CHAPTER 3

THE USES AND ABUSES OF SOVEREIGN CREDIT RATINGS

Summary

The sharp downgrades of structured credit products that followed in the wake of the subprime mortgage crisis and the more recent downgrades accompanying weakened sovereign balance sheets have focused attention on credit rating agencies (CRAs) and their rating methodologies. In part this attention reflects the myriad ways in which ratings drive investment decisions and collateral eligibility standards, even those of central banks. Securities regulations and rules have played a big part in this rating reliance, as well as prudential regulations. This chapter focuses on how well CRAs do their job and whether they inadvertently contribute to financial instability. The chapter specifically focuses on sovereign ratings, given the most recent escalation in sovereign credit risk and the propensity for ratings to affect sovereign debt markets.

Although CRAs have been under a cloud of suspicion following their role in structured credit markets, it should be acknowledged that ratings serve several useful purposes. They aggregate information about the credit quality of borrowers, including sovereign entities, corporations, financial institutions, and their related debt offerings. They thus allow such borrowers to access global and domestic markets and attract investment funds, thereby adding liquidity to markets that would otherwise be illiquid.

The chapter examines the top three CRAs (Fitch Ratings, Moody's Investors Service, and Standard & Poor's) to see whether they serve their various roles effectively and, more specifically, whether they rate sovereign debt accurately. It concludes that CRAs' ratings influence market prices, and that downgrades through the investment-grade barrier trigger market reactions. It shows that their market impact is associated not only with new information, but also with a "certification" role, though this is most evident through their use of "outlooks," "reviews" and "watches" (pre-rating change warnings) rather than actual rating changes.

CRAs insist that they do not target their ratings to specific credit risk metrics, such as default probabilities or expected losses, but only to ordinal rankings of credit risk. Tested against this objective, the chapter finds that the CRAs' discriminatory power of sovereign default risk is validated to some extent. For example, all sovereigns that defaulted since 1975 had noninvestment-grade ratings one year ahead of their default.

Despite the CRAs' goals of delivering only ordinal rankings, ratings are often used as though they map into specific credit-risk metrics, including in the Basel II standardized approach to determining bank capital requirements. Given this important use, and assuming Basel II's reliance on ratings remains, CRAs should provide default probabilities or expected losses. Also, they should be expected to meet the same rating calibration and validation standards as those required of banks that use the Basel II internal-ratings-based approach, since the CRAs are a substitute for this more sophisticated approach.

In addition, to reduce the negative "cliff effects" in prices and spreads that rating changes imply, the chapter recommends that regulations that hardwire buy or sell decisions to ratings be eliminated. This recommendation is already being implemented to some degree in some countries, but could usefully be extended. As well, CRAs should continue to provide additional information on the accuracy of their ratings, the underlying data, and their efforts to mitigate the conflicts of interest that are associated with their "issuer pay" model of charging issuers for their ratings.

IMF - Global Financial Stability Report - autumn 2010

In the wake of the recent U.S. structured finance "rating crisis" and recent European sovereign downgrades, many are asking whether credit rating agencies (CRAs) play a useful role in the market and whether their credit risk assessments are accurate. Because the current degradation of sovereign balance sheets raises very real concerns about their creditworthiness, and hence, how it is measured by credit ratings, this chapter will focus on sovereign debt ratings. One key concern is whether rating downgrades destabilize financial markets, since they are embedded in many regulations and private contracts, particularly when downgrades cross into noninvestment-grade categories. This chapter shows that CRA attempts to avoid volatile ratings by using smoothing practices actually make ratings more prone to procyclical "cliff effects," which in turn are amplified by the way that ratings are used as sell triggers. Much of this was apparent in the structured credit market debacle, but sovereign ratings are also prone to cliff effects.

Despite the recent criticism leveled at CRAs, they play a significant role in the marketing of fixed-income instruments, with most investors requiring that their fixed-income holdings have a credit rating. Sovereigns seek ratings so that they and their private sector borrowers can access global capital markets and attract foreign investment. More recently, ratings of structured products have been a key factor in the development of the originate-to-distribute model, since the ability to obtain cost-efficient funding depended on getting the highest possible long-term rating (AAA/Aaa). Also, with more than 70 CRAs globally (Annex 3.1), issuing credit ratings apparently has been a good business. This chapter will focus only on the "big three"—Fitch Ratings, Moody's Investors Service, and Standard & Poor's (S&P)—because their sovereign rating coverage dwarfs that of the others, and because they maintain a longer history of ratings (Box 3.1).

According to the theoretical literature, CRAs potentially provide information, monitoring, and certification services. First, since investors do not often know as much as issuers about the factors that determine credit quality, credit ratings address an important problem of asymmetric information between debt issuers and investors. Hence, CRAs provide an independent evaluation and assessment of the ability of issuers to meet their debt obligations. In this way, CRAs provide "information services" that reduce information costs, increase the pool of potential borrowers, and promote liquid markets. This implies that market prices are influenced by rating actions, and that CRA opinions can be important from a financial stability perspective. In theory, CRAs also provide valuable "monitoring services" through which they influence issuers to take corrective actions to avert downgrades via "watch" procedures. These implicitly insert a contract between the issuer and the CRA where the former implicitly promises to undertake specific actions to mitigate the risk of a downgrade (Boot, Milbourn, and Schmeits, 2006).

Although monitoring services can be useful, rating downgrades can lead to knock-on and spillover effects that destabilize financial markets (Box 3.2). These problems stem from the "certification" role played by ratings when they are embedded in regulatory capital requirements and thresholds, and in triggers in various financial contracts. For example, prudential regulations typically allow for less capital or reserves to be held against highly rated, fixed-income instruments. Central banks depend on ratings to determine which securities can serve as collateral for their money market operations. Suitability standards, such as those that constrain money market investments, are often based on rating thresholds. In these ways ratings influence institutional demand and market liquidity, and serve as buy-sell triggers. The strength of the three CRAs' roles is empirically assessed below.

The structured finance credit rating debacle, which was covered in some detail in the April 2008 *Global Financial Stability Report*, shows how ratings can run amok. In that event, the contention that ratings represent accurate default risk metrics was brought into question by the sheer volume and intensity of the multiple downgrades of U.S. mortgage-related structured finance securities in the wake of the crisis. For example, Figure 3.1 shows that over three-quarters of all private-label residential mortgage-backed securities issued in the United States from

Note: This chapter was written by a team headed by John Kiff, and comprised of Allison Holland, Michael Kisser, Sylwia Nowak, Samer Saab, Liliana Schumacher, Han van der Hoorn, and Ann-Margret Westin, with research support from Yoon Sook Kim and Ryan Scuzzarella.

Box 3.1. The Global Credit Rating Agency Landscape

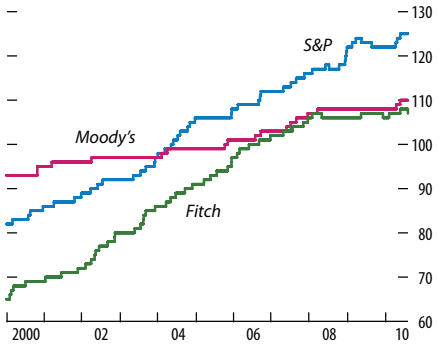
This box shows why the three major credit rating agencies surpass all others in global scope. In particular, their coverage of sovereigns is by far the largest.

When most think of credit rating agencies (CRAs) they think of the "big three" of Fitch Ratings, Moody's, and Standard & Poor's (S&P). Still, Annex 3.1 lists 74 CRAs worldwide. In the United States, the Securities and Exchange Commission recognizes 10 of these as nationally recognized statistical rating organizations (NRSROs), which are listed in the table below. Similarly, the European Central Bank recognizes the big three as well as DBRS as "external credit assessment institutions," while in Japan the big three as well as the two Japanese CRAs that also are NRSROs are considered "designated rating agencies" by the Financial Services Agency.

