

SPECIAL COMMENT

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Annual Default Study: Corporate Default and Recovery Rates, 1920-2013

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Summary

This report comprises Moody's 27th annual default study in which we update statistics on the default, loss, and rating transition experience of corporate bond and loan issuers for 2013, as well as for the historical period since 1920. This study covers financial institutions, non-financial corporates, and regulated utilities (collectively referred to as "corporate issuers" in this report) which have long-term debt ratings. Briefly, we find that:

- » 66 Moody's-rated corporate issuers defaulted in 2013, up from 63 in 2012. Defaulted debt in 2013 was comprised of \$36.7 billion of bonds and \$17.8 billion of loans. In comparison, there were \$31.7 billion of bonds and \$17.6 billion of loans that defaulted in 2012.
- » Defaults were recorded in a number of industries but were highly concentrated in the Capital Industries and the Banking sectors, which together registered 29 defaults (or 44% of the total). Across regions, half of the defaulted issuers were from North America. The remaining defaults were from Europe, Latin America, and Asia Pacific. Measured by default volume, Europe became the largest default region with \$23.8 billion of debt in default, surpassing North America's \$21.5 billion.
- » Moody's global speculative-grade default rate ended 2013 at 2.9%, the same as 2012's year-end level. The default rate for all Moody's-rated corporate issuers closed at 1.4% at the end of 2013, also unchanged from the level at year-end 2012. Both results correspond closely with our one-year-ago forecasts of 3.0% and 1.4%, respectively.
- » Measured on a dollar volume basis, Moody's global speculative-grade bond default rate ended 2013 at 1.1%, down from 1.9% at the end of 2012. Among all Moody's-rated issuers, the volume-weighted default rate edged lower to 0.3% in 2013 from 0.4% in 2012.
- » Moody's global speculative-grade default rate forecasting model now predicts that the speculative-grade default rate will remain low in 2014 and finish the year at 2.2%. The forecast, if realized, will be lower than 2013's closing level of 2.9% and well below the long-term average of 4.7% since 1983.
- » Following some improvement in the US economy and stabilization in the European debt crisis, credit deterioration slowed in 2013 although the number of downgrades remained higher than the number of upgrades.

- » Measured by trading prices, the average recovery rate for senior unsecured bonds was 43.8% in 2013, close to 2012's 43.0%.
- » Rating accuracy as measured by the Average Default Position (AP) indicates that Moody's ratings have been successful in rank ordering credit risk. Last year, the AP for Moody's ratings was 93.2%, better than the long-term average of 92.0% for the 1983-2013 period.

Introduction

The high-yield market of 2013 was little changed from 2012 in terms of strong debt issuance and low default rates. The high-yield spread tightened further in 2013 and ended well below its historical average. The most notable credit event last year was the tapering of quantitative easing by the US Federal Reserve Bank. The high-yield market was a bit fearful in May upon the Fed's announcement that it could start tapering its bond buying later in 2013 and end the program in 2014. The high-yield spread jumped from 410 bps in mid-May to 528 bps at the end of June. A few months later, however, when the Fed laid out its plan to modestly reduce its pace of asset purchases, the market was calmed with the high-yield bond spread falling below 400 bps for the first time since October 2007. This suggests that the credit market expects that QE tapering is unlikely to cause Treasury bond yields to overshoot or worsen the prospects for corporate debt repayment, at least for now. Compared to the Fed's QE tapering, the impact of the US government shutdown and debt limit negotiations in the fourth quarter seemed relatively benign as the market widely believed that the debt limit would be raised in time and the US government would continue to pay interest and principal on its debt.

With the US economic condition gradually improving and the sovereign debt crisis easing in Europe with some signs of recovery, the global economy is now navigating towards calmer waters. This, together with continued accommodative funding conditions and healthy corporate fundamentals, put defaults in 2013 on the same pace as what we saw in 2012, leaving the default rate low by historical standards. Looking ahead, we expect a somewhat lower corporate default rate in 2014 mainly driven by our expectations for relatively more robust economic growth. In this Moody's 27th annual default study, we document the default and recovery experience of corporate debt issuers for 2013 as well as for the historical period since 1920.¹ We also discuss Moody's default rate forecast for 2014 and review the performance of Moody's ratings.

Default pace remained slow in 2013

Majority of defaults took place in H1

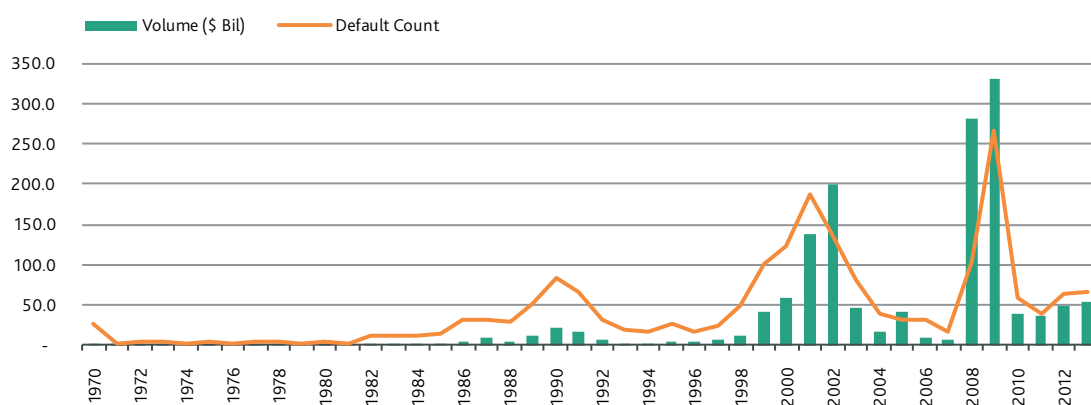
World-wide, 66 Moody's-rated corporate issuers defaulted in 2013, up slightly from 63 in 2012. The majority of the 2013 defaults were recorded in the first half of the year when 40 companies defaulted, accounting for 60% of defaults for the whole year. Throughout 2013, a total of \$54.6 billion of debt went into default which was comprised of \$36.7 billion of bonds and \$17.8 billion of loans. In comparison, the default volume was lower at \$49.3 billion in 2012 consisting of \$31.7 billion of bonds and \$17.6 billion of loans. Last year's default count exactly matched the forecast we made at the beginning of 2013. The reason why defaults remained benign is mainly attributable to a continuous accommodative monetary environment which allowed high yield borrowers to access the debt markets and refinance debt with low interest rates.

¹ The analysis of default and rating transitions in this report is limited to Moody's-rated financial and non-financial corporate issuers, including utility companies. Consistent with prior year studies, this report's default and transition rate statistics only cover issuers that have Moody's-rated bonds and/or loans and default refers to debt default. Companies that only have Corporate Family Ratings but no rated bonds or loans are excluded from the universe of this study. Unless otherwise specified, ratings in this report are issuer level, senior unsecured equivalent ratings which are derived from [Moody's Senior Rating Algorithm](#).

From a geographic standpoint, half of the defaulted issuers were from North America in 2013.² Europe accounted for another 23 defaults and the remainder came from Latin America (eight) and Asia Pacific (two). Compared to 2012, the default count fell noticeably from 46 in North America but almost doubled in Europe. In terms of volume, defaulted debt totaled \$54.6 billion in 2013, of which \$21.5 billion was from North America whereas \$23.8 billion was from Europe. It is worth noting that defaults rose noticeably in Latin America last year with the count doubling from four to eight and the volume more than doubling from \$3.0 billion to \$8.7 billion.

Exhibit 1 presents the annual default counts and defaulted debt volumes for the period 1970-2013. In terms of default types, 26 (or 39%) of last year's defaults were triggered by payment defaults, 21 (or 32%) were due to distressed exchanges, and the remaining 19 (or 29%) resulted from bankruptcies.

EXHIBIT 1

Defaults Remained Low in 2013

Source: Moody's Investors Service

Most defaults came from the Capital and Banking industries

Of the 66 defaults last year, almost 23% were by issuers in the Capital Industries sector.³ This is followed by the Banking sector, which contributed 21% of defaults in 2013. When measured by default volume, however, the Banking sector topped the list by accounting for almost a third of the total defaulted volume. The next highest share came from the Media & Publishing sector, which contributed 24% of defaulted debt. Exhibit 2 shows the distribution of 2013 defaults by broad industries.

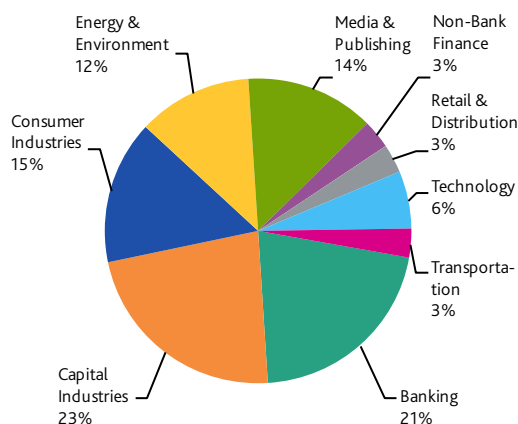
² For the purpose of the annual default study, annual default count refers to the number of defaulters in the January 1st cohorts. Including companies who are not in the January 1st cohort, e.g. issuers whose rating are withdrawn prior to Jan 1st, or newly rated/enter cohorts after Jan 1st, a total of 67 companies defaulted in 2013 with \$54.6 billion of debt affected. The additional default came from Axtel SAB de CV's second distressed exchange which took place in December 2013.

³ The Capital Industries sector includes automotive, capital equipment, chemicals, plastics, & rubber, construction & building, containers, packaging, & glass, forest products & paper, metals & mining, and business service industries.

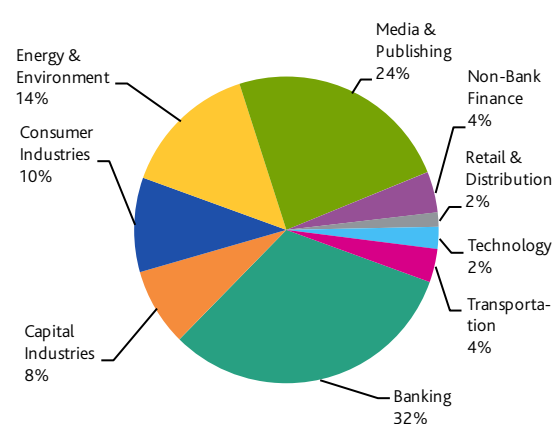
EXHIBIT 2

2013 Default Counts and Volumes by Broad Industry

Panel A Percent of Defaulted Issuer Counts



Panel B Percent of Default Dollar Volume



Source: Moody's Investors Service

Although the Capital Industries sector accounted for 23% of defaults last year, it was not the sector with the highest rate of default. That distinction belonged to the Media & Publishing industry, which had a 4.8% default rate in 2013 (see Exhibit 3).

EXHIBIT 3

Default Rate Highest in the Media & Publishing Sector

| Broad Industry | Default Rates* |
|----------------------------|----------------|
| Banking | 1.9% |
| Capital Industries | 1.4% |
| Consumer Industries | 1.7% |
| Energy & Environment | 1.9% |
| Non-Bank Finance | 0.4% |
| Media & Publishing | 4.8% |
| Retail & Distribution | 1.0% |
| Government Related Issuers | 0.0% |
| Technology | 0.9% |
| Transportation | 1.7% |
| Utilities | 0.0% |

* Issuer-Weighted

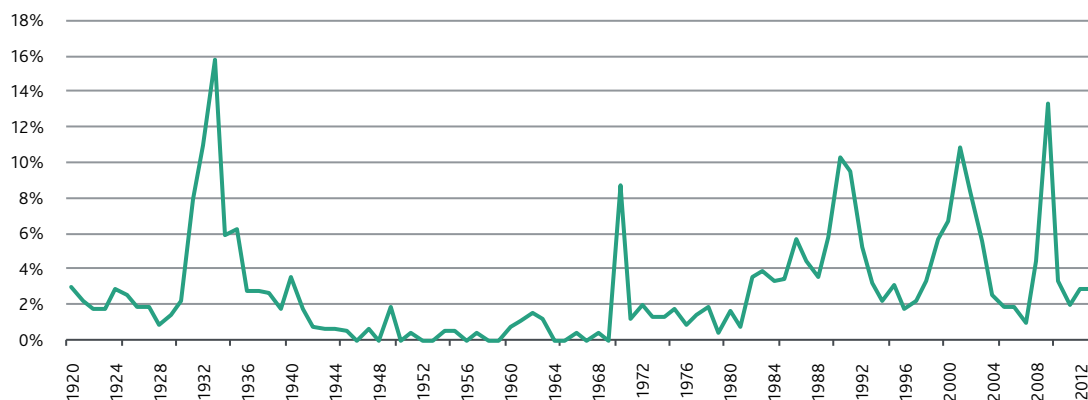
Speculative-grade default rate unchanged from 2012 to 2013

As the default pace remained slow last year, the trailing twelve-month issuer-weighted default rate for all Moody's-rated issuers closed at 1.4% in 2013, unchanged from the level in 2012. Among speculative-grade issuers, the default rate also held steady at 2.9% (see Exhibit 4). The current default rate remained low relative to the historical average of 4.7% since 1983. Measured on a dollar volume basis, Moody's speculative-grade corporate bond default rate fell from 1.9% in 2012 to 1.1% in 2013. The reduction in the dollar-weighted bond default rate resulted from a larger denominator as well as a

smaller numerator.⁴ For all of Moody's-rated issuers, the volume-weighted default rate edged lower from 0.4% in 2012 to 0.3% in 2013.

EXHIBIT 4

Global Speculative-Grade Default Rate Remained Low in 2013



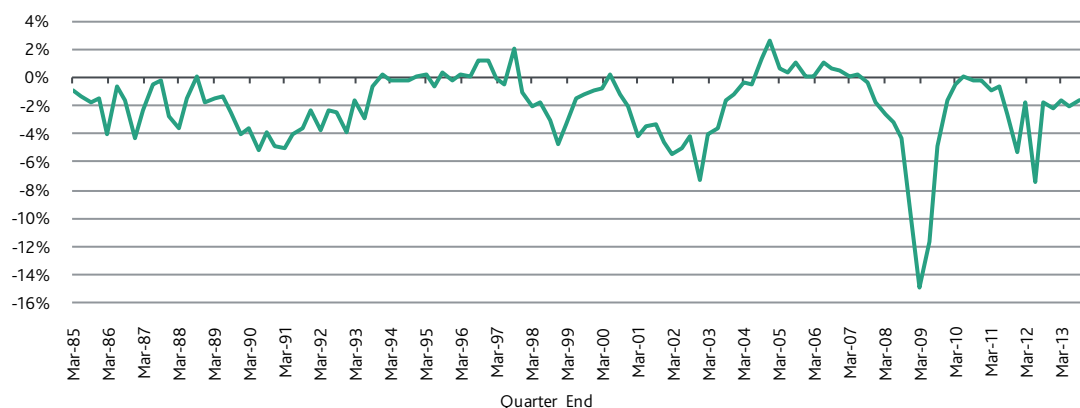
Source: Moody's Investors Service

Rating drift up slightly in 2013

Compared to 2012, credit deterioration slowed in 2013 as the number of issuers being downgraded fell by 27% while the corresponding number for upgrades only modestly declined by 5%. Nevertheless, rating downgrades continued to outpace upgrades. Quarterly rating drift, which is measured by the rating upgrade rate minus the rating downgrade rate edged higher from -1.7% in the first quarter to -1.5% in the last, both up from -2.1% in the fourth quarter of 2012 and off their recent lows in 2009 and 2012. The quarterly rating drift suggests that credit quality has stabilized after the sovereign debt crisis in 2011-2012 (see Exhibit 5).

EXHIBIT 5

Rating Drift Slightly Up in 2013



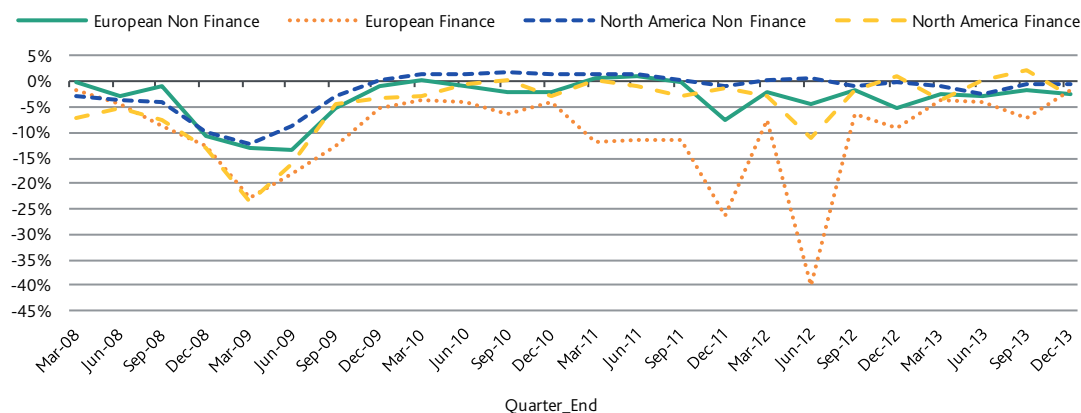
Source: Moody's Investors Service

⁴ Moody's global dollar-weighted bond default rate only includes bonds issued by US and European issuers. Latin America, which observed a few sizable defaults and accounted for almost a quarter of the defaulted bond volume in 2013, is excluded from the global dollar-weighted bond default rate calculation, thus resulted in a smaller numerator.

Across regions and sectors, we find that rating downgrades outnumbered rating upgrades in both Europe and North America as well as between financial institutions and non-financial corporations. However, the credit trend was stabilizing and deterioration was slowing. This can be seen in Exhibit 6, which shows the recent quarterly rating drifts by region and sector. The chart indicates that the credit trend among European financial institutions, which deteriorated severely in 2011-2012, improved in 2013, reflecting signs of stabilization in the European sovereign debt crisis.

EXHIBIT 6

Credit Quality Is Stabilizing among European Financial Institutions



Source: Moody's Investors Service

2013's recovery rates broadly higher than their historical averages

In Exhibit 7, we present the average recovery rates for debt defaulted in the past two years and put them into context with the historical averages. As indicated in the chart, recoveries are in most part correlated with priorities of claim in the capital structure in 2013, with a higher priority of claim enjoying a higher average rate of recovery. The only exceptions are that second lien bank loans recovered at a high rate of 78.7% while senior subordinated bonds only recovered 20.7 cents on the dollar, though both results are based on small sample sizes (see Exhibit 19 for more details). Exhibit 7 further shows that the recovery rates for all but senior subordinated and subordinated bonds were higher in 2013 than their long-term averages. For example, the average recovery rate for first lien loans was 75.1% in 2013 versus 66.3% for the period of 1982-2013 while the senior unsecured bond recovery rates averaged at 43.8% last year, compared to the historical average of 37.2%.

EXHIBIT 7

Average Corporate Debt Recovery Rates Measured by Trading Prices⁵

| Lien Position | Issuer-weighted | | | Volume-weighted | | |
|-------------------------|-----------------|-------|-----------|-----------------|-------|-----------|
| | 2013 | 2012 | 1982-2013 | 2013 | 2012 | 1982-2013 |
| 1st Lien Bank Loan | 75.1% | 66.4% | 66.3% | 67.7% | 66.8% | 60.2% |
| 2nd Lien Bank Loan* | 78.7% | 17.4% | 32.1% | 69.2% | 15.3% | 27.5% |
| Sr. Unsecured Bank Loan | n.a. | n.a. | 47.1% | n.a. | n.a. | 40.2% |
| Sr. Secured Bond | 57.7% | 51.2% | 52.2% | 58.8% | 28.4% | 47.7% |
| Sr. Unsecured Bond | 43.8% | 43.0% | 37.2% | 29.2% | 40.1% | 37.8% |
| Sr. Subordinated Bond* | 20.7% | 33.7% | 31.0% | 26.6% | 39.3% | 25.9% |
| Subordinated Bond | 26.4% | 37.3% | 31.4% | 33.7% | 32.1% | 25.5% |
| Jr. Subordinated Bond | n.a. | n.a. | 24.7% | n.a. | n.a. | 17.1% |

* The average recovery for 2012's and 2013's second lien bank loans were based on three issuers.

** The average recovery for 2013's senior subordinated bonds was based on four issuers.

The recovery data above are based on trading prices. An alternative recovery measure is based on ultimate recoveries, or the value creditors realize at the resolution of a default event. For example, for issuers filing for bankruptcy, the ultimate recovery is the present value of the cash and/or securities that the creditors actually receive when the issuer exits bankruptcy, typically 1-2 years following the initial default date.⁶

In Exhibit 8, we present data on ultimate recovery rates for North American companies included in Moody's Ultimate Recovery Database ("URD").⁷ The average "firm-wide" recovery rate⁸ for the seven default resolutions was 62.6% in 2013 compared to 59.7 % for the 15 companies which emerged from default in 2012. During 2013, the family recovery rate exceeded the historical average rate of 54.6%. The higher family recovery can be mostly attributed to higher loan rate recoveries during last year, and the fact that out of the seven default resolutions, almost half of them (three) were pre-arranged bankruptcies, which are historically characterized by higher family recovery rates than regular bankruptcies. Nevertheless, the family recovery rates typically have a historical standard deviation of 28.6%, and considering the small sample size in 2013, the recovery rates cannot be said to be unusual.

EXHIBIT 8

Average North American Non-Financial Corporate Debt Recovery Rates Measured by Ultimate Recoveries, 1987 – 2013

| Lien Position | Emergence Year | | | Default Year | | |
|----------------------|----------------|-------|-----------|--------------|-------|-----------|
| | 2013 | 2012 | 1987-2013 | 2013 | 2012 | 1987-2013 |
| Loans | 73.3% | 91.7% | 80.3% | 81.3% | 77.2% | 80.3% |
| Sr. Secured Bonds | 67.5% | 63.6% | 63.5% | n.a. | 71.2% | 63.5% |
| Sr. Unsecured Bonds* | 4.5% | 36.0% | 48.1% | n.a. | 39.3% | 48.1% |
| Subordinated Bonds** | 0.0% | 9.2% | 28.2% | n.a. | 13.5% | 28.2% |

* 2013's senior unsecured bond recovery rate is based on five observations.

** Includes senior subordinated, subordinated, and junior subordinated bonds. 2013's subordinated bond recovery rate is based on one observation.

⁵ For payment defaults and bankruptcies, we take trading prices 30 days after default. For distressed exchanges, we take trading prices at default.

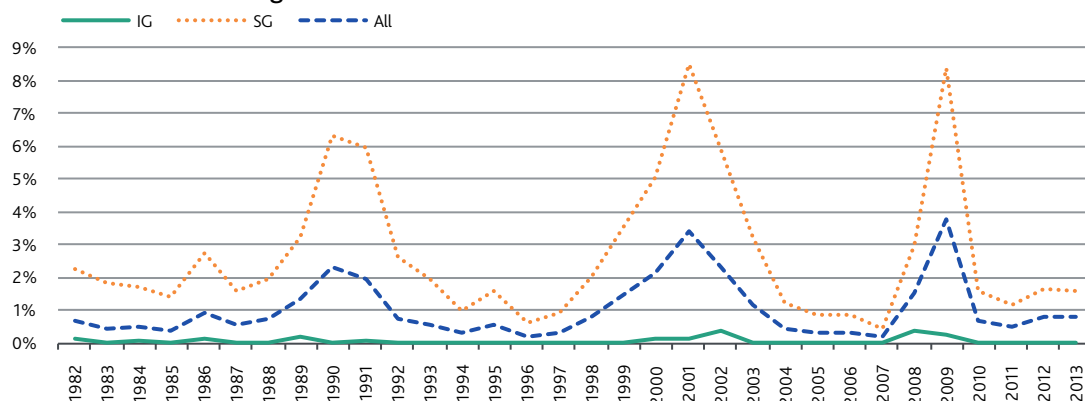
⁶ For details, see Moody's Special Comment [Moody's Ultimate Recovery Database](#), April 2007.

⁷ The analysis on ultimate recovery is provided by David Keisman and Julia Chursin. The data are from Moody's Ultimate Recovery Database which includes robust detailed recovery information for over 4,900 loans and bonds from more than 1,000 North American corporate defaulters since 1987.

⁸ For a given issuer, the firm-wide recovery rate is the weighted-average recovery rate across all of the issuer's debts where the weights are the size of the debts.

Moody's credit ratings are opinions of relative expected credit losses, which are a function of both the probability of default and severity of default ("LGD"). Exhibit 9 shows annual average credit loss rates from 1982 through 2013 for Moody's-rated corporate issuers. The chart indicates that the average credit loss rate among all Moody's-rated issuers remained unchanged at 0.8% from 2012 to 2013. To put this in historical perspective, the average annual credit loss rate for Moody's-rated issuers since 1982 is 1.0%.

