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Sovereign Default and Recovery Rates, 1983-2006

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

- Of 103 Moody's rated sovereigns, Belize was the only default in 2006 as the country struggled to meet its debt obligations that account for over 90% of GDP. Belize is only the third country to have defaulted in the past four years.
- The low default volume is consistent with strong global economic conditions and ample liquidity. Reflecting this benign default environment, sovereign bond spreads continued to tighten in 2006. In 2006, 19 sovereign issuers were upgraded against only two downgrades.
- Historically, sovereign ratings have proved to be more stable than their corporate counterparts. While sovereign upgrades rates have been similar to those of corporates, their downgrade rates have been lower.
- Sovereign default rates have been lower than their corporate counterparts with the differences generally widening at lower rating categories and at longer time horizons. The differences in default rates, however, are not likely significant because default risk is highly correlated across emerging market sovereigns and the overall size of the sovereign sample is small.
- The recovery rate on Belize's defaulted bonds in 2006 was 76%, as measured by their average trading prices thirty days after default. The recovery rate on Belize's bonds was substantially higher than the historical average recovery rate on sovereign bonds, which is 55% on an issuer-weighted basis and 29% on a volume-weighted basis.
- Issuer-weighted recovery rates for defaulted sovereign bonds have historically been higher than those for their corporate counterparts. Since sovereign default rates have also been lower, sovereign bonds have generally experienced lower credit loss rates than similarly rated corporate bonds.
- Historically, sovereign ratings have proven to be more accurate than corporate ratings as predictors of relative default risk. All sovereign defaulters have had ratings of Ba2 or less within one year prior to default.

Cumulative Speculative-Grade Default Rates: Corporate vs. Sovereign Issuers

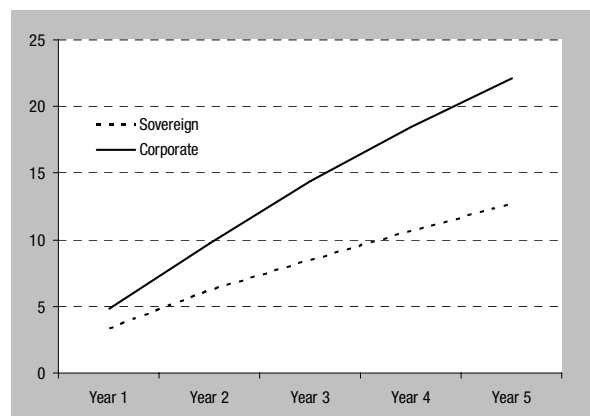


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Introduction

Sovereign defaults have historically been clustered around major regional economic events such as the 1998 Russian default that affected neighbouring Ukraine, or the 2001 Argentinean debt crisis that spread to Uruguay. Since the upturn from the global credit trough in 2002, Moody's has recorded only three defaults as improving economic conditions have generally supported sovereign credit quality. In 2006, Belize was the only rated country to default. Indeed, the dire state of Belize's state finances made the debt restructuring launched by the government a largely expected occurrence, as the country held a rating of Caa3 prior to the formal default event in December 2006. The Belize default involved a relatively modest amount of debt (US\$242 million), the lowest single country default volume since the default of Moldova in June 2001.

With increasing numbers of emerging market countries gaining access to international capital markets, the number of Moody's-rated sovereign issuers has grown significantly in recent years. This year's sovereign bond default study updates our previous sovereign studies and covers the rating history and default experience of 103 Moody's-rated governments issuing local and/or foreign currency bonds. Exhibit 1 provides the countries covered in this study, catalogued by the year in which their initial Moody's bond ratings were assigned.

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
Total	103	

Data and Methodology

While Moody's assigns a variety of sovereign ratings, this study focuses on sovereign bond ratings, as represented by either their foreign currency bond ratings or domestic currency bond ratings. 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 The lowest rating is selected because it is the most meaningful single indicator of a sovereign's likelihood of defaulting on any one of its bonds at any point in time.

On occasion, when a sovereign retires all 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).

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. The current study excludes defaults that were fully cured within a contractually specified grace period.² This refinement of not including cured grace period defaults creates a number of changes to our default coverage in terms of the size of the sample and timing of the default.³

The Current Economic and Market Environment

Data from the IMF and Moody's sovereign unit show that real world GDP expanded 5.4% in 2006, the highest rate in the 1999-2006 period and well above the 3.2% average in the ten years from 1989 to 1998. The strength of economic growth appears to have been broad-based in 2006, as indicated by robust global median and per-capita growth rates. Median real GDP growth was 4.9% in 2006, while average per-capita income in 2006 was 65% higher than in 1997. Despite ample world-wide liquidity and favourable lending standards, high-yield rated countries have generally concentrated their efforts on improving their debt positions - as signalled by ten-year lows in both external debt as a share of GDP (43% in 2006 against 62% in 2000) and as a share of current account receipts (90% in 2006 against 165% in 2000). To date, abundant liquidity and strong macroeconomic conditions have yet to create excessive inflationary pressure as the 2006 median inflation rate for speculative-grade rated countries stood at 4.7%, only just above the average of the past ten years.

The downward trend in sovereign credit spreads has been consistent with the benign economic environment.⁴ The option-adjusted spread on the Lehman aggregate sovereign bond index fell to 44 basis points (bps) in December 2006. At the end of April 2007, the aggregate sovereign spread was 43 bps, a level three times lower than the peak recorded in September 2001. Spreads on high-yield emerging markets government bonds have also seen a large compression, falling from a peak of 1194bps in September 2002 to a low of 174bps in February 2006 - a reduction by a factor of almost 7.