However, only the big three CRAs are truly global and broad in their product coverage ("global-full spectrum"), the rest being either regional or product-type specialists. Also, their sovereign rating coverage dwarfs that of the others. For example, LACE Financial rated only 59 sovereigns as of July 30, 2010, whereas S&P rated 125, Moody's 110, and Fitch 107 (see figure). They also have reasonably long histories of sovereign ratings, which is required for the empirical analysis of the chapter. For example, at the beginning of 2000, Moody's rated 93 sovereigns, S&P 82, and Fitch 65, whereas the two Japanese NRSROs rated only about 20 (Alsakka and ap Gwilym, forthcoming).

Note: This box was prepared by John Kiff and Ann-Margret Westin.

Total Number of Sovereigns Rated by the Three Major Credit Rating Agencies



Sources: Fitch; Moody's; and Standard & Poor's.
Note: For 2010, data through July 31, 2010.

U.S. Nationally Recognized Statistical Rating Organizations (as of August 10, 2010)

Credit Rating Agency	Head Office	Rating Scope	Number of Sovereigns Rated	Business Model	Internet Home Page
A.M. Best Company, Inc.	United States	Global-Insurance	n.a.	Issuer-Pay	www.ambest.com
DBRS	Canada	Global-Corporates and Structured Finance	n.a.	Issuer-Pay	www.dbrs.com
Egan-Jones Rating Company	United States	Global-Corporates	n.a.	User-Pay	www.egan-jones.com
Fitch Ratings	United Kingdom and United States	Global-Full Spectrum	107	Issuer-Pay	www.fitchratings.com
Japan Credit Rating Agency, Ltd.	Japan	Japanese-Full Spectrum	35	Issuer-Pay	www.jcr.co.jp
LACE Financial Corp.	United States	U.S. Corporates, Global Banks, & Sovereigns	59	User-Pay	www.lacefinancial.com
Moody's Investors Service	United States	Global-Full Spectrum	110	Issuer-Pay	www.moodys.com
Rating and Investment Information, Inc.	Japan	Japanese-Full Spectrum	46	Issuer-Pay	www.r-i.co.jp
Realpoint LLC	United States	U.S.–Structured Finance	n.a.	User-Pay	www.realpoint.com
Standard & Poor's (S&P)	United States	Global-Full Spectrum	125	Issuer-Pay	www.standardandpoors.com

Sources: U.S. Securities Exchange Commission (www.sec.gov/divisions/marketreg/ratingagency.htm); and rating agency websites.
Note: "Full spectrum" includes banks and other corporations, insurance companies, sovereigns, and structured finance.

Box 3.2. Spillover Effects of Sovereign Rating Downgrades

This box summarizes a working paper by Arezki, Candelon, and Sy (forthcoming) that examines the spillover effect of selected European sovereign rating downgrades during the 2007–10 period. The main finding is that rating downgrades have statistically significant spillover effects across countries and financial markets. The form of the spillover effect depends on linkages between countries.

The euro area crisis highlights the interdependence between different financial markets. This crisis has seen sovereign credit rating downgrades, widening of sovereign credit default swap (CDS) spreads, and pressures on stock markets. Did credit rating news in one country have an impact on financial markets in other euro area countries? Indeed, financial markets throughout the euro area have been under pressure, although credit rating actions were concentrated in a few countries such as Greece, Ireland, Portugal and Spain.

Arezki, Candelon, and Sy (forthcoming) assess the impact of sovereign rating news on various financial markets across countries in the euro area. The analysis uses daily sovereign CDS spreads and stock market indices, including banking and insurance subindices. This approach fully captures the interdependence between financial markets and allows for identifying which markets and countries are the most affected by any given downgrade. The main result is that sovereign rating downgrades impact not only the financial markets in the country subject to the downgrade but also other euro area countries. For instance, Austrian CDS spreads and stock market indices moved sharply following the downgrades of Baltic countries, while the Austrian credit rating remained unchanged. One possible channel of this spillover effect is the exposure of Austrian banks to the Baltic countries.

Note: This box was prepared by Rabah Arezki and Amadou Sy.

2005 to 2007 that were rated AAA by S&P are now rated below BBB-, that is, below investment grade.[1] While downgrades are expected to some extent, a large number of them—in particular when they involve several notches at the same time or when the downgrading takes place within a short period after issuance or after another downgrade—are evidence of rating failure. This chapter looks at such sovereign rating failures to form a view about the reliability of sovereign ratings, and hence whether policies governing their use should be altered as a result.

The chapter will start with a primer on credit rating definitions and principles, and then review the various ways that ratings have become embedded in regulations and private contracts. It will then describe how CRAs actually assess sovereign credit risk, and present various empirical tests used to assess sovereign rating accuracy and information value. The chapter will close with some policy suggestions aimed at mitigating these cliff effects and their impact.

Basic Rating Definitions and Principles

A credit rating measures the relative risk that an entity or transaction will fail to meet its financial commitments, such as interest payments and repayment of principal, on a timely basis.[2] These relative risks are mapped into discrete rating grades that are

[1]For more on the history and meaning of the "investment-grade" distinction, see Fons (2004).

[2]A sovereign is typically deemed to default when it fails to make timely payment of principal or interest on its publicly issued debt, or if it offers a distressed exchange for the original debt. Default events do not usually include the failure to repay debt owed to other governments and official creditors, including the IMF and World Bank. S&P measures default risk in terms of default probability whereas Moody's ratings measure expected loss. Fitch rates issuers on a default probability basis and instruments on an expected loss basis. Hence, in theory, Moody's ratings should diverge from Fitch's and S&P's on the same issuer according to variations in loss severity, as the expected loss can be approximated by the product of the default probability and expected loss severity. However, in practice, there is little divergence, particularly among investment-grade ratings.

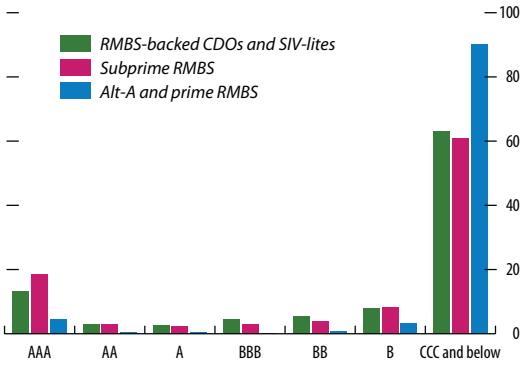
usually expressed in terms of alphabetic identifiers. For example, from the most creditworthy to the least, Fitch and S&P use AAA, AA, A, BBB for investment-grade long-term credit risk, and BB, B, CCC, CC, C and D for "speculative" long-term credit risk (see Table 3.1 for Moody's scales).[3] Modifiers are attached to further distinguish and rank ratings within each of the broader classification—Fitch and S&P use pluses and minuses (e.g., AA+ and AA-) and Moody's uses numbers (Aa1 and Aa3).[4]

CRAs typically signal in advance their intention to consider rating changes. For example, Fitch, Moody's, and S&P all use negative "review" or "watch" notifications to indicate that a downgrade is likely within the next 90 days. They use a negative "outlook" notification to indicate the potential for a downgrade within the next two years (one year in the case of speculative-grade credits).[5]

Although the CRAs do not explicitly quantify their scales, they do provide ex-post summaries of defaults by rating grades (Table 3.1).[6] Furthermore, in their structured finance methodologies, they have revealed their target default probabilities and loss

Figure 3.1. Ratings of AAA-Rated U.S. Mortgage-Related Securities

(In percent of S&P's originally rated 2005–07 issuance as of July 31, 2010)



Source: Standard & Poor's.
Note: RMBS = residential mortgage-backed security; CDO = collateralized debt obligation; and SIV = structured investment vehicle.

[3]The CRAs sometimes distinguish between local and foreign currency obligations, with the gap usually in favor of the former, reflecting the sovereign's greater access to local currency. Although such gaps are still frequently found among Fitch and S&P ratings, these distinctions are now infrequent among Moody's ratings (Moody's, 2010a).