EXHIBIT 9

Credit Loss Rates Unchanged in 2013

Source: Moody's Investors Service

Default rate expected to remain low in 2014

At the beginning of 2013, in light of the global economic prospects and rating facts, Moody's default rate forecasting model ("Credit Transition Model" or "CTM") predicted that the global speculative-grade default rate would finish at 3.0% by the end of the year. The model's prediction turned out to be very close to the realized rate which came in at 2.9%.⁹

Looking forward, CTM forecasts that the global speculative-grade default rate will remain low in 2014, ranging from 2.0% - 2.6% during the course of the year. The model further predicts the global rate to end the year at 2.2%, which if realized, will be lower than 2013's closing level of 2.9% and well below the 4.7% historical average. After the global financial crisis and subsequent recessions in advanced economies, there have been signs of a somewhat stronger growth trajectory in the US and the UK, while the euro area still looks set for a more gradual economic recovery.¹⁰ Despite some recent challenges in capital flows in several emerging economies, economic growth among advanced economies is expected to support a gradual strengthening in emerging markets over the medium term. Additional factors that support our view of a low default rate in 2014 are the continuous accommodative monetary environment together with ample liquidity, which has and will likely continue to allow distressed companies to access the capital market and reduce refinancing risk in the near future.

The above-mentioned 2.2% default rate projection, which implies approximately 61 defaults globally, is made under our baseline scenario. It assumes that the US unemployment rate will ease slightly from its current level of 6.8% to 6.2% by the fourth quarter of 2014 while the average high yield spread will widen to 451 bps from 397 bps.¹¹

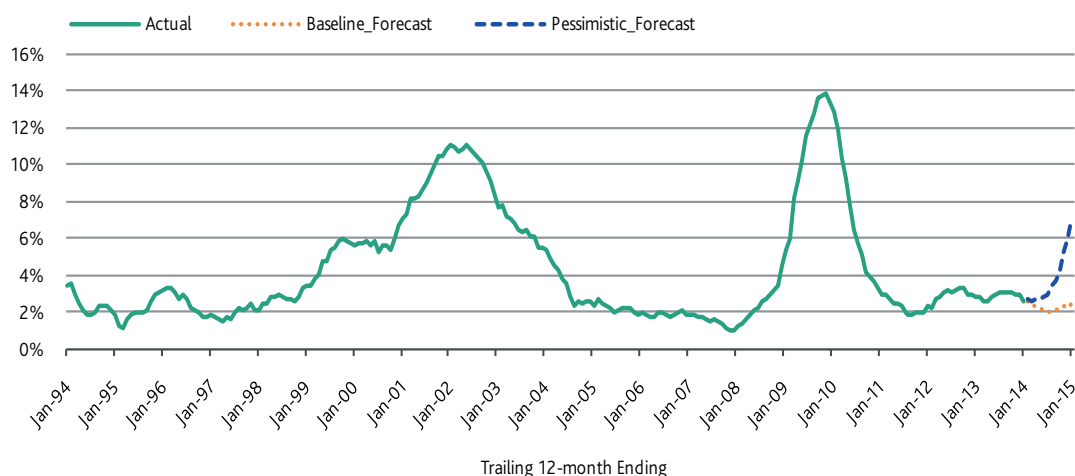
⁹ See Moody's [December Default Report](#), Jan 2013.

¹⁰ See Moody's Global [Macro Outlook 2014-15: Growing Pains](#), Feb 2014.

¹¹ The unemployment rates and high yield spreads are three-month moving averages.

While our baseline scenario remains relatively benign, we acknowledge there is risk associated with the US Federal Reserve's efforts to normalize monetary policy, which not only affects the US economy but can also hit some emerging market economies. In addition, while financial conditions in the euro area have stabilized over the past 18 months, there remain risks to growth and macroeconomic stability arising from the euro area debt crisis. In a pessimistic scenario where the global economy contracts, the US unemployment rate can climb to 9.6% and the average high yield bond spread balloon to 1,256 bps. In that case, the worldwide high yield default rate is expected to rise to 6.0%, which will be above the long-term average of 4.7% but well below the 2008-2009 peak of 13.9%.

EXHIBIT 10

Speculative-Grade Default Rate Expected to Stay low in 2014

Source: Moody's Investors Service

A year ago, based on a divergent economic outlook and rating momentum between the US and Europe, we anticipated that the speculative-grade default rate would ease in the US but rise in Europe in 2013. This has proven to be accurate as the realized rates fell from 3.4% to 2.2% in the US while jumping from 2.5% to 4.4% in Europe. Moving into 2014, under the baseline scenario, Moody's forecasting model expects the default rate to fall sharply from 4.4% to 1.9% in Europe, getting closer to the US rate which is expected to remain low from 2.2% to 2.3%. Our forecast of a lower default rate in Europe is based on the recent stabilization in the euro zone economies and some signs of recoveries in the UK. Moreover, our view is also supported by fewer negative outlooks and unfavorable watchlist assignments among the region's most vulnerable credits (i.e. Caa or below issuers) at the beginning of this year than last year (see Exhibit 11).

EXHIBIT 11

Watchlist/Outlook Assignments for European Caa or Below Issuers

| Watch/Outlook Assignments | Europe | |
|---|--------|--------|
| | Jan-13 | Jan-14 |
| On Watch for Downgrade | 4.3% | 7.1% |
| Negative Outlook | 37.4% | 22.8% |
| Stable Outlook | 53.2% | 60.9% |
| Positive Outlook | 5.0% | 8.2% |
| On Watch for Upgrade | 0.0% | 1.1% |
| Negative Outlook + On Watch for Downgrade | 41.7% | 29.9% |

Across industries, default rates for all of Moody's-rated issuers are expected to be highest in the Metal & Mining sector in the US and the Hotel, Gaming, & Leisure sector in Europe in 2014. Exhibit 12 shows the baseline one-year default rate forecasts across industries in both the US and Europe, sorted by the US rates in descending order. In each region, the same economic assumption is applied to all industries, so the only factor driving the different forecasted default rates is the underlying rating histories and current ratings of the issuers in those industries.

EXHIBIT 12

One-Year Corporate Default Rate Forecasts by Industry

| Industry | US | Europe | Industry | US | Europe |
|--|------|--------|----------------------------------|------|--------|
| Metals & Mining | 3.4% | 1.8% | Beverage, Food, & Tobacco | 1.0% | 1.0% |
| Services: Consumer* | 3.3% | | Energy: Oil & Gas | 0.9% | 0.4% |
| Media: Advertising, Printing & Publishing* | 3.1% | | Capital Equipment | 0.9% | 0.9% |
| Hotel, Gaming, & Leisure | 2.7% | 2.7% | Chemicals, Plastics, & Rubber | 0.8% | 0.7% |
| Retail | 2.7% | 1.8% | FIRE: Finance | 0.7% | 0.8% |
| Wholesale* | 2.2% | | Energy: Electricity* | 0.6% | |
| Services: Business | 2.0% | 2.2% | FIRE: Insurance | 0.5% | 0.6% |
| High Tech Industries | 2.0% | 0.7% | Banking | 0.5% | 1.0% |
| Automotive | 1.9% | 0.7% | Forest Products & Paper* | 0.5% | |
| Containers, Packaging, & Glass | 1.6% | 1.9% | Media: Diversified & Production* | 0.2% | |
| Aerospace & Defense | 1.6% | 1.1% | FIRE: Real Estate | 0.2% | 0.3% |
| Consumer goods: non-durable* | 1.5% | | Utilities: Oil & Gas | 0.2% | 0.7% |
| Transportation: Cargo | 1.4% | 1.0% | Utilities: Electric | 0.0% | 0.1% |
| Healthcare & Pharmaceuticals | 1.4% | 0.9% | Sovereign & Public Finance | 0.0% | 0.1% |
| Telecommunications | 1.4% | 0.9% | Environmental Industries* | | |
| Consumer goods: durable* | 1.2% | | Transportation: Consumer* | | 0.3% |
| Media: Broadcasting & Subscription | 1.1% | 1.0% | Utilities: Water* | | 0.1% |
| Construction & Building | 1.0% | 0.3% | | | |

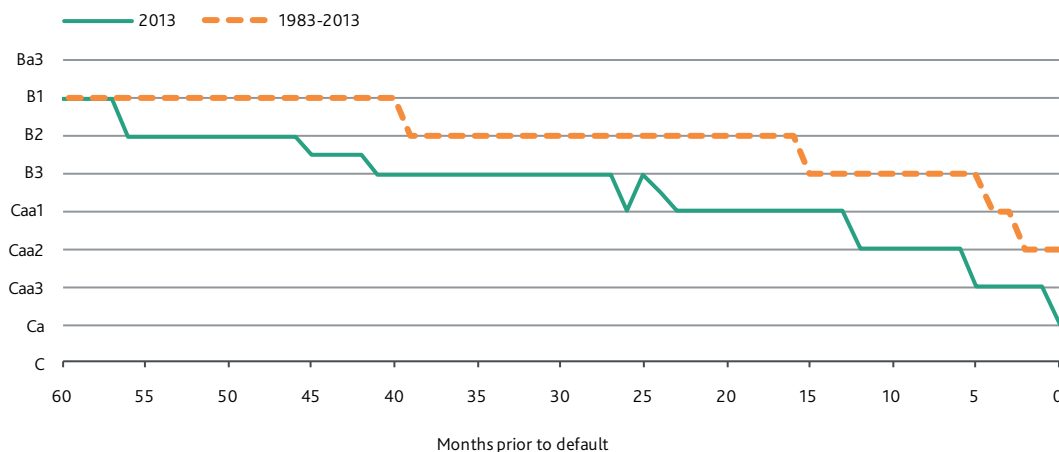
* Default rate forecasts are not reported in these sectors in either Europe or the US due to small sample size (less than ten issuers).

Rating Accuracy Metrics

Moody's ratings have historically proven to be effective predictors of default. This can be seen in Exhibit 13, which plots the median ratings of approximately 1,900 corporate issuers that defaulted from 1983 to 2013. The chart demonstrates that, historically, Moody's-rated issuers have been downgraded to the B1 level as early as five years prior to default. The comparable rating was also B1 among issuers that defaulted in 2013. At one year prior to default, 2013 defaulters' ratings were lowered to Caa2, two notches below the corresponding rating for companies that defaulted during the entire period of 1983-2013.

EXHIBIT 13

Median Ratings Prior to Default, 2013 vs. Long-Term Average

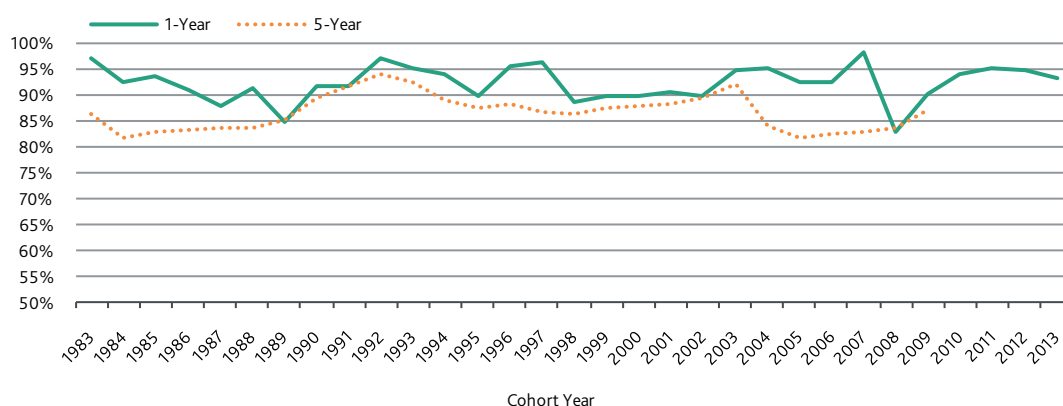


Source: Moody's Investors Service

To further demonstrate the ability of ratings to separate issuers with low credit risks from those with high credit risks, we use the Average Default Position ("AP") to evaluate the accuracy of Moody's ordinal rating systems (see Exhibit 14).¹² AP measures the average position for defaulters with position defined as the percentage of issuers with higher or equal ratings. A greater AP indicates a more discriminatory rating system as there are more issuers rated higher than the defaulters, or equivalently that defaulters are generally found in lower rating categories. Exhibit 14 reveals that between 1983 and 2013, the average default position has been consistently high during the entire period, with an average of 92.0% for the one-year horizon and 86.6% for the five-year horizon. This indicates that Moody's ratings have been effective in predicting defaults in both the short- and long-term periods. The lowest one-year AP was observed in 2008 when Lehman Brothers and several other high grade financial institutions failed. Since then, the AP has quickly recovered and reached 93.2% in 2013.

EXHIBIT 14

One- and Five-Year Average Default Position by Cohort Year, 1983-2013



Source: Moody's Investors Service

¹² For a detailed discussion of average default position and the mathematical derivation of accuracy ratio from the average default position, please refer to Moody's Special Comment, [Measuring Ratings Accuracy Using Average Default Position](#), Feb 2011.

Moody's Related Research

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- » [2014 Outlook – North American Non-Financial Corporates, December 2013 \(161121\)](#)
- » [A Different Flavor of PIKs, September 2013 \(158280\)](#)
- » [Annual Default Study: Corporate Default and Recovery Rates, 1920-2012, February 2013 \(151031\)](#)
- » [Asia Pacific Refunding Risks and Needs: Corporates Should Be Able to Refinance \\$378 Billion in Bonds Maturing Through 2017, December 2013 \(161310\)](#)
- » [Bond Covenants Weakened in Almost All North American Corporate Sectors in 2013, February 2014 \(163752\)](#)
- » [EMEA High-Yield Companies: Actual Financial Performance Well Below Their Forecasts, October 2013 \(158816\)](#)
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- » [Global Macro Outlook 2014-15: Growing Pains, February 2014 \(163544\)](#)
- » [Glossary of Moody's Ratings Performance Metrics, September 2011 \(135451\)](#)
- » [Industry Credit Risk: Recent Trends for Global Non-Financial Corporations, 2013, October 2013 \(159346\)](#)
- » [Measuring Ratings Accuracy Using Average Default Position, February 2011 \(129451\)](#)
- » [Money in the Bank: Borrowing Base Facilities Offer Very Strong Investor Recoveries, July 2013 \(156406\)](#)
- » [Moody's Financial Metrics™ Key Ratios by Rating and Industry for Global Non-Financial Corporations: December 2013, February 2014 \(162618\)](#)
- » [Most Companies Will Have Ample Time to Adapt to Rising Interest Rates, December 2013 \(160004\)](#)
- » [Positive Trend Takes Hold For Corporates as Global Recovery Accelerates, January 2014 \(162709\)](#)
- » [Refunding Risk and Needs 2014-2018: US Speculative-Grade Corporations, February 2014 \(162765\)](#)
- » [Substantial Bond Issuance Still Leaves Record Refinancing Needs to be Addressed Next Year, July 2013 \(156354\)](#)
- » [Signs of a 'Covenant Bubble' Suggest Future Risks for Investors, May 2013 \(154223\)](#)
- » [Still Second Rate: LGD Assessments Point to Low Recoveries for Defaulted Second Liens, January 2014 \(162050\)](#)
- » [Strengthened Sovereigns, Banking Systems Will Help Region Navigate a Post-QE World, September 2013 \(158525\)](#)
- » [US Dividend Recap Defaults and Recoveries: Hollow Threat, May 2013 \(153007\)](#)
- » [Why Fallen Angels Fall, February 2014 \(162807\)](#)

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

Methodology and Data Sources

Moody's Definition of Default

Moody's definition of default is applicable only to debt or debt-like obligations (e.g., swap agreements). For details, please refer to [Moody's Rating Symbols and Definitions](#).

Methodology

The methodology used in this study can be found in the [Glossary of Moody's Ratings Performance Metrics](#). The Glossary report is a technical paper that explains how Moody's calculates default rates, transition rates, and rating performance metrics in detail.

Changes in this Year's Report

Moody's occasionally discovers historical defaults, leading to minor revisions of the historical data. As always, the data contained in the most recently published Moody's default study supersedes the data published in previous reports.

Data Sources

Moody's bases the results of this study on its proprietary database of ratings and defaults for corporate bond and loan issuers. Municipal and sub-sovereign debt issuers, structured finance securities, private placements, and issuers with only short-term debt ratings are excluded unless otherwise noted. In total, Moody's data covers the credit experiences of over 20,000 corporate issuers that sold long-term public debt at some time between 1920 and 2013. As of January 1, 2014 approximately 5,000 corporate issuers held a Moody's long-term bond, loan, or corporate family rating.

Moody's database of corporate defaults covers more than 3,000 long-term bond and loan defaults by issuers both rated and non-rated by Moody's. Additional data sources, such as Barclay's Fixed Income 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, IDC, 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 1982-2013 period, the dataset includes post-default prices for approximately 5,000 defaulted instruments issued by over 1,700 defaulting corporations. Moody's makes the 1970-2013 credit rating, default, and recovery rate data used in this study available through its Default and Recovery Database (DRD).

Guide to Data Tables and Charts

In this section, we briefly describe the interpretation of some of the Exhibits contained in this report. Exhibit 13 was derived by mapping Moody's ratings to a linear scale, then taking the median values of the numerically mapped ratings.

Exhibit 21 shows average senior unsecured recovery rates by letter rating and year prior to default. Each cell in the table indicates the average recovery rate on senior unsecured bonds with a specific rating within T years of default. For example, the 37.3% two-year B recovery rate reported in Exhibit 21 indicates the average recovery rate on B rated issues that default at some time within a two-year period, not recovery rate for issuers rated B exactly two years before default. Together with issuer-weighted average cumulative default rates, these multi-period recovery estimates are used to calculate cumulative expected credit loss rates, as presented in Exhibit 22.

Exhibits 32 through 37 show issuer-weighted historical average default rates by rating category over various investment horizons. These data were generated by averaging the multi-year default rates of cohorts formed at monthly intervals. In addition to their being statements of historical fact, these data are also useful proxies for expected default rates. For example, over a five-year period a portfolio of B-rated issuers defaulted at a 24.1% average rate between 1983 and 2013 (see Exhibit 34). For an investor with a five-year exposure to a B-rated debt obligation or counterparty, this estimate also happens to be the best estimate of the expected risk of default for a B-rated exposure based on the available historical data, particularly over long investment horizons.

Exhibit 40 shows average cumulative volume-weighted default rates by rating category. Whereas issuer-based default rates weight each issuer equally, these data weight each issuer by the total volume of defaulted debt; larger defaults receive relatively more weight. Average default rates based on debt volume affected are less suitable estimates of expected default risk. One reason is that issuer default volumes vary considerably over time. On average, a leveraged corporate issuer defaults on approximately \$300 million of bonds. However, that total can be as high as \$30 billion (WorldCom). Issuer-based default rates receive particular emphasis in the rating process because the expected likelihood of default of a debt issuer holding a given rating is expected to be the same regardless of differences in the nominal sizes of the exposures.

Exhibit 41 shows the cumulative issuer-weighted historical default rates of cohorts formed between the years 1970 and 2013 (January 1 of each year). These data are a subset of the data used to calculate the issuer-weighted averages shown in Exhibits 32 through 34 (which, again, are based on cohorts formed at monthly time intervals). The default rates in Exhibit 41 may be useful for scenario analysis. For example, if one believed that future default rates for a given pool of issuers will behave as they did in, say, 1997, then one can use the January 1, 1997 cohort cumulative default rates as proxies for expected default rates.

Data Tables and Charts

EXHIBIT 15

Moody's-Rated 2013 Corporate Bond and Loan Defaults*

| Company | Country | Initial Default Type | Bonds (US\$ mil) | Loans (US\$ mil) | In Jan 2013 cohort?*** |
|--|----------------|--|---------------------|---------------------|---------------------------|
| Affinion Group Holdings, Inc. | United States | Distressed exchange | 293 | | Yes |
| AGY Holding Corp. | United States | Missed interest payment | 172 | | Yes |
| Alliance Bank | Kazakhstan | Missed interest payment | 1 | | yes |
| American Petroleum Tankers Parent LLC | United States | Distressed exchange | 400 | | yes |
| ATU Auto-Teile-Unger Handels GmbH & Co. KG | Germany | Missed interest payment | 620 | | yes |
| Axtel, S.A.B. de C.V. | Mexico | Distressed exchange | 497 | | yes |
| Banco BVA S.A. | Brazil | Liquidated | 45 | | yes |
| Banco CEISS | Spain | Distressed exchange | 946 | | yes |
| Banco Financiero y de Ahorros | Spain | Distressed exchange | 5,160 | | yes |
| Bank Finance and Credit JSC | Ukraine | Distressed exchange | 95 | | yes |
| BANK OF CYPRUS PUBLIC COMPANY LIMITED | Cyprus | Placed under administration | 214 | 4,509 | yes |
| Catalunya Banc SA | Spain | Distressed exchange | 926 | | yes |
| Cengage Learning Acquisitions, Inc. | United States | Distressed exchange | 1,922 | 3,662 | no |
| Central European Distribution Corporation | Poland | Missed principal payment | 1,198 | 15 | yes |
| CEVA Group plc | United Kingdom | Distressed exchange | 1,274 | 113 | yes |
| Chukchansi Economic Development Authority | United States | Missed interest payment | 244 | | yes |
| Codere S.A. | Spain | Missed interest payment | 300 | | yes |
| Co-Operative Bank Plc | United Kingdom | Distressed exchange | 1,893 | | yes |
| Corporacion GEO, S.A.B. DE C.V. | Mexico | Missed interest payment | 283 | | yes |
| Cyprus Popular Bank Public Co Ltd | Cyprus | Placed under administration | 1,572 | | yes |
| Desarrolladora Homex, S.A.B. de C.V. | Mexico | Missed interest payment | 900 | | yes |
| Dex Media East, Inc. | United States | Prepackaged Chapter 11 | | 488 | yes |
| Dex Media West, Inc. | United States | Prepackaged Chapter 11 | | 489 | yes |
| Dex One Corporation | United States | Prepackaged Chapter 11 | 212 | | yes |
| Energy Future Holdings Corp. | United States | Distressed exchange | 1,235 | | no |
| Energy Future Intermediate Holding Company | United States | Distressed exchange | 139 | | yes |
| Evergreen International Aviation, Inc. | United States | Missed principal and interest payments | | 300 | yes |
| Exide Technologies, Inc. | United States | Chapter 11 | 731 | | yes |
| GateHouse Media Operating, Inc. | United States | Prepackaged Chapter 11 | | 1,167 | yes |
| Geokinetics Holdings USA, Inc. | United States | Missed interest payment | 300 | 50 | yes |
| GMX Resources Inc. | United States | Chapter 11 | 426 | | yes |
| Green Field Energy Services, Inc. | United States | Missed principal payment | 256 | 74 | yes |
| Irish Bank Resolution Corporation Limited | Ireland | Liquidated | 365 | | yes |
| Jacuzzi Brands Corp. | United States | Distressed exchange | | 130 | yes |
| KIK Custom Products Inc. | Canada | Distressed exchange | | 30 | yes |
| Liberbank | Spain | Distressed exchange | 450 | | yes |

EXHIBIT 15

Moody's-Rated 2013 Corporate Bond and Loan Defaults*

| Company | Country | Initial Default Type | Bonds (US\$ mil) | Loans (US\$ mil) | In Jan 2013 cohort? ** |
|---|---------------|--|---------------------|---------------------|---------------------------|
| LodgeNet Interactive Corporation | United States | Missed principal and interest payments | | 354 | yes |
| Lone Pine Resources Canada Ltd. | Canada | Missed interest payment | 195 | 175 | yes |
| Lone Pine Resources Inc.*** | Canada | Missed interest payment | 0 | | yes |
| Lupatech S.A. | Brazil | Missed interest payment | 275 | | no |
| Magyar Telecom B.V. | Netherlands | Missed interest payment | 457 | | yes |
| Marfrig Alimentos S.A. | Brazil | Missed interest payment | 917 | | yes |
| Maxcom Telecomunicaciones, S.A.B. de C.V. | Mexico | Missed interest payment | 200 | | yes |
| Milagro Oil & Gas, Inc. | United States | Missed interest payment | 250 | | yes |
| Mirabela Nickel Ltd | Australia | Missed interest payment | 395 | | yes |
| NCG Banco S.A. | Spain | Distressed exchange | 466 | | yes |
| Northland Resources AB | Sweden | Missed interest payment | 350 | | yes |
| Nova Ljubljanska banka d.d. | Slovenia | Distressed exchange | 85 | 220 | yes |
| OGX Petroleo e Gas Participacoes SA | Brazil | Bankruptcy | 4,552 | | yes |
| OnCure Holdings, Inc. | United States | Chapter 11 | 210 | | yes |
| Orchard Supply Hardware Corporation | United States | Chapter 11 | | 211 | yes |
| Penson Worldwide, Inc. | United States | Missed interest payment | 81 | | no |
| Physiotherapy Associates Holdings, Inc. (NEW) | United States | Missed interest payment | 210 | | yes |
| Preferred Proppants, LLC | United States | Missed principal payment | | 561 | yes |
| R.H. Donnelley Inc. | United States | Prepackaged Chapter 11 | | 753 | yes |
| Reader's Digest Association, Inc. (The) | United States | Chapter 11 | 525 | 71 | yes |
| Revel Atlantic City, LLC | United States | Missed interest payment | 727 | 1,071 | yes |
| Rotech Healthcare, Inc. | United States | Prepackaged Chapter 11 | 520 | 24 | yes |
| Rural/Metro Corporation | United States | Chapter 11 | 308 | 429 | yes |
| Schoeller Arca Systems Holding B.V. | Netherlands | Distressed exchange | | 21 | yes |
| Seat Pagine Gialle Italia S.p.A | Italy | Missed interest payment | 1,058 | 848 | yes |
| SNS Bank N.V. | Netherlands | Distressed exchange | 415 | | yes |
| SNS Reaal N.V. | Netherlands | Distressed exchange | 100 | | yes |
| Sotera Defense Solutions, Inc. | United States | Distressed exchange | 42 | | yes |
| SuperMedia Inc. | United States | Prepackaged Chapter 11 | | 1,442 | yes |
| Synagro Technologies, Inc. | United States | Distressed exchange | | 502 | yes |
| UniTek Global Services, Inc. | United States | Missed interest payment | | 133 | yes |
| Urbi, Desarrollos Urbanos, S.A.B. de C.V. | Mexico | Missed interest payment | 1,000 | | yes |
| Winsway Coking Coal Holdings Limited | China | Distressed exchange | 151 | | yes |
| Zlomrex International Finance S.A. | Poland | Bankruptcy | 164 | | yes |

* This list only includes companies that have rated bonds and/or loans within one year prior to default. Companies that only have Corporate Family Ratings but no rated bonds or loans (e.g. Songa Offshore SE) are excluded. For details, please refer to footnote 1 on page 2.

