

Special Comment

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Sovereign Default and Recovery Rates, 1983-2007

This report is Moody's fourth annual study of sovereign bond issuers and their default experience. Broad conclusions include the following:

- There were no sovereign defaults in 2007. Low default volume over the past couple of years reflects strong global economic growth over the same period.
- Historically, sovereign ratings have been more stable at higher rating levels and modestly more stable than their corporate counterparts. Sovereign upgrades have far outnumbered downgrades in the last couple of years.
- Sovereign default rates have generally been lower than corporate default rates, with the differences widening at lower rating categories and at longer time horizons. However, the differences are not likely significant as the overall size of the sovereign sample is small and as default risk is highly correlated across emerging market sovereigns.
- Issuer-weighted recovery rates on defaulted sovereign bonds, as measured by trading prices observed at the time of default or distressed exchange, have averaged 54 percent overall.
- Historically, sovereign ratings have proved to be accurate predictors of relative default risk, providing consistent relative rank ordering. All sovereign defaulters have had ratings of Ba2 or less within one year prior to default. The historical average one-year accuracy ratio for the sovereign ratings has been 94.3 percent for the period 1983-2007.



Moody's Investors Service

Sovereign Default and Recovery Rates, 1983-2007

Introduction

With increasing numbers of emerging market countries gaining access to international capital markets in recent years, the number of Moody's-rated sovereign issuers has grown significantly. This year's sovereign default study examines the rating histories and default experience of 107 Moody's-rated governments issuing local and/or foreign currency bonds. Exhibit 1 provides the Moody's-rated countries included in this study, in chronological order of the year in which their initial Moody's bond ratings were assigned. Exhibit 2 shows the geographical coverage of Moody's bond ratings by showing each region's current share of sovereign issuers.

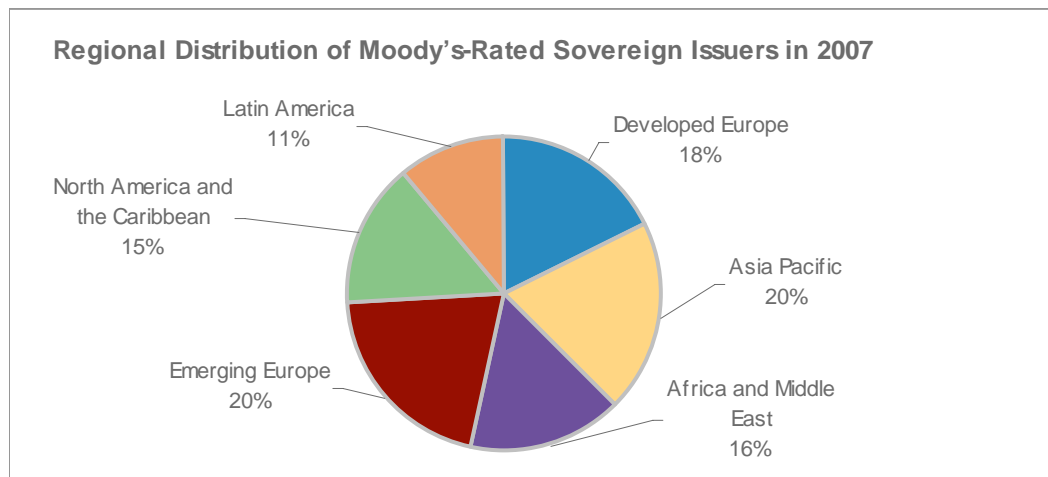
Exhibit 1

Coverage of Moody's-Rated Sovereign Issuers Included in the Study

1949-1985	14	United States, Panama, Australia, New Zealand, Denmark, Canada, Venezuela, Austria, Finland, Sweden, Norway, United Kingdom, Japan, Switzerland
1986	7	Argentina, Brazil, Germany, Italy, Malaysia, Netherlands, Portugal
1987	1	Ireland
1988	5	Belgium, China, France, Hong Kong, Spain
1989	3	Iceland, Luxembourg, Thailand
1990	2	Mexico, Micronesia
1991	0	
1992	1	Turkey
1993	5	Colombia, Czech Republic, Philippines, Trinidad & Tobago, Uruguay
1994	7	Barbados, Bermuda, Greece, Indonesia, Malta, Pakistan, South Africa
1995	2	Israel, Poland
1996	11	Bahrain, Bulgaria, Jordan, Kazakhstan, Kuwait, Lithuania, Mauritius, Russia, Saudi Arabia, Slovenia, United Arab Emirates
1997	12	Bahamas, Costa Rica, Croatia, Ecuador, El Salvador, Guatemala, Lebanon, Macao, Moldova, Oman, Romania, Turkmenistan
1998	16	Bolivia, Cyprus, Dominican Republic, Honduras, Hungary, India, Jamaica, Korea, Nicaragua, Papua New Guinea, Paraguay, Peru, Singapore, Slovakia, Taiwan, Ukraine
1999	10	Belize, Chile, Egypt, Estonia, Fiji Islands, Iran, Latvia, Morocco, Qatar, Tunisia
2000	0	
2001	1	Botswana
2002	0	
2003	0	
2004	2	Bosnia and Herzegovina, Suriname
2005	2	Mongolia, Vietnam
2006	2	Armenia, Azerbaijan
2007	4	Albania, Belarus, Cambodia, St. Vincent & the Grenadines
Total	107	

Sovereign Default and Recovery Rates, 1983-2007

Exhibit 2



Data and Methodology

While Moody's assigns a variety of sovereign ratings, this study focuses on sovereign bond ratings, as represented by either the sovereign's foreign currency bond rating or domestic currency bond rating. Specifically, we define the sovereign's rating history by tracking its lowest bond rating over time, regardless of whether the lowest rating is on a foreign currency or a domestic currency bond.^{1,2} The lowest rating is selected because Moody's views it as the most meaningful indicator of a sovereign's likelihood of default on any one of its bonds.

On occasion, when a sovereign retires all of its outstanding domestic or foreign currency debt, its bond ratings are withdrawn. Sovereigns, however, tend to have their ratings withdrawn considerably less frequently than corporates, whether on a specific issue or on all debt simultaneously. Unlike corporates, countries do not merge, shift from public to private sources of capital, or go bankrupt.

Moody's defines both sovereign and corporate issuers as defaulting when one or more of the following conditions are met:

1. There is a missed or delayed disbursement of interest and/or principal.
2. A distressed exchange occurs, where:
 - a) the issuer offers bondholders a new security or package of securities that amounts to a diminished financial obligation such as new debt instruments with a lower coupon or par value; or
 - b) the exchange had the apparent purpose of helping the borrower avoid a "stronger" event of default (such as a missed interest or principal payment).

¹ In most cases, the domestic currency bond rating is the same or higher than the sovereign's foreign currency bond rating. This is due to the fact that a government could generally "print" money if necessary to service domestic currency debts and avoid default, but may find it very difficult, at times, to obtain sufficient foreign exchange to service foreign currency debt. In a few cases, however, such as Japan, India, Russia (before the 1998-crisis and default), and Brazil (during the post-Russian crisis contagion), the country's foreign currency bonds may be rated higher than its domestic currency bonds. As emerging economies mature, it is very likely that foreign currency and domestic currency bond ratings will converge.

² The study constructs a country bond rating history using the following methodology: If there is an outstanding foreign currency government bond, the rating history is constructed from the lower of the foreign currency or local currency government issuer rating. If there is no outstanding foreign currency government bond, then the rating history is constructed from the local currency rating.

Sovereign Default and Recovery Rates, 1983-2007

For the purpose of calculating issuer-based default rates, we define a sovereign default to have occurred whenever a country defaults on any of its bonds. Moody's does not consider missed interest payments that are fully cured within contractually-specified grace periods to be defaults.³

Trends in Credit Quality: The Distribution of Sovereign Ratings

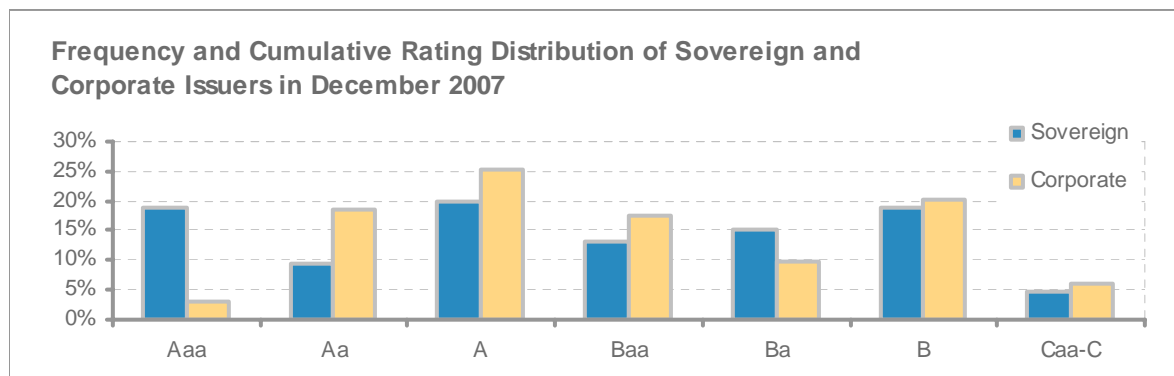
As shown in Exhibit 3, by end-2007 the share of investment-grade sovereign issuers had declined to a little over 60 percent. While all rated sovereign issuers in 1983 were investment-grade, recently riskier emerging market countries have gained access to debt markets. Indeed, as more sovereign issuers have obtained Moody's ratings, the rating distribution for sovereign issuers has become more similar to that of the corporate bond issuers. The sovereign rating mix had drifted upward between 2000 and 2006, as the share of sovereigns rated investment grade had climbed modestly. However, in 2007 the mode of the rating distribution shifted from A back to Baa, as the share of Aaa and A-rated sovereigns declined slightly.