[4]The discussion here centers on long-term debt rating scales. Those for short-term obligations tend to be simpler. For example, Moody's has three "Prime" grades that roughly map into the 10 long-term investment-grade notches. There are also differentiated scales for municipal securities and preferred shares, as well as a plethora of specialized ratings, such as "loss given default assessments" and "bank financial strength ratings" (Moody's, 2010c). Bank financial strength ratings measure the likelihood that a bank will require assistance from third parties, including central banks and governments.

[5]For example, between June 26, 1989 and March 31, 2010, S&P published 74 negative sovereign CreditWatch notices, 51 of which were followed by downgrades within an average of six weeks. Over the same period, 212 negative outlooks were followed by 118 downgrades within an average of six months. Also, 404 stable outlooks were followed by 82 upgrades and only 30 downgrades, and 202 positive outlooks by 143 upgrades and no downgrades.

[6]It should be kept in mind that Moody's default data include only 13 sovereign defaults since 1998. Of the 108 sovereigns that Moody's currently rates, 39 have been added since 1998. Also, according to Moody's, two-thirds of the 1983–2009 sovereign defaults were for unrated sovereigns.

Table 3.1. Long-Term Senior Debt Rating Symbols

			Moody's Five-Year Default Rates (1983–2009) *(in percent)*		
Interpretation	Fitch and S&P	Moody's	Idealized	Corporate	Sovereign
Highest quality	AAA	Aaa	0.003	0.086	
High quality	AA+	Aa1	0.031		
	AA	Aa2	0.068		
	AA–	Aa3	0.142	0.247	
Strong payment capacity	A+	A1	0.261		
	A	A2	0.467		
	A–	A3	0.730	0.806	0.000
Adequate payment capacity	BBB+	Baa1	1.100		
	BBB	Baa2	1.580		
	BBB–	Baa3	3.050	2.027	2.437
Likely to fulfill obligations, ongoing uncertainty	BB+	Ba1	5.280		
	BB	Ba2	8.410		
	BB–	Ba3	11.860	11.444	8.079
High-risk obligations	B+	B1	16.120		
	B	B2	20.710		
	B–	B3	27.050	26.240	10.572
Vulnerable to default	CCC+	Caa1	36.314		
	CCC	Caa2	48.750		
	CCC–	Caa3	69.821		
Near or in bankruptcy or default	CC	Ca			
	C	C		52.350	32.458
	D	D			

Sources: Fitch; Moody's; and Standard & Poor's.

rates. Examples of such target rates are the Moody's "idealized" default rates in Table 3.1, based on historical default rates over various horizons, and analyst judgments. The "idealization" process is intended to ensure the appropriate smooth ranking of default probabilities by rating.

However, the CRAs make it clear that they do not strive to maintain constant default rates for given letter grades (see Table 3.2). According to Cantor and Mann (2003, p. 6), this would require changing ratings "en masse in response to changes in cyclical conditions." More recently, the CRAs have made a special effort to clarify this point, both because of criticisms made of their quantitative models and because some uses of ratings by investors and the authorities, including central banks, are not fully compatible with this risk ordering idea. For example, the Basel II standardized approach is based on AAA/AA ratings implying a 0.10 percent probability of defaulting during a three-year period, single-A ratings a 0.25 percent probability, 1.00 percent for BBB instruments, and so on (BCBS, 2006, Annex 2). The Eurosystem's high "credit threshold" for collateral posted against monetary policy operations is defined in terms of a BBB- rating that implies a 0.40 percent one-year default probability (ECB, 2008a).

The CRAs also make it clear that rating stability is another key rating objective. In particular, they aim to make sure that the higher rating grades are more stable than the lower rating categories. S&P (2010b) recently formalized this objective in its revamped criteria. The stability criterion is driven by an aversion of market participants to the potential transaction-related costs that would be triggered by frequent rating changes (Cantor and Mann, 2007). The portfolio governance rules, regulations, and contractual triggers that would be associated with such transactions are discussed in the next section.

One of the ways in which CRAs achieve this stability is by rating "through the cycle" (TTC) instead of at a "point in time" (PIT), thereby attempting to avoid procyclicality. In more practical terms, ratings are typically based on the ability of an issuer to survive a cyclical trough. Once the rating is set, it is changed only in response to changes in fundamental factors, such as secular trends or unanticipated policies. Under this approach, a recession or tightening of

Table 3.2. Rating Agency Statements on What Their Ratings Are Designed to Measure

Fitch	"Credit ratings express risk in relative rank order, which is to say they are ordinal measures of credit risk and are not predictive of a specific frequency of default or loss. Fitch Ratings' credit ratings do not directly address any risk other than credit risk, ratings do not deal with the risk of a market value loss on a rated security due to changes in interest rates, liquidity and other market considerations."
Moody's	"There is an expectation that ratings will, on average, relate to subsequent default frequency, although they typically are not defined as precise default rate estimates. Moody's ratings are therefore intended to convey opinions of the relative creditworthiness of issuers and obligations...Moody's ratings process also involves forming views about the likelihood of plausible scenarios, or outcomes—not forecasting them, but instead placing some weight on their likely occurrence and on the potential credit consequences. Normal fluctuations in economic activity are generally included in these scenarios, and by incorporating our views about the likelihood of such scenarios, we give our ratings relative stability over economic cycles and a sense of horizon."
Standard & Poor's	"Standard & Poor's credit ratings are designed primarily to provide relative rankings among issuers and obligations of overall creditworthiness; the ratings are not measures of absolute default probability. Creditworthiness encompasses likelihood of default and also includes payment priority, recovery, and credit stability."

Sources: Fitch (2010b); Fons (2002); and Standard & Poor's (2009).

global liquidity should not, in itself, trigger a downgrade.[7] PIT assessments tend to focus on the current conditions of an issuer.

More recently CRAs have started to develop new methodologies that shift the criteria from a TTC to a "through-a-crisis" focus. For example, the new S&P (2010b) credit stability criterion uses hypothetical stress scenarios as benchmarks for calibrating the criteria across different sectors and over time. Each scenario is constructed to be relevant for a specific rating grade. The scenario for a particular grade reflects the level of stress that issuers rated in that grade, say AAA, should be able to withstand without defaulting. In contrast to the TTC rating approach, this new stability criterion allows for hypothetical scenarios affecting fundamental components. In this way, ratings become measures of risk conditional on the realization of extreme scenarios (rather than conditional on the continuation of the current macroeconomic situation).

In either case, however, investors and policymakers should be aware that TTC ratings may appear to underperform the short-term predictive power of PIT assessments. Some of these implications are discussed in greater depth below.

[7]One of the challenges of producing TTC ratings is differentiating fundamental versus cyclical factors. These challenges are similar to those faced by central banks that try to maintain their monetary policy targets.

The Evolving Roles and Regulation of Credit Ratings and Credit Rating Agencies

Credit ratings have long played a significant role in the marketing of fixed-income instruments to investors, but over time they have also found their way into various rules and regulations.[8] As a result, rating downgrades often lead to knock-on and spillover effects that can have destabilizing impacts on financial markets (Box 3.2). Country authorities have taken a two-pronged approach to mitigate these effects by seeking to reduce regulatory reliance on ratings, and by regulating the CRAs directly. In their efforts to reduce rating reliance, regulators are, however, recognizing that some smaller and less-sophisticated investors will have to continue to rely on ratings.

Central banks continue to use credit ratings rather mechanistically in their rules that determine the securities they accept as collateral in liquidity provision and market operations, and the margin or haircut applied thereon. For example, the U.S. Federal Reserve's Term Auction Lending Facility mandates that only asset-backed securities rated AAA/Aaa by two or more of the major nationally recognized statisti-

[8]For a history of the rating business in the United States, going back to Moody's *Analyses of Railroad Investments* published in 1909, and the increased regulatory reliance on ratings, see Cantor and Packer (1994), Partnoy (1999), and Federal Register (2008).

cal rating organizations (NRSROs) are eligible for nonrecourse loans. Similarly, the European Central Bank (ECB) requires that marketable assets meet "high credit standards" in order to be eligible as collateral, in turn requiring at least one BBB- credit rating from one of the four accepted "external credit assessment institutions" (with the exception of asset-backed securities, for which the credit rating at issuance should be AAA) (ECB 2008a, 2008b, and 2009).

