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Ratings, Rating Agencies and the Global Financial System: Summary and Policy Implications

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In this introductory chapter, we begin with a brief overview of the issues that have motivated our research into the role of credit ratings and credit rating agencies in the global financial system. We then summarize the main themes in each of the papers and highlight the major findings. In the final section, we suggest several policy implications and conclusions that can be drawn from this research.

1. INTRODUCTION AND MOTIVATION FOR THE PROJECT

The past 100 years have seen the birth of the credit rating business and the spread of credit ratings for applications in numerous borrowing and investment decisions, as well as for regulatory purposes in the United States and worldwide. The business of credit ratings began in the United States in the early 1900s. For most of the 20th century, rating agencies were an American phenomenon but they began taking a global dimension in the 1970s with the expansion of capital markets. Ratings began to play a role in U.S. financial market regulation in 1931, and over time regulators found expanded uses of credit ratings. Given the increasing reliance placed on ratings, in 1975, the U.S. Securities and Exchange Commission (SEC) established

guidelines for designating National Recognized Statistical Rating Organizations (NRSROs). But it was not until 1997 that the SEC proposed criteria for certifying NRSROs.

Recognizing the globalization of banking and financial markets, in 1988 the Bank for International Settlements (BIS), through its Committee on Banking Supervision, established a set of risk-based capital adequacy levels, which in 1999 were revised to provide an explicit role for credit ratings in determining a bank's risk capital. Given the complexity of the task, the deadline for producing and implementing a new Capital Accord (referred to as Basel 2) has been put off several times. As of this writing (November 2001), the Committee expects the final version of its new Capital Accord to be published sometime in 2002 and to be implemented in 2005.

This expanded role for credit ratings and rating agencies raises many fundamental questions, which the papers in this volume will address. We can group these questions into several categories. The most basic of all questions is that of "existence." Why do credit rating agencies exist and how have they evolved? How is it that credit ratings have come to play such an important part in certain financial transactions but not in others?

Another set of questions pertains to the industrial structure of the credit rating business itself. Why are there apparently so few credit rating firms? Can we characterize the credit rating business as competitive, open to new market entrants, and responsive to market forces? Are some credit rating firms demonstrably "special" and worthy of certification by a regulatory body; while others are not? On what

criteria, and by whom should this certification be based?

A third category of questions concerns the ratings themselves. Do ratings provide unbiased, or at least useful information regarding differences in obligors' capacity to repay? Do ratings provide incremental information to lenders beyond what is available through processing publicly available macroeconomic and firm-level data? Could the variation in market price for securities with similar credit rating signal important shortcomings in credit analysis?

A fourth category of questions deals with the international context of ratings. Do ratings have a uniform meaning and interpretation across countries? Can a rating system of u.s. origins be transplanted in other countries, or are adjustments needed to account for differences in accounting and financial market practices? Are emerging market risks (like the risks of banking and financial crises) "special" and ill suited to a single variable credit rating metric? Are ratings leading or lagging indicators of country risks? How important have changes in credit ratings been to emerging market economic performance?

And finally, we note a set of questions pertaining to the use of ratings for regulatory purposes, in general, and the Basel 2 accord, in particular. What is the proper regulatory use of ratings given that these ratings exist? Is such an expanded role justified based on the past performance of the credit ratings industry? If credit ratings are to be used for regulatory purposes, how should we construct the mapping of ratings into regulatory capital requirements? Could market data be used as a substitute for credit ratings for regulatory purposes? What might be the consequences of adopting a particular capital accord that incorporates credit

ratings?

Addressing these questions will lead us on the way toward understanding the role of ratings and credit rating agencies, and whether and how this role should be institutionalized through uniform and global financial market regulation.

2. SUMMARY AND HIGHLIGHTS OF THE RESEARCH PAPERS

This volume brings together the research of economists at New York University and the University of Maryland, along with those from the private sector, government bodies, and other universities. The first section of the volume focuses on the historical origins of the credit rating business and its present day industrial organization structure.