** Only issuers included in the Jan 1st cohort are included in Moody's default rates in this report.

*** This company defaulted on debts that it guaranteed. Guaranteed debts are only added to the issuers but not the guarantors to avoid double counting.

EXHIBIT 16

Annual Moody's-Rated Global Corporate Issuer Default Counts, 1920-2013

| Year | Inv-Grade | Spec-Grade | All-Rated |
|------|-----------|------------|-----------|
| 1920 | 8 | 25 | 33 |
| 1921 | 7 | 25 | 32 |
| 1922 | 10 | 23 | 33 |
| 1923 | 5 | 22 | 27 |
| 1924 | 3 | 37 | 40 |
| 1925 | 7 | 34 | 41 |
| 1926 | 4 | 18 | 22 |
| 1927 | 1 | 15 | 16 |
| 1928 | 0 | 8 | 8 |
| 1929 | 3 | 12 | 15 |
| 1930 | 2 | 21 | 23 |
| 1931 | 6 | 78 | 84 |
| 1932 | 10 | 108 | 118 |
| 1933 | 9 | 189 | 198 |
| 1934 | 5 | 60 | 65 |
| 1935 | 9 | 51 | 60 |
| 1936 | 3 | 19 | 22 |
| 1937 | 4 | 18 | 22 |
| 1938 | 9 | 17 | 26 |
| 1939 | 2 | 13 | 15 |
| 1940 | 2 | 22 | 24 |
| 1941 | 0 | 10 | 10 |
| 1942 | 0 | 4 | 4 |
| 1943 | 0 | 3 | 3 |
| 1944 | 0 | 3 | 3 |
| 1945 | 0 | 2 | 2 |
| 1946 | 0 | 0 | 0 |
| 1947 | 0 | 2 | 2 |
| 1948 | 0 | 0 | 0 |
| 1949 | 0 | 5 | 5 |
| 1950 | 0 | 0 | 0 |
| 1951 | 0 | 1 | 1 |

| Year | Inv-Grade | Spec-Grade | All-Rated |
|------|-----------|------------|-----------|
| 1952 | 0 | 0 | 0 |
| 1953 | 0 | 0 | 0 |
| 1954 | 0 | 1 | 1 |
| 1955 | 0 | 1 | 1 |
| 1956 | 0 | 0 | 0 |
| 1957 | 0 | 1 | 1 |
| 1958 | 0 | 0 | 0 |
| 1959 | 0 | 0 | 0 |
| 1960 | 0 | 2 | 2 |
| 1961 | 0 | 3 | 3 |
| 1962 | 0 | 4 | 4 |
| 1963 | 0 | 3 | 3 |
| 1964 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 |
| 1966 | 0 | 1 | 1 |
| 1967 | 0 | 0 | 0 |
| 1968 | 0 | 1 | 1 |
| 1969 | 0 | 0 | 0 |
| 1970 | 2 | 25 | 27 |
| 1971 | 0 | 3 | 3 |
| 1972 | 0 | 5 | 5 |
| 1973 | 2 | 3 | 5 |
| 1974 | 0 | 3 | 3 |
| 1975 | 0 | 4 | 4 |
| 1976 | 0 | 2 | 2 |
| 1977 | 1 | 3 | 4 |
| 1978 | 0 | 4 | 4 |
| 1979 | 0 | 1 | 1 |
| 1980 | 0 | 4 | 4 |
| 1981 | 0 | 2 | 2 |
| 1982 | 2 | 11 | 13 |
| 1983 | 0 | 13 | 13 |

| Year | Inv-Grade | Spec-Grade | All-Rated |
|------|-----------|------------|-----------|
| 1984 | 1 | 12 | 13 |
| 1985 | 0 | 15 | 15 |
| 1986 | 3 | 30 | 33 |
| 1987 | 0 | 31 | 31 |
| 1988 | 0 | 29 | 29 |
| 1989 | 4 | 47 | 51 |
| 1990 | 0 | 83 | 83 |
| 1991 | 1 | 65 | 66 |
| 1992 | 0 | 31 | 31 |
| 1993 | 0 | 19 | 19 |
| 1994 | 0 | 16 | 16 |
| 1995 | 0 | 27 | 27 |
| 1996 | 0 | 17 | 17 |
| 1997 | 0 | 25 | 25 |
| 1998 | 1 | 48 | 49 |
| 1999 | 1 | 100 | 101 |
| 2000 | 4 | 120 | 124 |
| 2001 | 4 | 183 | 187 |
| 2002 | 13 | 126 | 139 |
| 2003 | 0 | 82 | 82 |
| 2004 | 0 | 38 | 38 |
| 2005 | 2 | 30 | 32 |
| 2006 | 0 | 31 | 31 |
| 2007 | 0 | 18 | 18 |
| 2008 | 14 | 89 | 103 |
| 2009 | 11 | 255 | 266 |
| 2010 | 2 | 56 | 58 |
| 2011 | 1 | 37 | 38 |
| 2012 | 1 | 62 | 63 |
| 2013 | 1 | 65 | 66 |

EXHIBIT 17

Annual Rated Global Corporate Bond and Loan Default Volumes, 1970-2013*

| Year | Investment Grade | | | Speculative Grade | | | All Ratings | | |
|------|------------------|----------|-----------|-------------------|-----------|-----------|-------------|-----------|-----------|
| | Bond | Loan | Total | Bond | Loan | Total | Bond | Loan | Total |
| 1970 | \$154 | \$0 | \$154 | \$756 | \$0 | \$756 | \$910 | \$0 | \$910 |
| 1971 | \$0 | \$0 | \$0 | \$132 | \$0 | \$132 | \$132 | \$0 | \$132 |
| 1972 | \$0 | \$0 | \$0 | \$215 | \$0 | \$215 | \$215 | \$0 | \$215 |
| 1973 | \$17 | \$0 | \$17 | \$94 | \$0 | \$94 | \$112 | \$0 | \$112 |
| 1974 | \$0 | \$0 | \$0 | \$69 | \$0 | \$69 | \$69 | \$0 | \$69 |
| 1975 | \$0 | \$0 | \$0 | \$176 | \$0 | \$176 | \$176 | \$0 | \$176 |
| 1976 | \$0 | \$0 | \$0 | \$34 | \$0 | \$34 | \$34 | \$0 | \$34 |
| 1977 | \$68 | \$0 | \$68 | \$179 | \$0 | \$179 | \$247 | \$0 | \$247 |
| 1978 | \$0 | \$0 | \$0 | \$112 | \$0 | \$112 | \$112 | \$0 | \$112 |
| 1979 | \$0 | \$0 | \$0 | \$18 | \$0 | \$18 | \$18 | \$0 | \$18 |
| 1980 | \$0 | \$0 | \$0 | \$302 | \$0 | \$302 | \$302 | \$0 | \$302 |
| 1981 | \$0 | \$0 | \$0 | \$47 | \$0 | \$47 | \$47 | \$0 | \$47 |
| 1982 | \$243 | \$0 | \$243 | \$515 | \$0 | \$515 | \$758 | \$0 | \$758 |
| 1983 | \$0 | \$0 | \$0 | \$1,110 | \$0 | \$1,110 | \$1,110 | \$0 | \$1,110 |
| 1984 | \$183 | \$0 | \$183 | \$399 | \$0 | \$399 | \$582 | \$0 | \$582 |
| 1985 | \$0 | \$0 | \$0 | \$1,344 | \$0 | \$1,344 | \$1,344 | \$0 | \$1,344 |
| 1986 | \$138 | \$0 | \$138 | \$3,993 | \$0 | \$3,993 | \$4,131 | \$0 | \$4,131 |
| 1987 | \$0 | \$0 | \$0 | \$8,940 | \$242 | \$9,182 | \$8,940 | \$242 | \$9,182 |
| 1988 | \$0 | \$0 | \$0 | \$5,435 | \$361 | \$5,796 | \$5,435 | \$361 | \$5,796 |
| 1989 | \$1,506 | \$0 | \$1,506 | \$9,517 | \$0 | \$9,517 | \$11,023 | \$0 | \$11,023 |
| 1990 | \$0 | \$0 | \$0 | \$20,071 | \$1,603 | \$21,674 | \$20,071 | \$1,603 | \$21,674 |
| 1991 | \$1,348 | \$0 | \$1,348 | \$15,485 | \$570 | \$16,055 | \$16,833 | \$570 | \$17,403 |
| 1992 | \$0 | \$0 | \$0 | \$6,601 | \$698 | \$7,299 | \$6,601 | \$698 | \$7,299 |
| 1993 | \$0 | \$0 | \$0 | \$1,871 | \$424 | \$2,295 | \$1,871 | \$424 | \$2,295 |
| 1994 | \$0 | \$0 | \$0 | \$2,100 | \$299 | \$2,399 | \$2,100 | \$299 | \$2,399 |
| 1995 | \$0 | \$0 | \$0 | \$4,788 | \$172 | \$4,961 | \$4,788 | \$172 | \$4,961 |
| 1996 | \$0 | \$0 | \$0 | \$4,053 | \$1,435 | \$5,488 | \$4,053 | \$1,435 | \$5,488 |
| 1997 | \$0 | \$0 | \$0 | \$5,104 | \$948 | \$6,052 | \$5,104 | \$948 | \$6,052 |
| 1998 | \$399 | \$0 | \$399 | \$9,469 | \$3,017 | \$12,486 | \$9,868 | \$3,017 | \$12,885 |
| 1999 | \$461 | \$1,225 | \$1,686 | \$25,311 | \$14,107 | \$39,418 | \$25,772 | \$15,332 | \$41,104 |
| 2000 | \$4,115 | \$3,950 | \$8,065 | \$24,723 | \$26,206 | \$50,928 | \$28,838 | \$30,156 | \$58,994 |
| 2001 | \$21,195 | \$5,363 | \$26,558 | \$78,379 | \$34,103 | \$112,483 | \$99,574 | \$39,466 | \$139,041 |
| 2002 | \$46,350 | \$13,122 | \$59,472 | \$104,091 | \$37,223 | \$141,314 | \$150,441 | \$50,345 | \$200,786 |
| 2003 | \$0 | \$870 | \$870 | \$35,181 | \$10,208 | \$45,390 | \$35,181 | \$11,078 | \$46,259 |
| 2004 | \$0 | \$0 | \$0 | \$11,810 | \$4,197 | \$16,008 | \$11,810 | \$4,197 | \$16,008 |
| 2005 | \$2,155 | \$2,825 | \$4,980 | \$26,798 | \$8,745 | \$35,543 | \$28,953 | \$11,570 | \$40,523 |
| 2006 | \$0 | \$0 | \$0 | \$7,758 | \$2,630 | \$10,388 | \$7,758 | \$2,630 | \$10,388 |
| 2007 | \$0 | \$0 | \$0 | \$4,755 | \$1,983 | \$6,738 | \$4,755 | \$1,983 | \$6,738 |
| 2008 | \$183,155 | \$10,380 | \$193,535 | \$55,060 | \$32,322 | \$87,382 | \$238,215 | \$42,701 | \$280,916 |
| 2009 | \$38,945 | \$21,931 | \$60,876 | \$145,361 | \$123,876 | \$269,237 | \$184,306 | \$145,807 | \$330,113 |

EXHIBIT 17

Annual Rated Global Corporate Bond and Loan Default Volumes, 1970-2013*

| Year | Investment Grade | | | Speculative Grade | | | All Ratings | | |
|------|------------------|---------|---------|-------------------|----------|----------|-------------|----------|----------|
| | Bond | Loan | Total | Bond | Loan | Total | Bond | Loan | Total |
| 2010 | \$4,856 | \$0 | \$4,856 | \$20,553 | \$14,042 | \$34,595 | \$25,409 | \$14,042 | \$39,451 |
| 2011 | \$1,156 | \$1,411 | \$2,567 | \$29,336 | \$4,093 | \$33,429 | \$30,492 | \$5,504 | \$35,996 |
| 2012 | \$323 | \$0 | \$323 | \$31,360 | \$17,611 | \$48,972 | \$31,683 | \$17,611 | \$49,295 |
| 2013 | \$1,893 | \$0 | \$1,893 | \$34,829 | \$17,839 | \$52,668 | \$36,723 | \$17,839 | \$54,561 |

* Default volume in millions of USD

EXHIBIT 18

Annual Issuer Default Counts and Volume Totals by Geographical Region, 1986-2013

| Year | Issuer Counts | | | | | Dollar Volumes (US\$ mil) | | | | |
|------|----------------------|--------------|--------|---------------|---------------|---------------------------|--------------|----------|---------------|---------------|
| | 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 | 33 | \$0 | \$0 | \$0 | \$0 | \$4,131 |
| 1987 | 0 | 0 | 0 | 0 | 31 | \$0 | \$0 | \$0 | \$0 | \$9,182 |
| 1988 | 0 | 0 | 0 | 0 | 29 | \$0 | \$0 | \$0 | \$0 | \$5,796 |
| 1989 | 0 | 4 | 0 | 0 | 47 | \$0 | \$969 | \$0 | \$0 | \$10,054 |
| 1990 | 0 | 1 | 0 | 0 | 82 | \$0 | \$200 | \$0 | \$0 | \$21,474 |
| 1991 | 0 | 0 | 1 | 0 | 65 | \$0 | \$0 | \$999 | \$0 | \$16,404 |
| 1992 | 0 | 0 | 0 | 0 | 31 | \$0 | \$0 | \$0 | \$0 | \$7,299 |
| 1993 | 0 | 0 | 0 | 0 | 19 | \$0 | \$0 | \$0 | \$0 | \$2,295 |
| 1994 | 0 | 0 | 1 | 0 | 15 | \$0 | \$0 | \$774 | \$0 | \$1,625 |
| 1995 | 0 | 0 | 0 | 0 | 27 | \$0 | \$0 | \$0 | \$0 | \$4,961 |
| 1996 | 0 | 0 | 0 | 1 | 16 | \$0 | \$0 | \$0 | \$207 | \$5,280 |
| 1997 | 0 | 2 | 0 | 2 | 21 | \$0 | \$614 | \$0 | \$310 | \$5,129 |
| 1998 | 0 | 5 | 1 | 0 | 43 | \$0 | \$1,444 | \$200 | \$0 | \$11,241 |
| 1999 | 0 | 8 | 9 | 7 | 77 | \$0 | \$4,339 | \$4,012 | \$1,908 | \$30,845 |
| 2000 | 0 | 2 | 3 | 2 | 117 | \$0 | \$3,968 | \$713 | \$238 | \$54,074 |
| 2001 | 3 | 15 | 16 | 6 | 147 | \$2,444 | \$7,832 | \$10,635 | \$1,909 | \$116,221 |
| 2002 | 0 | 2 | 26 | 14 | 96 | \$0 | \$1,842 | \$47,385 | \$7,755 | \$143,803 |
| 2003 | 0 | 2 | 7 | 11 | 62 | \$0 | \$550 | \$3,296 | \$4,152 | \$38,261 |
| 2004 | 1 | 0 | 6 | 0 | 31 | \$183 | \$0 | \$2,521 | \$366 | \$12,938 |
| 2005 | 0 | 0 | 1 | 1 | 30 | \$0 | \$0 | \$207 | \$100 | \$40,215 |
| 2006 | 0 | 0 | 7 | 2 | 22 | \$0 | \$0 | \$1,601 | \$167 | \$8,620 |
| 2007 | 0 | 0 | 3 | 0 | 15 | \$0 | \$0 | \$771 | \$0 | \$5,967 |
| 2008 | 0 | 3 | 12 | 2 | 86 | \$0 | \$625 | \$53,374 | \$555 | \$226,361 |
| 2009 | 1 | 17 | 34 | 10 | 204 | \$650 | \$7,073 | \$28,010 | \$3,031 | \$291,350 |
| 2010 | 0 | 2 | 9 | 2 | 45 | \$0 | \$6,290 | \$9,119 | \$487 | \$23,554 |
| 2011 | 0 | 0 | 12 | 1 | 25 | \$0 | \$4 | \$10,047 | \$358 | \$25,588 |
| 2012 | 1 | 0 | 12 | 4 | 46 | \$48 | \$0 | \$16,750 | \$3,016 | \$29,481 |
| 2013 | 0 | 2 | 23 | 8 | 33 | \$0 | \$546 | \$23,834 | \$8,669 | \$21,512 |

EXHIBIT 19

2013 Defaulted Corporate Bond and Loan Recoveries*

| Company | Initial Default Type | Bank Loans | | Bonds | | | |
|--|----------------------|------------|----------|----------|------------|----------|-------|
| | | 1st Lien | 2nd Lien | Sr. Sec. | Sr. Unsec. | Sr. Sub. | Sub. |
| Affinion Group Holdings, Inc. | distressed exchange | | | 88.8% | | | |
| AGY Holding Corp. | payment default | | | 54.5% | | | |
| ATU Auto-Teile-Unger Handels GmbH & Co. KG | payment default | | | 22.8% | | | |
| Axtel, S.A.B. de C.V. | distressed exchange | | | 77.0% | | | |
| Banco CEISS** | distressed exchange | | | | | | 18.8% |
| Banco Financiero y de Ahorros** | distressed exchange | | | | | | 37.5% |
| Bank Finance and Credit, OJSC** | distressed exchange | | | 78.5% | | | |
| Catalunya Banc SA** | distressed exchange | | | | | | 43.9% |
| Cengage Learning Acquisitions, Inc. | distressed exchange | 74.0% | | 43.9% | 10.6% | 1.0% | |
| Central European Distribution Corporation | payment default | | | 79.5% | 21.5% | | |
| CEVA Group plc | distressed exchange | | | 91.0% | 87.0% | | |
| Chukchansi Economic Development Authority | payment default | | | 50.5% | | | |
| Codere S.A. | payment default | | | 51.5% | | | |
| Corporacion GEO, S.A.B. DE C.V. | payment default | | | 34.5% | | | |
| Cyprus Popular Bank Public Co Ltd*** | bankruptcy | | | | 67.0% | | 30.0% |
| Desarrolladora Homex, S.A.B. de C.V. | payment default | | | 18.5% | | | |
| Dex Media East, Inc. | bankruptcy | 72.1% | | | | | |
| Dex Media West, Inc. | bankruptcy | 77.7% | | | | | |
| Dex One Corporation | bankruptcy | | | | | 46.0% | |
| Energy Future Holdings Corp. | distressed exchange | | | 111.5% | 94.5% | | |
| Energy Future Intermediate Holding Company | distressed exchange | | | 109.4% | | | |
| Evergreen International Aviation, Inc. | payment default | 96.6% | 95.0% | | | | |
| Excel Maritime Carriers Ltd. | payment default | 79.5% | | 7.5% | | | |
| Exide Technologies, Inc. | bankruptcy | | | 59.6% | | 10.9% | |
| GateHouse Media Operating, Inc. | bankruptcy | 39.8% | | | | | |
| Geokinetics Holdings USA, Inc. | payment default | 95.0% | | 54.8% | | | |
| GMX Resources Inc. | bankruptcy | | | 54.8% | 9.4% | | |
| Green Field Energy Services, Inc. | payment default | | | 35.0% | | | |
| Irish Bank Resolution Corporation Limited **** | Bankruptcy | | | | 90.6% | | |
| JSC Alliance Bank** | payment default | | | 22.0% | | | |
| KIK Custom Products Inc. | distressed exchange | | 96.0% | | | | |
| LodgeNet Interactive Corporation | payment default | 68.8% | | | | | |
| Lone Pine Resources Canada Ltd. | payment default | | | 58.0% | | | |
| Magyar Telecom B.V. | payment default | | | 44.0% | | | |
| Maxcom Telecomunicaciones, S.A.B. de C.V. | payment default | | | 71.0% | | | |
| Milagro Oil & Gas, Inc. | payment default | | | 75.0% | | | |
| Mirabela Nickel Ltd | payment default | | | 25.0% | | | |
| NCG Banco S.A. ** | distressed exchange | | | | | | 25.0% |
| Northland Resources AB | payment default | | | 56.5% | | | |

EXHIBIT 19

2013 Defaulted Corporate Bond and Loan Recoveries*

| Company | Initial Default Type | Bank Loans | | Bonds | | | |
|---|----------------------|------------|----------|----------|------------|----------|-------|
| | | 1st Lien | 2nd Lien | Sr. Sec. | Sr. Unsec. | Sr. Sub. | Sub. |
| OGX Petroleo e Gas Participacoes SA | bankruptcy | | | 8.5% | | | |
| OnCure Holdings, Inc. | bankruptcy | | | 45.0% | | | |
| Orchard Supply Hardware Corporation | bankruptcy | 81.0% | | | | | |
| Penson Worldwide, Inc. | payment default | | | 9.0% | | | |
| Physiotherapy Associates Holdings, Inc. (NEW) | payment default | | | 55.0% | | | |
| Powerwave Technologies, Inc. | bankruptcy | | | | 24.9% | | 3.8% |
| Preferred Proppants, LLC | payment default | 63.7% | | | | | |
| Reader's Digest Association, Inc. (The) | bankruptcy | | | 38.3% | | | |
| Revel Atlantic City, LLC | payment default | 73.7% | | 7.0% | | | |
| Rotech Healthcare, Inc. | bankruptcy | | | 74.6% | | | |
| Rural/Metro Corporation | bankruptcy | 94.6% | | 27.5% | | | |
| Schoeller Arca Systems Holding B.V. | distressed exchange | 69.4% | | | | | |
| School Specialty, Inc. | bankruptcy | | | | | | 44.0% |
| Seat Pagine Gialle Italia S.p.A | payment default | 29.3% | | 21.6% | | | |
| SNS Bank N.V.** | distressed exchange | | | | | | 7.9% |
| SuperMedia Inc. | bankruptcy | 74.2% | | | | | |
| Synagro Technologies, Inc. | distressed exchange | 94.6% | 45.0% | | | | |
| UniTek Global Services, Inc. | payment default | 92.5% | | | | | |
| Urbi, Desarrollos Urbanos, S.A.B. de C.V. | payment default | | | 19.3% | | | |
| Winsway Coking Coal Holdings Limited | distressed exchange | | | 46.8% | | | |
| Zlomrex S.A. | bankruptcy | | | 70.0% | | | |

* Based on trading prices at default for distressed exchanges and 30-day post default for non-DE defaults.

** These banks did not default on their deposit obligations.

*** Cyprus Popular Bank also defaulted on uninsured deposit obligations. Uninsured deposit recoveries are not reported in the above table due to unavailability of market data.