Joint Forum Stocktaking Confirms Extensive Use of Credit Ratings in Regulations

A Joint Forum (2009) survey of the use of credit ratings by its member regulatory authorities in the banking, securities, and insurance sectors found that the reliance on credit ratings was widespread in regulations and legislation for the banking and securities sector, with more limited use in the insurance sector.[9] Credit rating references were found to be more prevalent in U.S. and Canadian legislation and regulations relative to those in Europe, Japan, and Australia. In the United States, the Securities and Exchange Commission (SEC) first used the term NRSRO in 1975 in its net capital rule for broker-dealers as an objective benchmark to prescribe capital charges for different types of debt securities.

Since its introduction in 1975, the NRSRO designation, and hence credit ratings, have found their way into other federal securities laws and regulations and elsewhere (Federal Register, 2008). For instance, insurance codes set by state regulators rely on ratings to determine appropriate investments for insurance companies. By 1997, the number of references to NRSROs in U.S. securities legislation had risen to more than 1,000, while there were some 400 citations each in pension, banking, and real estate legislation (Partnoy, 1999). This is consistent with the findings of the Joint Forum (2009) report that an important role of credit ratings is to identify or classify assets, usually in the context of eligible investments or permissible asset concentrations. Ratings were also found to play key roles in evaluating the risks associated with assets purchased as part of securitization offerings, and in determining disclosure requirements, as well as prospectus eligibility and exemptions. Still, the Joint Forum report found that the most common use of credit ratings is for regulatory capital.

Private Sector Contracts Are Also Highly Dependent on Credit Ratings

An SEC (2003) survey found that most mutual funds, pension funds, insurance companies, private endowments, and foundations use credit ratings to comply with internal by-law restrictions or investment policies that require certain minimum credit standards. External credit ratings constitute objective and easily verifiable third-party opinions. These institutions were also found to use ratings to ensure compliance with various regulatory requirements, even though they typically conducted their own credit analysis for risk management purposes, or to identify pricing discrepancies for their trading operations. Moreover, fixed-income portfolio manager performance is often benchmarked against standard indices that are usually constructed on the basis of credit ratings. For example, only investment-grade-rated (BBB-/Baa3 or better) instruments make it into the Barclays Euro Government Bond indices, implying that a bond downgrade to below the investment-grade threshold often triggers immediate liquidation.[10]

The SEC (2003) survey also noted the widespread use of "ratings triggers" in financial contracts that terminate credit availability or accelerate credit obligations in the event of specified downgrades. Moody's (2001) describes three instances of rating-trigger-related "mutual assured destruction" during 2000–01, including the collapse of Enron. In that case, trading and other financial agreements gave counterparties the right to demand cash collateral, and lenders the right to demand repayment of outstanding loans once Enron's credit rating declined below certain levels (Moody's, 2001).[11]

[9]The Joint Forum (2009) survey included 26 agencies representing 12 different countries, as well as five responses referring to international frameworks.

[10]In some cases, the liquidation requirement is actually triggered when an investment-grade issuer is just above the threshold (e.g., BBB-/Baa3 or BBB/Baa2) but on review for a downgrade, or when one of the relevant CRAs has issued the equivalent of a negative outlook.

[11]The other examples of rating-trigger-related corporate failures given in Moody's (2001) involve PG&E Corporation (and

Rating triggers in over-the-counter (OTC) derivative contracts also played a role in the near collapse of AIG. As long as the insurer and its financial products subsidiary (AIG FP) were rated AAA, the terms and conditions of their contracts did not oblige them to post collateral against these positions.[12] However, after the first downgrade (to AA+ in March 2005) they had to start posting collateral. As the crisis unfolded their mounting collateral posting requirements, coupled with liquidity strains from their securities lending unit, eventually became unsustainable. By September 2008, given the potentially disastrous systemic knock-on effects of a failure to post collateral, the U.S. authorities decided to supply AIG with liquidity assistance, which, at one point, exceeded $100 billion.

Country Authorities Working to Reduce Rating Reliance

Authorities are currently seeking to reduce regulatory reliance on credit ratings, while being mindful of not returning to inferior alternatives, such as risk-insensitive systems (for example, the Basel I framework), or model-based systems that are not yet sufficiently robust. The Financial Stability Board is currently working on proposals to reduce reliance on external ratings in rules and regulations, in line with the Group of Twenty (G-20) Declaration at the Toronto 2010 Summit (G-20, 2010) in June. In the United States, the financial sector reform bill signed into law in July 2010 explicitly requires all federal agencies to review and modify regulations to remove references to or reliance upon credit ratings and substitute an alternative standard of creditworthiness.[13] In Japan, the Financial Services Agency recently adopted a proposal aimed at reducing the use of credit ratings in the regulatory and supervisory framework.

Other options being explored include forcing institutions to conduct appropriate due diligence (with consequences for their required capital holdings if they fail to do so). In particular, institutional investors are being required to follow the International Organization of Securities Commissions' (IOSCO) best due diligence practices. There are also considerations to require CRAs to comply with the IOSCO Code of Conduct in order for their ratings to be used for Basel II purposes, and to reduce cliff effects in the standardized approach. Such a cliff effect occurs when there is a downgrade, in particular below the investment-grade threshold, which in turn has an additional liquidity effect due to the need to meet regulatory requirements. Similarly, central banks should to an increasing extent rely on internal credit assessments.

Notwithstanding the current move toward reducing the regulatory reliance on credit ratings, CRAs and their ratings will inevitably continue to play important roles in financial markets. For example, smaller and less-sophisticated investors that do not have the economies of scale to do their own credit assessments will inevitably continue to rely extensively on external information, including credit ratings. Hence, any steps to reduce overreliance on ratings should differentiate both according to the size and sophistication of the institution, and the instruments concerned, making sure there is sufficient information for most users to do their own due diligence. Also, it will be important that the authorities continue efforts to improve CRA procedures, including transparency, governance, and mitigation of conflicts of interest.

Recent and Ongoing Measures to Regulate Credit Rating Agencies

At the 2009 London Summit, the G-20 leaders agreed that the regulatory oversight of CRAs, consistent with the IOSCO (2008) credit rating *Code of Conduct Fundamentals*, should be established by end-2009 (G-20, 2009). As a result, national and regional initiatives have been undertaken or are under way to strengthen oversight of CRAs, with some of them initiated even before the crisis. The SEC has adopted or proposed amendments to its rules on NRSROs to increase transparency, tighten oversight, and reduce conflicts of interest. In the European Union (EU), regulation introducing oversight and supervision of CRAs entered into force in December 2009, and there is a proposal for the new European Securities and Markets Authority to be in charge of registration and

its subsidiary Pacific Gas and Electric Company), and Southern California Edison Company.

[12]For more on the risk management of OTC derivative contracts, see IMF (2010, Chapter 3).

[13]In August 2010, the U.S. banking regulators published an advance notice of proposed rulemaking that invited comments on credit rating alternatives for their regulations.

supervision of CRAs. In Australia and in Japan, new regulatory frameworks for CRAs became effective in January and April 2010, respectively, while in Canada, a proposal to introduce regulatory oversight of CRAs was published for comment in July 2010. Many other G-20 countries have also introduced or are in the process of introducing new regulatory oversight for CRAs. (See Box 3.3 for a summary of the major initiatives and proposals.)