The second section presents several empirical studies crafted largely around individual firm-level or bank-level data. These studies examine (a) the relationship between ratings and the default and recovery experience of corporate borrowers, (b) the comparability of credit ratings made by domestic and foreign rating agencies, and (c) the usefulness of financial market indicators for rating banks, among other topics. In the third section, we turn to examine the record of sovereign credit ratings in predicting financial crises and the reaction of financial markets to changes in credit ratings. The final section of the volume emphasizes policy issues now facing regulators and credit rating agencies.

Part I. History, Value and Industrial Structure of Credit Rating and Reporting

Agencies

As Richard Sylla describes in Chapter 1, capital markets developed, and in some

Respects flourished, in the Netherlands, the United Kingdom, and the United States for three centuries without the benefit of credit ratings or credit rating firms. However, the capital markets of the 17th, 18th and 19th centuries were fairly concentrated geographically and dealt primarily in sovereign debt issues. Sylla traces the rise of credit ratings to the development of a large U.S. corporate bond market, whose diverse issues and issuers (mainly American railroads) had grown to the point where the quality of borrowers could no longer be adequately certified by the general financial press or investment bankers.

Sylla suggests that the globalization of credit ratings since the 1970s followed an analogous path. In the 1960s, international capital markets were populated by institutional investors choosing among sovereign issues from industrial nations. Over the last 30 years, the global market has expanded to encompass dozens of non-industrialized nations, exotic currency issues, and corporate as well as sovereign issuers. Rating agencies, which now earned their revenues from issuers rather than from subscribers, could expand with the market, harvesting revenues from each new Issue.

A key question, however, is whether the expansion of the credit rating business reflects the economic value of their output, or an artificial demand brought about by regulations that mandate the use of credit ratings and regulators that have designated only a small number of approved credit rating firms. Earlier studies by Hickman (1958) and Atkinson (1967) showed that higher credit ratings were associated with lower default rates and lower promised and realized returns on

corporate bonds, as one would expect if credit ratings captured useful economic information. However, Sylla points out that "market ratings" (measured by yield spreads) had a similar capacity to discriminate, placing doubt on the marginal value of credit ratings.

Lawrence White (Chapter 2) discusses the nature of the credit rating industry from an industrial organization perspective. To do this, White chronicles the industry's structure (e.g. the number of buyers and sellers, conditions on entry, and the role of regulation), the impact of that structure on behavior (e.g. pricing, product development, entry, etc.) and performance (e.g. profitability and efficiency). White is less agnostic than Sylla on the importance of regulation as an important influence on the demand for credit ratings and the overall structure of the industry. Even though the number of credit rating firms has always been small, White argues that current U.S. regulations (that impose formal criteria for obtaining the official NRSRO designation) are limiting entry.

Pricing and performance in the industry are harder to judge, (1) because actual prices can be negotiated away from stated list prices for credit rating services, and (2) because most credit rating firms are part of larger corporations, making the performance of the credit rating activities hard to determine. Moody's became a standalone firm in 2000 so substantial accounting and financial information about their activities became available through their initial public offering materials. These documents show that Moody's has been extremely profitable, with after-tax, net income averaging 44.0% of total assets in the six years 1995-2000. To White, this raises the suspicion that Moody's is able to exercise pricing power beyond what one would

expect in a competitive industry with unrestricted entry.

Efficiency of credit ratings is also difficult to gauge. Credit ratings typically correlate well with average default rates, but by itself, this does not indicate whether ratings provide additional useful information beyond that in market spread data. Evidence that bond prices respond to credit rating changes is also not a conclusive test regarding the social value of ratings because, (1) the added information may have come to light within a few days anyway, and (2) prices may change because the rating change affects the bond's regulatory status and not its default probability. Because the market value of ratings is unclear, White argues that this is further evidence that regulation has likely given rating firms an "artificial lift in their business."

If ratings are to be a part of financial regulation, a key question then is "whose ratings" are authorized for use? In the United States, White concludes that the SEC criteria for NRSROs proposed in 1997 focus on inputs (does the rating firm have a national reputation, adequate staffing and organization controls, rely on systematic procedures, and so forth), rather than on outputs (do the ratings adequately predict the likelihood of default, are ratings revised quickly in response to new information, do the ratings have incremental value over and above assessments made using public information). Indeed, the U.S. regulations reflect an obvious "Catch-22" type of restriction on entry—most likely, a new firm cannot obtain a national reputation (and qualify to become an NRSRO) without first being a national recognized rating organization. The BIS faces a similar task as it too must certify which "external credit assessment institutions" are acceptable. The BIS guidelines refer to one

output (the historical validity of credit assessments) but are still heavily focused on inputs for judging the worthiness of a rating agency.