Exhibit 3

Rating Distribution of Sovereign Issuers on Selected Dates							
	1983	1990	1995	2000	2005	2006	2007
Aaa	75%	40%	20%	14%	20%	20%	19%
Aa	25%	30%	26%	14%	5%	9%	9%
A	0%	17%	20%	13%	24%	22%	20%
Baa	0%	3%	13%	21%	14%	14%	13%
Ba	0%	7%	15%	17%	15%	15%	15%
B	0%	3%	7%	16%	17%	17%	19%
Caa-C	0%	0%	0%	5%	4%	4%	5%
Investment-Grade	100%	90%	78%	62%	64%	64%	61%
Speculative-Grade	0%	10%	22%	38%	36%	36%	39%

The ratings distributions of sovereign and corporate bond issuers as of December 2007 are compared in Exhibit 4. The share of issuers rated Aaa is substantially larger for sovereigns than for corporates, while the proportion of sovereigns rated Aa is smaller. Otherwise, the distributions of sovereign and corporate ratings are fairly similar.

Exhibit 4



³ It has been observed that a cured grace-period default is often shortly followed by a debt restructuring with most of the loss to investors borne at this stage by means of a lengthening of maturity and/or a lowering of the coupon. However, as in the case of Peru, a fully cured default within its grace period yields virtually no losses to investors when it is not followed by another default event shortly afterwards. In other words, the presence of a grace-period default often signals the materialization of a future loss, but is not a necessary condition on its own.

Sovereign Default and Recovery Rates, 1983-2007

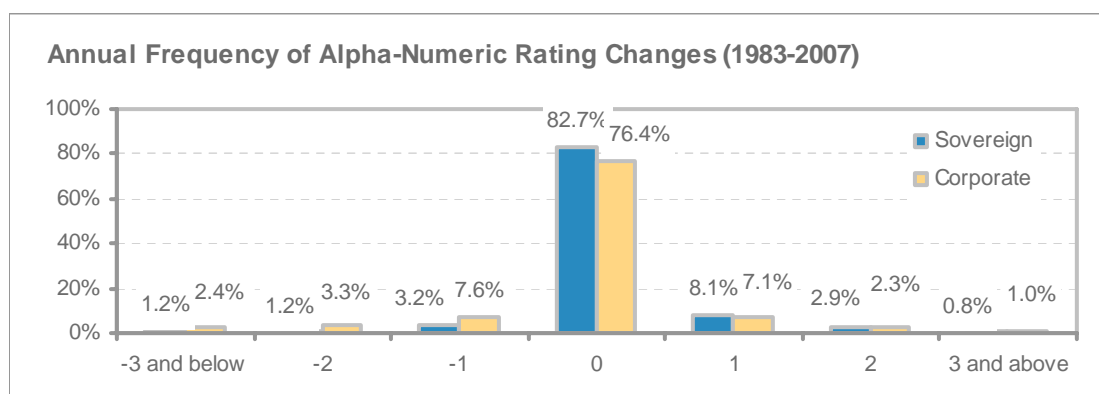
Trends in Credit Quality: Rating Actions and Migration Rates

Changes in the distribution of ratings over time can occur because issuers with higher or lower-than-average ratings enter or leave the sample and/or because of shifts in the credit quality of individual issuers. This section focuses exclusively on rating changes.

In 2007, 20 sovereigns had their local or foreign currency bond ratings changed, representing 19 percent of the total rated sample. Reflecting the strong economic and credit quality environment in 2006 and the first half of 2007, only two sovereigns experienced downgrades. Eighteen sovereigns experienced upgrades and these can be divided into four groups of countries. The largest group consists of oil-exporting countries, which have benefited from consistently high oil prices since 2004. The six Gulf countries have experienced significant strengthening of their public and external finances: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. The second group consists of six Asian issuers, reflecting their continually improving economic environment since the Asian crisis: China, Hong Kong, Indonesia, Japan, Korea, and Macao. The third group includes four Latin American and Caribbean countries: Brazil and Peru were upgraded reflecting strong improvements in their government debt profiles; and Belize and the Dominican Republic, in light of improved liquidity following the government external debt restructuring in the former, and the recovery from the 2003 banking and currency crisis in the later. The last group of upgraded countries includes Cyprus and Malta, in light of their joining the Euro zone on January 1, 2008.

Exhibit 5 displays the historical annual average frequency of alpha-numeric rating changes for sovereign and corporate issuers for the period 1983-2007. For example, an indication of "0" indicates no rating change over the twelve-month period. The category "-1" indicates a single-notch alpha-numeric rating downgrade, while "+2" indicates a two-notch alpha-numeric rating upgrade. The vertical axis indicates the percentage of issuers in each category.

Exhibit 5



Sovereign ratings have been modestly more stable on average than corporate ratings, with 82.7 percent of sovereigns experiencing no rating changes in a typical year vs. 76.4 percent of corporates. On average, sovereign issuers have experienced an 11.3 percent probability (8.1 percent upgrade + 3.2 percent downgrade) of a single alpha-numeric rating change over a one-year horizon. Changes in excess of a single alpha-numeric rating change, whether upgrades or downgrades, have been extremely infrequent over a one-year horizon.

Rating migration matrices present a more complete picture of changes in credit quality over time. Exhibit 6 shows average annual whole-letter rating migration rates since 1983. Each cell in the matrix shows the weighted average fraction of issuers who held a given row's rating at the beginning of the measurement period and the column rating at the end of the period, including defaults and withdrawn ratings (WR).⁴

⁴ Ratings are withdrawn when all of an issuer's debt matures, is called or converted, or is retired through some other orderly market function (such as M&A). Moody's does not generally withdraw a rating following a sovereign default.

Sovereign Default and Recovery Rates, 1983-2007

The largest values in the transition matrix are along the diagonal, as the most likely rating for an issuer at the end of a given year during the period 1983-2007 is the rating with which the issuer began the year. By contrast, those elements that are off the diagonal reflect transitions to higher (the triangle below the diagonal) or lower (the triangle above the diagonal) rating categories within one year. The further one moves away from the diagonal, the smaller the migration rates, reflecting a relatively low historical frequency of issuers moving across more than one rating category during the course of a year.

Exhibit 6

Average One-Year Rating Migration Rates (1983-2007)

Rating to:										
Rating from:	Aaa	Aa	A	Baa	Ba	B	Caa-C	D	WR	
Sovereign Issuers										
Aaa	97.23%	2.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.08%	
Aa	5.87%	92.14%	0.98%	0.00%	0.00%	0.00%	0.00%	0.00%	1.02%	
A	0.00%	4.08%	92.80%	2.28%	0.36%	0.00%	0.00%	0.00%	0.48%	
Baa	0.00%	0.00%	10.06%	84.65%	2.76%	0.93%	0.00%	0.00%	1.60%	
Ba	0.00%	0.00%	0.00%	7.91%	84.59%	5.75%	0.29%	0.96%	0.50%	
B	0.00%	0.00%	0.00%	0.00%	5.63%	85.45%	4.15%	3.13%	1.65%	
Caa-C	0.00%	0.00%	0.00%	0.00%	0.00%	26.37%	49.75%	23.88%	0.00%	
Corporate Issuers										
Aaa	87.78%	7.78%	0.47%	0.00%	0.02%	0.00%	0.00%	0.00%	3.95%	
Aa	0.99%	86.70%	7.01%	0.27%	0.05%	0.02%	0.00%	0.01%	4.96%	
A	0.07%	2.77%	86.72%	5.12%	0.54%	0.11%	0.02%	0.02%	4.63%	
Baa	0.04%	0.20%	5.07%	83.42%	4.33%	0.92%	0.29%	0.19%	5.54%	
Ba	0.01%	0.05%	0.40%	5.75%	73.67%	8.57%	0.67%	1.13%	9.75%	
B	0.01%	0.04%	0.16%	0.36%	5.53%	73.11%	5.74%	4.48%	10.57%	
Caa-C	0.00%	0.03%	0.03%	0.17%	0.60%	9.83%	59.03%	16.40%	13.91%	

As shown in Exhibit 6, rating changes on average have been somewhat less frequent for sovereign issuers than for corporate issuers. For example, on average, only 2.7 percent of Aaa-rated sovereign issuers have been downgraded per year compared to 8.3 percent for Aaa-rated corporate issuers. Sovereign ratings appear more stable than corporate ratings in the other investment-grade rating categories as well, with the differences marginally narrowing as we approach the Baa category. The extensively-documented average stability of sovereign ratings derives from an overwhelmingly lower historical probability of being downgraded within a 12-month period relative to corporate issuers.

Among speculative-grade issuers, sovereign issuers rated Caa-C have experienced a larger number of upgrades than have similarly-rated corporates.⁵ The higher rate of upgrade for the lowest-rated sovereigns reflects the different dynamics of sovereign and corporate ratings: most sovereign issuers that have been assigned Caa ratings received these ratings after they had defaulted. Once their defaults have been cured, most sovereigns are eventually upgraded. In contrast, many corporations that are downgraded to Caa or below ultimately default and have their ratings withdrawn. As a result, the upgrade rate from Caa is lower for corporates than for sovereigns, which almost always continue to be rated after defaulting.

⁵ A smaller sample size can magnify such rating changes.

Sovereign Default and Recovery Rates, 1983-2007

Historical Sovereign Defaults

Reflecting strong and widespread global economic growth in 2007, there were no Moody's-rated sovereign defaults last year.

Exhibit 7 provides a chronological summary of historical sovereign defaults, the bond-default volumes associated with these defaults, and the circumstances surrounding these defaults.⁶

Although our sample begins in 1983, there were no Moody's-rated sovereign bond defaults until 1998.⁷ A mixture of cooling global economic conditions, unfavorable market sentiment after the Asian crisis, and external shocks, as well as an increase in the share of speculative-grade sovereign bond issuers in the mid-1990s, produced four Moody's-rated sovereign bond defaults in 1998 - Russia, Pakistan, Ukraine and Venezuela – and the default of Ecuador in 1999. Interestingly, even though many countries were battered by the currency crisis of 1998, not one country directly affected by the Asian crisis actually defaulted on its government bonds.⁸ The largest default of 1998 was that of Russia as the country suffered a currency, banking and fiscal crisis, as a result of external shocks in the form of weak oil and nonferrous metals prices, unfavorable market sentiment after the Asian crises, and unsustainable government budget policies.