One particular ongoing concern is the conflict of interest arising from the issuer-pay model. Currently, almost all credit ratings are paid for by the issuer of the instruments, which might give issuers incentives to shop around for the best rating. In theory, a CRA should have a vested interest, including under an issuer-pay model, in providing reliable ratings on an ongoing basis in order to maintain its "reputational capital" (Partnoy, 1999; Bergevin, 2010). However, the significant increase over time in references to credit ratings in rules and regulations, combined with limited competition, has affected the business model of CRAs by creating a more or less "guaranteed market" with few incentives to compete on the basis of rating quality. Furthermore, some would argue that an investor-pay model, where ratings are paid for by investors through subscription fees, can also give rise to conflicts of interest.[14] A large investor could try to influence CRAs to provide lower initial ratings (which tend to provide higher yields), while institutions that can only invest in highly rated instruments due to regulatory requirements might pressure a CRA to assign an investment-grade rating on a particular security (Partnoy, 2009).

The U.S. financial sector reform legislation signed into law in July 2010 will require several agencies to conduct studies of various proposals to deal with the conflict of interest arising from the issuer-pay model. One of the proposals to be studied (by the SEC) would establish a Credit Rating Agency Board to assign NRSROs the rating of specific structured finance products to thwart rating shopping by issuers. The SEC and Government Accountability Office are also charged with reviewing alternative CRA business models and compensation schemes. In addition, a 2009 SEC amendment to the rules relating to the oversight of the NRSROs explicitly prohibits anyone who participates in determining a credit rating from also participating in any fee negotiations or discussions.[15] A more radical approach to the incentive conflict problem could be to move to performance-based pay, where only a smaller fee would be paid up front while the remaining fee would be earned over time, based on the ultimate accuracy of the rating. Alternatively, Partnoy (2009) has suggested that CRAs be required to hold stakes in certain instruments that they rate highly, although it is unlikely that all CRAs would have sufficient capital to support potential losses on such an asset.

Self-Improvement Measures Taken by the Credit Rating Agencies

Since the onset of the financial crisis, the major CRAs have also taken steps themselves to improve rating quality, transparency, and corporate governance. They have conducted rating reviews across asset classes, revised ratings where necessary, and updated criteria and models with new factors and assumptions. Several CRAs have improved staff training, including by teaming up with high-ranking universities. There has been a further emphasis on the publication of the underlying research, as well as revamped external websites to enhance transparency. For example, to better signal concerns about potential rating pressures for structured finance products, some CRAs started publishing early indicators of a potential rating change over the next one- to two-year period. Given the intensification of the global financial crisis, there has been a particular emphasis on publishing better and more accessible research on sovereign creditworthiness.

In order to enhance governance, the major CRAs have revised their codes of conduct to conform to the updated IOSCO code of May 2008, focusing on the

[14]In the mid-1970s, as credit ratings started to become more important because of the increasing reliance on ratings in rules and regulations, NRSROs stopped selling ratings to investors and instead began charging the companies that issue the debt they rate (Partnoy 1999 and 2009). Still, some of the smaller and more focused current NRSROs, such as Egan-Jones Rating Company (which focuses on corporates), Lace Financial Corporation, and Realpoint, LLC (which focuses on structured finance), base themselves on subscription-based business models.

[15]For more information see www.sec.gov/rules/final/2009/34-59342-secg.htm.

Box 3.3. Developments in the Regulation of Credit Rating Agencies

In the wake of the recent financial crisis, many countries have taken steps to enhance the regulatory framework for credit rating agencies, focusing on registration, enhanced oversight, and transparency. Some countries are also moving toward reduced reliance on credit ratings in rules and regulations. This box examines the regulatory steps taken in this regard in the United States, Europe, Japan, Australia, and Canada.

United States

The U.S. *Credit Rating Agency Reform Act of 2006* gave the Securities and Exchange Commission (SEC) authority to regulate credit rating agencies (CRAs). The act's overriding purpose is to improve rating quality for the protection of investors by fostering accountability, transparency, and competition in the credit rating industry and by establishing a transparent registration system and oversight regime for nationally recognized statistical rating organizations (NRSROs).

The SEC has introduced new measures aimed at reforming CRA transparency and disclosure standards and reducing potential conflicts of interest, given the current "issuer-pay" compensation model. NRSROs are required to publish a description of their rating methodologies and procedures, plus certain rating performance analytics.[1] In addition, issuers will have to share with the other NRSROs all information they provide to any particular NRSRO with respect to structured credit product ratings.

On July 21, 2010, the *Dodd-Frank Wall Street Reform and Consumer Protection Act* was signed into law.[2] The bill increases internal controls for CRAs, requires greater transparency of rating procedures and methodologies, and provides the SEC with greater enforcement and examination tools regarding NRSROs. In particular, the bill:

- Requires each NRSRO to have a Board of Directors of which at least half (but not fewer than two) are independent members, some of whom must be users of NRSRO ratings;
- Introduces the possibility of exposing NRSROs to liability as experts;[3]
- Suggests that the SEC should exercise its rulemaking authority to prevent conflict of interest arising from employees of NRSROs providing services to issuers of securities that are unrelated to the issuance of credit ratings;
- Requires each NRSRO to establish, maintain, enforce, and document an internal control structure to govern implementation of and adherence to policies, procedures, and methodologies for determining ratings;
- Asks the SEC to adopt rules that require each NRSRO to establish, maintain, and enforce policies and procedures that clearly define and disclose the meaning of any ratings symbol and apply this symbol consistently for all instruments for which the symbol is used;
- Requires the removal of certain statutory references to credit ratings and requires that all federal agencies review and modify regulations to remove references to or reliance upon credit ratings and substitute an alternative standard of creditworthiness; and

Note: This box was prepared by Ann-Margret Westin.

[1]The first set of rules adopted by the SEC in 2007 required CRAs to include certain rating performance statistics (for example, historical downgrade and default rates within each major rating category). These rules were refined in 2009. In addition, CRAs have to make publicly available, in machine-readable form on a six-month delay, rating action histories for a randomly selected 10 percent of issuer-paid ratings for each class of credit rating for which they have issued 500 or more issuer-paid ratings. Furthermore, all such data must be made publicly available on a 12–month lag. See www.sec.gov/rules/final/2009/34-59342-secg.htm and www.sec.gov/rules/final/2009/34-61050-secg-nrsro.htm.

[2]For a summary of the bill, see Davis Polk (2010). For the full text of the bill, see www.govtrack.us/congress/bill.xpd?bill=h111-4173.

[3]The bill nullifies Rule 436(g) under the Securities Act, which exempts credit ratings provided by NRSROs from being considered part of a registration statement prepared or certified by a person within the meaning of Sections 7 and 11 of the act. As a result, registrants, in order to include an NRSRO credit rating in a registration statement, would be required to file the NRSRO's consent along with the registration statement, in turn exposing the NRSRO to liability for material misstatements or omissions with respect to such included ratings. As a result, the major CRAs have already announced that they will not allow debt issuers to include their ratings in prospectuses or debt registration statements for now. The SEC has given issuers six months to comply with the new regulations, currently allowing them to omit credit ratings from the registration statements.

Box 3.3 *(continued)*

- Establishes an SEC Office of Credit Ratings that will put in place fines and other penalties for violations by NRSROs, administer SEC rules with respect to NRSRO practices in determining ratings, and conduct an annual examination of each NRSRO.

The bill also asks for a number of studies. In particular, the SEC is required to undertake a study of the credit rating process for structured finance products and the conflicts of interest associated with the issuer-pay and subscriber-pay models, the range of metrics to determine the accuracy of ratings, and alternative means of compensation to create incentives for accurate ratings. The SEC must also study the feasibility of establishing an independent organization to assign NRSROs to determine credit ratings for structured finance products, and create and oversee a Credit Rating Agency Board that would assign a "qualified" CRA to rate each new issue of asset-backed securities, unless it determines that an alternative system would be more appropriate.[4] The SEC is also asked to provide a study of the independence of NRSROs and how this affects ratings issued, while the Government Accountability Office must conduct a study of alternative means for compensating CRAs in order to create incentives to provide more accurate ratings.