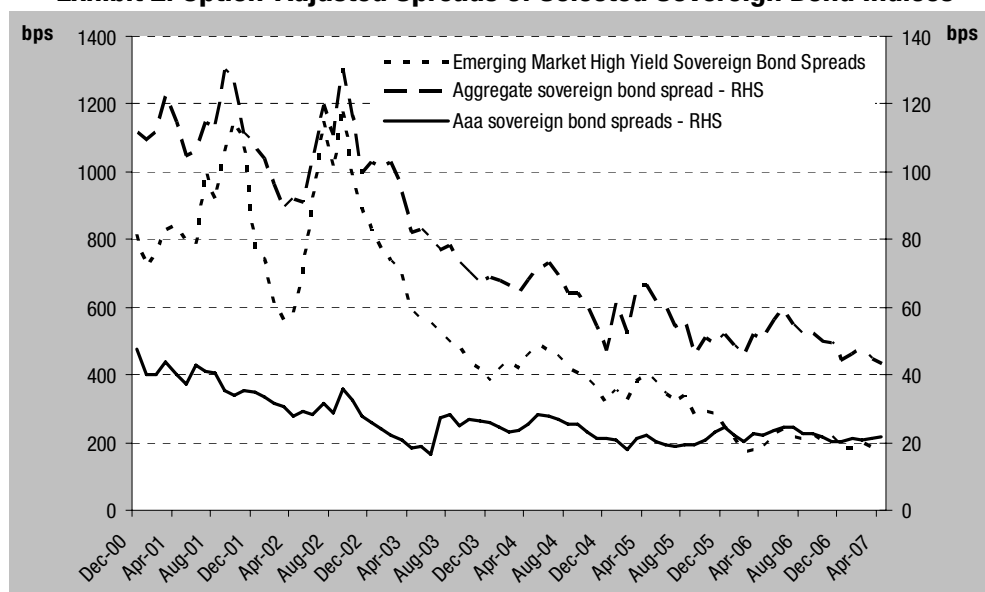
1. In most cases, domestic currency bond ratings are the same or higher than the same sovereign's foreign currency bond ratings. This is due to the fact that a government could generally "print" money if necessary to service domestic currency debts and avoid default, but may find it very difficult, at 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. 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 likely signals the materialisation of a future loss but it is not a necessary condition on its own.

3. As a result of this refinement, this year's study excludes the default of Peru, while Moldova and the Dominican Republic were subject to a change in the date of default. For further details on specific cases, see Appendix I.

4. For a more exhaustive discussion on the pricing of risk in the current economic environment, see Moody's International Policy Perspectives comment entitled "Why Is Credit Risk Priced so Low? A Perspective on Global Liquidity", February 2007.

Exhibit 2: Option-Adjusted Spreads of Selected Sovereign Bond Indices



Source: Lehman Brothers

Trends in Credit Quality: the Distribution of Sovereign Ratings

As shown in Exhibit 3, in 1983 all 12 rated sovereign issuers were investment grade. By the end of 2006, however, the investment-grade share of issuers had dwindled to less than 65%. This trend largely reflects the increased access to debt markets by riskier emerging market countries that Moody's began to rate. Indeed, as more sovereign issuers have been rated, the rating mix has become more similar to the rating distribution of corporate bond issuers.

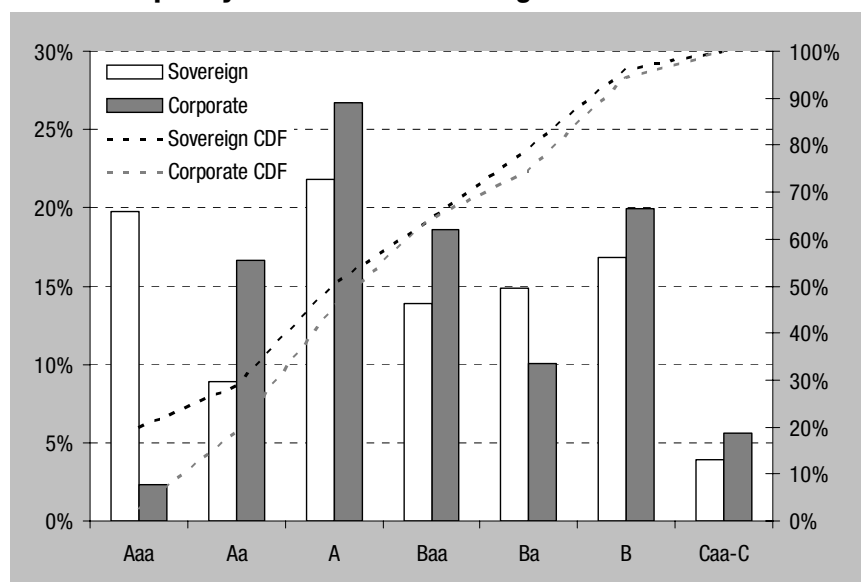
Interestingly, the sovereign rating mix drifted upward between 2000 and 2006, as the share of sovereigns rated investment grade climbed modestly. The mode of the rating distribution shifted from Baa to A during this period, with a considerable decrease in the share of Ba- and Baa-rated entities.

Exhibit 3 - Rating Distributions of Sovereign Issuers at Selected Dates

	1983	1990	1995	2000	2005	2006
Aaa	75%	40%	20%	14%	20%	20%
Aa	25%	30%	26%	14%	5%	9%
A	0%	17%	20%	13%	24%	22%
Baa	0%	3%	13%	21%	14%	14%
Ba	0%	7%	15%	17%	15%	15%
B	0%	3%	7%	16%	17%	17%
Caa-C	0%	0%	0%	5%	4%	4%
Investment-Grade	100%	90%	78%	62%	64%	64%
Speculative-Grade	0%	10%	22%	38%	36%	36%

Exhibit 4 compares the rating distributions of sovereign and corporate bond issuers as of December 2006. 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. On average, however, sovereign issuers have higher ratings, as highlighted by the sovereign cumulative distribution being consistently above its corporate counterpart.