Since 1999, there have been seven additional defaults, led by Argentina's US\$82 billion default in 2001, which spilled over to Uruguay two years later. Appendix I provides more details on events leading to the defaults listed in Exhibit 7, as well as their eventual resolutions.⁹

Exhibit 7

Moody's Rated Sovereign Bond Defaults since 1983

Default Date	Country	Total Defaulted Debt (\$ millions)	Comments
Jul-98	Venezuela	\$270	Defaulted on domestic currency bonds in 1998, although the default was cured within a short period of time.
Aug-98	Russia	\$72,709	Missed payments first on local currency Treasury obligations. Later a debt service moratorium was extended to foreign currency obligations issued in Russia but mostly held by foreign investors. Subsequently, failed to pay principal on MINFIN III foreign currency bonds. Debts were restructured in Aug 1999 and Feb 2000.
Sep-98	Ukraine	\$1,271	Moratorium on debt service for bearer bonds owned by anonymous entities. Only those entities willing to identify themselves and convert to local currency accounts were eligible for debt repayments, which amounted to a distressed exchange.
Jul-99	Pakistan	\$1,627	Pakistan missed an interest payment in Nov 1998 but cured the default subsequently within the grace period (within 4 days). Shortly thereafter, it defaulted again and resolved that default via a distressed exchange which was completed in 1999.
Aug-99	Ecuador	\$6,604	Missed payment was followed by a distressed exchange; over 90% of bonds were restructured.
Jan-00	Ukraine	\$1,064	Defaulted on DM-denominated Eurobonds in Feb 2000 and defaulted on USD-denominated bonds in Jan 2000. Offered to exchange bonds with longer term and lower coupon. The conversion was accepted by a majority of bondholders.
Sep-00	Peru	\$4,870	Peru missed payment on its Brady Bonds but subsequently paid approximately \$80 million in interest payments to cure the default, within a 30-day period.

⁶ While countries may have defaulted on bilateral loans or agency loans, our focus is on sovereign bond defaults.

⁷ Moody's-rated sovereign bond defaults represent about one third of all sovereign bond defaults. Additionally, sovereign defaults on official debt and commercial bank loans have been far more frequent than bond defaults.

⁸ Indonesia came closest to default as it restructured its private loans held under the Paris Club agreement, but its bonds continued to be serviced.

⁹ For the sake of completeness, both Exhibit 7 and Appendix I include the default of Peru which was fully cured within its grace period, but the event does not enter any of the subsequent default calculations.

Sovereign Default and Recovery Rates, 1983-2007

Moody's Rated Sovereign Bond Defaults since 1983

Default Date	Country	Total Defaulted Debt (\$ millions)	Comments
Nov-01	Argentina	\$82,268	Declared it would miss payment on foreign debt in November 2001. Actual payment missed on Jan 3, 2002. Debt was restructured through a distressed exchange offering where the bondholders received haircuts of approximately 70%.
Jun-02	Moldova	\$145	Missed payment on the bond in June 2001 but cured default shortly thereafter. Afterwards, it began gradually buying back its bonds, but in June 2002, after having bought back about 50% of its bonds, it defaulted again on remaining \$70 million of its outstanding issue.
May-03	Uruguay	\$5,744	Contagion from Argentina debt crisis in 2001 led to a currency crisis in Uruguay. To restore debt-sustainability, Uruguay completed a distressed exchange with bondholders that led to extension of maturity by five years.
Apr-05	Dominican Republic	\$1,622	After several grace period defaults (missed payments cured within the grace period), the country executed an exchange offer in which old bonds were swapped for new bonds with a five-year maturity extension, but the same coupon and principal.
Dec-06	Belize	\$242	Belize announced a distressed exchange of its external bonds for new bonds due in 2029 with a face value of U.S.\$ 546.8. The new bonds are denominated in U.S. dollars and provide for step-up coupons that have been set at 4.25% per annum for the first three years after issuance. When the collective action clause in one of Belize's existing bonds is taken into account, the total amount covered by this financial restructuring represents 98.1% of the eligible claims.

Sovereign Cumulative Default Rates

Exhibit 8 presents one-year through 10-year issuer-weighted average cumulative default rates for sovereign and corporate issuers. As in our other default studies, cumulative default rates are calculated by averaging the experiences of issuer cohorts formed at monthly frequencies.¹⁰ By forming and tracking such cohorts of all Moody's-rated issuers at the beginning of every month, we replicate the experience of a portfolio of both seasoned and new-issue bonds purchased in any given month. The dynamic nature of the cohorts allows the estimation of cumulative default risk over multi-year horizons. It also allows for the comparison and averaging of default rates over different periods.

¹⁰ Monthly cohorts have the advantage of capturing rating changes that occur within a calendar year. The default rates are calculated based on cohorts of all issuers holding a given rating at the start of a given month. The cohorts are dynamic in that they change based on whether these issuers leave the cohort due to default or non credit-related reasons (e.g. maturing of debt). While the cohort frequency is monthly, the accumulation periodicity remains 12 months, so that we track default rates over horizons of one year, two years, three years, etc.

Sovereign Default and Recovery Rates, 1983-2007

Exhibit 8

Issuer-Weighted Cumulative Default Rates (1983-2007)

	Year1	Year2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Sovereign										
Aaa	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Aa	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
A	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Baa	0.000%	0.517%	1.087%	1.725%	2.444%	3.198%	3.198%	3.198%	3.198%	3.198%
Ba	0.892%	1.951%	3.780%	5.864%	8.134%	9.799%	12.014%	14.494%	16.490%	18.420%
B	2.801%	5.769%	6.900%	8.720%	10.514%	12.681%	14.496%	16.072%	18.079%	20.832%
Caa-C	22.535%	26.786%	32.418%	32.418%	32.418%	32.418%	32.418%	32.418%	32.418%	32.418%
Investment Grade	0.000%	0.106%	0.220%	0.344%	0.479%	0.616%	0.616%	0.616%	0.616%	0.616%
Speculative Grade	2.650%	4.637%	6.363%	8.247%	10.231%	12.005%	13.989%	16.055%	17.965%	20.051%
All Sovereign	0.775%	1.429%	2.006%	2.629%	3.279%	3.862%	4.390%	4.914%	5.368%	5.817%
Corporate										
Aaa	0.000%	0.000%	0.000%	0.035%	0.078%	0.129%	0.186%	0.191%	0.191%	0.191%
Aa	0.009%	0.021%	0.048%	0.115%	0.183%	0.229%	0.263%	0.291%	0.315%	0.366%
A	0.020%	0.101%	0.241%	0.372%	0.499%	0.637%	0.766%	0.899%	1.015%	1.095%
Baa	0.192%	0.529%	0.943%	1.436%	1.939%	2.428%	2.885%	3.292%	3.674%	4.070%
Ba	1.166%	3.238%	5.835%	8.453%	10.688%	12.713%	14.479%	16.045%	17.471%	18.889%
B	4.663%	10.286%	15.752%	20.574%	25.022%	29.192%	33.068%	36.342%	39.083%	41.238%
Caa-C	17.534%	27.634%	35.913%	42.597%	47.854%	51.384%	53.967%	56.768%	60.881%	66.441%
Investment Grade	0.069%	0.208%	0.397%	0.616%	0.834%	1.045%	1.237%	1.409%	1.564%	1.710%
Speculative Grade	4.478%	9.005%	13.407%	17.285%	20.622%	23.565%	26.146%	28.317%	30.181%	31.826%
All Corporates	1.594%	3.184%	4.689%	5.979%	7.042%	7.939%	8.690%	9.300%	9.803%	10.234%

Importantly, the historical default rates in Exhibit 8 show that Moody's ratings clearly rank-order default risk at any given horizon for both sovereigns and corporates, as the probability of default rises with lower ratings. A comparison between sovereign and corporate default rates shows that sovereign default rates have been, on average, modestly lower than those for their corporate counterparts, except for Baa-rated issuers at three-year or longer horizons.

Recovery Rates of Defaulted Sovereign Issuers

Moody's ratings are statements about the probability of default and the expected loss severity rate (i.e. one minus the expected recovery rate) in case of default. As such, expectations of potential losses in the event of default are an important discriminating factor when comparing similarly rated sovereigns, particularly in the lower end of the rating scale.

Exhibit 9 presents two types of estimates of recovery rates on defaulted sovereign bonds. The first method reports the average, issuer-weighted, trading price on a sovereign's bonds thirty days after its initial missed interest payment. In cases in which the initial default event was the distressed exchange itself, we report the average price shortly before the distressed exchange. Appendix II provides more detail on the sovereign bond prices used to estimate the recovery rates.

Sovereign Default and Recovery Rates, 1983-2007

Exhibit 9

Recovery Rates on Defaulted Sovereign Bond Issuers

Year of Default	Defaulting Country	Average Trading Price** (%of par)	PV*** Ratio of Cash Flows (ratio in %)
2001	Argentina	27	30
2006	Belize	76	NA
2005	Dominican Republic	95	95
1999	Ecuador	44	60
2004	Grenada*	65	NA
2000	Ivory Coast*	18	NA
2002	Moldova	60	95
1999	Pakistan	52	65
1998	Russia	18	50
2000	Ukraine	69	60
2003	Uruguay	66	85
Issuer-Weighted Recovery Rates		54	68
Value-Weighted Recovery Rates		31	38

*Not rated by Moody's at the time of default.

