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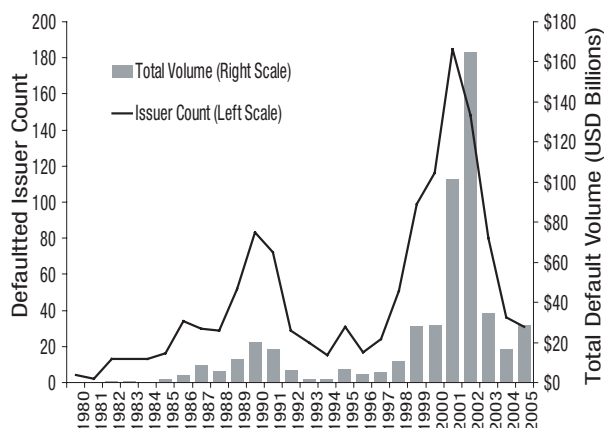
## Default and Recovery Rates of Corporate Bond Issuers, 1920-2005

### Summary

This is Moody's 19<sup>th</sup> annual survey of global corporate defaults and recovery rates. The report reviews the default, recovery, and credit loss experience of corporate bond issuers for 2005 as well as the historical period since 1920. Updated statistics on the default, loss, and rating transition experience of sovereign bond issuers are presented as well. Briefly, we find:

- A total of 32 corporate bond issuers rated as of January 1, 2005 defaulted on a total of USD 29 billion in 2005. Including issuers whose ratings were withdrawn prior to 2005, a total of 34 Moody's-rated issuers defaulted on a total of USD 29.2 billion.
- Defaults were concentrated in a handful of troubled industry sectors. The transportation (primarily airlines) and automobile (auto parts) sectors experienced the highest numbers of defaulting issuers, with 6 and 4 defaults, respectively. The independent power sector experienced the highest default rate by dollar volume, as two Calpine affiliates defaulted on USD 8.4 billion of bonds affected. Charter Communications Holdings (USD 6.9 billion) was 2005's largest default.
- The default rate for all rated corporate issuers fell to 0.6% in 2005 from 0.8% in 2004. As a percentage of dollar volume outstanding, the default rate for all rated corporate issuers increased to 0.8% in 2005 from 0.5% in 2004. The speculative-grade default rate fell to 1.9% in 2004 from 2.4% in 2005 on an issuer basis but increased to 3.8% from 2.6% on a dollar volume basis.
- Moody's global speculative-grade default rate forecasting model predicts that the default rate will rise from its current 1.9% level to 3.3% by the end of 2006.
- Recovery rates of defaulted corporate bonds remained well above their 36% historical average. In 2005, the senior unsecured bond recovery rate averaged 56%.
- Since 2003, two Moody's-rated sovereign bond issuers have defaulted: the Dominican Republic and Uruguay.

**Annual Global Default Counts and Volume  
Totals, 1980-2005**



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## Introduction

The year 2005 was, by many conventional measures, a positive year for corporate credit quality. Default rates remained low, recoveries on defaulted bonds were well above average, and aggregate credit rating revisions were favorable. Yet the year was also marked by heightened concern among investors about corporate credit quality. Rating downgrades to speculative-grade for major U.S. auto makers, defaults in a handful of widely-held industry sectors, and a rise in the size of defaults have refocused attention on credit risk. This report, Moody's 19th annual corporate default study is, therefore, timely.

In this report we document the default and recovery experience of corporate bond issuers for 2005 as well as for the historical period since 1920. We also discuss Moody's default rate forecast for 2006, as well as review the performance of Moody's forecasting model. One of the important functions of Moody's default study is to gauge the accuracy of its ratings, which we present in a separate section. In this year's report we also include an update to Moody's sovereign default statistics. Moody's methodology and detailed statistical tables are presented in two special appendices at the end of the report.

## Corporate Bond Defaults

The number of issuers defaulting on Moody's-rated corporate bonds fell for the fourth consecutive year, but the total dollar volume of defaults rose sharply in 2005 (see cover chart). Thirty-two Moody's-rated corporate bond issuers defaulted on a total of USD 29.0 billion of bonds in 2005, compared to 36 issuers and a total of USD16.5 billion in 2004. Including issuers whose ratings were withdrawn prior to 2005, a total of 34 Moody's-rated issuers defaulted on a total of USD 29.2 billion.<sup>1</sup>

Four major trends characterize corporate defaults in 2005: U.S.-based issuers constituted the vast majority of defaults; defaults were concentrated in a handful of troubled industries; the average size of default increased in 2005; and the defaults of several large, widely-held issuers led to a greater perception of credit losses than suggested by the aggregate statistics.

**Exhibit 1 - Annual Default Counts & Volume Totals by Geographical Region, 1986-2005**

Year	Issuer Counts					Year	Dollar Volumes				
	Africa & Middle East	Asia-Pacific	Europe	Latin America	North America		Africa & Middle East	Asia-Pacific	Europe	Latin America	North America
1986	0	0	0	0	34	1986	\$0	\$0	\$0	\$0	\$3,937
1987	0	0	0	0	30	1987	\$0	\$0	\$0	\$0	\$9,132
1988	0	0	0	0	29	1988	\$0	\$0	\$0	\$0	\$5,425
1989	0	4	0	0	48	1989	\$0	\$1,144	\$0	\$0	\$10,558
1990	0	1	0	0	82	1990	\$0	\$200	\$0	\$0	\$19,948
1991	0	0	1	0	71	1991	\$0	\$0	\$999	\$0	\$16,101
1992	0	0	0	0	29	1992	\$0	\$0	\$0	\$0	\$6,275
1993	0	0	0	0	22	1993	\$0	\$0	\$0	\$0	\$1,997
1994	0	0	1	0	14	1994	\$0	\$0	\$510	\$0	\$1,560
1995	0	0	0	0	31	1995	\$0	\$0	\$0	\$0	\$6,725
1996	0	0	0	0	17	1996	\$0	\$0	\$0	\$0	\$4,042
1997	0	2	0	1	21	1997	\$0	\$614	\$0	\$60	\$4,405
1998	0	7	0	0	44	1998	\$0	\$1,929	\$0	\$0	\$8,742
1999	0	8	8	2	81	1999	\$0	\$2,389	\$1,587	\$370	\$23,912
2000	0	5	3	0	108	2000	\$0	\$1,006	\$713	\$0	\$27,157
2001	4	15	16	4	145	2001	\$2,758	\$7,832	\$8,110	\$1,639	\$81,034
2002	0	3	29	15	98	2002	\$0	\$1,112	\$39,445	\$8,895	\$115,251
2003	0	2	9	3	66	2003	\$0	\$374	\$3,909	\$650	\$29,870
2004	1	0	2	0	33	2004	\$183	\$0	\$1,809	\$0	\$14,475
2005	0	0	2	1	29	2005	\$0	\$0	\$377	\$100	\$28,490

Exhibit 1 shows annual default counts and dollar volume totals by geographical region from 1986 to 2005. The majority of corporate bond defaults are by issuers based in the U.S., although the proportion of defaults originating in Europe, Asia, and Latin America has increased in recent years. In 2005, 29 of the year's 32 Moody's-rated defaults were by U.S.-based bond issuers. The three non-U.S. defaults were Brazil's Banco Santos S.A. and Sweden-based Concordia Bus AB and Concordia Bus Nordic AB.

1. Including unrated bond defaults, forty-one issuers defaulted on a total USD 29.5 billion in 2005.

By default count, 2005's defaults were concentrated in the auto/auto parts (4 defaults) and transportation (6 defaults) sectors. Measured by total default volume, the independent power sector was the top defaulting industry sector at USD 8.4 billion. The cable sector, with bonds totaling USD 6.9 billion, followed by the airlines sector (USD 5.8 billion), were the second and third largest defaulting industry categories, respectively. Exhibit 2 summarizes the distribution of 2005 default counts and dollar volume totals by industry category.

Several large defaults in 2005 boosted the average size of default to USD 905 million, compared to USD 457 million in 2004. Among the largest defaulters are issuers that are widely held in investors' portfolios, including two Calpine affiliates, Delphi Corporation, Delta Airlines and Northwest Airlines. Charter Communications Holdings LLC was 2005's largest default by total bond volume at \$6.9 billion. Exhibit 19 in Appendix B shows the complete list of 2005 defaulters and their total bond default volumes.

<b>Exhibit 2 - 2005 Corporate Defaults by Industry Sector</b>			
<b>Industry</b>	<b>No. Issuers</b>	<b>Total Volume (\$Millions)</b>	<b>Default Rates (% of Issuers)</b>
Transportation	6	\$6,027	4.01%
Automobile*	4	\$3,518	3.77%
Independent Power	2	\$8,426	2.38%
Containers, Packaging & Glass	1	\$350	2.27%
Machinery	1	\$250	1.80%
Chemicals, Plastics & Rubber	2	\$821	1.29%
Hotels, Casinos & Gaming	1	\$50	1.20%
Retail	1	\$300	1.05%
Metals & Mining	1	\$93	1.04%
Nondurable Consumer Products	1	\$34	1.03%
Healthcare, Education & Childcare	1	\$185	0.83%
Construction, Building & Real Estate	1	\$225	0.81%
Publishing, Cable & Broadcasting	1	\$6,862	0.61%
Telecommunications	1	\$160	0.45%
Electric Utilities	1	\$155	0.39%
Miscellaneous	4	\$755	0.34%
Oil & Gas	1	\$265	0.28%
Financial (Non-Bank)	1	\$390	0.14%
Banking	1	\$100	0.12%
<b>Total</b>	<b>32</b>	<b>\$28,967</b>	<b>0.65%</b>

*\* Tower Automotive, which carried a Moody's Issuer rating but did not have rated bonds, is excluded from the total. If included, automobile sector default rate is 4.72%*

The default rate for all rated corporate issuers fell to 0.6% in 2005 from 0.8% in 2004. As a percentage of dollar volume, however, the default rate for all rated corporate issuers increased to 0.8% in 2005 from 0.5% in 2004. The speculative-grade issuer default rate fell to 1.9% in 2005 from 2.4% in 2004 on an issuer basis but increased to 3.8% from 2.6% on a dollar volume basis. By rating category, default rates remained below their historical annual averages in 2005. Exhibit 3 presents default data for 2005 by whole letter rating, and Exhibit 4 shows the data by alphanumeric rating.

Although defaults were generally concentrated in the lowest tiers of speculative grade in 2005, there were two defaults by issuers that held investment-grade ratings within a year of their default date: Entergy New Orleans, Inc., and Delphi Corp. Entergy New Orleans, Inc., with bonds totaling \$155 million, filed for Chapter 11 in the aftermath of Hurricane Katrina. The bankruptcy filing of Delphi Corp., the largest auto parts maker in North America, came after it failed to secure financing from General Motors Corp., its former parent and largest customer, and was unable to negotiate sharp cuts in wages and benefits from the United Auto Workers union to restructure unprofitable U.S. operations.

### Exhibit 3 - 2005 Corporate Default Rates by Whole Letter Rating

Rating as of 1 Jan. 2005	Global				United States			
	Default Count	Volume (Millions)	Default Rate (% Issuers)	Default Rate (% Volume)	Default Count	Volume (Millions)	Default Rate (% Issuers)	Default Rate (% Volume)
Baa	2	\$2,155	0.17%	0.20%	2	\$2,155	0.30%	0.31%
Ba	0	\$0	0.00%	0.00%	0	\$0	0.00%	0.00%
B	8	\$4,232	1.06%	1.51%	8	\$4,232	1.37%	1.71%
Caa-C	22	\$22,579	8.27%	16.79%	19	\$22,102	8.48%	18.14%
Investment Grade	2	\$2,155	0.06%	0.07%	2	\$2,155	0.12%	0.14%
Speculative Grade	30	\$26,812	1.92%	3.79%	27	\$26,335	2.36%	4.29%
All Corporates	32	\$28,967	0.65%	0.75%	29	\$28,490	1.04%	1.24%

### Exhibit 4 - 2005 Corporate Default Rates by Alphanumeric Rating

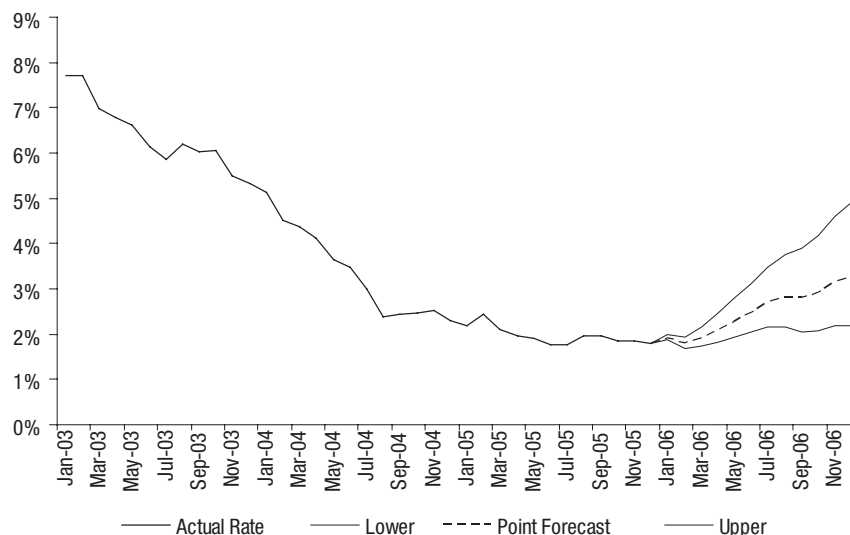
Rating as of 1 Jan. 2005	Global			United States		
	Default Count	Volume (Millions)	Default Rate (% Issuers)	Default Count	Volume (Millions)	Default Rate (% Issuers)
Baa1	0	\$0	0.00%	0	\$0	0.00%
Baa2	1	\$2,000	0.24%	1	\$2,000	0.40%
Baa3	1	\$155	0.30%	1	\$155	0.46%
Ba1	0	\$0	0.00%	0	\$0	0.00%
Ba2	0	\$0	0.00%	0	\$0	0.00%
Ba3	0	\$0	0.00%	0	\$0	0.00%
B1	0	\$0	0.00%	0	\$0	0.00%
B2	3	\$3,010	1.03%	3	\$3,010	1.34%
B3	5	\$1,222	2.09%	5	\$1,222	2.62%
Caa1	6	\$9,079	4.24%	6	\$9,079	5.15%
Caa2	9	\$1,883	10.29%	7	\$1,506	9.27%
Caa3	4	\$683	23.53%	3	\$583	21.43%
Ca-C	3	\$10,934	15.00%	3	\$10,934	16.67%
Investment Grade	2	\$2,155	0.06%	2	\$2,155	0.12%
Speculative Grade	30	\$26,812	1.92%	27	\$26,335	2.36%
All Corporates	32	\$28,967	0.65%	29	\$28,490	1.04%

## Default Rate Forecast and Model Performance

### 2005 DEFAULT RATE FORECAST

Moody's forecasting model for its global speculative-grade default rate predicts that the default rate will rise from its current 1.9% level to 3.3% by the end of 2006. Exhibit 5 shows Moody's global speculative-grade default rate forecast for 2006. Moody's point forecast indicates that the default rate will experience a gradual increase in 2006, remaining below its long-run 5% average. The chart also shows the effect on the default rate if forecasted default rates are 50% higher and lower than the model-generated estimates. In the event that the high default rate scenario occurs, the resulting default rate is still near its historical average.

**Exhibit 5 - 2005 Speculative-Grade Default Rate Forecast**



The trends in the credit and economic variables that drive Moody's forecast are somewhat more mixed relative to year ago readings. On the positive side, the credit quality of speculative-grade issuers - those most likely to default - remained steady in 2005. The number of newly rated speculative-grade issuers slowed in 2005 to 219 from 248 in 2004. The ratio of rating downgrades to rating upgrades among issuers rated speculative grade increased to 1.1 in 2005 from 0.9 in the prior year, but remained below the 1.8:1 ratio of 2003. Additionally, favorable rating outlook changes continued to outnumber negative outlook changes in 2005 by a 1.3:1 margin. Although down from 2:1 in 2004, the positive outlook changes - which have historically proven to forecast rating changes<sup>2</sup> - do not suggest rapid deterioration in credit quality in 2006.

On the negative side, consensus macroeconomic forecasts for 2006 predict that the rate of GDP growth in North America and Europe will slow, impacting corporate profitability and the ability to service debt obligations. The flattening of the Treasury yield curve in 2005 from 198 basis points at the end of 2004 to just 36 basis points at the end of 2005 is an additional concern. Yield curve flattening is historically correlated with slowing economic growth and a rise in corporate defaults. Lastly, as Moody's pointed out in its 2004 default study, the unprecedented increase in the number of new issuers rated Caa and below - nearly 1/3 of new speculative-grade rated issuers in 2004 - will eventually put upward pressure on the aggregate default rate. In light of the average seasoning pattern of corporate defaults, this risk may come home to roost near the end of 2006 and in 2007.

### MOODY'S FORECASTING MODEL PERFORMANCE

Moody's introduced and began reporting the results of its speculative-grade default rate forecasting model in 1999.<sup>3</sup> Moody's default rate forecasting model is a regression model that uses a set of credit and macroeconomic variables to predict the 12-month-ahead default rate. With six years and a full credit cycle of data now available - and with expectations of higher future default rates in the coming years - it is valuable to review the performance of Moody's model.

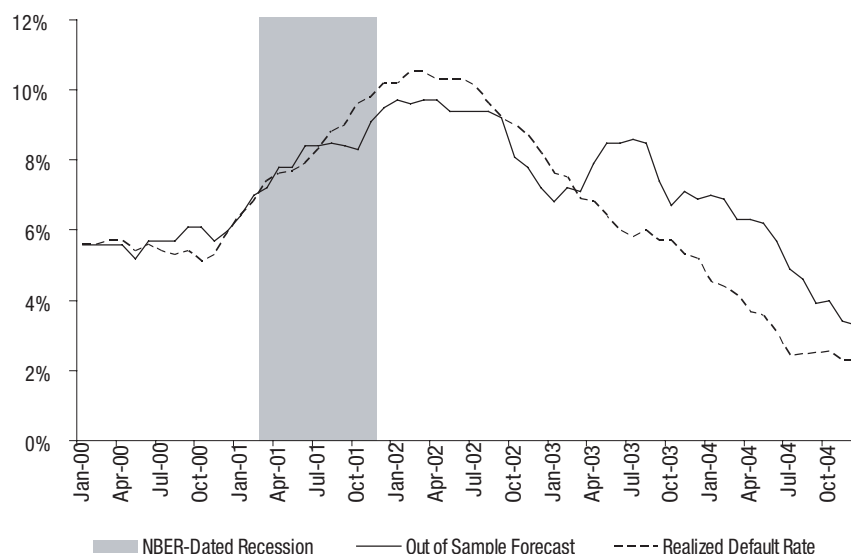
Exhibit 6 gives a general picture of the performance of Moody's default rate forecasting model. The graph shows the 12-month out-of-sample default rate forecast overlaid on the realized default rate. The gray shaded area corresponds to the NBER-dated recession in the U.S. Over the past six year, Moody's model has performed well at forecasting the default rate. Over the 2000-2005 time period, the realized and forecasted default rate have tracked each other closely, with a correlation of 0.92 and mean-squared-error of 0.006. The model also correctly forecasted some critical turning points: the sharp rise in the default rate that began in November 2000 and the peak in the default rate in March of 2002.

2. See Hamilton and Cantor (2005).

3. See Keenan, et. al. (1999).



## Exhibit 6 - Forecasted vs. Realized Speculative-Grade Default Rates, 2000-2005



However, the forecasted default rates generated by Moody's model have been less accurate in the period since April 2003. This is partially attributable to the fact that Moody's forecasts are the product of a regression model, which will tend to under-predict the default rate when it is rising and over-predict it when it is falling. A large part of the error, though, is due to misleading signals produced by the variables included in the model in 2003. U.S. industrial production experienced an average -0.8% year-over-year growth between April and August 2003, and the Treasury yield curve also briefly flattened. The change in both of these variables suggested a rise in the default rate. It is also worth noting that high yield investors also expected a rise in the default rate at the time. The high yield spread (a variable not included in Moody's forecasting model) widened from about 360 basis points in April 2003 to 650 basis points in October 2003. Moody's expects that with more historical data its forecasting model performance record will continue to prove accurate and unbiased.