**** The vast majority of IBRC's original deposit book moved to AIB and Permanent TSB in the first half of 2011 and those deposits were unaffected by IBRC's liquidation in 2013. For those deposits that remained at IBRC at the time of liquidation, some were eligible to be covered by the joint safeguards of the DGS and/or the ELG scheme while others were treated in the same way as other unsecured creditors.

EXHIBIT 20

Annual Defaulted Corporate Bond and Loan Recoveries*

| Year | Loan | Bond | | | | | |
|------|----------|----------|------------|----------|-------|----------|-----------|
| | 1st Lien | Sr. Sec. | Sr. Unsec. | Sr. Sub. | Sub. | Jr. Sub. | All Bonds |
| 1982 | n.a. | 72.5% | 35.8% | 48.1% | 30.0% | n.a. | 35.3% |
| 1983 | n.a. | 40.0% | 52.7% | 43.5% | 41.1% | n.a. | 44.5% |
| 1984 | n.a. | n.a. | 49.4% | 67.9% | 44.3% | n.a. | 45.5% |
| 1985 | n.a. | 83.6% | 60.2% | 29.6% | 39.7% | 48.5% | 43.6% |
| 1986 | n.a. | 59.2% | 51.1% | 46.8% | 41.4% | n.a. | 47.4% |
| 1987 | n.a. | 71.0% | 63.8% | 46.5% | 46.9% | n.a. | 51.3% |
| 1988 | n.a. | 55.4% | 45.2% | 33.4% | 33.8% | 36.5% | 38.8% |
| 1989 | n.a. | 46.5% | 43.6% | 35.3% | 26.8% | 16.9% | 32.3% |
| 1990 | 72.0% | 33.8% | 38.2% | 25.5% | 18.9% | 10.7% | 25.6% |
| 1991 | 67.9% | 48.4% | 36.7% | 41.8% | 24.4% | 7.8% | 35.5% |
| 1992 | 60.6% | 62.1% | 49.2% | 49.4% | 38.0% | 13.5% | 45.9% |
| 1993 | 53.4% | n.a. | 37.1% | 51.9% | 44.1% | n.a. | 43.1% |
| 1994 | 67.6% | 69.3% | 53.7% | 29.6% | 38.0% | 40.0% | 45.6% |
| 1995 | 75.4% | 62.0% | 47.6% | 34.3% | 41.5% | n.a. | 43.3% |
| 1996 | 85.5% | 47.6% | 62.8% | 43.8% | 22.6% | n.a. | 41.5% |
| 1997 | 78.8% | 75.5% | 56.1% | 44.7% | 33.1% | 30.6% | 48.8% |
| 1998 | 56.7% | 46.8% | 39.5% | 45.0% | 18.2% | 62.0% | 38.3% |
| 1999 | 73.5% | 36.0% | 38.0% | 26.9% | 35.6% | n.a. | 33.8% |
| 2000 | 68.8% | 38.6% | 24.2% | 20.8% | 31.9% | 7.0% | 25.1% |
| 2001 | 64.9% | 31.7% | 21.2% | 19.8% | 15.9% | 47.0% | 21.6% |
| 2002 | 58.4% | 50.6% | 29.5% | 21.4% | 23.4% | n.a. | 29.7% |
| 2003 | 73.4% | 69.2% | 41.9% | 37.2% | 12.3% | n.a. | 41.2% |
| 2004 | 87.7% | 73.3% | 52.1% | 42.3% | 94.0% | n.a. | 58.5% |
| 2005 | 83.8% | 71.9% | 54.9% | 32.8% | 51.3% | n.a. | 56.5% |
| 2006 | 83.6% | 74.6% | 55.0% | 41.4% | 56.1% | n.a. | 55.0% |
| 2007 | 68.6% | 80.6% | 53.7% | 56.2% | n.a. | n.a. | 55.1% |
| 2008 | 61.7% | 54.9% | 33.2% | 23.3% | 23.6% | n.a. | 33.9% |
| 2009 | 53.6% | 37.5% | 36.9% | 22.7% | 45.3% | n.a. | 33.9% |
| 2010 | 70.9% | 62.5% | 51.5% | 37.5% | 33.7% | n.a. | 51.8% |
| 2011 | 70.9% | 63.3% | 41.3% | 36.7% | 35.4% | n.a. | 46.3% |
| 2012 | 66.4% | 51.2% | 43.0% | 33.7% | 37.3% | n.a. | 44.7% |
| 2013 | 75.1% | 57.7% | 43.8% | 20.7% | 26.4% | n.a. | 45.6% |

* Issuer-weighted, based on trading prices.

EXHIBIT 21

Average Sr. Unsecured Bond Recovery Rates by Year Prior to Default, 1982-2013*

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|-------------------|--------|--------|--------|--------|--------|
| Aaa** | n.a. | 3.33% | 3.33% | 61.88% | 75.58% |
| Aa | 37.24% | 39.02% | 38.08% | 43.95% | 42.27% |
| A | 31.77% | 42.68% | 44.49% | 43.92% | 44.29% |
| Baa | 40.04% | 41.44% | 42.11% | 42.74% | 42.90% |
| Ba | 45.70% | 44.23% | 43.25% | 42.53% | 42.10% |
| B | 38.19% | 37.26% | 37.40% | 37.69% | 38.33% |
| Caa-C | 36.90% | 36.93% | 36.70% | 36.88% | 36.87% |
| Investment Grade | 38.07% | 41.46% | 42.60% | 43.28% | 43.64% |
| Speculative Grade | 37.99% | 37.79% | 37.81% | 38.06% | 38.40% |
| All Rated | 37.99% | 38.04% | 38.23% | 38.60% | 39.02% |

* Issuer-weighted, based on trading prices

** The Aaa recovery rates are based on five observations, three of which are Icelandic banks that have an average recovery rate of 3.33%.

EXHIBIT 22

Average Cumulative Credit Loss Rates by Letter Rating, 1982 - 2013*

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|-------------------|--------|--------|--------|--------|--------|
| Aaa | 0.00% | 0.02% | 0.02% | 0.02% | 0.03% |
| Aa | 0.02% | 0.05% | 0.09% | 0.16% | 0.26% |
| A | 0.05% | 0.13% | 0.27% | 0.43% | 0.61% |
| Baa | 0.11% | 0.32% | 0.56% | 0.82% | 1.11% |
| Ba | 0.63% | 1.83% | 3.32% | 4.98% | 6.39% |
| B | 2.41% | 5.85% | 9.29% | 12.27% | 14.87% |
| Caa-C | 10.00% | 17.01% | 22.67% | 27.10% | 30.98% |
| Investment Grade | 0.06% | 0.17% | 0.32% | 0.49% | 0.67% |
| Speculative Grade | 2.89% | 6.00% | 8.97% | 11.57% | 13.77% |
| All Rated | 1.14% | 2.34% | 3.44% | 4.38% | 5.16% |

* Based on average default rates and senior unsecured bond recoveries measured on issuer-weighted basis

EXHIBIT 23

Annual Credit Loss Rates by Letter Rating, 1982 - 2013*

| Year | Aaa | Aa | A | Baa | Ba | B | Caa-C | Inv-Grade | Spec-Grade | All Rated |
|---------|-------|-------|-------|-------|-------|-------|--------|-----------|------------|-----------|
| 1982 | 0.00% | 0.00% | 0.16% | 0.21% | 1.78% | 1.43% | 14.82% | 0.14% | 2.28% | 0.66% |
| 1983 | 0.00% | 0.00% | 0.00% | 0.00% | 0.43% | 3.02% | 19.70% | 0.00% | 1.81% | 0.46% |
| 1984 | 0.00% | 0.00% | 0.00% | 0.18% | 0.42% | 3.45% | 50.59% | 0.05% | 1.70% | 0.47% |
| 1985 | 0.00% | 0.00% | 0.00% | 0.00% | 0.56% | 3.02% | 0.00% | 0.00% | 1.38% | 0.38% |
| 1986 | 0.00% | 0.00% | 0.00% | 0.51% | 1.02% | 5.66% | 10.87% | 0.12% | 2.77% | 0.92% |
| 1987 | 0.00% | 0.00% | 0.00% | 0.00% | 1.01% | 2.37% | 7.25% | 0.00% | 1.60% | 0.58% |
| 1988 | 0.00% | 0.00% | 0.00% | 0.00% | 0.68% | 3.38% | 14.93% | 0.00% | 1.94% | 0.75% |
| 1989 | 0.00% | 0.36% | 0.00% | 0.35% | 1.77% | 4.83% | 14.11% | 0.17% | 3.26% | 1.35% |
| 1990 | 0.00% | 0.00% | 0.00% | 0.00% | 2.13% | 9.86% | 37.79% | 0.00% | 6.34% | 2.32% |
| 1991 | 0.00% | 0.00% | 0.00% | 0.18% | 3.14% | 7.73% | 28.50% | 0.04% | 5.99% | 1.96% |
| 1992 | 0.00% | 0.00% | 0.00% | 0.00% | 0.17% | 4.67% | 15.01% | 0.00% | 2.65% | 0.76% |
| 1993 | 0.00% | 0.00% | 0.00% | 0.00% | 0.38% | 2.92% | 17.32% | 0.00% | 1.98% | 0.56% |
| 1994 | 0.00% | 0.00% | 0.00% | 0.00% | 0.12% | 1.90% | 2.50% | 0.00% | 0.99% | 0.31% |
| 1995 | 0.00% | 0.00% | 0.00% | 0.00% | 0.40% | 2.29% | 4.82% | 0.00% | 1.60% | 0.54% |
| 1996 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.54% | 5.34% | 0.00% | 0.64% | 0.22% |
| 1997 | 0.00% | 0.00% | 0.00% | 0.00% | 0.09% | 0.90% | 6.60% | 0.00% | 0.94% | 0.34% |
| 1998 | 0.00% | 0.00% | 0.00% | 0.08% | 0.54% | 2.43% | 6.24% | 0.03% | 1.99% | 0.80% |
| 1999 | 0.00% | 0.00% | 0.00% | 0.07% | 0.88% | 3.19% | 11.49% | 0.03% | 3.53% | 1.49% |
| 2000 | 0.00% | 0.00% | 0.00% | 0.32% | 0.60% | 4.74% | 14.94% | 0.12% | 5.07% | 2.16% |
| 2001 | 0.00% | 0.00% | 0.15% | 0.17% | 1.19% | 7.84% | 25.18% | 0.12% | 8.53% | 3.42% |
| 2002 | 0.00% | 0.00% | 0.14% | 0.79% | 1.07% | 3.29% | 20.79% | 0.35% | 5.90% | 2.34% |
| 2003 | 0.00% | 0.00% | 0.00% | 0.00% | 0.61% | 1.27% | 13.33% | 0.00% | 3.21% | 1.17% |
| 2004 | 0.00% | 0.00% | 0.00% | 0.00% | 0.22% | 0.42% | 6.06% | 0.00% | 1.22% | 0.45% |
| 2005 | 0.00% | 0.00% | 0.00% | 0.09% | 0.00% | 0.47% | 3.18% | 0.03% | 0.85% | 0.34% |
| 2006 | 0.00% | 0.00% | 0.00% | 0.00% | 0.10% | 0.55% | 2.82% | 0.00% | 0.84% | 0.32% |
| 2007 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 2.81% | 0.00% | 0.45% | 0.19% |
| 2008 | 0.00% | 0.48% | 0.36% | 0.35% | 0.81% | 1.43% | 10.08% | 0.36% | 3.00% | 1.51% |
| 2009 | 0.00% | 0.00% | 0.14% | 0.59% | 1.47% | 4.75% | 21.95% | 0.28% | 8.41% | 3.79% |
| 2010 | 0.00% | 0.00% | 0.11% | 0.00% | 0.00% | 0.25% | 5.81% | 0.04% | 1.60% | 0.68% |
| 2011 | 0.00% | 0.00% | 0.00% | 0.05% | 0.12% | 0.07% | 5.06% | 0.02% | 1.18% | 0.52% |
| 2012 | 0.00% | 0.00% | 0.00% | 0.05% | 0.10% | 0.28% | 6.64% | 0.02% | 1.66% | 0.79% |
| 2013 | 0.00% | 0.00% | 0.00% | 0.04% | 0.29% | 0.50% | 5.35% | 0.02% | 1.62% | 0.78% |
| Average | 0.00% | 0.03% | 0.03% | 0.13% | 0.69% | 2.79% | 12.87% | 0.06% | 2.72% | 1.04% |
| Max | 0.00% | 0.48% | 0.36% | 0.79% | 3.14% | 9.86% | 50.59% | 0.36% | 8.53% | 3.79% |
| Min | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.45% | 0.19% |

* Based on issuer-weighted average default rates and issuer-weighted senior unsecured bond recovery rates.

EXHIBIT 24

2013 One-Year Letter Rating Migration Rates

| From/To: | Aaa | Aa | A | Baa | Ba | B | Caa | Ca-C | WR | Default |
|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Aaa | 94.118% | 3.922% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 1.961% | 0.000% |
| Aa | 0.000% | 89.958% | 5.439% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 4.603% | 0.000% |
| A | 0.000% | 0.471% | 89.753% | 6.007% | 0.000% | 0.118% | 0.000% | 0.000% | 3.651% | 0.000% |
| Baa | 0.000% | 0.070% | 2.096% | 90.985% | 2.795% | 0.349% | 0.070% | 0.000% | 3.564% | 0.070% |
| Ba | 0.000% | 0.000% | 0.166% | 5.132% | 75.993% | 8.609% | 0.166% | 0.000% | 9.437% | 0.497% |
| B | 0.000% | 0.000% | 0.000% | 0.330% | 3.551% | 74.814% | 8.340% | 0.248% | 11.891% | 0.826% |
| Caa | 0.000% | 0.000% | 0.000% | 0.000% | 0.542% | 7.401% | 72.924% | 1.625% | 11.913% | 5.596% |
| Ca-C | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 3.333% | 16.667% | 10.000% | 70.000% |

EXHIBIT 25

Average One-Year Letter Rating Migration Rates, 1920-2013

| From/To: | Aaa | Aa | A | Baa | Ba | B | Caa | Ca-C | WR | Default |
|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Aaa | 86.334% | 8.009% | 0.846% | 0.158% | 0.033% | 0.001% | 0.001% | 0.000% | 4.617% | 0.000% |
| Aa | 1.152% | 83.484% | 7.499% | 0.843% | 0.183% | 0.040% | 0.006% | 0.005% | 6.717% | 0.070% |
| A | 0.072% | 2.734% | 84.113% | 5.742% | 0.727% | 0.121% | 0.029% | 0.008% | 6.358% | 0.096% |
| Baa | 0.038% | 0.269% | 4.121% | 81.858% | 4.840% | 0.762% | 0.121% | 0.014% | 7.705% | 0.272% |
| Ba | 0.007% | 0.080% | 0.451% | 5.889% | 73.466% | 6.877% | 0.602% | 0.060% | 11.304% | 1.264% |
| B | 0.006% | 0.044% | 0.141% | 0.548% | 5.508% | 71.499% | 5.681% | 0.487% | 12.604% | 3.483% |
| Caa | 0.000% | 0.017% | 0.024% | 0.155% | 0.685% | 8.313% | 63.990% | 3.521% | 11.828% | 11.466% |
| Ca-C | 0.000% | 0.024% | 0.135% | 0.055% | 0.475% | 2.987% | 7.843% | 50.899% | 11.939% | 25.644% |

EXHIBIT 26

Average One-Year Letter Rating Migration Rates, 1970-2013

| From/To: | Aaa | Aa | A | Baa | Ba | B | Caa | Ca-C | WR | Default |
|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Aaa | 87.081% | 8.326% | 0.625% | 0.000% | 0.028% | 0.002% | 0.002% | 0.000% | 3.936% | 0.000% |
| Aa | 0.901% | 84.502% | 8.460% | 0.510% | 0.067% | 0.021% | 0.008% | 0.001% | 5.509% | 0.021% |
| A | 0.052% | 2.428% | 86.056% | 5.558% | 0.551% | 0.109% | 0.032% | 0.004% | 5.149% | 0.060% |
| Baa | 0.037% | 0.167% | 3.962% | 85.179% | 3.939% | 0.733% | 0.154% | 0.016% | 5.644% | 0.169% |
| Ba | 0.007% | 0.052% | 0.334% | 5.596% | 75.719% | 7.308% | 0.591% | 0.064% | 9.274% | 1.055% |
| B | 0.009% | 0.027% | 0.110% | 0.304% | 4.501% | 73.517% | 5.935% | 0.573% | 11.319% | 3.706% |
| Caa | 0.000% | 0.016% | 0.016% | 0.106% | 0.373% | 8.578% | 62.583% | 3.575% | 11.940% | 12.813% |
| Ca-C | 0.000% | 0.000% | 0.059% | 0.000% | 0.366% | 2.034% | 9.100% | 36.416% | 14.031% | 37.996% |

EXHIBIT 27

Average Five-Year Letter Rating Migration Rates, 1970-2013*

| From/To: | Aaa | Aa | A | Baa | Ba | B | Caa | Ca-C | WR | Default |
|----------|---------|---------|---------|---------|---------|---------|--------|--------|---------|---------|
| Aaa | 51.312% | 23.591% | 5.227% | 0.365% | 0.331% | 0.036% | 0.036% | 0.000% | 19.013% | 0.090% |
| Aa | 2.734% | 44.850% | 21.272% | 4.094% | 0.745% | 0.268% | 0.094% | 0.012% | 25.591% | 0.339% |
| A | 0.187% | 7.414% | 49.894% | 14.494% | 2.620% | 0.847% | 0.185% | 0.006% | 23.604% | 0.750% |
| Baa | 0.176% | 1.012% | 11.739% | 47.379% | 8.437% | 2.715% | 0.538% | 0.068% | 26.319% | 1.617% |
| Ba | 0.040% | 0.160% | 1.990% | 11.807% | 26.539% | 10.930% | 1.445% | 0.112% | 38.995% | 7.983% |
| B | 0.030% | 0.043% | 0.247% | 1.631% | 6.382% | 21.904% | 5.285% | 0.612% | 44.764% | 19.103% |
| Caa | 0.000% | 0.000% | 0.019% | 0.540% | 1.519% | 7.630% | 9.639% | 1.020% | 42.055% | 37.580% |
| Ca-C | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 3.122% | 1.699% | 4.367% | 38.490% | 52.322% |

* Last cohort formed on 1/1/2009

EXHIBIT 28

2013 One-Year Alphanumeric Rating Migration Rates*

| From/ To | Aaa | Aa1 | Aa2 | Aa3 | A1 | A2 | A3 | Baa1 | Baa2 | Baa3 | Ba1 | Ba2 | Ba3 | B1 | B2 | B3 | Caa1 | Caa2 | Caa3 | Ca-C | WR | Default |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| Aaa | 94.118 | 3.922 | 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 | 1.961 | 0.000 |
| Aa1 | 0.000 | 77.778 | 16.667 | 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 | 5.556 | 0.000 |
| Aa2 | 0.000 | 0.000 | 67.925 | 24.528 | 0.000 | 1.887 | 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 | 5.660 | 0.000 |
| Aa3 | 0.000 | 0.000 | 0.000 | 87.121 | 9.091 | 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 | 3.788 | 0.000 |
| A1 | 0.000 | 0.000 | 0.000 | 1.914 | 86.603 | 7.656 | 2.392 | 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 | 1.435 | 0.000 |
| A2 | 0.000 | 0.000 | 0.000 | 0.000 | 2.158 | 86.691 | 5.396 | 2.158 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.360 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 3.237 | 0.000 |
| A3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 3.039 | 79.282 | 9.392 | 2.762 | 0.276 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 5.249 | 0.000 |
| Baa1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.235 | 6.338 | 79.343 | 10.563 | 0.704 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 2.582 | 0.235 |
| Baa2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.360 | 5.576 | 82.734 | 5.396 | 0.719 | 0.180 | 0.000 | 0.180 | 0.540 | 0.000 | 0.180 | 0.000 | 0.000 | 0.000 | 4.137 | 0.000 |
| Baa3 | 0.000 | 0.000 | 0.000 | 0.223 | 0.000 | 0.000 | 0.000 | 0.445 | 5.345 | 82.183 | 6.459 | 0.891 | 0.445 | 0.223 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 3.786 | 0.000 |
| Ba1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 10.494 | 69.753 | 8.025 | 2.469 | 0.000 | 1.852 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 7.407 | 0.000 |
| Ba2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.485 | 5.825 | 6.796 | 61.165 | 9.223 | 5.825 | 0.971 | 0.971 | 0.000 | 0.000 | 0.000 | 0.000 | 8.738 | 0.000 |
| Ba3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.424 | 0.000 | 0.000 | 0.424 | 0.000 | 0.847 | 6.356 | 64.831 | 8.051 | 5.085 | 0.847 | 0.424 | 0.000 | 0.000 | 0.000 | 11.441 | 1.271 |
| B1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.336 | 1.007 | 0.000 | 1.007 | 11.745 | 63.758 | 9.396 | 2.349 | 0.336 | 1.007 | 0.000 | 0.000 | 9.060 | 0.000 |
| B2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.291 | 0.872 | 8.721 | 61.628 | 13.081 | 2.035 | 0.291 | 0.872 | 0.291 | 10.756 | 1.163 |
| B3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.176 | 0.000 | 0.527 | 7.381 | 61.336 | 11.951 | 2.636 | 0.527 | 0.351 | 14.060 | 1.054 |
| Caa1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.272 | 0.272 | 0.272 | 1.087 | 8.424 | 61.685 | 12.228 | 2.717 | 0.543 | 11.413 | 1.087 |
| Caa2 | 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 | 0.690 | 0.690 | 14.483 | 52.414 | 6.897 | 2.069 | 13.793 | 8.966 |
| Caa3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 2.439 | 0.000 | 0.000 | 0.000 | 0.000 | 7.317 | 2.439 | 9.756 | 24.390 | 9.756 | 9.756 | 34.146 |
| Ca-C | 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 | 3.333 | 0.000 | 0.000 | 16.667 | 10.000 | 70.000 |