White reminds us that expanding the regulatory use of ratings internationally raises other possible dangers. For example, if a country were unhappy with its own sovereign rating, could it challenge the approved status of the agency that issued the rating? White concludes that Basel 2 acts to increase the demand for ratings, but does not resolve the issue of how rating firms should be certified, and thus will restrict the supply of rating firms and stifle innovation. There may be a valid role for rating agencies, but; White urges that this role should be determined by the market participants themselves, and reflect more extensive use of market information (such as yield spreads and market value accounting).

Frank Partnoy (Chapter 3) draws together the strands of the papers by Sylla and White to highlight an important paradox of credit ratings. On the one hand, credit ratings seem extremely valuable and rating agencies seem to be highly influential. Credit ratings are an integral part of major financial dealings, and rating agencies' periodic press releases can seem to have a major impact on market prices. But on the other hand, Partnoy cites overwhelming evidence that credit ratings hold little informational value. Studies show that ratings changes typically lag the market and that the market anticipates most rating changes. The fact that ratings are correlated with actual default experience, Partnoy charges, does not prove that ratings hold any incremental value.

To resolve this paradox, Partnoy argues that credit ratings and rating agencies obtain their value primarily because regulations grant them an important role. In

Partnoy's view, rating agencies hold "regulatory licenses," valuable property rights granted to them by virtue of ratings-based regulation.

Partnoy builds his case on the history of credit ratings in the United States. In the 1920s, rating agencies were small and marginally profitable. And even though their track records through the Crash of 1929 were weak, credit ratings were still respected. In 1931, the Comptroller of the Currency gave credit ratings their first regulatory role-Bonds rated BBB or higher could be carried on a bank's books at historic cost, but lower rated bonds required a partial write-off. In 1936, regulations tightened further by prohibiting banks from purchasing non-investment grade bonds. Some protested this move noting that it could create a false sense of security that it was safe to buy and hold a bond based on its current credit rating, even though ratings were not necessarily accurate predictors of future performance.

After these rulings, the importance of credit ratings rose, as did the implied value of credit rating firms. Partnoy argues that it was the regulations of the 1930s that made this happen, not the improved informational quality of the ratings themselves. From 1940 to 1973, there was little change in the regulations affecting credit ratings. But in 1973, the SEC promulgated the first securities rule that formally incorporated credit ratings and instituted the notion of certain rating agencies as NRSROs. Partnoy reports that the number of references to NRSROs in Federal Agency documents increased dramatically throughout the 1970-2000 period. It is also in this period that rating agencies grew in the size and scope of their operations, and in the case of one agency (Moody's) grew to have a market value of more

than \$5 billion in its initial public offering in September 2000. Again, Partnoy concludes that it was a regulatory dependence on credit ratings and not the intrinsic informational value of the ratings that led to this growth.

In contemplating the expanded use of credit ratings for global financial market regulatory purposes, Partnoy reviews how credit rating agencies have fared in the courts when individuals have lost money from relying, in part, on ratings. Ironically, U.S. courts have dismissed claims of negligence against rating agencies, on the grounds that it was unreasonable for an investor to rely on the rating. If U.S. courts draw this conclusion about ratings and rating agencies, it clearly casts doubt on their use for expanded regulatory purposes.

Rating Agencies: Pricing and Regulatory Aspects

Edward Altman and Anthony Saunders (Chapter 4) examine two important aspects of the Basel 2 proposal using data on U.S. corporate bonds over the 1981-1999 period. Specifically, Altman and Saunders study whether ratings could lag in response to economic activity, thus causing banks to reserve more capital just at the time when defaults are more likely and bank earnings are under more pressure. They find some evidence for this lagging behavior and suggest that other approaches, including the credit spread approach, be assessed as alternatives. Despite this possible shortcoming, the authors conclude that credit risk should play some role in determining a bank's risk capital.