Europe

The European Commission (EC) in November 2008 established a group chaired by Jacques de Larosière to examine possible improvements to supervision and regulation of CRAs. As a result, a first set of regulations on CRAs was adopted in September 2009, responding to what was seen as major weaknesses in the activities of CRAs. The regulation, which came into force in December 2009, has introduced mandatory registration for all CRAs operating in the European Union (EU). Specific treatment can be extended on a case-by-case basis to CRAs operating exclusively from non-EU jurisdictions provided that their countries of origin have established regulatory and supervisory frameworks as stringent as the one now put in place in the EU.

Registered CRAs will have to comply with a comprehensive set of rules to make sure that ratings are not affected by conflicts of interest; that CRAs remain vigilant, ensuring the quality of the rating methodology; and that they act in a transparent manner. The regulation also includes a surveillance regime for CRAs. In particular, CRAs:

- May not provide advisory services;
- Will not be allowed to rate financial instruments if they do not have sufficient quality information on which to base their ratings;
- Must disclose the models, methodologies, and key assumptions on which they base their ratings;
- Must differentiate the ratings of more complex products by adding a specific symbol; and
- Should have at least two independent directors on their boards whose remuneration cannot depend on the business performance of the rating agency.

According to the regulation, the Committee of European Securities Regulators will be in charge of the registration and day-to-day supervision of the

[4]The board would be made up of a majority of investors, and of at least one issuer representative, one rating agency representative, and one independent member. The probability of a CRA being chosen could depend on past performance. The board would also be able to prevent CRAs from charging unreasonable fees for providing a rating.

quality and integrity of the ratings process and reducing conflicts of interest.[16] Some have updated their fee policies to ensure a clearer separation between their core rating activities and other business development activities, and clarified the definition of "ancillary business," that is, what is not included in the core rating business. Also, and in line with the recently approved U.S. financial sector reform bill, several CRAs have implemented "look-back" reviews, that is, reviews of historical ratings when a rating analyst leaves a CRA to join an organization that was previously rated by the particular analyst.

[16]See IOSCO (2009). For examples of the CRAs' own codes of conduct, see www.fitchratings.com/jsp/creditdesk/CodeOfConduct.faces?context=3&detail=1 and www.standardandpoors.com/ratings/policies-and-code-of-conduct/en/us.

Box 3.3 *(concluded)*

CRAs. However, in June 2010 the EC proposed the introduction of centralized EU oversight of CRAs, entrusting the proposed new European Securities and Market Authority (ESMA) with exclusive supervisory powers over CRAs registered in the EU, making CRAs the first type of institution subject to centralized EU supervision. Under the proposal, the ESMA will have powers to request information, launch investigations, and perform on-site inspections. Furthermore, issuers of structured finance products will have to provide all other interested CRAs with access to the information they give to the CRA rating their product, enabling the other CRAs to issue unsolicited ratings.[5]

Japan

Similarly, in Japan, the *Financial Instruments and Exchange Act* was amended in June 2009 to introduce a set of regulations on CRAs, effective April 2010, to ensure (1) independence of CRAs from security issuers; (2) quality and fairness in the rating process; and (3) transparency for market participants. Among several measures, the Financial Services Agency (FSA) of Japan has introduced a registration system that requires registered CRAs to disclose rating policies in a timely manner, take measures to control quality and prevent conflict of interests, and avoid providing advisory services. Unregistered CRAs are still allowed to operate, but in using their credit ratings, issuers must notify investors of the fact that those ratings are issued by unregistered CRAs effective October 2010.[6] The Japanese FSA also recently adopted a proposal to amend the relevant cabinet office ordinances with the aim of reducing the use of credit ratings in the regulatory and supervisory framework, effective January 2011.

Australia and Canada

Since January 1, 2010, CRAs in Australia have been required to hold an Australian Financial Services license, requiring them to, among other things, manage conflicts of interests, have in place risk management systems, lodge annual compliance reports, and disclose procedures, methodologies, and assumptions for ratings. Measures have also been taken to enhance CRA exposure to legal liability.[7]

Meanwhile, in July 2010 the Canadian Securities Administrators published for comment a proposal aimed at introducing securities regulatory oversight of credit rating organizations. Central to the proposal is the requirement for credit rating organizations to apply to become a "designated rating organization" to allow their ratings to be used for various purposes within securities legislation. Once designated, a rating organization would be required to have and enforce a code of conduct that is based on the code published by IOSCO, and to establish policies and procedures to manage conflicts of interest, prevent inappropriate use of information, appoint a compliance officer, and make an annual filing.[8]

[5]For further information go to http://ec.europa.eu/internal_market/securities/agencies/index_en.htm.

[6]For further information go to www.fsa.go.jp/en/news/2010/20100331-4.html.

[7]For further information go to www.asic.gov.au/asic/asic.nsf.

[8]For further information go to www.securities-administrators.ca/aboutcsa.aspx?id=915.

The Way Forward

Despite efforts so far, conflicts of interest are still present and will require a two-pronged approach. There seem to be few viable alternative compensation models to an issuer-pay business model in the foreseeable future. In particular, it is not realistic to return to a general investor-pay subscription model. Already as of 1999, 95 percent of all CRA revenue stemmed from issuer fees, reflecting in large part a desire to solve the free-rider problem of nonsubscribers accessing the rating information (Partnoy, 1999). Excluding nonsubscribers would be even more difficult in today's information society. Meanwhile, the more radical compensation model of performance pay could be desirable looking ahead, in line with similar initiatives in banking supervision to have compensation be more closely related with

risks undertaken. However, this business model, as well as a model based on more "skin in the game," is unlikely to gain momentum for the time being. Tellingly, no current regulatory initiatives seriously question the issuer-pay compensation model. Rather, the issuer-pay model should be expected to stay for now and the way forward should be a combination of gradually reducing the regulatory reliance on credit ratings to the extent possible, while at the same time enhancing CRA regulatory oversight. Reducing regulatory reliance on ratings will diminish some of the incentives to shop for ratings, since CRAs will no longer face a captive market but rather will need to compete on the basis of rating accuracy. The decline in regulatory reliance on ratings might in turn spur a decline in the use of ratings in private contracts as well. Still, credit ratings are likely to continue to serve an important role given the substantial existing information and analytical capacity asymmetries, in particular for smaller investors and illiquid instruments. Therefore, enhanced oversight of the CRAs will be essential, in line with IOSCO's new objectives and principles (IOSCO, 2010).

Enhanced competition would need to be combined with tougher measures against rating shopping. Although there are more than 70 CRAs globally, only three to four cover the lion's share of the global market. While there are few formal barriers for entering the market, fixed costs are still high given the information needs and the importance of company reputation, in turn stifling entry. Looking ahead, enhanced competition would be welcome, although there are a few caveats. Empirically, event studies suggest that the arrival of an additional CRA to a market has led to lower rating quality/higher ratings, in part reflecting enhanced opportunities for rating shopping, while not enhancing the information content.[17] Hence, measures should be taken to discourage such rating shopping, including requiring disclosure about any preliminary ratings. Also, establishing a public CRA, in the spirit of enhancing competition, could entail its own conflicts of interest if it rated sovereigns, given the importance of sovereign credit ratings.

Regulators will also need to decide on how to treat CRA liability issues. In the United States, civil suits against CRAs have so far been unsuccessful, as ratings qualify as "opinions" rather than expert recommendations. This is set to change with the recent Dodd-Frank Act (see Box 3.3), which subjects CRAs to greater liability. Similar measures have also been taken in Australia. With significant regulatory reliance on credit ratings, users could argue that legal recourse for rating inaccuracy is warranted. This might, however, become less important as the regulatory reliance on ratings declines over time.

[17]For example, see Becker and Milbourn (2010) and Bongaerts, Cremers, and Goetzmann (2009).

Fundamental Sovereign Credit Risk Analysis

The CRAs are constantly fine-tuning their rating methodologies. It would appear that sovereign ratings have performed somewhat better through this crisis than they did during the Asian crisis. However, the analysis below suggests that there is still scope to capture more effectively some factors that have been significant in shaping the current crisis—namely, the level of short-term debt and the size of contingent liabilities.