Exhibit 4 – Frequency and Cumulative Rating Distribution in December 2006



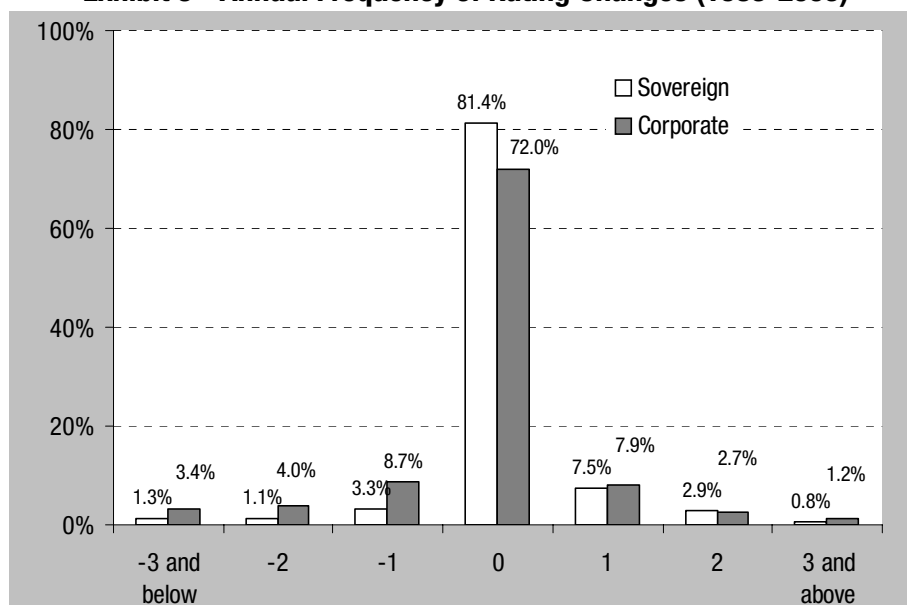
Trends in Credit Quality: Rating Actions and Migration Rates

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 2006, 21 sovereigns had their local or foreign currency bond ratings changed, or 21% of the total rated sample. Reflecting the strong economic and credit quality environment in 2006, only two sovereigns experienced downgrades. Nineteen sovereigns experienced upgrades and these can be divided into three groups. The largest group consists of oil-exporting countries, which have benefited from consistently high oil prices since 2004. Most of these countries come from the Middle-Eastern region (Bahrain, Kuwait, Oman, Qatar and Saudi Arabia), but Trinidad and Tobago and Kazakhstan are also part of this group. The second group consists of countries whose creditworthiness has improved as a result of reforms put in place in the pursuit of European Union membership. The upgraded countries include Bulgaria and Romania, which gained their EU membership at the beginning of 2007; Lithuania, Slovakia and Slovenia, which gained membership in 2004; and others still aspiring, such as Bosnia and Herzegovina. The third group consists of three Latin America sovereigns: Brazil, Chile and Uruguay. Besides geographical affinities, these three countries implemented structural reforms and experienced strong economic performance that will enable them to more effectively manage potential adverse economic conditions in the future.

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

Exhibit 5 - Annual Frequency of Rating Changes (1983-2006)



Sovereign ratings have been more stable on average than corporate ratings, with 81.4% of sovereigns experiencing no rating changes in a typical year vs. 72.0% for corporates. On average, sovereign issuers experienced a 10.8% probability (7.5% upgrade + 3.3% 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, were 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 is 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).⁵ The weights correspond to the size (number of issuers) of the annual cohorts.

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 under discussion 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 1-Year Rating Migration Rates (1983-2006)

Sovereign Issuers

Rating From:	Rating to	Aaa	Aa	A	Baa	Ba	B	Caa-C	D	WR
Aaa		97.34%	2.66%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Aa		6.24%	91.72%	1.04%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%
A		0.00%	2.75%	94.06%	2.25%	0.41%	0.00%	0.00%	0.00%	0.54%
Baa		0.00%	0.00%	9.76%	84.53%	3.00%	0.97%	0.00%	0.00%	1.74%
Ba		0.00%	0.00%	0.00%	8.04%	83.87%	6.29%	0.76%	0.49%	0.54%
B		0.00%	0.00%	0.00%	0.00%	5.77%	84.58%	3.64%	4.98%	1.03%
Caa-C		0.00%	0.00%	0.00%	0.00%	0.00%	31.36%	47.93%	20.71%	0.00%

5. 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.

Exhibit 6 - Average 1-Year Rating Migration Rates (1983-2006) (Continued)

Corporate Issuers

Rating From:	Rating to								
	Aaa	Aa	A	Baa	Ba	B	Caa-C	D	WR
Aaa	82.81%	12.27%	1.10%	0.00%	0.03%	0.00%	0.00%	0.00%	3.78%
Aa	0.70%	85.42%	9.37%	0.57%	0.08%	0.03%	0.00%	0.01%	3.82%
A	0.08%	2.75%	85.60%	6.79%	0.91%	0.18%	0.03%	0.04%	3.63%
Baa	0.04%	0.19%	5.83%	81.98%	5.62%	1.36%	0.40%	0.27%	4.32%
Ba	0.01%	0.08%	0.57%	7.73%	72.48%	9.68%	0.82%	1.33%	7.31%
B	0.01%	0.04%	0.17%	0.55%	7.76%	72.08%	6.43%	5.67%	7.30%
Caa-C	0.00%	0.04%	0.05%	0.23%	1.07%	9.62%	58.18%	19.87%	10.95%

As shown in Exhibit 6, rating changes on average have been less frequent for sovereign issuers than for corporate issuers. For example, only 2.6% of the Aaa-rated sovereign issuers have been downgraded on average per year compared to about 13.4% for Aaa-rated corporate issuers. Sovereign ratings appear more stable than corporate ratings in the other investment-grade rating categories, 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.⁶ The higher upgrade rate for the lowest-rated sovereigns reflects the fact that 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 and default ultimately enter bankruptcy and eventually 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.