The related question is whether the risk categories (or "buckets") in Basel 2 that specify a risk weighting for a range of credit ratings offer a reasonable formulaic approach. Altman and Saunders begin by stressing that economic capital reserves are

intended to cover unexpected loan losses, while loan loss reserves are designed to cover expected (or mean) losses. Thus, the authors set out to measure the unexpected loss rates on corporate bonds across credit rating categories, and then compare these with the risk weights proposed by Basel 2. Altman and Saunders report significant differences between the actual data and the Basel 2 proposal for both the absolute loss rates and in the relative weights across buckets. For example, in the authors' database, no losses were observed in the subsequent year for bonds rated AAA or AA. Thus, the data suggest a zero risk, compared to the 20% weight specified in Basel 2. Regarding the relative weightings, in Basel 2, the lowest rated bucket 3 carries a 150% risk weight, or 1.5 times as great as bucket 2. However, the data suggest that the actual loss rates in bucket 3 could be 3.2 times as great, or possibly far larger. Thus, the risk weightings in Basel 2 do not reflect the degree of convexity (i.e. relatively low loss rates among higher rated borrowers, and considerably higher loss rates among lower rated borrowers) that is apparent in the data.

Economically reasonable risk weights, the authors argue, would need to show considerably more variation across finer (or more "granular") buckets. The authors propose one such alternative, attempting to balance the desire to keep financial regulation workable. We will come back to this issue in the final section of this summary.

One disturbing aspect of Basel 2 is the treatment of the unrated category of bank Assets which specifies a 100% risk weight, or on a par with bucket 2 and actually lower than the lowest rated bucket 3. Altman and Saunders submit that designating

any risk weight for unrated assets is illogical on economic grounds, and that indeed from the U.S. experience, unrated loans are most likely drawn from the lower end of the credit rating spectrum (bucket 3). The solution for this unrated class, if they remain unrated by external agencies, would then rest with an internal rating system.

Mark Carey (Chapter 5) investigates the functioning of an internal ratings based (IRB) system for setting the absolute level of bank capital requirements. Carey distinguishes between "top-down" and "bottom up" approaches to setting capital requirements. In a top-down approach, policymakers set a target capital ratio (say 8%) for the banking system as a whole. In a bottom-up approach, policymakers vary the capital requirement as a function of the riskiness of each bank's loan portfolio to achieve a target failure rate for banks during periods of macroeconomic stress.

Carey's approach is novel. A bottom-up approach could be effective in limiting the kind of regulatory arbitrage among assets with different risk weights that has bedeviled the original Basel capital accord. Carey's description of a bottom-up, IRE approach naturally builds on various assumptions regarding the probability of loan default (PD), bank losses given defaults (LGD), and the distribution of these and other parameters, such as the lending horizon, and macroeconomic volatility. The IRB approach is consistent with a top-down approach that utilizes credit risk weightings, but importantly, an IRE approach requires economically realistic estimates of PD, LGD, and other parameters. While these estimates may be difficult to calculate precisely, Carey warns that bankers will be making them internally, thus

setting the stage for regulatory arbitrage in a top-down system that does not align risk weighting with realistic economic assumptions.

Implementing Basel 2 in many countries raises again the question of which credit ratings to use for regulatory purposes. In Chapter 6, Frank Packer examines the consistency between credit ratings assigned to Japanese non-financial firms by both Japanese and non-Japanese rating agencies. The first Japanese rating agencies were founded in 1985, quite recently compared to U.S. ratings firms. Japanese rating agencies over more firms than do U.S. agencies. And the original *raison d'etre* for Japanese agencies, to satisfy a minimum credit rating needed for bond issuance, was also different than in the U.S. market.!

Packer's study reveals a number of interesting findings. First, among 157 corporations that were rated by both Japanese and foreign agencies, all but four were given lower ratings by the foreign agencies. The average difference in ratings is substantial—about 3.5 "notches" or more than one full letter grade. Packer concludes that Japanese and foreign letter grades cannot convey the same level of default risk. These differences are well known in the financial community, but what accounts for them (e.g. a home bias or more lenient standards by Japanese agencies, a foreign bias or tougher standards by foreign agencies) is unclear.

