments of expected loss and economic capital. Stress analyses and risk-adjusted performance measures (e.g. RAROC) are used for key business areas.

Note: To achieve a B score, most of the above criteria must be met, particularly with regard to Board involvement in risk matters, the independence and importance of risk management in the firm's business strategy, effective systems and measurement tools commensurate with the bank's business lines and risk profile, frequent management review of the institution's major exposures, and the use of stress tests for key businesses.

C Satisfactory risk management practices

Supervisory board is aware of the key risks of the firm but its role in establishing the bank's risk appetite may be limited. Board should discuss overall risk issues with senior executives on a formal basis at least twice a year. Executives discuss risk issues monthly and largest (including house limit) credits and investment portfolios and their respective internal limits quarterly, e.g., through an Asset Liability Committee (ALCO) and Credit Risk Committee. Good governance structure. Emerging, though not necessarily in place, role of Chief Risk Officer (CRO) encompassing credit, market and operational risks. Exposures are reported to executives regularly, and risk units have enforcement power delegated by senior management. Risk functions are independent from business line management; however, credit and market risk teams may have separate reporting lines. Operational risk management structure and database may be just developing.

Satisfactory information systems and practices, in line with bank's risk profile, but may need further integration or upgrade. Data available on largest exposures very good; less timely data available for smaller exposures. Quantitative credit and market risk limits exist, but may not have comprehensive limit per borrower, perhaps because lacking fully integrated systems. Extraction of information on current exposures subject to some delays (but less than a week) or requiring some manual intervention. Credit portfolio reviews are conducted at least annually; largest credits and exposures reviewed more often. Escalation process for limit breaches in place, and enforced within reasonable period of time. Slippage may occur, though infrequently. Risk-adjusted performance measures (e.g., RAROC or equivalent) may be used. Stress testing may be used ad hoc for only the largest exposures.

Risk Management and Controls

Risk Management

D Modest risk management practices

Modest awareness of the key risks of the firm by the supervisory board and senior executives and less than adequate governance structure. Very limited involvement of board in establishing bank's risk appetite (senior executives' role). Risk issues may be discussed less than twice a year by the board; credit and market risks and limits discussed less than quarterly by executives at Asset/Liability (ALCO) and Credit Risk Committees. Have not addressed operational risks in a systematic way. Developing risk governance structure: no dedicated Chief Risk Officer (CRO) overseeing all business risks. Risk function not fully independent, and may report to business line management; credit and market risk teams may also have different reporting lines. No formally scheduled annual credit portfolio review.

Developing information systems. Uneven quality, availability, and timeliness of risk data: weaknesses in measuring and monitoring risks. Current exposures only available with more than a week delay and needing manual intervention to remove inaccuracies. Ad hoc quantitative risk limits and significant weaknesses in escalation process (delay of a week or more). Slippage may occur from time to time. Risk-adjusted performance (e.g., RAROC or equivalent) measures are not used. Stress tests used in limited fashion.

E Poor risk management practices

Poor awareness of the key risks of the firm by the supervisory board and senior executives and weak risk governance structure. Board not involved in establishing risk appetite or strategy of the bank. Executives may discuss risk issues ad hoc and discussion may be too superficial and/or infrequent to be effective (e.g., once a year or less). No dedicated Chief Risk Officer (CRO) overseeing all business risks. Risk function not independent from business line management. No formalized system of quantitative risk limits or regular credit portfolio reviews. Credit Risk Committee is ad hoc. No Asset/Liability Committee exists or lack of depth in risk management structure. Market risk and quantitative tools to measure it are undeveloped. Operational risk has probably not yet been addressed. Poor information systems, leading to weak quality, availability, and timeliness of risk data and limits escalation process and allows for limited corrective action. Extracting of risk exposure data is mainly a manual process that may take weeks or months to complete. Stress tests and risk-adjusted performance (e.g., RAROC or equivalent) measures are not used.

	A	B	C	D	E
Controls*	No control or governance issues in the last 5 yrs. No qualified audits in the last 5 yrs.	1-2 minor control or governance issues in the last 5 yrs. No qualified audits in the last 5 yrs.	1 major control or governance issue in the last 5 yrs.	1-2 major control or governance issues in the last 5 yrs, or any deliberate earnings misstatement in the last 5 yrs.	Weak controls with more than 2 major control or governance issues in the last 5 yrs, or any past fraud by current senior management.
Financial Reporting Transparency					
Global Comparability	Consolidated financial statements prepared under IFRS/US GAAP or GAAP that is substantially based on IFRS or US GAAP and audited by an independent, globally recognized accounting firm.	Consolidated financial statements prepared under IFRS/US GAAP or GAAP that is substantially based on IFRS or US GAAP and audited by an independent, nationally recognized accounting firm.	Unconsolidated financial statements prepared under IFRS/US GAAP or GAAP that is substantially based on IFRS or US GAAP and audited by an independent, globally or nationally recognized accounting firm.	Financial statements prepared under local GAAP and audited by an independent accounting firm.	Financial statements not audited by an independent accounting firm.
Frequency and Timeliness	Quarterly reporting within 10 weeks after the reporting date.	Semi-annual reporting within 10 weeks after the reporting date, AND quarterly trading updates.	Semi-annual reporting within 14 weeks after the reporting date, AND quarterly trading updates.	Semi-annual reporting within 16 weeks after the reporting date; no quarterly trading updates.	None of the above.
Quality of Public Financial Information	Published financial statements are presented in a user-friendly manner and all important information is disclosed at least annually, with most information disclosed semi-annually or quarterly. The includes level of PLs, PL coverage by provisions, RWAs, Tier 1 ratio, credit risk concentration (including industry and geographic concentration as well as some discussion of large credit exposures), detailed description of the level of risk carried by the bank in issuer-specific language (incl. exposures to credit risk, interest rate, FX risk, and also VaR and stress testing information). All financial information is publicly available.	Financial statements are presented in a user-friendly manner, most important information is disclosed, although disclosure is not as full as for A. Management analysis provides full insight into business and financial performance of the bank based on the economic substance and gives a comprehensive and description of the level of risk carried by the bank in issuer-specific language (incl. exposures to credit risk, interest rate, FX risk, and also VaR and stress testing information). Extensive quantitative disclosures on credit and market risks. All financial information is publicly available.	Management analysis provides good insight into business and financial performance of the bank based on the economic substance and provides good understanding about the level of risk carried by the bank in customized, issuer-specific language. The quality of disclosures is not as good as for A and B categories, but the key disclosures are nevertheless available. All financial information is publicly available.	Adequate disclosures, although some information may be missing. Management analysis provides some insight into business and financial performance of the bank and provides adequate understanding about the level of risk carried by the bank, although in a boiler plate language and some disclosures (e.g. on market risk) may be deficient. Important financial information is publicly available. If any of PLs, RWAs, or Tier 1 ratio is not disclosed, bank must be included in this category or the next lower one.	Limited disclosures, critical information may be missing. Limited or no discussion of business and financial performance of the bank. Boiler plate language is used to describe risks. Only limited financial information (key financial indicators) is publicly available.

* Note: A "major control issue" is defined as a breakdown in audit, compliance, risk management, operations, and/or accounting that results in either regulatory sanctions or constraints on activities, or large penalties or fines relative to those imposed on other firms for that type of issue in that jurisdiction, economic losses, sizable litigation exposures, OR reputational damage. A "minor control issue" more commonly results in no economic losses, may involve regulatory agreements seeking corrections (but no sanctions), and causes little or no reputational damage. An example of a minor control issue might be a regulatory settlement on anti-money laundering processes or other compliance matters that is not accompanied by severe regulatory constraints on activities, large fines or other punitive regulatory sanctions. Suggestions for control improvements made during the normal course of business by a regulator, external auditor or internal control executives are generally not considered control issues. In addition, legal settlements made with regard to common business practices would also not be considered a control issue, unless the settlement costs or fines are outsized for that type of issue in a given jurisdiction.

A

B

C

D

E

Credit Risk Concentration*

Borrower Concentration**	Top 20 group exposures are the worse of < 50% of Tier 1 OR < 100% of pre-tax pre-provision income (PPI)	Top 20 group exposures are the worse of 50%-80% of Tier 1 OR 100%-200 of PPI	Top 20 group exposures are the worse of 80%-100% of Tier 1 OR 200%-350% of PPI	Top 20 group exposures are the worse of 100%-200% of Tier 1 OR 350%-750% of PPI	Top 20 group exposures are the worse of > 200% of Tier 1 OR > 750% of PPI
Industry Concentration	Largest single sector exposure is < 50% of Tier 1	Largest single sector exposure is 50%-200% of Tier 1	Largest single sector exposure is 200%-350% of Tier 1	Largest single sector exposure is 350%-500% of Tier 1	Largest single sector exposure is > 500% of Tier 1

* The overall Credit Risk Concentration score equals the lower score of Borrower Concentration or Industry Concentration.

** Based on the sum of the 20 largest group exposures. "Group exposure" includes the aggregate of all loans (outstanding amounts plus undrawn committed exposures), investment or trading securities, counterparty exposures, etc. to related borrowers within a group or family. Excludes advised lines or internal limits, i.e. those instances where the bank is not obligated to extend credit.outstandings. Also excludes Aaa-rated sovereign exposures, but includes all other sovereign, sub-sovereign, and other government-related exposures as well as private sector exposures. Industry concentration measures exposures to borrowers in specific industries or sectors of the economy; for example, Commercial Real Estate, Oil & Gas, Fishing, Ship Building, Agriculture, Mining, etc. Does not include exposure to specific product lines (e.g. residential mortgages or credit cards). Aggregate exposures to Banking or Financial Institutions is considered an industry concentration. Aggregate exposures to the "Public Sector" is not be considered an industry concentration unless the public sector entities are highly correlated.

Liquidity Management ***Excellent Liquidity Management**

Effective measurement, monitoring and control system for liquidity positions in the major currencies in which the bank is active. Effective board and senior management oversight underpinned by good MIS that provides timely and sufficiently detailed info. Limits are appropriate to the size, complexity and financial condition of the bank.

Banks in this category should have positive net funding -- defined as Sources/Inflows (S) minus Uses/Outflows (U) > zero at every point in time over 12 months non-access to unsecured capital markets, with no reduction in business activities. Specifically, an A bank can pay all its liabilities as they fall due over the next 12 months with (i) no recourse to unsecured funding in the capital markets, (ii) no recourse to its own Class 4 or Class 5 liquidity sources (see table below), and (iii) no reduction in business activity (eg: maturing loans would not constitute a Source, but rather would be rolled or replaced with new lending).

Also, the extent that banks in this category rely upon non-core funding, they should enjoy ample diversification of funding sources by type, nature of the provider of funds and geographic market and enjoy strong relationships with key providers of funding (indicated by frequency of contact and frequency of use of a funding source). Liquidity contingency planning is prudent, incorporating an analysis of net funding requirements under both bank-specific and market-related crises).

A

Very Good Liquidity Management

Effective measurement, monitoring and control system for liquidity positions in the major currencies in which the bank is active. Effective board and senior management oversight underpinned by good MIS that provides timely and sufficiently detailed info. Limits are appropriate to the size, complexity and financial condition of the bank.

As a general rule, banks in this category should have positive net funding -- defined as Sources/Inflows (S) minus Uses/Outflows (U) > zero at every point in time over 12 months non-access to unsecured capital markets, with only a modest reduction in business activities. Specifically, a B bank can pay all its liabilities as they fall due over the next 12 months with (i) no recourse to unsecured funding in the capital markets, (ii) limited recourse its own Class 4 liquidity sources, (iii) no recourse to its own Class 5 liquidity sources, and (iii) only a modest reduction in business activity (any reduction in business activity limited to non-core, non-franchise businesses).

Also the extent that banks in this category rely upon non-core funding, they should enjoy ample diversification of funding sources by type, nature of the provider of funds and geographic market and enjoy strong relationships with key providers of funding (indicated by frequency of contact and frequency of use of a funding source). Liquidity contingency planning is prudent, incorporating an analysis of net funding requirements under both bank-specific and market-related crises).

B

Satisfactory Liquidity Management

Effective measurement, monitoring and control system for liquidity positions in the major currencies in which the bank is active. Effective board and senior management oversight underpinned by good MIS that provides timely and sufficiently detailed info. Limits are appropriate to the size, complexity and financial condition of the bank.

C As a general rule, banks in this category should have positive net funding -- defined as Sources/Inflows (S) minus Uses/Outflows (U) > zero at every point in time over 12 months non-access to unsecured capital markets, with only a modest reduction in business activities. Specifically, a C bank can pay all its liabilities as they fall due over the next 12 months with (i) no recourse to unsecured funding in the capital markets, (ii) heavy reliance on its own Class 4 liquidity sources, (iii) no recourse to its own class 5 liquidity sources, and (iv) only a modest reduction in business activity (no reduction in business activity that could permanently impair franchise value owing to a loss of customers or reputation). Modest diversification of funding sources by type, nature of the provider of funds and geographic market and questionable relationships with key providers of funding (indicated by frequency of contact and frequency of use of a funding source). Liquidity contingency planning is prudent, incorporating an analysis of net funding requirements under both bank-specific and market-related crises).

Modest Liquidity Management

Questionable measurement, monitoring and control system for liquidity positions in the major currencies in which the bank is active. Questionable board and senior management oversight. MIS may not provide timely and sufficiently detailed info. Limits may not be appropriate to the size, complexity and financial condition of the bank.

Questionable measurement, monitoring and control system for liquidity positions in the major currencies in which the bank is active.

Questionable board and senior management oversight. MIS may not provide timely and sufficiently detailed info. Limits may not be appropriate to the size, complexity and financial condition of the bank.

D As a general rule, banks in this category should have positive net funding -- defined as Sources/Inflows (S) minus Uses/Outflows (U) > zero over 12 months non-access to unsecured capital markets, but may have some timing gaps and some reduction in business activities. Specifically, a D bank can pay all its liabilities more or less as they fall due over the next 12 months, although there may be some gaps in the timing, with (i) no recourse to unsecured funding in the capital markets, (ii) recourse to all classes of liquidity sources (even Class 5), and (iii) some reduction in business activity (eg: less than half its maturing loans could be rolled or replaced with new lending). Modest diversification of funding sources by type, nature of the provider of funds and geographic market and questionable relationships with key providers of funding (indicated by frequency of contact and frequency of use of a funding source). Less realistic liquidity contingency planning.

Poor Liquidity Management

E Institutions that do not qualify for previous categories

*** Liquidity Management Notes:**

This sub-factor focuses on how well a bank can manage a name-specific disruption of its funding. This could be the result of investor reaction to problems at similar institutions or to problems at the bank itself, including a multi-notch downgrade. While such a downgrade may be unlikely, a highly rated bank is nonetheless expected to be able to survive a multi-notch downgrade without defaulting on its obligations (or requiring a bailout to avoid default). The focus is on how quickly and easily the bank will be able to access alternative liquidity to meet ongoing liquidity needs in the event the bank suffers a loss of access to unsecured funding.

Liquidity Uses/Outflows (U) --

Liabilities falling due -- wholesale debt as well as other confidence sensitive deposits -- and contingent liabilities (i.e. committed lines of credit that can be drawn down as well as other funding requirements for off-balance sheet commitments such as letters of credit and financial guarantees, swaps, written OTC options, margin calls etc). Factors such as diversification and relationship building are seen as especially important in evaluating the extent of liability run-off and a bank's capacity to replace funds. Matched books (eg: repos) should be netted, and only net liability amounts considered a use.

Liquidity Sources/Inflows (S) By Class (based in time within which can be converted to cash) --

Sources of liquidity include cash flow from operations and dividends from subsidiaries (net of taxes, and only if not restricted by a subsidiary's regulator) plus the following and should be estimated net of reasonable haircuts for price fluctuations, liquidity, relationship ramifications, etc. Maturing assets should be considered a source of liquidity only to the extent the corresponding reduction in business activity is consistent with the scoring described above.

CLASS 1 (one week sources)

Cash, government securities or other assets which can be sold/repoed/used as collateral in the market (with appropriate haircuts) or are eligible as collateral in central bank's routine open market operations (but only if such central bank borrowings won't jeopardize customer confidence), and established and committed secured and unsecured credit lines with no Material Adverse Change clauses - MAC - from similar or higher rated banks

CLASS 2 (two week sources)

Other marketable securities such as listed equities and interbank loans with appropriate haircuts, and assets that can be used as collateral in well-established securitization and/or covered bond programmes (programmes must be able to provide cash within two weeks)

CLASS 3 (3 month sources)

Banks' saleable loan portfolio with reasonable schedule for the disposal. Includes assets that can be used as collateral in established securitization and/or covered bond programmes (but only for banks that have used such programmes within the past year for this class of assets). Limited credit should be given to (i) markets where loans are not frequently transferred and do not routinely include loan-sale clauses in loan documentation, (ii) for those banks that have not developed a network of customers with whom it has concluded loan-purchase agreements.

CLASS 4 (6-9 month sources)

Illiquid loans or securities not capable of being readily sold, including assets that can be used as collateral in securitizations or covered bond, but at banks that have not utilized such assets in a securitization or covered bond programme within the past year.

CLASS 5 (uncertain sources)

Bank premises, investment in subsidiaries, private equity holdings, subordinated/mezzanine debt holdings, and troubled credits.

	A	B	C	D	E
Market Risk Appetite *	< 10% of Tier 1 capital is at risk due to market risk events	11%-20% of Tier 1 capital is at risk	21%-35% of Tier 1 capital is at risk	36%-50% of Tier 1 capital is at risk	> 50% of Tier 1 capital is at risk

* Market Risk Appetite aims at capturing the sensitivity of both the trading and non-trading books to major changes in key financial variables (including interest rates, FX, equity prices, credit spreads).

1) If stress tests or economic capital allocated to market risk capture the potential loss of both the trading and the non-trading books to major market movements are available, the results should be used, expressed as a percentage of Tier 1 capital, as the measure for market risk appetite.

2) If stress tests are not available, add up separately estimated losses coming from the trading and non-trading books, and express as a percentage of Tier 1 capital:

(a) For the trading book, multiply 5 times the 10-day 99% average VaR for a firm's trading book for a given calendar year (a 1-day 99% VaR can be converted to 10-day 99% by using a multiplicative factor of 3.162).

(b) For the non trading (i.e. banking) book, estimate the open, unhedged positions of the firm for each of the following risks and calculate the potential loss before tax for each risk based on the sensitivity of the book to the following stress tests. If available, one year VaR can be used for those risks on which it is reported, stress tests should be calculated for the other risks.

	Interest Rate Risk	Equity Risk	Foreign Currency Risk
Eurozone, Japan	Change in market value of equity* for a +/- 100 bps change in rates	25% decline in equity prices	20% change in value to exposures in developed market currencies, 40% otherwise
North America, UK, other developed markets	+/- 200 bps		
Developing Markets	+/- 500 bps	50%	40%

Rating Factor 3: Regulatory Environment

Why It Matters

Moody's believes that the stand-alone financial strength of a bank can be strongly influenced by the bank regulatory environment. A bank's financial strength is often improved with the existence of an independent bank regulator with credible and demonstrated enforcement powers and an adherence to standards of effective regulation and supervision consistent with global best practices. A bank regulator's principal objectives are usually focused on protecting bank depositors and promoting a healthy banking system in order to foster economic growth and development. As such, the interests of a bank regulator are often aligned with the interests of depositors, bond holders and other creditors. Through a combination of effective regulations, active supervision, and aggressive and prompt enforcement, a strong regulatory environment can promote sound banking practices and limit excessive risk taking.

We also believe that a bank's regulatory environment is important in all markets, not just in developing markets. In our view, while regulatory environments are often stronger in mature markets, this is not universally the case. Even in mature markets we believe that the existence of a strong regulator is important for protecting creditors.

Independence

In evaluating the bank regulatory environment we consider a number of aspects. The independence of the bank regulator is an important threshold measure that we believe is necessary for effective banking regulation. We consider the extent to which supervisory authorities are free from political or industry influences and whether there are clear and unambiguous laws in place which empower the regulator to impose and enforce standards and rules without need for joint action with other government and judicial bodies.

Regulatory Standards

We also look to see whether there are published regulatory standards in place. Published standards increase the transparency of the regulatory environment, which frequently improves both its consistency and efficacy. To the extent there are published standards, we evaluate whether those standards are consistent with the best practices established by the Basel Committee for Banking Supervision ("Core Principles for Effective Banking Supervision"). Those principles were first published in September 1997, and were most recently revised in October 2006.

Some regulators have extensive published rules that may look good on paper, but they may not follow them or enforce them. Others may work behind the scenes through unwritten guidance and moral suasion, but are very effective. However, in the absence of clear regulations and published standards, both regulatory independence and the quality of supervision necessarily take on greater importance.

In Moody's opinion, the most important areas where we believe such standards should exist are for

- » licensing,
- » capital,
- » asset quality (including large and related party exposures), and
- » liquidity.

Licensing standards are important because newly licensed banks are frequently more risky than established banks. A large number of new entrants that are not prudently managed and supervised can pose considerable risks to a banking system. This can affect even the strongest banks in such a system. In an effective bank regulatory environment regulators should have the authority to know and approve the identity and suitability of a bank's ownership and management as well as its business plan. Licensing requirements should also be sufficiently strong so as to limit the destabilizing impact that an excessive number of new entrants can have on a banking system. The number of new licenses issued annually, as well as the impact that de novo banking has on the banking system, can be an important indicator of the extent to which licensing requirements are sufficiently tight so as not to jeopardize the financial strength of existing banks in the system. It addresses the commitment and capability of regulators to manage the solvency of the banking system.

Minimum capital standards are widely recognized as an essential function of bank regulation. We consider the extent to which supervisors have prudently and conservatively implemented the Basel capital accords, including the extent to which the exercise of national discretion on risk-weights or capital calculations has strengthened or undermined the principles of the accords. We also evaluate whether the regulator has the discretion to require capital levels above minimums, through capital additions or other means, to cover risks that may not be fully captured in the capital rules or where a particular bank's risk profile might warrant it, and whether such discretion is actively exercised in practice.