Overall, the CRAs base their ratings on key economic factors coupled with some qualitative assessment (particularly of the nature of institutions and the political environment). These factors are described in significant detail in their publications, and much of the underlying information is in the public domain. This suggests that internal-ratings models could readily use the equivalent information. However, the analysis below of various tests of quantitative, model-driven ratings suggests that the qualitative judgmental element is an equally important rating driver.

Overview of Sovereign Rating Approaches

The CRAs determine sovereign ratings based on a range of quantitative and qualitative factors with which they gauge a country's ability and willingness to repay its debt (Box 3.4). The limited number of actual sovereign defaults constrains back-testing of any empirical model when trying to determine a sovereign's creditworthiness (and associated probability of default). Another factor that differentiates the rating of sovereigns over and above other instrument ratings is the concept of "willingness to pay." This reflects the potential risk that even if the sovereign had the *capacity* to pay, it may not be *willing* to pay if it judges the social or political costs to be too great. To capture this element, CRAs assess a range of qualitative factors such as institutional strength,

Table 3.3. Key Factors in Sovereign Credit Rating Assessments

Fitch	Macroeconomic policies, performance, and prospects; structural features of the economy; public finances; external finances
Moody's	Economic strength; institutional strength; financial strength of the government; susceptibility to event risk
Standard & Poor's	Political risk; economic structure; economic growth prospects; fiscal flexibility; general government debt burden; offshore and contingent liabilities; monetary flexibility; external liquidity; external debt burden

Sources: Fitch (2010a); Moody's (2008); and Standard and Poor's (2008).

political stability, fiscal and monetary flexibility, and economic vitality. In addition, a country's track record of honoring its debt is an important indicator of willingness to pay, a characteristic that is otherwise difficult to measure objectively. These qualitative factors are complemented with quantitative factors such as the level of debt and official international reserves, the composition of debt (in particular the currency composition and maturity profile), and the extent of the debt burden, for example as captured in interest costs.

The fundamental analysis that feeds the rating process is comparable across the CRAs, but it differs in the way individual factors are classified and grouped, and in the specificity with which the CRAs present their methodologies. Hence, although the overall information sets are similar, Fitch and Moody's classify their indicators under four categories of key factors, while S&P uses nine (Table 3.3 and Box 3.4).[18] The CRAs use public information as well as additional information supplied to them by the country authorities. Though sometimes difficult to achieve, a quality check of the data is an important part of the country risk analysis.

While CRAs make a significant effort to use clear and objective criteria to "score" country performance under each factor, the actual rating is not a mechanical weighting of these factors. As with their other ratings, sovereign ratings are determined by a rating committee that takes into account all the material presented by a relevant analyst and then forms a judgment of where the country stands relative to other credits.[19] This judgment is necessary in order to take into account the relevance of political and institutional factors; it also allows the ratings to adapt to changing circumstances, permitting the relative weight of various factors—for example, levels of domestic and short-term debt—to vary over time.

Also, rating methodologies themselves evolve over time and continue to be adjusted in response to new information and economic developments. These adjustments tend to be small, and CRAs are generally careful to keep the number of rating changes triggered by these adjustments to a minimum. However, following the Asian crisis—when the CRAs were widely criticized for failing to spot at an early stage the build-up of risks that would affect a sovereign—there was a more significant review and change in their sovereign risk methodologies. For example, Fitch adjusted its approach to more closely monitor countries with a high proportion of short-term external debt, even if overall debt levels were modest, while S&P increased its focus on external obligations, including private sector external debt and contingent liabilities.

The quality of CRA ratings would benefit from better sovereign data and transparency. Indeed, S&P has been assigning a greater weight to issues of transparency and the quality of fiscal data since the Asian crisis.[20] Global data transparency initiatives could give CRAs and other market participants access to key sovereign data in a more relevant and timely fashion. Also, such initiatives would help identify the current information gaps, including on contingent

[18]Between 1998 and 2008 the number of key factors considered by S&P has varied between 8 and 10.

[19]The rating committee typically also draws on staff from other rating teams, sectors, and regions. One reason is to help ensure consistency across rating groups. Another reason is to mitigate the risk of conflict of interest or "issuer capture" referred to above. Since the onset of the crisis, some CRAs have taken steps to further broaden their rating committee representation. In fact, one element of the EU proposals on regulating CRAs is to ensure the regular rotation of rating committee members to mitigate issuer capture. This will need to be carefully balanced, though, so that the benefits of consistency through time are not lost.

[20]For more analysis on the importance of disclosing fiscal risks from exogenous shocks and the realization of explicit or implicit contingent obligations of the government, see Everaert and others (2009).

Box 3.4. An Overview of the Factors Influencing Sovereign Credit Ratings

This box reviews the quantitative and qualitative factors that the credit rating agencies (CRAs) use to gauge a country's ability and willingness to repay its debt. Although there are significant overlaps in which factors the CRAs use, there are differences in the relative weightings of factors, not only between CRAs, but also between types of countries.

Each of the three main credit rating agencies identifies a set of key drivers that determine its sovereign credit ratings (see table). For each driver, a range of quantitative and/or qualitative criteria is assessed.[1] While there may be some differences in how these factors are characterized, there is significant overlap in the underlying information that is considered. For example, all of the CRAs consider GDP per capita, the level and composition of debt, financial resources of the government, some indicator of political stability, and the robustness of the financial sector to be key criteria. However, there are some differences—for example, Fitch and S&P appear to put relatively more weight on contingent liabilities of the government, while Moody's appears to put more relative weight on event risk. Similarly, both Moody's and S&P appear to consider a broader set of factors when considering the general economic structure, including income discrepancies, competitiveness and protectionist factors (S&P), and innovation and investment in human capital (Moody's), relative to Fitch. The relevance of each factor also depends on the (type of) country under review. For instance, the level of reserves is a much more prominent factor for countries operating under a fixed or managed exchange rate regime.

Each CRA differs slightly in how the information is aggregated into a single rating. For example, Fitch uses a sovereign rating model that combines the criteria into

Note: This box was prepared by Allison Holland, Samer Saab, and Han van der Hoorn.

[1]These criteria are described more fully in each of the CRAs' criteria reports. See Fitch Ratings (2010a), Moody's Investor Services (2008), and Standard & Poor's (2008).

Indicators Used by the Credit Rating Agencies (By Type of Driver)

	Fitch	Moody's	Standard & Poor's
Macro/ Growth	GNP and GDP per capita Consistency of monetary and fiscal policies and credibility of policy framework Sustainability of long-term growth path Competitiveness of economy Depth of demand for local currency Capacity to implement countercyclical macro policies Composition of current account	GDP per capita Long-term volatility of nominal output Scale of economy Integration in economic and trade zones	Rate and pattern of economic growth Range and efficiency of monetary policy tool Size and composition of savings and investment Money and credit expansion Price behavior in economic cycles
Public finance	Financial assets of government Sovereign net foreign asset position Volatility of government revenue Revenue-to-GDP ratio Medium-term public debt dynamics Credibility of fiscal policy framework and institutions Financial flexibility	Government's ability to raise taxes, cut spending, sell assets, or obtain foreign currency (e.g., from official reserves)	General government revenue, expenditure, and surplus/deficit trends Compatibility of fiscal stance with monetary and external factors Revenue-raising flexibility and efficiency Expenditure effectiveness and pressures Size and health of nonfinancial public sector enterprises
Debt	Size and growth rate of public debt Composition of government debt (maturity, interest rate, and currency) Contingent liabilities of government Maturity and currency structure of foreign liabilities and assets Distribution of foreign liabilities and assets by sector Payment record	Level of debt Interest payments and revenues Structure of government debt Debt repayment burden Debt dynamics Conditional liabilities Financial depth	General government gross and net debt; gross and net external debt Share of revenue devoted to interest Debt service burden Maturity profile and currency composition Access to concessional funding Debt and breath of local capital markets
Financial sector	Macro-prudential risk indicators Quality of banking sector and supervision Contingent liabilities of banking sector Foreign ownership of banking sector	Financial sector strength Contingent liabilities of banking sector	Robustness of financial sector Effectiveness of financial sector

a single score that is calibrated to derive a long-term issuer default rating. However, the actual rating can deviate from this model-generated rating, given that the model may not capture all relevant developments; this is where the rating committee, a body within each CRA, can provide additional value. In the case of Moody's, each of the four key factors is rated on a five-point scale, which is combined in three stages. In the final stage, economic resilience—factors (1) and (2)—and financial robustness—factors (3) and (4)—are blended with peer group information and any missing information considered relevant. In the case of S&P, each of the nine key factors is ranked on a six-point scale but there is no precise formula for combining the scores. In addition, trends in each of the factors, as well as their absolute level, are also taken into account in the final rating.