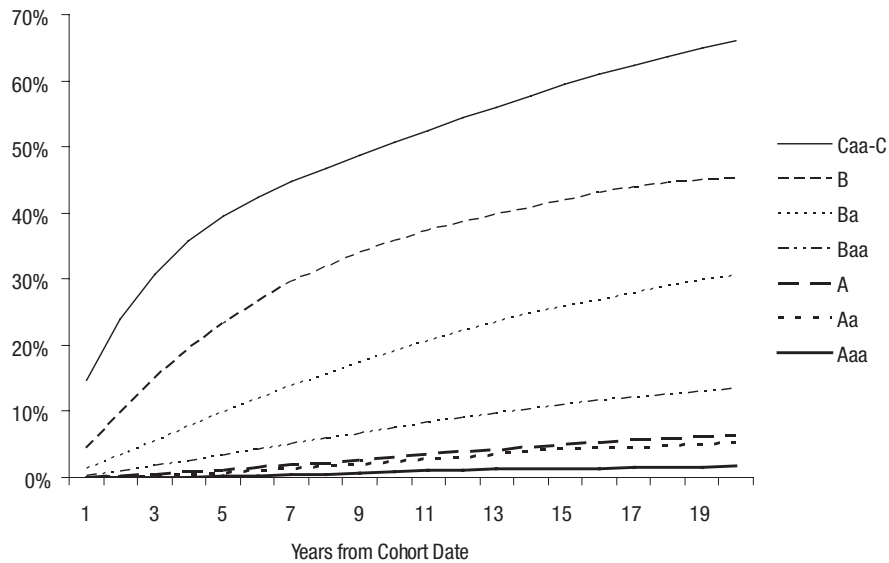
## Credit Rating Accuracy Metrics

From its inception, one of the primary goals of Moody's annual default study has been to serve as a report card on the accuracy of its long-term credit ratings. Over the years Moody's has developed several measurement criteria for evaluating the ability of its rating to predict defaults and credit losses. We review some of these performance measures in this section.<sup>4</sup>

One of the simplest measures of rating accuracy is default rates by rating category. Moody's credit ratings have been highly correlated with subsequent default rates over investment horizons as long as 20 years. Exhibit 7 shows that average cumulative default rates between 1920 and 2005 increase significantly with lower credit ratings over all time horizons. Indeed, the rate of default for issuers rated Caa is 40 times that of Aaa-rated issuers at a 20-year time horizon. While the average default rate estimates for each rating category shown in Exhibit 7 are unbiased, it is important to highlight the fact that defaults among highly rated investment-grade issuers have been extremely rare events. For example, since 1920 only six corporate bond issuers that ever held an Aaa Moody's rating have defaulted. The tables of annual and cumulative default rates in Appendix B show more detail for various historical time periods and investment horizons.

4. Moody's also publishes a separate, much more detailed report on ratings performance on a quarterly basis. See Mann and Parwani (2006).

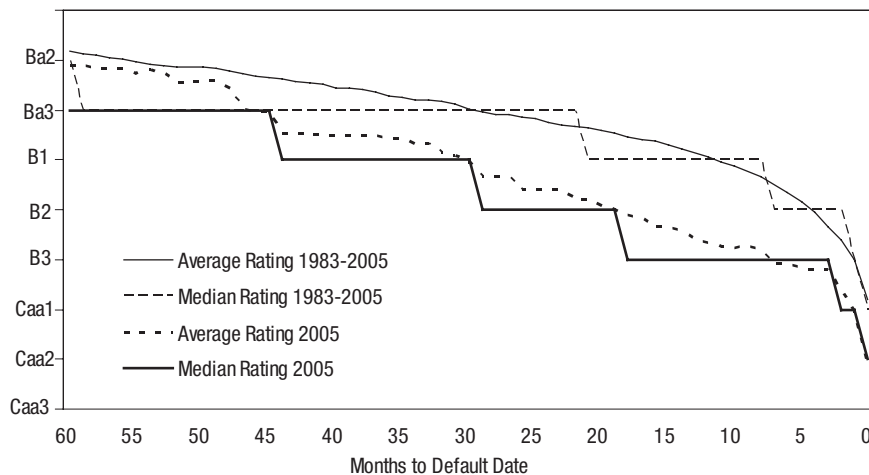
### Exhibit 7 - Average Cumulative Default Rates by Whole Letter Rating, 1920-2005



A desirable performance objective of a rating system is to identify the weakest credits by assign the lowest ratings to issuers that ultimately default. Exhibit 8 shows that the median and average ratings of the 1,226 corporate issuers that have defaulted since 1983 have been firmly in speculative grade as far as five years prior to default. Exhibit 8 plots the median and average credit ratings of defaulting issuers from 60 months prior to default up to the default date (time zero).<sup>5</sup>

For the historical period from 1983 to 2005, the median and average rating of defaulting issuers is Ba3. As the default date draws near, the chart shows a clear deterioration in the median and average level of the credit rating, the pace of which accelerates in the twelve months prior to default. The graph also shows that the pace of rating deterioration is measured: the median and average ratings of defaulters do not undergo multi-notch revision as they approach the default date. Rating cuts generally proceed in one notch increments.

### Exhibit 8 - Median and Average Rating Prior to Default, 1983-2005



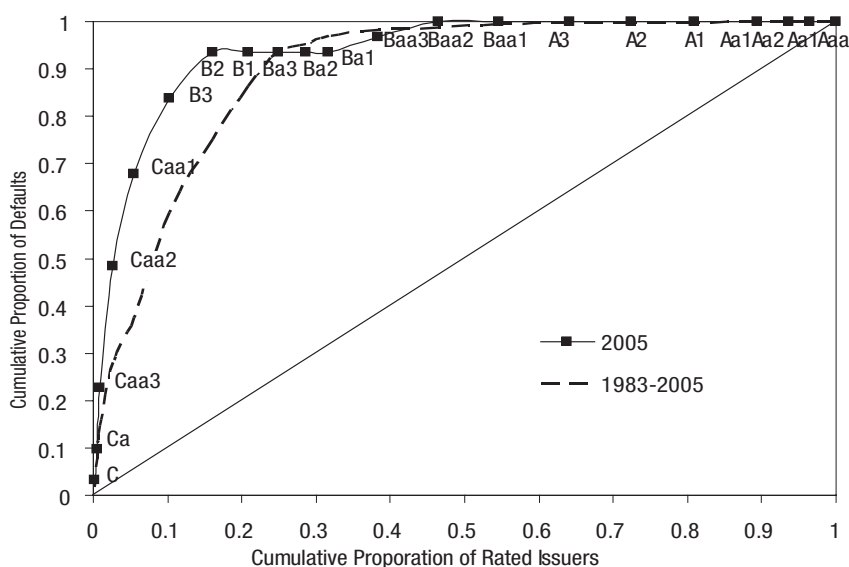
5. The median and average rating values were calculated by mapping Moody's ratings to a linear scale (1=Aaa, 2=Aa1, ..., 21=C). The median and average ratings were then calculated at each point in time.

In addition to assigning low ratings to issuers that ultimately default, the effectiveness of a rating system depends on its ability to assign high credit ratings to issuers that do not default. In other words, an efficient rating system is able to separate the low credit risks from the high credit risks.

A metric designed to measure this aspect of ratings performance is the cumulative accuracy profile (CAP) plot. The 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. Exhibit 9 shows the CAP plots for the 2005 cohort of issuers as well as for the 1983-2005 time period.<sup>6</sup> 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 9 shows that the CAP curve for 2005 lies above that of the 1983-2005 CAP curve over most of its range. As Exhibit 3 showed, 22 of 2005's 32 defaults were by issuers rated Caa and below. This has the effect of improving the 2005 CAP curve relative to the historical CAP curve. However, the two investment-grade defaults in 2005 cause the CAP curve for the year to cross below the historical curve over a section of its range, resulting in somewhat weaker relative performance.

**Exhibit 9 - 2005 CAP Curve vs. 1983-2005 Average CAP Curve**



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 negative and positive one (like a correlation statistic).<sup>7</sup> Exhibit 10 shows one- and five-year accuracy ratios for the 1983-2005 time period. The graph suggests that the one-year accuracy ratio is positively correlated with the credit cycle: when defaults are increasing, the accuracy ratio falls. At the five-year horizon this correlation is much less evident. In the short run, the stability objective of Moody's rating system dampens rating changes; at longer time horizons, stability is unconstrained, and accuracy increases. As suggested by Exhibit 9 above, the one-year accuracy ratio for 2005 was somewhat weaker relative to 2004 due to the two investment-grade rated defaults.

6. The 1983-2005 CAP curve was generated by pooling the annual cohort data.

7. A detailed description of CAP plots and the accuracy ratio is found in Cantor and Mann (2003).

**Exhibit 10 - 1- and 5-Year Accuracy Ratios by Cohort Year, 1983-2005**



## Recovery in Default and Credit Loss Rates

### CORPORATE DEBT RECOVERY RATES

The positive credit environment in 2005 was also reflected in higher than average recovery rates<sup>8</sup> for defaulted bonds and bank loans. As default rates have steadily declined, recovery rates on defaulted instruments have been rising from their 2001 nadir.<sup>9</sup> The issuer-weighted average recovery rate for defaulted bonds 2005 was 55.9%, substantially greater than the historical average of 35.9% but a bit lower than the highly elevated level, 59.9%, seen in 2004.

Recovery values for defaulted loans were also well above their historical averages in 2005, but preferred stocks experienced recovery rates that were fairly similar to their long-run means. Exhibit 11 details issuer-weighted and value-weighted recovery rates for 2005, 2004, and the long-term averages, for securities at various levels of the capital structures of defaulting issuers.<sup>10</sup>

**Exhibit 11 - Average Recovery Rates for Corporate Debt Obligations, 1982-2005**

	Issuer-Weighted			Value-Weighted		
	2005	2004	1982-2005	2005	2004	1982-2005
<b>Bank loans</b>						
Sr. Secured	81.6	86.1	70	91.6	84.7	64.2
Sr. Unsecured	—	—	57.6	—	—	46.8
<b>Bonds</b>						
Equipment Trust	NA	28.3	59.3	NA	28.3	56.6
Sr. Secured	77.9	78.7	51.9	76.9	85.7	52.6
Sr. Unsecured	55.2	53.2	36.0	54.4	67.8	34.6
Sr. Subordinated	33.6	47.5	32.4	37.0	43.8	29.2
Subordinated	95.0*	82.9**	31.8	95.0*	78.4**	29.1
Jr. Subordinated	—	—	23.9	—	—	16.8
<b>All Bonds</b>	55.9	59.9	35.9	54.3	70.7	33.9
Preferred Stock	13.8	50.3	11.3	7.2	48.1	7.3
<b>All Debt Instruments</b>	54.5	63.3	37.7	53.5	69.0	35.8
* Based on one observation						
** Based on three observations						

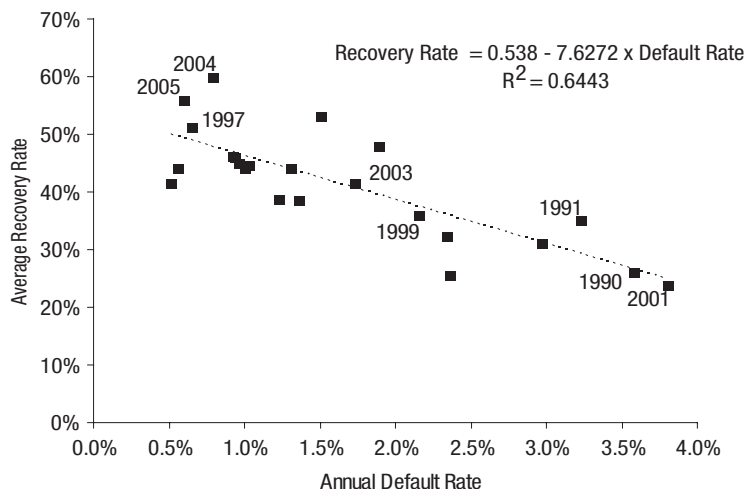
8. Recovery rates are quoted as percentage of par.

9. Average recovery rates on defaulted instruments can be estimated in various ways. In most of the analysis below, we focus on issuer-weighted mean recovery rates, which correspond to the average recovery rate on a portfolio of bonds that is well diversified across issuers. Appendix A defines the recovery rate measures we use in this section.

10. Exhibit 20 in the Appendix details recovery prices on instruments that defaulted in 2005. Exhibit 24 in Appendix B presents various descriptive statistics - sample sizes, high, lows, medians, and standard deviations - for our long-term sample of recovery rates by type of capital instrument.

A number of factors may explain why average recovery rates have recently been elevated, such as a reduced supply of or increased demand for defaulted assets, a reduction in high-yield spreads, cyclically higher asset values, or increased risk preferences among vulture investors. Moody's and other researchers have documented that recovery rates tend to be higher when default rates (and the commensurate supply of defaulted debt) are low. The resulting negative correlation between default rates and recovery rates is apparent in Exhibit 12.

**Exhibit 12 - Correlation between Defaults and Recoveries, 1983-2005**



A simple linear regression model shows an  $R^2$  of 0.64 between issuer-weighted average annual recovery rates and annual corporate default rates. Although not shown here, similar but weaker correlations are also evident between issuer-weighted average annual recovery rates and annual speculative-grade default rates and between value-weighted recovery rates and annual aggregate default rates.

While recovery rates have been high in recent years, we are likely to see a decline in average recovery rates going forward as default rates rise from their current lows. Over the 24-year period from 1982 to 2005, the issuer-weighted and value-weighted recovery rates have fluctuated around a long-term mean of about 41%, as shown in Exhibit 13. In past two years, recovery rates have exceeded the long-term mean, but between 1997 and 2002 - when default rates were above average - they were below the long-term mean. If the default rates rise as forecasted by Moody's for 2006, and beyond, a decline in recovery rates seems likely. Exhibit 24 in Appendix B presents annual recovery rates from 1982 to 2005 for instruments with different seniority in the capital structure.

**Exhibit 13 - Annual Average Sr. Unsecured Recovery Rates, 1982-2005**

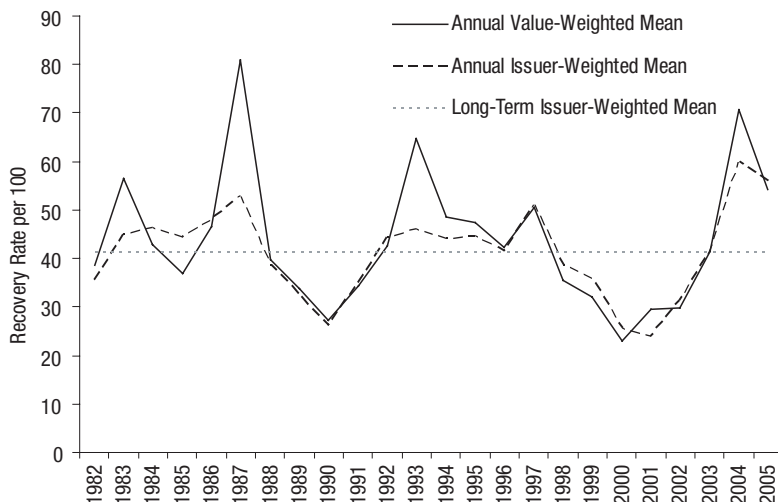


Exhibit 14 presents the historical relationship between ratings prior to default and average senior unsecured bond recovery rates. The relationship between recovery rates and ratings prior to default is very weak for speculative-grade ratings. When, however, issuers have defaulted within a few years of carrying investment-grade ratings, their senior unsecured bond recovery rates have tended to be modestly higher than that of speculative-grade issuers.<sup>11</sup> The difference, however, tends to diminish as the time to default increases - 48.9% versus 35.1% at a one-year horizon and 44.1% versus 41.7% at a five-year horizon.

	Years Prior to Default				
	1	2	3	4	5
Aaa	—	—	—	97.0	74.1
Aa	95.4	62.1	30.8	55.3	41.6
A	46.4	54.9	50.3	47.7	48.4
Baa	48.1	46.4	47.3	44.1	41.5
Ba	40.1	39.2	38.6	42.4	44.3
B	36.6	35.3	37.3	38.2	41.3
Caa-Ca	30.4	29.7	32.9	39.2	34.7
Investment Grade	48.9	49.8	47.9	46.8	44.1
Speculative Grade	35.1	34.7	36.7	39.3	41.7
All Ratings	36.2	36.7	38.9	41.2	42.4

\* Issuer-weighted average as percentage of par. See Appendix A for the definition.

There are a number of possible reasons why investment-grade issuers that default over a short horizon experience higher average senior unsecured recovery rates. Most importantly, investment-grade issuers tend not to have much secured bank or bond debt "in front of" senior unsecured debt; hence, the lower recovery rate on speculative senior unsecured debt may reflect its more structurally subordinated position within the capital structure. Moreover, some investment-grade defaults may reflect strategic defaults by companies battling litigation or, in the case of utilities, seeking rate relief from regulators.

It is important to recognize, however, that the majority of investment-grade issuers that do default, default many years after being rated investment-grade. For example, although 8.9% of investment-grade issuers default within twenty years, only 1.3% default in the first four years. As a result, there is little to reason to expect that senior unsecured recovery rates will be higher for issuers rated investment-grade in general, but only for those few investment-grade issuers that default within a relatively short period of time of carrying an investment grade rating.

## HISTORICAL CREDIT LOSS RATES

Moody's credit ratings are opinions on relative expected credit losses upon default. Credit losses are therefore a function of both probability of default as well as the severity of default (LGD). Exhibit 15 presents historical credit losses for broad rating categories and shows that Moody's have consistently rank ordered issuers based on their expected credit loss rates over investment horizons ranging from 1-year to 5-years.

It is worth noting that credit loss rates for very highly rated (Aaa- and Aa-rated) investment-grade issuers may be over-estimated using price-based historical recovery rate data because (1) there are relatively few historical defaults among Aaa- and Aa-rated issuers; and (2) price-based data is not available or underestimates recovery values for the defaults that have occurred.<sup>12</sup>

11. These estimates may understate recoveries for very highly rated investment-grade issuers, such as Aaa- and Aa-rated issuers. Since 1980, there have only been three Aaa-rated bond defaults (two of which were affiliated): Texaco Oil, Getty Oil, and Federated Department stores. Texaco and Getty bondholders ultimately recovered 100% of their claims.

12. See footnote 9.

Exhibit 15 - Average Cumulative Credit Loss Rates by Whole Letter Rating, 1982-2005					
Cohort Rating	(Percent)				
	Year 1	Year 2	Year 3	Year 4	Year 5
Aaa	0.000	0.000	0.000	0.000	0.004
Aa	0.000	0.001	0.018	0.038	0.080
A	0.007	0.033	0.090	0.159	0.227
Baa	0.108	0.313	0.572	0.902	1.241
Ba	0.767	2.173	3.925	5.623	7.042
B	3.605	8.059	12.119	15.590	18.612
Caa-C	14.427	22.966	29.530	34.112	37.701
Investment Grade	0.041	0.111	0.257	0.470	0.766
Speculative Grade	3.246	6.709	13.019	18.903	26.965
All Corporates	1.078	0.445	2.475	4.358	6.974

## Sovereign Defaults

### SOVEREIGN DEFAULTS

Since Moody's last report on sovereign bond issuer transition and default rates in 2003,<sup>13</sup> two rated bond issuers - the Dominican Republic and Uruguay - defaulted by imposing distressed exchanges on investors. In this section, we discuss these two defaults and provide updated statistics on sovereign rating transition, default, and recovery rates.

- Dominican Republic:** The Dominican Republic missed a bond interest payment in January 2004, but cured that default within a 30-day grace period. After a number of additional late interest payments in the following year, the country proposed a debt exchange to investors in April 2005 which would extend the existing maturities on its two outstanding foreign currency bond issues and defer their cash interest payments for 2-years. In May, roughly 95% of the investors in the bond coming due in 2006 and one coming due in 2013 agreed to extend the maturity dates by 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 tantamount to a default both because the maturity extension and the interest deferral were needed to avoid outright default. The issuer's foreign-currency bond rating was kept at B3 before and after the exchange because the realized loss severity of the exchange was modest, yet the potential for further losses going forward remains material.

- Uruguay:** From mid-1997 to May 2002, Uruguay was rated investment-grade (Baa3). However, Argentina's severe currency crisis led to concurrent debt servicing problems for Uruguay in 2002. Uruguay's total debt escalated to about 100% of GDP, or roughly USD 11 billion, with significant amount of bonds coming due in 2003 and 2004. To help restore debt sustainability, in April 2003 the authorities launched a debt exchange aimed 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 overall participation rates averaged about 93%.

The debt restructuring involved three components: an external component covering bonds mainly issued in Europe and the U.S. (amounting to some USD 3.6 billion), a Japanese component (covering Samurai bonds worth about USD 250 million), and a domestic component (covering domestic currency bonds worth about USD 1.6 billion). As a result of the maturity extension, Moody's classifies 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 exchange was completed.