Establishing standards for bank asset quality, and monitoring bank performance under those standards, is a critical aspect of banking regulation. We look at the extent to which problem loan definitions are conservative and reported uniformly (at least to the regulator if not publicly), whether regulatory guidance on loan loss provisioning, loan reclassification, and loan write-off practices are prudent, and the extent to which there is effective regulation of, and strict limits on, both large exposures and related-party holdings and exposures.

As noted above, Moody's believes that banks fail first and foremost because of illiquidity. In an effective bank regulatory environment regulators should have guidelines and requirements for prudent liquidity management. Such requirements should provide a safety net in the event of a liquidity crunch set off by a sharp increase in deposit or capital market withdrawals. We consider whether the regulator requires regular reporting on liquidity positions, and requires banks to evaluate liquidity over a number of different time horizons under a variety of circumstances (and across different currencies, where appropriate). We also evaluate the extent to which the regulator requires a bank to conduct stress tests or prepare contingency planning reports on how the bank would manage liquidity in the event of prolonged non-access to capital markets, caused by either a market shock or a major rating downgrade for the bank or for a whole category of similar or related banks.

Supervision

While we believe it is important to have conservative regulatory standards in place, we believe that without active supervision, even the strictest standards may not prove effective. In evaluating the overall regulatory environment we therefore consider the frequency, thoroughness, and length of on-site inspections and the quality, depth, and size of the supervisory/inspection staff.

Effective bank regulators tend to have good professional staff and resources that regularly monitor both system performance and the franchise and financial development of the banks within their purview. Even when bank regulators rely primarily upon external auditors to conduct regulatory reviews, we believe staffing levels and expertise must be sufficient to enable on-site inspections as an alternative or additional level of review where needed.

We also consider the use of thematic or targeted inspections and loan portfolio reviews, and the extent to which there are regular discussion meetings between the regulator and banks that enable supervisors to better assess specific risks and emerging risk exposures in order to have early warning signs of deterioration at either an individual bank or a systemic level.

Enforcement

In addition to active supervision, we believe active and prompt enforcement is another important component of effective banking regulation. Even when proper regulations are in place, if enforcement is poor, then those regulations are not going to be effective. We consider the extent that there are clear and unambiguous laws in place which empower the regulator to enforce standards and rules on matters mentioned above. In this context we will also evaluate the overall rule of law in the country, since it may shed additional light on the enforceability of banking regulations.

We also look for evidence of strong, successful enforcement, or alternatively of lax enforcement, especially any notable lapses or failures to adequately supervise banks or enforce regulations on them. We recognize that a lack of evidence on either extreme may also indicate an effective regulatory regime where enforcement measures are not necessary because prudent practices prevail. However, we would expect to be able to observe visible enforcement actions in less healthy banking systems. We also recognize that some level of forbearance may be necessary in a weak banking system; nonetheless, we believe that forbearance which lasts for an extended period of time without visible enforcement actions or corrections is an indicator of a weak bank regulatory environment.

Maturity of Regulatory Framework

Another important variable Moody's considers is the length of time a country's current bank regulatory regime has been in place. Some banking systems may have newly minted laws that include the latest Basel norms, but in practice they are not yet compliant, simply because they are so new, and

the banks and their regulators require time to adjust to the new framework. For example, both the banks and the regulator may need time to put into place the systems necessary to collect and compile the data required to be reported under a new regulation.

During the first five years following the adoption of such rules we have observed that many regulators are focused on developing the resources needed for effective implementation. A fair degree of regulatory forbearance is often exercised during this transition period as well, as both the banks and the regulator adjust to the new environment. The weaker the banking system, the longer this period of forbearance may last. During the next five years the regulator has the opportunity to fully implement and enforce the new rules. However, even during this period implementation may be challenged by other political participants, or by a lack of resources, during which the independence and effectiveness of the bank regulator is often tested. We believe that a clear track record of effective enforcement is likely to only be fully apparent after this period has ended.

While this timeline may vary from country to country, we nonetheless believe it is important to consider the maturity of the bank regulatory regime in evaluating the overall regulatory environment. We believe that the majority of the current laws and regulations, as well as the bank regulatory authority and its staff, should be firmly established before the regulatory environment can be considered comparable to those in countries which have similar, but long-established bank regulatory regimes.

Health of Banking System

As alluded to above, the overall financial health of a country's banking system is often correlated with the strength of the bank regulatory environment. While the financial health of a banking system can obviously be impacted by a variety of macroeconomic factors outside the control of a bank regulator, the existence of effective, prudential and proactive banking regulation and supervision should enable a banking system to weather all but the most severe macroeconomic downturns without significantly weakening the overall health of the system. Therefore, when evaluating the bank regulatory environment in a given country, we consider not only the various aspects of bank regulation described above, but we also consider both the stand-alone financial strength of the banking system as a whole. We also consider whether or not the trends are improving, which may also be a sign of a strengthening bank regulatory environment.

How it is Measured in the Scorecard

The bank regulatory environment has always been an important consideration in Moody's analysis of banks. Moody's has a long history of meeting with bank regulators and evaluating bank regulatory regimes. In addition, a number of Moody's analysts have formerly worked for bank regulators. One of the principal objectives in updating our BFSR methodology is to increase the transparency of how Moody's assigns BFSRs. To do this we have grouped bank regulatory regimes globally, placing all such regimes that regulate banks rated by Moody's on a five point scale, from A to E.

Unlike in other sections of the scorecard, we have chosen not to individually score specific sub-factors to measure the bank regulatory environment. While we attempted to do so in our previous requests for comment, we found that the results failed to fully capture the complex interaction of the various elements needed for a strong bank regulatory environment.

Instead, we have developed a relative grouping based upon the observations and experience of Moody's bank analysts located throughout the world. These groupings capture all of the elements described in the first section above.

While the specifics of each bank regulatory regime may vary within a group, we have concluded that all of the bank regulatory regimes within each group are comparable in the strength of the overall regulatory environment as it impacts bank credit risk and bank creditors. It is important to emphasize that this is a relative scale. Making such relative judgments is challenging. But we believe investors benefit from understanding more precisely how Moody's opinions on the bank regulatory environment affect Moody's ratings.

In some countries there may be different banking regulators for banks with different banking charters. In most cases we have found these differences do not significantly alter the overall regulatory environment for those banks. However, where the differences between different banking regulators within the same country are substantial, they could lead to a different regulatory environment score for different banks within the same country.

For banks' with operations in more than one country, our analysis focuses on a the regulator in the country where the bank is domiciled due to the importance of regular on-site examinations and familiarity with local risks. We recognize that consolidated supervision and the frequent existence of home-host regulatory agreements may shift primary regulatory responsibility to another jurisdiction. In our opinion a strong regulator in a parent bank's home country can make up for a weak regulator in the host country of a subsidiary bank, but the opposite is unlikely to be true. The failure of BCCI in 1990 is a clear example of this, and while coordination amongst banking regulators has improved significantly since then, nonetheless we believe that the home country regulatory environment is of paramount importance.

Rating Factor 4: Operating Environment

Why It Matters

A bank's performance is frequently constrained by its operating environment and, where conditions are particularly difficult, banks could often be said to be the victims of their environments. Violent economic cycles, business-damaging political decisions, weak legal systems and irrational competitive environments can all act singly or in combination to impair a bank's creditworthiness. While many factors contribute to making some countries easier places in which to do business and others more difficult, Moody's believes the key drivers are the economic volatility, the efficiency of the legal system, the effectiveness of social and political institutions, and the competition dynamics and industry structure of the banking system.

Our initial analysis of the operating environment in the BFSR scorecard focuses on three different measures, all of which can be quantified. We have chosen these measures as the best way to capture the broad differences in various operating environments. In practice, Moody's assesses the operating environment of each country at least once a year. That assessment will apply to all banks operating in that system. For those banks with a substantial (over 20%) portion of assets or profits in another country (either directly or through subsidiaries), we will consider a blended operating environment score for each sub-factor reflecting the bank's overall operating environment based on its asset or profit mix.

1. Economic Stability
2. Integrity and Corruption
3. Legal System

Economic Stability

Large drops in economic growth are highly correlated with worsening asset quality and earnings. Therefore, all other things being equal, countries with more volatile economic cycles are riskier places in which to do business.

Economic cycles in highly industrialized economies are gentle, with their GDP growth rates moving up or down by only 1-2 percentage points in two-thirds of the past 20 years. Developing economies exhibit more violent economic cycles, with their GDP growth rate standard deviation ranging from 7-12 percentage points to, occasionally, more than 100 percentage points. We assign each country an Economic Volatility Score based on the standard deviation of its nominal local currency GDP growth rates.

Integrity and Corruption

Corruption can make an operating environment unpredictable and costly. When severe, it can render its institutions and even infrastructure dysfunctional.

Corruption in the economy constitutes a problem for a bank, even when its internal operations are themselves free of corruption. At the macroeconomic level, corruption results in a misallocation of resources, thus limiting economic growth. At the microeconomic level, corruption can taint accounting and other information on which credit decisions are made. Furthermore, government and private sector services may be forthcoming only when service providers are paid off. This adds to the cost of doing business and can put the bank on the wrong side of the law, even if those laws are seldom enforced.

Because they handle large sums of money, banks everywhere are subject to various forms of malfeasance. However, where corruption is prevalent in society, normal bank control mechanisms are likely to prove insufficient to prevent theft and fraud, particularly in the face of collusion, fear or indifference. These crimes can be costly in terms of both bank money and reputation.

It is difficult to accurately assess levels of corruption in different countries based on hard data. Therefore, we have chosen to use the World Bank's indicator on Control of Corruption, (WB CC) which ranks countries in terms of the degree to which public power is exercised for private gain. We assign each country an Integrity and Corruption Score based on the WB CC.⁹

Legal System

A well-established and enforced system of contract law facilitates the day-to-day operations of banks. The vast majority of bank business is based on contracts; loan agreements, foreign-exchange forwards, guarantees, collateral pledges, and derivatives are contracts. Most of a bank's risk management and risk mitigation tools rely on the predictable and preferably fair functioning of the legal system. The time value of money also puts a premium on the swift functioning of the legal system.

Because it is important to banks that the legal system be predictable, fair and swift, we have chosen to score each country's legal system according to the typical time it takes a bank to foreclose on a residential mortgage. In our experience, this time period can be less than a year in countries with efficient bank-friendly courts and a strong rule of law. However, where courts are inefficient, corrupt

⁹ The Control of Corruption is a composite index drawing on corruption related data in expert surveys carried out by a variety of institutions. It reflects the views of firms and individuals from around the world, as well as assessments of commercial risk-ratings agencies, non-governmental organizations and think tanks, and multilateral aid agencies. The 2005 WB CC, together with details on the WB CC methodology, is publicly available at www.worldbank.org/wbi/governance.

or sometimes just very protective of individuals, it can take five to ten years for a bank to be awarded vacant possession of a residential property, which can lead to a significant deterioration in the value of collateral for the bank.

Summary of Factor Mapping – Operating Environment

	A	B	C	D	E
Economic Stability	Standard deviation of GDP growth <2.3	Standard deviation of GDP growth 2.3-4.0	Standard deviation of GDP growth 4.0-7.0	Standard deviation of GDP growth 7.0-12.0	Standard deviation of GDP growth >12.0
Integrity and Corruption	WB Corruption Index > or = 2.00	WB Corruption Index between 1.20 – 1.99	WB Corruption Index between 0.60 – 1.19	WB Corruption Index between -0.35 and 0.59	WB Corruption Index < -0.35
Legal System *	Length of foreclosure on residential real estate < 1 yr	Length of foreclosure on residential real estate 1-2 yrs	Length of foreclosure on residential real estate 2-3 yrs	Length of foreclosure on residential real estate 3-5 yrs	Length of foreclosure on residential real estate > 5 yrs

* The legal system should be evaluated firstly based upon length of foreclosure on residential real estate. If such information is not readily available or is not considered indicative of the overall rule of law, analysts will evaluate the legal system on the basis of the effectiveness of commercial contract law, the perfection of collateral, bankruptcy laws or other considerations in light of their impact (favorable or unfavorable) on the banking system. However, if foreclosure data is not used, then the score can only be C or lower.

Rating Factor 5: Financial Fundamentals

Why It Matters

Financial fundamentals are a relatively easy way to compare banks' performance. Banks should be simple to compare globally, because they generally have two main businesses: borrowing money and lending money. They are regulated institutions and there are thousands of them around the world. The use of financial metrics helps to verify or falsify performance assumptions that were based on past trends. These following sub-factors are all components of the classical CAMEL approach to bank credit analysis, and are certainly not groundbreaking at Moody's.¹⁰

We break down our analysis of a bank's financial fundamentals into the following sub-factors:

1. Profitability
2. Liquidity
3. Capital Adequacy
4. Efficiency
5. Asset Quality.

Profitability

Earnings power is a key determinant of the long-term success or failure of a financial institution. It measures the ability of a bank to create economic value and, by adding to its storehouse of resources, to preserve or improve risk protection for creditors. Moody's believes that core or recurring profitability is a bank's first line of defense to absorb credit-related losses and losses stemming from

¹⁰ CAMEL stands for Capital, Asset quality, Earnings, Management, and Liquidity

market, operational and business risk. However, the absolute level of earnings needs to be measured for volatility. In our ratios, we are looking to capture coverage for creditors while measuring earnings performance relative to balance sheet and other risks. At the same time, we are cognizant that bank managers may be keenly concerned with shareholders' needs. To the extent that measures such as return on equity or EPS growth drive management's strategies, we will look at them to gauge what pressures management may be facing.

As we indicated earlier in this methodology, there are many qualitative factors that address earnings from the point of view of both volatility and diversification. The selected profitability ratios, however, measure consolidated performance on a historical basis.

Liquidity

Illiquidity is almost always a proximate cause of bank failure, while strong liquidity helps an otherwise weak institution to remain adequately funded during difficult times. One of Moody's principal aims in bank analysis is to assess the institution's ability to finance itself under stress. This is an especially sensitive element, because access to market funding (interbank, fixed-income securities, derivatives) may not be based on long-term relationships, but can be based on perceptions of creditworthiness. Consequently, adverse news or other information can cause funding interruptions.

The financial ratio is complemented by the assessment made on Liquidity Management in the Risk Positioning rating factor.

Capital Adequacy

Compared to most other industries, banks are highly leveraged entities. Yet, as with other industries, capital is a carefully managed tool for banks. Managers must address the needs of many constituents – not the least of which are shareholders. We believe these needs must be balanced against the interests of regulators and creditors.

Banks typically fail because of losses in the loan portfolio, poor business models, or fraud. These factors ultimately lead to a decline in capital, but capital inadequacy cannot truly be considered the cause of bank failure. As we have said many times, capital is important, but it is not a leading indicator of credit health, and therefore only rarely drives ratings. In fact, historically, capital ratios have been inversely correlated to ratings – with highly rated banks being more leveraged than lower rated banks. This is because we believe that the benefits of an extensive franchise, a diversified business mix, strong risk management, and stable, predictable earnings more than offset weak capital ratios. That said, we do consider the current and expected level of capital in determining ratings.

As highly regulated entities, banks are required to meet minimum standards. Exceeding regulatory capital requirements allows favorable access to capital markets and may, perhaps, facilitate obtaining regulatory approvals for strategic initiatives. Ample capital also provides management with financial flexibility to take advantage of opportunistic acquisitions, divestitures and discontinuation of businesses including associated write-downs.

The discussion of capital does become a more prominent factor at acquisition time. This is so because institutions are likely to employ leverage to finance transactions. Oftentimes the cash portion is funded with debt or something other than pure equity. Capital also becomes more prominent when a bank is otherwise in weak financial condition. When earnings are absent, capital becomes a much more important buffer for absorbing losses.

Efficiency

Banking is a people- and technology-intensive industry, and cost containment is the strategic focal point for banks seeking higher efficiency. Increased competition and banking-product commoditization make revenue-boosting a difficult task. Efficiency can allow a bank to more easily satisfy shareholder demands for earnings growth without overly aggressive risk taking. Our analysis focuses on both management efforts to control and reduce costs, and on the actual results.

Asset Quality

Asset quality is a main driver of future earnings and, therefore, capital generation or erosion. Loan portfolios are generally the largest component of a bank's balance sheet. Therefore, loan quality is considered a key component in determining the creditworthiness of banks.

We wrote earlier that there are many qualitative inputs in assessing asset quality. Such factors can point to the likelihood of future problems long before loan quality ratios so indicate. Nevertheless, the risk profile of a bank can ultimately be seen in its asset quality statistics; and non-performing loans, although inevitably somewhat backward looking, have proven to be a good predictor of near-term loan losses, which ultimately reduce creditor protection.

Selected Ratios

Since Moody's ratings are intended to be a relative ranking of risk, it is important to be able to make global comparisons. To facilitate this, the BFSR scorecard focuses on ratios that are both meaningful in assessing credit risk and based on data that is available for most banks globally. To reduce the impact of performance distortions in any single period, we have chosen to calculate three-year average ratios. Each of the following ratios, listed according to sub-factor, is mapped to a BFSR score as shown in the accompanying table.

Profitability

Income before taxes and loan loss provisions as percentage of average risk-weighted assets (PPP % Avg. RWA). Pre-provision profits reflect the core earnings power of a bank, and to the extent they are recurring represent the principal buffer against potential future losses. Profits are measured against risk-weighted assets (as measured under the Basel I capital accord) as a proxy for coverage for creditors. This tends to provide a better measure of risk than total assets, because it reflects risk in the balance sheet and off-balance sheet. We know, however, that this measure of asset risk is less than perfect. In jurisdictions where risk-weighted assets are not disclosed, we will estimate it using main balance sheet and off-balance sheet categories and standard risk weightings. These estimates will be compared to similar peers with disclosed risk-weighted assets as a check on their reasonability.

Net Income as percentage of average risk-weighted assets (Net Income % Avg. RWA). Bottom-line profitability measures performance after all costs, whether ongoing or one-time. It also captures the benefit of any gains whether or not recurring. Again, we use risk-weighted assets as the denominator for the reasons cited above.

Liquidity

Market funds minus liquid assets % of total assets. Market funds consist of all long- and short-term debt including amounts due to other banks. Measured against total assets, this is a period-end calculation. This ratio captures the degree to which a bank is reliant on non-core funding (i.e. funding other than customer deposits) to support its asset base.

Capital Adequacy

Tier 1 regulatory ratio. This is the Basel I regulatory ratio as reported by banks (Tier 1 capital as % of risk-weighted assets). Tier 1 is preferred since it is closest to equity and excludes subordinated debt. Subordinated debt is generally unavailable to absorb losses except in liquidation, and as such provides no protection against insolvency.

Tangible common equity % risk-weighted assets. This ratio captures the risk profile of banks' assets (on- and off-balance sheet) as per Basel criteria. Tangible Common Equity is calculated as Total Shareholders Equity less the following: Preferred Stock, Minority Interest, Fair Value Reserves/Unrealized Gains or Losses on AFS Securities, Asset (Re)Valuation Reserves, Hedging Reserves/Adjustment for Cash Flow Hedges, Less Goodwill and all other intangible assets; plus Moody's "equity credit" for hybrids and preferred stock as per Moody's New Instruments Committee's Tool Kit ¹¹. For those banks that do not disclose risk-weighted assets we will estimate risk-weighted assets using broad balance sheet and off-balance sheet categories and standard risk weightings.

Efficiency

Cost/Income Ratio. This ratio is measured as total non-interest expense relative to total revenues (which is calculated as the total of net interest income plus non-interest income including the net of gains or losses on securities sales). This is a measure of a bank's efficiency and its ability to generate incremental profits with added revenue.

Asset Quality

Problem loans % of gross loans. Problem loans consist of: (1) "impaired loans" as defined under IAS 39 paragraph 59 for banks reporting under IFRS or a substantially similar accounting framework; or (2) nonaccrual loans plus accruing loans that are past due 90 days or more for banks reporting under US bank regulatory standards or a substantially similar framework; or (3) for banks which do not report under IFRS, Moody's will estimate the level of problem loans using the regulatory classification of loans by banks. Such estimate of problem loans will cover the same universe of loans as reported by IFRS reports in (1) or by US banks in (2) above. In some countries, for example, Doubtful loans and Loss loans as reported by banks to their regulators may be broadly equivalent to Problem loans as defined above.

Problem loans % (shareholders' equity + loan loss reserves). Problem loans (as defined above) are measured against shareholders' equity plus loan loss reserves. We include loan loss reserves in the denominator, rather than netting them out of the numerator, to provide a measure that is easier to compare across different banking systems with different reserving and write-off policies.

Summary of Factor Mapping – Financial Fundamentals

	A	B		C		D		E
Profitability	>=	>=	<	>=	<	>=	<	<
PPP % of Avg RWA	3.5%	2.4%	3.5%	1.4%	2.4%	0.5%	1.4%	0.5%
Net Income % Avg RWA	2.0%	1.7%	2.0%	1.0%	1.7%	0.3%	1.0%	0.3%

¹¹ Please see Moody's Rating Methodology "Refinements to Moody's Tool Kit: An Addendum for Banks and Insurers", published January 2006.

Summary of Factor Mapping – Financial Fundamentals

	A	B		C		D		E
Liquidity	<	>=	<	>=	<	>=	<	>=
(Market funds - Liquid Assets) % Total Assets	-10%	-10%	0%	0%	10%	10%	20%	20%
Liquidity Management score from Risk Positioning	A	B		C		D		E
Capital Adequacy	>=	>=	<	>=	<	>=	<	<
Tier 1 ratio (%)	10%	8%	10%	6%	8%	4%	6%	4%
Tangible Common Equity % RWA	7.0%	5.5%	7.0%	4.0%	5.5%	2.5%	4.0%	2.5%
Efficiency	<	>=	<	>=	<	>=	<	>=
Cost/income ratio*	45%	45%	55%	55%	65%	65%	80%	80%
Asset Quality	<	>=	<	>=	<	>=	<	>=
Problem Loans (%) Gross Loans	0.8%	0.8%	2%	2%	5%	5%	12%	12%
Problem Loans % (Shareholders' Equity + LLR)	10%	10%	20%	20%	30%	30%	50%	50%

* Cost/income ratio = total non-interest expense as a percentage of total revenues (which is calculated as the total of net interest income plus non-interest income including the net of gains or losses on securities sales).