* Data in percent

EXHIBIT 29

Average One-Year Alphanumeric Rating Migration Rates, 1983-2013*

| From/ To | Aaa | Aa1 | Aa2 | Aa3 | A1 | A2 | A3 | Baa1 | Baa2 | Baa3 | Ba1 | Ba2 | Ba3 | B1 | B2 | B3 | Caa1 | Caa2 | Caa3 | Ca-C | WR | Default |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| Aaa | 85.810 | 5.769 | 2.670 | 0.498 | 0.320 | 0.131 | 0.022 | 0.000 | 0.000 | 0.000 | 0.017 | 0.017 | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 | 4.741 | 0.000 |
| Aa1 | 2.065 | 73.831 | 8.704 | 6.368 | 1.853 | 0.721 | 0.107 | 0.199 | 0.032 | 0.006 | 0.035 | 0.000 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 6.077 | 0.000 |
| Aa2 | 1.012 | 4.191 | 72.252 | 10.150 | 3.586 | 1.542 | 0.528 | 0.111 | 0.229 | 0.088 | 0.034 | 0.021 | 0.000 | 0.017 | 0.009 | 0.006 | 0.000 | 0.026 | 0.000 | 0.004 | 6.194 | 0.000 |
| Aa3 | 0.135 | 1.285 | 4.042 | 74.178 | 8.807 | 3.690 | 0.966 | 0.284 | 0.337 | 0.158 | 0.025 | 0.027 | 0.030 | 0.029 | 0.000 | 0.000 | 0.003 | 0.000 | 0.000 | 0.000 | 5.954 | 0.049 |
| A1 | 0.064 | 0.116 | 1.148 | 5.020 | 74.621 | 8.283 | 3.064 | 0.767 | 0.431 | 0.194 | 0.227 | 0.150 | 0.052 | 0.074 | 0.029 | 0.010 | 0.000 | 0.007 | 0.000 | 0.000 | 5.664 | 0.079 |
| A2 | 0.077 | 0.016 | 0.161 | 1.028 | 4.833 | 75.028 | 8.091 | 2.987 | 1.053 | 0.454 | 0.220 | 0.128 | 0.134 | 0.051 | 0.028 | 0.012 | 0.034 | 0.033 | 0.007 | 0.000 | 5.561 | 0.066 |
| A3 | 0.017 | 0.064 | 0.090 | 0.208 | 1.500 | 6.062 | 73.442 | 6.994 | 3.154 | 1.085 | 0.525 | 0.167 | 0.199 | 0.102 | 0.053 | 0.022 | 0.006 | 0.004 | 0.007 | 0.014 | 6.227 | 0.058 |
| Baa1 | 0.024 | 0.038 | 0.088 | 0.115 | 0.204 | 1.562 | 6.146 | 73.430 | 7.629 | 2.691 | 0.750 | 0.428 | 0.307 | 0.310 | 0.082 | 0.043 | 0.051 | 0.032 | 0.007 | 0.019 | 5.897 | 0.148 |
| Baa2 | 0.039 | 0.061 | 0.037 | 0.073 | 0.154 | 0.584 | 2.085 | 5.933 | 74.903 | 6.424 | 1.480 | 0.584 | 0.519 | 0.400 | 0.266 | 0.101 | 0.104 | 0.015 | 0.014 | 0.005 | 6.052 | 0.166 |
| Baa3 | 0.043 | 0.010 | 0.032 | 0.053 | 0.097 | 0.209 | 0.464 | 2.215 | 8.698 | 71.389 | 4.706 | 2.419 | 1.139 | 0.769 | 0.333 | 0.268 | 0.157 | 0.080 | 0.101 | 0.039 | 6.524 | 0.253 |
| Ba1 | 0.025 | 0.002 | 0.027 | 0.047 | 0.143 | 0.125 | 0.315 | 0.586 | 2.666 | 10.003 | 63.385 | 4.887 | 4.111 | 1.469 | 1.036 | 0.660 | 0.125 | 0.200 | 0.067 | 0.053 | 9.427 | 0.644 |
| Ba2 | 0.000 | 0.000 | 0.024 | 0.024 | 0.030 | 0.089 | 0.059 | 0.287 | 0.668 | 3.515 | 8.084 | 62.868 | 7.011 | 2.867 | 2.032 | 0.965 | 0.225 | 0.198 | 0.107 | 0.091 | 10.135 | 0.720 |
| Ba3 | 0.000 | 0.017 | 0.010 | 0.009 | 0.020 | 0.141 | 0.107 | 0.138 | 0.310 | 0.731 | 2.284 | 6.658 | 63.461 | 6.183 | 4.497 | 2.082 | 0.516 | 0.366 | 0.081 | 0.083 | 10.683 | 1.623 |
| B1 | 0.026 | 0.012 | 0.014 | 0.007 | 0.035 | 0.076 | 0.083 | 0.059 | 0.139 | 0.244 | 0.427 | 2.362 | 6.748 | 63.614 | 6.665 | 3.959 | 1.187 | 0.545 | 0.216 | 0.303 | 11.095 | 2.184 |
| B2 | 0.000 | 0.000 | 0.006 | 0.007 | 0.016 | 0.000 | 0.040 | 0.090 | 0.081 | 0.108 | 0.204 | 0.573 | 1.851 | 6.995 | 61.246 | 8.466 | 3.238 | 1.506 | 0.473 | 0.514 | 11.232 | 3.352 |
| B3 | 0.000 | 0.004 | 0.032 | 0.000 | 0.007 | 0.016 | 0.054 | 0.034 | 0.053 | 0.091 | 0.061 | 0.193 | 0.507 | 2.109 | 6.799 | 59.657 | 6.935 | 3.535 | 1.050 | 0.951 | 12.185 | 5.728 |
| Caa1 | 0.000 | 0.029 | 0.000 | 0.000 | 0.000 | 0.023 | 0.000 | 0.046 | 0.000 | 0.003 | 0.046 | 0.040 | 0.179 | 0.636 | 2.065 | 9.489 | 54.052 | 8.924 | 3.525 | 2.091 | 11.548 | 7.306 |
| Caa2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.010 | 0.000 | 0.010 | 0.048 | 0.182 | 0.081 | 0.086 | 0.354 | 0.488 | 1.101 | 3.419 | 8.192 | 47.122 | 5.401 | 4.769 | 11.989 | 16.748 |
| Caa3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.195 | 0.097 | 0.014 | 0.139 | 0.278 | 1.501 | 2.683 | 8.160 | 37.948 | 7.590 | 14.554 | 26.842 |
| Ca-C | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.061 | 0.000 | 0.000 | 0.000 | 0.061 | 0.137 | 0.182 | 0.197 | 0.501 | 1.230 | 1.564 | 3.523 | 4.358 | 34.740 | 14.561 | 38.886 |

* Data in percent

EXHIBIT 30

Annual Issuer-Weighted Corporate Default Rates by Letter Rating, 1920-2013*

| Year | Aaa | Aa | A | Baa | Ba | B | Caa-C | Inv Grade | Spec Grade | All rated |
|------|-------|-------|-------|-------|--------|--------|--------|-----------|------------|-----------|
| 1920 | 0.000 | 0.000 | 0.323 | 0.941 | 2.153 | 4.382 | 0.000 | 0.427 | 3.009 | 1.233 |
| 1921 | 0.000 | 0.189 | 0.353 | 0.647 | 0.444 | 2.683 | 13.332 | 0.387 | 2.150 | 1.068 |
| 1922 | 0.000 | 0.185 | 0.165 | 1.098 | 1.078 | 1.705 | 7.629 | 0.506 | 1.762 | 1.007 |
| 1923 | 0.000 | 0.000 | 0.000 | 0.621 | 0.929 | 2.270 | 5.932 | 0.244 | 1.705 | 0.804 |
| 1924 | 0.000 | 0.367 | 0.000 | 0.126 | 2.065 | 2.705 | 12.835 | 0.140 | 2.852 | 1.152 |
| 1925 | 0.000 | 0.000 | 0.141 | 0.707 | 1.745 | 2.585 | 14.397 | 0.320 | 2.562 | 1.170 |
| 1926 | 0.000 | 0.395 | 0.147 | 0.113 | 1.387 | 2.900 | 3.704 | 0.188 | 1.909 | 0.768 |
| 1927 | 0.000 | 0.000 | 0.212 | 0.000 | 1.300 | 1.980 | 12.842 | 0.069 | 1.831 | 0.736 |
| 1928 | 0.000 | 0.000 | 0.000 | 0.000 | 0.164 | 1.320 | 10.477 | 0.000 | 0.877 | 0.363 |
| 1929 | 0.000 | 0.293 | 0.000 | 0.443 | 0.825 | 0.918 | 9.733 | 0.241 | 1.401 | 0.714 |
| 1930 | 0.000 | 0.000 | 0.000 | 0.400 | 0.915 | 3.163 | 7.720 | 0.151 | 2.202 | 1.039 |
| 1931 | 0.000 | 0.000 | 0.269 | 1.080 | 2.999 | 9.523 | 31.670 | 0.501 | 7.889 | 3.800 |
| 1932 | 0.000 | 0.670 | 1.099 | 0.925 | 6.084 | 13.978 | 24.062 | 0.860 | 10.978 | 5.495 |
| 1933 | 0.000 | 0.000 | 0.258 | 1.771 | 11.687 | 16.147 | 25.921 | 0.790 | 15.756 | 8.523 |
| 1934 | 0.000 | 0.617 | 0.306 | 0.857 | 2.517 | 4.224 | 16.504 | 0.586 | 5.885 | 3.401 |
| 1935 | 0.000 | 0.000 | 1.429 | 1.923 | 5.105 | 4.275 | 13.024 | 1.285 | 6.238 | 3.930 |
| 1936 | 0.000 | 0.847 | 0.543 | 0.327 | 1.223 | 2.385 | 7.795 | 0.482 | 2.709 | 1.631 |
| 1937 | 0.000 | 0.000 | 0.505 | 1.043 | 0.988 | 2.669 | 9.074 | 0.619 | 2.736 | 1.719 |
| 1938 | 0.000 | 0.855 | 1.639 | 1.990 | 0.985 | 1.462 | 12.808 | 1.550 | 2.587 | 2.105 |
| 1939 | 0.000 | 0.000 | 0.000 | 0.995 | 0.619 | 1.739 | 6.073 | 0.412 | 1.766 | 1.221 |
| 1940 | 0.000 | 0.000 | 0.000 | 1.370 | 0.431 | 3.283 | 11.829 | 0.592 | 3.545 | 2.465 |
| 1941 | 0.000 | 0.000 | 0.000 | 0.000 | 0.973 | 0.806 | 5.028 | 0.000 | 1.704 | 1.082 |
| 1942 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.784 | 1.984 | 0.000 | 0.732 | 0.454 |
| 1943 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.347 | 0.000 | 0.000 | 0.612 | 0.369 |
| 1944 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.490 | 2.519 | 0.000 | 0.662 | 0.387 |
| 1945 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 3.509 | 0.000 | 0.560 | 0.305 |
| 1946 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1947 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.714 | 2.703 | 0.000 | 0.632 | 0.314 |
| 1948 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1949 | 0.000 | 0.000 | 0.000 | 0.000 | 1.360 | 1.020 | 8.217 | 0.000 | 1.912 | 0.834 |
| 1950 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1951 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 4.545 | 0.000 | 0.431 | 0.176 |
| 1952 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1953 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1954 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 7.143 | 0.000 | 0.465 | 0.166 |
| 1955 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.613 | 0.000 | 0.000 | 0.518 | 0.166 |
| 1956 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1957 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.266 | 0.000 | 0.000 | 0.446 | 0.142 |
| 1958 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1959 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

EXHIBIT 30

Annual Issuer-Weighted Corporate Default Rates by Letter Rating, 1920-2013*

| Year | Aaa | Aa | A | Baa | Ba | B | Caa-C | Inv Grade | Spec Grade | All rated |
|------|-------|-------|-------|-------|-------|--------|---------|-----------|------------|-----------|
| 1960 | 0.000 | 0.000 | 0.000 | 0.000 | 1.243 | 0.000 | 0.000 | 0.000 | 0.747 | 0.245 |
| 1961 | 0.000 | 0.000 | 0.000 | 0.000 | 0.592 | 0.000 | 8.696 | 0.000 | 1.065 | 0.352 |
| 1962 | 0.000 | 0.000 | 0.000 | 0.000 | 1.729 | 1.471 | 0.000 | 0.000 | 1.505 | 0.469 |
| 1963 | 0.000 | 0.000 | 0.000 | 0.000 | 1.152 | 1.471 | 0.000 | 0.000 | 1.145 | 0.350 |
| 1964 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1965 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1966 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 2.439 | 0.000 | 0.000 | 0.439 | 0.122 |
| 1967 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1968 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 5.000 | 0.000 | 0.375 | 0.105 |
| 1969 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1970 | 0.000 | 0.000 | 0.000 | 0.543 | 4.237 | 19.444 | 50.000 | 0.270 | 8.678 | 2.621 |
| 1971 | 0.000 | 0.000 | 0.000 | 0.000 | 0.885 | 0.000 | 12.500 | 0.000 | 1.155 | 0.285 |
| 1972 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 6.897 | 37.500 | 0.000 | 1.922 | 0.451 |
| 1973 | 0.000 | 0.000 | 0.000 | 0.461 | 0.000 | 3.846 | 37.500 | 0.230 | 1.280 | 0.453 |
| 1974 | 0.000 | 0.000 | 0.000 | 0.000 | 0.513 | 7.162 | 0.000 | 0.000 | 1.332 | 0.274 |
| 1975 | 0.000 | 0.000 | 0.000 | 0.000 | 1.029 | 6.158 | 0.000 | 0.000 | 1.742 | 0.359 |
| 1976 | 0.000 | 0.000 | 0.000 | 0.000 | 0.995 | 0.000 | 0.000 | 0.000 | 0.868 | 0.175 |
| 1977 | 0.000 | 0.000 | 0.000 | 0.294 | 0.543 | 3.226 | 33.333 | 0.109 | 1.360 | 0.352 |
| 1978 | 0.000 | 0.000 | 0.000 | 0.000 | 1.124 | 5.405 | 0.000 | 0.000 | 1.823 | 0.352 |
| 1979 | 0.000 | 0.000 | 0.000 | 0.000 | 0.513 | 0.000 | 0.000 | 0.000 | 0.435 | 0.088 |
| 1980 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 5.000 | 33.333 | 0.000 | 1.630 | 0.342 |
| 1981 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 4.397 | 0.000 | 0.000 | 0.698 | 0.162 |
| 1982 | 0.000 | 0.000 | 0.254 | 0.328 | 2.777 | 2.222 | 23.077 | 0.212 | 3.544 | 1.032 |
| 1983 | 0.000 | 0.000 | 0.000 | 0.000 | 0.901 | 6.386 | 41.667 | 0.000 | 3.832 | 0.964 |
| 1984 | 0.000 | 0.000 | 0.000 | 0.365 | 0.839 | 6.817 | 100.000 | 0.097 | 3.361 | 0.934 |
| 1985 | 0.000 | 0.000 | 0.000 | 0.000 | 1.414 | 7.573 | 0.000 | 0.000 | 3.470 | 0.960 |
| 1986 | 0.000 | 0.000 | 0.000 | 1.038 | 2.087 | 11.568 | 22.222 | 0.245 | 5.666 | 1.875 |
| 1987 | 0.000 | 0.000 | 0.000 | 0.000 | 2.780 | 6.525 | 20.000 | 0.000 | 4.417 | 1.588 |
| 1988 | 0.000 | 0.000 | 0.000 | 0.000 | 1.250 | 6.165 | 27.273 | 0.000 | 3.551 | 1.372 |
| 1989 | 0.000 | 0.641 | 0.000 | 0.627 | 3.131 | 8.565 | 25.000 | 0.303 | 5.774 | 2.386 |
| 1990 | 0.000 | 0.000 | 0.000 | 0.000 | 3.443 | 15.940 | 61.111 | 0.000 | 10.255 | 3.750 |
| 1991 | 0.000 | 0.000 | 0.000 | 0.290 | 4.965 | 12.206 | 45.000 | 0.070 | 9.450 | 3.091 |
| 1992 | 0.000 | 0.000 | 0.000 | 0.000 | 0.332 | 9.199 | 29.534 | 0.000 | 5.216 | 1.500 |
| 1993 | 0.000 | 0.000 | 0.000 | 0.000 | 0.604 | 4.641 | 27.557 | 0.000 | 3.151 | 0.890 |
| 1994 | 0.000 | 0.000 | 0.000 | 0.000 | 0.265 | 4.110 | 5.405 | 0.000 | 2.145 | 0.663 |
| 1995 | 0.000 | 0.000 | 0.000 | 0.000 | 0.772 | 4.371 | 9.206 | 0.000 | 3.061 | 1.031 |
| 1996 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.446 | 14.335 | 0.000 | 1.719 | 0.588 |
| 1997 | 0.000 | 0.000 | 0.000 | 0.000 | 0.195 | 2.054 | 15.030 | 0.000 | 2.145 | 0.765 |
| 1998 | 0.000 | 0.000 | 0.000 | 0.133 | 0.895 | 4.019 | 10.327 | 0.045 | 3.298 | 1.317 |
| 1999 | 0.000 | 0.000 | 0.000 | 0.112 | 1.420 | 5.139 | 18.541 | 0.041 | 5.694 | 2.409 |

EXHIBIT 30

Annual Issuer-Weighted Corporate Default Rates by Letter Rating, 1920-2013*

| Year | Aaa | Aa | A | Baa | Ba | B | Caa-C | Inv Grade | Spec Grade | All rated |
|--------|-------|-------|-------|-------|--------|--------|---------|-----------|------------|-----------|
| 2000 | 0.000 | 0.000 | 0.000 | 0.421 | 0.792 | 6.253 | 19.706 | 0.157 | 6.685 | 2.852 |
| 2001 | 0.000 | 0.000 | 0.190 | 0.216 | 1.510 | 9.954 | 31.968 | 0.153 | 10.831 | 4.345 |
| 2002 | 0.000 | 0.000 | 0.196 | 1.115 | 1.516 | 4.668 | 29.503 | 0.492 | 8.373 | 3.319 |
| 2003 | 0.000 | 0.000 | 0.000 | 0.000 | 1.052 | 2.190 | 22.925 | 0.000 | 5.528 | 2.018 |
| 2004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.450 | 0.879 | 12.660 | 0.000 | 2.556 | 0.939 |
| 2005 | 0.000 | 0.000 | 0.000 | 0.198 | 0.000 | 1.049 | 7.049 | 0.078 | 1.875 | 0.760 |
| 2006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.218 | 1.213 | 6.272 | 0.000 | 1.858 | 0.721 |
| 2007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 6.069 | 0.000 | 0.981 | 0.401 |
| 2008 | 0.000 | 0.715 | 0.543 | 0.522 | 1.218 | 2.144 | 15.085 | 0.544 | 4.493 | 2.252 |
| 2009 | 0.000 | 0.000 | 0.220 | 0.937 | 2.325 | 7.529 | 34.770 | 0.442 | 13.320 | 6.002 |
| 2010 | 0.000 | 0.000 | 0.228 | 0.000 | 0.000 | 0.509 | 11.971 | 0.084 | 3.305 | 1.408 |
| 2011 | 0.000 | 0.000 | 0.000 | 0.090 | 0.197 | 0.112 | 8.628 | 0.042 | 2.011 | 0.890 |
| 2012 | 0.000 | 0.000 | 0.000 | 0.084 | 0.170 | 0.486 | 11.654 | 0.042 | 2.915 | 1.381 |
| 2013 | 0.000 | 0.000 | 0.000 | 0.072 | 0.520 | 0.892 | 9.526 | 0.040 | 2.883 | 1.381 |
| Mean | 0.000 | 0.061 | 0.096 | 0.268 | 1.070 | 3.384 | 13.127 | 0.149 | 2.836 | 1.192 |
| Median | 0.000 | 0.000 | 0.000 | 0.000 | 0.612 | 2.099 | 8.662 | 0.000 | 1.867 | 0.766 |
| St Dev | 0.000 | 0.188 | 0.269 | 0.461 | 1.645 | 4.021 | 16.046 | 0.276 | 3.105 | 1.449 |
| Min | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Max | 0.000 | 0.855 | 1.639 | 1.990 | 11.687 | 19.444 | 100.000 | 1.550 | 15.756 | 8.523 |

* Data in percent

EXHIBIT 31

Annual Issuer-Weighted Corporate Default Rates by Alphanumeric Rating, 1983-2013*

| Year | Aaa | Aa1 | Aa2 | Aa3 | A1 | A2 | A3 | Baa1 | Baa2 | Baa3 | Ba1 | Ba2 | Ba3 | B1 | B2 | B3 | Caa1 | Caa2 | Caa3 | Ca-C | Inv Grade | Spec Grade | All rated |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|---------|-----------|------------|-----------|
| 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 | 2.600 | 0.000 | 11.859 | 21.053 | n.a. | 53.125 | n.a. | 0.000 | 0.000 | 3.832 | 0.964 |
| 1984 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.075 | 1.205 | 1.613 | 0.000 | 5.949 | 11.407 | 4.167 | n.a. | n.a. | n.a. | 100.000 | 0.097 | 3.361 | 0.934 |
| 1985 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.667 | 2.894 | 4.478 | 8.824 | 11.364 | n.a. | 0.000 | n.a. | 0.000 | 0.000 | 3.470 | 0.960 |
| 1986 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 3.652 | 0.909 | 1.176 | 3.533 | 7.808 | 16.268 | 14.554 | n.a. | 28.571 | n.a. | 0.000 | 0.245 | 5.666 | 1.875 |
| 1987 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 3.788 | 0.962 | 3.034 | 4.331 | 5.737 | 11.726 | n.a. | 22.222 | n.a. | 0.000 | 0.000 | 4.417 | 1.588 |
| 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 | 2.554 | 4.214 | 6.679 | 10.960 | n.a. | 22.222 | n.a. | 50.000 | 0.000 | 3.551 | 1.372 |
| 1989 | 0.000 | 0.000 | 0.000 | 1.408 | 0.000 | 0.000 | 0.000 | 0.000 | 0.885 | 1.075 | 0.813 | 1.942 | 4.956 | 5.774 | 7.861 | 18.603 | n.a. | 27.273 | n.a. | 0.000 | 0.303 | 5.774 | 2.386 |
| 1990 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 3.727 | 2.957 | 3.539 | 8.154 | 23.157 | 28.763 | n.a. | 61.905 | 0.000 | 75.000 | 0.000 | 10.255 | 3.750 |
| 1991 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.800 | 0.000 | 0.000 | 1.099 | 0.000 | 9.260 | 3.587 | 11.141 | 26.163 | n.a. | 50.000 | 0.000 | 40.000 | 0.070 | 9.450 | 3.091 |
| 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 | 0.781 | 1.042 | 1.449 | 26.882 | n.a. | 31.601 | 0.000 | 25.000 | 0.000 | 5.216 | 1.500 |
| 1993 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.010 | 0.000 | 0.794 | 2.604 | 3.226 | 10.159 | n.a. | 23.982 | 0.000 | 50.000 | 0.000 | 3.151 | 0.890 |
| 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 | 0.671 | 1.978 | 3.568 | 8.867 | n.a. | 7.143 | 0.000 | 0.000 | 0.000 | 2.145 | 0.663 |
| 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 | 1.953 | 4.545 | 5.942 | 1.981 | n.a. | 2.632 | 0.000 | 24.706 | 0.000 | 3.061 | 1.031 |
| 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 | 1.237 | 0.000 | 3.422 | 0.000 | 15.316 | 0.000 | 13.462 | 0.000 | 1.719 | 0.588 |
| 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 | 1.227 | 7.105 | 0.000 | 13.944 | 0.000 | 18.981 | 0.000 | 2.145 | 0.765 |
| 1998 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.348 | 0.000 | 0.000 | 1.399 | 1.288 | 2.314 | 5.649 | 4.980 | 5.734 | 9.285 | 26.667 | 16.667 | 0.045 | 3.298 | 1.317 |
| 1999 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.376 | 0.595 | 0.613 | 2.583 | 2.668 | 5.292 | 8.660 | 11.981 | 22.427 | 20.870 | 47.368 | 0.041 | 5.694 | 2.409 |
| 2000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.321 | 0.000 | 1.093 | 0.602 | 0.680 | 1.053 | 3.248 | 5.133 | 12.223 | 11.386 | 30.042 | 20.139 | 41.765 | 0.157 | 6.685 | 2.852 |
| 2001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.496 | 0.000 | 0.332 | 0.290 | 0.000 | 0.000 | 1.375 | 2.952 | 3.523 | 10.654 | 17.850 | 25.641 | 35.481 | 43.704 | 44.000 | 0.153 | 10.831 | 4.345 |
| 2002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.514 | 1.201 | 0.799 | 1.436 | 2.766 | 0.685 | 1.144 | 2.330 | 4.902 | 7.559 | 17.338 | 25.470 | 34.368 | 53.932 | 0.492 | 8.373 | 3.319 |
| 2003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.714 | 0.758 | 1.528 | 0.362 | 2.484 | 4.507 | 9.823 | 21.619 | 33.840 | 43.077 | 0.000 | 5.528 | 2.018 |
| 2004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.806 | 0.510 | 0.000 | 0.625 | 2.451 | 8.401 | 9.756 | 14.360 | 34.156 | 0.000 | 2.556 | 0.939 |
| 2005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.266 | 0.347 | 0.000 | 0.000 | 0.000 | 0.000 | 0.606 | 2.517 | 3.138 | 7.498 | 20.879 | 22.244 | 0.078 | 1.875 | 0.760 |
| 2006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.515 | 0.774 | 0.574 | 2.314 | 2.485 | 6.967 | 18.031 | 19.025 | 0.000 | 1.858 | 0.721 |
| 2007 | 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 | 2.258 | 8.600 | 15.249 | 32.500 | 0.000 | 0.981 | 0.401 |
| 2008 | 0.000 | 0.000 | 0.000 | 2.105 | 1.527 | 0.298 | 0.000 | 0.295 | 0.860 | 0.366 | 0.000 | 0.000 | 2.833 | 1.869 | 0.881 | 3.253 | 7.608 | 19.845 | 36.366 | 55.364 | 0.544 | 4.493 | 2.252 |
| 2009 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.616 | 1.260 | 0.782 | 0.767 | 2.465 | 0.602 | 3.656 | 4.131 | 9.008 | 8.522 | 17.284 | 39.907 | 58.022 | 75.511 | 0.442 | 13.320 | 6.002 |