Historical Sovereign Defaults

Belize was the only default recorded by Moody's in 2006. The Belize default was prompted by a need for debt restructuring as the economy struggled to meet its debt obligations accounting for over 90% of GDP. The new debt structure did not reduce the amount of debt owed, though it did lengthen maturity and lower the interest rate.

Although our sample period begins in 1983, there were no Moody's rated sovereign bond defaults until 1998. A mixture of cooling global economic conditions 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. Interestingly, even though many countries were battered by the currency crisis of 1998, not one country directly affected by the crisis actually defaulted on its government bonds. For example, despite the deep economic impact of the currency crisis and the drastic measures that some governments put in place, countries like Malaysia, Indonesia, Thailand and Korea managed to avoid default on their government bonds. Indonesia came closest as it restructured its private loans held under the Paris-Club agreement, but its bonds continued to be serviced.

The largest default of 1998 was that of Russia as the country suffered a fiscal crisis as a result of government policies. The total sovereign market default volume in 1998 was a staggering US\$76 billion, of which the Russian default accounted for over 96%. Since 1998, there have been seven additional defaults, led by Argentina's US\$82 billion default in 2001 which spilled over to Uruguay two years later.

While countries may have defaulted on bilateral loans or agency loans, since our focus is on sovereign bond defaults, Exhibit 7 provides a chronological summary of only bond-default volumes and the circumstances surrounding these defaults. Appendix I provides more details on events leading to these defaults and their eventual resolutions.⁷

6. A smaller sample size can magnify such ratings changes.

7. For the sake of completeness, both pieces of information 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.

Exhibit 7 - Sovereign Defaults

Year	Country	Total Defaulted Debt (\$ millions)	Comments
Nov-98	Pakistan	\$1,627	Pakistan missed an interest payment 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-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-98	Venezuela	\$270	Defaulted on domestic currency bonds in 1998, although the default was cured within a short period of time.
Aug-99	Ecuador	\$6,604	Missed payment was followed by a distressed exchange; over 90% of bonds were restructured.
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.
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.
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-01	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.
Apr-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

In addition to migration probabilities, investors are also interested in default rates for multiple investment horizons. 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.⁸ 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.

8. 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, in that we track default rates over horizons of one year, two years, three years etc.

Exhibit 8 - Issuer-Weighted Cumulative Default Rates (1983-2006)

Sovereign Issuers

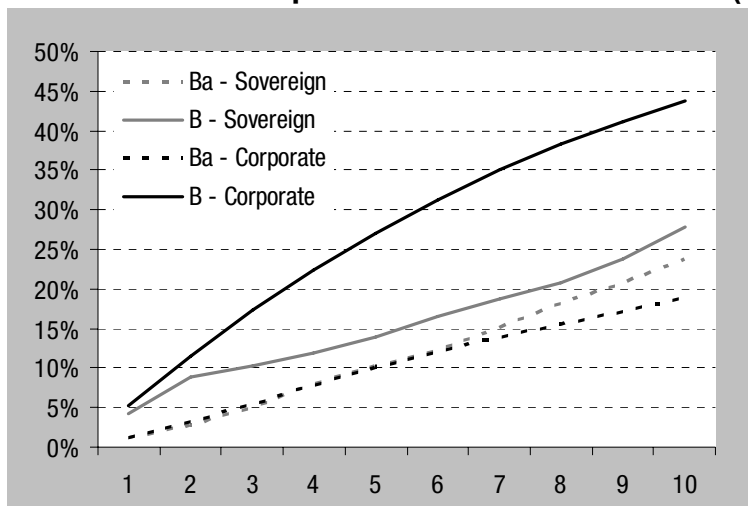
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Aaa	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Aa	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
A	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Baa	0.000%	0.723%	1.441%	2.191%	3.018%	3.903%	3.903%	3.903%	3.903%	3.903%
Ba	1.302%	2.809%	5.141%	8.005%	10.285%	12.315%	15.055%	18.139%	20.801%	23.690%
B	4.264%	8.789%	10.226%	11.819%	13.934%	16.562%	18.761%	20.857%	23.753%	27.748%
Caa-C	22.901%	28.542%	34.731%	34.731%	34.731%	34.731%	34.731%	34.731%	34.731%	--
Investment-Grade	0.000%	0.143%	0.286%	0.434%	0.596%	0.760%	0.760%	0.760%	0.760%	0.760%
Speculative-grade	3.369%	6.234%	8.452%	10.639%	12.708%	14.827%	17.265%	19.850%	22.560%	25.690%
All Corporates	0.913%	1.816%	2.543%	3.281%	3.987%	4.688%	5.331%	5.980%	6.565%	7.148%

Corporate Issuers

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Aaa	0.000%	0.000%	0.000%	0.026%	0.101%	0.174%	0.254%	0.338%	0.429%	0.526%
Aa	0.008%	0.019%	0.042%	0.106%	0.178%	0.261%	0.344%	0.417%	0.465%	0.524%
A	0.021%	0.095%	0.221%	0.346%	0.474%	0.617%	0.763%	0.930%	1.111%	1.293%
Baa	0.177%	0.493%	0.911%	1.409%	1.908%	2.422%	2.930%	3.423%	3.990%	4.613%
Ba	1.201%	3.210%	5.543%	7.910%	10.149%	12.130%	13.866%	15.556%	17.221%	18.924%
B	5.334%	11.523%	17.290%	22.309%	27.022%	31.208%	35.003%	38.215%	41.206%	43.696%
Caa-C	19.347%	30.239%	39.507%	46.841%	52.596%	56.755%	60.087%	63.897%	67.267%	70.126%
Investment-Grade	0.074%	0.221%	0.416%	0.631%	0.842%	1.039%	1.208%	1.356%	1.506%	1.664%
Speculative-grade	4.842%	9.755%	14.418%	18.472%	22.109%	25.176%	27.676%	29.689%	31.494%	33.148%
All Corporates	1.697%	3.396%	4.969%	6.290%	7.418%	8.330%	9.039%	9.587%	10.062%	10.489%

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 the two shows that sovereign default rates have been on average lower than those for their corporate counterparts. With the exception of Ba-rated issuers, differences seem to widen as we descend the rating scale and at longer horizons. Exhibit 9 powerfully visualizes these differences for Ba and B-rated issuers. Caa-C rated sovereign default rates have been significantly lower at any horizon barring the one-year.