### SOVEREIGN RATING TRANSITION AND DEFAULT RATES

Exhibit 16 presents one-year letter rating transition rates for sovereign bond issuers. These statistics indicate that sovereign rating transition rates are comparable to those of corporate issuers (see Exhibit 24 in Appendix B); however, the ratings on Baa and Caa-C sovereign issuers appear somewhat less stable than their corporate counterparts.<sup>14</sup>

13. See Varma (2003).

14. When considering these statistics, readers should keep in mind that underlying sample size is very small. As of January 2006, Moody's rated only 94 sovereigns. Moreover, some rating transitions reflect changes in the underlying reference rating rather than changes in any specific rating, as described in Appendix A, Moody's estimates long-term senior unsecured sovereign rating histories by tracking the lower of its foreign or domestic currency ratings.

## Exhibit 16 - Average One-Year Whole Letter Rating Transition Rates, 1983-2005

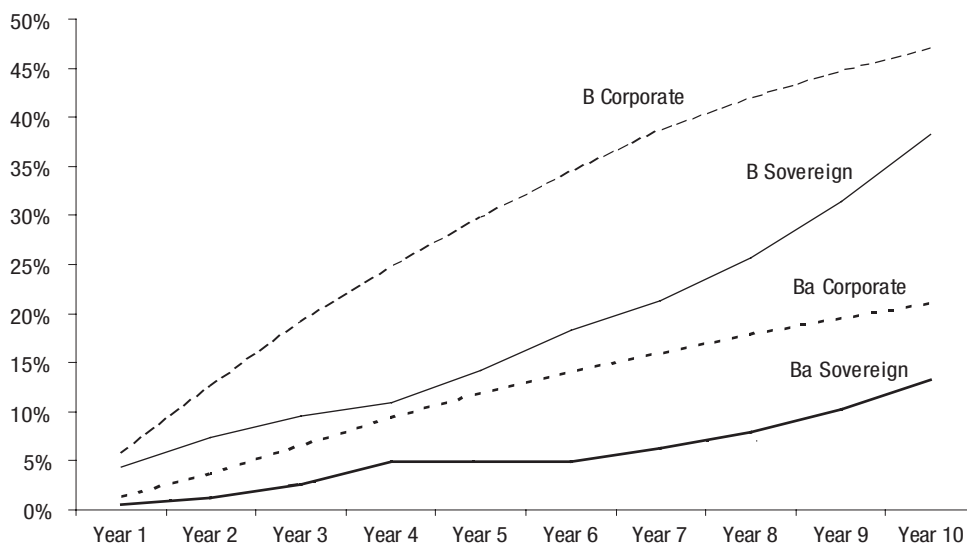
(Percentage of Issuers)

Beginning of Year Rating	End of Year Rating								WR
	Aaa	Aa	A	Baa	Ba	B	Caa-C	Default	
Aaa	94.65	5.21	0.00	0.00	0.00	0.00	0.00	0.00	0.15
Aa	4.43	92.28	1.38	0.00	0.00	0.00	0.00	0.00	1.90
A	0.00	2.90	91.73	3.19	0.52	0.00	0.00	0.00	1.66
Baa	0.00	0.00	8.88	79.02	6.85	0.85	0.00	0.00	4.40
Ba	0.00	0.00	0.00	4.28	85.93	8.29	0.73	0.62	0.15
B	0.00	0.00	0.00	0.00	3.50	87.18	2.09	3.89	3.34
Caa-C	0.00	0.00	0.00	0.00	0.52	28.18	53.12	18.18	0.00

The fairly high annual upgrade rate, at 29%, for Caa-C sovereign issuers is much higher than the upgrade rate for Caa-C corporate issuers, which is in single digits. One explanation for the higher upgrade rate is that many of the Caa-C rated sovereigns were first assigned these ratings after executing a distressed exchange. So, it is not surprising that a significant percentage of those cases were upgraded over time. Downgrades of sovereigns into the Caa rating category have, in fact, almost always been followed by a default.<sup>15</sup> Exhibit 20 in Appendix B presents the complete list of all sovereign issuers that have defaulted on rated bonds since 1983.

Exhibit 17 presents average cumulative Baa, Ba, and B default rates for sovereign and corporate bond issuers for the 1983-2005 time period. Default rates for sovereign bond issuers have generally been lower - roughly half at the five-year and ten-year horizons - than the default rates for similarly rated corporate issuers during the same time period. Exhibit 33 in Appendix B shows detailed cumulative default rates for sovereign bond issuers.

## Exhibit 17 - Average Cumulative Default Rates: Sovereigns vs. Corporates, 1983-2005



## SOVEREIGN BOND RECOVERY RATES

Exhibit 18 presents two types of estimates of recovery rates on defaulted sovereign bonds. The first method reports the average 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 offer, we report the average price shortly before the distressed exchange was completed.

<sup>15</sup> Of the 10 sovereign issuers that ever held a Caa rating, only two - Romania and Belize - have not defaulted either before or after.



The second method is based on the ratio of the value the old securities to new securities received in exchange by discounting their promised cash flows using the yield to maturity implicit in the price of old securities at the time of the announcement of the exchange offer.<sup>16</sup> The sample presents recovery estimates for all rated bond defaulters, except for Venezuela for whom we were unable to obtain market quotes on its defaulted domestic currency bonds, although anecdotal evidence suggests recovery rates on its bonds were high. The sample also includes estimated recovery rates on two defaulting issuers, Grenada and Ivory Coast, whose bonds were not rated by Moody's.

<b>Exhibit 18 - Sovereign Recovery Rate Estimates</b>			
<b>Country</b>	<b>Default Year</b>	<b>Average Price**</b>	<b>Fair Value Price***</b>
Argentina	2001	33	30
Dominican Republic	2005	92	95
Ecuador	1999	44	60
Grenada*	2004	65	NA
Ivory Coast*	2000	18	NA
Moldova	2001	66	NA
Pakistan	1998	65	65
Russian	1998	18	50
Ukraine	2000	69	60
Uruguay	2003	66	85
<b>Average</b>		<b>54</b>	<b>64</b>
* Not rated by Moody's at the time of default.			
** 30-day post-default price when initial default event was a missed payment; price before exchange when initial event was an exchange offer			
*** Ratio of the present value of the new instruments relative to the PV of instruments for which they were exchanged, discounted by the yield to maturity observed just prior to the exchange			

Contrary to market perceptions, recovery rates on sovereign bonds have on average been higher than those on corporates on average. The market's view that sovereign bond recovery rates are lower, everything else equal is, however, not wholly without basis. The two largest defaulters, Russian and Argentina, imposed large losses on their investors.

Recovery rates for issuers that defaulted in the past three years have been higher those than those that defaulted earlier in the sample. This rise is consistent with higher average recovery rates experience by defaulted corporate bonds issuers during the same time period. The overall average issuer-weighted recovery rate for sovereign issuers was 53%, about 30% higher than reported in Varma (2003).

16. This method, reported by the Bank of England (2005), uses the discount rate on the old bonds at the time of the announcement of exchange offer, which could be months after the first default event. For example, in Russia's case, Moody's recorded the default when the first payment was missed; whereas, the distressed exchange was announced more than a year later. With the announcement of an exchange offer, some uncertainty is resolved and the yield on existing instruments may change which will impact the PV of new instruments. The appropriateness of this method may also depend on the validity of an implied assumption that the yield curve is flat over the period of maturity extension. Other methods are also discussed in Stuzenneger and Zettelmeyer (2005).

## References

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Bank of England (2005) *Financial Stability Review*, June 2005

Cantor and Mann (2003) "Measuring the Performance of Corporate Bond Ratings," Moody's Global Credit Research, April.

Cutler and Ederer (1958) "Maximum Utilization of the Life Table Method in Analyzing Survival," *Biostatistics*, December.

Hamilton and Cantor (2004) "Rating Transition and Default Rates Conditioned on Outlooks", *Journal of Fixed Income*, September.

Keenan, S., Sobehart, J., and D. T. Hamilton (1999) " Predicting Default Rates: A Forecasting Model for Moody's Issuer-Based Default Rates," Moody's Global Credit Research, August.

Mann, C. and K. Parwani (2006) "The Performance of Moody's Corporate Bond Ratings: December 2005 Quarterly Update," Moody's Global Credit Research, January.

Stuzenneger, F. and J. Zettelmeyer (2005) "Haircuts: Estimating Investor Losses in Sovereign Debt Restructurings, 1998-2005," IMF Working Paper (WP/05/137).

Varma, P. (2003) "Sovereign Bond Defaults, Rating Transitions, And Recoveries (1985-2002)," Moody's Global Credit Research, February.

## Appendix A - Methodology and Data

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### DATA SOURCES

Moody's bases the results of this study on its proprietary database of ratings and defaults for corporate bond issuers. Municipal debt issuers, structured finance transactions, private placements, and issuers with only short-term debt ratings or only bank loan ratings are excluded unless otherwise noted. In total, Moody's data covers the credit experiences of over 16,000 corporate issuers that sold long-term public debt at some time between 1920 and 2005. As of January 1, 2005 over 5,000 corporate issuers held a Moody's long-term bond rating.

Moody's database of corporate defaults covers over 3,600 long-term bond defaults by issuers both rated and non-rated by Moody's. Additional data sources, such as Lehman Brothers index data, supplemented Moody's proprietary data in the construction of the aggregate dollar volume-weighted default rates. Defaulted bond pricing data was derived from Bloomberg, Reuters, and TRACE. The majority of these market quotes represent an actual bid on the debt instrument, although no trade may have occurred at that price. Over the 1982-2005 period, the dataset consists includes post-default prices for nearly 2,500 defaulted instruments issued by over 1,200 defaulting corporations. Moody's makes the 1970-2005 credit rating, default, and recovery rate data used in this study available through its Default Risk Service (DRS) database.

### ESTIMATED SENIOR RATINGS

The credit ratings used in Moody's annual default studies do not refer to the ratings of any specific debt obligations. Rather, they are notional, issuer-level ratings derived from each issuer's outstanding rated bonds. The resulting ratings are called estimated senior unsecured ratings or, more concisely, estimated senior ratings. Estimated senior ratings are derived by a statistical algorithm: first, the rating on each company's senior unsecured bonds is used; if an issuer does not have any rated senior unsecured bonds, the estimated senior rating is derived by statistically implying such a rating on the basis of rated subordinated or secured bonds, or senior implied ratings.

Deriving estimated senior ratings is necessary because Moody's credit ratings for corporate bonds are based on expected credit loss, which is comprised of (1) the expected probability of default, as well as (2) the expected severity (loss of principal and interest) in the event of default. Therefore, in order to calculate historical default rates by rating category, which are estimates of the expected default probability component, one must hold severity considerations constant. In most cases, estimated senior ratings will yield an assessment of default risk that is relatively unaffected by special considerations of collateral or of position within the capital structure.

### MOODY'S DEFINITION OF DEFAULT

Moody's definition of default includes three types of credit events:

1. A missed or delayed disbursement of interest and/or principal, including delayed payments made within a grace period;
2. Bankruptcy, administration, legal receivership, or other legal blocks (perhaps by regulators) to the timely payment of interest and/or principal; or
3. A distressed exchange occurs where: (i) the issuer offers bondholders a new security or package of securities that amount to a diminished financial obligation (such as preferred or common stock, or debt with a lower coupon or par amount, lower seniority, or longer maturity); or (ii) the exchange had the apparent purpose of helping the borrower avoid default.

The definition of a default is intended to capture events that change the relationship between the bondholder and bond issuer from the relationship which was originally contracted, and which subjects the bondholder to an economic loss. Technical defaults (covenant violations, etc.) are not included in Moody's definition of default.

In Moody's default research, secondary and tertiary defaults are reported only after the initial default event is believed to have been cured. This is to ensure that multiple defaults related to a single episode of financial distress are not over-counted.<sup>17</sup>

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17. For example, a bankruptcy that follows a missed interest payment is not counted as a separate default event. When an issuer has re-entered the pool of eligible issuers (where a previous event of default has been cured), the rating associated with a subsequent default is the one on the given cohort formation date; if the analysis is based on 'initial' ratings rather than cohort ratings, the rating used is the one after the initial default. Thus, an issuer that experiences two defaults in its lifetime has two 'initial' ratings.

## DEFAULT RATE CALCULATIONS

Moody's employs the standard method used by statisticians to analyze cumulative survival (and hence default) probabilities using discrete time data.<sup>18</sup> In calculating default rates for individual cohorts, Moody's adjusts the denominator of the default rate downward for issuers whose ratings are withdrawn to account for survivorship bias. Once an issuer's rating is withdrawn, the observation of its future default experience is treated as a censored observation.<sup>19</sup>

By way of example, if while measuring a 10-year CDR an issuer's rating was withdrawn in year 5, certainty regarding default history can only be gained for the period of time between the time the cohort was formed and year 5. The issuer would therefore be considered "exposed" to default for 5 years, not 10 years.

Cumulative default rates (CDRs) are calculated from marginal default rates (MDRs), which represent the probability that an issuer that has survived in the sample through a particular date will default over a short interval following that date. By definition, the denominators used to estimate MDRs must adjust for withdrawals and defaults prior to that date. We use the following formal for calculating MDRs, which also makes a very minor adjustment (and inconsequential) adjustment for the withdrawals that occur during the short interval in question.

The marginal default rate,  $d(t)$ , is the ratio of the number of defaulting issuers in period  $t$ ,  $x(t)$ , divided by the number of issuers exposed to the risk of default in period  $t$ . The denominator of the marginal default rate is adjusted for issuers whose ratings have been withdrawn,  $w(t)$ :

$$d(t) = \frac{x(t)}{n(t) - x(t-1) - \frac{1}{2}[w(t) + w(t-1)]}$$

Cumulative default rates,  $D(T)$ , for horizons of length  $T$ , for specific cohorts are built up from the MDRs as follows:

$$D(T) = d_1 + (1 - d_1)d_2 + (1 - d_1)(1 - d_2)d_3 + \dots + \prod_{t=1}^{T-1} (1 - d_t)d_T$$

For example, the two year cumulative default rate is the sum of the marginal default rate in year one ( $d_1$ ) and the marginal default rate in year two ( $d_2$ ) for issuers that survived past year one,  $(1 - d_1)$ .

When calculating average CDRs over many cohorts, the above formula is also used, but the MDRs are constructed by averaging across cohorts. In this manner, when estimating long-term CDRs, information from recent cohorts need not be ignored entirely. Rather, near-term cohorts are used to obtain more precise estimates of the near-term marginal default rates used in deriving long-term CDRs.

Our default rate calculation method has two important advantages over the more simplistic so-called static pool method used by some researchers:

- If you expect to have a ten-year exposure to an issuer, you want an estimate of the risk of ten years of exposure. Moody's method produces an unbiased estimate of this risk, whereas the static pool method produces downwardly biased default rates estimates since it implicitly assumes that issuers that leave the sample would never have defaulted.
- Moody's method uses all the available information about default/survival in the dataset to estimate long-term CDRs, including the information from recent cohorts, not just cohorts that have history that span the entire horizon of the CDR calculation. Moody's method uses such information in estimating short-term MDRs that enter into the long-term CDR calculations, whereas the static approach simply ignores that data.<sup>20</sup>

## COHORT FREQUENCY

The historical average default and rating migration rates reported in this study are calculated by taking the weighted average of groups of issuers formed at equally spaced time intervals, called cohorts. For example, the average one-year rating migration rates for the 1970-2005 time period (shown in Exhibit 24) are calculated by forming groups of issuers

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18. The classic reference is Cutler and Ederer (1958). This approach is the discrete time analogue of the continuous hazard rate model which is familiar to most economists.

19. Moody's does attempt to follow these companies subsequent experience and occasionally becomes aware of instances that issuers with withdrawn ratings default. It is not possible, however, to use this information in an unbiased way because we do not know what happens to all withdrawn issuers. Moreover, issuers that have their ratings withdrawn because they no longer have any debt outstanding and are liquidated cannot be used to gain insight to the question: what would happen if I have credit exposure to an issuer beyond that date of liquidation?

20. For example, Moody's 10-year cumulative default rate is not calculated only using issuers with 10 years of history available. Issuers with one year of history contribute to the first year marginal default rate; issuers with two years of history contribute (up to) the second year marginal default rate, etc.

based on their ratings held at the beginning of each month between 1970 and 2005, tracking the rating changes over the subsequent twelve months, and then taking the weighted average. The weights correspond to the number of issuers in each cohort and rating category.

The selection of cohort frequency is somewhat arbitrary. In previous years, Moody's annual default study calculated historical average default and rating migration rates using cohorts formed at annual frequencies. In this year's report, we use a monthly cohort periodicity. Monthly cohorts have the advantage of capturing rating changes that occur in small time intervals that may be missed at an annual cohort frequency.

## RECOVERY RATE ESTIMATES

Moody's generally measures recovery rates in this report using bid prices on defaulted debt obligations observed roughly 30 days after the date of default, specifically measured as a ratio of prices relative to par. Using a post-default price to measure loss severity parallels common practice in the credit default swaps market. Moreover, recovery rates measured in this way are most relevant for the many cash bond investors who liquidate their holdings shortly after default as required by their portfolio governance rules or their own investment objectives. For investors holding defaulted securities until ultimate resolution, prices observed shortly after default are generally accepted as the market's discounted expected ultimate recovery rates.

The alternative approach - measuring ultimate recoveries realized in bankruptcy resolutions - presents a number of estimation challenges including estimation of the discount rate to apply to each cash-flow, assumptions about the value of certain payments made during the process, and estimates of values of securities used to pay creditor claims, which may include illiquid new securities (e.g., equity and derivative instruments) as well as physical assets.

The table below defines the various ways Moody's sometimes calculates and presents its recovery rate estimates. For the purposes of measuring expected loss rates, we rely on issuer-weighted mean recovery rates.

Term	Definition
Issuer-Weighted Mean Recovery Rates	Issuer-weighted mean recovery rates are derived by estimating mean recovery rates for each issuer, then averaging them across issuers. They are useful for predicting recovery rates for portfolios that are well diversified across issuers.
Value-Weighted Mean Recovery Rates	Value-weighted recovery rates represent the average of recovery rates on all defaulted issuers, weighted by the face value of those issues. These estimates are useful for predicting recovery rates on the market portfolio.
Issuer-Weighted Median Recovery Rates	Issuer-weighted median recovery rates are estimated as median of issuer-weighted recovery rates and are used for predicting the most likely recovery rate for a randomly selected issuer.
Issue-Weighted Mean Recovery Rates	Issue-weighted recovery rates are estimated using recovery rates for each issue and taking the average of all issues. While this measure is widely reported, it is useful only for predicting the average recovery rate on a portfolio of default bonds diversified across issues but without reference to issuer or issue size.