Economic Insolvency Override

Economic Insolvency Override is a separate factor introduced into the scorecard with the aim of capping the estimated BFSR of those banks whose capital level may be seriously impaired by asset quality problems. Economic insolvency is not the same as legal insolvency. Many banks with high levels of problem assets may still be liquid and remain solvent under regulatory definitions. Our economic solvency ratio attempts to evaluate the hypothetical capital position of such a bank if it were required to resolve its problem loans over the near term. The overall scorecard estimate for those banks whose capital may be seriously impaired by asset quality problems will automatically drop to D, D-, E+ and E depending on the level of economic solvency which is calculated with the following formula:

$$(1 - (0.5 * PL / (Equity + LLR))) * Tier 1$$

where PL = Problem Loans and LLR = Loan Loss Reserves.

The trigger points are as follows:

Economic Insolvency Override

	D		D-		E+		E
	>=	<	>=	<	>=	<	>=
Economic Insolvency Ratio (1 - 0.5*Problem Loans % (Equity +LLR))*Tier 1 ratio	2.0%	4.0%	0.0%	2.0%	2.0%	4.0%	0.0%

The formula assumes a 50% severity of loss for problem loans. We consider 50% to be a conservative but reasonable first estimate in light of the data in Moody's default studies. Those studies show that the average severity of loss (loss given default) on unsecured bonds in mature markets is roughly 50%. Rated secured debt in mature markets has a lower severity of loss. However, in both cases there is a wide variation around the average.

We acknowledge that this is a crude measure. However, it has been designed to identify those banks that reveal by their own reporting that they may be economically insolvent. It is intended as a tool to highlight those banks most at risk for substantial capital impairment and has the benefit of using ratios already included in the scorecard. As already is the case, Moody's rating committees will carefully evaluate additional ratios and further detail on the nature of the problem loans at such banks before determining the final BFSR.

Weighting the Factors in the Scorecard

A Two-Stage Process for Arriving at the Estimated BFSR

The five key rating factors can be divided into two major BFSR determinants: Qualitative Factors (QF), which comprises the first four key rating factors (Franchise Value, Risk Positioning, Regulatory Environment, and Operating Environment), and Financial Fundamentals (FF), which comprises the fifth rating factor. The following section explains how the QF-derived BFSR (QFBFSR) and the FF-derived BFSR (FFBFSR) are arrived at in the scorecard and how these two are then combined to arrive at an estimated BFSR. As noted above, the estimated BFSR will be used as a first step by analysts and rating committees when deciding upon a bank's BFSR. Neither the rating committee nor the analyst are bound by the estimated rating if they believe that the scorecard results do not provide an accurate reflection of the bank's credit risk profile relative to other rated banks.

Score for each Sub-factor is Converted into a Numerical Value

Using Moody's BFSR rating scale, each of the sub-factors that contribute to the four key qualitative rating factors in the QFBFSR are assessed and assigned a score using the broad BFSR scale from A to E. This score is then converted to a 13 point scale, which represents the full range of BFSRs, including + and - modifiers (i.e. A=1; B=4; C=7; D=10; and E=13). Weightings are then applied to determine an overall numerical value for each key factor. This overall numerical value is then converted back to the BFSR scale. For example, for Franchise Value, the scores for each of the four Franchise Value sub-factors are weighted equally at 25% and then combined to arrive at a numerical score for Franchise Value. This process is repeated for each of the other rating factors.

Some Weightings May Shift

While the sub-factor weightings within most of the key qualitative rating factors are constant, the weightings on the sub-factors within Risk Positioning are more dynamic. This reflects our view of the significant impact which undue concentration risk, weak controls and risk management, opaque financial reporting, or poor corporate governance can have on a bank's intrinsic risk profile. In particular, if a bank scores a D or E on Credit Risk Concentration, that score receives an additional 30% weighting within the overall Risk Positioning score (with the weighting on all other sub-factors being reduced in equal proportion). A similar shift in weighting occurs if a bank scores a D or E on Quality of Financial Information.

In addition, within Franchise Value, if the bank is a monoline, the weight on each of the four sub-factors is equal. However, if the bank is not a monoline, then Earnings Diversification is neutral and gets no weight, so that the weight is evenly divided over the other three sub-factors (Market Share, Geographic Diversification, and Earnings Stability).

Finally, as noted above, if a bank scores an E on either Controls and Risk Management, or on the Insider and Related-Party Risks component of Corporate Governance, then the overall Risk Positioning score is set to an E as well, regardless of the scores on the other sub-factors. And if a bank scores a D on either Controls and Risk Management or Insider and Related-Party Risks, then the overall Risk Positioning score is set to a maximum of D, but could still be lower if the scores on the other sub-factors warrant it.

Financial Fundamentals-Derived BFSR (FFBFSR) and Category Weightings

The same process is followed to arrive at the FFBFSR. The five sub-factors within FF - (1) profitability, (2) liquidity, (3) capital adequacy, (4) efficiency, and (5) asset quality - are weighted equally, at 15.75% each, to reflect their equal analytical importance, with the exception of efficiency, which is weighted 7%. Each sub-factor blends with an equal weighting the different ratios used, except for Liquidity. The liquidity ratio is complemented in the scorecard by the qualitative score on Liquidity Management. The weight of the liquidity ratio in the overall assessment of Liquidity, i.e. Liquidity Ratio and Liquidity Management, will be 25%.

An extra weighting of 30% is applied to the lowest-scoring of the sub-factors within FF, with the exception of the Efficiency sub-factor. Instead, a combined weighted average score of both the efficiency sub-factor and the profitability sub-factor is determined before the extra weighting is applied. The extra weighting is then applied only to the lowest scoring of either Asset Quality, Liquidity, Capital Adequacy, or the combined Profitability/Efficiency sub-factor. The adjustment is designed to reflect the additional weight Moody's analysts place on low scoring elements of a bank's financial fundamentals in their ratings analysis. It also serves to minimize the impact of inevitable dilution that is inherent in the scorecard given the number of factors included. At the same time, combining the profitability and Efficiency sub-factors before applying the extra weighting, reduces the impact which a low score on Efficiency alone would have on the overall scorecard estimate.

Economic Insolvency Override

The overall scorecard estimate for those banks whose capital may be seriously impaired by assets quality problems will automatically drop to D, D-, E+ and E depending on the level of the economic solvency ratio.

Different Weightings in Mature vs. Developing Markets

Each of the four key factors comprising the QFBFSR is assigned a different weighting in the scorecard to arrive at the final QFBFSR. However, we use different weightings depending upon whether we define the bank in question as operating in mature or developing markets. Although there are many ways of making such a distinction, we focus on the level of the foreign currency (FC) ceiling in each country. If the FC ceiling is Aa1 or higher (i.e. Aaa), we will regard the market in question as mature. If it is lower than Aa1, we will regard the market as developing.

For banks in mature markets the weightings are Franchise Value (40%), Risk Positioning (40%), Regulatory Environment (10%), and Operating Environment (10%). For banks in developing markets, the weightings are Franchise Value (10%), Risk Positioning (30%), Regulatory Environment (30%), and Operating Environment (30%).

Similarly, the final weightings of the QFBFSR and the FFBFSR – to enable us to arrive at the estimated BFSR – also vary depending on whether the bank is operating in mature or developing markets. For banks operating in a mature market, the QFBFSR is weighted 50% and the FFBFSR 50%. For those banks operating in developing markets, this is different, i.e. the QFBFSR is weighted 70% and the FFBFSR 30%. After being weighted, the FFBFSR and QFBFSR are then combined to arrive at a prediction of the final BFSR. The table in Appendix A sets out the contribution of each factor and sub-factor to the BFSR to help readers gauge their respective impact (both within each category and overall).

Why the Weighting Differs from Mature to Developing Markets

The different weighting approaches reflect Moody's view of the different challenges banks face in developing markets where economic volatility and general country risks can be quite substantial. In addition, banks operating in a mature market generally benefit from more effective financial reporting and regulatory environments that would allow outside observers to ascribe more analytical weight to available disclosed numbers when making a credit decision. The cut-off level, i.e. Aa1, was chosen by looking at the countries within the Aaa and Aa1 peer groups, and their characteristics with respect to financial reporting, and regulatory and operating environments.

Possible Adjustments to the Inputs and Outputs of the Scorecard

As noted above, the scorecard is designed taking into account global availability of information, global comparison and reasonable fit for all banks rated by Moody's Investors Service. However, given that we rate banks in over 85 countries, with different market environments, regulations and business models, this basic scorecard can not perfectly fit all of them and can not permit perfect global comparability. For example the efficiency ratio of an investment bank ratio established in a market with loose labor regulations would be well lower than that of a nationwide retail bank.

Therefore Moody's analysts and rating committees will consider making additional adjustments to one or more sub-factors in the scorecard, or consider additional metrics to improve comparability. In this regard, the analyst interpretation of such metrics, as well as the consideration of regional/supplemental metrics, provides further insights and analysis.

Following the guidelines described below, the analyst will present to the rating committee both the unadjusted scorecard and the adjusted scorecard, along with his/her remarks on the adjustments, and he/she will be required to explain and substantiate the adjustments made.

Rationale for Possible Adjustments

By having access to the scorecard, investors and issuers will be able to arrive at the estimated scorecard BFSR, which is a combined result of both qualitative factors and financial metrics. However, it is to be emphasized that the scorecard BFSR is just an input to the whole process of a rating committee conclusion on the final BFSR. The BFSR scorecard is designed to provide an estimated BFSR that will be used as a first step by analysts and rating committees when deciding upon a bank's BFSR. Neither the rating committee nor the analyst is bound by the estimated rating if they believe there are other important factors that the scorecard does not adequately consider. We have not limited the final BFSR for a given bank to be within two notches of the scorecard's initial output. We anticipate that there will be some banks whose BFSR is not consistent with the scorecard estimate. Rating committees will consider the reasons why a given bank is showing up as an outlier. Such reasons could include aspects of the bank's accounting and reporting, business model, regulatory or market environment that limit the comparability of certain key factors and metrics.

General Guidelines on Allowable Adjustments

While it is practically impossible to enumerate all possible adjustments, in Moody's view, there are some typical cases of justifiable adjustments to the inputs to the score itself. The following section will provide examples of those circumstances where Moody's analysts and rating committees may consider adjustments to improve the comparability of the scorecard output for a bank, or overlay other considerations in arriving at a final BFSR. Allowable adjustments will usually take the form of adjusted scorecards with rationale for adjustment. The focus here is to avoid the risk of discretionary treatment of important factors by the analyst, while trying to provide some common framework of opinions on some cases of justifiable adjustments to the score.

Adjusting Ratios

The global ratios used in the scorecard are the starting point of our bank analysis. Where needed, we will continue to use additional ratios to shed further light on the relative credit risk ranking of different institutions within a region and across regions. As the scorecard's ratios are selected based mainly on the global availability of data, if there are ratios that are available in a certain region having greater explanatory power, the rating committee will consider the possible addition of new ratios to augment the scorecard ratios, as long as global comparability can be preserved.

One area where adjustments may be needed to improve global comparability involves risk-weighted assets. Where national discretion has allowed for a lower risk-weighting on certain asset classes than that used by most other banks globally (for example, domestic sovereign debt in most developing markets), Moody's analysts and rating committees will attempt to adjust reported risk-weighted assets for banks in those countries in order to obtain financial ratios that are more globally comparable.

The liquidity ratio used in the scorecard may also require adjustments for some banks. As noted above, because of limited disclosure by many banks, this ratio does not reflect the maturity profile of a bank's funding. In assessing an individual bank's score under this ratio, analysts and rating committees will also consider the maturity structure of the bank's funding, if such information is available, recognizing that this may be based on non-comparable data

Adjusting for Trends

Importance of cycle

Bank performance reflects the operating environment of each country. And operating environment is usually subject to economic cycles of stability, growth and deterioration, which would sometimes critically affect a bank's asset quality and profitability. As our BFSR should not be too sensitive to changes in selected ratios, and to avoid the risk of responding to cyclical driven performance changes of banks, we have decided that the ratios in the scorecard will use three-year average data

Difficulty of setting the appropriate cycle

There was a comment from the market that the three-year average for the financial fundamentals in the BFSR scorecard does not appear to be a good timeframe for evaluating performance "through the cycle", as illustrated by the fact that the last three years have been very favorable for European, US and Latin American banks. However, determining the appropriate time frame for a cycle is a difficult task. Some banks are operating at the top of business cycle, and others are bottom at the cycle, and some systems are having relatively longer economic cycles. Or in some systems, banks are finally getting out of a severe structural adjustment process towards normality, during which period all key ratios may have been severely pressured.

Adjustment of one-time factor

Adjustments that may be warranted may include one-time recognition of large restructuring charges or credit portfolio improvement-related losses, or on the other hand one-time recognitions of gains that may inflate earnings. In such cases, to use three-year average ratios in the score may lead to incorrect financial trends for such institutions, and may result in sensitive future adjustment of the final BFSR with the materialization of expected results.

Adjustment of appropriate cycle

We chose the three-year time frame in the scorecard in order to reduce the impact of performance distortions in any single period. However, neither the rating committee nor the analyst is bound by the scorecard estimated rating if they believe there are other factors that could argue for a different timeframe. Longer (or shorter) periods may be considered by rating committees in cases where these are deemed to be a better indicator of future "through the cycle" performance.

Importance of medium term projections

In choosing to deviate from the three-year timeframe, it is critical that the analyst formulate a medium term financial picture. A rating committee may conclude that more recent performance provides a more accurate picture only if the committee is confident that the most recent numbers are sustainable. Also, this consideration should be exercised in the opposite direction. If the analyst expects a significant change in reserving policies and an adverse change in the operating environment in the near future, it is also recommended that analyst should also think about whether it makes sense to employ the three-year average. The addition of the Trend indicator to the scorecard - either Neutral, Improving, or Weakening - should also serve as a modifier, if necessary, to provide a more accurate forward-looking view of financial trends

Typical ratios affected in trend adjustment

In Moody's view, not all ratios are to be treated in the same way. Generally speaking, it is unrealistic to expect significant changes in liquidity ratios or efficiency and pre-provision profit indicators owing to changing trends unless there is a corresponding change in the business model or management style.

On the other hand, net profit and problem loans numbers are to a larger extent affected by one time factors. Particularly, net profit is by its nature more affected by extraordinary items.

Adjusting problem loan number

Room for defining problem loans

It is important to have a better idea of what real capital would be. To reach the accurate level of capital, it is also important to know the true quality of the loan portfolio. In this connection, adjusting problem loans (PL) is justifiable in certain circumstances given the diversity of PL reporting across the world. In some systems, PL is not publicly disclosed, while in other systems disclosed PL includes so-called restructured loans that are not classified as problem loans in other systems. While it is practically impossible to reach uniform agreement on this point, adjusting problem loans to reach the true level of capital is justifiable.

Adjusting for and estimating Economic Solvency

Differences in reporting and regulatory standards affecting any balance sheet items will inevitably create distortions in reported capital, because it is nothing more than the net of assets and liabilities. Given the importance of capital adequacy, especially for emerging markets and for weaker banks everywhere, it is vital that the scorecard's capital adequacy ratios be adjusted for these differences when the analyst and the rating committee agree that reported numbers do not provide a true measure of a bank's capital. The Economic Insolvency Override used in the scorecard is, in fact, an estimate of just this sort of capital adjustment.

The most typical valuation adjustment is for over-valued loans, resulting from under-reported and/or under-reserved problem loans (PLs). Having adjusted the PL number as described above, the analyst then estimates the likely loss among the problem loans and adjusts capital and risk-weighted assets accordingly. Assuming that the loss rate is estimated to be 50%, a normal loan loss reserve for the bank of 1% and that the loans carry 100% risk-weights, the formulae for the scorecard's capital ratios would be.

$$\text{Adjusted Tier 1 CAR} = (\text{Reported Tier 1 Capital} - (\text{EL} - \text{LLR} - (.01 * (\text{Gross Loans} - \text{EL}))) / (\text{Reported RWA} - \text{EL})$$

$$\text{Adjusted TCE/RWA} = (\text{TCE} - (\text{EL} - \text{LLR} - (.01 * (\text{Gross Loans} - \text{EL}))) / (\text{Reported RWA} - \text{EL})$$

Where EL is assumed rate of Expected Loss: $\text{EL} = .05 * \text{Adjusted Problem Loans}$

Moody's generally proceeds from the assumption that liabilities will have to be settled at face value. Thus, the analyst's task is to adjust any asset valuations deemed problematic. As loans often make up the majority of a bank's assets, other adjustments may not be necessary as they will not result in any material change in capital. However, Moody's analysts will look at both over-and under-valued investments should they be material.

Adjusting Gross Credit Concentration Exposure

Credit concentration is another factor where some adjustments are justified. Moody's credit concentration is generally defined as the current outstandings plus unutilized credit commitments. The level of credit concentration is usually affected by the practices and characteristics of each

country's banking system. In some systems, it is not uncommon to see that the top 20 concentration is well beyond the Tier I capital of the bank.

Allowable adjustments

While we continue to think that the level of gross concentration is important, some mitigating circumstances could argue for adjustment. One example is the case where the bank's top concentration is generally represented by highly creditworthy borrowers. This would be applicable to situations where such concentrations are represented by highly rated corporate credits, or central government, government-related entities. However, many bank exposures are unrated, and the comparability of different banks' internal risk rating systems may be very limited. Given the difficulty of achieving the required level of consistency, Moody's expects that any adjustments for borrower creditworthiness are likely to be limited to those borrowers with a very high investment grade Moody's -equivalent rating. In order to preserve global comparability, such adjusted concentration risk measures need to be evaluated against a separate, lower scale than the one included in the scorecard, as shown below. This is because the largest exposures at many banks are often highly rated. The ranges in the scorecard are based on an assessment of unadjusted exposures at many banks globally. Excluding highly rated exposures for just one bank and then comparing the adjusted figure against other bank's unadjusted figures would result in non-comparable data.

Adjustments may also be considered in cases where a bank has purchased credit default swaps as credit protection against a borrower or group exposure. However, where such instruments expose the bank to counterparty credit risk (i.e. the risk that the seller of credit protection defaults), the exposure should still be included under the bank's aggregate exposure to that counterparty.

In particular, we are willing to consider as an adjustment using top 20 below A3 (single-A) as long as the analyst and the rating committee believe that the bank's ratings are comparable to Moody's. In doing so, the following mapping would be used.

20 Largest Exposures Below A3 % PPI

A	<	70%
B	70%	140%
C	140%	245%
D	245%	525%
E	>	525%

20 Largest Exposures Below A3 % Tier 1

A	<	35%
B	35%	56%
C	56%	70%
D	70%	140%
E	>	140%

This mapping has lower ranges in order to preserve the relative rank ordering of concentration risk across banks for whom the top 20 below single A is unavailable. All banks include some exposures to highly rated credits. Therefore comparing both ratios using the same scale would not provide a consistent relative ranking. The mapping is based on loan granularity surveys Moody's has conducted in a number of different regions where data on both Total top 20 and top 20 below A3 have been evaluated relative to Moody's current BFSRs.

For the 20 largest exposures under single-A, collateral in the form of securities rated down to A3 can be netted against total exposures rated below single A (again subject to the caveat that the analyst and the rating committee must be satisfied that the bank's ratings are comparable to Moody's).

Negative attitude toward collateral

Adjusting for collateral is a difficult process given the difficulty of estimating the value of collateral. Furthermore, the same difficult economic conditions that cause loans to go bad often impair collateral values and liquidity, especially real estate and property collateral. In addition, most banks rely upon collateral for credit risk mitigation to some extent, so adjusting one bank's exposures for collateral could make comparisons with other banks difficult if their exposures are not similarly adjusted. Therefore, in most cases analysts and rating committees will only consider making adjustments to reflect the risk mitigation benefits of collateral in cases where the bank is holding cash or liquid Aaa-rated government debt as collateral. However, if coupled with a strong history of collateral management, stable credit portfolio performances for a number of years, demonstrated outperformance on loss severity and loss-given-default relative to peers, and strong regulatory pressure for monitoring of collateral, collateral as a mitigating factor may be considered.

Adjusting for Business Model Differential

Retail banking orientation

Business model misfit with the scorecard will be inevitable in a number of cases, since the scorecard is designed to fit reasonably well for 1,000 banks, but may not fit equally well with every one of those banks. While the BFSR scorecard is based primarily upon traditional retail banking and lending, it is intended to be applicable to all deposit-taking banks, regardless of the specific business models a bank pursues. To the extent that an analyst or rating committee believes that a bank's risk profile is not adequately captured by the scorecard because of a bank's unique business model, they may look at adjustments to existing metrics or other metrics as long as such analysis is done within the context of global comparisons and not just local ones. Moody's will endeavor to compare such banks to banks with similar profiles globally, to ensure that we maintain global consistency in our BFSRs for such banks.

Wholesale or investment oriented banks

There are certain cases where wholesale or other specialized business model-oriented institutions may not fit in well with the scorecard. Where appropriate, we may adjust the ratios or even weighting depending on the need. Wholesale-oriented or investment type oriented institutions are usually characterized by higher regulatory capital ratios due to risk asset conservation, and strong efficiency ratios, however, if need be securitization adjustments or the larger weighting of liquidity scores will be made to more accurately represent the true risks of such institutions. These types of institutions may require higher liquidity preparedness.

Efficiency ratio

There are some cases in which the efficiency ratio is very low due to underinvestment. Both wholesale and retail banking institutions need certain levels of capital expenditures and investment to maintain the basis for adequate growth. If exceptionally good score in efficiency ratio is believed to be due to such underinvestment, the efficiency score will be adjusted downward.