** 30-day post-default price or pre-distressed exchange trading price.

*** Ratio of the present value of cash flows received as a result of the distressed exchange versus those initially promised, discounted using yield to maturity immediately prior to default (Source: Bank of England (2005)).

The second method is based on the ratio of the value of the old securities to the value of the new securities received in exchange, obtained by discounting the promised cash flows using the yield to maturity implicit in the old securities at the time of the announcement of the exchange offer.¹¹ Additionally, we present the average value-weighted recovery rates for the sovereign sample using both methods.

The sample presents recovery estimates for all rated bond defaulters, except Venezuela as we were unable to obtain market quotes on its defaulted domestic currency bonds. The sample also includes estimated recovery rates on two defaulting issuers, Grenada and Ivory Coast, whose bonds were not rated by Moody's.

The two highest recovery rates in our sample follow the Belize and the Dominican Republic defaults in 2006 and 2005, respectively, when corporate recovery rates were generally high and corporate default rates were low.¹² The value-weighted recovery rate estimate is significantly lower than the issuer-weighted recovery rate due to the large Argentinean and Russian defaults that garnered low recovery rates.

While there are some cases where the differences between the two recovery-rate methods (30-day post default price and the PV of cash flows) are significant, the two approaches to estimating recovery values generally produce similar estimates. The material differences in the estimates of recovery rates, wherever present, are mainly caused by the timing of the recovery estimate. For example, in Russia's case, Moody's recorded the default when the payment was missed, whereas the distressed exchange was announced more than a year later, when the yield on the existing bonds was used to estimate net present value reduction. With the announcement of an exchange offer, some uncertainty is resolved and the yield on existing instruments may change, which will affect the present value of the new instruments. Another difference arises because the present value method makes the implicit assumption that the yield curve facing the sovereign is flat (it will have a constant discount rate); whereas, the trading price at default may reflect different expectations.

¹¹ The method of estimated recovery rates is discussed in "Resolving Sovereign Debt Crises: The Market-based Approach and the Role of the IMF," Financial Stability Review, Bank of England, June 2005. Other methods are also discussed in Stuzenneger, F. and J. Zettelmeyer (2005), "Haircuts: Estimating Investor Losses in Sovereign Debt Restructurings, 1998-2005", IMF Working Paper (WP/05/137).

¹² Please see Moody's Special Comment, "Corporate Default and Recovery Study, 1920-2006", February 2007 for a summary of corporate recovery rates.

Sovereign Default and Recovery Rates, 1983-2007

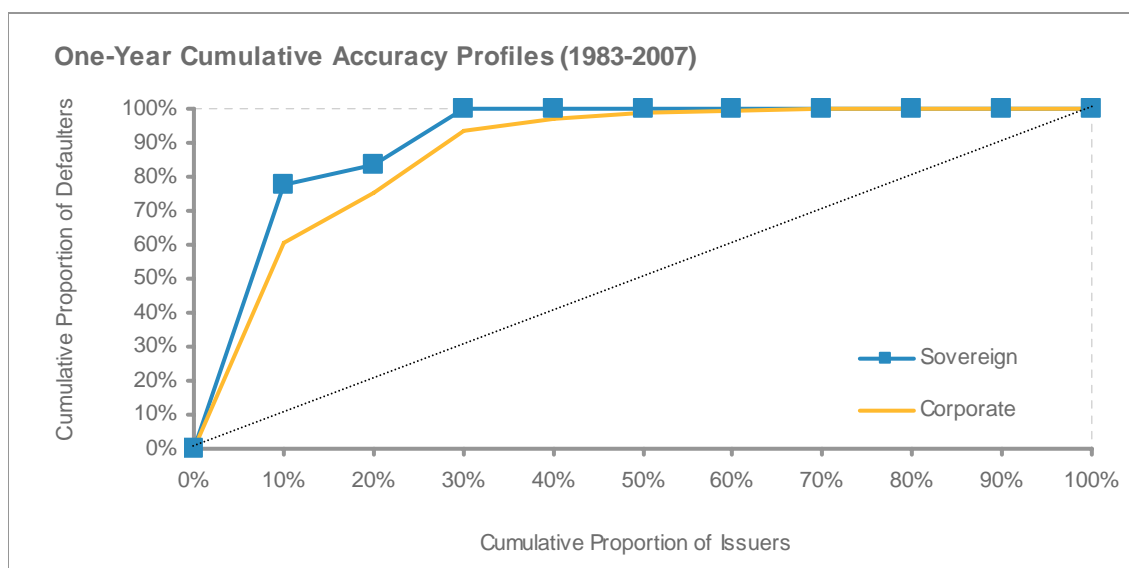
Note, however, that the two methods' median issuer-weighted recovery rates are very similar (60 percent for 30-day post-default method and 62.5 percent for the PV method).

Rating Performance Measures

One of the desirable properties of an effective rating system is its ability to separate low risk from high credit risk issuers. A key metric used by Moody's to measure the relative accuracy of a rating system is the cumulative accuracy profile (CAP). The CAP curve is constructed by plotting, for each rating category, the proportion of defaults accounted for by issuers with the same or lower rating against the proportion of all issuers with the same or lower rating.

Exhibit 10 presents the one-year-ahead horizon CAP curves for sovereign and corporate ratings observed between 1983 and 2007. The CAP curve is useful for making visual assessment of the information content embedded in the relative ranking of credit risk provided by a set of ratings. A rating system that conveyed no information about default risk would lie on the 45-degree line. The further the CAP curve bows toward the top left corner, the greater the fraction of all defaults that can be accounted for by the lowest rating categories.

Exhibit 10



The CAP plots reveal that historically sovereign ratings have done a good job rank-ordering one-year default risk. For example, all sovereign defaulters had ratings of Ba2 or lower within one year of default. More generally, the 23 percent of the lowest-rated sovereign issuers have accounted for 100 percent of the defaults. The CAP plots also indicate that sovereign ratings have modestly outperformed corporate ratings in rank-ordering default risk.

A summary measure of rating accuracy that compresses the information depicted in the CAP curve into a single summary statistic is the accuracy ratio (AR). The AR is the ratio of the area between the CAP curve and the 45-degree line to the total area above the 45-degree line. The AR lies between minus one and plus one, similar to a correlation statistic. As can be inferred by the CAP curves in Exhibit 10, Moody's sovereign ratings have had modestly higher accuracy ratios than their corporate counterparts. The historical average one-year accuracy ratio for the sovereign ratings is 94.3 percent for the 1983-2007 period, compared to 90.5 percent for corporate ratings during the same period.

Sovereign Default and Recovery Rates, 1983-2007

Moody's Related Research

Special Comments:

- [Default and Recovery Rates of Asia-Pacific Corporate Bond and Loan Issuers, Excluding Japan, 1990-1H2007, September 2007 \(104737\)](#)
- [Corporate default and Recovery Rates, 1920-2006, February 2007 \(102071\)](#)
- [Measuring Corporate Default Rates November 2006, November 2006 \(100779\)](#)
- [Determinants of Recovery Rates on Defaulted Bonds and Loans for North American Corporate Issuers: 1983-2003, December 2004 \(90593\)](#)
- [Guide to Moody's Default Research, November 2007 Update \(106248\)](#)

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

Sovereign Default and Recovery Rates, 1983-2007

Appendix I – Circumstances Surrounding Individual Sovereign Bond Defaults

Argentina 2001

Argentina defaulted in 2002 by missing an interest payment on 3 January 2002. While the actual default occurred in 2002, Moody's had already downgraded the long-term foreign currency sovereign credit rating to Ca on 20 December 2001, reflecting a very high probability of default.

Three factors led to the default. In 1989, then President Menem agreed to peg the Argentine peso to the dollar on a parity basis by establishing a currency board. However, when Brazil devalued its real in 1999, foreign investors and buyers found their dollars could buy more in Brazil than in Argentina. As a result, Argentina's foreign investment and exports dried up — buyers of Argentine products could get more for the same price in other countries, particularly in neighboring Brazil.

Secondly, the Menem government accrued a significant amount of debt, both domestic and foreign, sending domestic interest rates up. This led to the squeezing of private investment out of the market, forcing many companies to close and pushing up unemployment. Many of the privatized companies were utilities, which raised prices for such basic services as electricity and phones. Argentina's recession grew steadily worse.

Thirdly, the IMF declined to bail Argentina out by making an advance payment on a previously agreed loan.

These three factors converged to the point that, in December 2001 and early January 2002, there was a rush on the banks to convert pesos into dollars at the one-to-one rate. Argentina, subsequently, defaulted on its foreign debt.

After prolonged negotiations with its lenders and multilateral institutions to restructure the debt, Argentina completed several exchange offers covering various series of defaulted bonds. By some estimates, the ultimate haircut taken by investors was as high as 65 percent.

Belize 2006

A period of modest economic growth in the late 1990s prompted the government to stimulate economic activity through aggressive policies largely financed by foreign borrowing. As a result, the fiscal balance quickly swelled to a deficit in excess of 10 percent of GDP. In 2005, the government embarked on a series of stabilization policies by rising taxes, cutting expenditure and tightening monetary conditions. During the 2005 fiscal year, the deficit was reduced to 3 percent of GDP. The debt restructuring is part of the efforts aimed at placing Belize on a more sustainable economic path.

The government announced in August 2006 its intention to reach an agreement with external commercial creditors and, in mid-December, a debt exchange was launched to which over 98 percent of bondholders had subscribed by its conclusion in February 2007. The exchange did not decrease the overall amount owed by Belize, although its servicing has been made easier by a lengthening in the maturity and a lower coupon. Specifically, the new dollar-denominated bonds will mature in 2029 and they will not start amortizing before 2019 - providing a 12-year grace period to the government. The new debt carries a lower coupon of 4.25 percent for the first three years that gradually increases up to 8.5 percent.