Packer goes on to show that Japanese ratings tend to be more closely related (in regression tests) to observable accounting variables and keiretsu affiliation, whereas foreign ratings are more difficult to model, as if they embody other subjective factors. However, both Japanese and foreign ratings appear to contain useful information that can explain yield spreads better than any single average rating. Despite

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In a somewhat similar spirit, Paola Bongini, Luc Laeven and Giovanni Majnoni (Chapter 7) examine the performance of three sets of indicators-credit ratings, accounting data and stock market prices-for gauging bank fragility in East Asian banks. In principle, it could be argued that market prices should offer the best signal of available information, as they embody accounting information and are updated continuously. On the other hand they may reflect the presence of an implicit public guarantee and therefore may provide a biased signal of financial fragility. How well alternative indicators work in practice is, therefore, an empirical question, which the authors investigate for a sample of 246 financial institutions in Indonesia, Korea,

Malaysia and Thailand in the 1995-98 period.

The study reports four empirical regularities: (1) Being listed on a local stock exchange or being rated has no apparent disciplining effect; (2) None of the three indicators has strong predictive power in forecasting bank distress after controlling for macroeconomic factors and bank size; (3) Ratings from credit rating agencies have the lowest power to discriminate between sound and insolvent banks; and (4) Stock prices and the implicit deposit risk premium they reflect adjusted more quickly and with a lead when compared with credit rating changes.

The overall evidence on credit ratings is not particularly impressive. In this sample, credit ratings appear more suited to distinguishing good and bad countries, than in distinguishing good and bad banks. Moreover, credit rating changes are more likely to lag than to lead changes in market values. Nevertheless, the authors take a cautious view that in countries with less developed financial systems, regulators ought to rely on multiple indicators of bank fragility, rather than any single one of the three indicators tested.

The study by Liliana Rojas-Suarez (Chapter 8) also investigates the value of bank credit ratings in emerging markets and draws a somewhat similar conclusion. Rojas-Suarez points out that in emerging markets, some rating agencies rely more on macroeconomic variables than on bank specific financial ratios. The author argues that two factors account for the poor performance of bank ratios in emerging markets: (1) the presence of severe deficiencies in the accounting and regulatory framework, and (2) the absence of liquid markets for bank equity and debt shares

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For banks in emerging markets. Two such indicators stand out. First, interest paid on deposits (when high) is likely to be a poor signal of bank strength. And second, the interest rate spread on bank loans (when low) is likely to be a signal of excess risk taking and bank weakness.

Part 3-Empirical Evidence on Credit Ratings Agency's Performance: Macroeconomic Aspects

With the globalization of financial markets, credit ratings have taken on a greater role in the international allocation and pricing of capital. The pending global application of Basel 2 stands to widen and possibly intensify the macroeconomic role of credit ratings. Analogous to questioning the validity of corporate credit ratings, it is natural to examine whether sovereign credit ratings are useful indicators of national financial crises, and to explore the impact that changes in ratings have on a country's

capital markets and macroeconomic performance. Based on the greater information asymmetries in emerging markets, it is reasonable to suppose that rating agencies may face greater difficulties in these markets and yet credit ratings could carry a greater impact, not just on the local market, but also with contagious effects elsewhere.

In Chapter 9, Graciela Kaminsky and Sergio Schmukler investigate how sovereign rating changes affect local as well as neighboring financial markets. The authors utilize two empirical approaches—panel regressions, to measure the immediate response in financial markets to rating changes, and event studies, to capture the dynamic responses of financial markets around the time of rating announcements. Their data cover 16 emerging market countries over the 1990-2000 period. Overall, The analysis supports several conclusions. First, rating downgrades give rise to a significant widening of yields spreads (by about 3 percent) and a significant decline in equity market returns (about 1 percent). Second, rating changes spawn significant spillover or contagious effects. This contagion seems to follow regional patterns. Third, economies that are more fragile or vulnerable are more severely affected by U.S. interest rate changes than are more robust economies. And finally, local-country rating upgrades (downgrades) are more likely to occur after rallies (downturns) in the local equity market, suggesting that agency ratings have a pro-cyclical effect and may contribute to financial excesses. While many of their results are statistically significant, Kaminsky and Schmukler note that the results are fairly small quantitatively. Thus, while a change in the sovereign credit rating may reveal useful information and

serve as a "wake-up call" to emerging market investors, numerous other factors are also at work driving financial market volatility.