## Appendix B - Statistical Tables

### Exhibit 19 - Moody's-Rated 2005 Corporate Bond Issuer Defaults

Company	Country	Default Date	Total Volume*	In Jan. 1 Cohort**
Charter Communications Holdings, LLC	United States	9/27/2005	\$6,862	Yes
Calpine Corporation	United States	12/20/2005	\$6,721	Yes
Delta Air Lines, Inc.	United States	9/14/2005	\$3,947	Yes
Delphi Corporation	United States	10/8/2005	\$2,000	Yes
Calpine Generating Co LLC	United States	12/20/2005	\$1,705	Yes
Northwest Airlines, Inc.	United States	9/14/2005	\$1,203	Yes
Collins & Aikman Products Co.	United States	5/17/2005	\$915	Yes
Foamex L.P.	United States	8/15/2005	\$500	Yes
R.J. Tower Corporation	United States	2/1/2005	\$453	Yes
Refco Group LTD., LLC	United States	10/17/2005	\$390	Yes
Northwest Airlines Corporation	United States	9/14/2005	\$375	Yes
Anchor Glass Container Corporation	United States	8/8/2005	\$350	Yes
Pliant Corporation	United States	12/1/2005	\$321	Yes
Winn-Dixie Stores Inc	United States	2/22/2005	\$300	Yes
Salton, Inc.	United States	6/15/2005	\$275	Yes
Star Gas Partners, L.P.	United States	12/5/2005	\$265	Yes
EaglePicher Incorporated	United States	4/11/2005	\$250	Yes
Inland Fiber Group LLC	United States	5/15/2005	\$225	Yes
Concordia Bus, AB	Sweden	2/15/2005	\$207	Yes
O'Sullivan Industries, Inc.	United States	7/15/2005	\$195	Yes
Curative Health Services, Inc.	United States	11/1/2005	\$185	Yes
Concordia Bus Nordic AB	Sweden	1/31/2005	\$169	Yes
IWO Holdings	United States	1/4/2005	\$160	Yes
Entergy New Orleans, Inc.	United States	9/23/2005	\$155	Yes
Fedders North America, Inc.	United States	8/31/2005	\$155	Yes
Allied Holdings, Inc.	United States	7/31/2005	\$150	Yes
Levitz Home Furnishings, Inc.	United States	10/11/2005	\$130	Yes
FLYi, Inc.	United States	2/15/2005	\$125	Yes
Tower Automotive, Inc.	United States	2/2/2005	\$125	No
Brown Jordan International, Inc.	United States	2/15/2005	\$105	No
Banco Santos S.A.	Brazil	1/14/2005	\$100	Yes
WHX Corporation	United States	3/8/2005	\$93	Yes
Romacorp, Inc.	United States	11/6/2005	\$50	Yes
Boyd's Collection, Ltd.	United States	10/16/2005	\$34	Yes

\* USD Millions

\*\* Issuers in the January 1 cohort are included in the 2005 default rates

### Exhibit 20 - Moody's-Rated Sovereign Bond Defaults, 1998-2005

Country	Default Date	Total Volume*
Pakistan	November 1998	\$750
Russia	August 1998	\$73,336
Ukraine	September 1998	\$1,422
Venezuela	July 1998	\$270
Ecuador	August 1999	\$6,603
Peru	September 2000	\$4,870
Ukraine	January 2000	\$1,063
Argentina	November 2001	\$82,268
Moldova	June 2001	\$145
Uruguay	May 2003	\$5,500
Dominican Republic	April 2005	\$1,100

\* USD Millions

## Exhibit 21 - 2005 Defaulted Corporate Bond Recoveries\*

Company	Country	Seniority	Coupon	Maturity	Defaulted Amount (\$MM)	Recovery Price
Allied Holdings, Inc.	United States	Sr. Unsecured	8.63%	10/1/2007	\$150	\$57.4
Anchor Glass Container Corporation	United States	Sr. Secured	11.00%	2/15/2013	\$350	\$66.0
Boyd's Collection, Ltd.	United States	Subordinated	9.00%	5/15/2008	\$34	\$95.0
Charter Communications Holdings, LLC	United States	Sr. Unsecured	9.63%	11/15/2009	\$532	\$82.0
Charter Communications Holdings, LLC	United States	Sr. Unsecured	10.75%	10/1/2009	\$743	\$83.0
Charter Communications Holdings, LLC	United States	Sr. Unsecured	11.75%	1/15/2010	\$406	\$81.5
Charter Communications Holdings, LLC	United States	Sr. Unsecured	10.25%	1/15/2010	\$269	\$78.0
Charter Communications Holdings, LLC	United States	Sr. Unsecured	11.13%	1/15/2011	\$312	\$66.5
Charter Communications Holdings, LLC	United States	Sr. Unsecured	13.50%	1/15/2011	\$589	\$74.0
Charter Communications Holdings, LLC	United States	Sr. Unsecured	10.00%	4/1/2009	\$486	\$83.0
Charter Communications Holdings, LLC	United States	Sr. Unsecured	8.63%	4/1/2009	\$952	\$81.5
Charter Communications Holdings, LLC	United States	Sr. Unsecured	9.92%	4/1/2011	\$940	\$63.0
Charter Communications Holdings, LLC	United States	Sr. Unsecured	10.00%	5/15/2011	\$300	\$63.0
Charter Communications Holdings, LLC	United States	Sr. Unsecured	10.00%	5/15/2011	\$280	\$63.0
Charter Communications Holdings, LLC	United States	Sr. Unsecured	11.75%	5/15/2011	\$831	\$63.0
Charter Communications Holdings, LLC	United States	Sr. Unsecured	12.13%	1/15/2012	\$221	\$53.0
Collins & Aikman Products Co.	United States	Sr. Unsecured	10.75%	12/31/2011	\$500	\$42.5
Collins & Aikman Products Co.	United States	Sr. Subordinated	12.88%	8/15/2012	\$415	\$5.3
Curative Health Services, Inc.	United States	Sr. Unsecured	10.75%	5/1/2011	\$185	\$69.3
Delphi Corporation	United States	Sr. Unsecured	6.55%	6/15/2006	\$500	\$67.0
Delphi Corporation	United States	Sr. Unsecured	6.50%	5/1/2009	\$500	\$66.8
Delphi Corporation	United States	Sr. Unsecured	6.50%	8/15/2013	\$500	\$66.5
Delphi Corporation	United States	Sr. Unsecured	7.13%	5/1/2029	\$500	\$66.8
Delta Air Lines, Inc.	United States	Sr. Unsecured	7.70%	12/15/2005	\$147	\$18.0
Delta Air Lines, Inc.	United States	Sr. Unsecured	7.90%	12/15/2009	\$499	\$18.0
Delta Air Lines, Inc.	United States	Sr. Unsecured	9.75%	5/15/2021	\$106	\$17.5
Delta Air Lines, Inc.	United States	Sr. Unsecured	8.30%	12/15/2029	\$1,000	\$18.0
Delta Air Lines, Inc.	United States	Sr. Unsecured	10.00%	8/15/2008	\$239	\$18.0
Delta Air Lines, Inc.	United States	Sr. Unsecured	9.25%	12/27/2007	\$53	\$17.5
Delta Air Lines, Inc.	United States	Sr. Unsecured	10.13%	5/15/2010	\$125	\$17.8
Delta Air Lines, Inc.	United States	Sr. Unsecured	10.38%	2/1/2011	\$200	\$17.5
Delta Air Lines, Inc.	United States	Sr. Unsecured	9.00%	5/15/2016	\$150	\$17.5
Delta Air Lines, Inc.	United States	Sr. Unsecured	9.25%	3/15/2022	\$200	\$17.5
Delta Air Lines, Inc.	United States	Sr. Unsecured	8.63%	12/12/2005	\$30	\$17.0
Delta Air Lines, Inc.	United States	Sr. Unsecured	8.56%	1/30/2006	\$20	\$17.0
Delta Air Lines, Inc.	United States	Sr. Unsecured	8.00%	12/15/2007	\$135	\$18.0
Delta Air Lines, Inc.	United States	Sr. Unsecured	10.38%	12/15/2022	\$175	\$17.5
Delta Air Lines, Inc.	United States	Sr. Unsecured	10.13%	5/15/2010	\$350	\$17.5
Delta Air Lines, Inc.	United States	Sr. Unsecured	10.38%	2/1/2011	\$325	\$18.0
EaglePicher Incorporated	United States	Sr. Unsecured	9.75%	9/1/2013	\$250	\$63.0
Entergy New Orleans, Inc.	United States	Sr. Secured	3.88%	8/1/2008	\$30	\$92.0
Entergy New Orleans, Inc.	United States	Sr. Secured	4.98%	7/1/2010	\$30	\$92.5
Entergy New Orleans, Inc.	United States	Sr. Secured	5.25%	8/1/2013	\$70	\$91.5
Entergy New Orleans, Inc.	United States	Sr. Secured	6.75%	10/15/2017	\$25	\$92.5

**Exhibit 21 - 2005 Defaulted Corporate Bond Recoveries\* (Cont'd)**

Company	Country	Seniority	Coupon	Maturity	Defaulted Amount (\$MM)	Recovery Price
Fedders North America, Inc.	United States	Sr. Unsecured	9.88%	3/1/2014	\$155	\$74.5
FLYi, Inc	United States	Sr. Unsecured	6.00%	2/15/2034	\$125	\$31.9
Foamex L.P.	United States	Sr. Secured	10.75%	04/01/2009	\$300	\$84.5
Foamex L.P.	United States	Sr. Subordinated	9.88%	05/15/2007	\$149	\$9.0
Foamex L.P.	United States	Sr. Subordinated	13.50%	8/15/2005	\$52	\$9.0
IWO Holdings	United States	Sr. Unsecured	9.63%	11/15/2007	\$160	\$70.0
Levitz Home Furnishings, Inc.**	United States	Sr. Secured	14.00%	1/15/2011	\$100	\$18.0
Levitz Home Furnishings, Inc.**	United States	Sr. Secured	6.63%	5/15/2023	\$30	\$0.5
Northwest Airlines Corporation	United States	Sr. Unsecured	7.63%	11/15/2023	\$150	\$26.6
Northwest Airlines Corporation	United States	Sr. Unsecured	8.88%	6/1/2006	\$225	\$27.1
Northwest Airlines, Inc.	United States	Sr. Unsecured	8.70%	3/15/2007	\$270	\$28.0
Northwest Airlines, Inc.	United States	Sr. Unsecured	7.88%	3/15/2008	\$100	\$28.5
Northwest Airlines, Inc.	United States	Sr. Unsecured	10.00%	2/1/2009	\$200	\$28.3
Northwest Airlines, Inc.	United States	Sr. Unsecured	9.88%	3/15/2007	\$300	\$28.8
Northwest Airlines, Inc.	United States	Sr. Unsecured	10.63%	10/01/2008	\$143	\$6.3
Northwest Airlines, Inc.	United States	Sr. Unsecured	13.38%	10/15/2009	\$300	\$28.8
O'Sullivan Industries, Inc.	United States	Sr. Secured	12.00%	6/1/2013	\$100	\$69.0
O'Sullivan Industries, Inc.	United States	Sr. Subordinated	9.00%	8/1/2012	\$95	\$20.6
R.J. Tower Corporation	United States	Sr. Unsecured	10.75%	12/15/2005	\$258	\$62.5
Refco Group LTD., LLC	United States	Sr. Subordinated	12.25%	4/15/2008	\$390	\$73.0
Salton, Inc.	United States	Sr. Subordinated	8.15%	4/22/2005	\$125	\$66.0
Salton, Inc.	United States	Sr. Subordinated	5.75%	5/15/2024	\$150	\$54.5
Tower Automotive, Inc.	United States	Sr. Unsecured	8.88%	4/1/2008	\$125	\$19.0

\* Measured by secondary market prices taken 30-days post-default



### Exhibit 22 - 2005 Corporate Whole Letter Rating Migration Rates\*

Beginning of Year Rating	End of Year Rating								
	Aaa	Aa	A	Baa	Ba	B	Caa-C	Default	WR
Aaa	89.167	5.833	0.833	0.000	0.000	0.000	0.000	0.000	4.167
Aa	0.000	92.490	1.976	0.132	0.132	0.000	0.000	0.000	5.270
A	0.149	1.791	88.955	3.731	0.075	0.000	0.000	0.000	5.299
Baa	0.000	0.253	6.397	84.343	3.199	0.842	0.000	0.168	4.798
Ba	0.000	0.000	0.716	9.302	74.240	7.335	0.537	0.000	7.871
B	0.000	0.000	0.126	0.000	7.915	75.879	4.397	1.131	10.553
Caa-C	0.000	0.000	0.351	0.702	1.404	21.404	55.088	7.719	13.333

\* Percentage of issuers rated as of 1 January 2005

### Exhibit 23 - Average One-Year Corporate Whole Letter Rating Migration Rates, 1920-2005\*

Beginning of Year Rating	End of Year Rating								
	Aaa	Aa	A	Baa	Ba	B	Caa-C	Default	WR
Aaa	88.365	6.994	0.760	0.165	0.021	0.001	0.000	0.000	3.694
Aa	1.242	85.498	6.521	0.709	0.179	0.037	0.006	0.060	5.748
A	0.076	2.851	85.279	5.359	0.717	0.117	0.028	0.073	5.500
Baa	0.045	0.306	4.666	80.898	5.290	0.795	0.170	0.287	7.542
Ba	0.007	0.084	0.522	5.975	73.632	6.982	0.641	1.316	10.840
B	0.004	0.060	0.181	0.709	6.439	71.200	5.498	4.225	11.683
Caa-C	0.000	0.027	0.054	0.200	0.944	6.806	66.583	13.885	11.502

\* Percentage of issuers calculated using monthly cohort spacing

### Exhibit 24 - Average One-Year Corporate Whole Letter Rating Migration Rates, 1970-2005\*

Beginning of Year Rating	End of Year Rating								
	Aaa	Aa	A	Baa	Ba	B	Caa-C	Default	WR
Aaa	90.071	6.737	0.541	0.191	0.013	0.002	0.000	0.000	2.637
Aa	1.036	87.885	6.918	0.269	0.053	0.017	0.000	0.008	3.814
A	0.055	2.573	88.124	4.946	0.516	0.102	0.022	0.021	3.641
Baa	0.045	0.208	4.920	84.716	4.436	0.793	0.246	0.177	4.461
Ba	0.009	0.056	0.483	5.652	76.678	7.605	0.623	1.178	7.715
B	0.009	0.049	0.169	0.412	5.549	74.539	5.442	5.367	8.463
Caa-C	0.000	0.036	0.036	0.196	0.738	7.166	60.648	19.523	11.659

\* Percentage of issuers calculated using monthly cohort spacing

**Exhibit 25 - 2005 Corporate Alphanumeric Rating Migration Rates\***

Beginning of Year Rating	End of Year Rating																		
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa-C	Default	WR
Aaa	89.167	0.000	5.833	0.000	0.000	0.833	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.167
Aa1	0.000	75.758	0.758	17.424	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.061
Aa2	0.000	5.500	87.000	1.500	1.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.500
Aa3	0.000	0.000	4.215	87.119	0.703	0.703	1.405	0.234	0.000	0.000	0.000	0.000	0.234	0.000	0.000	0.000	0.000	0.000	5.386
A1	0.000	0.000	0.463	3.704	87.037	2.546	0.926	0.463	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.861
A2	0.480	0.000	0.000	1.199	2.638	79.137	6.954	1.439	0.480	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.674
A3	0.000	0.000	0.000	0.204	3.462	11.813	72.505	5.092	0.815	2.240	0.204	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.666
Baa1	0.000	0.477	0.000	0.000	0.000	2.387	10.501	71.838	4.535	2.148	2.864	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.251
Baa2	0.000	0.000	0.233	0.000	0.233	0.930	3.721	8.837	72.558	5.581	1.163	0.465	0.233	0.930	0.233	0.000	0.000	0.233	4.651
Baa3	0.000	0.000	0.000	0.000	0.000	0.000	0.295	4.720	14.159	69.322	1.770	1.770	1.770	0.590	0.885	0.000	0.000	0.295	4.425
Ba1	0.000	0.000	0.000	0.000	0.000	0.658	0.658	0.658	3.947	19.079	55.921	10.526	1.316	1.316	0.000	0.658	0.000	0.000	5.263
Ba2	0.000	0.000	0.000	0.000	0.000	0.535	0.000	0.000	0.000	5.348	20.321	53.476	5.882	4.813	0.535	0.000	0.535	0.000	8.556
Ba3	0.000	0.000	0.000	0.000	0.000	0.000	0.455	0.455	0.909	1.364	4.545	13.636	55.909	9.091	2.727	0.909	0.909	0.000	9.091
B1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.250	6.250	10.000	57.500	9.583	2.500	0.833	0.000	12.083
B2	0.000	0.000	0.000	0.000	0.000	0.000	0.328	0.000	0.000	0.000	0.656	0.984	3.279	13.443	60.000	7.541	2.623	0.984	10.164
B3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.390	2.789	17.131	55.777	9.960	2.390	9.562
Caa-C	0.000	0.000	0.000	0.000	0.000	0.351	0.000	0.000	0.000	0.702	0.000	1.053	0.351	1.404	4.912	15.088	55.088	7.719	13.333

\* Percentage of issuers rated as of 1 January 2005

**Exhibit 26 - Average One-Year Corporate Rating Migration Rates, 1983-2005\***

Beginning of Year Rating	End of Year Rating																		
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa-C	Default	WR
Aaa	89.544	4.906	1.918	0.312	0.256	0.117	0.035	0.000	0.000	0.000	0.016	0.000	0.000	0.002	0.000	0.000	0.000	0.000	2.893
Aa1	2.718	78.025	8.126	6.016	1.043	0.300	0.113	0.113	0.025	0.007	0.035	0.000	0.004	0.000	0.000	0.000	0.000	0.000	3.475
Aa2	0.912	3.423	79.496	7.707	2.671	1.200	0.353	0.094	0.087	0.000	0.000	0.000	0.027	0.018	0.009	0.000	0.000	0.000	4.002
Aa3	0.125	0.513	4.111	79.037	8.284	2.596	0.605	0.204	0.150	0.074	0.011	0.030	0.026	0.018	0.003	0.000	0.000	0.018	4.196
A1	0.058	0.096	0.439	5.702	78.198	7.337	2.725	0.586	0.352	0.103	0.230	0.135	0.056	0.053	0.032	0.000	0.000	0.003	3.894
A2	0.037	0.045	0.276	0.894	5.126	78.031	7.286	2.776	0.885	0.370	0.212	0.095	0.147	0.043	0.047	0.006	0.037	0.025	3.664
A3	0.060	0.093	0.110	0.227	1.824	7.025	74.510	6.347	3.297	1.153	0.485	0.191	0.221	0.118	0.048	0.029	0.029	0.036	4.195
Baa1	0.040	0.041	0.132	0.129	0.278	2.130	6.708	73.327	7.267	3.134	0.937	0.497	0.391	0.505	0.073	0.041	0.123	0.159	4.088
Baa2	0.051	0.098	0.033	0.137	0.216	0.721	3.460	5.810	73.813	6.657	1.698	0.586	0.718	0.580	0.264	0.146	0.225	0.156	4.632
Baa3	0.041	0.006	0.028	0.047	0.166	0.400	0.694	3.209	8.564	70.068	5.566	2.643	1.397	0.681	0.424	0.247	0.625	0.320	4.874
Ba1	0.029	0.002	0.012	0.056	0.228	0.197	0.525	0.770	3.112	9.217	64.458	5.068	4.288	1.370	1.164	0.739	0.379	0.705	7.682
Ba2	0.000	0.000	0.035	0.032	0.035	0.141	0.133	0.430	0.822	2.877	8.776	62.636	7.558	2.574	2.716	1.074	0.736	0.753	8.672
Ba3	0.000	0.023	0.013	0.006	0.026	0.170	0.164	0.232	0.266	0.564	2.927	6.061	64.806	7.077	4.802	2.264	1.034	1.981	7.585
B1	0.020	0.013	0.020	0.010	0.050	0.090	0.073	0.093	0.158	0.225	0.561	2.805	6.188	63.201	9.085	4.031	2.457	3.041	7.880
B2	0.000	0.000	0.012	0.027	0.029	0.015	0.106	0.157	0.099	0.176	0.433	0.720	2.038	7.801	60.507	8.266	6.211	5.166	8.237
B3	0.000	0.008	0.063	0.000	0.014	0.033	0.083	0.091	0.077	0.157	0.113	0.347	0.783	3.258	5.882	58.663	11.229	9.071	10.129
Caa-C	0.000	0.020	0.000	0.016	0.000	0.028	0.000	0.028	0.085	0.108	0.108	0.089	0.402	0.940	1.218	3.312	59.462	10.405	23.779

\* Percentage of issuers calculated using monthly cohort spacing

**Exhibit 27 - Annual Moody's-Rated Global Corporate Bond Issuer Default Counts, 1920-2005\***

Cohort	Investment Grade	Speculative Grade	All Corporates	Cohort	Investment Grade	Speculative Grade	All Corporates
1920	8	25	33	1963	0	3	3
1921	7	24	31	1964	0	0	0
1922	10	23	33	1965	0	0	0
1923	5	22	27	1966	0	1	1
1924	3	37	40	1967	0	0	0
1925	7	34	41	1968	0	1	1
1926	4	18	22	1969	0	0	0
1927	1	15	16	1970	2	25	27
1928	0	8	8	1971	0	3	3
1929	3	12	15	1972	0	5	5
1930	2	21	23	1973	2	3	5
1931	6	79	85	1974	0	3	3
1932	9	108	117	1975	0	4	4
1933	9	188	197	1976	0	2	2
1934	5	60	65	1977	1	3	4
1935	9	51	60	1978	0	4	4
1936	3	19	22	1979	0	1	1
1937	4	17	21	1980	0	4	4
1938	9	17	26	1981	0	2	2
1939	2	13	15	1982	2	11	13
1940	2	16	18	1983	0	13	13
1941	0	10	10	1984	1	12	13
1942	0	4	4	1985	0	16	16
1943	0	3	3	1986	4	30	34
1944	0	3	3	1987	0	30	30
1945	0	2	2	1988	0	29	29
1946	0	0	0	1989	4	48	52
1947	0	1	1	1990	0	83	83
1948	0	0	0	1991	1	71	72
1949	0	5	5	1992	0	29	29
1950	0	0	0	1993	0	22	22
1951	0	1	1	1994	0	15	15
1952	0	0	0	1995	0	31	31
1953	0	0	0	1996	0	17	17
1954	0	1	1	1997	0	24	24
1955	0	1	1	1998	1	50	51
1956	0	0	0	1999	1	98	99
1957	0	1	1	2000	4	112	116
1958	0	0	0	2001	4	180	184
1959	0	0	0	2002	16	129	145
1960	0	2	2	2003	0	80	80
1961	0	3	3	2004	0	36	36
1962	0	4	4	2005	2	30	32

\* Includes issuers rated as of January 1 of each cohort year

**Exhibit 28 - Annual Moody's-Rated Global Corporate Bond Default Volume Totals, 1970-2005\***

Cohort	Investment Grade	Speculative Grade	Total
1970	\$154	\$756	\$910
1971	\$0	\$132	\$132
1972	\$0	\$215	\$215
1973	\$17	\$94	\$112
1974	\$0	\$69	\$69
1975	\$0	\$176	\$176
1976	\$0	\$34	\$34
1977	\$68	\$179	\$247
1978	\$0	\$112	\$112
1979	\$0	\$18	\$18
1980	\$0	\$302	\$302
1981	\$0	\$47	\$47
1982	\$243	\$515	\$758
1983	\$0	\$1,161	\$1,161
1984	\$183	\$474	\$657
1985	\$0	\$1,705	\$1,705
1986	\$178	\$3,759	\$3,937
1987	\$0	\$9,132	\$9,132
1988	\$0	\$5,425	\$5,425
1989	\$1,506	\$10,196	\$11,702
1990	\$0	\$20,148	\$20,148
1991	\$1,348	\$15,752	\$17,100
1992	\$0	\$6,275	\$6,275
1993	\$0	\$1,997	\$1,997
1994	\$0	\$2,070	\$2,070
1995	\$0	\$6,725	\$6,725
1996	\$0	\$4,042	\$4,042
1997	\$0	\$5,079	\$5,079
1998	\$399	\$10,272	\$10,671
1999	\$461	\$27,798	\$28,259
2000	\$4,115	\$24,760	\$28,876
2001	\$21,251	\$80,122	\$101,373
2002	\$55,680	\$109,022	\$164,702
2003	\$0	\$34,803	\$34,803
2004	\$0	\$16,468	\$16,468
2005	\$2,155	\$26,812	\$28,967

\* USD millions. Includes issuers rated as of January 1 of each cohort year.