Adjusting Franchise Value

Vulnerability to "Event Risk"

This adjustment attempts to measure the vulnerability of a bank's franchise to "event risks", i.e. potential threats to its market standing as well as to its ability to generate recurrent earnings that were not captured by the prior factors. Event risk refers to the risk that an event could occur which permanently damages a bank's franchise value by impairing its reputation, significantly increasing its

costs, or otherwise reducing its earnings coverage. Such events can include a bank's being subject to significant adverse publicity, litigation, or regulatory sanctions over its business activities; management's decision to spin off a business to its shareholders; changes in political regimes that could directly affect the bank's franchise; fiscal changes; or changes in tax laws, regulations, or patents. Questions the analyst might ask would include the following (keeping in mind that these are not already taken into account in any other sub-factor in the scorecard):

- » Is there a potential threat of intentional adverse publicity or similar event that would affect the bank's market standing?
- » Is there a threat of litigation against the bank that would create sizeable losses and/or harm its reputation?
- » Is there a threat of regulatory sanction that would create sizeable losses and/or harm its reputation?
- » Is there a threat of changes in licensing that would affect the bank's position by allowing indiscriminate entries to the market?
- » Is management likely to contemplate a spin-off to shareholders that could reduce the bank's market standing or diversification?
- » Is there a possibility that the bank's license could be taken away?
- » Is there a threat of arbitrary changes that could affect its revenue generation and balance sheet quality, for example maximum interest rates, changes in tax laws, changes in currency, among others?
- » Is there a mismatch in the balance sheet that is not reflected in Risk Management, for example a dollarized balance sheet in a highly dollarized country?

This adjustment will be applied to the overall Franchise Value and could override the score previously attributed, by notching it down.

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Appendix 1

BFSR Scorecard Weights for Banks in Mature Markets

			Category Weight	Overall Weight		Sub-Factor Weight	Overall Weight	
Mature Markets	Qualitative Factors	50%	Franchise Value	40%	20%	Market share and sustainability	25%	5.0%
						Geographical diversification	25%	5.0%
						Earnings stability	25%	5.0%
						Earnings diversification	25%	5.0%
		Risk Positioning	40%	20%	Corporate Governance	16.7%	3.3%	
					Controls & Risk Management	16.7%	3.3%	
					Financial Reporting Transparency	16.7%	3.3%	
					Credit Risk Concentration	16.7%	3.3%	
					Liquidity Management	16.7%	3.3%	
	Regulatory Environment	10%	5%	Regulatory Environment	100%	5.0%		
				Operating Environment	10%	5%		
	Financial Factors	50%	Profitability	15.75%	8%	PPP % Avg RWA	50%	3.9%
						Net Income % Avg RWA	50%	3.9%
Liquidity			15.75%	8%	(Market funds - Liquid Assets) % Total Assets	36%	2.8%	
					Liquidity Management	64%	5.1%	
Capital Adequacy			15.75%	8%	Tier 1 ratio (%)	50%	3.9%	
					Tangible Common Equity % RWA	50%	3.9%	
Efficiency			7.00%	4%	Cost/income ratio	100%	3.5%	
Asset Quality	15.75%	8%	Problem Loans % Gross Loans	50%	3.9%			
			Problem Loans % (Equity + LLR)	50%	3.9%			
Lowest Score	30.00%	15%	Assigned to lowest combined financial factor score	100%	15.0%			

Note that in the table above there is at least one adverse consideration for Corporate Governance. If there were no adverse considerations, it would receive no weight and the weights for all other factors in Risk Positioning would increase by an equal amount. In addition, a score of D or E in Controls, Credit Risk Concentration, or Quality of Financial Reporting would increase the weights of those sub-factors and reduce the weights on other sub-factors within Risk Positioning. In this case the bank is also considered a "monoline," and so the weight on each of the four sub-factors for Franchise Value is equal. If the bank is not a monoline, then Earnings Diversification gets no weight, and the weight for Franchise Value is evenly divided over the other three sub-factors (Market Share, Geographic Diversification, and Earnings Stability).

BFSR Scorecard Weights for Banks in Developing Markets

		Category Overall Weight		Sub-Factor Weight		Overall Weight	
Developing Markets	Qualitative Factors	Franchise Value	10%	7%	Market share and sustainability	25%	1.8%
					Geographical diversification	25%	1.8%
					Earnings stability	25%	1.8%
					Earnings diversification	25%	1.8%
		Risk Positioning	30%	21%	Corporate Governance	16.7%	3.5%
					Controls & Risk Management	16.7%	3.5%
					Financial Reporting Transparency	16.7%	3.5%
					Credit Risk Concentration	16.7%	3.5%
					Liquidity Management	16.7%	3.5%
					Market Risk Appetite	16.7%	3.5%
	Regulatory Environment	100%	21.0%	Regulatory Environment	30%	21%	
	Operating Environment	30%	21%	Economic Stability	33.3%	7.0%	
				Integrity and Corruption	33.3%	7.0%	
				Legal System	33.3%	7.0%	
Financial Factors	30%	Profitability	15.75%	5%	PPP % Avg RWA	50%	2.4%
					Net Income % Avg RWA	50%	2.4%
		Liquidity	15.75%	5%	(Market funds - Liquid Assets) % Total Assets	44%	2.1%
					Liquidity Management	56%	2.7%
		Capital Adequacy	15.75%	5%	Tier 1 ratio (%)	50%	2.4%
					Tangible Common Equity % RWA	50%	2.4%
		Efficiency	7%	2%	Cost/income ratio	100%	2.1%
Asset Quality	15.75%	5%	Problem Loans % Gross Loans	50%	2.4%		
			Problem Loans % (Equity + LLR)	50%	2.4%		
Lowest Score	30%	9%	Assigned to lowest combined financial factor score	100%	9.0%		

Note that in the table above there is at least one adverse consideration for Corporate Governance. If there were no adverse considerations, it would receive no weight and the weights for all other factors in Risk Positioning would increase by an equal amount. In addition, a score of D or E in Controls, Credit Risk Concentration, or Quality of Financial Reporting would increase the weights of those sub-factors and reduce the weights on other sub-factors within Risk Positioning. In this case the bank is also considered a "monoline," and so the weight on each of the four sub-factors for Franchise Value is equal. If the bank is not a monoline, then Earnings Diversification gets no weight, and the weight for Franchise Value is evenly divided over the other three sub-factors (Market Share, Geographic Diversification, and Earnings Stability).

Appendix 2

About Moody's Bank Ratings

Bank Financial Strength Ratings

Moody's Bank Financial Strength Ratings (BFSRs) represent Moody's opinion of a bank's intrinsic safety and soundness and, as such, exclude certain external credit risks and credit support elements that are addressed by Moody's Bank Deposit Ratings. Bank Financial Strength Ratings do not take into account the probability that the bank will receive such external support, nor do they address risks arising from sovereign actions that may interfere with a bank's ability to honor its domestic or foreign currency obligations. Factors considered in the assignment of Bank Financial Strength Ratings include bank-specific elements such as financial fundamentals, franchise value, and business and asset diversification. Although Bank Financial Strength Ratings exclude the external factors specified above, they do take into account other risk factors in the bank's operating environment, including the strength and prospective performance of the economy, as well as the structure and relative fragility of the financial system, and the quality of banking regulation and supervision.

A

Banks rated A possess superior intrinsic financial strength. Typically, they will be institutions with highly valuable and defensible business franchises, strong financial fundamentals, and a very predictable and stable operating environment.

B

Banks rated B possess strong intrinsic financial strength. Typically, they will be institutions with valuable and defensible business franchises, good financial fundamentals, and a predictable and stable operating environment.

C

Banks rated C possess adequate intrinsic financial strength. Typically, they will be institutions with more limited but still valuable business franchises. These banks will display either acceptable financial fundamentals within a predictable and stable operating environment, or good financial fundamentals within a less predictable and stable operating environment.

D

Banks rated D display modest intrinsic financial strength, potentially requiring some outside support at times. Such institutions may be limited by one or more of the following factors: a weak business franchise; financial fundamentals that are deficient in one or more respects; or an unpredictable and unstable operating environment.

E

Banks rated E display very modest intrinsic financial strength, with a higher likelihood of periodic outside support or an eventual need for outside assistance. Such institutions may be limited by one or more of the following factors: a weak and limited business franchise; financial fundamentals that are materially deficient in one or more respects; or a highly unpredictable or unstable operating environment.

Note: Where appropriate, a "+" modifier will be appended to ratings below the "A" category and a "-" modifier will be appended to ratings above the "E" category to distinguish those banks that fall in intermediate categories.

Global Local Currency Deposit Ratings

A deposit rating, as an opinion of relative credit risk, incorporates the Bank Financial Strength Rating as well as Moody's opinion of any external support. Specifically, Moody's Bank Deposit Ratings are opinions of a bank's ability to repay punctually its deposit obligations. As such, Moody's Bank Deposit Ratings are intended to incorporate those aspects of credit risk relevant to the prospective payment performance of rated banks with respect to deposit obligations, and includes: intrinsic financial strength, sovereign transfer risk (in the case of foreign currency deposit ratings), and both implicit and explicit external support elements. Moody's Bank Deposit Ratings do not take into account the benefit of deposit insurance schemes which make payments to depositors, but they do recognize the potential support from schemes that may provide assistance to banks directly.

National Scale Ratings

National scale ratings are intended primarily for use by domestic investors and are not comparable to Moody's globally applicable ratings; rather they address relative credit risk within a given country. An Aaa rating on Moody's National Scale indicates an issuer or issue with the strongest creditworthiness and the lowest likelihood of credit loss relative to other domestic issuers. National Scale Ratings, therefore, rank domestic issuers relative to each other and not relative to absolute default risks. National ratings isolate systemic risks; they do not address loss expectation associated with systemic events that could affect all issuers, even those that receive the highest ratings on the National Scale.

Foreign Currency Deposit Ratings

Moody's ratings on foreign currency bank obligations derive from the bank's local currency rating for the same class of obligation. The implementation of JDA for banks can lead to a high local currency ratings for certain banks, which could also produce high foreign currency ratings. Nevertheless, it should be reminded that foreign currency deposit ratings are in all cases constrained by the country ceiling for foreign currency bank deposits. This may result in the assignment of a different, and typically lower, rating for the foreign currency deposits relative to the bank's rating for local currency obligations.

Foreign Currency Debt Ratings

Foreign currency debt ratings are derived from the bank's local currency debt rating. In a similar way to foreign currency deposit ratings, foreign currency debt obligations may also be constrained by the country ceiling for foreign currency bonds and notes, however, in some cases the ratings on foreign currency debt obligations may be allowed to pierce the foreign currency ceiling. A particular mix of rating factors are taken into consideration in order to assess whether a foreign currency bond rating pierces the country ceiling. They include the issuer's global local currency rating, the foreign currency government bond rating, the country ceiling for bonds and the debt's eligibility to pierce that ceiling.

RATING METHODOLOGY

Incorporation of Joint-Default Analysis into Moody's Bank Ratings: Global Methodology

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Introduction

This rating methodology updates our approach for incorporating expectations related to various forms of external support into our ratings of banks. In our March 2007 rating methodology "*Incorporation of Joint-Default Analysis into Moody's Bank Ratings: A Refined Methodology*" we set out a framework - joint-default analysis (JDA) - for adjusting bank financial strength ratings to reflect various forms of external support. Throughout the financial crisis, governments have extended extraordinary amounts of support to systemically important banks. This support stabilized their credit quality, thereby limiting ratings migration to the benefit of most bank creditors. Although the crisis largely reaffirmed Moody's views on external support, it has also caused us to refine some of the assumptions underlying our assessment of the inevitable and growing uncertainties regarding the support framework for banks.

This rating methodology is largely unchanged from the March 2007 document. In the current update we have changed the rating symbols we use to communicate Baseline Credit Assessments, which express Moody's opinions on banks' stand-alone financial strength and default risk, absent extraordinary support which may be provided by governmental entities or affiliates. The new scale replaces the use of our traditional long-term rating scale, which we now reserve for expressing Moody's views on the relative risk of default and loss, inclusive of possible extraordinary third-party support.¹² Baseline Credit Assessments are now expressed using a strictly a lower-case alpha-numeric scale (i.e. aaa, aa1, aa2, ...caa3). The only other substantive revisions are updates which codify changes of practice that we announced and implemented at earlier stages of the financial crisis in two particular areas of the methodology, as described below:

- » Previously our assumption for systemic support was based on the central bank's capacity to provide support, as measured by an indicator called the local currency Deposit Ceiling (LCDC), which is the highest rating that can be assigned to the local currency deposits of a bank or other deposit taking institution domiciled within that rated jurisdiction. However, the financial crisis has illustrated the propensity for idiosyncratic problems to develop into systemic crises, and for liquidity shocks to develop into solvency problems, given the interconnectedness of the financial sector and the confidence sensitivity of banks. In such circumstances, the capacity of the authorities to provide support converges with the government's own financial capacity as reflected in its debt rating. This methodology explains how we use the government's debt rating as an indicator of its ability to support banks.

¹² The introduction of new rating symbols is also consistent with Section 938 of the Dodd-Frank Wall Street and Consumer Protection Act – the US financial reform bill. Based upon rule-making by the Securities and Exchange Commission, nationally recognized statistical rating organizations are prohibited from having multiple definitions for the same rating symbol.

- » In most cases, we have removed systemic and regional support from bank hybrid ratings and, in many cases, from subordinated debt ratings. Instead, these ratings are linked to the stand-alone intrinsic strength of the bank as expressed through our Bank Financial Strength Rating. This is in contrast to our previous practice of anchoring from the bank's senior unsecured rating or Bank Debt Rating, which incorporates systemic and other forms of external support.

To recap, JDA operates on the principle that the risk of default (and therefore, loss) for certain obligations depends upon the performance of *both the primary obligor and another entity (or entities) that may provide support to the primary obligor*.¹³

The chief benefit offered by JDA is a consistent, transparent approach to the incorporation of (typically uncertain) non-contractual external support. That said, Moody's bank deposit ratings will continue to be determined through judgment, not through models. Our intention is to be transparent about the judgments we are making and to be consistent in their impact on rating outcomes.

Moody's JDA framework for banks evaluates potential support in a *sequential* process, or "building block" approach. The intention of the Sequential Support Model is to replicate the likely sequence in which external support for a bank would be forthcoming. Each support provider is assessed for its *capacity* and *willingness* to support the bank. The first is based on the supporter's own rating. The second is based on Moody's opinion of the probability that support will be forthcoming when needed.

Rationale for JDA and Refinement of Methodology

Any assessment of expected loss on debt issued by financial institutions must take into account the potential for third parties to provide support to a financial institution to enable it to avoid default. For example, a default study conducted in 2005 found that financial institutions historically had similar, if not safer, credit risk profiles to similarly rated corporate issuers. Among issuers rated single A and above (roughly 75% of all financial institutions), the default rates of financial institutions and corporate issuers were very similar between 1983 and 2004. For issuers rated Baa and below, however, default rates were lower for financial institutions than for similarly rated corporate issuers.¹⁴ The main reason for the difference in performance was the incidence of intervention by regulatory authorities, whether through provision of liquidity or capital, through regulatory/accounting forbearance or other support operations, in order to minimize the systemic consequences of a large bank failure.

The crisis has provided many further examples of third party support for banks. While bank default rates have increased significantly over the crisis, the increase would have been far higher were it not for the support extended, on many occasions, by central, regional and local governments as well as by parents and co-operative groups. While the future support framework for banks is increasingly uncertain, experience during the crisis has validated the assumption that many banks have some reasonable expectation of external support, the effect of which is to reduce any loss borne by creditors.

Accordingly, in order to promote comparability between, on the one hand, Moody's deposit ratings and, on the other, its ratings of bonds issued by non-financial corporates which would typically have no expectation of support, Moody's practice is to raise deposit ratings to reflect the expected level of support. JDA provides a transparent framework to do this.

¹³ For an explanation of the principles of JDA, please see Moody's Special Comment "[The Incorporation of Joint-Default Analysis into Moody's Corporate, Financial and Government Rating Methodologies](#)" February 2005.

¹⁴ Moody's Special Comment "[Defaults, Losses and Rating Transitions on Bonds Issued by Financial Institutions: 1983-2004](#)" December 2005. Also see Moody's Special Comment "[Defaults and Recoveries for Financial Institution Debt Issuers, 1983 – 2010](#)" February 2011 for more recent data.

However, the crisis has also provided insights into the limitations on the support environment, both now and in the future. For example:

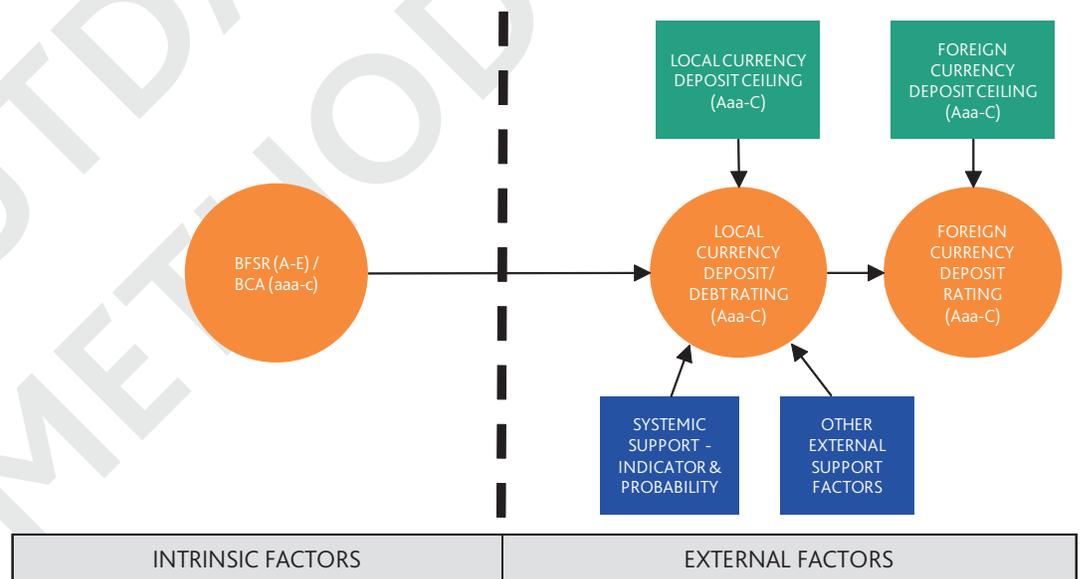
- » The crisis has caused policy makers actively to explore ways of reducing the need to commit taxpayers' funds to support banks in future, including through the development of resolution frameworks and, potentially, new forms of debt instrument which can more readily bear losses;
- » The crisis has also exposed the speed with which an idiosyncratic problem can become a systemic financial crisis, and the limits on the public sector's ability to provide financial support to contain systemic crises without damaging its own balance sheet;
- » And not all classes of debt have received the same levels of support: there have been many more instances of losses being incurred on various junior instruments than on senior debt,

This update to earlier reports on the JDA framework explains some changes to the way in which the framework is applied in order to reflect those insights. Their overall effect is to restrict external support estimates and to limit lift from support, aligning bank deposit ratings more closely with Moody's assessment of their intrinsic financial strength.

Moody's Bank Rating Methodology

The schematics below summarize the broad analytic concepts underpinning the bank rating process by highlighting the relationship between the bank financial strength rating (or its corresponding baseline credit assessment), the supported local currency deposit rating, and the foreign currency deposit rating.

Moody's Bank Rating Methodology



In analyzing the creditworthiness of banks, it is useful to separate intrinsic risk factors from external risk factors. Since 1995, the starting point for Moody's bank rating methodology has been an assessment of a bank's intrinsic financial strength, as captured by a Bank Financial Strength Rating (BFSR) and mapped to the baseline credit assessment (BCA).

A BFSR measures the risk that a bank will require external support. The BFSR is informed by fundamental analysis and consequently reflects both financial and qualitative measures. The BFSR forms the basis for the bank's deposit and debt ratings, which further incorporate both external support and risk elements. Anticipated external support may lift deposit and debt ratings and sovereign-related risk may cap them.

Assigning Local and Foreign Currency Deposit Ratings

BFSR / BCA	+ Outside Support = LC Deposit Rating	+ Sovereign Ceiling = Constrained FC Deposit Rating
A / aaa	Aaa	Aaa
A- / aa1	Aa1	Aa1
B+ / aa2	Aa2	Aa2
B / aa3	Aa3	Aa3
B- / a1	A1	A1
C+ / a2	A2	A2
C / a3	A3	A3
C- / baa1	Baa1	Baa1

In the schematic, a bank with a BFSR of C+ is highlighted. The C+ BFSR translates into a Baseline Credit Assessment of A2. This bank also benefits from external support, raising its local currency deposit rating to A1. However, this bank operates in a country with a sovereign foreign currency ceiling of Baa1, which constrains the bank's foreign currency deposit rating at Baa1.

Assigning Local and Foreign Currency Deposit Ratings

JDA provides a methodology for incorporating external sources of credit strength (as well as credit interference) into issuer and obligation ratings. In many applications, there is an entity or obligation with an underlying rating and a support provider. The probability that support would be extended when needed is also part of the framework. This can range from 100% (via an irrevocable guarantee¹⁵) to 0% (the expectation of no support).

By explicitly capturing estimates of the ability and willingness of various external entities to provide support to banks, the JDA methodology is intended to result in consistent deposit and debt ratings. The impact on foreign currency deposit ratings and the ratings on nondeposit obligations may vary, depending upon a number of other factors, including the risk of a foreign currency moratorium.

¹⁵ Refer to Special Comment: "Moody's Identifies Core Principles of Guarantees for Credit Substitution" November 2010.