EXHIBIT 31

Annual Issuer-Weighted Corporate Default Rates by Alphanumeric Rating, 1983-2013*

| Year | Aaa | Aa1 | Aa2 | Aa3 | A1 | A2 | A3 | Baa1 | Baa2 | Baa3 | Ba1 | Ba2 | Ba3 | B1 | B2 | B3 | Caa1 | Caa2 | Caa3 | Ca-C | Inv Grade | Spec Grade | All rated |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|---------|-----------|------------|-----------|
| 2010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.431 | 0.000 | 0.293 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.903 | 0.000 | 0.629 | 2.764 | 11.607 | 26.331 | 37.239 | 0.084 | 3.305 | 1.408 |
| 2011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.243 | 0.000 | 0.000 | 0.000 | 0.552 | 0.000 | 0.364 | 0.000 | 2.137 | 13.301 | 20.446 | 40.000 | 0.042 | 2.011 | 0.890 |
| 2012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.262 | 0.000 | 0.000 | 0.000 | 0.000 | 0.485 | 0.000 | 0.926 | 0.432 | 4.193 | 13.362 | 25.477 | 64.935 | 0.042 | 2.915 | 1.381 |
| 2013 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.241 | 0.000 | 0.000 | 0.000 | 0.000 | 1.356 | 0.000 | 1.243 | 1.156 | 1.183 | 9.864 | 37.312 | 74.154 | 0.040 | 2.883 | 1.381 |
| Mean | 0.000 | 0.000 | 0.000 | 0.113 | 0.063 | 0.026 | 0.046 | 0.152 | 0.144 | 0.329 | 0.635 | 0.556 | 1.855 | 2.510 | 5.377 | 9.123 | 7.409 | 21.499 | 18.836 | 35.454 | 0.093 | 4.639 | 1.766 |
| Median | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.288 | 2.314 | 4.902 | 7.559 | 4.964 | 20.732 | 20.292 | 37.239 | 0.040 | 3.470 | 1.381 |
| StDev | 0.000 | 0.000 | 0.000 | 0.448 | 0.283 | 0.102 | 0.149 | 0.336 | 0.286 | 0.743 | 1.093 | 0.761 | 1.927 | 2.361 | 5.460 | 8.277 | 7.080 | 15.099 | 16.570 | 26.172 | 0.153 | 3.007 | 1.267 |
| Min | 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 | 0.000 | 0.981 | 0.401 |
| Max | 0.000 | 0.000 | 0.000 | 2.105 | 1.527 | 0.496 | 0.616 | 1.260 | 0.885 | 3.652 | 3.788 | 2.957 | 9.260 | 8.154 | 23.157 | 28.763 | 25.641 | 61.905 | 58.022 | 100.000 | 0.544 | 13.320 | 6.002 |

* Data in percent

EXHIBIT 32

Average Cumulative Issuer-Weighted Global Default Rates by Letter Rating, 1920-2013*

| Rating | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Aaa | 0.000 | 0.009 | 0.030 | 0.084 | 0.162 | 0.248 | 0.357 | 0.508 | 0.666 | 0.851 | 1.008 | 1.139 | 1.277 | 1.317 | 1.354 | 1.428 | 1.502 | 1.563 | 1.634 | 1.682 |
| Aa | 0.072 | 0.213 | 0.342 | 0.539 | 0.834 | 1.167 | 1.498 | 1.815 | 2.118 | 2.464 | 2.861 | 3.291 | 3.718 | 4.127 | 4.431 | 4.666 | 4.877 | 5.127 | 5.433 | 5.689 |
| A | 0.099 | 0.306 | 0.634 | 0.996 | 1.379 | 1.790 | 2.233 | 2.683 | 3.167 | 3.644 | 4.128 | 4.602 | 5.023 | 5.439 | 5.929 | 6.366 | 6.735 | 7.108 | 7.454 | 7.803 |
| Baa | 0.282 | 0.841 | 1.491 | 2.195 | 2.943 | 3.687 | 4.398 | 5.122 | 5.876 | 6.632 | 7.376 | 8.118 | 8.869 | 9.551 | 10.164 | 10.801 | 11.401 | 11.932 | 12.437 | 12.972 |
| Ba | 1.348 | 3.204 | 5.263 | 7.428 | 9.485 | 11.440 | 13.216 | 14.946 | 16.595 | 18.333 | 19.882 | 21.424 | 22.915 | 24.248 | 25.486 | 26.630 | 27.775 | 28.845 | 29.796 | 30.698 |
| B | 3.714 | 8.437 | 13.124 | 17.273 | 20.944 | 24.229 | 27.260 | 29.808 | 32.074 | 34.088 | 35.890 | 37.576 | 39.180 | 40.725 | 42.139 | 43.505 | 44.700 | 45.677 | 46.384 | 46.856 |
| Caa-C | 13.830 | 23.374 | 30.462 | 35.936 | 40.375 | 43.751 | 46.417 | 48.728 | 50.961 | 52.850 | 54.819 | 56.806 | 58.653 | 60.496 | 62.359 | 64.126 | 65.692 | 67.106 | 68.421 | 69.719 |
| Inv Grade | 0.158 | 0.471 | 0.859 | 1.292 | 1.768 | 2.259 | 2.751 | 3.248 | 3.763 | 4.286 | 4.814 | 5.341 | 5.849 | 6.319 | 6.772 | 7.199 | 7.582 | 7.950 | 8.312 | 8.672 |
| Spec Grade | 3.863 | 7.807 | 11.493 | 14.784 | 17.682 | 20.242 | 22.521 | 24.552 | 26.422 | 28.220 | 29.843 | 31.423 | 32.934 | 34.332 | 35.638 | 36.867 | 38.036 | 39.092 | 40.000 | 40.822 |
| All rated | 1.579 | 3.225 | 4.767 | 6.150 | 7.388 | 8.494 | 9.487 | 10.393 | 11.253 | 12.086 | 12.868 | 13.630 | 14.355 | 15.021 | 15.647 | 16.233 | 16.770 | 17.270 | 17.733 | 18.176 |

* Data in percent

EXHIBIT 33

Average Cumulative Issuer-Weighted Global Default Rates by Letter Rating, 1970-2013*

| Rating | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Aaa | 0.000 | 0.013 | 0.013 | 0.037 | 0.104 | 0.170 | 0.241 | 0.318 | 0.401 | 0.489 | 0.584 | 0.686 | 0.790 | 0.848 | 0.910 | 0.977 | 1.048 | 1.073 | 1.073 | 1.073 |
| Aa | 0.022 | 0.068 | 0.136 | 0.260 | 0.410 | 0.550 | 0.682 | 0.800 | 0.900 | 1.017 | 1.162 | 1.349 | 1.567 | 1.740 | 1.871 | 2.014 | 2.193 | 2.429 | 2.800 | 3.167 |
| A | 0.062 | 0.199 | 0.434 | 0.679 | 0.958 | 1.271 | 1.615 | 1.995 | 2.387 | 2.759 | 3.114 | 3.456 | 3.797 | 4.153 | 4.583 | 5.027 | 5.520 | 6.053 | 6.535 | 7.044 |
| Baa | 0.174 | 0.504 | 0.906 | 1.373 | 1.862 | 2.375 | 2.872 | 3.386 | 3.965 | 4.623 | 5.311 | 6.026 | 6.779 | 7.548 | 8.306 | 9.135 | 9.932 | 10.675 | 11.339 | 11.989 |
| Ba | 1.110 | 3.071 | 5.371 | 7.839 | 10.065 | 12.123 | 13.911 | 15.700 | 17.479 | 19.323 | 21.196 | 23.103 | 24.914 | 26.700 | 28.500 | 30.165 | 31.680 | 32.965 | 34.303 | 35.410 |
| B | 3.904 | 9.274 | 14.723 | 19.509 | 23.869 | 27.957 | 31.774 | 34.993 | 37.936 | 40.560 | 42.732 | 44.776 | 46.659 | 48.558 | 50.275 | 51.719 | 52.863 | 54.027 | 54.891 | 55.892 |
| Caa-C | 15.894 | 27.003 | 35.800 | 42.796 | 48.828 | 53.270 | 56.878 | 60.366 | 63.730 | 66.212 | 68.302 | 69.765 | 71.650 | 72.379 | 73.152 | 74.572 | 74.946 | 74.946 | 74.946 | 74.946 |
| Inv Grade | 0.091 | 0.272 | 0.519 | 0.802 | 1.113 | 1.441 | 1.776 | 2.126 | 2.498 | 2.887 | 3.281 | 3.683 | 4.099 | 4.510 | 4.938 | 5.391 | 5.860 | 6.338 | 6.796 | 7.260 |
| Spec Grade | 4.460 | 9.161 | 13.634 | 17.571 | 21.014 | 24.042 | 26.690 | 29.035 | 31.212 | 33.234 | 35.079 | 36.866 | 38.541 | 40.167 | 41.744 | 43.179 | 44.426 | 45.512 | 46.579 | 47.507 |
| All rated | 1.675 | 3.407 | 5.015 | 6.398 | 7.587 | 8.619 | 9.513 | 10.312 | 11.062 | 11.771 | 12.430 | 13.069 | 13.689 | 14.287 | 14.881 | 15.464 | 16.026 | 16.568 | 17.090 | 17.595 |

* Data in percent

EXHIBIT 34

Average Cumulative Issuer-Weighted Global Default Rates by Letter Rating, 1983-2013*

| Rating | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Aaa | 0.000 | 0.016 | 0.016 | 0.048 | 0.085 | 0.130 | 0.179 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 |
| Aa | 0.025 | 0.077 | 0.154 | 0.291 | 0.451 | 0.570 | 0.670 | 0.760 | 0.854 | 0.983 | 1.147 | 1.367 | 1.593 | 1.749 | 1.893 | 2.042 | 2.232 | 2.538 | 2.988 | 3.381 |
| A | 0.069 | 0.226 | 0.501 | 0.782 | 1.103 | 1.458 | 1.846 | 2.265 | 2.671 | 3.034 | 3.362 | 3.677 | 4.016 | 4.420 | 4.923 | 5.463 | 6.085 | 6.805 | 7.366 | 7.936 |
| Baa | 0.190 | 0.548 | 0.956 | 1.423 | 1.930 | 2.450 | 2.944 | 3.437 | 3.937 | 4.504 | 5.121 | 5.748 | 6.490 | 7.250 | 7.989 | 8.860 | 9.748 | 10.558 | 11.292 | 11.859 |
| Ba | 1.137 | 3.265 | 5.844 | 8.583 | 10.901 | 13.035 | 14.917 | 16.724 | 18.408 | 20.098 | 21.755 | 23.451 | 25.085 | 26.854 | 28.654 | 30.146 | 31.515 | 32.736 | 34.250 | 35.302 |
| B | 3.893 | 9.326 | 14.845 | 19.678 | 24.093 | 28.261 | 32.134 | 35.391 | 38.284 | 40.832 | 42.905 | 44.901 | 46.801 | 48.734 | 50.414 | 51.671 | 52.927 | 54.470 | 55.639 | 57.059 |
| Caa | 13.180 | 24.159 | 32.976 | 40.138 | 46.319 | 51.013 | 54.743 | 58.270 | 62.297 | 65.863 | 69.086 | 71.542 | 75.230 | 76.859 | 78.914 | 82.784 | 83.817 | 83.817 | 83.817 | 83.817 |
| Ca-C | 42.703 | 54.997 | 64.204 | 70.828 | 76.339 | 78.015 | 80.615 | 84.024 | 85.163 | 85.163 | 85.163 | 85.163 | 85.163 | 85.163 | 85.163 | 85.163 | 85.163 | 85.163 | n.a. | n.a. |
| Inv Grade | 0.099 | 0.296 | 0.559 | 0.856 | 1.185 | 1.523 | 1.861 | 2.205 | 2.544 | 2.889 | 3.237 | 3.591 | 3.982 | 4.385 | 4.816 | 5.291 | 5.808 | 6.374 | 6.886 | 7.349 |
| Spec Grade | 4.671 | 9.662 | 14.465 | 18.691 | 22.347 | 25.575 | 28.428 | 30.906 | 33.126 | 35.130 | 36.875 | 38.566 | 40.186 | 41.841 | 43.419 | 44.711 | 45.886 | 47.031 | 48.252 | 49.242 |
| All rated | 1.855 | 3.798 | 5.616 | 7.172 | 8.492 | 9.628 | 10.607 | 11.454 | 12.205 | 12.888 | 13.499 | 14.087 | 14.679 | 15.273 | 15.864 | 16.434 | 17.014 | 17.625 | 18.201 | 18.704 |

* Data in percent

EXHIBIT 35

Average Cumulative Issuer-Weighted Global Default Rates by Alphanumeric Rating, 1983-2013*

| Rating | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Aaa | 0.000 | 0.016 | 0.016 | 0.048 | 0.085 | 0.130 | 0.179 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 | 0.183 |
| Aa1 | 0.000 | 0.000 | 0.000 | 0.087 | 0.161 | 0.243 | 0.249 | 0.249 | 0.249 | 0.249 | 0.249 | 0.249 | 0.394 | 0.572 | 0.774 | 0.847 | 0.847 | 0.847 | 0.847 | 0.847 |
| Aa2 | 0.000 | 0.017 | 0.152 | 0.329 | 0.496 | 0.623 | 0.765 | 0.923 | 1.100 | 1.298 | 1.517 | 1.761 | 1.978 | 2.078 | 2.189 | 2.397 | 2.675 | 2.986 | 3.426 | 3.703 |
| Aa3 | 0.051 | 0.148 | 0.222 | 0.353 | 0.545 | 0.675 | 0.784 | 0.864 | 0.942 | 1.075 | 1.265 | 1.551 | 1.814 | 2.000 | 2.144 | 2.281 | 2.477 | 2.894 | 3.522 | 4.155 |
| A1 | 0.081 | 0.252 | 0.548 | 0.851 | 1.160 | 1.442 | 1.676 | 1.878 | 2.090 | 2.330 | 2.596 | 2.869 | 3.174 | 3.567 | 3.998 | 4.476 | 4.970 | 5.438 | 5.694 | 5.967 |
| A2 | 0.068 | 0.212 | 0.433 | 0.691 | 0.991 | 1.415 | 1.908 | 2.447 | 2.952 | 3.421 | 3.800 | 4.085 | 4.396 | 4.790 | 5.277 | 5.834 | 6.658 | 7.532 | 8.171 | 8.802 |
| A3 | 0.060 | 0.219 | 0.533 | 0.819 | 1.174 | 1.521 | 1.937 | 2.426 | 2.910 | 3.272 | 3.601 | 4.001 | 4.414 | 4.847 | 5.453 | 6.047 | 6.554 | 7.367 | 8.177 | 9.010 |
| Baa1 | 0.156 | 0.426 | 0.704 | 0.995 | 1.332 | 1.667 | 1.987 | 2.223 | 2.417 | 2.661 | 2.989 | 3.463 | 4.012 | 4.548 | 5.222 | 6.114 | 6.864 | 7.327 | 7.480 | 7.697 |
| Baa2 | 0.169 | 0.488 | 0.860 | 1.382 | 1.843 | 2.370 | 2.852 | 3.298 | 3.838 | 4.501 | 5.336 | 6.210 | 7.014 | 7.773 | 8.523 | 9.216 | 10.024 | 10.963 | 11.961 | 12.519 |
| Baa3 | 0.257 | 0.764 | 1.374 | 1.985 | 2.762 | 3.505 | 4.240 | 5.138 | 5.996 | 6.871 | 7.586 | 8.085 | 9.005 | 10.062 | 10.869 | 11.930 | 13.069 | 14.116 | 15.177 | 16.125 |
| Ba1 | 0.674 | 2.012 | 3.704 | 5.575 | 7.352 | 9.238 | 10.698 | 11.768 | 12.747 | 13.873 | 15.179 | 16.696 | 17.756 | 18.636 | 20.045 | 21.203 | 22.475 | 24.077 | 26.420 | 27.943 |
| Ba2 | 0.754 | 2.113 | 3.796 | 5.634 | 7.287 | 8.577 | 9.936 | 11.433 | 12.793 | 14.010 | 15.565 | 17.348 | 19.256 | 21.039 | 23.249 | 24.834 | 26.231 | 26.704 | 26.901 | 26.901 |
| Ba3 | 1.733 | 4.967 | 8.819 | 12.835 | 16.037 | 18.978 | 21.599 | 24.294 | 26.881 | 29.486 | 31.597 | 33.462 | 35.568 | 38.465 | 40.474 | 42.427 | 44.027 | 45.488 | 47.041 | 48.470 |
| B1 | 2.321 | 6.467 | 10.929 | 14.911 | 18.984 | 23.029 | 27.320 | 30.836 | 33.897 | 36.847 | 39.268 | 41.815 | 44.394 | 47.005 | 48.628 | 50.099 | 51.927 | 53.542 | 55.476 | 58.031 |
| B2 | 3.544 | 8.926 | 14.356 | 19.354 | 23.663 | 27.703 | 31.287 | 34.370 | 37.531 | 39.957 | 41.701 | 42.951 | 44.278 | 45.735 | 48.034 | 49.944 | 51.029 | 53.668 | 54.070 | 54.070 |
| B3 | 5.979 | 12.993 | 19.981 | 25.820 | 30.954 | 35.616 | 39.353 | 42.598 | 44.816 | 46.837 | 48.958 | 51.419 | 52.890 | 54.139 | 55.049 | 55.049 | 55.295 | 55.705 | 55.705 | 55.705 |
| Caa1 | 7.531 | 17.062 | 25.665 | 33.032 | 39.856 | 44.764 | 48.182 | 51.269 | 55.516 | 59.525 | 64.526 | 69.830 | 78.151 | 82.349 | 82.349 | n.a. | n.a. | n.a. | n.a. | n.a. |
| Caa2 | 17.495 | 29.376 | 38.591 | 45.673 | 50.954 | 55.835 | 59.953 | 63.632 | 67.434 | 70.274 | 72.503 | 72.503 | 72.503 | 72.503 | 75.069 | 79.645 | 80.866 | 80.866 | 80.866 | 80.866 |
| Caa3 | 29.109 | 44.784 | 53.546 | 59.992 | 66.052 | 68.718 | 72.313 | 76.667 | 79.631 | 82.616 | 82.616 | 82.616 | 82.616 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Ca-C | 42.703 | 54.997 | 64.204 | 70.828 | 76.339 | 78.015 | 80.615 | 84.024 | 85.163 | 85.163 | 85.163 | 85.163 | 85.163 | 85.163 | 85.163 | 85.163 | 85.163 | 85.163 | n.a. | n.a. |
| Inv Grade | 0.099 | 0.296 | 0.559 | 0.856 | 1.185 | 1.523 | 1.861 | 2.205 | 2.544 | 2.889 | 3.237 | 3.591 | 3.982 | 4.385 | 4.816 | 5.291 | 5.808 | 6.374 | 6.886 | 7.349 |
| Spec Grade | 4.671 | 9.662 | 14.465 | 18.691 | 22.347 | 25.575 | 28.428 | 30.906 | 33.126 | 35.130 | 36.875 | 38.566 | 40.186 | 41.841 | 43.419 | 44.711 | 45.886 | 47.031 | 48.252 | 49.242 |
| All rated | 1.855 | 3.798 | 5.616 | 7.172 | 8.492 | 9.628 | 10.607 | 11.454 | 12.205 | 12.888 | 13.499 | 14.087 | 14.679 | 15.273 | 15.864 | 16.434 | 17.014 | 17.625 | 18.201 | 18.704 |

* Data in percent

EXHIBIT 36

Average Cumulative Issuer-Weighted Global Default Rates by Alphanumeric Rating, 1998-2013*

| Rating/Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Aaa | 0.000 | 0.036 | 0.036 | 0.036 | 0.036 | 0.036 | 0.036 | 0.036 | 0.036 | 0.036 |
| Aa1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.059 | 0.198 | 0.211 | 0.211 | 0.211 | 0.211 |
| Aa2 | 0.000 | 0.014 | 0.212 | 0.443 | 0.601 | 0.787 | 1.009 | 1.275 | 1.597 | 1.991 |
| Aa3 | 0.054 | 0.159 | 0.226 | 0.376 | 0.649 | 0.848 | 1.071 | 1.216 | 1.392 | 1.627 |
| A1 | 0.145 | 0.338 | 0.632 | 1.028 | 1.514 | 1.966 | 2.394 | 2.790 | 3.185 | 3.652 |
| A2 | 0.110 | 0.321 | 0.616 | 0.881 | 1.274 | 1.887 | 2.544 | 3.325 | 4.192 | 5.161 |
| A3 | 0.081 | 0.267 | 0.650 | 1.038 | 1.498 | 1.826 | 2.326 | 2.979 | 3.737 | 4.451 |
| Baa1 | 0.193 | 0.496 | 0.767 | 1.013 | 1.268 | 1.587 | 1.872 | 2.169 | 2.415 | 2.807 |
| Baa2 | 0.202 | 0.524 | 0.864 | 1.268 | 1.581 | 1.966 | 2.312 | 2.608 | 3.008 | 3.433 |
| Baa3 | 0.282 | 0.785 | 1.384 | 1.963 | 2.649 | 3.096 | 3.680 | 4.608 | 5.576 | 6.852 |
| Ba1 | 0.443 | 1.750 | 3.207 | 4.530 | 6.012 | 7.438 | 8.741 | 9.877 | 11.217 | 12.874 |
| Ba2 | 0.692 | 1.630 | 2.802 | 4.175 | 5.305 | 6.278 | 7.207 | 8.776 | 10.003 | 11.710 |
| Ba3 | 1.112 | 3.256 | 5.816 | 8.667 | 10.552 | 12.316 | 13.870 | 16.132 | 18.791 | 21.448 |
| B1 | 1.530 | 5.054 | 9.013 | 12.393 | 15.225 | 17.941 | 20.911 | 23.653 | 26.355 | 29.382 |
| B2 | 3.079 | 8.077 | 13.332 | 18.309 | 22.078 | 25.726 | 28.997 | 31.799 | 34.865 | 37.162 |
| B3 | 4.415 | 10.949 | 18.020 | 23.650 | 28.414 | 32.656 | 36.212 | 39.472 | 42.208 | 44.213 |
| Caa1 | 7.543 | 17.056 | 25.625 | 32.891 | 39.705 | 44.690 | 48.154 | 51.262 | 55.063 | 59.180 |
| Caa2 | 17.230 | 30.114 | 40.016 | 46.962 | 52.471 | 57.257 | 61.514 | 65.049 | 67.921 | 67.921 |
| Caa3 | 29.484 | 45.153 | 54.019 | 60.382 | 66.333 | 68.116 | 70.737 | 74.118 | 75.167 | 75.167 |
| Ca-C | 47.423 | 60.691 | 70.381 | 76.338 | 80.513 | 81.268 | 82.462 | 85.179 | 86.735 | 86.735 |
| Inv Grade | 0.136 | 0.368 | 0.661 | 0.974 | 1.331 | 1.690 | 2.082 | 2.532 | 3.028 | 3.599 |
| Spec Grade | 4.809 | 9.960 | 14.883 | 19.013 | 22.300 | 25.097 | 27.544 | 29.887 | 32.206 | 34.355 |
| All rated | 2.052 | 4.197 | 6.185 | 7.807 | 9.102 | 10.185 | 11.140 | 12.069 | 12.991 | 13.900 |

* Data in percent. This table provides the average cumulative default rates after Moody's introduced the modified ratings within the Caa category in 1997.