Exhibit 9 - Ba- and B-rated Comparative Cumulative Default Rates (1983-2006)



Recovery Rates of Defaulted Sovereign Issuers

Moody's ratings are statements about the probability of default and the expected loss severity rate (i.e. 1 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.

Exhibit 10 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, or in cases in which the initial default event was the distressed exchange itself, we report the average price shortly before the distressed exchange. The second method is based on the ratio of the value of the old securities to new securities received in exchange by discounting their promised cash flows, using the yield to maturity implicit in the old securities at the time of the announcement of the exchange offer.⁹ 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.

Year of Default	Defaulting Country	Average Trading Price** (% of par)	PV*** Ratio of Cash Flows (ratio in %)
2001	Argentina	33	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	65	65
1998	Russian	18	50
2000	Ukraine	69	60
2003	Uruguay	66	85
Issuer Weighted Recovery Rates		55	64
Value Weighted Recovery Rates		29	41
<small>*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))</small>			

The two highest recovery rates in our sample follow the Belize and the Dominican Republic defaults in 2005 and 2006, respectively, when corporate recovery rates were generally high and corporate default rates were low.¹⁰ 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) presented in the exhibit are significant, the two approaches to estimating recovery values generally produce similar estimates.¹¹ 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); the trading price at default may reflect different expectations.

9. 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.

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

11. 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)*.

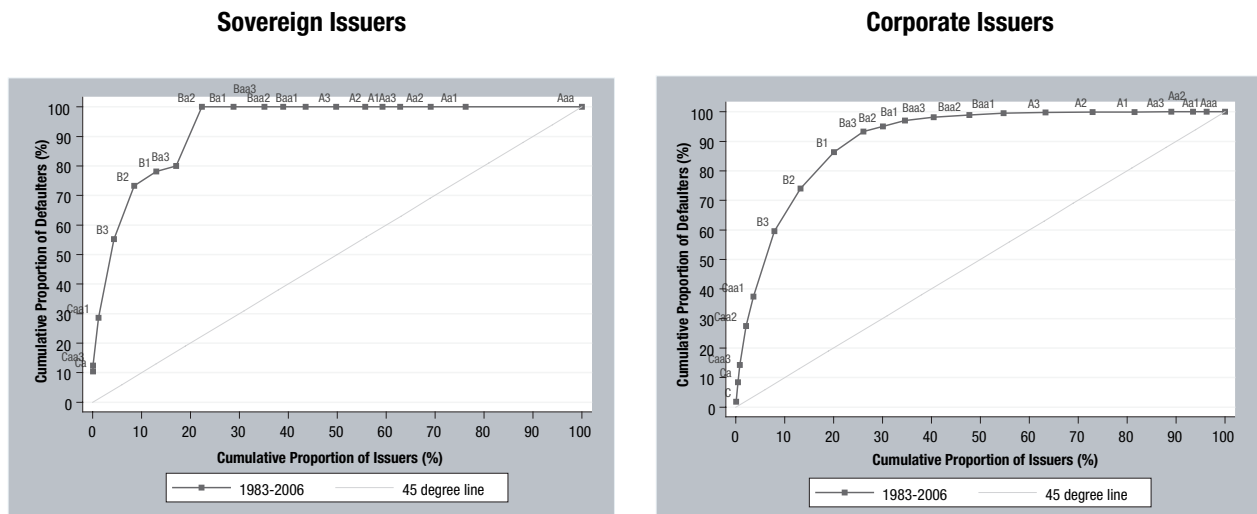
Note, however, that the two methods' median issuer-weighted recovery rates are very similar (65% for 30-day post default method and 62.5% for the PV method). As our sample of sovereign recoveries increases over time, differences in average recovery rates are likely to even out.

Rating Performance Measures

One of the desirable properties of an effective rating system is it should be able to separate the low risk from the high credit risk issuers. A simple, but important, measure of ratings performance can be derived from the cumulative accuracy profiles (CAPs) of Moody's ratings as predictors of sovereign defaults over various time horizons.

Exhibit 11 presents the CAPs for sovereign and corporate ratings observed between 1983 and 2006 as predictors of default over one-year horizons. A CAP plot graphs the cumulative proportion of defaults from a portfolio against the proportion of issuers exposed to the risk of default, sorted by riskiness. 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 better it is at identifying defaults in the riskiest rating categories.

Exhibit 11 - One-Year Cumulative Accuracy Profiles (1983-2006)



The CAP plots reveal that sovereign ratings historically have done a better job rank-ordering one-year default risks than have corporate ratings. All sovereign defaulters had ratings of Ba2 or less within one year prior to default. In contrast, some corporate issuers have carried ratings as high as A1 within a year prior to defaulting. More generally, the 22% of the lowest rated sovereign issuers have accounted for 100% of the defaults; meanwhile, 22% of the lowest rated corporates have accounted for only about 88% of the defaults within one year of having a particular rating.

A summary measure of rating accuracy that can be derived from the CAP curve is the accuracy ratio. The accuracy ratio (AR) is the ratio of the area between the CAP curve and the 45-degree line, and lies between the negative and positive area (like a correlation statistic). As can be inferred from the CAP curves in Exhibit 11, Moody's sovereign ratings have had a higher accuracy ratio than their corporate counterparts. The historical average one-year accuracy ratio for the sovereign ratings has been 88.8% for the 1983-2006 period, compared to 83.9% for the corporate ratings during the same period.