### Exhibit 29 - Annual Average Defaulted Bond Recovery Rates by Lien Position, 1982-2005\*

Year	Secured Bank Loans	Sr. Secured Bonds	Sr. Unsecured Bonds	Sr. Subordinated Bonds	Subordinated Bonds	Jr. Sub. Bonds	All Bonds	Pfd. Stock
1982	NA	72.5	34.4	48.1	32.3	NA	35.6	15.0
1983	NA	40.0	52.7	43.5	41.4	NA	44.8	NA
1984	NA	NA	49.4	67.9	44.3	NA	46.3	15.9
1985	NA	83.6	60.2	30.9	42.7	48.5	44.2	13.8
1986	NA	59.2	52.6	50.2	43.7	NA	47.9	22.1
1987	NA	71.0	62.7	49.6	46.2	NA	52.9	22.6
1988	NA	55.3	45.2	33.4	33.8	36.5	38.5	11.0
1989	NA	46.5	46.2	34.6	26.4	16.9	32.3	8.7
1990	76.1	35.7	37.0	26.7	20.5	10.7	26.1	6.9
1991	70.6	49.5	38.8	43.4	25.3	7.8	35.1	10.7
1992	50.0	62.7	45.9	47.9	37.8	13.5	44.2	14.5
1993	47.3	NA	44.7	51.9	43.7	NA	46.0	6.8
1994	61.0	69.3	53.7	29.6	33.7	NA	44.1	NA
1995	82.8	63.6	47.6	34.3	39.4	NA	44.5	12.0
1996	89.1	47.6	62.8	42.8	24.3	NA	41.5	10.6
1997	83.1	76.0	55.1	44.7	41.3	30.6	51.1	7.3
1998	59.3	53.7	38.6	42.7	13.3	62.0	38.7	7.1
1999	68.3	43.3	38.0	29.1	35.5	NA	35.9	18.0
2000	71.6	41.7	23.2	20.3	32.9	15.5	25.5	5.8
2001	67.0	41.7	21.8	20.9	15.9	47.0	23.8	6.6
2002	55.8	46.9	30.3	25.3	24.5	NA	31.2	5.7
2003	77.9	63.5	40.5	38.8	12.3	NA	41.6	4.5
2004	86.1	78.7	53.2	47.5	82.9	NA	59.9	50.3
2005	81.6	77.9	55.2	33.6	95.0	NA	55.9	13.8

\* Measured by secondary market prices taken 30-days post-default.

**Exhibit 30 - Annual Issuer-Weighted Global Corporate Default Rates, 1920-2005\***

Cohort	Investment Grade	Speculative Grade	All Corporates	Cohort	Investment Grade	Speculative Grade	All Corporates
1920	0.439	3.010	1.244	1963	0.000	1.161	0.351
1921	0.380	2.066	1.031	1964	0.000	0.000	0.000
1922	0.515	1.776	1.019	1965	0.000	0.000	0.000
1923	0.242	1.713	0.805	1966	0.000	0.415	0.119
1924	0.138	2.846	1.152	1967	0.000	0.000	0.000
1925	0.325	2.557	1.176	1968	0.000	0.385	0.107
1926	0.225	1.756	0.784	1969	0.000	0.000	0.000
1927	0.073	1.781	0.725	1970	0.271	8.741	2.638
1928	0.000	0.897	0.373	1971	0.000	1.143	0.285
1929	0.239	1.294	0.687	1972	0.000	1.942	0.455
1930	0.158	2.131	1.021	1973	0.231	1.282	0.454
1931	0.488	7.845	3.801	1974	0.000	1.342	0.275
1932	0.775	10.811	5.417	1975	0.000	1.743	0.360
1933	0.801	15.391	8.403	1976	0.000	0.871	0.175
1934	0.573	5.929	3.449	1977	0.109	1.345	0.351
1935	1.241	6.090	3.840	1978	0.000	1.790	0.352
1936	0.460	2.736	1.634	1979	0.000	0.418	0.087
1937	0.653	2.591	1.655	1980	0.000	1.613	0.343
1938	1.554	2.582	2.101	1981	0.000	0.703	0.163
1939	0.397	1.739	1.199	1982	0.211	3.560	1.034
1940	0.559	2.585	1.843	1983	0.000	3.818	0.962
1941	0.000	1.684	1.072	1984	0.095	3.324	0.922
1942	0.000	0.743	0.460	1985	0.000	3.670	1.005
1943	0.000	0.609	0.367	1986	0.318	5.644	1.901
1944	0.000	0.670	0.394	1987	0.000	4.234	1.499
1945	0.000	0.517	0.289	1988	0.000	3.598	1.355
1946	0.000	0.000	0.000	1989	0.286	5.797	2.336
1947	0.000	0.310	0.155	1990	0.000	10.079	3.588
1948	0.000	0.000	0.000	1991	0.065	10.395	3.226
1949	0.000	1.880	0.826	1992	0.000	4.833	1.306
1950	0.000	0.000	0.000	1993	0.000	3.509	0.940
1951	0.000	0.450	0.179	1994	0.000	1.938	0.560
1952	0.000	0.000	0.000	1995	0.000	3.319	1.025
1953	0.000	0.000	0.000	1996	0.000	1.670	0.514
1954	0.000	0.473	0.164	1997	0.000	2.057	0.652
1955	0.000	0.505	0.163	1998	0.037	3.442	1.227
1956	0.000	0.000	0.000	1999	0.035	5.696	2.157
1957	0.000	0.457	0.144	2000	0.132	6.127	2.385
1958	0.000	0.000	0.000	2001	0.127	10.554	3.783
1959	0.000	0.000	0.000	2002	0.485	8.426	3.003
1960	0.000	0.739	0.243	2003	0.000	5.314	1.701
1961	0.000	1.073	0.353	2004	0.000	2.347	0.763
1962	0.000	1.468	0.463	2005	0.059	1.924	0.648

\* Includes issuers rated as of January 1 of each cohort year



**Exhibit 32 - Annual Issuer-Weighted Corporate Default Rates by Alphanumeric Rating, 1983-2005\***

Cohort	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa-C	Inv.Gr.	Spec.Gr.	Total
1983	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.614	0.000	10.000	17.910	40.000	0.000	3.818	0.962
1984	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.075	1.156	1.613	0.000	5.839	18.750	2.899	100.000	0.095	3.324	0.922
1985	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.626	2.830	4.380	7.692	13.592	0.000	0.000	3.670	1.005
1986	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.878	0.870	1.198	3.436	7.609	16.667	15.789	23.529	0.318	5.644	1.901
1987	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.731	0.952	2.963	4.930	4.301	10.219	20.000	0.000	4.234	1.499
1988	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.575	4.313	7.143	10.959	28.571	0.000	3.598	1.355
1989	0.000	0.000	0.000	1.342	0.000	0.000	0.000	0.000	0.820	1.053	0.794	1.818	4.711	5.755	9.790	18.045	25.000	0.286	5.797	2.336
1990	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.667	2.817	3.922	8.521	22.642	29.114	58.824	0.000	10.079	3.588
1991	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.735	0.000	0.000	1.075	0.000	10.084	5.861	12.903	28.421	36.842	0.065	10.395	3.226
1992	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.727	1.000	1.587	24.845	26.667	0.000	4.833	1.306
1993	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.826	0.000	0.741	3.292	5.128	11.290	28.571	0.000	3.509	0.940
1994	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583	1.917	3.704	8.163	5.128	0.000	1.938	0.560
1995	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.770	4.348	6.422	3.941	12.389	0.000	3.319	1.025
1996	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.179	0.000	3.361	14.184	0.000	1.670	0.514
1997	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.474	0.000	1.515	7.435	14.865	0.000	2.057	0.652
1998	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.308	0.000	0.000	0.613	1.117	2.128	7.368	5.694	15.238	0.037	3.442	1.227
1999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.348	0.483	0.000	1.967	3.352	6.884	9.730	20.438	0.035	5.696	2.157
2000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.287	0.000	0.984	0.943	0.631	1.036	3.448	4.067	10.901	20.000	0.132	6.127	2.385
2001	0.000	0.000	0.000	0.000	0.000	0.410	0.000	0.272	0.264	0.000	0.528	1.333	2.967	3.343	10.454	16.774	34.227	0.127	10.554	3.783
2002	0.000	0.000	0.000	0.000	0.000	0.000	0.430	1.247	0.719	1.752	1.622	1.389	1.554	1.934	6.474	7.263	30.216	0.485	8.426	3.003
2003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.536	0.738	1.432	0.771	2.487	5.666	21.832	0.000	5.314	1.701
2004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.467	0.000	0.651	2.020	12.747	0.000	2.347	0.763
2005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.237	0.298	0.000	0.000	0.000	0.000	1.034	2.092	8.271	0.059	1.924	0.648

\* Includes issuers rated as of January 1 of each cohort year



**Exhibit 33 - Average Cumulative Issuer-Weighted Corporate Default Rates by Whole Letter Rating, 1920-2005\***

Rating	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	0.020	0.081	0.170	0.266	0.382	0.549	0.724	0.925
Aa	0.064	0.192	0.303	0.470	0.740	1.065	1.404	1.734	2.050	2.404
A	0.077	0.251	0.530	0.853	1.177	1.523	1.883	2.228	2.610	3.016
Baa	0.301	0.900	1.652	2.468	3.307	4.121	4.897	5.658	6.440	7.193
Ba	1.394	3.309	5.406	7.491	9.438	11.188	12.737	14.190	15.468	16.723
B	4.477	9.446	13.946	17.598	20.495	22.708	24.455	25.722	26.704	27.479
Caa-C	14.692	22.537	27.517	30.656	32.674	34.148	35.156	35.963	36.682	37.304
Investment-Grade	0.150	0.456	0.849	1.295	1.772	2.259	2.742	3.215	3.707	4.208
Speculative-Grade	3.790	7.497	10.843	13.663	15.995	17.898	19.465	20.773	21.874	22.868
All Corporates	1.458	2.977	4.422	5.710	6.843	7.830	8.696	9.466	10.177	10.859
Rating	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	1.101	1.239	1.389	1.437	1.478	1.557	1.642	1.707	1.793	1.848
Aa	2.781	3.186	3.587	3.986	4.286	4.506	4.678	4.853	5.044	5.190
A	3.440	3.848	4.199	4.520	4.900	5.238	5.491	5.728	5.962	6.176
Baa	7.855	8.513	9.131	9.688	10.172	10.640	11.047	11.405	11.728	12.071
Ba	17.790	18.774	19.697	20.446	21.053	21.608	22.167	22.659	23.056	23.426
B	28.105	28.631	29.053	29.422	29.755	30.054	30.279	30.438	30.540	30.592
Caa-C	37.879	38.430	38.897	39.351	39.770	40.126	40.445	40.745	41.018	41.280
Investment-Grade	4.688	5.164	5.606	6.008	6.384	6.728	7.010	7.267	7.515	7.754
Speculative-Grade	23.704	24.456	25.124	25.687	26.163	26.592	26.985	27.316	27.579	27.805
All Corporates	11.472	12.054	12.585	13.053	13.473	13.855	14.187	14.480	14.739	14.977

\* Calculated using monthly cohort spacing

**Exhibit 34 - Average Cumulative Issuer-Weighted Corporate Default Rates by Whole Letter Rating, 1970-2005\***

Rating	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	0.028	0.106	0.184	0.267	0.356	0.452	0.555
Aa	0.008	0.020	0.046	0.116	0.194	0.286	0.378	0.459	0.512	0.578
A	0.022	0.103	0.239	0.374	0.512	0.668	0.827	1.009	1.206	1.406
Baa	0.183	0.527	0.976	1.512	2.037	2.565	3.080	3.571	4.121	4.732
Ba	1.231	3.278	5.629	7.959	10.026	11.802	13.293	14.684	15.977	17.224
B	5.646	11.922	17.271	21.396	24.702	27.237	29.143	30.424	31.350	32.017
Caa-C	21.120	30.428	36.177	39.464	41.236	42.275	42.824	43.221	43.466	43.626
Investment-Grade	0.070	0.215	0.418	0.658	0.899	1.150	1.397	1.645	1.911	2.199
Speculative-Grade	4.745	9.279	13.242	16.437	19.004	21.028	22.596	23.835	24.855	25.725
All Corporates	1.513	3.012	4.372	5.520	6.476	7.273	7.929	8.487	8.995	9.477
Rating	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	0.661	0.776	0.896	0.963	1.036	1.117	1.206	1.239	1.239	1.239
Aa	0.646	0.757	0.910	1.050	1.153	1.276	1.421	1.555	1.715	1.878
A	1.609	1.799	1.994	2.176	2.440	2.749	3.085	3.421	3.746	4.041
Baa	5.294	5.903	6.509	7.129	7.709	8.215	8.680	9.130	9.502	9.862
Ba	18.395	19.520	20.539	21.450	22.209	22.927	23.545	23.986	24.380	24.694
B	32.429	32.733	32.932	33.107	33.251	33.343	33.375	33.401	33.401	33.401
Caa-C	43.692	43.692	43.692	43.692	43.692	43.692	43.692	43.692	43.692	43.692
Investment-Grade	2.477	2.774	3.081	3.382	3.699	4.017	4.341	4.654	4.940	5.212
Speculative-Grade	26.422	27.032	27.542	27.991	28.359	28.682	28.934	29.113	29.261	29.377
All Corporates	9.902	10.314	10.702	11.067	11.412	11.741	12.044	12.307	12.539	12.746

\* Calculated using monthly cohort spacing

### Exhibit 35 - Average Issuer-Weighted Corporate Default Rates by Whole Letter Rating, 1983-2005

Rating	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	0.039	0.085	0.141	0.203	0.208	0.208	0.208
Aa	0.010	0.023	0.053	0.127	0.203	0.255	0.294	0.326	0.354	0.414
A	0.022	0.114	0.271	0.417	0.562	0.715	0.854	1.003	1.140	1.237
Baa	0.213	0.603	1.077	1.649	2.222	2.767	3.282	3.715	4.107	4.545
Ba	1.307	3.606	6.339	8.974	11.129	12.944	14.486	15.812	16.895	17.793
B	5.693	12.123	17.593	21.772	25.119	27.682	29.560	30.783	31.562	32.087
Caa-C	20.982	30.274	36.115	39.500	41.228	42.147	42.588	42.879	43.084	43.256
Investment-Grade	0.075	0.232	0.442	0.686	0.927	1.156	1.367	1.551	1.716	1.881
Speculative-Grade	5.145	10.111	14.479	17.943	20.628	22.704	24.281	25.433	26.256	26.872
All Corporates	1.737	3.475	5.057	6.371	7.432	8.289	8.973	9.502	9.913	10.259
Rating	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208
Aa	0.478	0.601	0.737	0.836	0.940	1.060	1.199	1.359	1.459	1.468
A	1.328	1.398	1.504	1.637	1.856	2.157	2.496	2.855	3.086	3.206
Baa	4.931	5.352	5.855	6.372	6.786	7.067	7.358	7.675	7.921	8.071
Ba	18.531	19.233	19.831	20.401	20.793	21.122	21.423	21.621	21.789	21.860
B	32.407	32.645	32.807	32.953	33.063	33.118	33.140	33.167	33.167	33.167
Caa-C	43.326	43.326	43.326	43.326	43.326	43.326	43.326	43.326	43.326	43.326
Investment-Grade	2.036	2.204	2.413	2.630	2.857	3.088	3.343	3.622	3.816	3.916
Speculative-Grade	27.301	27.657	27.933	28.186	28.364	28.490	28.587	28.658	28.704	28.724
All Corporates	10.530	10.785	11.033	11.276	11.489	11.674	11.853	12.022	12.133	12.186

\* Calculated using monthly cohort spacing

**Exhibit 36 - Average Cumulative Issuer-Weighted Corporate Default Rates by Alphanumeric Rating, 1983-2005**

Rating	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	0.039	0.085	0.141	0.203	0.208	0.208	0.208
Aa1	0.000	0.000	0.000	0.110	0.166	0.187	0.187	0.187	0.187	0.187
Aa2	0.000	0.011	0.048	0.120	0.232	0.285	0.346	0.415	0.495	0.588
Aa3	0.019	0.040	0.078	0.138	0.199	0.263	0.304	0.324	0.328	0.392
A1	0.003	0.091	0.241	0.339	0.416	0.493	0.553	0.606	0.686	0.792
A2	0.026	0.082	0.224	0.427	0.612	0.794	0.999	1.213	1.398	1.509
A3	0.037	0.175	0.358	0.486	0.657	0.860	1.009	1.187	1.333	1.397
Baa1	0.166	0.449	0.792	1.093	1.368	1.582	1.834	1.951	2.060	2.143
Baa2	0.161	0.465	0.881	1.513	2.053	2.605	3.117	3.597	4.151	4.893
Baa3	0.335	0.962	1.670	2.498	3.479	4.424	5.261	6.020	6.547	7.025
Ba1	0.753	1.995	3.518	4.996	6.417	7.851	8.746	9.551	10.168	10.806
Ba2	0.780	2.283	4.239	6.237	7.989	9.171	10.387	11.392	12.336	12.943
Ba3	2.069	5.663	9.762	13.614	16.529	18.971	21.140	22.980	24.422	25.596
B1	3.223	8.503	13.573	17.635	21.467	24.623	27.290	29.016	30.073	30.830
B2	5.457	12.067	17.141	21.057	23.805	25.564	26.610	27.279	27.962	28.405
B3	10.460	18.653	25.249	29.887	33.022	35.377	36.766	37.699	38.165	38.446
Caa-C	20.982	30.274	36.115	39.500	41.228	42.147	42.588	42.879	43.084	43.256
Investment-Grade	0.075	0.232	0.442	0.686	0.927	1.156	1.367	1.551	1.716	1.881
Speculative-Grade	5.145	10.111	14.479	17.943	20.628	22.704	24.281	25.433	26.256	26.872
All Corporates	1.737	3.475	5.057	6.371	7.432	8.289	8.973	9.502	9.913	10.259
Rating	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208
Aa1	0.187	0.187	0.363	0.582	0.839	0.941	0.941	0.941	0.941	0.941
Aa2	0.685	0.796	0.848	0.848	0.848	0.970	1.177	1.414	1.684	1.710
Aa3	0.462	0.646	0.820	0.932	1.042	1.168	1.314	1.482	1.498	1.498
A1	0.947	1.098	1.285	1.535	1.813	2.124	2.256	2.256	2.256	2.256
A2	1.554	1.605	1.663	1.729	1.809	1.982	2.356	2.800	3.100	3.174
A3	1.476	1.481	1.559	1.656	2.002	2.465	2.971	3.580	3.947	4.231
Baa1	2.230	2.407	2.646	3.055	3.380	3.746	4.172	4.351	4.351	4.351
Baa2	5.627	6.435	7.048	7.600	8.329	8.772	9.185	9.596	10.056	10.296
Baa3	7.324	7.539	8.204	8.792	8.912	8.912	8.926	9.259	9.469	9.641
Ba1	11.522	12.403	12.918	13.305	13.593	14.073	14.874	15.522	16.140	16.335
Ba2	13.620	14.517	15.335	15.961	16.763	17.378	17.637	17.695	17.775	17.775
Ba3	26.360	26.864	27.404	28.028	28.309	28.453	28.530	28.569	28.569	28.609
B1	31.294	31.583	31.787	31.980	32.088	32.161	32.161	32.161	32.161	32.161
B2	28.642	28.818	28.991	29.248	29.501	29.598	29.680	29.756	29.756	29.756
B3	38.644	38.865	38.964	38.964	38.964	38.964	38.964	38.985	38.985	38.985
Caa-C	43.326	43.326	43.326	43.326	43.326	43.326	43.326	43.326	43.326	43.326
Investment-Grade	2.036	2.204	2.413	2.630	2.857	3.088	3.343	3.622	3.816	3.916
Speculative-Grade	27.301	27.657	27.933	28.186	28.364	28.490	28.587	28.658	28.704	28.724
All Corporates	10.530	10.785	11.033	11.276	11.489	11.674	11.853	12.022	12.133	12.186

\* Calculated using monthly cohort spacing

### Exhibit 37 - Average Sovereign Default Rates by Whole Letter Rating, 1983-2005\*

Rating	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Aaa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Baa	0.00	1.66	2.61	3.70	5.08	6.91	6.91	6.91	6.91	6.91
Ba	0.57	1.20	2.58	4.90	4.90	4.90	6.22	7.90	10.20	13.30
B	4.35	7.32	9.57	10.92	14.16	18.34	21.26	25.64	31.36	38.22
Caa-C	18.18	28.41	28.41	28.41	28.41	28.41	28.41	NA	NA	NA
Investment-Grade	0.00	0.31	0.48	0.67	0.89	1.14	1.14	1.14	1.14	1.14
Speculative-Grade	2.67	4.51	6.16	8.06	9.18	10.52	12.28	14.65	17.87	22.08
All Sovereigns	0.79	1.55	2.16	2.85	3.31	3.86	4.29	4.80	5.40	6.10

\* Calculated using annual cohort spacing

\*\* NA = Not meaningful, no issuer had a rating of Caa - C for more than seven years.