EXHIBIT 37

Average Cumulative Issuer-Weighted Global Default Rates by Broad Industry Group, 1970-2013*

| Broad Industry Group | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| Banking | 0.602 | 1.250 | 1.921 | 2.551 | 3.125 | 3.677 | 4.187 | 4.702 | 5.194 | 5.697 |
| Capital Industries | 2.204 | 4.611 | 6.913 | 8.990 | 10.813 | 12.430 | 13.894 | 15.254 | 16.513 | 17.667 |
| Consumer Industries | 2.583 | 5.293 | 7.802 | 9.971 | 11.802 | 13.398 | 14.786 | 15.983 | 17.120 | 18.108 |
| Energy & Environment | 1.587 | 3.139 | 4.490 | 5.604 | 6.585 | 7.431 | 8.126 | 8.694 | 9.248 | 9.759 |
| Non-Bank Finance | 0.797 | 1.659 | 2.501 | 3.253 | 3.927 | 4.593 | 5.258 | 5.916 | 6.613 | 7.365 |
| Media & Publishing | 4.008 | 8.115 | 12.056 | 15.412 | 18.481 | 21.081 | 23.143 | 24.873 | 26.403 | 27.902 |
| Retail & Distribution | 2.839 | 5.838 | 8.725 | 11.197 | 13.388 | 15.289 | 16.830 | 18.240 | 19.660 | 21.029 |
| Government Related Issuers | 0.242 | 0.517 | 0.679 | 0.797 | 0.932 | 0.944 | 0.944 | 0.944 | 0.944 | 0.944 |
| Technology | 1.882 | 3.818 | 5.527 | 6.863 | 7.873 | 8.627 | 9.263 | 9.748 | 10.145 | 10.511 |
| Transportation | 2.426 | 4.536 | 6.392 | 8.002 | 9.375 | 10.590 | 11.608 | 12.573 | 13.502 | 14.491 |
| Utilities | 0.152 | 0.299 | 0.437 | 0.566 | 0.695 | 0.825 | 0.942 | 1.046 | 1.158 | 1.277 |

* Data in percent

EXHIBIT 38

Annual Default Rates by Broad Industry Group, 1970-2013*

| Year | Banking | Capital Industries | Consumer Industries | Energy & Environment | Non-Bank Finance | Media & Publishing | Retail & Distribution | Gov't-Related Issuers | Technology | Transportation | Utilities |
|------|---------|--------------------|---------------------|----------------------|------------------|--------------------|-----------------------|-----------------------|------------|----------------|-----------|
| 1970 | n.a. | 0.000 | 0.926 | 0.000 | 16.667 | 0.000 | 0.000 | 0.000 | 0.833 | 15.385 | 0.000 |
| 1971 | n.a. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 2.296 | 0.000 |
| 1972 | n.a. | 0.356 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 3.030 | 0.000 |
| 1973 | n.a. | 0.362 | 0.000 | 0.000 | 0.000 | 0.000 | 2.985 | 0.000 | 0.000 | 1.600 | 0.000 |
| 1974 | n.a. | 0.357 | 0.000 | 0.000 | 0.000 | 0.000 | 3.032 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1975 | 0.000 | 0.372 | 0.769 | 0.000 | 0.000 | 4.167 | 1.538 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1976 | 0.000 | 0.356 | 0.735 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1977 | 0.000 | 0.000 | 0.746 | 0.000 | 0.000 | 4.000 | 0.000 | 0.000 | 0.000 | 1.770 | 0.000 |
| 1978 | 0.000 | 0.000 | 0.746 | 1.163 | 0.000 | 0.000 | 1.613 | 0.000 | 0.719 | 0.000 | 0.000 |
| 1979 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.704 | 0.000 | 0.000 |
| 1980 | 0.000 | 0.379 | 0.000 | 1.111 | 0.000 | 0.000 | 0.000 | 0.000 | 0.685 | 0.917 | 0.000 |
| 1981 | 0.000 | 0.370 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.901 | 0.000 |
| 1982 | 0.000 | 1.118 | 0.000 | 0.909 | 0.000 | 4.000 | 4.738 | 0.000 | 1.829 | 1.933 | 0.000 |
| 1983 | 0.000 | 1.430 | 0.565 | 2.363 | 0.000 | 0.000 | 0.000 | 0.000 | 0.613 | 3.874 | 0.000 |
| 1984 | 0.000 | 0.716 | 1.081 | 3.864 | 0.000 | 0.000 | 0.000 | 0.000 | 1.768 | 1.020 | 0.000 |
| 1985 | 0.000 | 1.225 | 1.391 | 3.316 | 1.220 | 0.000 | 0.000 | 0.000 | 0.556 | 0.971 | 0.000 |
| 1986 | 0.000 | 3.415 | 1.588 | 7.018 | 0.000 | 3.450 | 0.990 | 0.000 | 0.518 | 2.770 | 0.000 |
| 1987 | 0.410 | 2.459 | 2.471 | 5.356 | 0.000 | 1.333 | 1.828 | 0.000 | 0.452 | 0.893 | 0.426 |
| 1988 | 2.053 | 0.770 | 2.593 | 1.385 | 0.625 | 3.309 | 1.667 | 0.000 | 1.195 | 0.000 | 0.424 |
| 1989 | 2.195 | 3.233 | 4.334 | 0.000 | 3.507 | 5.679 | 0.794 | 10.526 | 1.200 | 1.802 | 0.000 |
| 1990 | 2.775 | 4.968 | 8.619 | 1.303 | 0.000 | 7.297 | 5.635 | 0.000 | 2.402 | 5.744 | 0.000 |
| 1991 | 2.148 | 3.600 | 3.725 | 1.303 | 0.541 | 4.094 | 10.116 | 0.000 | 1.696 | 9.102 | 1.329 |
| 1992 | 0.541 | 2.040 | 3.030 | 0.649 | 0.529 | 7.132 | 2.467 | 0.000 | 1.273 | 0.000 | 0.873 |
| 1993 | 0.493 | 1.673 | 1.161 | 1.254 | 0.000 | 2.778 | 2.497 | 0.000 | 0.452 | 0.000 | 0.000 |
| 1994 | 0.000 | 0.432 | 0.974 | 0.617 | 0.000 | 1.282 | 2.752 | 0.000 | 1.232 | 1.914 | 0.000 |
| 1995 | 0.000 | 1.360 | 2.939 | 0.565 | 1.282 | 0.000 | 1.873 | 0.000 | 0.733 | 0.926 | 0.000 |

EXHIBIT 38

Annual Default Rates by Broad Industry Group, 1970-2013*

| Year | Banking | Capital Industries | Consumer Industries | Energy & Environment | Non-Bank Finance | Media & Publishing | Retail & Distribution | Gov't-Related Issuers | Technology | Transportation | Utilities |
|------|---------|--------------------|---------------------|----------------------|------------------|--------------------|-----------------------|-----------------------|------------|----------------|-----------|
| 1996 | 0.000 | 0.711 | 1.316 | 1.000 | 0.000 | 2.655 | 0.621 | 0.000 | 0.704 | 0.000 | 0.000 |
| 1997 | 0.000 | 0.483 | 2.302 | 0.000 | 0.313 | 1.408 | 3.452 | 0.000 | 0.594 | 0.855 | 0.000 |
| 1998 | 0.149 | 1.109 | 2.468 | 1.497 | 1.051 | 2.821 | 5.917 | 0.000 | 0.774 | 0.763 | 0.000 |
| 1999 | 0.281 | 2.364 | 4.730 | 5.708 | 0.702 | 3.318 | 2.880 | 2.564 | 2.013 | 5.511 | 0.339 |
| 2000 | 0.000 | 4.375 | 6.805 | 1.360 | 0.923 | 1.848 | 5.925 | 0.000 | 2.775 | 4.198 | 0.000 |
| 2001 | 0.136 | 7.720 | 5.899 | 2.062 | 1.380 | 3.715 | 8.356 | 0.000 | 7.963 | 4.317 | 0.602 |
| 2002 | 0.589 | 2.982 | 2.184 | 4.250 | 0.459 | 10.304 | 3.849 | 0.000 | 9.180 | 6.460 | 0.571 |
| 2003 | 0.147 | 2.682 | 2.267 | 1.315 | 0.659 | 3.822 | 4.496 | 0.000 | 4.680 | 3.376 | 0.563 |
| 2004 | 0.000 | 1.596 | 2.295 | 0.310 | 0.230 | 1.609 | 1.187 | 0.000 | 0.849 | 1.794 | 0.265 |
| 2005 | 0.131 | 1.384 | 0.727 | 0.968 | 0.220 | 0.546 | 1.895 | 0.000 | 0.245 | 4.241 | 0.263 |
| 2006 | 0.000 | 1.388 | 1.063 | 0.000 | 0.437 | 1.526 | 1.140 | 0.000 | 0.792 | 2.587 | 0.000 |
| 2007 | 0.000 | 0.754 | 0.686 | 0.000 | 0.000 | 1.040 | 1.837 | 0.000 | 0.477 | 0.000 | 0.000 |
| 2008 | 1.094 | 3.256 | 4.028 | 1.712 | 2.191 | 4.518 | 2.287 | 0.000 | 1.263 | 3.190 | 0.000 |
| 2009 | 1.853 | 10.794 | 8.044 | 2.033 | 3.786 | 22.966 | 4.821 | 0.000 | 5.766 | 6.129 | 0.253 |
| 2010 | 0.697 | 1.461 | 1.906 | 2.313 | 0.945 | 3.783 | 3.897 | 0.000 | 1.313 | 0.917 | 0.242 |
| 2011 | 0.807 | 0.711 | 0.740 | 1.438 | 0.668 | 1.749 | 2.463 | 0.000 | 0.000 | 6.125 | 0.000 |
| 2012 | 1.076 | 1.367 | 2.209 | 1.612 | 0.653 | 4.347 | 1.649 | 0.000 | 1.401 | 0.901 | 0.448 |
| 2013 | 1.871 | 1.444 | 1.653 | 1.925 | 0.415 | 4.787 | 1.042 | 0.000 | 0.911 | 1.747 | 0.000 |

* Data in percent

EXHIBIT 39

Annual Volume-weighted Corporate Bond Default Rates by Letter Rating, 1994-2013*

| Year | Aaa | Aa | A | Baa | Ba | B | Caa-C | Inv-Grade | Spec-Grade | All- Rated |
|--------|-------|-------|-------|-------|-------|--------|--------|-----------|------------|------------|
| 1994 | 0.000 | 0.000 | 0.000 | 0.000 | 0.141 | 1.971 | 2.797 | 0.000 | 1.220 | 0.249 |
| 1995 | 0.000 | 0.000 | 0.000 | 0.000 | 0.567 | 4.651 | 6.876 | 0.000 | 3.088 | 0.716 |
| 1996 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.624 | 22.529 | 0.000 | 2.309 | 0.659 |
| 1997 | 0.000 | 0.000 | 0.000 | 0.000 | 0.051 | 3.064 | 7.111 | 0.000 | 1.950 | 0.504 |
| 1998 | 0.000 | 0.000 | 0.000 | 0.000 | 0.654 | 3.023 | 13.225 | 0.000 | 2.872 | 0.853 |
| 1999 | 0.000 | 0.000 | 0.000 | 0.140 | 1.143 | 5.483 | 20.515 | 0.031 | 5.783 | 1.114 |
| 2000 | 0.000 | 0.000 | 0.000 | 0.623 | 1.039 | 6.069 | 20.723 | 0.137 | 5.857 | 1.350 |
| 2001 | 0.000 | 0.000 | 0.692 | 0.957 | 1.178 | 13.898 | 55.371 | 0.532 | 15.646 | 3.006 |
| 2002 | 0.000 | 0.000 | 2.718 | 2.616 | 4.872 | 15.699 | 79.453 | 1.959 | 21.956 | 5.073 |
| 2003 | 0.000 | 0.000 | 0.000 | 0.000 | 3.622 | 2.560 | 17.062 | 0.000 | 5.669 | 0.991 |
| 2004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.258 | 9.190 | 0.000 | 1.879 | 0.328 |
| 2005 | 0.000 | 0.000 | 0.000 | 0.201 | 0.000 | 1.639 | 16.473 | 0.073 | 3.787 | 0.754 |
| 2006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.033 | 1.062 | 4.008 | 0.000 | 1.050 | 0.212 |
| 2007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 3.655 | 0.000 | 0.602 | 0.117 |
| 2008 | 0.000 | 0.816 | 2.370 | 1.108 | 8.097 | 1.287 | 11.019 | 1.466 | 5.807 | 2.221 |
| 2009 | 0.000 | 0.000 | 0.014 | 0.642 | 2.599 | 6.416 | 40.318 | 0.187 | 16.759 | 2.808 |
| 2010 | 0.000 | 0.000 | 0.151 | 0.000 | 0.000 | 0.083 | 6.283 | 0.072 | 1.698 | 0.344 |
| 2011 | 0.000 | 0.000 | 0.000 | 0.005 | 0.224 | 0.047 | 8.473 | 0.002 | 1.766 | 0.335 |
| 2012 | 0.000 | 0.000 | 0.000 | 0.018 | 0.000 | 0.218 | 10.284 | 0.007 | 1.892 | 0.368 |
| 2013 | 0.000 | 0.000 | 0.000 | 0.069 | 0.000 | 0.271 | 6.145 | 0.029 | 1.144 | 0.261 |
| Mean | 0.000 | 0.041 | 0.297 | 0.319 | 1.211 | 3.466 | 18.075 | 0.225 | 5.137 | 1.113 |
| Median | 0.000 | 0.000 | 0.000 | 0.003 | 0.183 | 1.805 | 10.651 | 0.004 | 2.590 | 0.687 |
| StDev | 0.000 | 0.182 | 0.786 | 0.641 | 2.108 | 4.391 | 19.413 | 0.529 | 5.948 | 1.257 |
| Min | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 2.797 | 0.000 | 0.602 | 0.117 |
| Max | 0.000 | 0.816 | 2.718 | 2.616 | 8.097 | 15.699 | 79.453 | 1.959 | 21.956 | 5.073 |

* Data in percent

EXHIBIT 40

Average Volume-weighted Corporate Bond Default Rates by Letter Rating, 1994-2013*

| Rating / Year | 1 | 2 | 3 | 4 | 5 |
|---------------|--------|--------|--------|--------|--------|
| Aaa | 0.000 | 0.049 | 0.049 | 0.049 | 0.049 |
| Aa | 0.028 | 0.082 | 0.123 | 0.179 | 0.255 |
| A | 0.348 | 0.688 | 0.978 | 1.193 | 1.477 |
| Baa | 0.276 | 0.595 | 0.822 | 1.211 | 1.776 |
| Ba | 0.944 | 2.463 | 4.023 | 5.579 | 6.456 |
| B | 3.348 | 8.054 | 12.203 | 15.643 | 17.722 |
| Caa-C | 16.468 | 26.395 | 33.362 | 36.198 | 38.041 |
| Inv-Grade | 0.247 | 0.507 | 0.711 | 0.932 | 1.238 |
| Spec-Grade | 4.731 | 9.116 | 12.750 | 15.347 | 16.906 |
| All Rated | 1.082 | 2.100 | 2.927 | 3.575 | 4.106 |

* Data in percent

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

1/1/70

| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 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 | 79 | 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 | 1.408 | 1.408 | 1.408 | 2.880 | 2.880 | 2.880 | 2.880 |
| A | 256 | 0.000 | 0.000 | 0.000 | 0.410 | 0.410 | 0.828 | 0.828 | 0.828 | 0.828 | 0.828 | 1.281 | 1.281 | 1.281 | 1.281 | 1.281 | 1.281 | 1.780 | 1.780 | 2.842 | 2.842 |
| Baa | 372 | 0.543 | 0.543 | 0.543 | 1.123 | 1.415 | 1.415 | 1.728 | 2.368 | 3.038 | 3.038 | 3.396 | 3.396 | 4.584 | 4.992 | 5.418 | 5.864 | 7.256 | 8.313 | 9.398 | 9.994 |
| Ba | 238 | 4.237 | 5.120 | 5.565 | 6.050 | 7.042 | 8.072 | 8.606 | 9.208 | 10.456 | 10.456 | 10.456 | 12.020 | 14.560 | 15.489 | 15.489 | 17.575 | 21.076 | 23.608 | 23.608 | 25.077 |
| B | 36 | 19.444 | 19.444 | 22.321 | 22.321 | 22.321 | 22.321 | 22.321 | 22.321 | 22.321 | 22.321 | 22.321 | 22.321 | 30.498 | 30.498 | 30.498 | 30.498 | 36.290 | 36.290 | 36.290 | 36.290 |
| Caa-C | 16 | 50.000 | 56.250 | 75.000 | 81.250 | 81.250 | 81.250 | 81.250 | 90.625 | 90.625 | 90.625 | 90.625 | 90.625 | 90.625 | 90.625 | 90.625 | 90.625 | 90.625 | 90.625 | 90.625 | 90.625 |
| IG | 746 | 0.270 | 0.270 | 0.270 | 0.694 | 0.836 | 0.983 | 1.132 | 1.435 | 1.746 | 1.746 | 2.076 | 2.076 | 2.596 | 2.948 | 3.130 | 3.316 | 4.275 | 4.887 | 5.725 | 5.945 |
| SG | 290 | 8.678 | 9.764 | 11.601 | 12.382 | 13.192 | 14.035 | 14.471 | 15.443 | 16.450 | 16.450 | 16.450 | 17.693 | 21.008 | 21.733 | 21.733 | 23.347 | 26.969 | 28.932 | 28.932 | 30.097 |
| All | 1036 | 2.621 | 2.918 | 3.420 | 3.939 | 4.255 | 4.580 | 4.801 | 5.261 | 5.734 | 5.734 | 5.989 | 6.250 | 7.337 | 7.757 | 7.903 | 8.350 | 9.752 | 10.581 | 11.265 | 11.628 |