The study by Carmen Reinhart (Chapter 10) also focuses on the linkages between financial crises and rating changes in emerging market countries. Reinhart notes that various developed countries have experienced currency and/or banking crises without experiencing significant rating changes or loss of access to international markets. However, in emerging market countries, the connection between currency crises, banking crises, and possibly sovereign default was an almost common occurrence in the 1990s. One could expect, then, that changes in sovereign credit ratings for emerging market countries would, at least to some extent, anticipate financial crises.

Using three sources of sovereign credit ratings (Institutional Investor, Moody's, and Standard and Poor's) and various indicators of financial crises, Reinhart finds that sovereign credit ratings systematically fail to anticipate crises. Indeed, the author finds that in emerging markets, ratings tend to be reactive in the sense that we observe downgrades after a crisis is underway. Thus ratings behavior is apt to produce pro-cyclical forces.

Reinhart draws on her other research and reviews why emerging markets are different than developed markets. In emerging markets, liabilities are often denominated in foreign currency, and so sharp devaluations will severely worsen corporate and bank balance sheets. A currency crisis can then evolve into a banking crisis, and produce contractionary forces on the local economy. Ratings downgrades follow. Reinhart suggests that sovereign ratings may do a poor job in predicting financial

distress, in part, because they place too little weight on financial indicators such as liquidity and currency misalignment. If so, then it would be possible to improve their performance, although agencies would still face political issues in the timing of rating downgrades and upgrades.

Sovereign risk enters into the pricing of all financial instruments, including equities.

In Chapter 11, Aswath Damodaran examines the theory and practice of estimating the risk in emerging market equity cash flows, as well as the pricing of that risk. Damodaran begins by noting that, even in the domestic country context, there are several popular and plausible models for pricing financial risk in addition to the classic capital asset pricing model (CAPM). And even when we confine ourselves to the traditional CAPM framework, empirical issues such as the time period, the selection of the risk-free rate, and the use of arithmetic versus geometric averaging can have non-trivial effects on the resulting estimate.

In emerging market countries, both the theoretical and empirical issues can become more severe. The theoretical pricing of country risk depends very much on whether the marginal investor in, say, Malaysia is well diversified across the global equity market, or is constrained to hold an imperfectly diversified portfolio with separate Malaysian country risk. And from an empirical standpoint, the limited history of emerging equity markets makes estimates of the risk premium more imprecise. As well, the limitations on risk-free instruments pose another dilemma. As Damodaran points out, historical risk premiums for the last quarter of the 20th century are negative in some non-U.S. markets, and these are unlikely equilibrium

estimates going forward.

Damodaran outlines two alternative approaches for estimating country equity risk premiums. One approach, the "implied equity premium," is essentially a dividend discount model with several inputs (the expected growth in dividends, earnings, and the current market value of the firm) estimated separately. While the current market value and dividend yield are readily observed, growth rates are not, and estimating growth rates in small emerging countries is problematic. The second approach, called a "modified historical premium," utilizes the interest rate spread for each sovereign rating class over and above a riskless U.S. Treasury rate. Damodaran argues that these historic spreads are less volatile and more reliable for valuing longer-term cash flow stream. Which one of these two methods wins the "horse race" for the better valuation approach, and whether credit ratings retain a role for estimating country equity risk premiums, are questions for future research.

Part4-Policy Issues Facing Regulators and Credit Rating Agencies

The preparation of credit ratings and their use in financial regulation raise numerous policy issues. In Chapter 12, Roy Smith and Ingo Walter offer a general discussion of the credit rating business, focusing on whether the rating agencies face significant conflicts of interest that could compromise the usefulness of ratings or the integrity of the rating firms. The authors begin their paper with what they offer as an axiom-"Anytime advice is offered in a financial matter, there is a potential agency issue. "When rating agencies began, in the early 1900s, revenues came almost entirely from the sale of publications, and so agency problems were non-existent. But since the 1970s, the market for credit ratings has expanded across instruments,

Across countries, and through their increased use in regulation. And moreover, revenues now come from issuers rather than investors and institutions that are the ultimate users of the ratings. Given that conflicts of interest are unavoidable, Smith and Walter examine how conflicts can be managed.