Sovereign Default and Recovery Rates, 1983-2007

Dominican Republic 2005

The Dominican Republic missed a bond payment in January 2004, but cured that default within the 30-day grace period. After a number of additional late interest payments over the following year, in April 2005, the country proposed a debt exchange to investors which would extend the existing maturities on its two outstanding foreign currency bond issues and defer their cash interest payments for two years. In May 2005, roughly 95 percent of the investors in the bond coming due in 2006 and one coming due in 2013 had agreed to extend the maturity dates by an additional five years at the original coupon rate and accept payment-in-kind (additional bonds) in lieu of all the interest due in 2005 and half of the interest due in 2006.

Moody's views the exchange as "distressed" and hence tantamount to a default, both because the maturity extension and the interest deferral were needed to avoid outright default and because the terms of the new securities (maintaining the original coupon rate) were insufficiently attractive to induce new investor participation. The date of the actual default for the purpose of this study is set at April 2005.

The issuer's foreign-currency bond rating was B3 before the exchange and remained at B3 following the exchange because the realized loss severity of the exchange was modest, yet the potential for further losses going forward remains material.

Ecuador 1999

Ecuador's rating was lowered to Caa1 in September 1999, indicating imminent default. On 1 October 1999, Ecuador officially suspended payment on almost half of the interest due on its Brady bonds. The rating was lowered two notches to Caa3 later that month to indicate further deterioration of credit quality and deepening fiscal crisis. The US and the IMF publicly backed Ecuador's efforts to restructure its US\$13 billion in foreign debt. About half of this debt was in the form of Brady Bonds. With the support of the US, Ecuador renegotiated its US\$1 billion of debt outstanding with the Paris Club of creditor nations and was able to restructure over 98 percent of the bonds into new bonds. Ecuador also defaulted on its domestic debt by unilaterally changing the interest rates on domestic bonds after it had defaulted on its foreign currency bonds.

Grenada 2004

Moody's does not rate Grenada.

Grenada incurred arrears on most of its commercial debt after the authorities declared public debt to be unsustainable after Hurricane Ivan struck in September 2004. Damage from the hurricane exceeded 200 percent of GDP. In October 2004, the authorities announced that the public debt was unsustainable and they intent to seek a cooperative solution with creditors and donors. In late December, interest payments on two large international bonds were missed.

Almost a year after Ivan, Grenada launched an exchange offer for its commercial debt. The offer covered about half of the country's total public sector debt, and sought to restructure approximately US\$190 million of external debt – including one global bond of US\$100 million – as well as US\$86 million of domestic debt. (The authorities reached a separate settlement on US\$17 million claims by domestic banks in October, ahead of the closing of the general offer.)

On 15 November 2005, Grenada successfully completed a distressed debt exchange and debt rescheduling affecting about US\$276 million of local and foreign currency bonds and bank loans. The debt exchange did not involve any write down of principal, and past-due interest was fully capitalized. The new bonds have a 20-year maturity and interest rates of one percent for the first three years, which gradually increases thereafter. The lower interest rates in the near to medium term imply that creditors accepted a haircut in NPV terms of 40-45 percent for exit yields in the 9-10 percent range.

Sovereign Default and Recovery Rates, 1983-2007

Ivory Coast 2000

Ivory Coast defaulted on its Brady Bonds obligation in March 2000. Moody's does not rate Ivory Coast.

General Guei, after proclaiming himself the new leader, suspended payment of the country's external debt (estimated in 1997 at US\$15.6 billion). When the IMF stressed the severity of the consequences of this unilateral moratorium, he resumed payments on 8 January 1998. His administration nevertheless had to go into technical default on CI Brady Bonds in April 2000 and into arrears, yet again, on debt in September 2000.

Ivory Coast was successful at obtaining restructuring of its Paris Club debts. The restructuring means that debt servicing requirements have been reduced to around 23 percent of exports, compared to 28 percent before the default. With the restructuring, the short-term debt component has been reduced, but it is still at well over 100 percent as a proportion of foreign exchange reserves.

Moldova 2002

In 1990, the Moldovan parliament voted to issue a declaration of sovereignty and secession from the USSR, establishing the supremacy of the Moldovan constitution and legislation throughout the country.

In 1998, Moldova was especially affected by the Russian economic crisis as exports in hard currency and in rubles almost dried up. The country faced a significant shortfall in its foreign reserves, which made servicing of foreign currency-denominated debt extremely difficult. However, it avoided default until June 2001 when it missed a payment on a foreign currency bond. It subsequently cured the default in July within the grace period.

Moldova started buying back its bonds some time after July 2001 and was successful in repurchasing approximately 50 percent of the outstanding amount. However, on 13 June 2002, it defaulted on the same bond, which matured that day. It was not able to cure the default within the grace period, which expired on 27 June 2002.

The country successfully negotiated with its bondholders to restructure and roll over the matured bond into a new debt instrument with a maturity date of 2009 and face value of US\$39.6 million. The annual coupon was 6.8 percent with the first payment due by the end of 2002. For the purposes of this study, the cured grace period default is not considered as an actual default event and only the final 2002 default counts.

Pakistan 1999

A serious balance of payments crisis in 1998 was exacerbated as international sanctions were tightened following a military coup. Pakistan sought a new IMF agreement and then a restructuring of its bilateral debt obligations with the Paris Club of lenders but, even in the midst of these negotiations, the government was intermittently late in making payments on commercial, bilateral and some multilateral debt. In this situation, the possibility increased that payments would eventually be missed on the country's Eurobonds and euro notes.

In an attempt to "bail in" private lenders, Pakistan's official bilateral creditors imposed unprecedented conditions on the country before they would grant a Paris Club restructuring. Namely, they required that Pakistan obtain a multi-year debt refinancing from private creditors, including bondholders. Upon agreeing to these conditions, the Paris Club rescheduled in March 1999 some US\$3.25 billion of Pakistan's bilateral obligations (including arrears) over 18 years with three years' grace. In December 1999, bondholders received a new Eurobond, with a coupon of 10 percent and maturity of six years with three years' grace, in exchange for US\$608 million in existing bonds and notes carrying coupons of 6 percent, 11.5 percent, and LIBOR plus 3.95 percent with original maturity dates between December 1999 and February 2002.

The 1999 Paris Club agreement was not fully implemented because Pakistan failed to comply with the terms of its concurrent IMF agreement. However, subsequent IMF programs - a stand-by agreement and the current Poverty Reduction and Growth Facility - have achieved better results. A new Paris Club agreement was reached in January 2001 that restructured US\$1.75 billion in debt and payment arrears on extremely favorable ("Houston") terms.

Sovereign Default and Recovery Rates, 1983-2007

Peru 2000

On 7 September 2000, Peru decided not to pay US\$80 million in interest payments on four of its Brady Bonds. Peru had been trying to renegotiate its commercial loans with Elliott and Associates ("Elliott"), a fund specializing in sovereign and distressed debt. Peru had offered to restructure the commercial debt into Brady Bonds, which the lender had refused. Additionally, Elliott filed a lawsuit against the government of President Alberto Fujimori and a US judge granted an injunction authorizing Elliott to attach any financial assets owned by the Peruvian government in the United States. The government of Peru was concerned that Elliott would attach the US\$80 million debt service payment.

After tense negotiations that lasted four weeks and failure to find a safe depository for the US\$80 million, Peru settled the dispute with Elliott through a multimillion-dollar payment. This settlement allowed the Peruvian government to make the interest payments through its fiscal agent in the United States. The payment was made on 4 October 2000 and the default thus fully cured within its grace period. Peru's grace-period default is reported in this appendix for the sake of completeness, but it is excluded from all formal calculations found in this study.

Russia 1998

A significant drop in oil prices in late 1997 and early 1998 led to a serious shortfall in exports. This decline significantly reduced federal budget revenues even in nominal terms in the spring of 1998, while the stock of short-term Russian T-bills (GKO) grew rapidly. Faced with the high cost of domestic debt service (almost 5 percent of GDP in 1996), the government sped up liberalization of the T-bill market. Restrictions on non-residents' participation were gradually reduced and then eliminated at the beginning of 1998. The Russian market benefited from the inflow in 1997, with the interest rate on short-term debt (GKO) reaching its historic floor of 13 percent in August 1997, a time when consumer price inflation was at an annual 15 percent.

With East Asian economies in crisis, non-resident investors decided to pull out money from the Russian T-Bill market as evidenced by a reduction of almost US\$1 billion in foreign exchange reserves per week. The uncertainty over the July 1998 emergency loan from the IMF also resulted in large swings in foreign flows to the T-bill market. The IMF loan was intended to boost confidence among foreigners and, for a while, it had the intended effect. However, Russia stopped payments first on local currency Treasury obligations and later defaulted on its foreign currency obligations that were issued locally but held mostly by foreign investors. Subsequently, it also failed to pay principal on MINFIN III foreign currency bonds.

Debts were restructured in August 1999 and February 2000.

Ukraine 1998, 2000

In 1998, the Government of Ukraine issued a decree whereby all anonymous "non-person" saving accounts in foreign currency were "frozen". The only recourse for account holders was to identify themselves and "transfer" the accounts to local-currency accounts.

Since independence, Ukraine has remained dependent upon imported energy and foreign loans. Approximately, US\$3 billion of these foreign loans came due in 2000. The IMF's US\$ 2.6 billion extended fund facility (EFF) was suspended in September 1999, and the World Bank postponed all its lending to Ukraine in October 1999.

On 28 February 2000, Ukraine's Finance Ministry confirmed that it had missed the scheduled coupon repayment for its 16 percent DM-nominated Eurobonds, which were to mature in 2001. With over US\$13 billion in foreign debt, Ukraine had already announced in January 2000 that it would miss the scheduled repayment for dollar-nominated 16.75 percent bonds and offered to include them in an exchange proposal. Bondholders were offered seven-year coupon amortization bonds which would be issued by Ukraine and nominated in the euro or U.S. dollar. In euro, the bond coupon amounted to 10 percent, while in U.S. dollars the coupon represented 11 percent with no grace period.