The JDA Sequential Support Framework

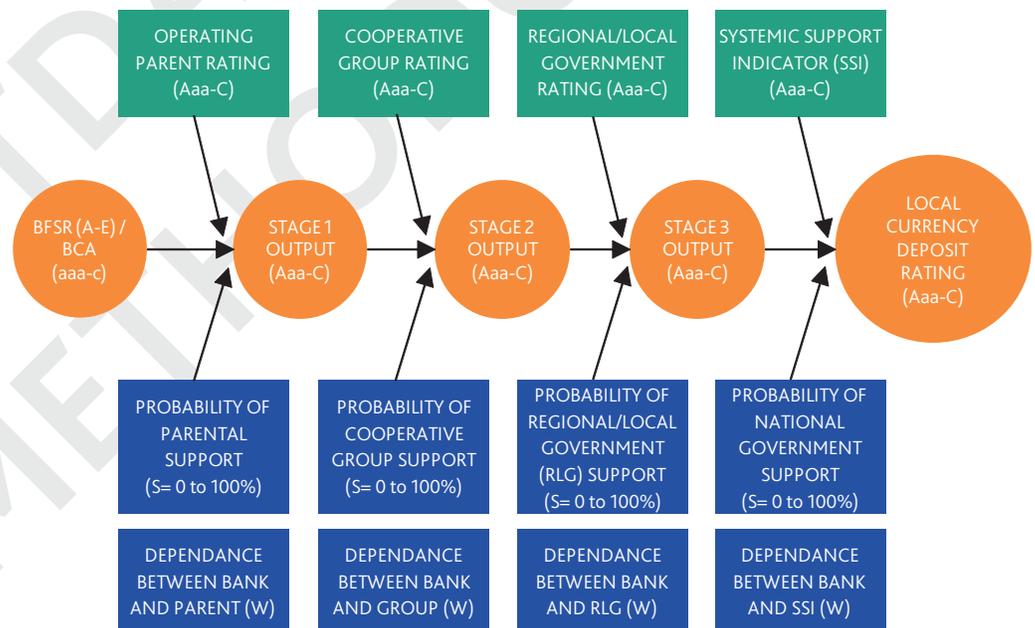
Moody's JDA sequential support framework is intended to apply to all major forms of potential external support for banks. We have identified four sources of potential external support for banks, each representing one step in the sequential JDA support framework:

1. Support from a parent (operating company or family group),
2. Support from a cooperative or mutualist group,
3. Support from a regional or local government, and
4. Systemic (i.e. national government and/or central bank) support.

Rather than attempt to model multiple supporters with potentially different support probabilities and default correlations, we have designed a JDA framework that evaluates support in a sequential process, or "building block" approach. The intention is to replicate the likely sequence in which external support for a bank might be forthcoming. Each stage of support has the potential to raise the "underlying" rating that is an input for the next stage of the framework. The final local currency deposit rating thus reflects all forms of potential external support.

The sequential support framework is summarized in the attached diagram. The framework and the sequential support model itself are illustrated in Appendix A.

JDA for Banks – Sequential Support Model



Within the sequential framework, the JDA algorithm can theoretically be applied up to four times for a given bank, once for each potential support provider. In practice, however, few (if any) banks would have all four types of support available, and even where multiple forms of support were anticipated, systemic support (the final stage) would generally be reduced in order to avoid double-counting external support.

At each stage, the results from the previous stage (where applicable) carry over. For example, at stage 1, the Baseline Credit Assessment, derived from the BFSR mapping, will be used as the underlying rating input. At stage 2, the parent-supported rating becomes the underlying rating, and so forth. The local currency deposit rating will be the final rating output from Stage 4.

At each stage, in addition to the underlying rating (derived from the prior stage), there are three other JDA inputs:

- » the rating of the support provider, an assessment of its ability to support;
- » the probability, S , that the support provider will choose to provide support when needed (willingness to support); and
- » the default dependence (or correlation), W , between the supporter and the underlying rating for that stage.

For any particular bank, there may or may not be a separate support provider at a given stage. For example, a bank may have a parent, but it may not be a member of a cooperative association, or it may not have a significant relationship with a regional/local government. Where there is no support provider for a particular stage, we set $S = 0\%$, and the output from the previous stage automatically becomes the input to the next stage. The JDA worksheet located on www.moodys.com is a working version of the model that allows one to see the results for hypothetical situations.

The JDA framework operates in default risk space. We rely on Moody's idealized default rates when converting ratings to their default risk meanings. Appendix F shows the relationship between BFSRs, Moody's credit ratings and their default-rate equivalents. It also contains a reverse look-up table, constructed by calculating midpoints as geometric means. These can also be found in the JDA worksheet.

The Stand-Alone (Bank Financial Strength) Rating

Moody's introduced Bank Financial Strength Ratings (BFSRs) in 1995. Today, Moody's assigns over 1,200 BFSRs to banks in over 90 countries. In order to apply the JDA framework, we must assign a BFSR to each bank with a deposit rating.

In summary, BFSRs are intended to provide investors with a measure of a bank's intrinsic safety and soundness on an entity-specific basis. Thus, unlike traditional bond or deposit ratings, BFSRs are assigned to banks and not to specific debt issues. They are opinions of the stand-alone credit risk of a bank enterprise and address aspects of risk familiar to regulatory examiners and bank investors.

As such, Moody's BFSRs provide the foundation for Moody's bank credit analysis. Unlike debt or deposit ratings, however, BFSRs are not intended to measure directly the risk of credit loss, or expected loss. They do not take into consideration such factors as "too important to fail," nor do these ratings incorporate the risks associated with a deposit moratorium.

A BFSR is intended to provide a globally consistent measure of a bank's financial condition before considering external support factors that might reduce default risk, or country risks that might increase default risk. Thus, a depositor, lender or regulator can compare BFSRs across countries or regions for a consistent signal of intrinsic financial strength.

Moody's uses an A through E symbol system to distinguish BFSRs from its traditional debt and deposit ratings. For banks whose ratings do not reflect Moody's expectation of any external support, Moody's BFSRs map directly into a local currency deposit rating. That mapping is shown below.

To facilitate implementation of JDA for banks, we created the mapping as the basis for determining the Baseline Credit Assessment of a bank's stand-alone default risk. This reflects what the local currency deposit rating of the bank would be *without* any assumed external support from a government or other third party.

BFSR/Baseline Risk Assessment Mapping

BFSR	Baseline Credit Assessment (BCA)
A	aaa
A-	aa1
B+	aa2
B	aa3
B-	a1
C+	a2
C	a3
C-	baa1
C-	baa2
D+	baa3
D+	ba1
D	ba2
D-	ba3
E+	b1
E+	b2
E+	b3
E	caa1
E	caa2
E	caa3

The Bank Deposit Rating

A deposit rating - as an opinion of relative credit risk - incorporates the Bank Financial Strength Rating as well as Moody's opinion of any external support. Specifically, Moody's bank deposit ratings are opinions of a bank's ability to repay its deposit obligations punctually. As such, Moody's bank deposit ratings are intended to incorporate those aspects of credit risk relevant to the prospective payment performance of rated banks with respect to deposit obligations, and include the following: a) intrinsic financial strength; b) sovereign transfer risk (in the case of foreign currency deposit ratings); and c) both implicit and explicit external support elements.

Moody's bank deposit ratings do not incorporate the benefits from deposit insurance schemes that make payments to depositors, but they do reflect the potential support from schemes that may provide assistance to banks directly.

The foreign currency deposit rating is derived from the local currency deposit rating and is subject to Moody's country ceiling for foreign currency deposits. For banks domiciled in countries with a Aaa Country Ceiling for Foreign Currency Bank Deposits, local and foreign currency deposit ratings are identical. Banks with local currency deposit ratings above the Country Ceiling for Foreign Currency Bank Deposits will have their foreign currency deposit ratings capped by the ceiling.

In the following sections, we summarize the key elements used to determine Moody's Local Currency Deposit Ratings. Appendices B through E contain detailed scorecards used to estimate the precise support level and default dependence (where applicable).

The scorecards provide specific guidance around parameter inputs and therefore likely rating outcomes, but it is emphasized that rating committee judgment may lead to different outcomes than those implied here. In particular, an effort is made to avoid double-counting anticipated external support where a bank benefits from potentially multiple sources of support.

1. Support from the Operating Parent

This section describes the application of parental support for banks that are either wholly- or partially-owned by other rated entities, which is the initial stage of the sequential JDA framework.

Following established practices, we first address those banks whose obligations benefit from guarantees¹⁶ or similarly legally binding forms of credit support. At this point, we apply a 100% probability of support when rating the relevant entity. The JDA methodology also addresses the analysis of potential parental support as it relates to non-guaranteed banks. We define "parent" to mean any entity (bank, other financial institution, or non-bank) that owns 20% or more of a rated bank.

In certain cases in which there is only a shell parent that holds one or more sibling banks, each owned directly by the holding company, Moody's does not view the holding company itself as a source of support. If we believe that support is likely in such cases, we may look to the largest sibling bank of the group as the first choice of support. In the rare situation where there is no dominant sibling bank, Moody's may estimate (for internal purposes) a "group" BFSR based upon the group's financials, which would then be used as the rating of the support provider for each of the sibling banks in the group.

The parent company's own rating is regarded as a measure of its capacity to support a weak subsidiary. However, the support capacity that we ascribe may vary, depending on whether or not the parent benefits from systemic or other forms of support. For domestic subsidiaries, we will rely on the parent's own supported rating, which may include systemic support. For foreign subsidiaries Moody's will, in most cases, use the parent's Baseline Risk Assessment (bank financial strength or derived stand-alone rating), unless a case can be made that systemic support for the parent would be extended to the foreign subsidiary as well.

A parent's decision (willingness) to support its bank subsidiary is influenced by a number of issues. As detailed in Appendix B, "Parent Support and Dependence Scorecard," we consider the existence, if any, of documented support. We also consider the following: a) the level of ownership and/or management control; b) the importance of the subsidiary to the parent, including strategic fit, brand

¹⁶ Refer to Special Comment: "[Moody's Identifies Core Principles of Guarantees for Credit Substitution](#)" November 2010

and reputation risk; and c), the parent's track record of support to related entities in general or to the specific entity being rated.

As for each stage of the JDA framework, the dependence section of the scorecard is designed to establish economic linkages between the operating bank and its parent.

2. Cooperative and Mutualist Support

There is a case history of cooperative banking groups and other banking groups with similar mutual support characteristics intervening in the support of members in order to avoid potential damage to the business and reputation of the group or other members. This may be particularly evident where they carried similar names or had similar and closely connected business structures. These groups usually comprise local banks that typically own or control one or more central institutions in which certain functions are housed. Support mechanisms for group members can range from legally binding to more informal types of support.

We believe that a group's willingness to support its members is best determined by evaluating the cohesiveness of the group. This is based on an analysis of the organization of the group as well as any implicit or explicit support structures that may be in place.

The criteria shown in Appendix C, "Cooperative/Mutualist Group Support and Dependence Score Card," are designed to estimate the probability of intervention, based on meeting objective and transparent standards.

3. Regional and Local Government Support

Regional and local governments (RLGs) have also been known to intervene and support banks. They have done this for those that they own, but also for others that are deemed important to the local economy or for those banks linked to the reputation or fiscal standing of the RLG.

This support can be provided, for example, by immediate injections of cash, by providing access to additional lines of liquidity, or in the longer term, by authorizing funds for recapitalization, guarantees on deposits or other financial provisions to make good the losses of a failing bank.

Moody's will only consider for RLG support banks that meet the following minimum criteria: 1) ownership or control by a sole RLG is greater than 25%; or 2) the RLG acts as the primary regulator. Banks that do not meet the criteria will not be considered for RLG support. However, even where these criteria are met, Moody's may choose to incorporate support by RLGs in its overall systemic support assumption if it believes support by RLGs and the national governments is likely to be provided through a coordinated approach.

When evaluating the ability of the RLG to provide support, Moody's will typically use the RLG's own issuer rating. However, in cases where the RLG's issuer rating includes extraordinary support by a higher-tier government, in order to avoid double-counting support, Moody's will use the RLG's unsupported baseline credit assessment.¹⁷

¹⁷ For more information, please see Moody's Rating Methodology "[The Application of Joint Default Analysis to Regional and Local Governments](#)" December 2008.

The criteria for estimating the probability of regional or local government intervention and default dependence are shown in Appendix D, "Scorecard for Support and Dependence from Regional and Local Governments."

4. Systemic (National Government) Support

The global financial crisis reaffirmed Moody's view that most governments are at least as likely, if not more likely, to try to support their banking systems as they are to service their own debts. As noted above, the availability of support will reflect each government's *willingness* to commit public funds to support financial institutions, and its *ability* to do so. In each case, the government's decision will reflect a range of factors including i) the negative externalities arising from each bank's failure, including through its impact on depositor and investor confidence in the banking system; ii) the extent and type of resources required to prevent the failure; and iii) the availability of alternative policy instruments such as resolution frameworks. The weight ascribed to each factor will depend, among other things, on whether the problem is idiosyncratic or systemic. While the government's desire to provide support may be greater in the event of a systemic crisis, its ability to do so will be greatly reduced. The financial crisis has illustrated the speed with which systemic problems can emerge – a factor which Moody's needs to reflect in its analysis of the government's overall support capacity.

Government's own debt rating as anchor for Systemic Support Indicator¹⁸

For each banking system, the 'Systemic Support Indicator' ('SSI') is a measure determined during the analytic process that reflects our assessment of the overall capacity of the state to provide support to the banking system.

The starting point for Moody's analysis of a government's overall support capacity is its debt rating. Moody's recognizes that a government's willingness and capacity to provide support to banks may exceed its capacity to service its own debt, for example where supported institutions are small relative to the government's overall debt burden or where non-fiscally-dependent measures such as liquidity support and regulatory forbearance are deployed. However, those measures are less effective the more sustained and widespread are the problems in the banking system, and the crisis has shown the propensity for idiosyncratic problems to become systemic crises given the interconnectedness of the financial sector and the confidence sensitivity of banks. The more widespread the problem the government faces and the larger the banking sector relative to the economy, the more its capacity to support banks will be constrained by its own rating. Indeed, in cases where Moody's believes a government may seek to 'ring-fence' its own fiscal position from a very weak banking system, the adjustment could even be negative, implying an SSI below the government's own rating. Conversely, in very rare cases where a government's fiscal position is very strong and Moody's assessment of the risk of a system-wide banking crisis is very low, the support adjustment could be higher.

In practice, Moody's sovereign and banking analysts assess government capacity to support during the rating process on a country-by-country basis, on the basis of a range of factors, including:

- » The size of the banking sector relative to the government's resources, which is an important measure of the potential call on the government's resources in the event of a systemic crisis;
- » The level of stress in the banking system and in the economy, which is a measure of the probability of a systemic crisis emerging;

¹⁸ See Moody's Special Comment: "[Financial Crisis More Closely Aligns Bank Credit Risk and Government Ratings in Non-Aaa Countries](#)" May 2009.

- » The foreign currency obligations of the banking system relative to the government's own foreign currency resources – a measure of the government's ability to provide the necessary support;
- » Political and historical patterns, and any recent shift in government priorities, as a measure of the government's willingness to commit public funds to support banks;
- » The availability of alternative policy tools, such as credible resolution frameworks which would allow losses to be imposed on bank creditors without serious negative externalities.

Given the limits these factors imply, SSIs are generally limited to two notches above the government's rating and will be lower than this where banking systems are largest and banks and government finances are under the greatest strain, as in Europe at present. A list of published Systemic Support Indicators are available on the [Moody's Global Bank Rating Methodology page](#).

Assessing Systemic Support

To establish probabilities of support for individual bank entities, Moody's relies on a two-step process. The first step is to identify the overall willingness of the government to support troubled banks. This is a system wide assessment that holds for all banks domiciled in a jurisdiction. The second step is to evaluate the probability that support would be extended to an individual bank.

Moody's determination of system wide support focuses on the country's history of bank-deposit defaults, as well as the importance of the banking system to the national economy and the overall strength of the banking system. The probability of national government support is in part a function of public policy. In determining the probability of support for an individual bank, we examine the significance of the bank's role in the payments system, its overall importance to the national economy, and the size of the bank's deposit and loan market shares. Moody's believes Government ownership of a bank can increase the likelihood of support, at least where that ownership is the result of policy framework which favours public ownership as a means to guiding the intermediation of credit, rather than the result of a bail-out. Deposit-taking banks wholly owned by the national government (directly or indirectly) will almost always be supported. The government's own fiscal strength also informs our assessment.

A number of developing factors¹⁹ are currently acting to reduce the probability of support. In Europe, while the near-term framework remains highly supportive, governments are increasingly constrained by the need to protect their own balance sheets from further expansion. Over the longer term, many governments and regulators, particularly in G-20 countries, have signaled a clear policy intent to impose losses on creditors in future rather than commit further public funds to support banks, and several of them have established or plan to enact bank-resolution regimes that increase the risk borne by creditors. Moody's is bound to factor in such changes in the financial environment or policy framework in its assessment of the likelihood of systemic support. At the same time, its ratings will continue to reflect the economic importance of a well-functioning financial sector and the limitations on any government's ability to resolve problems by other means given the complexity of banks and the interconnectedness of the banking sector.

In highly dollarized or euro-ized systems, where there is no lender of last resort, a different situation exists. In these cases, the government's financial flexibility (i.e. its capacity to print dollars or euros) and hence ability to support a failing institution, is much more limited, and the cost of bailing out banks can quickly become prohibitive. In these situations, authorities must rely on measures such as regulatory and/or accounting forbearance, private deposit insurance, or other mechanisms of indirect

¹⁹ See Moody's Special Comment: "[Status Report on Systemic Support Incorporated in Moody's Bank Debt Ratings Globally](#)" November 2011.

support, such as systemic coordination among banks, which are inevitably less effective the more widely spread the crisis.

Appendix E contains the two scorecards for systemic support. Specific criteria cover government-owned banks, large private-sector retail banks with national franchises, large regional banks, small local banks, wholesale banks, and other niche banks. The scorecards indicate ranges of support. Where prior sources of external support are accounted for (e.g., parent or regional government), guidelines call for systemic support to be assessed at the low end of the range. Otherwise, support levels will generally be assessed at the midpoint of the range.

Treatment of Foreign Currency Obligations

Foreign currency ratings are based on the obligation's local currency rating and Moody's country ceiling policy. Foreign currency deposit ratings are in all cases constrained by the Country Ceiling for Foreign Currency Bank Deposits. Foreign currency debt obligations may also be constrained by the Country Ceiling for Foreign Currency Bonds and Notes²⁰. However, in some cases the ratings on foreign currency debt obligations may pierce the foreign currency ceiling.

Moody's methodology for determining whether or not a foreign currency debt obligation may pierce the foreign currency ceiling is based on an analysis of the following: (1) the local currency debt rating; (2) the probability that there will be a generalized foreign currency moratorium in the event of default by the government in question; and (3), the probability that, in the event of a foreign-currency payments moratorium, certain classes of debt securities may be exempted from such a moratorium.

Notching for Non-Deposit Obligations

The various senior debt liabilities issued by banks and bank holding companies are notched from the local currency deposit rating in proportion to their higher risk of nonpayment and their reduced priority of claim.

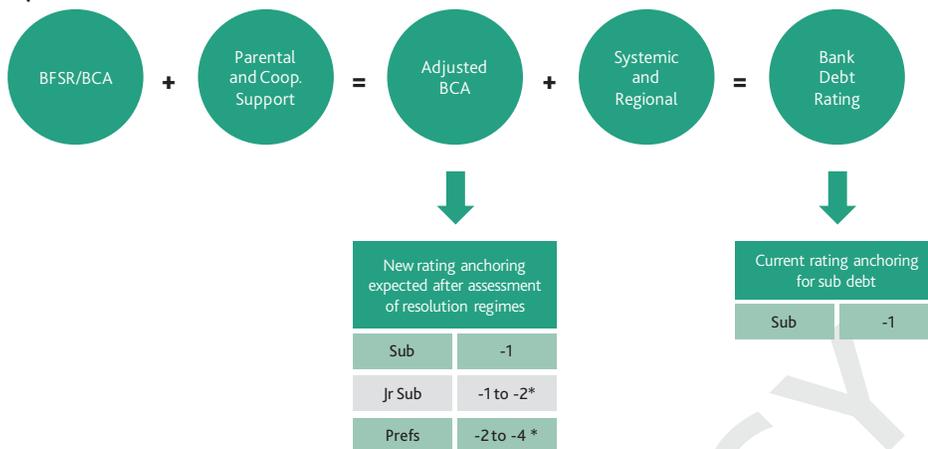
Junior Obligations

As illustrated below, the ratings of most hybrids are currently notched off the "Adjusted BCA" rather than the long-term debt rating. The Adjusted BCA reflects the bank's own intrinsic financial strength, adjusted where appropriate to reflect the likelihood of parental and cooperative or mutual support. The Adjusted BCA is also expected to be the new rating anchor for subordinated debt ratings in most markets once Moody's has completed its reassessment of support incorporated into these ratings in light of the enactment of resolution regimes. Further details are included in Moody's rating methodology for bank hybrid securities and subordinated debt.²¹

²⁰ ["Banks Dependent on Government Foreign Currency Resources for Support"](#) February 2009

²¹ For details refer to the rating Methodology ["Moody's Guidelines for Rating Bank Hybrid Securities and Subordinated Debt"](#) November 2009. See also Moody's Special Comment: ["Status Report on Systemic Support Incorporated in Moody's Bank Debt Ratings Globally"](#) November 2011

Anchoring of Subordinated Debt Securities in Banking Systems where Government Support Is No Longer Expected



In systems where subordinated debt is rated at one notch below the Adjusted BCA, junior subordinated debt is typically rated two notches below the Adjusted BCA.

In some exceptional circumstances, we may decide to include some degree of regional and local government support for subordinated debt. This situation could arise, for instance, if a regional government has a material stake in a bank, potentially having granted substantial amounts of support already.