Related Research

[Hamilton, David T.; Cantor, Richard; Ou, Sharon and Kim, Franklin; 2007 “Corporate default and Recovery Rates, 1920-2006”, Moody’s Investors Service, Special Comment, February 2007 \(102071\)](#)

[Hamilton, David T.; Cantor, Richard; “Measuring Corporate Default Rates November 2006”, Moody’s Investors Service, Special Comment, November 2006 \(100779\)](#)

[Cantor, Richard, Varma, Praveen; “Determinants of Recovery Rates on Defaulted Bonds and Loans for North American Corporate Issuers: 1983-2003”, Moody’s Investors Service, Special Comment, December 2004 \(90593\)](#)

[Guide to Moody’s Default Research, April 2007 \(102661\)](#)

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.

Appendix I - Circumstances Surrounding Individual Sovereign Bond Defaults

ARGENTINA 2001

Argentina defaulted in 2002 by missing a payment on 3 January 2002. While the actual default happened in 2002, Moody's had already downgraded the long-term foreign currency sovereign credit rating to **Ca** on 20 December 2001, which reflected 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 neighbouring 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 privatised 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, people started believing that their pesos would be devalued and rushed to the banks to convert them to 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%.

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% of GDP. In 2005, the government embarked on a series of stabilisation policies by rising taxes, cutting expenditure and tightening monetary conditions. During the 2005 fiscal year, the deficit was cut back to 3% 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% 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 amortising before 2019 - providing a 12-year grace period to the government. The new debt carries a lower coupon of 4.25% for the first three years that gradually increases up to 8.5%.

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% 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 realised 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% 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.

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 has been reduced to around 23% of exports, compared to 28% before the default. With the restructuring, the short-term debt component has been reduced, but it is still at well over 100% 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% 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% 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% and maturity of six years with three years' grace, in exchange for US\$608 million in existing bonds and notes carrying coupons of 6%, 11.5%, and LIBOR plus 3.95% 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 programmes - 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 favourable ("Houston") terms.

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 specialising 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 authorising 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% of GDP in 1996), the government sped up liberalisation 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% in August 1997, a time when consumer price inflation was at an annual 15%.

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 forex 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% 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% bonds and offered to include them in an exchange proposal. Bondholders were offered seven-year coupon amortisation bonds which would be issued by Ukraine and nominated in the euro or U.S. dollar. In euro, the bond coupon amounted to 10%, while in U.S. dollars the coupon represented 11% with no grace period.

The bulk of the debt was amortised 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% of holders of Ukrainian government bonds had agreed to the restructuring and accepted new bonds with a face value of approximately 50% 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% 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%.

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 cheques was unavailable at the time but that the cheques 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.

Appendix II - Prices of Defaulted Sovereign Bonds

Defaulting Issuer	Date of Issue	Maturity Date	Coupon	Initial Rating	Issue Default Date	Default Rating	Default Amount in \$MM	Recovery Price
Russia	May-94	May-99	3%	Ba3	4/20/1999	Ca	1307	25
Russia	Oct-97	15-Dec	FLT	Ba3	5/25/1999	Ca	6051	10.5
Pakistan	Sep-96	Dec-00	FLT	B1	12/6/1999	Caa1	150	98.6
Pakistan	Feb-97	2-Feb	6%	B2	12/6/1999	Caa1	150	55
Pakistan	Nov-94	Dec-99	11.50%	Ba3	12/6/1999	Caa1	150	40
Ecuador	Jul-97	25-Feb	4%	B1	10/22/1999	Caa2	1914	30
Ecuador	Jul-97	2-Apr	11.25%	B1	10/22/1999	Caa3	350	43
Ecuador	Apr-97	4-Apr	FLT	B1	10/22/1999	Caa3	150	59.9
Ukraine	Feb-98	1-Feb	16%	B2	2/25/2000	Caa1	500	68.8
Ukraine	Mar-98	Mar-00	14.75%	B2	2/25/2000	Caa1	489	69.3
Ivory Coast	Mar-98	18-Mar	2%	NR	3/31/2000	NR	410	18.1
Argentina	Jun-97	2-Jul	8.75%	B1	11/30/2001	Caa3	113	25
Argentina	Oct-99	2-Oct	Discount	NR	11/30/2001	NR	250	98
Argentina	Dec-97	2-Nov	Discount	Ba3	11/30/2001	Caa3	135	40.8
Argentina	Oct-99	3-Oct	Discount	NR	11/30/2001	NR	250	55
Argentina	Jul-98	3-Dec	8.38%	Ba3	11/30/2001	Caa3	300	31
Argentina	Jul-97	3-Dec	8.38%	B1	11/30/2001	Caa3	500	31
Argentina	Dec-93	3-Dec	8.38%	B1	11/30/2001	Caa3	1000	31
Argentina	Oct-99	4-Oct	Discount	NR	11/30/2001	NR	250	42
Argentina	Mar-98	5-Apr	FLT	Ba3	11/30/2001	Caa3	456	30
Argentina	Nov-98	5-Dec	11%	Ba3	11/30/2001	Caa3	862	26.5
Argentina	Oct-96	6-Oct	11%	B1	11/30/2001	Caa3	1213	30.5
Argentina	Jan-97	7-Feb	11.75%	B1	11/30/2001	Caa3	80	10
Argentina	1-May	8-Dec	7%	B2	11/30/2001	Caa3	11456	30.6
Argentina	Mar-99	9-Apr	11.75%	Ba3	11/30/2001	Caa3	1163	30.3
Argentina	Mar-00	10-Mar	11.38%	B1	11/30/2001	Caa3	1000	32
Argentina	1-Feb	12-Feb	12.38%	B1	11/30/2001	Caa3	905	29
Argentina	Jun-00	15-Jun	11.38%	B1	11/30/2001	Caa3	903	31
Argentina	Jan-97	17-Jan	11.38%	B1	11/30/2001	Caa3	2491	27
Argentina	1-May	18-Jun	12.25%	B2	11/30/2001	Caa3	7463	25.5
Argentina	Feb-99	19-Feb	12.13%	Ba3	11/30/2001	Caa3	176	28
Argentina	Jan-00	20-Feb	12%	B1	11/30/2001	Caa3	158	28
Argentina	Sep-97	27-Sep	9.75%	B1	11/30/2001	Caa3	891	26
Argentina	Jul-00	30-Jul	10.25%	B1	11/30/2001	Caa3	241	29.5
Argentina	1-May	Jun-31	12%	B2	11/30/2001	Caa3	8821	25
Argentina	Feb-99	29-Mar	8.88%	NR	11/30/2001	NR	125	20
Moldova	Jun-97	2-Jun	9.88%	Ba2	6/13/2002	Caa1	75	60
Uruguay	Jul-97	27-Jul	7.88%	B3	5/15/2003	B3	510	58.5
Uruguay	Jun-00	10-Jun	8.75%	B3	5/15/2003	B3	300	66.5
Uruguay	1-Nov	12-Jan	7.63%	B3	5/15/2003	B3	300	63
Uruguay	2-Mar	9-Mar	7.88%	B3	5/15/2003	B3	250	66
Uruguay	2-Mar	9-May	7.25%	B3	5/15/2003	B3	250	64
Uruguay	Nov-98	3-Nov	7.88%	B3	5/15/2003	B3	200	80
Dominican Republic	3-Jan	13-Jan	9.04%	Ba2	4/20/2005	B2	600	91.8
Dominican Republic	1-Sep	6-Sep	9.50%	Ba2	4/20/2005	B2	500	98.5
Grenada	2-Jun	12-Jun	9.38%	NR	12/30/2004	NR	100	65
Belize	15-Aug	15-Aug	9.50%	Ba2	12/7/2006	Caa3	125	75
Belize	9-Jun	12-Jun	9.75%	Ba3	12/7/2006	Caa3	100	75