### Exhibit 38 - Time to Default (Months) by Original Rating, 1970-2005

Original Rating	Mean	Min	Max	StDev
Aaa	628	443	816	152
Aa	372	28	992	288
A	306	52	836	209
Baa	218	60	717	146
Ba	114	19	237	50
B	54	15	170	35
Caa-C	39	23	64	12

### Exhibit 39 - Annual Defaulted Issuer Counts and Total Dollar Volume by Default Event, 1980-2005\*

Cohort	Issuer Count			Total Volume		
	Bankruptcy	Missed Payment	Distressed Exchange	Bankruptcy	Missed Payment	Distressed Exchange
1980	0	4	0	\$0	\$302	\$0
1981	2	0	0	\$47	\$0	\$0
1982	10	2	1	\$739	\$7	\$12
1983	6	4	3	\$139	\$98	\$924
1984	7	4	2	\$449	\$64	\$145
1985	3	9	4	\$80	\$1,183	\$442
1986	11	16	7	\$951	\$1,309	\$1,678
1987	8	14	8	\$7,477	\$1,008	\$646
1988	4	23	2	\$1,496	\$3,602	\$327
1989	15	26	11	\$5,106	\$4,747	\$1,849
1990	27	51	5	\$6,617	\$11,203	\$2,328
1991	17	54	1	\$3,829	\$13,117	\$153
1992	8	20	1	\$3,637	\$2,605	\$33
1993	7	12	3	\$699	\$602	\$696
1994	7	8	0	\$1,106	\$964	\$0
1995	10	20	1	\$2,367	\$4,235	\$123
1996	7	8	2	\$2,288	\$1,472	\$282
1997	6	17	1	\$1,145	\$3,816	\$118
1998	13	34	4	\$2,705	\$7,283	\$683
1999	25	59	15	\$8,887	\$14,298	\$5,074
2000	27	86	3	\$9,409	\$19,140	\$327
2001	53	121	10	\$41,594	\$56,219	\$3,560
2002	37	90	18	\$33,901	\$105,126	\$25,676
2003	27	39	14	\$16,715	\$12,260	\$5,828
2004	10	15	11	\$4,908	\$3,525	\$8,034
2005	18	12	2	\$18,928	\$2,911	\$7,127

\* Includes issuers rated as of January 1 of each cohort year

**Exhibit 40 - Annual Dollar Volume-Weighted Corporate Default Rates by Whole Letter Rating, 1994-2005**

Cohort	Aaa	Aa	A	Baa	Ba	B	Caa-C	Inv.Gr.	Spec.Gr.	Total
1994	0.00	0.00	0.00	0.00	0.14	1.93	2.80	0.00	1.20	0.24
1995	0.00	0.00	0.00	0.00	0.57	6.26	12.11	0.00	4.28	0.99
1996	0.00	0.00	0.00	0.00	0.00	1.62	22.53	0.00	2.31	0.66
1997	0.00	0.00	0.00	0.00	0.05	3.06	6.70	0.00	1.93	0.50
1998	0.00	0.00	0.00	0.00	0.65	3.02	14.70	0.00	2.98	0.89
1999	0.00	0.00	0.00	0.14	2.22	5.79	21.10	0.03	6.38	1.23
2000	0.00	0.00	0.00	0.65	1.04	5.60	20.46	0.14	5.56	1.29
2001	0.00	0.00	1.18	1.76	1.18	14.13	66.41	0.93	17.26	3.61
2002	0.00	0.00	2.77	3.69	3.38	16.83	86.29	2.32	21.54	5.51
2003	0.00	0.00	0.00	0.00	3.62	2.61	17.73	0.00	5.81	1.02
2004	0.00	0.00	0.00	0.00	0.00	0.27	12.84	0.00	2.58	0.45
2005	0.00	0.00	0.00	0.20	0.00	1.51	16.79	0.07	3.79	0.75

**Exhibit 41 - Average Dollar Volume-Weighted Corporate Default Rates by Whole Letter Rating, 1994-2005\***

Rating	Year 1	Year 2	Year 3	Year 4	Year 5
Aaa	0.00	0.00	0.00	0.00	0.00
Aa	0.00	0.00	0.00	0.00	0.00
A	0.44	0.83	1.16	1.44	1.79
Baa	0.67	1.50	2.31	3.29	4.11
Ba	1.25	3.38	5.91	8.68	10.47
B	5.22	13.23	20.62	26.25	29.47
Caa-C	27.51	42.67	53.39	60.71	62.31
Investment-Grade	0.40	0.82	1.19	1.57	1.93
Speculative-Grade	6.78	13.42	19.15	23.62	26.12
All Corporates	1.64	3.25	4.65	5.84	6.65

\* Calculated using annual cohort spacing

### Exhibit 42 - Cumulative Issuer-Weighted Global Corporate Default Rates by Annual Cohort, 1970-2005\*

1/1/1970 Cohort																					
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	39	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.703	2.703	2.703
Aa	78	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.439	1.439	1.439	2.899	2.899	2.899	2.899
A	255	0.000	0.000	0.000	0.410	0.410	0.827	0.827	0.827	0.827	0.827	1.275	1.275	1.275	1.275	1.275	1.275	1.763	1.763	2.816	2.816
Baa	370	0.544	0.544	0.544	1.121	1.413	1.413	1.720	2.353	3.007	3.007	3.357	3.357	4.492	4.880	5.278	6.102	7.394	8.311	9.297	9.817
Ba	240	4.246	5.083	5.513	5.959	6.870	7.806	8.292	8.806	9.888	9.888	9.888	11.199	13.248	13.951	13.951	15.494	18.683	20.351	20.351	21.272
B	36	19.718	19.718	22.012	22.012	22.012	22.012	22.012	22.012	22.012	22.012	22.012	22.012	27.898	27.898	27.898	27.898	27.898	27.898	27.898	27.898
Caa-C	15	53.333	56.444	65.156	67.559	67.559	67.559	67.559	69.876	69.876	69.876	69.876	69.876	69.876	69.876	69.876	69.876	69.876	69.876	69.876	69.876
Investment-Grade	742	0.271	0.271	0.271	0.695	0.838	0.983	1.131	1.431	1.739	1.739	2.062	2.062	2.571	2.917	3.093	3.452	4.371	4.945	5.749	5.956
Speculative-Grade	291	8.741	9.723	11.391	12.070	12.764	13.478	13.847	14.622	15.427	15.427	15.427	16.375	18.827	19.325	19.325	20.401	22.635	23.803	23.803	24.443
All Corporates	1,033	2.638	2.928	3.418	3.918	4.222	4.532	4.743	5.175	5.620	5.620	5.858	6.102	7.107	7.491	7.621	8.157	9.395	10.111	10.712	11.024
1/1/1971 Cohort																					
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	39	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.778	2.778	2.778	2.778
Aa	75	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.786
A	283	0.000	0.000	0.363	0.363	0.732	0.732	0.732	0.732	1.126	1.126	1.531	1.939	1.939	1.939	2.361	2.361	3.267	3.267	3.267	3.267
Baa	396	0.000	0.000	0.533	0.804	0.804	1.092	1.689	2.306	2.306	2.638	2.638	3.724	4.096	4.477	5.267	6.502	7.376	8.312	8.802	9.824
Ba	233	0.866	1.311	1.774	2.720	4.183	4.689	5.224	6.356	6.356	6.356	7.728	9.882	10.624	10.624	12.256	16.516	18.311	18.311	19.313	19.313
B	25	0.000	4.167	4.167	4.167	4.167	4.167	4.167	4.167	4.167	4.167	16.944	16.944	16.944	16.944	16.944	16.944	16.944	16.944	16.944	16.944
Caa-C	7	14.286	51.020	58.556	58.556	58.556	58.556	65.463	65.463	65.463	65.463	65.463	65.463	65.463	65.463	65.463	65.463	65.463	65.463	65.463	65.463
Investment-Grade	793	0.000	0.000	0.392	0.525	0.660	0.797	1.078	1.366	1.366	1.669	1.669	2.307	2.631	2.796	3.132	3.823	4.361	5.115	5.309	5.913
Speculative-Grade	265	1.143	3.093	3.889	4.705	5.970	6.407	7.329	8.295	8.295	8.295	9.455	12.484	13.100	13.100	14.447	17.968	19.446	19.446	20.276	20.276
All Corporates	1,058	0.285	0.769	1.261	1.561	1.969	2.179	2.609	3.052	3.052	3.289	3.533	4.667	5.051	5.182	5.719	6.962	7.681	8.285	8.599	9.086
1/1/1972 Cohort																					
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.703	2.703	2.703	2.703	2.703
Aa	78	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.695	1.695
A	305	0.000	0.335	0.335	0.335	0.335	0.335	0.335	0.335	0.335	0.335	0.711	1.089	1.089	1.089	1.481	1.481	2.327	2.327	2.785	3.255
Baa	429	0.000	0.490	0.738	0.992	1.256	1.802	2.370	2.370	2.985	2.985	3.657	4.002	4.356	5.086	6.225	7.033	7.902	8.812	10.229	12.165
Ba	228	0.000	0.464	1.414	2.886	3.394	3.929	5.056	5.056	5.056	6.408	9.244	9.970	10.730	13.089	17.151	18.850	18.850	19.788	20.749	25.641
B	27	7.407	7.407	7.407	7.407	7.407	7.407	7.407	7.407	7.407	7.407	17.695	17.695	17.695	17.695	17.695	17.695	17.695	17.695	17.695	17.695
Caa-C	8	40.000	49.231	49.231	49.231	49.231	57.692	57.692	57.692	57.692	57.692	57.692	57.692	57.692	57.692	57.692	57.692	57.692	57.692	57.692	57.692
Investment-Grade	852	0.000	0.364	0.486	0.611	0.738	0.999	1.265	1.265	1.547	1.547	1.993	2.295	2.449	2.763	3.406	3.909	4.614	4.980	5.926	6.889
Speculative-Grade	263	1.942	2.731	3.540	4.795	5.229	6.138	7.086	7.086	7.086	8.212	11.743	12.339	12.965	14.914	18.277	19.680	19.680	20.460	21.263	25.364
All Corporates	1,115	0.455	0.919	1.201	1.586	1.782	2.187	2.603	2.603	2.825	3.056	4.122	4.483	4.729	5.359	6.524	7.199	7.766	8.210	9.126	10.681

## Exhibit 42 - Cumulative Issuer-Weighted Global Corporate Default Rates by Annual Cohort, 1970-2005\* (Cont'd)

### 1/1/1973 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.703	2.703	2.703	2.703	2.703	2.703
Aa	81	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.613	1.613	1.613
A	310	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.366	0.735	0.735	0.735	1.120	1.120	1.951	1.951	2.399	2.858	3.345
Baa	443	0.457	0.688	1.164	1.408	1.916	2.443	2.443	3.015	3.015	3.641	4.286	4.943	5.958	7.009	7.753	8.552	9.391	11.141	12.937	12.937
Ba	206	0.000	1.008	2.050	2.594	3.165	4.361	4.361	4.361	5.777	9.458	10.197	10.197	11.794	15.974	18.614	18.614	19.565	20.540	26.463	27.418
B	26	3.922	3.922	3.922	3.922	3.922	3.922	3.922	3.922	3.922	15.225	15.225	15.225	15.225	15.225	15.225	15.225	15.225	15.225	15.225	15.225
Caa-C	5	44.444	44.444	44.444	44.444	58.333	58.333	58.333	58.333	58.333	58.333	58.333	58.333	58.333	58.333	58.333	58.333	58.333	58.333	58.333	58.333
Investment-Grade	874	0.231	0.347	0.585	0.706	0.953	1.207	1.207	1.476	1.476	1.901	2.335	2.628	3.077	3.691	4.170	4.843	5.192	6.276	7.195	7.388
Speculative-Grade	237	1.282	2.154	3.058	3.529	4.516	5.540	5.540	5.540	6.747	11.128	11.754	11.754	13.122	16.712	18.974	18.974	19.800	20.654	25.857	26.699
All Corporates	1,111	0.454	0.730	1.107	1.299	1.695	2.101	2.101	2.318	2.543	3.699	4.168	4.407	5.020	6.156	6.946	7.499	7.930	8.971	10.638	10.951

### 1/1/1974 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	44	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.439	2.439	2.439	2.439	2.439	2.439	2.439
Aa	88	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.274	1.274	1.274	1.274	1.274	1.274	1.274	1.274	2.793	2.793	2.793	2.793
A	307	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.366	0.735	0.735	0.735	1.118	1.118	1.938	1.938	2.378	2.829	3.311	3.311
Baa	434	0.000	0.477	0.722	1.230	1.759	1.759	2.333	2.333	2.963	3.611	4.274	5.299	5.654	6.416	7.235	8.094	9.439	11.288	11.288	11.288
Ba	196	0.000	1.090	1.662	2.263	3.524	3.524	3.524	4.269	8.145	8.923	8.923	10.587	16.664	19.337	19.337	20.315	22.307	28.246	29.202	30.214
B	30	10.345	10.345	10.345	10.345	10.345	10.345	10.345	14.330	22.299	22.299	22.299	22.299	22.299	22.299	22.299	22.299	22.299	22.299	22.299	22.299
Caa-C	2	0.000	0.000	0.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
Investment-Grade	873	0.000	0.235	0.355	0.599	0.849	0.849	1.115	1.115	1.677	2.105	2.395	2.839	3.143	3.619	4.285	4.631	5.524	6.435	6.626	6.626
Speculative-Grade	228	1.342	2.269	2.754	3.769	4.824	4.824	4.824	6.060	10.533	11.175	11.175	12.573	17.695	19.950	19.950	20.783	22.506	27.701	28.541	29.424
All Corporates	1,101	0.275	0.650	0.842	1.236	1.641	1.641	1.857	2.080	3.347	3.814	4.052	4.662	5.792	6.577	7.126	7.555	8.588	10.242	10.554	10.722

### 1/1/1975 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	51	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.041	2.041	2.041	2.041	2.041	2.041	2.041	2.041
Aa	103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.047	1.047	1.047	1.047	1.047	1.047	2.239	2.239	3.461	3.461	3.461	3.461	3.461
A	319	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.357	0.357	0.357	0.728	0.728	1.527	1.527	1.957	2.844	3.317	3.823	3.823
Baa	417	0.000	0.000	0.262	0.809	0.809	1.403	1.403	2.373	3.035	3.709	4.748	5.106	5.875	6.289	7.162	8.974	10.822	10.822	10.822	10.822
Ba	200	1.026	2.096	3.211	3.791	3.791	3.791	4.478	8.083	8.806	8.806	10.365	16.069	18.587	19.463	20.373	21.299	25.956	26.870	27.826	27.826
B	33	6.154	6.154	6.154	9.335	9.335	9.335	12.891	20.002	20.002	20.002	20.002	20.002	20.002	20.002	20.002	25.716	31.430	31.430	31.430	31.430
Caa-C	2	0.000	0.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
Investment-Grade	890	0.000	0.000	0.118	0.361	0.361	0.618	0.618	1.159	1.571	1.850	2.276	2.567	3.023	3.661	3.991	5.015	6.057	6.239	6.435	6.435
Speculative-Grade	235	1.743	2.642	4.046	5.013	5.013	5.013	6.147	10.279	10.874	10.874	12.179	16.963	19.074	19.807	20.571	22.143	26.886	27.656	28.455	28.455
All Corporates	1,125	0.360	0.544	0.922	1.310	1.310	1.517	1.731	2.941	3.387	3.614	4.197	5.275	6.023	6.677	7.084	8.204	9.910	10.205	10.521	10.521

**Exhibit 42 - Cumulative Issuer-Weighted Global Corporate Default Rates by Annual Cohort, 1970-2005\* (Cont'd)**

1/1/1976 Cohort																					
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	66	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.667	1.667	1.667	1.667	1.667	1.667	1.667	1.667	1.667
Aa	109	0.000	0.000	0.000	0.000	0.000	0.000	0.985	0.985	0.985	0.985	0.985	0.985	2.123	2.123	3.289	3.289	3.289	3.289	3.289	3.289
A	368	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.615	0.615	0.615	1.269	1.269	2.333	2.333	2.711	3.888	3.888	4.340	4.340	5.299
Baa	376	0.000	0.281	0.575	0.575	0.894	0.894	2.283	2.991	3.712	4.825	5.209	6.026	6.026	6.961	8.905	10.386	10.891	10.891	10.891	10.891
Ba	205	1.000	2.042	3.122	3.122	3.714	4.345	7.003	7.679	7.679	9.133	14.433	16.788	17.616	18.475	19.351	24.698	25.569	26.476	26.476	26.476
B	28	0.000	0.000	3.922	3.922	3.922	8.390	17.328	17.328	17.328	17.328	17.328	17.328	17.328	17.328	25.201	33.075	33.075	33.075	33.075	33.075
Caa-C	2	0.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
Investment-Grade	919	0.000	0.112	0.227	0.227	0.348	0.348	0.986	1.504	1.767	2.170	2.587	3.021	3.627	3.941	4.912	5.901	6.074	6.261	6.261	6.667
Speculative-Grade	235	0.871	2.232	3.636	3.636	4.150	5.239	8.654	9.234	9.234	10.508	15.165	17.234	17.960	18.717	20.272	25.798	26.567	27.365	27.365	27.365
All Corporates	1,154	0.175	0.535	0.904	0.904	1.100	1.302	2.447	2.976	3.193	3.747	4.893	5.610	6.236	6.625	7.695	9.466	9.749	10.053	10.053	10.380
1/1/1977 Cohort																					
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	67	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.667	1.667	1.667	1.667	1.667	1.667	1.667	1.667	1.667	1.667
Aa	116	0.000	0.000	0.000	0.000	0.000	0.922	0.922	0.922	0.922	0.922	0.922	1.993	1.993	3.082	3.082	3.082	3.082	3.082	3.082	3.082
A	387	0.000	0.000	0.000	0.000	0.000	0.000	0.581	0.581	0.581	1.200	1.200	2.883	2.883	3.597	4.703	4.703	5.128	5.128	6.031	6.031
Baa	361	0.285	0.584	0.584	0.584	0.584	1.992	2.710	3.441	4.573	4.963	5.791	5.791	6.740	8.221	9.729	10.245	10.245	10.245	10.245	10.245
Ba	197	0.522	1.612	1.612	2.212	2.851	5.531	6.213	6.213	7.685	13.047	15.430	16.263	17.122	17.999	23.376	24.257	25.180	25.180	25.180	25.180
B	30	3.390	6.840	6.840	10.722	14.690	23.013	23.013	23.013	23.013	23.013	23.013	23.013	23.013	29.707	36.402	36.402	36.402	36.402	36.402	36.402
Caa-C	2	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
Investment-Grade	931	0.109	0.221	0.221	0.221	0.221	0.840	1.344	1.600	1.994	2.399	2.822	3.708	4.012	4.955	5.916	6.084	6.267	6.267	6.663	6.663
Speculative-Grade	229	1.345	2.738	2.738	3.762	4.846	8.255	8.834	8.834	10.100	14.727	16.782	17.499	18.242	19.771	25.223	25.986	26.782	26.782	26.782	26.782
All Corporates	1,160	0.351	0.711	0.711	0.902	1.100	2.218	2.735	2.946	3.489	4.610	5.311	6.167	6.545	7.587	9.312	9.588	9.885	9.885	10.206	10.206
1/1/1978 Cohort																					
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	72	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.515	1.515	1.515	3.030	3.030	3.030	3.030	3.030	3.030	3.030	3.030
Aa	129	0.000	0.000	0.000	0.000	0.830	0.830	0.830	0.830	0.830	0.830	1.765	1.765	1.765	1.765	1.765	1.765	1.765	1.765	1.765	1.765
A	378	0.000	0.000	0.000	0.000	0.000	0.589	0.589	0.589	1.217	1.217	2.601	2.601	3.712	4.475	4.475	4.915	4.915	5.852	5.852	5.852
Baa	344	0.000	0.000	0.000	0.000	1.386	1.741	2.467	3.217	3.607	4.845	5.283	6.209	7.656	9.626	10.129	10.129	10.129	10.129	10.129	10.129
Ba	189	1.084	1.084	1.084	1.733	4.462	5.852	5.852	8.817	14.092	15.647	16.474	17.331	19.080	24.387	25.256	27.079	27.079	27.079	27.079	27.079
B	37	5.556	5.556	11.458	14.361	20.371	20.371	23.621	23.621	27.258	30.895	30.895	30.895	34.960	39.296	39.296	39.296	39.296	39.296	39.296	39.296
Caa-C	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
Investment-Grade	923	0.000	0.000	0.000	0.000	0.606	0.976	1.227	1.484	1.883	2.436	3.304	3.603	4.682	5.624	5.789	5.968	5.968	6.356	6.356	6.356
Speculative-Grade	229	1.790	1.790	2.777	3.822	7.110	8.226	8.809	11.209	16.758	18.643	19.301	19.985	22.100	27.126	27.834	29.306	29.306	29.306	29.306	29.306
All Corporates	1,152	0.352	0.352	0.539	0.732	1.823	2.328	2.637	3.273	4.583	5.377	6.207	6.574	7.839	9.513	9.781	10.214	10.214	10.524	10.524	10.524