Notching from the Adjusted BCA rather than from bank debt rating reflects the higher default probability for junior debt than for senior debt. This in turn reflects the possibility that losses could occur in a restructuring outside liquidation through coupon suspension, principal write-downs, good bank/bad bank structures, and distressed exchanges.

OUTDRAFTED BLOG METHODOLOGY

Appendix A - Moody's Bank JDA Sequential Support Framework

	Inputs	Outputs		
Bank Name				
Country Name				
Bank Financial Strength Rating				
Baseline Credit Assessment				
	Parent Support	Coop Support	RLG Support	Systemic Support
Name of Support Provider	NA	NA	NA	0
Stating of Support Provider / Ability to Support Indicator	NA	NA	NA	NA
Dependence Ratio (W)	0%	0%	0%	100%
Support Level (S)	0%	0%	0%	0%
Support Bucket				
	Stage 1	Adjusted BCA	Stage 3	Supported Rating
JDA-Implied Rating (not capped)	0	0	0	0
Local Currency Deposit Ceiling				NA
JDA-Implied Rating (capped by LCDC)				NA

Notes:

- If a support provider stage does not apply, enter NA for supporter's rating and leave Dependence Ratio (W) and Support Level (S) blank.
- The Local Currency Deposit Ceiling can be found on http://www.moodys.com/moodys/cust/RatingAction/bl_rList.aspx?busLineid=7
- The mapping from the Bank Financial Strength Rating to the Baseline Credit Assessment can be found in The Look-up Tables tab.

Appendix B - Parent Support and Dependence Score Card

Support Scorecard

Criteria	Scoring	
1. Documented Support (i.e. comfort letters, keep well agreements, etc.)	There is an explicit legal, documented support in the form of an unconditional, irrevocable (and enforceable) guarantee.	100
	There is a strong comfort letter that appears legally enforceable, and hence equal to credit substitution, and which commits explicitly to timely payment of all obligations.	99
	There is a keepwell agreement or other documents which include statements on ownership & solvency maintenance, full & timely payment of all liabilities, and are public.	15
	There is a keepwell agreement or other documents which include ownership &/or solvency maintenance, parent has incentive & willingness to maintain a subsidiary, but documents may be unpublished.	5
	Weak comfort letter or other document which acknowledges sub's existence, but with no reference to obligations.	0
2. Legal or Regulatory Limitations on Ability to Support, especially of foreign subsidiaries.	No legal or regulatory barriers.	0
	Legal or regulatory factors limit (but do not prohibit) ability to support, e.g. prohibition on increasing ownership stake, home or host regulator inclined to disapprove.	-10
	Legal barriers or prohibitions on all types of support, especially of foreign subsidiaries	-20
3. Regulatory Requirements of Support	Written, enforceable banking regulations or laws which require support from a parent or sister company.	100
	Banking regulator may require support but regulation is unwritten or enforcement is questionable or requirement has limits. Parent is located in same country as subsidiary.	50
	Banking regulator may require support but regulation is unwritten or enforcement is questionable or requirement has limits. Parent is located in a foreign country.	15*
	Regulatory requirements of support are unlikely or ineffectual.	0
4. Control	> 50% ownership with management influence	25
	=< 50% with management influence	15
	=<50% without influence.	0
5. Reputation or Brand Risk.	Bank carries supporting parent's name and parent logo	25
	Bank carries name easily associated with parent or parent logo or recognized by market as member of group	15
	Name has no relation to parent whatsoever and no use of parent logo	0
6. Strategic Fit/Event Risk (sale or disposition risk)	Substantial tangible benefit, proximate geographic location, and highly integrated with parent's business line, customer or product strategy	25
	Strategic fit is more limited due to remote geography, divergent business line or customer base or limited integration.	15
	No obvious strategic fit	-10
7. Track Record	Any evidence of not supporting a troubled subsidiary within the past 20 years	-20
	Otherwise	0
Total Score		

* A higher score may be given if parent's home country regulator has close ties with host country, but only if the country is also strategic and important to parent.

Support Mapping

Score	Support
under 20	0%
21-30	30%
31-50	50%
51-70	70%
71-85	90%
86-95	95%
96-99	98%
over 99	100%

Default Dependence Scorecard

Criteria		Scoring
1. Degree of integration/funding dependence with parent	Low or no (0 to <20%) reliance on parent for funding	1
	20-50% reliance on parent for funding	2
	>50% of total funding dependent upon parent, or there are strong contractual arrangements such as transfers or subsidies, high operational connectivity or business integration (e.g., distribution and/or risk management systems, shared loan or fee businesses)	3
2. Correlation of macroeconomic/operating environment	Parent and sub operate in different countries with remote or low geographic or economic linkage.	1
	Parent and sub operate in same economic or monetary union or trade community.	2
	Parent and sub operate in same country or macroeconomic environment.	3
3. Shared business lines/industry focus	Parent and sub have different business focus, e.g., parent is a retail bank and sub is a specialized wholesale bank.	1
	Parent and sub share same business focus, e.g., both multi-product commercial banks.	2
Total Score		

Dependence Mapping

Score	Dependence
3, 4, 5, or 6	70%
7 or 8	100%

Appendix C - Cooperative/Mutualist Group Support and Dependence Score Card

Support Scorecard

Criteria	Scoring
1. Support Fund/guarantee	Guarantee or equivalent 20
	Unlimited Support fund/support agreement 15
	limited support fund 1
	No support fund -2
2. Branding/Logo	identical Branding/Logo 2
	Reference to group/logo 1
	no branding/logo 0
3. Charter/Constitution	Charter/constitution 2
	no charter/constitution 0
4. Sanction Rights (How much ability does group have to enforce rules or curtail activities/behavior of member?)	Sanction rights strong 2
	Sanction rights medium 1
	Sanction rights low 0
5. Economic Independence: (Does member have any independence on (i) funding (other than retail funding), (ii) investment activities (other than loans), or (iii) position taking, e.g. ALM, FX, Derivatives, etc.?)	No independence on any of the factors 0
	Independent on one factor -1
	Independent on two factor -2
	Independent on three factors -3
6. Financial Statements: (Is member included in consolidated, aggregated, or no group accounts?)	Consolidated accounts 2
	Aggregated accounts 1
	no aggregated or consolidated accounts 0
7. Operational integration: (How integrated are member's operations into the group, including IT, shared services, risk management, portfolio management?)	high degree of operational integration 2
	modest operational integration 1
	little or no operational integration 0
Total Score	

Notes:

1. If the member benefits from a limited support fund, support could be 98% but only if all other criteria are scored at their highest level.
2. If the member does not benefit from any form of support fund, support is capped at 50%.
3. For groups with a strong history of mutual support (no defaults), support could be above 0% even if no other criteria are present.

Support Mapping

Score	Support
(-5) - 2	0%
2 - 6	30%
7 - 8	50%
9	70%
10 - 14	90%
15 - 19	98%
20 or more	100%

Default Dependence Scorecard

Criteria		Scoring
1. Degree of integration/funding dependence with coop/mutual group	Low or no (0 to <20%) reliance on coop/mutual group for funding	1
	20-50% reliance on coop/mutual group for funding	2
	>50% of total funding dependent upon coop/mutual group or strong contractual arrangements such as transfers or subsidies; high operational connectivity or business integration (e.g., distribution and/or risk management systems, shared loan or fee businesses)	3
	Guarantee	7
2. Correlation of macroeconomic/operating environment	Remote or Low geographic or economic, or country risk linkage	1
	Member institutions operate in same economic or monetary union or trade community (with FTA, for example)	2
	Member institutions operate in same country or macroeconomic environment	3
3. Shared business lines/industry focus	Different business focus, e.g., group is a retail focused and member is a specialized wholesale bank	1
	Same business focus, e.g., both multi-product commercial banks	2
Total Score		

Dependence Mapping

Score	Dependence
3	30%
4	50%
5 or 6	70%
7 or 8	100%

Appendix D - Regional and Local Government Support and Dependence Score Card

Support Scorecard

Criteria	Scoring
1. Legal capacity to provide support	Regional or local government is legally permitted to support a distressed bank. 0
	Regional or local government is NOT legally permitted to support a distressed bank. -20
2. Guarantee	Regional or local government has provided a credible, explicit guarantee to support a distressed bank and has never failed to act on such guarantee when called. 24
	Regional or local government previously failed to act on a guarantee or has stated that it would not act on such guarantees; or there is no guarantee. 0
3. Historical track record	Interventions in the past twenty years, or explicit credible statement on willingness to intervene 4
	No track record of intervention. 0
	Explicit policy or administrative statement of non-intervention -17
	Regional or local government has consistently declined to support distress banks within the past 10 years. -20
4. Financial capacity to provide support	Regional or local government has the financial capacity to provide significant direct or indirect support to provide timely short-term liquidity support and substantial coverage of losses. 0
	Regional or local government DOES NOT have the financial capacity to provide significant direct or indirect support to provide timely short-term liquidity support and substantial coverage of losses. -20
5. Direct employment of bank	Below 200 (low) 0
	200 to 500 (medium) 1
	Above 500 (high) 2
6. Bank's market share (proxy for banks role as intermediary to local or regional economy)	Below 5% (low) 0
	Below 5% to 20% (medium) 1
	Above 20% (high) 2
7. Bank's contribution to RLG tax revenues	Below 1% 0
	1% to 2.5% 1
	Above 2.5% 2
8. RLG Ownership	0% (low) 0
	10-50% (medium) 1
	Above 50% (high) 2
9. Complexity of Ownership Structure	No other owners requiring agreement 0
	a. One additional owner requiring agreement -2
	b. More than one owner requiring agreement -4
10. Regulatory or oversight role (if no ownership)	No 0
	Light regulation; some oversight but not primary regulator 2
	Primary regulator oversight 6
11. Board participation	No representation (low) 0
	Appointed representatives, not within government leadership (medium) 1
	Elected, high official; Mayor or Deputy Mayor (high) 2
Total Score	

Support Mapping

Score	Support
0 (or less) – 3	0%
4 - 6	30%
7 - 10	50%
11 - 13	70%
14 - 20	90%
20 or more	100%

Default Dependence Scorecard

	> 50% of bank's revenues are from local economy	< 50% of bank's revenues are from local economy
> 50% of the RLGs' operating revenues are from fiscal Transfers and/or nationally economic related shared taxes	40%	10%
20-50% of the RLGs' operating revenues are from fiscal Transfers and/or nationally economic related shared taxes	70%	40%
< 20% of the RLGs' operating revenues are from fiscal Transfers and/or nationally economic related shared taxes	90%	70%

Appendix E - Country Support and Systemic Support Scorecards

Non-Dollarized Systems (or Less than 50% dollarized)

Criteria		Scoring
1. History of Bank Deposit Defaults*	5 or more bank deposit defaults over past 20 years	-3
	4 or fewer bank deposit defaults over past 20 years	1
	No bank deposit defaults over past 20 years	6
2. Importance of the Banking System (system assets as a percentage of GDP)**	0 to 100%	1
	100 to 200%	2
	Over 200%	3
3. Strength of Banking System (system average BFSR)	A or B	1
	C	2
	D or E	3

Total Score

* The historical trend provides objective evidence of authorities behavior to form expectation for the future. In the current environment of unprecedented legal, regulatory and policy changes affecting banks and especially where new tools are being put in place for bank resolution and loss sharing the historical view needs to be complemented with these developments to form an expectation of impact on bank creditors in the future.

** If a substantial portion of banking system assets are offshore, these may be excluded only if they are also funded offshore.

Support Mapping

Score	Country Classification
(-1) - 4	Low Support
5 - 7	Medium Support
7 - 12	High Support

Dollarized (or euro-ized) Countries (50% or greater)

Criteria		Scoring
Degree of Dollarization	Fully (legally) dollarized (country does not have its own currency and is not a member of a monetary union)	1
	Over 50% dollarized or currency board	2

Support Mapping

Score	Country Classification
1	Fully Dollarized
2	Highly Dollarized

Systemic Support Scorecard

	Government-Owned	Very High	High	Moderate	Low	None
	95 - 100%	70 - 95%	70 - 50%	30-50%	0-30%	0%
High Country Support Guideline	100% national government ownership (direct or indirect*) or partially government-owned with a specific policy mandate.	Nationwide retail bank with a meaningful (>3%) market share of deposits or loans or among top 10 banks in a fragmented system, or an important regional bank (among top 5 in region), or a bank important to the country's national payment or clearing system (i.e. system would be disrupted but would not collapse if bank defaulted), or wholesale-based institution with sizeable (>7%) share of system loans/ payments transactions.	Nationwide or regional bank or cooperative with modest (2-3%) market share of deposits or loans, or a minor wholesale-based institution.	Nationwide or regional bank or cooperative with low (<2%) market share, or a minor wholesale based institution.	0-30%	All other banks, including branches of foreign banks.
Medium Country Support Guideline	100% national government ownership (direct or indirect*), or partially government-owned with a specific policy mandate.	Nationwide retail bank with a significant (>6%) market share of deposits or loans or among top 10 banks in a fragmented system, or a dominant regional bank in a region critical to the nation's economy or highly politically sensitive, or a bank important to the national payment or clearing system, or a wholesale-based institution with a substantial (>15%) share of system loans/payments transactions.	Nationwide retail bank with a meaningful (3-5%) market share of deposits or loans, or regional bank with important, but not dominant market position (among top 5 in region) relative to larger competitors in region, or wholesale-based institution with sizeable (>7%) share of loans/payments/ transactions.	Nationwide or regional bank or cooperative with modest (2-3%) market share of deposits or loans, or minor wholesale-based institution.	Nationwide or regional bank or cooperative with low (<2%) market share, or a minor wholesale based institution.	All other banks, including branches of foreign banks.
Low Country Support Guideline	100% national government ownership (direct or indirect*), or partially government-owned with a specific policy mandate.	Nationwide retail bank with a substantial (>10%) market of deposits and loans or among top 4** banks in a fragmented system, or a bank critical to the country's national payment or clearing system (i.e. system would collapse if bank defaulted).	Nationwide retail bank with a significant (6-10%) market share of deposits and loans, or a regional bank with dominant market position in a region critical to the nation's economy or highly politically sensitive, or a bank important to the national payment or clearing system, or a wholesale based institution with >15% of system loans/payments/ transactions.	Nationwide retail bank with a meaningful (3-5%) market share of deposits or loans, or a regional bank or cooperative with the largest (but still not dominant) market share in region, or a sizeable wholesale based institution with >7% of system loans/payments/ transactions.	Nationwide retail bank with modest (2-3%) market share of deposits or loans, or a regional bank with significant but not the largest share in the region, or a mid- to small-sized wholesale based institution with up to 7% of system loans/ payments/transactions.	Nationwide retail bank with low (<2%) market share, or a regional bank or cooperative with modest market share in the region, or a mid- to small-sized wholesale based institution, and all other banks.

Systemic Support Scorecard

	Government-Owned	Very High	High	Moderate	Low	None
	95 - 100%	70 - 95%	70 - 50%	30-50%	0-30%	0%
Highly Dollarized System Support Guideline	100% national government ownership (direct or indirect*), or partially government-owned with a specific policy mandate.	Nationwide retail bank with a dominant (>25%) market share of deposits and loans, or the largest bank by far in a fragmented system, and is critical to the country's national payment or clearing system (i.e. the system would collapse if bank defaulted).	Nationwide retail bank with a large (15-25%) market share of deposits and loans, or one of top 2 banks in a fragmented system, or a regional bank with dominant market position in a region that is critical to nation's economy or politically sensitive, or bank that is critical to the national payments system.	Second or third tier nationwide retail bank with a substantial (10-15%) market share of deposits or loans, or one of top 4 banks in a fragmented system, or wholesale based institution with >15% of loans/payments/ transactions.	Nationwide retail bank with significant (5-10%) market share of deposits or loans, or regional bank or cooperative with modest market share in region, or wholesale institution with >15% of loans/payments/ transactions.	All other banks, including branches of foreign banks.
Fully (Legally) Dollarized System Support Guideline	100% national government ownership (direct or indirect*), or partially government-owned with a specific policy mandate.				Bank that has a nationwide retail network and a large (>15%) market share, of deposits and loans, or among top 2 banks in a fragmented system, or bank critical to the national payment or clearing system, or wholesale-based institution with >25% of system loans/ payments/ transactions.	All other banks, including branches of foreign banks.

* Sum all direct and indirect national government stakes, including national government employee pension funds. However, should the pension fund be run strictly in the best interests of the beneficiaries, then it should NOT be considered as a "government owner", given the likelihood it would sell underperforming assets.

** Could be up to banks 5 to 10 by size, if and only if regulators have voiced a consistent willingness to support certain banks by name or by size.

Implementation Guidance:

1. Use the Country Support Guideline decided upon in the Country Support Scorecard to determine which row to use in this matrix. For all banks you must use the same row to choose that bank's support bucket.
2. Note the use of AND and OR above. Where AND is used the bank must possess all the characteristics listed.
3. Fragmented System is defined as one in which the Top 4 Banks together control less than 40% of system assets or deposits
4. "Dominant market share" requires that a bank's market share is significantly (usually at least 50%) larger than lower-ranked competitors. In some markets no bank may be dominant; in others there could be 2 or 3 dominant banks.

Appendix F - BFSR/Rating Default Rate Look-up Tables

BFSR/Baseline Risk Assessment/ Default Rate Lookup		Reverse Rating Lookup	
BFSR / BCA	Implied Default Rate	PD cut-offs	Local Currency Deposit Rating
A / aaa	0.00%	0.01%	Aaa
A- / aa1	0.02%	0.03%	Aa1
B+ / aa2	0.05%	0.07%	Aa2
B / aa3	0.10%	0.14%	Aa3
B- / a1	0.19%	0.26%	A1
C+ / a2	0.35%	0.43%	A2
C / a3	0.54%	0.67%	A3
C- / baa1	0.83%	1.00%	Baa1
C- / baa2	1.20%	1.69%	Baa2
D+ / baa3	2.38%	3.16%	Baa3
D+ / ba1	4.20%	5.34%	Ba1
D / ba2	6.80%	8.16%	Ba2
D- / ba3	9.79%	11.64%	Ba3
E+ / b1	13.85%	15.85%	B1
E+ / b2	18.13%	20.88%	B2
E+ / b3	24.04%	27.94%	B3
E / caa1	32.48%	37.75%	Caa1
E / caa2	43.88%	53.91%	Caa2
E / caa3	66.24%		

Moody's Related Research

Special Comments:

- » [Moody's Identifies Core Principles of Guarantees for Credit Substitution, November 2010 \(124437\)](#)
- » [Financial Crisis More Closely Aligns Bank Credit Risk and Government Ratings in Non-Aaa Countries, May 2009 \(115275\)](#)
- » [Banks Dependent on Government Foreign Currency Resources for Support, February 2009 \(114127\)](#)
- » [Status Report on Systemic Support Incorporated in Moody's Bank Debt Ratings Globally, November 2011 \(136724\)](#)
- » [Emerging Market Bank Ratings in Local and Foreign Currency: The Implications of Country Risk and Institutional Support, December 2001 \(72806\)](#)
- » [Proposal to Incorporate "Joint-Default Analysis" into Moody's Rating Methodologies, December 2004 \(90184\)](#)
- » [The Incorporation of Joint-Default Analysis into Moody's Corporate, Financial and Government Rating Methodologies, February 2005 \(91617\)](#)
- » [Request for Comment: Incorporation of Joint-Default Analysis for Systemic Support into Moody's Bank Rating Methodology, October 2005 \(94781\)](#)

Rating Methodologies:

- » [Refinements to Moody's Tool Kit: An Addendum for Banks and Insurers, January 2006 \(96187\)](#)
- » [The Application of Joint Default Analysis to Regional and Local Governments, December 2008 \(99025\)](#)

Rating Implementation Guidance:

- » [The Local Currency Deposit Ceiling, August 2006 \(98554\)](#)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

RATING METHODOLOGY

Moody's Guidelines for Rating Bank Hybrid Securities and Subordinated Debt

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In late 2008, Moody's initiated a dialog with the market on potential revisions to our rating practices for hybrid securities and subordinated debt²². This was followed by a Request for Comment in June 2009 where we put forward a proposal requesting formal market feedback²³. After considering the market's comments, which we have responded to in a separate publication²⁴, this report describes Moody's revised methodology for rating bank hybrids and subordinated debt. It replaces our current methodology entitled, "[Guidelines for Rating Bank Junior Securities](#)" dated April 2007.

In the next several sections, we discuss the rationale for changes to our bank hybrid and subordinated debt rating methodology as well as the revised methodology itself. As we make changes to our existing ratings, our guiding principle will be the broad framework of the rating methodology described herein complemented by country-specific and case-specific credit judgment.

Moody's Revised Methodology: Analytical Underpinnings and Summary

The credit crisis, which had its origin in the summer of 2007, put a spotlight on the performance of hybrids at a time of severe financial distress for a number of banking systems globally. Our previous hybrid and subordinated debt rating methodology was based on the same default probability for all classes of debt, with notching driven by subordination to reflect relative loss severity in the event of a bank-wide default. For hybrid securities, Moody's assumed that optional coupon skip mechanisms, whether cumulative or non-cumulative, would only be used when a bank was close to liquidation. This view was supported by Moody's research indicating that once a coupon payment is missed, default typically is imminent²⁵.

²² Hybrid securities are defined as various types of subordinated debt, junior subordinated debt, and preferred securities with coupon skip mechanisms, which can be cumulative or non-cumulative. Unless otherwise indicated, when we refer to subordinated debt in this report, we mean "plain vanilla" subordinated debt where a missed coupon payment results in an event of default.

²³ Refer to "[Moody's Assesses Bank Hybrid Securities in the Context of the Credit Crisis](#)" dated December 2008 and "[Request for Comment: Moody's Proposed Changes to Bank Subordinated Capital Ratings](#)" dated June 2009.

²⁴ Refer to "[Frequently Asked Questions on Moody's Guidelines for Rating Bank Hybrid Securities and Subordinated Debt](#)" dated November 2009.