Appendix III - Sovereign Bond Rating Histories

Sovereign issuer	FCR date	FC rating	Sovereign issuer	DCR date	DC rating
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
	08/15/90	WR		03/28/01	B2
	09/10/91	B3		07/13/01	B3
	07/13/92	B1		07/26/01	Caa1
	10/02/97	Ba3		10/12/01	Caa3
	10/06/99	B1		12/20/01	Ca
	03/28/01	B2		08/20/03	Caa1
	07/13/01	B3		06/29/05	B3
	07/26/01	Caa1			
	10/12/01	Caa3			
	12/20/01	Ca			
	08/20/03	Caa1			
06/29/05	B3				
Armenia	-		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	-		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	Baa1
				10/04/06	A3
Barbados	12/05/94	Ba2	Barbados	12/09/02	A3
	04/18/97	Ba1			
	02/08/00	Baa2			
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
	06/14/04	WR			
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

Sovereign issuer	FCR date	FC rating	Sovereign issuer	DCR date	DC rating
Botswana	-		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			
	10/12/05	Ba3			
	08/31/06	Ba2			
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			
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			
Chile	05/25/99	Baa1	Chile	07/29/99	A1
	07/07/06	A2		10/01/02	WR
				11/08/02	A1
China	05/23/88	A3	China	-	
	11/08/89	Baa1			
	10/21/92	WR			
	09/10/93	A3			
	10/02/03	A2			
Colombia	08/04/93	Ba1	Colombia	06/19/98	Baa2
	09/19/95	Baa3		01/21/99	WR
	08/11/99	Ba2		05/25/99	Baa2
				06/29/06	Baa3
Costa Rica	05/08/97	Ba1	Costa Rica	10/02/98	Ba1
				12/01/00	WR
				11/27/01	Ba1
Croatia	01/27/97	Baa3	Croatia	03/02/99	Baa1
Cyprus	01/29/98	A2	Cyprus	07/19/99	A2
Czech Republic	03/01/93	Baa3	Czech Republic	06/22/98	A1
	05/01/94	Baa2		08/15/02	WR
	09/01/95	Baa1		09/18/02	A1
	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
				09/01/92	WR
				09/27/95	Aaa

Sovereign issuer	FCR date	FC rating	Sovereign issuer	DCR date	DC rating
Dominican Republic	08/29/01	Ba2	Dominican Republic	11/09/98	B1
	10/07/03	B1		08/29/01	Ba2
	11/10/03	B2		10/07/03	B1
	01/30/04	B3		11/10/03	B2
	05/07/07	B2		01/30/04	B3
			11/09/05	WR	
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		12/01/06	WR
	01/30/07	Caa2			
Egypt	07/06/01	Ba1	Egypt	03/04/99	Baa1
				05/18/05	Baa3
				10/16/05	WR
El Salvador	02/08/02	Baa3	El Salvador	11/09/98	Baa2
				12/18/03	WR
Estonia	06/20/02	Baa1	Estonia	02/18/99	A1
	11/12/02	A1			
Fiji Islands	-		Fiji Islands	03/31/99	Ba1
				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	-		Germany	04/29/93	Aaa
Greece	05/24/94	Baa3	Greece	10/24/01	WR
	12/23/96	Baa1		01/28/97	A2
	07/14/99	A2		11/04/02	A1
	11/04/02	A1			
Guatemala	08/01/97	Ba2	Guatemala	11/09/98	Ba1
Honduras	-		Honduras	10/24/01	WR
				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			
	09/27/06	Aa3			
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			