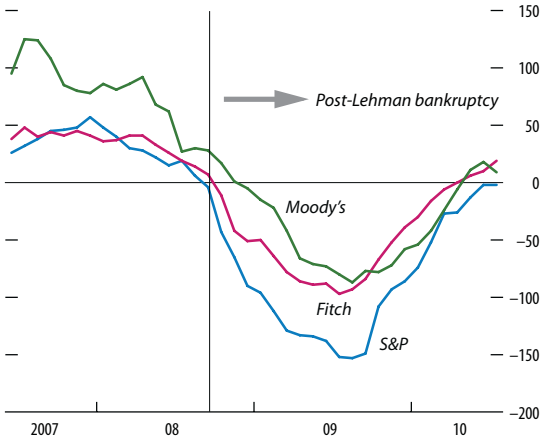
In general, the CRAs assign both foreign currency and local currency ratings to each sovereign. While there is often little difference between the two in the case of advanced economies, in the case of emerging and developing economies the local currency rating is generally higher. This difference can be attributed to the fact that it is often easier to repay local currency debt than foreign currency debt, given the central bank's ability to create the local currency. When determining the foreign currency rating, a country's ability to convert domestic assets into foreign currency is critical to the assessment. A well-developed domestic capital market that facilitates local-currency, long-term funding at relatively low cost will likely translate into a higher local currency rating. In contrast, countries that are members of a currency union, with fully dollarized economies, or with a fixed peg, tend to have identical local and foreign currency ratings. When market analysts refer to "the sovereign rating," they are generally referring to the long-term foreign currency rating.

Indicators Used by the Credit Rating Agencies (By Type of Driver) ***(concluded)***

	Fitch	Moody's	Standard & Poor's
External finances	Capital flows Willingness of nonresidents to extend credit and purchase domestic assets Share of current output devoted to servicing external debt Reserve adequacy	Balance of payments dynamics Foreign exchange reserves Access to foreign exchange External vulnerability indicator	Impact of fiscal and monetary policies on external accounts Structure of the current account Composition of capital flows Reserve adequacy
Exchange rate	Exchange rate regimes Indexation and dollarization	Exchange rate regime Indexation and dollarization	Compatibility of exchange-rate regime and monetary goals Indexation and dollarization
Political	War risk Legitimacy of political regime Relations with international community and institutions	War Degree of political consensus Political chaos Efficiency and predictability of government action Level of policy transparency	Stability and legitimacy of political institutions Popular participation in political processes Orderliness of leadership succession Transparency in economic policy decisions and objectives Public security Geopolitical risk
Structural/ Institutional	Effectiveness of government Openness to international capital flows and trade Strength of business environment, human capital, and governance Rule of law, respect for property rights Control of corruption	Transparency Level of innovation Investment in human capital Respect for property rights	Efficiency of public sector Institutional factors, such as central bank independence Timeliness, coverage, and transparency in reporting Competitiveness and profitability of private sector
Other	Savings ratios Openness of economy to trade Commodity dependence	Earthquakes Hurricanes Speculative crises	Prosperity, diversity, and degree of market orientation Income discrepancies Protectionism and other nonmarket influences Labor flexibility

Note: This table generalizes the presentation of indicators by the CRAs into a common set of key drivers.
Sources: Fitch (2010a); Moody's (2008); and Standard & Poor's (2008).

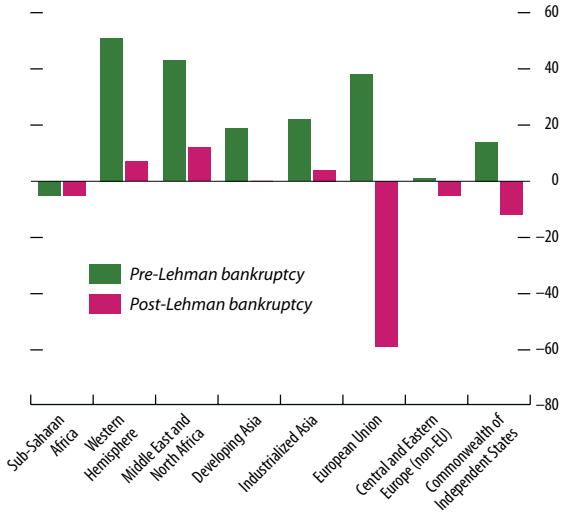
Figure 3.2. Sovereign Rating and Outlook Changes
(Rolling 12-month sum of rating actions)



Sources: IMF staff calculations using data from Fitch; Moody's; and Standard & Poor's.

Note: This figure shows rolling 12-month cumulative sums of all sovereign foreign currency rating actions across all sovereign ratings by each credit rating agency. For example, each positive (negative) rating outlook is +1 (–1); a review for upgrade (downgrade) is +2 (–2); and a positive (negative) rating change is +3 (–3).

Figure 3.3. Moody's Sovereign Rating and Outlook Changes by Selected Regions, May 2007–June 2010
(Cumulative sum of rating actions)



Source: IMF staff calculations using data from Moody's.

Note: No changes were made for the United States and Canada during this period. This figure shows cumulative sums of all sovereign foreign currency rating actions for the period May 2007–June 2010. For example, each positive (negative) rating outlook is +1 (–1); a review for upgrade (downgrade) is +2 (–2); and a positive (negative) rating change is +3 (–3). The regional groupings are based on the conventions used in the IMF's *World Economic Outlook*.

liabilities settled in national currency and those outside the scope of the monetary and central government authorities.[21]

A number of empirical studies have tried to infer the relative weighting of each factor in determining the ultimate rating (see Jaramillo, 2010, for a summary). A crude analysis that simply counts the frequency with which specific words appear in methodological papers might give a tentative indication of their relative importance to each CRA. This would suggest that Moody's attaches a relatively higher weight to the ability to pay, whereas Fitch and S&P focus relatively more on willingness to pay. Moody's also seems to attach greater weight to debt levels, particularly relative to official international reserves and other sovereign assets—that is, the affordability of debt—than the other two agencies. S&P appears to deviate from the other agencies in that it seems to attach relatively high weight to political risks and to monetary policy. (See Box 3.5 for a review of recent empirical work that has sought to reverse engineer ratings from fundamental inputs.)

Sovereign Credit Ratings through the Recent Crisis

One defining feature of the recent crisis is that it originated in advanced economies, with many emerging market economies relatively insulated. Overall, the sovereign rating environment began deteriorating significantly in the spring of 2008, with a strong downward trend evident starting in September 2008 (Figure 3.2). However, as also discussed in Chapter 1, this overall development masks important differences in performance across regions and levels of income (Figure 3.3). For example, Latin America and the Middle East continued to register positive rating actions both before and after the Lehman Brothers bankruptcy, as many emerging markets have demonstrated considerable resilience through the crisis. On

[21]An example of data transparency initiatives is the IMF's International Reserves and Foreign Currency Liquidity Data Template, which includes in its two-dimensional framework (foreign currency resources and the net demand on these resources) both predetermined and contingent demands on foreign currency resources resulting from short-term foreign currency liabilities and off-balance-sheet activities of national authorities.