A key building block for the authors is the view that the principal asset for a Ratings agency is its reputation for technical competence, objectivity, and impartiality in the production of ratings. Without reputation, it is difficult to justify a demand for ratings. Given that the two major rating agencies (Moody's and Standard and Poor's) share roughly 80% of the market, these firms have strong market-driven Incentives to avoid all apparent conflicts that offer a marginal gain at the risk of a Substantial cost to reputation. This is especially the case for Moody's, which is now a publicly owned, stand-alone company whose sole business is ratings. Without a high reputation for ratings, Moody's business franchise value (and its share price) would descend precipitously in plain view.

Smith and Walter review several specific "pressure points" where a ratings firm maybe subject to conflicts. Among these, the issues of unsolicited ratings, the sovereign ceiling for local borrowers, and local involvements (of the ratings agency in others sovereign consultancies) have received the most public attention. While each of these may grab headlines from time to time, Smith and Walter suggest that the loss of franchise value and the threat of regulatory decertification have been effective safeguards against conflicts of interest.

In Chapter 14, Jerome Fons (a Managing Director at Moody's) summarizes some of his views on the policy issues facing rating agencies. One important issue is the

process for certifying rating agencies in the many countries where Basel 2 will operate. A national recognition scheme (as in Basel 2) could lead to numerous ratings bodies, and possibly inconsistent standards. A centralized gatekeeper could impose uniform standards, but would have to formulate objective criteria for judging the ratings agencies. Fons expresses hope that the process for certification will be fair and open, but predicts that new and smaller agencies may find it difficult to demonstrate competence and enter the industry.

To guard against "rate shopping," Fons suggests a consistent use of agency ratings that rules out the possibility of cherry picking among ratings when multiple ratings exist for any issuer. Overall, Fons seems to support the Smith and Walter view that while conflicts of interest are a theoretical possibility, the incentives are clearly aligned to promote objectivity and accuracy in ratings.

Finally, we summarize two papers that address more general concerns regarding ratings, financial regulation and macroeconomic policy-making. Michele Cavallo and Giovanni Majnoni (Chapter 13) observe that default frequencies associated with different rating grades provide an important benchmark for assessing expected loan losses and setting appropriate loan loss provisioning policies. The use of measures of expected losses for setting adequate levels of provisions, however, has attracted considerably less attention than the use of unexpected losses for setting minimum bank capital requirements. The authors note that the need for bank capital to offset unexpected loan losses depends, in part, on the ongoing process of bank provisioning to establish reserves for meeting the expected losses on bank loans. If provisioning is slow or insufficient, banks are forced to rely more heavily on risk capital to meet

loan losses, which may accentuate the pro-cyclical impact of a risk-based capital system.

Cavallo and Majnoni hypothesize that agency factors-meaning the presence of bank "insiders" (bank managers and majority shareholders) versus bank "outsiders" (minority shareholders and the regulatory authority)-significantly affect the provisioning process. Specifically, they hypothesize that higher shareholder protection and higher public debt to GDP ratios should be associated with lower levels of general provisions (meaning higher payouts to shareholders and greater reliance on risk capital).

The authors test their hypotheses on a sample of 1,176 banks from 36 countries over the 1988-1999 period. In general, the data confirm that agency factors have a significant impact on bank provisioning. It follows that policies to encourage timely and adequate loan loss provisioning are an important corollary of bank capital regulation, and one that could be used to calm the pro-cyclical nature of present systems.

In Chapter 15, Richard Herring analyzes the demands that credit risk create from a modeling perspective. Because risk capital functions to meet unexpected losses, low frequency, high-severity events pose the most serious threat to financial stability. Unfortunately, human ability to assess the risk of these extreme events is questionable. If humans harbor certain cognitive biases and persistently underestimate the likelihood of extreme events, a kind of "disaster myopia" is likely that makes the financial system vulnerable to crisis.

Herring considers a number of policy options to deal with disaster myopia. One

option that he discusses further in his comments in Part 2 is the possibility of a tranche of subordinated debt to be traded in the public market. In theory, the release of a bank's risk exposure data, the market would continuously raise the bank's subordinated debt, sending a continuous signal on the risk taking and capital adequacy of the bank.