Sovereign Default and Recovery Rates, 1983-2007

The bulk of the debt was amortized in the new euro bonds every six months, with the first six months as a grace period. The average term of the bonds was 4.5 years. While exchanging, investors were able to choose the currency in which the bonds would be denominated.

By the end of March 2000, over 90 percent of holders of Ukrainian government bonds had agreed to the restructuring and accepted new bonds with a face value of approximately 50 percent of the debt they replaced.

Uruguay 2003

Prior to May 2002, Uruguay had been rated investment grade (Baa3) since the middle of 1997. However, Argentina's severe currency crisis led to concurrent debt servicing problems for Uruguay in 2002. Uruguay's total debt had escalated to about 100 percent of GDP, or roughly US\$11 billion, with a significant amount of bonds coming due in 2003 and 2004. To help restore debt sustainability, the authorities launched in April 2003 a debt exchange aiming at lengthening the average maturity on the bonds with no principal reduction. The exchange was completed fairly soon after (at the end of May) and participation rates averaged about 93 percent.

The debt restructuring involved three components: an international component, covering mainly bonds issued in Europe and the US (amounting to some US\$3.6 billion), a Japanese component (covering Samurai bonds worth about US\$250 million) and a domestic component (covering domestic currency bonds worth about US\$1.6 billion).

As a result of the maturity extension but no principal reduction, Moody's classified the offer as a distressed exchange / default. The foreign-currency issuer rating for Uruguay was B3 when the offer was first proposed and was maintained after the exchange was complete.

Venezuela 1998

In the first week of July 1998, the government of Venezuela did not pay the coupon on local currency bonds that were held by local residents. The payments were made a week later. Since these bonds had no grace period, this delay in payment amounted to a technical default.

The government claimed that the person who was supposed to sign the checks was unavailable at the time but that the checks were later issued from the appropriate office. It was the type of episode that seems to have happened more than once in Venezuela, where the government did not pay the coupon on local currency bonds on time. However, the government has always claimed that there was no "intentional" delay.

After this default, Venezuela installed state-of-the-art payment machinery that reduced or eliminated the need for human intervention in the payment processes.

Moody's subsequently changed the issuer ratings to Caa1 from B2 due to the fact that the government, although fully capable of paying domestic coupons and principal, had shown unwillingness to pay its domestic obligations from time to time.

Sovereign Default and Recovery Rates, 1983-2007

Appendix I I

Prices of Defaulted Sovereign Bonds

Defaulting Issuer	Date of Issue	Maturity Date	Coupon	Initial Rating	Issue Date	Default Date	Default Rating	Default Amount in \$MM	Recovery Price
Russia	14-May-94	14-May-99	3%	Ba3	20-Apr-99		Ca	1,307	25
Russia	6-Oct-97	15-Dec-15	FLT	Ba3	25-May-99		Ca	6,051	10.5
Ecuador	18-Apr-97	25-Apr-04	FLT	B1	22-Oct-99		Caa3	150	59.9
Ecuador	24-Jul-97	25-Apr-02	11.25%	B1	22-Oct-99		Caa3	350	43
Ecuador	24-Jul-97	28-Feb-25	4%	B1	22-Oct-99		Caa2	1,914	30
Pakistan	23-Nov-94	22-Dec-99	11.50%	Ba3	6-Dec-99		Caa1	150	40
Pakistan	30-May-97	30-May-00	FLT	B1	6-Dec-99		Caa1	300	62.0
Pakistan	20-Feb-97	26-Feb-02	6%	B2	6-Dec-99		Caa1	160	55
Ukraine	19-Feb-98	26-Feb-01	16%	B2	25-Feb-00		Caa1	500	68.8
Ukraine	9-Mar-98	17-Mar-00	14.75%	B2	25-Feb-00		Caa1	489	69.3
Ivory Coast	31-Mar-98	29-Mar-18	2%	NR	31-Mar-00		NR	410	18.1
Argentina	8-Dec-93	20-Dec-03	8.38%	B1	30-Nov-01		Caa3	1,000	31
Argentina	1-Oct-96	9-Oct-06	11%	B1	30-Nov-01		Caa3	1,213	30.5
Argentina	22-Jan-97	30-Jan-17	11.38%	B1	30-Nov-01		Caa3	2,491	27
Argentina	29-Jan-97	12-Feb-07	11.75%	B1	30-Nov-01		Caa3	80	10
Argentina	26-Jun-97	10-Jul-02	8.75%	B1	30-Nov-01		Caa3	113	25
Argentina	28-Jul-97	20-Dec-03	8.38%	B1	30-Nov-01		Caa3	500	31
Argentina	12-Sep-97	19-Sep-27	9.75%	B1	30-Nov-01		Caa3	891	26
Argentina	27-Mar-98	10-Apr-05	FLT	Ba3	30-Nov-01		Caa3	456	30
Argentina	29-Jul-98	20-Dec-03	8.38%	Ba3	30-Nov-01		Caa3	300	31
Argentina	18-Nov-98	4-Dec-05	11%	Ba3	30-Nov-01		Caa3	862	26.5
Argentina	17-Feb-99	25-Feb-19	12.13%	Ba3	30-Nov-01		Caa3	176	28
Argentina	19-Feb-99	1-Mar-29	8.88%	NR	30-Nov-01		NR	125	20
Argentina	29-Mar-99	7-Apr-09	11.75%	Ba3	30-Nov-01		Caa3	1,163	30.3
Argentina	25-Jan-00	1-Feb-20	12%	B1	30-Nov-01		Caa3	158	28
Argentina	6-Mar-00	15-Mar-10	11.38%	B1	30-Nov-01		Caa3	1,000	32
Argentina	2-Jun-00	15-Jun-15	11.38%	B1	30-Nov-01		Caa3	903	31
Argentina	11-Jul-00	21-Jul-30	10.25%	B1	30-Nov-01		Caa3	241	29.5
Argentina	7-Feb-01	21-Feb-12	12.38%	B1	30-Nov-01		Caa3	905	29
Argentina	24-May-01	19-Dec-08	7%	B2	30-Nov-01		Caa3	11,456	30.6
Argentina	24-May-01	19-Jun-18	12.25%	B2	30-Nov-01		Caa3	7,463	25.5
Argentina	24-May-01	19-Jun-31	12%	B2	30-Nov-01		Caa3	8,821	25
Moldova	6-Jun-97	13-Jun-02	9.88%	Ba2	13-Jun-02		Caa1	75	60
Uruguay	9-Jul-97	15-Jul-27	7.88%	B3	15-May-03		B3	510	58.5
Uruguay	13-Nov-98	18-Nov-03	7.88%	B3	15-May-03		B3	200	80
Uruguay	19-Jun-00	22-Jun-10	8.75%	B3	15-May-03		B3	300	66.5
Uruguay	21-Nov-01	20-Jan-12	7.63%	B3	15-May-03		B3	300	63
Uruguay	20-Mar-02	25-Mar-09	7.88%	B3	15-May-03		B3	250	66
Uruguay	20-Mar-02	4-May-09	7.25%	B3	15-May-03		B3	250	64

Sovereign Default and Recovery Rates, 1983-2007

Prices of Defaulted Sovereign Bonds

Defaulting Issuer	Date of Issue	Maturity Date	Coupon	Initial Rating	Issue Date	Default Date	Default Rating	Default Amount in \$MM	Recovery Price
Grenada	20-Jun-02	30-Jun-12	9.38%	NR		30-Dec-04	NR	100	65
Dominican Republic	27-Sep-01	27-Sep-06	9.50%	Ba2		20-Apr-05	B2	500	98.5
Dominican Republic	23-Jan-03	23-Jan-13	9.04%	Ba2		20-Apr-05	B2	600	91.8
Belize	15-Aug-02	15-Aug-12	9.50%	Ba2		7-Dec-06	Caa3	125	75
Belize	9-Jun-03	12-Jun-15	9.75%	Ba3		7-Dec-06	Caa3	100	76

Sovereign Default and Recovery Rates, 1983-2007

Appendix III

Sovereign Issuers Rating History					
Sovereign issuer	FCR date	FC rating	Sovereign issuer	LCR date	LC rating
Albania	06/29/07	B1	Albania	06/29/07	B1
Argentina	11/18/86	Ba3	Argentina	01/28/97	B1
	12/04/87	B2		10/02/97	Ba3
	05/26/89	B3		10/06/99	B1
	07/13/92	B1		03/28/01	B2
	10/02/97	Ba3		07/13/01	B3
	10/06/99	B1		07/26/01	Caa1
	03/28/01	B2		10/12/01	Caa3
	07/13/01	B3		12/20/01	Ca
	07/26/01	Caa1		08/20/03	Caa1
	10/12/01	Caa3		06/29/05	B3
	12/20/01	Ca			
	08/20/03	Caa1			
	06/29/05	B3			
Armenia	07/24/06	Ba2	Armenia	07/24/06	Ba2
Australia	01/15/62	A	Australia	07/26/99	Aaa
	10/15/74	Aaa			
	09/10/86	Aa1			
	08/28/89	Aa2			
	10/20/02	Aaa			
Austria	06/26/77	Aaa	Austria	10/27/86	Aaa
Azerbaijan	09/14/06	Ba1	Azerbaijan	09/14/06	Ba1
Bahamas	04/08/97	A3	Bahamas	11/12/98	A1
Bahrain	01/29/96	Ba1	Bahrain	03/30/99	Baa3
	08/15/02	Baa3		08/15/02	Baa1
	12/11/03	Baa1		10/04/06	A3
	10/04/06	A3		07/24/07	A2
	07/24/07	A2			
Barbados	12/05/94	Ba2	Barbados	12/09/02	A3
	04/18/97	Ba1			
	02/08/00	Baa2			