### Exhibit 42 - Cumulative Issuer-Weighted Global Corporate Default Rates by Annual Cohort, 1970-2005\* (Cont'd)

1/1/1979 Cohort																					
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	76	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.429	1.429	1.429	2.857	2.857	2.857	2.857	2.857	2.857	2.857	2.857	2.857
Aa	130	0.000	0.000	0.000	0.816	0.816	0.816	0.816	0.816	0.816	1.735	1.735	1.735	1.735	1.735	1.735	1.735	1.735	1.735	1.735	1.735
A	374	0.000	0.000	0.000	0.000	0.581	0.581	0.581	1.199	1.199	2.571	2.571	3.301	4.057	4.057	4.496	4.496	5.423	5.423	5.423	5.423
Baa	338	0.000	0.314	0.314	1.668	2.015	2.370	3.104	3.104	4.323	4.755	5.679	8.104	10.059	10.556	10.556	10.556	10.556	10.556	10.556	10.556
Ba	210	0.490	0.490	1.048	3.376	5.754	8.814	11.271	16.894	18.153	18.819	19.510	21.637	26.670	27.371	28.824	28.824	28.824	28.824	28.824	28.824
B	34	0.000	6.452	9.623	16.196	16.196	19.762	23.409	31.264	35.083	35.083	35.083	39.411	39.411	39.411	39.411	39.411	39.411	39.411	39.411	39.411
Caa-C	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
Investment-Grade	918	0.000	0.113	0.113	0.707	1.069	1.192	1.444	1.704	2.247	3.101	3.395	4.611	5.539	5.702	5.878	5.878	6.261	6.261	6.261	6.261
Speculative-Grade	247	0.418	1.303	2.238	5.164	7.155	10.259	12.860	19.255	20.849	21.404	21.982	24.374	28.643	29.248	30.500	30.500	30.500	30.500	30.500	30.500
All Corporates	1,165	0.087	0.357	0.543	1.594	2.274	2.968	3.678	5.141	5.899	6.693	7.045	8.502	10.107	10.364	10.778	10.778	11.076	11.076	11.076	11.076
1/1/1980 Cohort																					
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	89	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.242	1.242	1.242	2.492	2.492	2.492	2.492	2.492	2.492	2.492	2.492	2.492	2.492
Aa	127	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.917	1.835	1.835	1.835	1.835	1.835	1.835	1.835	1.835	1.835	1.835	1.835	1.835
A	383	0.000	0.000	0.273	0.828	0.828	0.828	1.713	2.021	2.997	2.997	3.695	4.415	4.415	4.832	4.832	5.715	5.715	5.715	5.715	6.195
Baa	337	0.000	0.000	0.998	1.341	1.691	2.780	2.780	3.580	4.427	5.761	8.082	9.953	10.906	10.906	10.906	10.906	10.906	10.906	10.906	10.906
Ba	209	0.000	0.531	3.837	4.949	8.426	11.324	16.627	18.414	19.046	21.053	23.077	28.596	29.950	31.330	31.330	31.330	31.330	32.057	32.057	32.057
B	41	4.938	7.407	15.018	19.944	24.871	27.334	35.261	37.751	37.751	37.751	42.939	45.532	45.532	45.532	45.532	45.532	45.532	45.532	45.532	45.532
Caa-C	6	33.333	33.333	33.333	33.333	33.333	33.333	46.667	46.667	46.667	46.667	46.667	46.667	46.667	46.667	46.667	46.667	46.667	46.667	46.667	46.667
Investment-Grade	936	0.000	0.000	0.458	0.808	0.926	1.291	1.667	2.320	3.139	3.561	4.723	5.610	5.921	6.089	6.089	6.456	6.456	6.456	6.456	6.659
Speculative-Grade	256	1.613	2.457	6.394	8.152	11.799	14.533	20.605	22.462	22.948	24.479	27.074	31.848	32.896	33.965	33.965	33.965	33.965	34.523	34.523	34.523
All Corporates	1,192	0.343	0.519	1.699	2.344	3.191	4.055	5.635	6.555	7.302	7.965	9.443	11.179	11.661	12.048	12.048	12.326	12.326	12.471	12.471	12.623
1/1/1981 Cohort																					
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	93	0.000	0.000	0.000	0.000	0.000	0.000	1.227	1.227	1.227	2.477	2.477	2.477	2.477	2.477	2.477	2.477	2.477	2.477	2.477	2.477
Aa	132	0.000	0.000	0.000	0.000	0.000	0.000	0.844	2.532	2.532	2.532	2.532	2.532	2.532	2.532	2.532	2.532	2.532	2.532	2.532	3.814
A	391	0.000	0.264	0.264	0.264	0.264	1.142	1.448	2.100	2.100	2.802	3.531	3.531	3.956	3.956	4.860	4.860	4.860	4.860	5.350	5.843
Baa	337	0.000	0.634	1.959	2.636	3.681	3.681	4.064	4.875	6.147	8.345	9.667	10.561	10.561	10.561	10.561	10.561	10.561	10.561	10.561	11.191
Ba	244	0.000	3.587	4.945	7.769	11.097	16.926	18.893	19.416	21.639	24.478	29.747	30.913	32.104	32.104	32.104	32.104	32.736	33.370	33.370	33.370
B	45	4.598	11.494	15.976	22.698	24.875	34.121	34.121	34.121	39.001	41.441	41.441	41.441	41.441	41.441	41.441	41.441	41.441	41.441	41.441	41.441
Caa-C	6	0.000	0.000	0.000	0.000	0.000	20.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000
Investment-Grade	953	0.000	0.328	0.777	1.005	1.358	1.722	2.229	3.026	3.437	4.566	5.284	5.586	5.749	5.749	6.107	6.107	6.107	6.107	6.304	6.907
Speculative-Grade	295	0.703	4.741	6.587	10.026	13.095	19.795	21.751	22.162	23.902	27.044	31.662	32.585	33.531	33.531	33.531	33.531	34.029	34.529	34.529	34.529
All Corporates	1,248	0.163	1.342	2.117	3.085	4.075	5.930	6.795	7.499	8.229	9.841	11.484	11.941	12.308	12.308	12.571	12.571	12.710	12.851	12.995	13.433

### Exhibit 42 - Cumulative Issuer-Weighted Global Corporate Default Rates by Annual Cohort, 1970-2005\* (Cont'd)

1/1/1982 Cohort																					
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	95	0.000	0.000	0.000	0.000	0.000	1.212	1.212	1.212	2.463	2.463	2.463	2.463	2.463	2.463	2.463	2.463	2.463	2.463	2.463	2.463
Aa	145	0.000	0.000	0.000	0.000	0.000	0.758	2.290	2.290	2.290	2.290	2.290	2.290	2.290	3.376	3.376	3.376	3.376	3.376	4.554	4.554
A	399	0.254	0.254	0.254	0.254	1.108	1.108	1.744	1.744	2.772	3.483	3.483	3.892	3.892	3.892	3.892	3.892	3.892	4.368	4.846	7.759
Baa	326	0.317	0.317	1.365	2.441	2.811	3.600	4.438	5.753	8.024	9.393	10.325	10.325	10.325	10.877	10.877	10.877	10.877	10.877	11.528	11.528
Ba	259	2.740	5.151	7.647	11.005	16.995	18.720	19.178	21.137	24.190	27.360	28.452	29.570	29.570	29.570	30.188	30.817	30.817	30.817	30.817	32.098
B	42	2.410	9.729	14.418	16.763	26.702	26.702	26.702	26.702	29.756	42.244	42.244	42.244	42.244	42.244	42.244	42.244	42.244	42.244	42.244	42.244
Caa-C	12	25.000	44.565	44.565	44.565	49.605	54.186	54.186	54.186	54.186	54.186	54.186	54.186	54.186	54.186	54.186	54.186	54.186	54.186	54.186	54.186
Investment-Grade	965	0.211	0.211	0.546	0.890	1.365	1.863	2.647	3.052	4.308	5.020	5.320	5.482	5.482	5.836	5.836	5.836	5.836	6.031	6.625	7.830
Speculative-Grade	313	3.560	7.503	10.169	13.192	19.724	21.432	21.793	23.342	26.174	30.368	31.215	32.083	32.083	32.083	32.554	33.033	33.033	33.033	33.033	34.010
All Corporates	1,278	1.034	2.014	2.934	3.960	5.992	6.816	7.489	8.191	9.853	11.446	11.890	12.246	12.246	12.502	12.502	12.637	12.774	12.914	13.341	14.492
1/1/1983 Cohort																					
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	98	0.000	0.000	0.000	0.000	2.395	2.395	2.395	3.655	3.655	3.655	3.655	3.655	3.655	3.655	3.655	3.655	3.655	3.655	3.655	3.655
Aa	225	0.000	0.000	0.000	0.000	0.480	1.958	1.958	1.958	1.958	1.958	1.958	1.958	2.641	2.641	2.641	2.641	2.641	2.641	3.399	4.174
A	430	0.000	0.000	0.000	0.259	0.259	0.834	0.834	1.763	2.721	3.393	3.753	3.753	3.753	3.753	3.753	3.753	3.753	4.196	6.004	6.467
Baa	270	0.000	1.176	1.581	3.286	3.745	4.250	5.306	6.397	7.521	7.521	7.521	7.521	7.521	7.521	7.521	7.521	8.343	10.002	10.836	12.526
Ba	230	0.911	2.379	4.962	12.166	13.911	16.471	19.232	22.871	26.561	26.561	27.364	27.364	28.198	28.198	29.079	29.960	29.960	30.853	32.649	34.421
B	114	6.306	10.705	16.774	22.718	25.172	26.008	27.824	32.668	37.692	39.702	40.707	40.707	40.707	40.707	40.707	40.707	40.707	40.707	40.707	40.707
Caa-C	11	40.000	53.333	53.333	53.333	58.519	58.519	58.519	58.519	58.519	58.519	58.519	58.519	58.519	58.519	58.519	58.519	58.519	58.519	58.519	58.519
Investment-Grade	1,023	0.000	0.304	0.408	0.950	1.407	2.129	2.378	3.149	3.810	4.089	4.240	4.240	4.406	4.406	4.406	4.406	4.590	5.149	6.285	7.058
Speculative-Grade	355	3.818	6.843	10.556	16.980	19.263	20.996	23.237	27.184	31.218	32.037	32.884	32.884	33.319	33.319	33.776	34.238	34.238	34.704	35.643	36.580
All Corporates	1,378	0.962	1.949	2.961	4.987	5.919	6.903	7.648	9.198	10.688	11.104	11.440	11.440	11.683	11.683	11.811	11.941	12.074	12.613	13.705	14.537
1/1/1984 Cohort																					
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	82	0.000	0.000	0.000	1.429	1.429	1.429	2.993	2.993	2.993	2.993	2.993	2.993	2.993	2.993	2.993	2.993	2.993	2.993	2.993	2.993
Aa	243	0.000	0.000	0.000	0.881	1.788	1.788	1.788	1.788	1.788	1.788	1.788	2.410	2.410	2.410	2.410	2.410	2.410	3.102	3.812	3.812
A	460	0.000	0.225	0.460	0.706	1.474	1.739	2.564	3.417	4.013	4.013	4.013	4.013	4.013	4.013	4.013	4.013	4.410	6.027	6.441	6.880
Baa	276	0.368	0.368	0.780	1.238	1.746	2.808	3.916	5.637	5.637	6.285	6.285	6.285	6.285	6.285	6.285	7.122	8.826	9.690	11.453	12.352
Ba	246	0.833	3.905	12.201	14.074	17.143	19.859	23.838	28.402	28.975	29.577	29.577	30.211	30.211	30.892	30.892	30.892	31.597	33.008	34.403	34.403
B	120	6.723	12.351	18.726	21.807	24.165	27.573	33.871	37.495	38.421	40.316	40.316	40.316	40.316	40.316	41.336	41.336	41.336	41.336	41.336	41.336
Caa-C	2	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
Investment-Grade	1,061	0.095	0.193	0.398	0.940	1.626	1.981	2.719	3.478	3.746	3.891	3.891	4.051	4.051	4.051	4.051	4.228	4.769	5.869	6.619	7.009
Speculative-Grade	368	3.324	7.259	14.782	17.093	19.862	22.824	27.658	31.822	32.523	33.617	33.617	33.994	33.994	34.394	34.804	34.804	35.218	36.049	36.876	36.876
All Corporates	1,429	0.922	2.012	4.129	5.156	6.409	7.453	9.266	10.938	11.327	11.745	11.745	11.972	11.972	12.093	12.216	12.342	12.851	13.883	14.670	14.940

### Exhibit 42 - Cumulative Issuer-Weighted Global Corporate Default Rates by Annual Cohort, 1970-2005\* (Cont'd)

#### 1/1/1985 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	83	0.000	0.000	0.000	0.000	0.000	1.587	1.587	1.587	1.587	1.587	1.587	1.587	1.587	1.587	1.587	1.587	1.587	1.587	1.587	1.587
Aa	303	0.000	0.000	0.000	0.771	0.771	0.771	0.771	0.771	0.771	0.771	1.356	1.356	1.356	1.356	1.356	1.356	2.005	2.672	2.672	2.672
A	522	0.000	0.209	1.326	2.265	2.508	3.529	4.318	4.592	4.592	4.592	4.592	4.592	4.592	4.592	4.592	4.966	6.100	6.488	6.895	6.895
Baa	273	0.000	1.220	1.220	1.731	2.805	3.361	5.092	5.698	6.355	6.355	6.355	6.355	6.355	6.355	8.147	9.966	10.890	12.776	13.734	13.734
Ba	294	1.404	6.622	9.011	12.088	16.752	21.095	25.981	26.955	27.466	27.466	28.565	28.565	29.146	29.146	29.146	29.770	31.668	32.910	32.910	32.910
B	148	8.219	16.834	21.894	24.454	27.319	34.352	37.497	38.320	40.009	40.009	40.009	40.009	40.009	40.905	40.905	40.905	40.905	40.905	40.905	40.905
Caa-C	5	0.000	0.000	0.000	33.333	33.333	33.333	33.333	33.333	33.333	33.333	66.667	66.667	66.667	66.667	66.667	66.667	66.667	66.667	66.667	66.667
Investment-Grade	1,181	0.000	0.365	0.858	1.597	1.927	2.615	3.326	3.577	3.715	3.715	3.868	3.868	3.868	3.868	4.212	4.735	5.619	6.344	6.721	6.721
Speculative-Grade	447	3.670	10.060	13.473	16.600	20.531	25.859	30.053	30.965	31.915	31.915	32.911	32.911	33.257	33.613	33.613	33.980	35.093	35.828	35.828	35.828
All Corporates	1,628	1.005	3.049	4.383	5.812	7.157	9.141	10.839	11.285	11.671	11.671	12.096	12.096	12.208	12.323	12.559	13.038	14.009	14.749	15.003	15.003

#### 1/1/1986 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Aaa	109	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aa	298	0.000	0.000	0.774	0.774	1.201	1.201	1.201	1.201	1.201	1.774	1.774	1.774	1.774	1.774	1.774	2.425	3.086	3.086	3.086	3.086
A	580	0.000	0.189	0.781	1.193	1.840	2.284	2.284	2.284	2.284	2.284	2.284	2.284	2.284	2.934	3.928	4.617	4.978	4.978	5.355	5.355
Baa	306	1.356	1.356	3.039	3.900	5.235	6.615	7.588	8.122	8.122	8.122	8.122	8.122	8.122	9.575	10.313	11.063	12.584	12.584	12.584	12.584
Ba	359	2.035	5.839	8.249	12.752	18.267	24.321	25.548	27.280	27.722	28.177	28.177	29.164	29.164	29.164	30.233	32.388	32.918	33.449	33.449	33.987
B	185	11.732	16.955	20.180	23.158	29.670	34.978	36.989	38.359	38.359	39.088	39.088	39.088	39.850	40.621	40.621	40.621	40.621	40.621	40.621	40.621
Caa-C	10	23.529	23.529	35.294	35.294	35.294	35.294	35.294	35.294	35.294	51.471	51.471	51.471	51.471	51.471	51.471	51.471	51.471	51.471	51.471	51.471
Investment-Grade	1,293	0.318	0.403	1.221	1.598	2.287	2.795	3.012	3.130	3.130	3.262	3.262	3.262	3.262	3.563	4.021	4.796	5.592	5.756	5.756	5.930
Speculative-Grade	554	5.644	9.924	12.827	16.681	22.469	28.148	29.650	31.222	31.490	32.321	32.321	32.904	33.206	33.513	34.135	35.386	35.697	36.008	36.008	36.323
All Corporates	1,847	1.901	3.262	4.716	6.114	8.277	10.290	10.896	11.469	11.555	11.916	11.916	12.110	12.210	12.516	13.033	13.977	14.617	14.836	14.836	15.064

#### 1/1/1987 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19
Aaa	134	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aa	316	0.000	0.000	0.000	0.384	0.384	0.384	0.384	0.384	0.915	0.915	0.915	0.915	0.915	0.915	1.534	2.166	2.166	2.166	2.166
A	554	0.000	0.000	0.402	1.239	1.668	1.668	1.668	1.668	1.668	1.668	1.668	1.668	1.668	1.982	2.625	3.293	3.992	3.992	4.353
Baa	336	0.000	1.060	1.429	2.975	4.569	5.817	6.716	6.716	6.716	6.716	7.297	7.297	8.533	9.164	11.090	11.732	11.732	11.732	11.732
Ba	464	2.718	4.431	8.976	15.243	21.478	23.932	26.227	26.907	27.616	27.989	28.781	29.194	29.194	30.065	30.942	32.270	32.714	32.714	33.166
B	265	6.226	12.995	18.809	27.587	34.651	36.406	37.321	37.816	37.816	37.816	37.816	38.354	38.900	39.986	40.524	41.611	41.611	41.611	41.611
Caa-C	10	20.000	28.421	28.421	28.421	28.421	28.421	28.421	28.421	42.737	42.737	42.737	42.737	42.737	42.737	42.737	42.737	42.737	42.737	42.737
Investment-Grade	1,340	0.000	0.247	0.504	1.309	1.862	2.155	2.367	2.367	2.486	2.486	2.616	2.616	2.888	3.167	4.018	4.599	4.899	4.899	5.058
Speculative-Grade	739	4.234	7.961	12.918	20.062	26.548	28.693	30.397	30.790	31.611	31.823	32.267	32.730	32.966	33.924	34.642	35.850	36.092	36.092	36.337
All Corporates	2,079	1.499	2.982	4.881	7.867	10.463	11.410	12.161	12.306	12.685	12.764	13.011	13.180	13.441	13.972	14.780	15.603	15.884	15.884	16.080