²⁵ Refer to "[Preferred Stock Impairments and Recovery Rates, 1983-2008](#)" dated July 2009 and "[Recovery Rates on Defaulted Corporate Bonds and Preferred Stock, 1982-2003](#)" dated December 2003.

However, contrary to historical precedent, recent events have shown that hybrid “default”²⁶ probability now is clearly higher than for bank senior debt, and losses could occur in a restructuring outside liquidation through coupon suspension, principal write-downs, good bank/bad bank structures, and distressed exchanges. Actions taken by regulators and governments in response to the financial crisis continue to increase the loss probability for these securities. Consequently, in addition to capturing the risk of loss from subordination in liquidation, Moody’s revised hybrid ratings will factor in the risk of loss from the suspension of coupon payments and the potential for a principal loss outside liquidation.

There is increasing evidence that hybrids and, in some cases, subordinated debt will not benefit from systemic support at a time of financial distress as they have in past crises. While this may vary from country to country depending on the regulator, the political system, the structure of the particular banking system, and the legal framework, regulators are clearly promoting the expectation that hybrids are loss absorbing. Contrary to past behavior, bank regulators in a given country as well as supranational regulators such as the European Commission have shown increasing willingness to allow all forms of regulatory capital to absorb losses even where it is necessary to pass laws that override contractual limitations²⁷. This propensity rises when taxpayer money is used to support a weakening financial system in order to share the expense of recapitalizing a troubled bank.

To summarize the changes to our approach, in response to changing conditions affecting the credit risk of hybrids and subordinated debt, our revised methodology:

- » **In most cases, removes systemic and regional support from bank hybrid ratings and, in some cases, from subordinated debt ratings.** Instead, these ratings will be linked to the stand-alone intrinsic strength of the bank as expressed through our Bank Financial Strength Rating. This is in contrast to our current practice of anchoring from the bank’s senior unsecured rating or Bank Debt Rating²⁸, which incorporates systemic and other forms of external support.
- » **Applies wider notching among different classes of bank hybrids based on the riskiness of specific features.** For example, due to their terms, non-cumulative preferred securities have proven to be more loss absorbing than junior subordinated debt with cumulative coupon skip features. Accordingly, our revised notching guidelines will capture these relative risks.
- » **Provides the flexibility to position hybrid ratings based on case-specific and country-specific considerations.** While hybrids may be poised to absorb losses to varying degrees, the speed by which regulators make use of their loss absorbing features, if at all, is driven by jurisdictional considerations. This necessitates the use of a country-specific approach with a qualitative overlay.

²⁶ Under their terms, hybrids allow for missed coupon payments and/or principal write-downs, which do not result in an event of default. If these events occurred, there would not be a breach of contract, but a significant credit event that could potentially result in investor losses.

²⁷ For example, under the UK Banking Act of 2009, regulators were given broader resolution powers than they had at the time to support troubled banks while imposing losses on selected creditors. Following the transfer of Bradford & Bingley’s retail deposits and branch network to Abbey National plc, its subordinated debt and preferred shares were excluded from the government support provided to senior creditors and bank depositors. In February 2009, the UK Treasury announced changes to the terms and conditions of Bradford & Bingley’s subordinated debt to make it possible to skip coupon payments and extend principal payments beyond the original maturity. Refer to [“Credit Differentiation Among Classes of Bank Debt: Evidence from Recent Government Interventions in the UK, Denmark, and the US”](#), dated April 2009.

²⁸ For purposes of this piece, we have defined the Bank Debt Rating as the senior unsecured rating of the bank rather than the Bank Deposit Rating. In this way, we have allowed for the possibility that there may be differentiation between these two ratings in the future, depending on the potential for depositor preference relative to senior unsecured creditors in a given jurisdiction.

We will remove systemic support from the ratings of preferred securities²⁹ in all jurisdictions, except in the case of certain government-owned banks. However, the removal of systemic support from junior subordinated debt ratings may occur at a slower pace, depending on the country and the circumstances. The ratings will reflect remaining support currently for banks in jurisdictions particularly affected by the credit crisis as they transition away from a period of extraordinary government support to one with more normal support levels. In addition, for Japanese or emerging market banks with high levels of government support embedded in their ratings for a number of years, the pace of support reduction will be slower, if it happens at all.

Possible Introduction of an Indicator to Capture the Potential Volatility in Hybrid Ratings

With the roll-out of this bank hybrid and subordinated debt rating methodology, Moody's is considering the introduction of an indicator to all outstanding hybrid ratings and the subordinated debt in certain jurisdictions. The indicator would apply to ratings for hybrid issues, which have a coupon skip mechanism as a defining characteristic³⁰. This includes preferred securities and both subordinated and junior subordinated debt with similar features. In addition, even for subordinated debt that does not have a coupon skip mechanism, an indicator would be used in jurisdictions where selected losses have been imposed on this creditor class³¹.

Together with the indicator, the hybrid rating would continue to be an expression of the expected loss associated with that particular hybrid. It would be based on our best information at the time regarding the various loss scenarios for the hybrid resulting from a structural analysis as well as an assessment of the bank's credit fundamentals. As such, the ratings approach would be the same as for other debt securities to ensure ratings comparability. This means that an A-rated hybrid with an indicator would have the same expected loss as an A-rated senior unsecured debt obligation. However, the indicator would signal the potential for volatility in the rating due to exogenous factors that are less predictable and not always credit-linked such as regulatory and/or government intervention.

In the context of hybrids, which may lend itself to providing loss absorption as a going concern, it is difficult to accurately predict what regulators and/or a government may do at a time when either an isolated bank is in financial distress versus when an entire banking system is under financial pressure. While the uncertainty of regulatory and/or government intervention may also pose the risk of loss to the senior obligations of a bank, which benefits from some degree of systemic support, the risk is heightened for hybrids. Because of their unique equity-like features, including coupon skip and/or principal write-down mechanisms, hybrid losses outside a bank-wide failure are a possibility. These features, which also result in regulatory capital treatment for the hybrid, increase the probability of government intervention that could result in greater losses relative to senior debt.

To cite various examples, a regulator may intervene and prevent a coupon payment sooner than financial measurements might suggest. Conversely, a bank may breach a coupon skip trigger, the probability of which can be measured, but a regulator may intervene and request payment anyway so that the market does not lose confidence in the bank and the banking system. Finally, a bank may receive government support but, under certain circumstances, regulators may advise or even require

²⁹ Preferred securities include preferred stock, preference shares, and all other securities, which are in the "first loss" position in liquidation only senior to common equity. It may also include certain forms of junior subordinated debt, which are pari passu with preferred stock in liquidation.

³⁰ If skipped, the coupon can either be cumulative or non-cumulative.

³¹ In regulatory capital terms, the modifier applies generally to Tier 1 and Upper Tier 2 securities. It would also apply to other Tier 2 securities that have coupon skip mechanisms. In jurisdictions such as the UK where selected losses have been imposed on Lower Tier 2 securities without coupon skip mechanisms, the modifier would also apply.

that the resulting taxpayer burden be shared with investors through skipping hybrid coupons and/or principal write-downs³².

Moody's Hybrid and Subordinated Debt Ratings Do Not Capture Extension Risk

Consistent with firm-wide practices, Moody's rates securities to maturity and does not factor in extension risk, which is the risk that a security will not be called at the first call date. Prior to the financial crisis, there was a tacit agreement between an issuer and investors that hybrid and subordinated debt would be called at the first call date. During the crisis, this has not proven to be the case, resulting in significant negative implications for the market value of these instruments. If a bank is in financial distress and is unable to access the market at the call date or if regulators do not approve the call, hybrids and subordinated debt will remain outstanding. This may be consistent with the regulatory goal of having loss absorbing capital in place when needed, but may be inconsistent with investors' expectations. Moody's hybrid and subordinated debt ratings do not incorporate extension risk, but it is a risk that nonetheless exists and one that could heighten the risk of coupon skips and/or principal write-downs in perpetual or very long-dated hybrid securities³³.

I. Moody's Bank Hybrid and Subordinated Debt Rating Guidelines

The best starting point for the discussion on bank hybrid and subordinated debt ratings is a short review explaining how bank ratings, of which external support is a factor, are determined based on Moody's bank rating methodology. This is described in detail in Appendix A.

The intrinsic credit risk of banks is communicated through the Bank Financial Strength Rating (BFSR), which reflects the likelihood that a bank will require exceptional assistance from third parties such as its owners, industry groups, or governments³⁴. While excluding extraordinary levels of systemic support, the Bank Financial Strength Rating incorporates any system-wide and/or bank-specific measures that have already been provided by the government. The Bank Financial Strength Rating maps to the Baseline Credit Assessment (BCA), which is summarized in Appendix B. It is from this starting point that various forms of external support including systemic support are added to bring the Baseline Credit Assessment to the Bank Debt Rating.

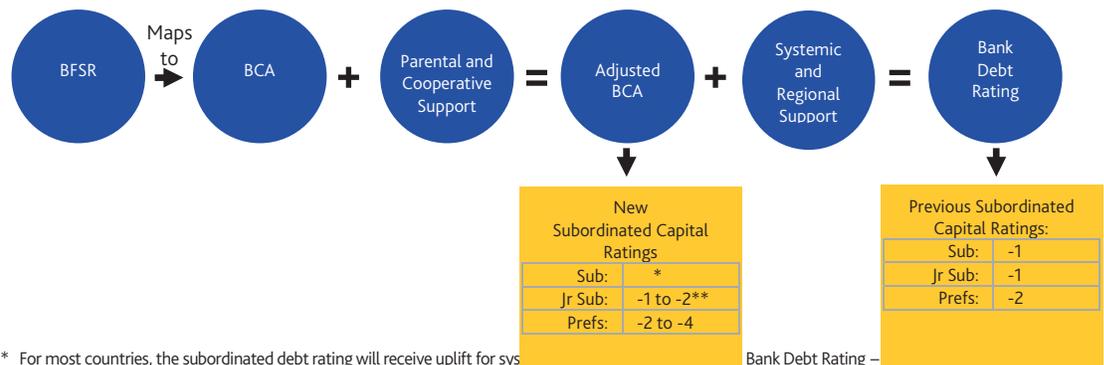
Previous Guidelines

Under Moody's previous bank hybrid and subordinated debt rating guidelines, summarized in Appendix C, the starting point for the analysis was the Bank Debt Rating (BDR). By notching the ratings for hybrids and subordinated debt from this anchor rating, we incorporated systemic support. In general, subordinated debt and junior subordinated debt were rated one-notch below the Bank Debt Rating while preferred securities were rated two notches below.

³² In particular, the European Commission has, for a number of European banks, advised that hybrid coupons be skipped in conjunction with the approval of state aid packages.

³³ Refer to "[Debt Redemption Extension Risk](#)" dated December 2008.

³⁴ Exceptional assistance is extraordinary bank-specific support for depositors and senior creditors through the restructuring or nationalization of a troubled bank outside liquidation. Refer to "[Calibrating Bank Ratings in the Context of the Global Financial Crisis](#)" dated February 2009.



* For most countries, the subordinated debt rating will receive uplift for sys

Bank Debt Rating –

** Dated junior subordinated debt with principal write-down features could be positioned up to 4 notches below the Adjusted BCA.

Notching for hybrid ratings widened as the Bank Financial Strength Rating dropped to the D range and below. In addition, the anchor rating switched from the supported Bank Debt Rating to the unsupported Baseline Credit Assessment for banks in the E range, which resulted in a high ratings transition, particularly for banks that benefited from high levels of systemic support. As a bank's intrinsic financial strength weakened and the risk of a coupon skip or a principal loss outside liquidation increased, Moody's used an expected loss analysis to position the rating. Neither the potential absence of systemic support nor the risk of loss outside liquidation from a coupon skip and/or principal write-down was factored into the hybrid rating from the outset.

Revised Guidelines

In contrast, under our revised guidelines, the starting point is the Adjusted Baseline Credit Assessment (Adjusted BCA). By using the Adjusted Baseline Credit Assessment as the starting point, we are linking the ratings of hybrids and subordinated debt to the intrinsic financial strength of the bank, which incorporates any system wide and/or bank-specific measures that have already been provided by the government. We arrive at the Adjusted Baseline Credit Assessment by adding some forms of external support including parental³⁵ and cooperative support to the Baseline Credit Assessment. However, it excludes systemic and regional support.

Treatment of Government-owned Banks

For government-owned banks, where the government is the parent, the Adjusted Baseline Credit Assessment will implicitly incorporate systemic support. As a result, hybrids issued by government-owned banks will be notched from the supported or Bank Debt Rating. Government banks are almost always supported when in financial distress through the issuance of common equity to their government parents, forbearance, or through other forms that do not force principal write-downs on creditors. Even the probability of a skipped coupon may be less than for a non-government-owned bank. For banks that meet this definition, notching will generally only capture the risk of subordination, i.e., the Bank Debt Rating minus one notch for subordinated and junior subordinated debt and two notches for preferred securities. However, for banks in weak financial condition, notching may widen depending on the riskiness of the hybrid's features.

³⁵ The parent's Adjusted Baseline Credit Assessment, absent systemic support, is used to determine the subsidiary's Adjusted Baseline Credit Assessment.

For purposes of this methodology, government-owned banks are defined as those where: 1) the government has greater than 50% beneficial ownership with no intention to reduce ownership below that level for at least the medium-term and 2) the bank has a clear policy function. That is, it provides banking services to a disadvantaged segment of the population; or has been used by the government to bail out troubled industrial companies or financial institutions; or has been a key lender to important government projects; or, through normal commercial lending, is providing development funding. This definition will be supplemented by case- and country-specific judgments.

Treatment of Bank Holding Companies

For bank holding companies that issue hybrids, the Adjusted Baseline Credit Assessment of the bank is used as the starting point. Consistent with Moody's practices for rating bank holding companies, we then usually incorporate an additional notch for structural subordination from the bank's Adjusted Baseline Credit Assessment. If there is substantial holding company double leverage, two notches may be incorporated. For bank holding companies with substantial operations at the holding company and/or material subsidiaries other than a bank, there may not be a notching differential to reflect structural subordination. In these cases, the bank holding company could have a predictable cash flow stream available from other sources to support hybrid payments even if the bank itself gets into financial distress.

Summary Guidelines

Moody's revised rating guidelines for hybrids and subordinated debt are summarized in the chart on the next page.

Hybrids have also taken the form of preferred securities issued by a trust where proceeds are on-lent to the bank through either preferred securities or junior subordinated debt. For these structures, our analysis focuses on both the features of the obligation issued by the trust to investors and the features of the obligation between the bank or bank holding company and the trust. This helps us to accurately identify the ultimate claim in liquidation and the coupon skip mechanism, which can be cumulative, non-cash cumulative (with an Alternative Coupon Settlement Mechanism or ACSM³⁶), or non-cumulative.

Moody's Revised Bank Hybrid and Subordinated Debt Rating Guidelines

	Hybrid Subordination	Typical Regulatory Treatment	Coupon Skip Mechanism	Number of Notches below Adjusted BCA (Adj. BCA = BCA + Parental and/or Cooperative Support)
1	"Plain Vanilla" Subordinated Debt	Lower Tier 2	None	Generally, will receive uplift from Adjusted BCA to BDR - 1*
2	Hybrid Subordinated Debt	Tier 2** and Tier 3	Mandatory, weak triggers, cumulative, subject to maturity extension	Lower of BDR - 1 or Adjusted BCA + 2
3	Junior Subordinated Debt	Upper Tier 2	Optional, cumulative	Adjusted BCA - 1 or - 2***
4	Dated Junior Subordinated Debt with Principal Write-down	Upper Tier 2	Optional/mandatory, cumulative	Adjusted BCA - 2 to - 4

³⁶ Hybrids with an Alternative Coupon Settlement Mechanism (ACSM) feature require the issuer to subsequently settle any accumulated coupons through the issuance of common stock or certain types of preferred securities. As such, they are cumulative in nature.

Moody's Revised Bank Hybrid and Subordinated Debt Rating Guidelines

	Hybrid Subordination	Typical Regulatory Treatment	Coupon Skip Mechanism	Number of Notches below Adjusted BCA (Adj. BCA = BCA + Parental and/or Cooperative Support)
5	Preferred Securities	Tier 1	Optional/mandatory, cumulative, non-cumulative, or non-cash cumulative (ACSM) settlement	Adjusted BCA - 2 to - 4****

*In countries where this class of subordinated debt has absorbed losses or if the probability of incurring losses has increased, the rating will be positioned at Adjusted BCA - 1 notch.

**For Tier 2 securities with a cumulative coupon skip mechanism, the rating would likely be positioned in line with an Upper Tier 2 security that has similar features.

***For junior subordinated debt, depending on jurisdiction, ratings may incorporate some uplift for systemic support as banks transition from a period of extraordinary government support to a more normal operating environment. For junior subordinated debt with weak triggers, the rating could also incorporate some uplift for systemic support.

****Capped at a maximum of Baa1 for non-cumulative Tier 1 securities with a net loss trigger.

In the following sections, we explain our rationale for rating hybrids and each type of subordinated debt as well as how to position ratings within the notching ranges. For each of the ranges presented, there is a “standard” position, which we expect to be the rating outcome in most circumstances. However, rating committees have the flexibility to position hybrid ratings within these ranges based on specific hybrid features, including triggers, judgments on the bank’s capital position, and the likelihood of coupon omission and/or principal write-downs. We will also assess past demonstrated regulatory intervention and non-intervention practices for insight into future regulatory behavior.

The notching ranges for hybrids issued by banks with Bank Financial Strength Ratings from A to E are fixed because the structural risks of hybrids remain the same, regardless of the bank’s financial strength³⁷. When the bank’s financial condition weakens and the probability increases that a hybrid’s loss absorbing features will be used, hybrid ratings will generally be downgraded because they are linked to the intrinsic strength of the bank. However, if a coupon skip and/or principal loss in a restructuring outside liquidation is imminent, Moody’s will use an expected loss analysis, which is explained later in the report, that could result in a rating lower than what is suggested by the ranges, particularly if past government support has already been incorporated in the Bank Financial Strength Rating.

“Plain Vanilla” Subordinated Debt

Subordinated or “plain vanilla” subordinated debt has no coupon skip mechanism and generally absorbs losses only in liquidation. In most circumstances, the rating for “plain vanilla” subordinated debt will incorporate uplift for systemic support from the Adjusted Baseline Credit Assessment to a level that is one notch below the Bank Debt Rating, which captures subordination risk. However, in certain countries where the government has the legal authority to impose selective losses on this creditor class outside liquidation and has done so³⁸, the ratings will be positioned one notch below the Adjusted Baseline Credit Assessment.

³⁷ For banks with a Bank Financial Strength Rating in the E range, we may also consider using an expected loss analysis depending on the factors driving the bank’s low intrinsic strength rating.

³⁸ The UK is an example of a country that has used its legal authority to impose losses on “plain vanilla” subordinated debt.

Hybrid Type	Range	Standard	Comments
"Plain Vanilla" Subordinated Debt	n/a	BDR - 1 notch	» If a country has the legal tools to impose selected losses on this creditor class and has used them, then Adjusted BCA – 1 notch.

The available legal tools to impose selected losses on “plain vanilla” subordinated debt varies from jurisdiction to jurisdiction, as does the need to do so and willingness should that need exist. There are countries where the government has not used its existing resolution authority to date³⁹. In addition, other countries may not have the tools available today, but could legislate quickly to put them in place. In determining the appropriate anchor for “plain vanilla” subordinated debt — either the Bank Debt Rating or the Adjusted Baseline Credit Assessment — Moody’s will use judgment on a country-by-country basis. If there is an increased probability that losses will be imposed on this creditor class, Moody’s will likely shift the anchor from the Bank Debt Rating to the Adjusted Baseline Credit Assessment.

Hybrid Subordinated Debt with Coupon Skip Mechanisms

For the most part, subordinated debt does not have coupon skip mechanisms. However, in certain regions such as Latin America, Europe and Asia, it does in some cases. For example, in Latin America, hybrid subordinated debt is short-dated and, if minimum regulatory capital thresholds fail to be met, coupons must be skipped on a cumulative basis. In Europe, Tier 3 securities, which are short-dated and pari passu with Lower Tier 2 securities, have similar triggers which, if breached, result in coupon suspension and the extension of maturity.

Hybrid Type	Range	Standard	Comments
Hybrid Subordinated Debt	n/a	Lower of BDR - 1 notch or Adjusted BCA + 2 notches	» Tied to the breach of to weak regulatory capital triggers, a cumulative coupon skip is a low probability, low severity event. As the bank's intrinsic financial strength weakens, the rating will be positioned closer to the Adjusted BCA.

In all these cases, the probability of a trigger breach is low. In addition, if the trigger is breached, the incremental loss associated with a coupon skip is also low because the bank will either be close to liquidation or included in a restructuring outside liquidation and skipped coupons will likely not have accumulated over a long period of time. As a result, the loss potential is not much greater than the risk of subordination. The ratings for these securities are positioned at the lower of the Bank Debt Rating minus one notch or the Adjusted Baseline Credit Assessment plus two notches. In this way, the rating reflects that as the intrinsic strength of the bank weakens and the Adjusted Baseline Credit Assessment drops, the likelihood of a bank falling below regulatory capital requirements and the probability of a restructuring outside liquidation increases.

Junior Subordinated Debt

Junior subordinated debt has a more junior claim in liquidation than other types of subordinated debt and is typically structured to allow the bank to skip coupon payments at its option on a cumulative basis. This capital layer, therefore, may be at risk for loss if a bank’s capital deterioration continues and

³⁹ Canada has the legal authority to impose selective losses on all forms of subordinated debt and hybrids outside liquidation, but it has not been used to date. The Federal Deposit Insurance Corporation (FDIC) in the US has similar legal authority to impose selective losses on both senior and subordinated debt issued by banks. However, this resolution power does not currently extend to bank holding companies, although the House Financial Services Committee and the US Treasury Department has proposed legislation giving such tools to the US government.

more junior capital does not provide sufficient cushion. An additional concern is a missed coupon payment and the timeliness of payments, even if accumulated coupons are repaid. Consequently, most junior subordinated debt ratings will eventually be positioned one to two notches below the Adjusted Baseline Credit Assessment⁴⁰.