Sovereign Default and Recovery Rates, 1983-2007

Sovereign Issuers Rating History					
Sovereign issuer	FCR date	FC rating	Sovereign issuer	LCR date	LC rating
Belarus	08/22/07	B1	Belarus	08/22/07	B1
Belgium	03/27/88	Aa1	Belgium	01/27/97	Aa1
Belize	01/21/99	Ba2	Belize	01/21/99	Ba1
	05/28/03	Ba3		05/28/03	Ba2
	08/05/04	B2		08/05/04	B1
	06/07/05	B3		06/07/05	B3
	10/26/05	Caa3		10/26/05	Caa3
	02/13/07	Caa1		02/13/07	Caa1
Bermuda	06/10/94	Aa1	Bermuda	11/09/98	Aaa
Bolivia	05/29/98	B1	Bolivia	10/02/98	B1
	04/16/03	B3		04/16/03	B3
Bosnia and Herzegovina	03/29/04	B3	Bosnia and Herzegovina	03/29/04	B3
	05/16/06	B2		05/16/06	B2
Botswana	03/12/01	A2	Botswana	03/12/01	A1
Brazil	11/18/86	Ba1	Brazil	06/19/98	B2
	12/04/87	B1		09/03/98	Caa1
	10/15/89	B2		12/16/99	B3
	11/30/94	B1		10/16/00	B1
	09/03/98	B2		08/12/02	B2
	10/16/00	B1		09/09/04	Ba3
	08/12/02	B2		08/31/06	Ba2
	09/09/04	B1		08/23/07	Ba1
	10/12/05	Ba3			
	08/31/06	Ba2			
	08/23/07	Ba1			
Bulgaria	09/27/96	B3	Bulgaria	02/18/99	B1
	12/16/97	B2		06/05/03	Ba2
	12/19/01	B1		11/17/04	Ba1
	06/05/03	Ba2		03/01/06	Baa3
	11/17/04	Ba1			
	03/01/06	Baa3			
Cambodia	05/21/07	B2	Cambodia	05/21/07	B2

Sovereign Default and Recovery Rates, 1983-2007

Sovereign Issuers Rating History					
Sovereign issuer	FCR date	FC rating	Sovereign issuer	LCR date	LC rating
Canada	05/22/68	Aa	Canada	05/03/93	Aaa
	04/12/74	Aaa		04/12/95	Aa1
	06/02/94	Aa1		05/03/02	Aaa
	04/12/95	Aa2			
	06/21/00	Aa1			
	05/03/02	Aaa			
Cayman Islands	10/25/00	Aa3	Cayman Islands	-	
Chile	05/25/99	Baa1	Chile	07/29/99	A1
	07/07/06	A2			
China	05/23/88	A3	China	07/25/07	A1
	11/08/89	Baa1			
	09/10/93	A3			
	10/02/03	A2			
	07/25/07	A1			
Colombia	08/04/93	Ba1	Colombia	06/19/98	Baa2
	09/19/95	Baa3		06/29/06	Baa3
	08/11/99	Ba2			
Costa Rica	05/08/97	Ba1	Costa Rica	10/02/98	Ba1
Croatia	01/27/97	Baa3	Croatia	03/02/99	Baa1
Cuba	04/05/99	Caa1	Cuba	-	
Cyprus	01/29/98	A2	Cyprus	07/19/99	A2
	07/10/07	A1		07/10/07	A1
Czech Republic	03/01/93	Baa3	Czech Republic	06/22/98	A1
	05/01/94	Baa2			
	09/01/95	Baa1			
	11/02/02	A1			
Denmark	09/06/67	Aa	Denmark	07/08/86	Aa
	08/15/86	Aa1		08/15/86	Aa1
	08/23/99	Aaa		02/03/87	Aaa

Sovereign Default and Recovery Rates, 1983-2007

Sovereign Issuers Rating History					
Sovereign issuer	FCR date	FC rating	Sovereign issuer	LCR date	LC rating
Dominican Republic	07/20/99	B1	Dominican Republic	11/09/98	B1
	08/29/01	Ba2		08/29/01	Ba2
	10/07/03	B1		10/07/03	B1
	11/10/03	B2		11/10/03	B2
	01/30/04	B3		01/30/04	B3
	05/07/07	B2		05/07/07	B2
Ecuador	07/24/97	B1	Ecuador	10/02/98	B3
	09/14/98	B3		10/05/99	Caa1
	10/05/99	Caa2		02/24/04	B3
	02/24/04	Caa1			
	01/30/07	Caa2			
Egypt	07/06/01	Ba1	Egypt	03/04/99	Baa1
				05/18/05	Baa3
El Salvador	02/08/02	Baa3	El Salvador	11/09/98	Baa2
Estonia	06/20/02	Baa1	Estonia	02/18/99	A1
	11/12/02	A1			
Fiji Islands	03/31/99	Ba1	Fiji Islands	03/31/99	Ba1
	07/19/00	Ba2		07/19/00	Ba2
Finland	10/19/77	Aa	Finland	01/15/97	Aaa
	02/07/86	Aaa			
	10/22/90	Aa1			
	01/13/92	Aa2			
	01/15/97	Aa1			
	05/04/98	Aaa			
France	02/25/92	Aaa	France	09/28/88	Aaa
Germany	02/09/86	Aaa	Germany	04/29/93	Aaa
Greece	05/24/94	Baa3	Greece	01/28/97	A2
	12/23/96	Baa1		11/04/02	A1
	07/14/99	A2			
	11/04/02	A1			
Guatemala	08/01/97	Ba2	Guatemala	11/09/98	Ba1

Sovereign Default and Recovery Rates, 1983-2007

Sovereign Issuers Rating History					
Sovereign issuer	FCR date	FC rating	Sovereign issuer	LCR date	LC rating
Honduras	07/20/99	B2	Honduras	09/29/98	B2
Hong Kong	11/8/1988	A2	Hong Kong	10/5/1998	A1
	11/1/1989	A3		8/1/2000	Aa3
	10/2/2003	A1		7/25/2007	Aa2
	9/27/2006	Aa3			
	7/25/2007	Aa2			
Hungary	02/08/99	Baa2	Hungary	06/22/98	A1
	06/25/99	Baa1		12/22/06	A2
	11/14/00	A3			
	11/12/02	A1			
	12/22/06	A2			
Iceland	05/24/89	A2	Iceland	07/30/97	Aaa
	06/24/96	A1			
	07/30/97	Aa3			
	10/20/02	Aaa			
India	07/28/99	Ba2	India	06/19/98	Ba2
	02/03/03	Ba1			
	01/22/04	Baa3			
Indonesia	03/01/94	Baa3	Indonesia	03/28/99	B3
	12/01/97	Ba1		09/01/03	B2
	01/01/98	B2		05/18/06	B1
	03/01/98	B3		10/18/07	Ba3
	09/01/03	B2			
	05/18/06	B1			
Iran	-		Iran	06/10/99	Ba2
				12/31/01	WR
Ireland	07/15/87	Aa3	Ireland	09/04/92	Aaa
	08/31/94	Aa2			
	02/13/97	Aa1			
	05/04/98	Aaa			
Israel	12/12/95	A3	Israel	12/15/98	A2
	07/06/00	A2			

Sovereign Default and Recovery Rates, 1983-2007

Sovereign Issuers Rating History					
Sovereign issuer	FCR date	FC rating	Sovereign issuer	LCR date	LC rating
Italy	10/10/86	Aaa	Italy	11/02/93	A1
	07/01/91	Aa1		07/03/96	Aa3
	08/13/92	Aa3		05/15/02	Aa2
	05/05/93	A1			
	07/03/96	Aa3			
	05/05/02	Aa2			
Jamaica	03/30/98	Ba3	Jamaica	03/30/98	Baa3
	05/17/03	B1		05/17/03	Ba2
Japan	10/01/81	Aaa	Japan	05/07/93	Aaa
	11/16/98	Aa1		11/16/98	Aa1
	10/20/02	Aaa		09/08/00	Aa2
				12/04/01	Aa3
				05/30/02	A2
				10/11/07	A1
Jordan	01/22/96	Ba3	Jordan	11/24/99	Ba2
	08/21/03	Ba2		08/21/03	Baa3
Kazakhstan	12/09/96	Ba3	Kazakhstan	06/25/99	B1
	02/18/99	B1		06/18/01	Ba1
	06/18/01	Ba2		09/19/02	Baa1
	09/19/02	Baa3			
	06/08/06	Baa2			
Korea	04/09/98	Ba1	Korea	12/04/98	Baa1
	02/12/99	Baa3		03/28/02	A3
	12/16/99	Baa2		07/25/07	A2
	03/28/02	A3			
	07/25/07	A2			
Kuwait	01/29/96	Baa1	Kuwait	01/21/99	Baa1
	05/15/02	A2		05/15/02	A2
	10/04/06	Aa3		10/04/06	Aa3
	07/24/07	Aa2		07/24/07	Aa2
Latvia	08/24/99	Baa2	Latvia	03/02/99	A2
	11/12/02	A2			

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Sovereign Issuers Rating History					
Sovereign issuer	FCR date	FC rating	Sovereign issuer	LCR date	LC rating
Lebanon	02/26/97	B1	Lebanon	08/26/99	B1
	07/30/01	B2		07/30/01	B3
	03/14/05	B3			
Lithuania	09/04/96	Ba2	Lithuania	02/18/99	Baa1
	12/16/97	Ba1		12/11/03	A3
	11/12/02	Baa1		09/11/06	A2
	12/11/03	A3			
09/11/06	A2				
Luxembourg	09/20/89	Aaa	Luxembourg	07/13/99	Aaa
Macao	11/03/97	Baa1	Macao	09/04/98	A3
	02/09/03	A3		10/15/03	A1
	10/15/03	A1		07/25/07	Aa3
	07/25/07	Aa3			
Malaysia	11/18/86	Baa1	Malaysia	09/04/98	A3
	03/12/90	A3			
	03/15/93	A2			
	03/15/95	A1			
	12/29/97	A2			
	07/23/98	Baa2			
	09/14/98	Baa3			
	10/17/00	Baa2			
	09/24/02	Baa1			
12/15/04	A3				
Malta	03/14/94	A2	Malta	03/25/98	A3
	03/25/98	A3		07/10/07	A2
	07/10/07	A2			
Mauritius	03/28/96	Baa2	Mauritius	01/15/99	A2
				06/01/06	Baa1
				12/14/07	Baa2
Mexico	12/18/90	Ba3	Mexico	05/20/93	Baa1
	01/22/96	Ba2		03/07/00	Baa1
	08/10/99	Ba1			
	03/07/00	Baa3			
	02/06/02	Baa2			
	01/06/05	Baa1			