### Exhibit 42 - Cumulative Issuer-Weighted Global Corporate Default Rates by Annual Cohort, 1970-2005\* (Cont'd)

1/1/1988 Cohort																			
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18
Aaa	139	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aa	344	0.000	0.316	0.645	0.645	0.645	0.645	0.645	1.101	1.101	1.101	1.101	1.101	1.626	2.159	2.703	2.703	2.703	2.703
A	554	0.000	0.383	0.979	1.387	1.387	1.387	1.387	1.387	1.387	1.387	1.387	1.387	1.387	2.010	2.333	3.010	3.010	3.363
Baa	328	0.000	0.334	1.036	2.484	3.615	4.434	4.434	4.434	4.434	4.959	4.959	5.523	6.103	7.874	9.071	9.687	9.687	9.687
Ba	507	1.247	6.463	12.375	19.040	21.360	23.615	24.212	24.840	25.500	26.202	26.570	26.953	27.741	29.748	31.363	31.363	31.363	31.783
B	329	6.359	12.931	23.620	31.516	33.919	36.467	36.841	38.018	38.018	38.428	40.121	40.543	41.389	41.812	42.665	42.665	42.665	42.665
Caa-C	11	28.571	28.571	28.571	28.571	28.571	28.571	28.571	42.857	42.857	42.857	42.857	42.857	42.857	42.857	42.857	42.857	42.857	42.857
Investment-Grade	1,365	0.000	0.314	0.804	1.311	1.579	1.773	1.773	1.883	1.883	2.002	2.002	2.127	2.384	3.174	3.714	4.133	4.133	4.281
Speculative-Grade	847	3.598	9.280	17.031	24.134	26.471	28.838	29.333	30.373	30.733	31.297	32.276	32.676	33.490	34.723	35.965	35.965	35.965	36.177
All Corporates	2,212	1.355	3.669	6.854	9.820	10.874	11.899	12.092	12.564	12.704	12.997	13.374	13.606	14.081	15.049	15.871	16.124	16.124	16.301
1/1/1989 Cohort																			
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	
Aaa	158	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aa	343	0.596	0.596	0.596	0.596	0.596	0.596	1.026	1.026	1.026	1.026	1.026	1.519	2.023	2.533	2.533	2.533	2.533	2.533
A	583	0.000	0.181	0.556	0.556	0.556	0.556	0.556	0.556	0.556	0.556	0.556	0.556	1.420	1.717	2.029	2.029	2.360	
Baa	345	0.598	1.224	1.870	2.887	2.887	2.887	2.887	2.887	3.344	3.344	3.837	4.346	6.419	8.001	9.096	9.096	9.096	
Ba	488	2.982	9.782	17.028	19.183	21.552	21.836	22.445	23.412	24.438	25.520	25.895	27.053	29.014	31.387	31.387	31.387	31.387	
B	365	8.947	21.700	29.458	32.625	35.681	36.629	38.279	38.279	38.981	40.070	40.435	41.168	41.534	42.272	42.272	42.272	42.647	
Caa-C	12	25.000	38.636	45.455	45.455	45.455	45.455	45.455	45.455	45.455	45.455	45.455	45.455	45.455	45.455	45.455	45.455	45.455	
Investment-Grade	1,429	0.286	0.509	0.817	1.062	1.062	1.062	1.163	1.163	1.271	1.271	1.386	1.620	2.582	3.197	3.581	3.581	3.717	
Speculative-Grade	865	5.797	15.268	22.757	25.334	27.986	28.578	29.674	30.163	31.021	32.098	32.465	33.399	34.529	36.047	36.047	36.047	36.241	
All Corporates	2,294	2.336	5.982	9.004	10.158	11.197	11.431	11.924	12.117	12.516	12.930	13.142	13.648	14.679	15.655	15.886	15.886	16.049	
1/1/1990 Cohort																			
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16		
Aaa	180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Aa	387	0.000	0.000	0.000	0.000	0.000	0.359	0.359	0.359	0.359	0.359	0.359	0.798	1.246	1.246	1.246	1.246		
A	609	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.264	0.534	0.815	1.109	1.109	1.420		
Baa	341	0.000	0.626	0.626	0.626	0.626	0.626	0.626	0.626	1.130	1.651	4.302	6.434	7.535	7.535	7.535			
Ba	474	3.344	11.519	13.734	16.195	16.792	17.750	18.420	19.839	20.963	21.353	22.974	25.866	27.942	27.942	27.942	27.942		
B	383	16.201	25.497	30.278	33.328	34.201	35.446	35.772	36.462	37.555	38.300	39.050	39.428	40.571	40.571	40.571	40.958		
Caa-C	18	58.824	61.569	61.569	61.569	61.569	64.771	64.771	64.771	64.771	64.771	64.771	64.771	64.771	64.771	64.771	64.771		
Investment-Grade	1,517	0.000	0.140	0.140	0.140	0.140	0.232	0.232	0.232	0.232	0.338	0.555	1.337	2.024	2.379	2.379	2.507		
Speculative-Grade	875	10.079	18.672	22.030	24.716	25.436	26.669	27.152	28.173	29.249	29.805	30.942	32.476	34.022	34.022	34.022	34.223		
All Corporates	2,392	3.588	6.795	8.053	9.066	9.339	9.858	10.039	10.417	10.810	11.080	11.633	12.693	13.701	13.924	13.924	14.081		

## Exhibit 42 - Cumulative Issuer-Weighted Global Corporate Default Rates by Annual Cohort, 1970-2005\* (Cont'd)

### 1/1/1991 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Aaa	168	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aa	434	0.000	0.000	0.000	0.000	0.308	0.308	0.308	0.308	0.308	0.308	0.693	1.090	1.090	1.090	1.090
A	604	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.258	0.520	0.791	1.073	1.073	1.372
Baa	373	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.691	1.121	3.309	5.083	6.002	6.002	6.002
Ba	375	5.352	6.552	8.245	8.623	9.454	10.335	11.751	13.290	14.384	16.675	20.196	22.578	22.578	23.208	23.208
B	329	14.563	22.157	27.095	28.480	30.721	31.114	32.386	33.734	34.661	35.604	36.085	38.044	38.044	38.044	38.550
Caa-C	20	36.842	36.842	36.842	36.842	41.700	41.700	41.700	41.700	41.700	41.700	47.530	47.530	47.530	47.530	47.530
Investment-Grade	1,579	0.065	0.065	0.065	0.065	0.149	0.149	0.149	0.149	0.246	0.446	1.163	1.794	2.122	2.122	2.240
Speculative-Grade	724	10.395	14.556	17.790	18.670	20.394	21.000	22.301	23.698	24.678	26.195	28.259	30.350	30.350	30.621	30.898
All Corporates	2,303	3.226	4.539	5.561	5.837	6.423	6.607	6.992	7.394	7.741	8.309	9.403	10.447	10.678	10.758	10.924

### 1/1/1992 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14
Aaa	156	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aa	446	0.000	0.000	0.000	0.275	0.275	0.275	0.275	0.275	0.275	0.620	0.620	0.620	0.620	0.620
A	693	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.221	0.449	0.925	1.172	1.172	1.172
Baa	385	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.392	0.793	2.843	4.105	4.988	4.988	5.461
Ba	357	0.299	0.998	0.998	1.880	2.356	3.400	5.115	6.360	8.345	12.434	15.895	15.895	16.656	17.461
B	260	9.035	16.668	19.342	22.806	24.376	26.069	27.910	29.191	31.838	32.507	35.261	35.261	35.261	35.261
Caa-C	24	26.667	30.427	30.427	34.916	34.916	39.922	39.922	39.922	39.922	45.384	45.384	45.384	45.384	45.384
Investment-Grade	1,680	0.000	0.000	0.000	0.075	0.075	0.075	0.075	0.162	0.341	0.991	1.472	1.773	1.773	1.881
Speculative-Grade	641	4.833	8.680	9.895	12.131	13.087	14.649	16.347	17.560	19.783	22.376	25.343	25.343	25.693	26.057
All Corporates	2,321	1.306	2.335	2.652	3.269	3.505	3.877	4.267	4.604	5.229	6.304	7.342	7.572	7.652	7.819

### 1/1/1993 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
Aaa	131	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aa	461	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
A	736	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.191	0.588	1.002	1.219	1.219	1.219
Baa	456	0.000	0.000	0.256	0.256	0.256	0.546	1.146	1.760	3.007	3.971	4.641	4.641	5.002
Ba	388	0.549	0.549	2.589	3.314	4.522	5.861	6.824	8.381	11.596	14.890	14.890	14.890	15.535
B	255	5.785	9.757	14.557	16.083	18.358	20.257	23.622	27.713	29.789	31.906	32.619	33.351	33.351
Caa-C	23	28.571	28.571	37.229	41.414	41.414	41.414	41.414	41.414	46.740	46.740	46.740	46.740	46.740
Investment-Grade	1,784	0.000	0.000	0.065	0.065	0.065	0.139	0.290	0.523	1.006	1.424	1.685	1.685	1.780
Speculative-Grade	666	3.509	5.078	8.516	9.730	11.304	12.801	14.679	17.217	20.107	22.755	23.058	23.376	23.705
All Corporates	2,450	0.940	1.353	2.274	2.578	2.954	3.350	3.879	4.607	5.609	6.517	6.787	6.857	7.004

**Exhibit 42 - Cumulative Issuer-Weighted Global Corporate Default Rates by Annual Cohort, 1970-2005\* (Cont'd)**

1/1/1994 Cohort													
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
Aaa	125	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aa	419	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
A	875	0.000	0.000	0.000	0.000	0.000	0.000	0.150	0.460	0.781	0.950	0.950	0.950
Baa	528	0.000	0.202	0.202	0.420	0.648	1.828	2.311	3.552	4.320	4.861	4.861	5.160
Ba	439	0.236	1.769	2.042	2.951	4.651	6.890	9.283	11.321	14.284	14.735	14.735	15.254
B	332	3.859	9.037	11.919	13.517	16.807	20.446	24.703	27.908	30.578	32.192	33.839	33.839
Caa-C	41	5.128	13.260	22.081	22.081	22.081	26.077	26.077	36.273	36.273	36.273	36.273	36.273
Investment-Grade	1,947	0.000	0.055	0.055	0.114	0.176	0.494	0.690	1.163	1.512	1.733	1.733	1.814
Speculative-Grade	812	1.938	5.281	7.051	8.195	10.434	13.317	16.347	19.224	21.935	22.877	23.622	23.881
All Corporates	2,759	0.560	1.541	2.034	2.382	2.983	3.903	4.752	5.783	6.687	7.078	7.255	7.378
1/1/1995 Cohort													
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	
Aaa	122	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Aa	486	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
A	966	0.000	0.000	0.000	0.000	0.000	0.128	0.392	0.801	0.944	0.944	0.944	
Baa	550	0.000	0.000	0.000	0.421	1.511	1.958	3.340	3.815	4.066	4.066	4.348	
Ba	452	0.686	0.933	2.029	3.558	6.237	8.723	10.905	13.175	14.403	14.403	14.871	
B	456	4.767	7.136	9.734	12.937	16.477	20.856	26.905	31.433	33.676	34.663	35.005	
Caa-C	62	12.389	19.767	19.767	23.935	28.476	30.943	41.775	44.201	44.201	46.627	46.627	
Investment-Grade	2,124	0.000	0.000	0.000	0.108	0.385	0.557	1.031	1.337	1.466	1.466	1.538	
Speculative-Grade	970	3.319	5.021	6.767	9.276	12.494	15.891	20.491	23.930	25.622	26.332	26.703	
All Corporates	3,094	1.025	1.544	2.056	2.831	3.887	4.898	6.461	7.620	8.180	8.377	8.532	
1/1/1996 Cohort													
Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10		
Aaa	128	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Aa	510	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
A	1,067	0.000	0.000	0.000	0.000	0.111	0.341	0.580	0.706	0.706	0.706		
Baa	633	0.000	0.000	0.173	0.709	1.264	2.597	3.183	3.594	3.811	4.044		
Ba	474	0.000	0.719	2.331	5.547	7.677	10.806	12.759	14.187	14.187	15.008		
B	514	1.439	4.395	8.953	12.305	17.384	23.371	28.759	31.226	32.518	32.857		
Caa-C	75	14.184	19.548	25.145	34.127	37.156	45.213	46.674	46.674	48.242	48.242		
Investment-Grade	2,338	0.000	0.000	0.047	0.193	0.394	0.861	1.130	1.299	1.359	1.421		
Speculative-Grade	1,063	1.670	3.819	7.167	10.959	14.534	19.438	22.987	24.795	25.594	26.099		
All Corporates	3,401	0.514	1.151	2.130	3.262	4.364	6.027	7.196	7.812	8.072	8.254		

## Exhibit 42 - Cumulative Issuer-Weighted Global Corporate Default Rates by Annual Cohort, 1970-2005\* (Cont'd)

### 1/1/1997 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Aaa	127	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aa	560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
A	1,134	0.000	0.000	0.000	0.100	0.307	0.522	0.863	0.863	0.863
Baa	733	0.000	0.143	0.734	1.347	2.457	3.110	3.454	3.638	4.029
Ba	557	0.190	1.468	5.213	8.129	10.864	13.206	14.622	14.622	15.285
B	590	2.124	7.341	11.492	16.518	24.657	29.420	31.686	33.112	33.359
Caa-C	77	14.865	25.507	33.861	39.431	48.958	50.159	50.159	50.159	50.159
Investment-Grade	2,554	0.000	0.041	0.211	0.432	0.842	1.125	1.375	1.427	1.538
Speculative-Grade	1,224	2.057	5.922	10.213	14.369	20.304	23.783	25.521	26.263	26.653
All Corporates	3,778	0.652	1.856	3.237	4.606	6.656	7.910	8.607	8.866	9.060

### 1/1/1998 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Aaa	114	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aa	604	0.000	0.000	0.000	0.000	0.000	0.000	0.219	0.219
A	1,158	0.000	0.000	0.093	0.287	0.488	0.808	0.808	0.808
Baa	872	0.117	0.599	1.094	2.119	3.310	3.588	3.885	4.204
Ba	669	0.624	2.842	5.901	9.583	12.265	13.936	14.164	14.900
B	739	4.246	11.256	17.664	26.431	31.359	34.222	36.425	36.731
Caa-C	113	15.238	28.836	35.343	47.882	49.887	51.241	51.928	51.928
Investment-Grade	2,748	0.037	0.189	0.386	0.793	1.259	1.482	1.624	1.723
Speculative-Grade	1,521	3.442	8.937	14.000	21.136	24.960	27.272	28.650	29.078
All Corporates	4,269	1.227	3.207	5.086	7.877	9.576	10.570	11.170	11.391

### 1/1/1999 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Aaa	105	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aa	643	0.000	0.000	0.000	0.000	0.000	0.198	0.198
A	1,179	0.000	0.000	0.182	0.372	0.669	0.669	0.669
Baa	978	0.103	0.637	1.408	2.672	3.038	3.298	3.575
Ba	719	1.006	3.296	6.456	9.095	10.712	11.107	12.176
B	848	5.983	14.468	23.741	30.417	33.297	35.329	35.834
Caa-C	212	20.438	29.073	43.572	46.622	49.056	50.452	50.452
Investment-Grade	2,905	0.035	0.215	0.550	1.052	1.297	1.426	1.516
Speculative-Grade	1,779	5.696	11.860	19.727	24.499	26.949	28.402	29.005
All Corporates	4,684	2.157	4.610	7.885	10.115	11.258	11.926	12.224

**Exhibit 42 - Cumulative Issuer-Weighted Global Corporate Default Rates by Annual Cohort, 1970-2005\* (Cont'd)****1/1/2000 Cohort**

<b>Ratings</b>	<b>No. Issuers</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
Aaa	123	0.000	0.000	0.000	0.000	0.000	0.000
Aa	644	0.000	0.000	0.000	0.000	0.000	0.000
A	1,242	0.000	0.169	0.344	0.620	0.716	0.818
Baa	1,073	0.380	0.871	2.211	2.648	2.881	3.249
Ba	580	0.887	2.764	4.561	5.858	5.858	6.374
B	1,028	5.475	15.446	23.207	26.923	29.028	30.215
Caa-C	267	20.000	38.551	44.470	47.540	49.493	49.777
Investment-Grade	3,082	0.132	0.370	0.903	1.165	1.283	1.449
Speculative-Grade	1,875	6.127	15.200	21.129	24.183	25.796	26.661
All Corporates	4,957	2.385	6.019	8.714	10.118	10.847	11.295

**1/1/2001 Cohort**

<b>Ratings</b>	<b>No. Issuers</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Aaa	120	0.000	0.000	0.000	0.000	0.000
Aa	711	0.000	0.000	0.000	0.000	0.000
A	1,297	0.156	0.399	0.653	0.653	0.653
Baa	1,075	0.189	1.669	1.981	2.204	2.674
Ba	522	1.575	3.458	4.806	4.806	5.616
B	979	9.319	18.623	23.284	25.633	26.907
Caa-C	256	34.227	41.857	47.224	49.254	49.849
Investment-Grade	3,203	0.127	0.721	0.929	1.002	1.157
Speculative-Grade	1,757	10.554	17.662	21.700	23.462	24.513
All Corporates	4,960	3.783	6.774	8.426	9.138	9.626

**1/1/2002 Cohort**

<b>Ratings</b>	<b>No. Issuers</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
Aaa	130	0.000	0.000	0.000	0.000
Aa	741	0.000	0.000	0.000	0.000
A	1,301	0.156	0.320	0.320	0.320
Baa	1,188	1.206	1.477	1.573	1.777
Ba	539	1.533	3.174	3.836	4.794
B	760	5.062	10.384	12.676	14.546
Caa-C	292	30.216	39.118	43.120	44.299
Investment-Grade	3,360	0.485	0.645	0.678	0.749
Speculative-Grade	1,591	8.426	13.458	15.695	17.141
All Corporates	4,951	3.003	4.746	5.497	6.006



## Exhibit 42 - Cumulative Issuer-Weighted Global Corporate Default Rates by Annual Cohort, 1970-2005\* (Cont'd)

### 1/1/2003 Cohort

Ratings	No. Issuers	Year 1	Year 2	Year 3
Aaa	131	0.000	0.000	0.000
Aa	687	0.000	0.000	0.000
A	1,283	0.000	0.000	0.000
Baa	1,161	0.000	0.000	0.197
Ba	548	0.941	1.145	1.811
B	748	2.648	4.169	6.225
Caa-C	281	21.832	31.285	32.739
Investment-Grade	3,262	0.000	0.000	0.070
Speculative-Grade	1,577	5.314	7.927	9.393
All Corporates	4,839	1.701	2.533	3.037

### 1/1/2004 Cohort

Ratings	No. Issuers	Year 1	Year 2
Aaa	145	0.000	0.000
Aa	654	0.000	0.000
A	1,249	0.000	0.000
Baa	1,190	0.000	0.181
Ba	548	0.188	0.393
B	806	0.774	2.066
Caa-C	246	12.747	18.686
Investment-Grade	3,238	0.000	0.066
Speculative-Grade	1,600	2.347	3.987
All Corporates	4,838	0.763	1.328

### 1/1/2005 Cohort

Ratings	No. Issuers	Year 1
Aaa	146	0.000
Aa	760	0.000
A	1,331	0.000
Baa	1,176	0.172
Ba	550	0.000
B	783	1.060
Caa-C	279	8.271
Investment-Grade	3,413	0.059
Speculative-Grade	1,612	1.924
All Corporates	5,025	0.648

## Related Research

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### **Special Comments:**

[Rating Transitions and Defaults Conditional on Rating Outlooks Revisited: 1995-2005, December 2005 \(95748\)](#)

[Bond Prices at Default and at Emergence from Bankruptcy for US Corporate Issuers, June 2005 \(92891\)](#)

[The Performance of Moody's Corporate Bond Ratings: December 2005 Quarterly Update, January 2006 \(96330\)](#)

[Corporate Europe: 2005 Review & 2006 Outlook, January 2006 \(96321\)](#)

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