As Herring points out, however, the scheme might not work well in practice. First, it might not be feasible to release bank risk exposure data without revealing confidential information about a client or proprietary information about the bank risk assessment model. Second, given the uncertainty, the information release could coordinate herding among banks as they learn about each other's exposures. And finally, it is possible that individual investors or ratings agencies themselves could exhibit disaster myopia, and fail to penalize excessive risk taking. Even though credit rating agencies have, at times, underestimated the vulnerability of many firms or countries, subordinated debt retains some possibility of signaling trouble ahead long as the marginal investor/analyst resists disaster myopia.

POLICY IMPLICATIONS AND CONCLUSIONS

Taken together, the papers in this volume trace the development of the credit ratings industry from a lone firm assessing the debt obligations of railroad companies, to a worldwide industry that produces ratings on a wide array of financial instruments pursued by firms from many countries. Key milestones occurred in 1931, when U.S. financial market regulators provided a role for credit ratings. We stand now at what seems like another milestone, as the Bank for International Settlements is about to and the role of credit ratings still further by making regulatory bank capital

depend on the credit ratings of bank obligors. Questions about the interplay between credit ratings and financial regulation can be crafted along two lines:

- (1) Are the credit rating industry and its products (credit ratings) well designed to Meet the regulatory challenges laid out in Basel 2?
- (2) Does Basel 2 make effective use of existing credit ratings, or would other risk Measurement tools (or policies) be better suited to the task of setting bank capital requirements and disciplining banks?

The research in this volume lays a foundation to be skeptical on both issues. Already, credit ratings are a type of short hand. They are a one-dimensional measure that attempts to capture the many dimensions of risk that accompany the repayment of funds from an obligor. The empirical record of credit ratings is mixed, owing some ability to discern the credit quality of different groups, but perhaps incremental ability to discern this quality better than the measures inherent in market spreads, and limited ability to predict major changes and financial crises. These large misses loom large, but seem entwined in the prediction of extreme but low frequency events. The evidence in hand suggests that credit ratings (at least we have observed them thus far) seem ill suited to capturing the special-risk situations in emerging markets. However, several studies in this volume (those by Reinhart, Rojas-Suarez and Packer) suggest ways for improving this record. The competitive structure of the credit rating industry and the regulatory mandate held by entrenched firms are other troubling aspects. We would be more confident that ratings represented valuable marginal information, if they were free of the "regulatory licenses" criticism and permitted to prove their worth in a competitive

market test.

Similarly, the buckets in the original formulation of Basel 2 bore little resemblance to the actual historic default and recovery experience in the U.S. corporate bond market. And while modifications (and improvements) to that proposal have been offered, the link between experience and risk weights is obscure. So too, the risk weighting of an "unrated" class remains an enigma. Several papers in this volume have noted (both at the firm and sovereign level) the likely pro-cyclical nature of ratings and risk capital. Any revision of Basel 2 should seek to avoid exacerbating this problem.

Internal rating based schemes for risk measurement may be a feasible alternative to external credit ratings for some banks, but their complexity is daunting, as is their verifiability. The recent experiences of Long Term Capital Management, Enron, and others to measure and manage complex risk are not encouraging. Alternative proposals, such as risk capital dependent on the market yield on subordinated debt, seem efficient and attractive relative to Basel 2, but these may be subject to their own shortcomings.

Assessing the credit risk in financial transactions is an essential component of a well functioning banking system. Credit ratings are a limited and imperfect tool for assessing credit risk, but ratings are a well-established and well-recognized part of the financial landscape. As such, ratings may be a reasonable place to begin the process of integrating credit risk into regulatory levels of bank risk capital. The studies in this volume have highlighted many useful empirical regularities about

credit ratings, and their relationship to the actual experience of default and crisis in both industrial and developed economies. Hopefully, bank regulators and supervisors can make use of these findings for the design and re-design of Basel 2. At the same time, given the weak record of credit ratings in many situations, bank regulators and supervisors must remain cautious about excessive reliance on credit ratings for regulatory purposes.

A system that puts greater reliance on bank accounting transparency and makes greater use of large numbers of market agents to assess, and thereby "rate," the riskiness of a bank's asset portfolio seems preferable to the black boxes and mixed records of the credit rating agencies. While such a system may be a goal for market oriented economists, we see this only as a possible prospect for Basel 3.

References

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