Sovereign Default and Recovery Rates, 1983-2007

Sovereign Issuers Rating History					
Sovereign issuer	FCR date	FC rating	Sovereign issuer	LCR date	LC rating
Micronesia	04/20/90	Aa2	Micronesia	-	
	05/23/90	Aa1			
	01/13/03	WR			
Moldova	01/14/97	Ba2	Moldova	07/13/99	Caa1
	07/14/98	B2		07/11/02	Caa2
	04/19/00	B3		05/06/03	Caa1
	07/03/01	Caa1			
	07/11/02	Ca			
	05/06/03	Caa1			
Mongolia	10/03/05	B1	Mongolia	10/03/05	B1
Morocco	07/22/99	Ba1	Morocco	12/03/01	Ba1
Netherlands	01/10/86	Aaa	Netherlands	05/05/98	Aaa
New Zealand	07/01/65	Baa	New Zealand	09/14/91	Aaa
	07/10/75	Aa			
	06/29/77	Aaa			
	10/17/84	Aa			
	08/15/86	Aa3			
	03/16/94	Aa2			
	02/26/96	Aa1			
	09/23/98	Aa2			
	10/20/02	Aaa			
Nicaragua	03/27/98	B2	Nicaragua	03/27/98	B2
	06/30/03	Caa1		06/30/03	B3
Norway	11/12/78	Aaa	Norway	08/11/95	Aaa
	07/13/87	Aa1			
	09/30/97	Aaa			
Oman	04/01/97	Baa2	Oman	07/15/99	Baa2
	10/06/05	Baa1		10/06/05	Baa1
	10/04/06	A3		10/04/06	A3
	07/24/07	A2		07/24/07	A2

Sovereign Default and Recovery Rates, 1983-2007

Sovereign Issuers Rating History					
Sovereign issuer	FCR date	FC rating	Sovereign issuer	LCR date	LC rating
Pakistan	11/23/94	Ba3	Pakistan	06/25/99	Caa1
	07/11/95	B1		02/13/02	B3
	11/06/96	B2		10/20/03	B2
	05/28/98	B3		11/22/06	B1
	10/23/98	Caa1			
	02/13/02	B3			
	10/20/03	B2			
	11/22/06	B1			
Panama	06/30/58	A	Panama	-	
	06/27/78	Aa			
	01/22/97	Ba1			
Papua New Guinea	12/31/98	B1	Papua New Guinea	01/25/99	B1
Paraguay	07/13/98	B2	Paraguay	07/13/98	B1
	04/28/03	Caa1		04/28/03	Caa1
Peru	07/20/99	Ba3	Peru	11/09/98	Baa3
	09/19/00	B1			
	10/05/00	Ba3			
	07/16/07	Ba2			
Philippines	07/01/93	Ba3	Philippines	09/04/98	Baa3
	05/12/95	Ba2		01/27/04	Ba2
	05/18/97	Ba1		02/05/05	B1
	01/27/04	Ba2			
	02/05/05	B1			
Poland	06/01/95	Baa3	Poland	06/22/98	A2
	09/01/99	Baa1			
	11/02/02	A2			
Portugal	11/18/86	A1	Portugal	02/10/97	Aa2
	02/10/97	Aa3			
	05/04/98	Aa2			
Qatar	09/22/99	Baa2	Qatar	12/15/99	Baa2
	08/15/02	A3		08/15/02	A3
	05/18/05	A1		05/18/05	A1
	10/04/06	Aa3		10/04/06	Aa3
	07/24/07	Aa2		07/24/07	Aa2

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Sovereign Issuers Rating History					
Sovereign issuer	FCR date	FC rating	Sovereign issuer	LCR date	LC rating
Romania	06/04/97	Ba3	Romania	02/22/99	Caa1
	09/14/98	B1		12/19/01	B2
	11/06/98	B3		12/16/02	B1
	12/19/01	B2		12/11/03	Ba3
	12/11/03	Ba3		03/02/05	Ba1
	03/02/05	Ba1		10/06/06	Baa3
	10/06/06	Baa3			
Russia	11/22/96	Ba2	Russia	05/29/98	B2
	03/11/98	Ba3		08/13/98	Caa1
	05/29/98	B1		08/21/98	Ca
	08/13/98	B2		01/05/00	Caa2
	08/21/98	B3		12/07/00	B3
	09/05/01	B2		10/11/01	B1
	11/29/01	Ba3		11/29/01	Ba2
	12/17/02	Ba2		10/08/03	Baa3
	10/08/03	Baa3		10/25/05	Baa2
10/25/05	Baa2				
Saudi Arabia	01/29/96	Baa3	Saudi Arabia	01/12/99	Ba1
	06/16/03	Baa2		06/16/03	Baa1
	11/14/05	A3		11/14/05	A3
	10/04/06	A2		10/04/06	A2
	07/24/07	A1		07/24/07	A1
Singapore	09/20/89	Aa3	Singapore	09/04/98	Aaa
	05/24/94	Aa2			
	01/18/96	Aa1			
	06/14/02	Aaa			
Slovakia	05/18/98	Ba1	Slovakia	06/22/98	Baa2
	11/13/01	Baa3		11/13/01	A3
	11/12/02	A3		01/12/05	A2
	01/12/05	A2		10/16/06	A1
	10/16/06	A1			
Slovenia	05/08/96	A3	Slovenia	01/06/99	Aa3
	11/14/00	A2		07/26/06	Aa2
	11/12/02	Aa3			
	07/26/06	Aa2			

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Sovereign Issuers Rating History					
Sovereign issuer	FCR date	FC rating	Sovereign issuer	LCR date	LC rating
South Africa	10/03/94	Baa3	South Africa	11/20/95	Baa1
	11/29/01	Baa2		11/29/01	A2
	01/11/05	Baa1			
Spain	02/03/88	Aa2	Spain	01/31/97	Aa2
	12/13/01	Aaa		12/13/01	Aaa
St. Vincent & the Grenadines	12/10/07	B1	St. Vincent & the Grenadines	12/10/07	B1
Suriname	02/03/04	B1	Suriname	02/03/04	Ba3
Sweden	11/10/77	Aaa	Sweden	01/18/95	Aa1
	01/17/91	Aa1		08/23/99	Aaa
	02/01/93	Aa2			
	01/05/95	Aa3			
	06/04/98	Aa2			
	08/23/99	Aa1			
	04/04/02	Aaa			
Switzerland	01/20/82	Aaa	Switzerland	11/10/98	Aaa
Taiwan	03/24/94	Aa3	Taiwan	12/04/98	Aa3
Thailand	08/01/89	A2	Thailand	09/04/98	Baa1
	04/08/97	A3			
	10/01/97	Baa1			
	11/27/97	Baa3			
	12/21/97	Ba1			
	06/22/00	Baa3			
	11/26/03	Baa1			
Trinidad & Tobago	02/08/93	Ba2	Trinidad & Tobago	11/09/98	Baa3
	10/10/95	Ba1		04/06/00	Baa1
	04/06/00	Baa3			
	08/09/05	Baa2			
	07/07/06	Baa1			
Tunisia	10/25/00	Baa3	Tunisia	06/25/99	Baa2
	04/17/03	Baa2			

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Sovereign Issuers Rating History					
Sovereign issuer	FCR date	FC rating	Sovereign issuer	LCR date	LC rating
Turkey	05/05/92	Baa3	Turkey	09/09/02	B3
	01/14/94	Ba1		09/30/04	B2
	06/02/94	Ba3		02/11/05	B1
	03/13/97	B1		12/14/05	Ba3
	12/14/05	Ba3			
Turkmenistan	12/04/97	B2	Turkmenistan	01/14/02	B2
Ukraine	02/06/98	B2	Ukraine	02/22/99	Ca
	09/09/98	B3		01/05/00	Caa3
	01/05/00	Caa1		11/20/01	Caa1
	01/24/02	B2		01/24/02	B2
	11/10/03	B1		11/10/03	B1
United Arab Emirates	01/29/96	Baa1	United Arab Emirates	10/04/06	Aa3
	12/11/97	A2		07/09/07	Aa2
	12/21/04	A1			
	10/04/06	Aa3			
	07/09/07	Aa2			
United Kingdom	03/31/78	Aaa	United Kingdom	04/27/93	Aaa
United States of America	02/05/49	Aaa	United States of America	02/05/49	Aaa
Uruguay	10/15/93	Ba1	Uruguay	06/10/97	Baa3
	06/10/97	Baa3		05/03/02	Ba2
	05/03/02	Ba2		07/10/02	B1
	07/10/02	B1		07/31/02	B3
	07/31/02	B3		12/21/06	B1
	12/21/06	B1			
Venezuela	12/29/76	Aaa	Venezuela	07/22/98	B3
	02/04/83	Aa		09/03/98	Caa1
	06/03/87	Ba2		12/20/99	B3
	12/04/87	Ba3		09/20/02	Caa1
	08/07/91	Ba1		09/07/04	B1
	04/08/94	Ba3			
	01/22/96	Ba2			
	07/22/98	B1			
	09/03/98	B2			
	09/20/02	B3			
	01/21/03	Caa1			
	09/07/04	B2			
	Vietnam	10/31/05		Ba3	Vietnam

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