Hybrid Type	Range	Standard	Comments
Junior Subordinated Debt	Adjusted BCA - 1 to - 2 notches	Adjusted BCA - 1 notch	<ul style="list-style-type: none"> » If coupon suspension is non-cumulative, then Adjusted BCA – 2 notches. » If no systemic support is given to the “plain vanilla” subordinated debt rating, then Adjusted BCA – 2 notches. » Junior subordinated debt with restricted deferral options⁴¹ may be rated at or above the Adjusted BCA. » For a given country, migration to the Adjusted BCA anchor rating will depend on the pace of reduction in government support, should it exist.

The migration of most junior subordinated debt ratings to be notched below the Adjusted Baseline Credit Assessment will be phased in over time. The pace of transition will depend on the support provided — either directly or indirectly — to junior subordinated debt as well as the treatment of subordinated debt in a given country’s existing legal and regulatory framework. Another important consideration is whether or not there is increasing political pressure for banks’ investors to share the expense of recapitalizing banks with taxpayers should government monies be necessary to support a faltering bank.

In most emerging markets, we expect that junior subordinated debt ratings will incorporate some systemic support for now. Emerging market banks are key to the economic development of their countries and access to global capital markets is an important consideration. As a result, we expect that governments will do everything they can to avoid defaults — including hybrid “defaults” — and support their financial systems. In addition, despite low Bank Financial Strength Ratings, emerging market banks tend to have large, high quality capital levels.

Another example currently is Japan. Having gone through its own banking crisis, Japan has in place a well-developed resolution framework for distressed banks. The only time that losses can be imposed on junior subordinated debt is when certain Subordination Events such as bankruptcy, corporate reorganization, civil rehabilitation, and similar events outside Japan are triggered. Excluded from this definition are nationalization or recapitalization events, which would be used in the context of banks⁴². While Japanese banks may eventually see the level of current systemic support reduced, we do not expect this to happen over the near term.

Finally, banks in the countries or regions particularly hard hit by the recent financial crisis including the US and Europe have benefited from extraordinary levels of government support to prevent their

⁴⁰ As the Bank Financial Strength Rating weakens, junior subordinated debt ratings may not necessarily move in tandem. Experience in some jurisdictions has shown that junior subordinated debt benefits from government support provided to a troubled bank, thereby lowering the probability of a cumulative coupon skip and limiting the loss severity to the risk of subordination in liquidation.

⁴¹ Restricted deferral options are those where a coupon skip is tied to the breach of a weak trigger such as a minimum regulatory capital ratio. The probability of such a trigger breach is remote unless a bank is close to liquidation or a restructuring outside liquidation. In these cases, it is likely that a government would provide support before the trigger is breached, which reduces the probability of a trigger breach. Consequently, positioning the rating above the Adjusted Baseline Credit Assessment implicitly suggests some degree of systemic support.

⁴² Even when the majority of Japanese banks had Bank Financial Strength Ratings in the D to E range, coupon skips on junior subordinated debt did not take place despite the breach of triggers, which then provided the bank with the option to skip coupons.

financial systems from collapsing. Governments have invested in the preferred capital of banks and, at the same time, preferred securities held by third parties have shared in the expense of bank recapitalizations through principal write-downs or exchanges into common equity. These actions have indirectly reduced the risk of loss for the layer of junior subordinated debt above preferred capital. However, Moody's believes that this degree of government support will gradually diminish as more normal market conditions return.

The ratings for the banks in all these examples, which are not intended to be fully inclusive, will capture the support that junior subordinated debt enjoys. Consequently, as appropriate, some uplift for systemic support will be incorporated in the ratings, not to exceed two notches below the Bank Debt Rating to capture the potential for a coupon skip and lower recovery relative to supported senior debt. Over time, as banks are weaned from government support at different rates, junior subordinated debt ratings will be positioned close to or below the Adjusted Baseline Credit Assessment. In determining the amount of support uplift to be given, rating committees will use judgment after considering the size of the bank's potential capital deficit under stress scenarios and the means available to address it, including ongoing earnings, asset sales, access to the equity markets, and any available cushion from more junior capital⁴³.

Dated Junior Subordinated Debt with Principal Write-down

European banks have issued short-dated junior subordinated debt with coupon skip and principal write-down features tied to the breach of triggers⁴⁴. Although generally cumulative, any skipped payments and subsequent principal write-ups following a write-down must occur prior to maturity⁴⁵. Consequently, depending on the time relative to maturity when a principal write-down occurs, these securities could be at risk for both principal and coupon losses. These securities will be anchored from the Adjusted Baseline Credit Assessment and generally notched within a range of two to four notches depending on the trigger type and whether the hybrid is cumulative or non-cumulative.

Hybrid Type	Range	Standard	Comments
Dated Junior Subordinated Debt with Principal Write-down	Adjusted BCA - 2 to - 4 notches	Adjusted BCA - 2 notches	» Will be positioned within the range depending on the trigger type and whether the hybrid is cumulative or non-cumulative.

Preferred Securities

Preferred securities or, in some jurisdictions such as the European Union, junior subordinated debt with a priority of claim only senior to common equity, is loss absorbing by its terms. Preferred securities can be subject to principal write-downs resulting from the breach of certain financial triggers, be excluded from the restructuring of a bank outside liquidation, or subject to an exchange into common equity at a deep discount when a bank is in financial distress. Typically perpetual in nature,

⁴³ Refer to "Moody's Approach to Estimating Bank Credit Losses and their Impact on Bank Financial Strength Ratings", dated May 2009.

⁴⁴ There can be net loss or balance sheet loss triggers. In contrast to a net loss trigger, which is income-based, a balance sheet loss trigger typically includes retained earnings, reserves, and the latest fiscal year's earnings. We consider a balance sheet loss trigger to be weaker than an income-based trigger because a bank will likely experience several years of losses and substantial capital depletion before a balance sheet loss is reported. However, if a bank has experienced several years of net losses, the probability of a balance sheet loss trigger breach increases.

⁴⁵ Genussscheine issued by German banks and Ergänzungskapital issued by Austrian banks are examples of this type of security. Most Genussscheine are cumulative junior subordinated debt with a balance sheet loss trigger. If the trigger breach results in coupon suspension and a principal write-down, the written down amount is due at maturity. However, some types of Genussscheine require the bank, if subsequently profitable, to repay any accumulated coupons and written down amounts for up to four years after the original maturity. Ergänzungskapital has net loss triggers, but the securities are typically non-cumulative.

preferred securities do not have to be repaid and a skipped coupon will never result in an event of default⁴⁶.

Skipped coupons are generally non-cumulative and an extended period of non-payment could result in the risk of significant loss. As such, non-cumulative preferred securities provide loss absorption as a going concern and the rating will generally be positioned three notches below the Adjusted Baseline Credit Assessment. Cumulative preferred securities, which are less frequently issued, are rated two notches below the Adjusted Baseline Credit Assessment.

Hybrid Type	Range	Standard	Comments
Preferred Securities	Adjusted BCA - 2 to - 4 notches	BCA - 3 notches	<ul style="list-style-type: none"> » If coupon skip is cumulative, then Adjusted BCA - 2 notches. » If coupon skip is non-cumulative with a net loss trigger, then Adjusted BCA - 4 notches, not to exceed Baa1.

Ratings four notches below the Adjusted Baseline Credit Assessment are reserved for non-cumulative preferred securities with net loss triggers to reflect the possibility of greater transition risk associated with a missed coupon payment. The ratings are subject to a ceiling of Baa1, which will impact banks with Bank Financial Strength Ratings of A to B+, because all banks, regardless of their financial strength and how well they are capitalized, may experience profit volatility potentially resulting in the breach of a net loss trigger.

Jurisdictional Considerations

In Europe, banks issue non-cumulative trust preferred securities with a preferred claim in liquidation. These hybrids typically only have a mandatory coupon skip mechanism tied to the breach of weak triggers such as minimum regulatory capital requirements. The probability of a trigger breach is less likely, particularly for a systemically important bank that has received government support to bolster its capital position and avoid insolvency. As a result, the rating will be positioned at the Adjusted Baseline Credit Assessment minus two notches or less.

A common hybrid issued by Australian banks is non-cumulative preferred securities with net loss triggers. The bank has the option, which may or may not be explicit, to override a trigger breach and pay the coupon anyway, subject to regulatory approval. Given the dependence of Australian banks on foreign wholesale funding, there is a high probability that the breach of a net loss trigger would be overridden by the bank or regulators despite the absence of explicit language. As a result, the ratings for these securities, in certain cases, may be positioned at the Adjusted Baseline Credit Assessment minus three instead of four notches and be excluded from the Baa1 cap.

For banks in jurisdictions with senior unsecured ratings that benefit from a significant amount of uplift for systemic support, the rating on non-cumulative preferred securities could be positioned at the Adjusted Baseline Credit Assessment minus two notches or less depending on the factors that drive the bank's weak intrinsic financial strength rating. For example, an emerging market bank with a strong capital position that is managing its franchise in a weak operating environment may be very unlikely to skip a coupon payment.

Positioning the Ratings for Contingent Capital Securities

Contingent capital securities are those designed to provide loss absorbing capital at a time of financial distress. At issuance, the "host" security could take any form of capital from senior debt to non-

⁴⁶ In contrast, even if a coupon on junior subordinated debt is deferred until a later date, non-payment of the accumulated amount will result in an event of default.

cumulative preferred securities. At the bank's option or if a pre-specified trigger --- typically, a regulatory capital trigger --- is breached, the security converts into a more loss absorbing form of capital relative to the "host" such as non-cumulative preferred stock or common equity. Depending on the structure of the hybrid, an investor may face the potential for significant losses.

After reviewing the features of contingent capital securities, we may decide that they cannot be rated. The securities most likely to fall into this category are those that contractually give the issuer and/or the regulator the discretion to convert the "host" security into common equity. To the extent that there are triggers, our focus will be on whether or not they provide an objective threshold for conversion enabling an investor to reasonably measure the risk associated with conversion.

If we decide that certain types of contingent capital securities can be rated, the analysis will focus on the ability of the "host" to absorb losses as a going concern, the type of loss absorbing capital that the investor may ultimately hold, the probability of conversion, and the loss severity given conversion based on the conversion ratio⁴⁷. Consistent with all hybrid and subordinated debt ratings, the risk of potential loss is factored into the rating from the outset. An expected loss analysis will be used to position the rating if the probability of a trigger breach resulting in conversion to the underlying loss absorbing capital significantly increases.

Rating (or not Rating) the Next Generation Hybrids

Moody's expects that new types of hybrid securities will continue to be developed in the future. As before, we will assess our ability to assign ratings to new products based on the preponderance of their fixed income characteristics. For example, it is less likely that ratings will be assigned to hybrids where it is difficult to assess the potential loss to investors such as if the bank has the option to convert a hybrid into common equity. In addition, we will not rate securities for which the amount of promised principal repayment is dependent on the occurrence of a non-credit event⁴⁸. We may also consider adding an indicator to next generation hybrids should it become clear that there is volatility in the rating that goes beyond our expected loss analysis.

Generic Examples to Illustrate the Ratings Impact

The chart in Appendix D summarizes the range of rating outcomes for subordinated debt, junior subordinated debt, and non-cumulative preferred securities for a range of Bank Debt Ratings and Adjusted Baseline Credit Assessments. For junior subordinated debt, we assume that the ratings are notched from the Adjusted Baseline Credit Assessment with no uplift incorporated for systemic support. We compare the hypothetical rating outcomes that result from the implementation of Moody's revised hybrid and subordinated debt rating methodology against those using our previous hybrid and subordinated debt rating methodology.

II. The Use of Expected Loss Analysis for Hybrid Ratings

There may be circumstances under which a skipped coupon and/or principal write-down for hybrid capital is either imminent or highly likely. For example, a coupon skip and/or principal write-down trigger is close to being breached, a bank opts to skip a non-cumulative coupon payment for an extended period of time to build capital, or a regulator steps in to prevent a coupon payment or require a principal write-down. We may also consider using an expected loss analysis for banks with a

⁴⁷ The "host" security could convert into a fixed or variable number of shares, which may or may not be capped.

⁴⁸ Refer to *"Moody's Update on Rating Debt Obligations with Variable Promises"* dated June 2009.

Bank Financial Strength Rating of E depending on the hybrid's features and the factors driving such a weak Bank Financial Strength Rating⁴⁹.

In these cases, the rating will be positioned using an expected loss analysis, which factors in the anticipated period of coupon non-payment, the potential for a principal write-down outside liquidation, and the severity of loss, if these events happen. The rating will be adjusted downward, if necessary, beyond what is suggested by the revised methodology. In the event that a hybrid skips coupon payments and subsequently resumes them, Moody's will consider an upgrade and the use of normal notching guidelines only when the bank's financial condition stabilizes and there is a high likelihood that the bank is able to make coupon payments for an extended period of time.

In certain cases, outstanding hybrids have been subject to exchanges into other forms of debt or equity at a substantial discount to par. If the exchange is viewed as avoiding a bankruptcy filing or payment default, it is tantamount to a restructuring outside liquidation and considered a distressed exchange for rating purposes. Moody's will also use an expected loss approach to position the rating and determine the potential for loss relative to par value, which is the bank's original promise to pay⁵⁰.

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⁴⁹ If an expected loss analysis is used to position hybrids issued by banks with a Bank Financial Strength Rating of E, the rating may be higher than the suggested guidelines.

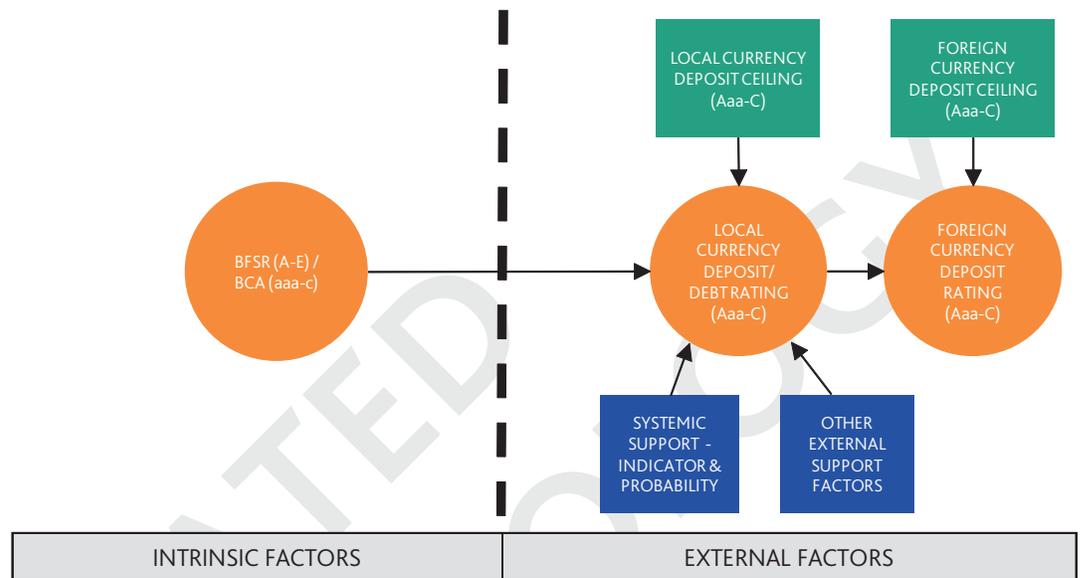
⁵⁰ Refer to "[Moody's Approach to Evaluating Distressed Exchanges](#)", dated March 2009.

Appendix A

Bank Rating Methodology

The schematic below summarizes the broad analytical concepts underpinning the bank rating process by highlighting the relationship between the Bank Financial Strength Rating and the Baseline Credit Assessment.

Moody's Bank Rating Methodology



In analyzing the creditworthiness of banks, Moody's separates the intrinsic risk factors from external risk factors. The starting point for bank ratings is the assessment of a bank's intrinsic financial strength as captured by the Bank Financial Strength Rating, which measures the risk that a bank will require external support. It is measured on a scale from A to E, with A for the strongest banks and E for the weakest. The Bank Financial Strength Rating is then translated into a Baseline Credit Assessment, ranging from Aaa to C.

The Bank Financial Strength Rating and Baseline Credit Assessment rating form the basis for the Bank Debt Rating, which further incorporates both external support and risk elements. Anticipated external support may lift debt ratings while sovereign-related risk may cap them. External support could come from four different sources:

1. Support from a parent (operating company or family group);
2. Support from a cooperative or mutualist group;
3. Support from a regional or local government; and
4. Systemic (i.e. national government and/or central bank) support.

Unless capped by the local or foreign currency debt ceiling, the Bank Debt Rating can be derived by adding total external support to the Baseline Credit Assessment rating.

Appendix B

Bank Financial Strength Ratings and Baseline Credit Assessment Mapping	
Bank Financial Strength Rating	Baseline Credit Assessment
A	aaa
A-	aa1
B+	aa2
B	aa3
B-	a1
C+	a2
C	a3
C-	baa1
C-	baa2
D+	baa3
D+	ba1
D	ba2
D-	ba3
E+	b1
E+	b2
E+	b3
E	caa1
E	caa2
E	caa3

Appendix C

Moody's Previous Bank Hybrid and Subordinated Debt Notching Guidelines						
				Number of Notches below Bank Debt Rating (BDR)		
Most Common Characteristics				BFSR (BCA)		
Hybrid Subordination	Typical Regulatory Treatment	Coupon Skip Mechanism	A / B / C (aaa – baa2)	D (baa3 – ba3)	E (b1 – caa3)	
1	"Plain Vanilla" Subordinated Debt	Lower Tier 2	None	BDR – 1	BDR – 1	BDR – 1
2	Hybrid Subordinated Debt	Tier 2 and Tier 3	Mandatory, weak triggers, cumulative, subject to maturity extension	BDR – 1	BDR – 1	BDR – 1
3	Junior Subordinated Debt	Upper Tier 2	Optional, Cumulative	BDR – 1	BDR – 1	BDR – 2
4	Dated Junior Subordinated Debt with Principal Write-down	Upper Tier 2	Optional/Mandatory, Cumulative	BDR – 1	BDR – 2	Closer to BCA
5	Preferred Securities	Tier 1	Optional/Mandatory, Non-cumulative or non-cash cumulative (ACSM)	BDR – 2	BDR – 3	Closer to BCA

Appendix D

Generic Examples*

	Subordinated Debt				Junior Subordinated Debt		Preferred Securities		
	Bank Financial Strength Rating	Bank Debt Rating	Adj. Baseline Credit Assessment (Adj. Bca)	Notching Uplift From Adj. Bca	Previous Methodology	Revised Methodology**	Previous Methodology	Revised Methodology	
Bank 1	B	Aa3	aa3	0	A1	A1	A1	A2	A2/Baa1****
Bank 2	C+	Aa3	a2	2	A1	A1	A3/Baa1	A2	Baa1/Baa3
Bank 3	C	Aa3	a3	3	A1	A1	Baa1/Baa2	A2	Baa2/Ba1
Bank 4	C-	A2	aaa2	3	A3	A3	Baa3/Ba1	Baa1	Ba1/Ba3
Bank 5	D+	A2	aaa3	4	A3	A3	Ba1/Ba2	Baa2	Ba2/B1
Bank 6	D	A2	aa2	6	A3	A3	Baa3/B1	Baa2	B1/B3

* For a bank holding company, assume the generic examples are already adjusted for the risk of structural subordination.

** Incorporates uplift for systemic support from the Adj. BCA to BDR - 1. However, if the government has the legal authority to impose selective losses on this creditor class and there is a high probability that it will do so, the rating will be positioned one notch below the Adj. BCA. In addition, if subordinated debt has a coupon skip mechanism, the rating will be positioned one notch lower.

*** Assumes junior subordinated debt rating is notched down from the Adj. BCA. However, depending on the jurisdiction, as banks transition to lower levels of systemic support, junior subordinated debt ratings for certain banks will receive some uplift from the Adj. BCA.

**** Non-cumulative preferred securities with a net loss trigger will be capped at Baa1. The A2 rating applies to cumulative preferred securities.

Moody's Related Research

Special Comments

- » [Frequently Asked Questions on Moody's Guidelines for Rating Bank Hybrid Securities and Subordinated Debt, November 2009 \(120614\)](#)
- » [Moody's Proposed Changes to Bank Subordinated Capital Ratings, June 2009 \(117894\)](#)
- » [Moody's Assesses Bank Hybrid Securities in the Context of the Credit Crisis, December 2008 \(112358\)](#)
- » [Calibrating Bank Ratings in the Context of the Global Financial Crisis, February 2009 \(114705\)](#)
- » [Credit Differentiation Among Classes of Bank Debt: Evidence from Recent Government Interventions in the UK, Denmark, and the US, April 2009 \(116002\)](#)

To access this report, click on the entry above. Note that this reference is current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

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>>contacts continued from the front page

Analyst Contacts:

FRANKFURT +49.69.7073.0700

Carola Schuler +49.69.7073.0766
Managing Director – Banking
 carola.schuler@moodys.com

LONDON +44.20.7772.5454

Yves Lemay +44.20.7772.5512
Managing Director – Banking
 yves.lemay@moodys.com

Johannes Wassenberg +44.20.7772.1543
Managing Director – Banking
 johannes.wassenberg@moodys.com

Simon Harris +44.20.7772.1576
Managing Director – Financial Institutions
 simon.harris@moodys.com

Alastair Wilson +44.20.7772.1372
Managing Director – Chief Credit Officer EMEA
 alastair.wilson@moodys.com

HONG KONG +852.3551.3077

Stephen Long +852.3758.1306
Managing Director – Financial Institutions
 stephen.long@moodys.com

Report Number: 143152

Authors

Gregory W. Bauer
 Rana Ameer
 Mark Lamonte
 Alastair Wilson

Production Associate

Sarah Warburton

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