Sovereign issuer	FCR date	FC rating	Sovereign issuer	DCR date	DC rating
Iceland	05/24/89	A2	Iceland	07/30/97	Aaa
	06/24/96	A1			
	07/30/97	Aa3			
	10/20/02	Aaa			
India	-		India	06/19/98	Ba2
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			
	09/01/03	B2			
	05/18/06	B1			
Iran	-		Iran	06/10/99	Ba2
Ireland	07/15/87	08/31/94	Ireland	12/31/01	WR
		02/13/97		09/04/92	Aaa
		05/04/98		Aaa	
Isle of Man	-		Isle of Man	10/03/00	Aaa
Israel	12/12/95	A3	Israel	12/15/98	A2
	07/06/00	A2			
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	11/02/98	Aaa	Japan	05/07/93	Aaa
		Aa1		11/16/98	Aa1
				09/08/00	Aa2
				12/04/01	Aa3
				05/30/02	A2
Jordan	01/22/96	Ba3	Jordan	11/24/99	Ba2
	08/21/03	Ba2		10/17/02	WR
	12/23/05	WR		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			
	03/28/02	A3			

Sovereign issuer	FCR date	FC rating	Sovereign issuer	DCR date	DC rating
Kuwait	01/29/96	Baa1	Kuwait	01/21/99	Baa1
				04/19/00	WR
				05/15/02	A2
				10/04/06	Aa3
Latvia	08/24/99	Baa2	Latvia	03/02/99	A2
				04/26/01	WR
				11/12/02	A2
				05/14/04	WR
				11/22/05	A2
Lebanon	02/26/97	B1	Lebanon	08/26/99	B1
				07/30/01	WR
				03/14/05	B3
				10/07/04	WR
Lithuania	09/04/96	Ba2	Lithuania	02/18/99	Baa1
				12/16/97	Ba1
				11/12/02	Baa1
				12/11/03	A3
				09/11/06	A2
Luxembourg	09/20/89	Aaa	Luxembourg	07/13/99	Aaa
Macao	-		Macao	11/03/97	Baa1
				09/04/98	A3
				10/15/03	A1
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
Mauritius	03/28/96	Baa2	Mauritius	01/15/99	A2
				10/05/00	WR
Mexico	12/18/90	Ba3	Mexico	05/20/93	Baa1
				01/22/96	Baa3
				08/10/99	Ba1
				03/07/00	Baa3
				02/06/02	Baa2
				01/06/05	Baa1
				01/06/05	Baa1
				03/31/99	WR
				06/09/99	Baa3
				03/07/00	Baa1
Micronesia	04/20/90	Aa2	Micronesia	-	
				05/23/90	Aa1
				01/13/03	WR

Sovereign issuer	FCR date	FC rating	Sovereign issuer	DCR date	DC rating
Moldova	01/14/97	Ba2	Moldova	07/13/99	Caa1
	07/14/98	B2		07/02/00	WR
	04/19/00	B3		12/18/00	Caa1
	07/03/01	Caa1		07/11/02	Caa2
	07/11/02	Ca		05/06/03	Caa1
	05/06/03	Caa1			
Mongolia	-		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	-		Nicaragua	03/27/98	B2
				06/30/03	B3
Norway	11/12/78	Aaa	Norway	08/11/95	Aaa
	01/15/83	WR			
	07/15/86	Aaa			
	07/13/87	Aa1			
	09/30/97	Aaa			
	01/27/03	WR			
Oman	04/01/97	Baa2	Oman	07/15/99	Baa2
	03/20/02	WR		08/03/03	WR
				09/03/03	Baa2
				10/06/05	Baa1
				10/04/06	A3
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	-	
	10/14/77	WR			
	06/27/78	Aa			
	11/11/85	WR			
	01/22/97	Ba1			
Papua New Guinea	-		Papua New Guinea	12/31/98	B1
Paraguay	-		Paraguay	07/13/98	B1
				12/20/98	WR
				04/28/03	Caa1

Sovereign issuer	FCR date	FC rating	Sovereign issuer	DCR date	DC rating
Peru	07/20/99	Ba3	Peru	11/09/98	Baa3
	09/19/00	B1			
	10/05/00	Ba3			
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		02/06/02	WR
	11/02/02	A2		09/18/02	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		06/30/02	WR
	05/18/05	A1		08/15/02	A3
	10/04/06	Aa3		05/18/05	A1
			10/04/06	Aa3	
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
	06/17/02	WR		08/08/04	WR
	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	Baa1
				11/14/05	A3
				10/04/06	A2
Singapore	-		Singapore	09/04/98	Aaa
Slovakia	05/18/98	Ba1	Slovakia	06/22/98	Baa2
	11/13/01	Baa3		11/13/01	A3
	11/12/02	A3		07/01/02	WR
	01/12/05	A2		01/12/05	A2
	10/16/06	A1		10/16/06	A1

Sovereign issuer	FCR date	FC rating	Sovereign issuer	DCR date	DC rating
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			
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
Suriname	-		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	-		Switzerland	01/20/82	Aaa
Taiwan	-		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	-		Tunisia	06/25/99	Baa2
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			
Turkmenistan	-		Turkmenistan	12/04/97	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
	02/26/01	WR		01/24/02	B2
	11/20/01	Caa1		11/10/03	B1
	01/24/02	B2			
	11/10/03	B1			

Sovereign issuer	FCR date	FC rating	Sovereign issuer	DCR date	DC rating
United Arab Emirates	01/29/96	Baa1	United Arab Emirates	10/04/06	Aa3
	12/11/97	A2			
	12/21/04	A1			
	10/04/06	Aa3			
United Kingdom	03/31/78	Aaa	United Kingdom	04/27/93	Aaa
	01/28/03	WR			
United States of America	-		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
	03/25/83	WR		12/20/99	B3
	06/03/87	Ba2		09/20/02	Caa1
	12/04/87	Ba3		09/07/04	B1
	08/07/91	Ba1			
	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	-		Vietnam	10/31/05	Ba3

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