1/1/71

| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 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 | 0.000 | 2.703 | 2.703 | 2.703 | 2.703 |
| Aa | 76 | 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 | 1.754 |
| A | 284 | 0.000 | 0.000 | 0.364 | 0.364 | 0.734 | 0.734 | 0.734 | 0.734 | 0.734 | 1.131 | 1.131 | 1.538 | 1.948 | 1.948 | 1.948 | 2.382 | 2.382 | 3.299 | 3.299 | 3.299 |
| Baa | 398 | 0.000 | 0.000 | 0.534 | 0.802 | 1.075 | 1.366 | 1.966 | 2.595 | 2.595 | 2.930 | 2.930 | 4.059 | 4.445 | 4.849 | 5.272 | 6.588 | 7.577 | 8.592 | 9.143 | 10.308 |
| Ba | 228 | 0.885 | 1.332 | 1.815 | 2.810 | 3.844 | 4.381 | 4.986 | 6.241 | 6.241 | 6.241 | 7.798 | 10.322 | 11.247 | 11.247 | 13.311 | 17.937 | 20.487 | 20.487 | 21.959 | 21.959 |
| B | 27 | 0.000 | 3.846 | 3.846 | 3.846 | 3.846 | 3.846 | 3.846 | 3.846 | 3.846 | 3.846 | 3.846 | 15.865 | 15.865 | 15.865 | 15.865 | 23.514 | 23.514 | 23.514 | 23.514 | 23.514 |
| Caa-C | 8 | 12.500 | 50.000 | 62.500 | 62.500 | 62.500 | 62.500 | 81.250 | 81.250 | 81.250 | 81.250 | 81.250 | 81.250 | 81.250 | 81.250 | 81.250 | 81.250 | 81.250 | 81.250 | 81.250 | 81.250 |
| IG | 798 | 0.000 | 0.000 | 0.392 | 0.523 | 0.793 | 0.931 | 1.213 | 1.502 | 1.502 | 1.809 | 1.809 | 2.457 | 2.785 | 2.955 | 3.128 | 3.844 | 4.412 | 5.189 | 5.394 | 6.032 |
| SG | 263 | 1.155 | 3.112 | 3.942 | 4.806 | 5.706 | 6.173 | 7.216 | 8.295 | 8.295 | 8.295 | 9.620 | 13.174 | 13.950 | 13.950 | 15.671 | 20.478 | 22.588 | 22.588 | 23.837 | 23.837 |
| All | 1061 | 0.285 | 0.766 | 1.263 | 1.565 | 1.980 | 2.194 | 2.637 | 3.093 | 3.093 | 3.338 | 3.590 | 4.772 | 5.177 | 5.317 | 5.748 | 7.098 | 7.894 | 8.549 | 8.897 | 9.444 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/72 | | | | | | | | | | | | | | | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 41 | 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 | 2.632 | 2.632 | 2.632 | 2.632 | 2.632 |
| Aa | 80 | 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 | 1.639 | 1.639 |
| A | 306 | 0.000 | 0.336 | 0.336 | 0.336 | 0.336 | 0.336 | 0.336 | 0.336 | 0.336 | 0.336 | 0.710 | 1.088 | 1.088 | 1.088 | 1.487 | 1.487 | 2.332 | 2.332 | 2.800 | 3.288 |
| Baa | 431 | 0.000 | 0.489 | 0.735 | 1.246 | 1.513 | 2.061 | 2.639 | 2.639 | 3.274 | 3.274 | 3.977 | 4.337 | 5.089 | 5.479 | 6.693 | 7.604 | 8.542 | 9.576 | 11.201 | 14.023 |
| Ba | 224 | 0.000 | 0.476 | 1.455 | 2.474 | 3.001 | 3.589 | 4.810 | 4.810 | 4.810 | 6.291 | 9.477 | 10.348 | 10.348 | 13.240 | 17.526 | 19.852 | 19.852 | 21.188 | 22.647 | 28.876 |
| B | 29 | 6.897 | 6.897 | 6.897 | 6.897 | 6.897 | 6.897 | 6.897 | 6.897 | 6.897 | 6.897 | 17.850 | 17.850 | 17.850 | 17.850 | 25.318 | 25.318 | 25.318 | 25.318 | 25.318 | 25.318 |
| Caa-C | 8 | 37.500 | 50.000 | 50.000 | 50.000 | 50.000 | 66.667 | 66.667 | 66.667 | 66.667 | 66.667 | 66.667 | 66.667 | 66.667 | 66.667 | 66.667 | 66.667 | 66.667 | 66.667 | 66.667 | 66.667 |
| IG | 858 | 0.000 | 0.362 | 0.484 | 0.733 | 0.861 | 1.121 | 1.389 | 1.389 | 1.673 | 1.673 | 2.125 | 2.430 | 2.746 | 2.907 | 3.570 | 4.097 | 4.819 | 5.207 | 6.205 | 7.445 |
| SG | 261 | 1.922 | 2.734 | 3.578 | 4.459 | 4.914 | 5.920 | 6.963 | 6.963 | 6.963 | 8.216 | 12.233 | 12.965 | 12.965 | 15.405 | 19.910 | 21.865 | 21.865 | 23.014 | 24.297 | 29.814 |
| All | 1119 | 0.451 | 0.917 | 1.200 | 1.589 | 1.788 | 2.203 | 2.629 | 2.629 | 2.858 | 3.093 | 4.195 | 4.573 | 4.835 | 5.370 | 6.625 | 7.364 | 7.975 | 8.467 | 9.495 | 11.273 |
| 1/1/73 | | | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 41 | 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 | 2.632 | 2.632 | 2.632 | 2.632 | 2.632 | 2.632 |
| Aa | 83 | 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 | 1.563 | 1.563 | 1.563 |
| A | 313 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.361 | 0.725 | 0.725 | 0.725 | 1.112 | 1.112 | 1.933 | 1.933 | 2.383 | 2.855 | 3.335 |
| Baa | 441 | 0.461 | 0.693 | 1.175 | 1.425 | 1.940 | 2.484 | 2.484 | 3.081 | 3.081 | 3.745 | 4.424 | 5.136 | 5.874 | 7.024 | 7.881 | 8.763 | 9.742 | 11.801 | 13.966 | 13.966 |
| Ba | 205 | 0.000 | 1.018 | 2.080 | 2.630 | 3.239 | 4.496 | 4.496 | 4.496 | 5.994 | 10.008 | 10.874 | 10.874 | 12.770 | 17.027 | 20.521 | 20.521 | 21.824 | 23.245 | 30.613 | 32.155 |
| B | 27 | 3.846 | 3.846 | 3.846 | 3.846 | 3.846 | 3.846 | 3.846 | 3.846 | 3.846 | 15.158 | 15.158 | 15.158 | 15.158 | 22.871 | 22.871 | 22.871 | 22.871 | 22.871 | 22.871 | 22.871 |
| Caa-C | 6 | 37.500 | 37.500 | 37.500 | 37.500 | 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 |
| IG | 878 | 0.230 | 0.346 | 0.584 | 0.705 | 0.953 | 1.209 | 1.209 | 1.480 | 1.480 | 1.912 | 2.351 | 2.653 | 2.962 | 3.600 | 4.105 | 4.798 | 5.169 | 6.318 | 7.313 | 7.517 |
| SG | 238 | 1.280 | 2.164 | 3.088 | 3.565 | 4.613 | 5.695 | 5.695 | 5.695 | 6.974 | 11.740 | 12.475 | 12.475 | 14.096 | 18.614 | 21.583 | 21.583 | 22.719 | 23.986 | 30.602 | 31.990 |
| All | 1116 | 0.453 | 0.729 | 1.107 | 1.301 | 1.704 | 2.117 | 2.117 | 2.339 | 2.567 | 3.752 | 4.239 | 4.492 | 5.009 | 6.225 | 7.087 | 7.677 | 8.152 | 9.308 | 11.028 | 11.381 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/74 | | | | | | | | | | | | | | | | | | | | | |
|--------|------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 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 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 |
| Aa | 91 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.235 | 1.235 | 1.235 | 1.235 | 1.235 | 1.235 | 1.235 | 1.235 | 2.709 | 2.709 | 2.709 | 2.709 |
| A | 311 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.360 | 0.722 | 0.722 | 0.722 | 1.105 | 1.105 | 1.913 | 1.913 | 2.353 | 2.813 | 3.283 | 3.283 |
| Baa | 431 | 0.000 | 0.480 | 0.730 | 1.244 | 1.786 | 1.786 | 2.381 | 2.381 | 3.045 | 3.723 | 4.437 | 5.177 | 5.566 | 6.431 | 7.322 | 8.306 | 9.840 | 12.013 | 12.013 | 12.013 |
| Ba | 197 | 0.513 | 1.601 | 2.166 | 2.793 | 4.090 | 4.090 | 4.090 | 4.851 | 8.921 | 9.805 | 9.805 | 11.704 | 17.935 | 21.390 | 21.390 | 22.723 | 25.585 | 33.014 | 34.572 | 36.441 |
| B | 29 | 7.162 | 7.162 | 7.162 | 7.162 | 7.162 | 7.162 | 7.162 | 11.804 | 22.180 | 22.180 | 22.180 | 22.180 | 29.962 | 29.962 | 29.962 | 29.962 | 29.962 | 29.962 | 29.962 | 29.962 |
| Caa-C | 3 | 0.000 | 0.000 | 0.000 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | | | |
| IG | 877 | 0.000 | 0.234 | 0.354 | 0.598 | 0.849 | 0.849 | 1.116 | 1.116 | 1.685 | 2.117 | 2.415 | 2.720 | 3.035 | 3.533 | 4.216 | 4.582 | 5.518 | 6.495 | 6.695 | 6.695 |
| SG | 229 | 1.332 | 2.270 | 2.756 | 3.825 | 4.928 | 4.928 | 4.928 | 6.226 | 11.030 | 11.778 | 11.778 | 13.412 | 19.682 | 22.647 | 22.647 | 23.801 | 26.384 | 33.146 | 34.568 | 36.246 |
| All | 1106 | 0.274 | 0.648 | 0.841 | 1.239 | 1.648 | 1.648 | 1.868 | 2.094 | 3.386 | 3.868 | 4.118 | 4.630 | 5.832 | 6.684 | 7.268 | 7.737 | 8.878 | 10.573 | 10.922 | 11.119 |
| 1/1/75 | | | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 52 | 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 | 106 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 2.171 | 2.171 | 3.379 | 3.379 | 3.379 | 3.379 | 3.379 |
| A | 324 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.348 | 0.348 | 0.348 | 0.718 | 0.718 | 1.499 | 1.499 | 1.926 | 2.815 | 3.276 | 3.819 | 3.819 |
| Baa | 412 | 0.000 | 0.000 | 0.268 | 0.825 | 0.825 | 1.436 | 1.436 | 2.444 | 3.131 | 3.850 | 4.596 | 4.987 | 5.851 | 6.295 | 7.282 | 9.335 | 11.481 | 11.481 | 11.481 | 11.481 |
| Ba | 200 | 1.029 | 2.117 | 3.266 | 3.886 | 3.886 | 3.886 | 4.593 | 8.443 | 9.275 | 9.275 | 11.089 | 17.015 | 20.310 | 21.465 | 22.732 | 24.087 | 29.744 | 31.208 | 32.928 | 32.928 |
| B | 33 | 6.158 | 6.158 | 6.158 | 9.510 | 9.510 | 9.510 | 13.444 | 22.100 | 22.100 | 22.100 | 22.100 | 28.591 | 28.591 | 28.591 | 28.591 | 38.793 | 48.994 | 48.994 | 48.994 | 48.994 |
| Caa-C | 3 | 0.000 | 0.000 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | | | | |
| IG | 894 | 0.000 | 0.000 | 0.119 | 0.361 | 0.361 | 0.617 | 0.617 | 1.161 | 1.574 | 1.858 | 2.147 | 2.447 | 2.920 | 3.569 | 3.914 | 4.979 | 6.081 | 6.269 | 6.487 | 6.487 |
| SG | 236 | 1.742 | 2.659 | 4.117 | 5.135 | 5.135 | 5.135 | 6.329 | 10.801 | 11.497 | 11.497 | 13.037 | 18.908 | 21.686 | 22.653 | 23.712 | 26.060 | 32.175 | 33.455 | 34.933 | 34.933 |
| All | 1130 | 0.359 | 0.543 | 0.925 | 1.316 | 1.316 | 1.525 | 1.740 | 2.969 | 3.427 | 3.665 | 4.151 | 5.289 | 6.095 | 6.786 | 7.228 | 8.455 | 10.200 | 10.527 | 10.898 | 10.898 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/76 | | | | | | | | | | | | | | | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 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 | 1.695 | 1.695 | 1.695 | 1.695 | 1.695 | 1.695 | 1.695 | 1.695 | 1.695 |
| Aa | 115 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.935 | 0.935 | 0.935 | 0.935 | 0.935 | 0.935 | 2.000 | 2.000 | 3.113 | 3.113 | 3.113 | 3.113 | 3.113 | 3.113 |
| A | 370 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.608 | 0.608 | 0.608 | 1.268 | 1.268 | 2.330 | 2.330 | 3.099 | 4.312 | 4.312 | 4.811 | 4.811 | 5.355 |
| Baa | 371 | 0.000 | 0.288 | 0.584 | 0.584 | 0.906 | 0.906 | 2.344 | 3.078 | 3.849 | 4.650 | 5.068 | 5.984 | 5.984 | 7.038 | 9.239 | 10.963 | 11.548 | 11.548 | 11.548 | 11.548 |
| Ba | 206 | 0.995 | 2.044 | 3.163 | 3.163 | 3.788 | 4.425 | 7.202 | 7.957 | 7.957 | 9.586 | 14.850 | 17.801 | 18.828 | 19.956 | 21.169 | 27.415 | 28.711 | 30.196 | 30.196 | 30.196 |
| B | 27 | 0.000 | 0.000 | 4.000 | 4.000 | 4.000 | 8.800 | 19.529 | 19.529 | 19.529 | 19.529 | 28.471 | 28.471 | 28.471 | 28.471 | 42.776 | 57.082 | 57.082 | 57.082 | 57.082 | 57.082 |
| Caa-C | 3 | 0.000 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | | | | | |
| IG | 922 | 0.000 | 0.112 | 0.226 | 0.226 | 0.346 | 0.346 | 0.986 | 1.504 | 1.773 | 2.048 | 2.475 | 2.925 | 3.543 | 3.871 | 5.051 | 6.101 | 6.280 | 6.488 | 6.488 | 6.725 |
| SG | 236 | 0.868 | 2.248 | 3.691 | 3.691 | 4.235 | 5.355 | 8.959 | 9.618 | 9.618 | 11.064 | 16.540 | 19.160 | 20.068 | 21.067 | 23.245 | 30.089 | 31.294 | 32.669 | 32.669 | 32.669 |
| All | 1158 | 0.175 | 0.536 | 0.907 | 0.907 | 1.104 | 1.306 | 2.464 | 3.004 | 3.228 | 3.689 | 4.892 | 5.659 | 6.317 | 6.736 | 8.044 | 9.853 | 10.163 | 10.519 | 10.519 | 10.722 |
| 1/1/77 | | | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 67 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.695 | 1.695 | 1.695 | 1.695 | 1.695 | 1.695 | 1.695 | 1.695 | 1.695 | 1.695 |
| Aa | 122 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.877 | 0.877 | 0.877 | 0.877 | 0.877 | 0.877 | 1.889 | 1.889 | 2.932 | 2.932 | 2.932 | 2.932 | 2.932 | 2.932 | 2.932 |
| A | 391 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.571 | 0.571 | 0.571 | 1.192 | 1.192 | 2.869 | 2.869 | 3.951 | 5.100 | 5.100 | 5.572 | 5.572 | 6.088 | 6.088 |
| Baa | 355 | 0.294 | 0.595 | 0.595 | 0.595 | 0.595 | 2.054 | 2.798 | 3.581 | 4.398 | 4.825 | 5.754 | 5.754 | 6.826 | 8.506 | 10.244 | 10.830 | 10.830 | 10.830 | 10.830 | 10.830 |
| Ba | 195 | 0.543 | 1.674 | 1.674 | 2.273 | 2.920 | 5.721 | 6.481 | 6.481 | 8.107 | 13.365 | 16.300 | 17.320 | 18.438 | 19.637 | 25.808 | 27.110 | 28.598 | 28.598 | 28.598 | 28.598 |
| B | 31 | 3.226 | 6.563 | 6.563 | 10.625 | 14.881 | 24.895 | 24.895 | 24.895 | 24.895 | 33.240 | 33.240 | 33.240 | 33.240 | 46.592 | 59.944 | 59.944 | 59.944 | 59.944 | 59.944 | 59.944 |
| Caa-C | 3 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | | | | | |
| IG | 935 | 0.109 | 0.220 | 0.220 | 0.220 | 0.220 | 0.840 | 1.343 | 1.604 | 1.872 | 2.287 | 2.724 | 3.629 | 3.948 | 5.091 | 6.107 | 6.281 | 6.484 | 6.484 | 6.714 | 6.714 |
| SG | 229 | 1.360 | 2.788 | 2.788 | 3.843 | 4.955 | 8.551 | 9.209 | 9.209 | 10.638 | 16.052 | 18.633 | 19.527 | 20.509 | 22.643 | 29.341 | 30.539 | 31.901 | 31.901 | 31.901 | 31.901 |
| All | 1164 | 0.352 | 0.713 | 0.713 | 0.906 | 1.103 | 2.232 | 2.757 | 2.977 | 3.426 | 4.599 | 5.345 | 6.246 | 6.654 | 7.923 | 9.678 | 9.980 | 10.327 | 10.327 | 10.525 | 10.525 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/78 | | | | | | | | | | | | | | | | | | | | | |
|--------|------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 71 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.563 | 1.563 | 1.563 | 3.150 | 3.150 | 3.150 | 3.150 | 3.150 | 3.150 | 3.150 | 3.150 |
| Aa | 134 | 0.000 | 0.000 | 0.000 | 0.000 | 0.800 | 0.800 | 0.800 | 0.800 | 0.800 | 0.800 | 1.702 | 1.702 | 1.702 | 1.702 | 1.702 | 1.702 | 1.702 | 1.702 | 1.702 | 1.702 |
| A | 383 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.576 | 0.576 | 0.576 | 1.205 | 1.205 | 2.578 | 2.578 | 4.064 | 4.843 | 4.843 | 5.326 | 5.326 | 5.852 | 5.852 | 5.852 |
| Baa | 341 | 0.000 | 0.000 | 0.000 | 0.000 | 1.415 | 1.777 | 2.540 | 2.938 | 3.353 | 4.684 | 5.144 | 6.171 | 7.779 | 10.009 | 10.571 | 10.571 | 10.571 | 10.571 | 10.571 | 10.571 |
| Ba | 187 | 1.124 | 1.124 | 1.124 | 1.770 | 4.583 | 6.092 | 6.092 | 9.330 | 15.441 | 17.431 | 18.437 | 19.555 | 21.939 | 28.124 | 29.430 | 32.371 | 32.371 | 32.371 | 32.371 | 32.371 |
| B | 37 | 5.405 | 5.405 | 11.712 | 14.982 | 22.375 | 22.375 | 26.941 | 26.941 | 32.561 | 38.692 | 38.692 | 38.692 | 47.450 | 60.587 | 60.587 | 60.587 | 60.587 | 60.587 | 60.587 | 60.587 |
| 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 | | | | | | | |
| IG | 929 | 0.000 | 0.000 | 0.000 | 0.000 | 0.605 | 0.973 | 1.227 | 1.358 | 1.763 | 2.327 | 3.209 | 3.519 | 4.792 | 5.781 | 5.950 | 6.148 | 6.148 | 6.371 | 6.371 | 6.371 |
| SG | 227 | 1.823 | 1.823 | 2.841 | 3.909 | 7.370 | 8.614 | 9.281 | 12.009 | 18.681 | 21.156 | 22.004 | 22.943 | 26.013 | 32.611 | 33.793 | 36.441 | 36.441 | 36.441 | 36.441 | 36.441 |
| All | 1156 | 0.352 | 0.352 | 0.539 | 0.731 | 1.830 | 2.341 | 2.659 | 3.206 | 4.575 | 5.418 | 6.292 | 6.687 | 8.195 | 9.904 | 10.199 | 10.702 | 10.702 | 10.894 | 10.894 | 10.894 |
| 1/1/79 | | | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 75 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.471 | 1.471 | 1.471 | 2.963 | 2.963 | 2.963 | 2.963 | 2.963 | 2.963 | 2.963 | 2.963 | 2.963 |
| Aa | 135 | 0.000 | 0.000 | 0.000 | 0.787 | 0.787 | 0.787 | 0.787 | 0.787 | 0.787 | 1.673 | 1.673 | 1.673 | 1.673 | 1.673 | 1.673 | 1.673 | 1.673 | 1.673 | 1.673 | 1.673 |
| A | 379 | 0.000 | 0.000 | 0.000 | 0.000 | 0.568 | 0.568 | 0.568 | 1.187 | 1.187 | 2.548 | 2.548 | 3.646 | 4.412 | 4.412 | 4.890 | 4.890 | 5.404 | 5.404 | 5.404 | 5.404 |
| Baa | 336 | 0.000 | 0.313 | 0.313 | 1.696 | 2.051 | 2.426 | 2.813 | 2.813 | 4.110 | 4.560 | 5.577 | 8.254 | 10.472 | 11.031 | 11.031 | 11.031 | 11.031 | 11.031 | 11.031 | 11.031 |
| Ba | 207 | 0.513 | 0.513 | 1.072 | 3.478 | 6.061 | 9.475 | 12.261 | 18.888 | 20.543 | 21.388 | 22.324 | 25.377 | 31.697 | 32.798 | 35.242 | 35.242 | 35.242 | 35.242 | 35.242 | 35.242 |
| B | 34 | 0.000 | 6.452 | 9.793 | 17.009 | 17.009 | 21.620 | 26.519 | 38.954 | 45.737 | 45.737 | 45.737 | 56.589 | 56.589 | | | | | | | |
| 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 | | | | | | | | |
| IG | 925 | 0.000 | 0.112 | 0.112 | 0.704 | 1.065 | 1.190 | 1.317 | 1.581 | 2.133 | 2.997 | 3.301 | 4.712 | 5.684 | 5.850 | 6.044 | 6.044 | 6.263 | 6.263 | 6.263 | 6.263 |
| SG | 244 | 0.435 | 1.345 | 2.293 | 5.337 | 7.533 | 11.045 | 14.051 | 21.806 | 23.952 | 24.691 | 25.509 | 29.144 | 34.989 | 36.037 | 38.363 | 38.363 | 38.363 | 38.363 | 38.363 | 38.363 |
| All | 1169 | 0.088 | 0.358 | 0.543 | 1.598 | 2.288 | 3.002 | 3.633 | 5.165 | 5.974 | 6.816 | 7.198 | 8.925 | 10.578 | 10.863 | 11.349 | 11.349 | 11.534 | 11.534 | 11.534 | 11.534 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/80 | | | | | | | | | | | | | | | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 88 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.266 | 1.266 | 1.266 | 2.565 | 2.565 | 2.565 | 2.565 | 2.565 | 2.565 | 2.565 | 2.565 | 2.565 | 2.565 |
| Aa | 132 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.877 | 1.762 | 1.762 | 1.762 | 1.762 | 1.762 | 1.762 | 1.762 | 1.762 | 1.762 | 1.762 | 1.762 | 1.762 |
| A | 384 | 0.000 | 0.000 | 0.274 | 0.823 | 0.823 | 0.823 | 1.720 | 2.033 | 3.022 | 3.022 | 4.091 | 4.836 | 4.836 | 5.298 | 5.298 | 5.797 | 5.797 | 5.797 | 5.797 | 6.989 |
| Baa | 336 | 0.000 | 0.000 | 1.010 | 1.357 | 1.722 | 2.465 | 2.465 | 3.309 | 4.188 | 5.621 | 8.154 | 10.748 | 11.818 | 11.818 | 11.818 | 11.818 | 11.818 | 11.818 | 11.818 | 11.818 |
| Ba | 207 | 0.000 | 0.524 | 3.871 | 5.077 | 8.849 | 12.082 | 18.197 | 20.464 | 21.243 | 23.961 | 26.861 | 33.099 | 35.432 | 37.916 | 37.916 | 37.916 | 37.916 | 39.468 | 39.468 | 39.468 |
| B | 41 | 5.000 | 7.568 | 15.723 | 21.536 | 27.949 | 31.552 | 44.781 | 49.383 | 49.383 | 49.383 | 61.434 | 69.148 | 69.148 | 69.148 | 69.148 | 69.148 | 69.148 | 69.148 | 69.148 | 69.148 |
| Caa-C | 6 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 55.556 | 55.556 | 55.556 | 55.556 | 55.556 | | | | | | | | | |
| IG | 940 | 0.000 | 0.000 | 0.458 | 0.806 | 0.927 | 1.171 | 1.551 | 2.218 | 3.050 | 3.487 | 4.840 | 5.925 | 6.252 | 6.438 | 6.438 | 6.648 | 6.648 | 6.648 | 6.648 | 7.151 |
| SG | 254 | 1.630 | 2.482 | 6.538 | 8.478 | 12.575 | 15.774 | 23.176 | 25.676 | 26.322 | 28.556 | 32.582 | 38.807 | 40.869 | 43.059 | 43.059 | 43.059 | 43.059 | 44.415 | 44.415 | 44.415 |
| All | 1194 | 0.342 | 0.518 | 1.701 | 2.356 | 3.226 | 4.023 | 5.685 | 6.670 | 7.468 | 8.193 | 9.953 | 11.781 | 12.341 | 12.803 | 12.803 | 12.980 | 12.980 | 13.171 | 13.171 | 13.597 |
| 1/1/81 | | | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 93 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.220 | 1.220 | 1.220 | 2.486 | 2.486 | 2.486 | 2.486 | 2.486 | 2.486 | 2.486 | 2.486 | 2.486 | 2.486 | 2.486 |
| Aa | 136 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.820 | 2.487 | 2.487 | 2.487 | 2.487 | 2.487 | 2.487 | 2.487 | 2.487 | 2.487 | 2.487 | 2.487 | 2.487 | 3.964 |
| A | 389 | 0.000 | 0.267 | 0.267 | 0.267 | 0.267 | 1.155 | 1.469 | 2.132 | 2.132 | 3.199 | 3.949 | 3.949 | 4.413 | 4.413 | 4.916 | 4.916 | 4.916 | 4.916 | 6.104 | 6.714 |
| Baa | 339 | 0.000 | 0.640 | 1.952 | 2.652 | 3.379 | 3.379 | 3.793 | 4.634 | 6.008 | 8.426 | 10.404 | 11.419 | 11.419 | 11.419 | 11.419 | 11.419 | 11.419 | 11.419 | 11.419 | 12.342 |
| Ba | 241 | 0.000 | 3.637 | 5.115 | 8.155 | 11.857 | 18.546 | 21.054 | 21.707 | 24.756 | 28.947 | 35.417 | 37.593 | 39.905 | 39.905 | 39.905 | 39.905 | 41.335 | 42.802 | 42.802 | 42.802 |
| B | 46 | 4.397 | 11.393 | 16.315 | 24.335 | 27.245 | 41.234 | 41.234 | 41.234 | 41.234 | 51.518 | 57.578 | 57.578 | 57.578 | 57.578 | 57.578 | 57.578 | 57.578 | 57.578 | 57.578 | 57.578 |
| Caa-C | 7 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 16.667 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 |
| IG | 957 | 0.000 | 0.329 | 0.773 | 1.005 | 1.245 | 1.613 | 2.136 | 2.945 | 3.371 | 4.687 | 5.592 | 5.911 | 6.090 | 6.090 | 6.295 | 6.295 | 6.295 | 6.295 | 6.785 | 7.553 |
| SG | 294 | 0.698 | 4.772 | 6.764 | 10.496 | 13.971 | 21.880 | 24.458 | 24.994 | 27.485 | 32.330 | 38.537 | 40.390 | 42.344 | 42.344 | 42.344 | 42.344 | 43.571 | 44.825 | 44.825 | 44.825 |
| All | 1251 | 0.162 | 1.342 | 2.124 | 3.116 | 4.049 | 5.995 | 6.926 | 7.680 | 8.482 | 10.396 | 12.140 | 12.677 | 13.118 | 13.118 | 13.287 | 13.287 | 13.470 | 13.660 | 14.069 | 14.709 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/82 | | | | | | | | | | | | | | | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 96 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.190 | 1.190 | 1.190 | 2.441 | 2.441 | 2.441 | 2.441 | 2.441 | 2.441 | 2.441 | 2.441 | 2.441 | 2.441 | 2.441 | 2.441 |
| Aa | 148 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.746 | 2.273 | 2.273 | 2.273 | 2.273 | 2.273 | 2.273 | 2.273 | 3.397 | 3.397 | 3.397 | 3.397 | 3.397 | 4.777 | 4.777 |
| A | 399 | 0.254 | 0.254 | 0.254 | 0.254 | 1.113 | 1.113 | 1.756 | 1.756 | 3.141 | 3.868 | 3.868 | 4.309 | 4.309 | 4.309 | 4.309 | 4.309 | 4.309 | 4.882 | 5.469 | 9.102 |
| Baa | 326 | 0.328 | 0.328 | 1.396 | 2.137 | 2.527 | 3.362 | 4.225 | 5.625 | 8.091 | 10.112 | 11.160 | 11.160 | 11.160 | 11.160 | 11.160 | 11.160 | 11.160 | 12.040 | 12.986 | 12.986 |
| Ba | 254 | 2.777 | 5.350 | 8.043 | 11.785 | 18.626 | 20.834 | 21.408 | 24.098 | 28.647 | 32.821 | 34.802 | 36.905 | 36.905 | 36.905 | 36.905 | 38.277 | 39.782 | 39.782 | 39.782 | 43.177 |
| B | 45 | 2.222 | 9.101 | 14.084 | 16.769 | 29.169 | 29.169 | 29.169 | 29.169 | 35.072 | 55.478 | 55.478 | 55.478 | 55.478 | 55.478 | 55.478 | 55.478 | 55.478 | 55.478 | 55.478 | 55.478 |
| Caa-C | 13 | 23.077 | 46.154 | 46.154 | 46.154 | 55.128 | 64.103 | 64.103 | 64.103 | 64.103 | 64.103 | 64.103 | 64.103 | 64.103 | 64.103 | 64.103 | 64.103 | 64.103 | 64.103 | 64.103 | 64.103 |
| IG | 969 | 0.212 | 0.212 | 0.550 | 0.783 | 1.264 | 1.774 | 2.566 | 2.982 | 4.419 | 5.309 | 5.623 | 5.800 | 5.800 | 6.001 | 6.001 | 6.001 | 6.001 | 6.483 | 7.236 | 8.775 |
| SG | 312 | 3.544 | 7.655 | 10.564 | 13.990 | 21.651 | 23.894 | 24.361 | 26.592 | 31.020 | 36.635 | 38.329 | 40.116 | 40.116 | 40.116 | 40.116 | 41.290 | 42.567 | 42.567 | 42.567 | 45.476 |
| All | 1281 | 1.032 | 2.017 | 2.957 | 3.932 | 6.058 | 6.947 | 7.666 | 8.438 | 10.405 | 12.095 | 12.616 | 13.044 | 13.044 | 13.207 | 13.207 | 13.387 | 13.573 | 13.974 | 14.600 | 16.301 |
| 1/1/83 | | | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 98 | 0.000 | 0.000 | 0.000 | 0.000 | 2.353 | 2.353 | 2.353 | 3.638 | 3.638 | 3.638 | 3.638 | 3.638 | 3.638 | 3.638 | 3.638 | 3.638 | 3.638 | 3.638 | 3.638 | 3.638 |
| Aa | 224 | 0.000 | 0.000 | 0.000 | 0.000 | 0.488 | 1.991 | 1.991 | 1.991 | 1.991 | 1.991 | 1.991 | 1.991 | 2.706 | 2.706 | 2.706 | 2.706 | 2.706 | 2.706 | 3.599 | 4.544 |
| A | 426 | 0.000 | 0.000 | 0.000 | 0.260 | 0.260 | 0.847 | 0.847 | 2.100 | 3.416 | 4.112 | 4.502 | 4.502 | 4.502 | 4.502 | 4.502 | 4.502 | 4.502 | 5.054 | 6.744 | 7.338 |
| Baa | 270 | 0.000 | 1.181 | 1.603 | 3.347 | 3.851 | 4.368 | 5.477 | 6.644 | 7.853 | 7.853 | 7.853 | 7.853 | 7.853 | 7.853 | 7.853 | 7.853 | 8.912 | 11.189 | 13.590 | 16.094 |
| Ba | 229 | 0.901 | 2.383 | 4.497 | 12.177 | 14.265 | 17.307 | 21.106 | 26.308 | 31.987 | 31.987 | 33.499 | 33.499 | 33.499 | 33.499 | 35.455 | 37.472 | 39.705 | 41.938 | 46.497 | 51.150 |
| B | 114 | 6.386 | 11.153 | 18.080 | 25.279 | 28.544 | 29.644 | 32.275 | 40.478 | 48.053 | 53.392 | 56.134 | 56.134 | 56.134 | 56.134 | 56.134 | 56.134 | 56.134 | 56.134 | 56.134 | 56.134 |
| Caa-C | 10 | 41.667 | 65.000 | 65.000 | 65.000 | 76.667 | 76.667 | 76.667 | 76.667 | 76.667 | 76.667 | 76.667 | 76.667 | 76.667 | 76.667 | 76.667 | 76.667 | 76.667 | 76.667 | 76.667 | 76.667 |
| IG | 1018 | 0.000 | 0.307 | 0.415 | 0.963 | 1.431 | 2.169 | 2.426 | 3.352 | 4.179 | 4.470 | 4.634 | 4.634 | 4.819 | 4.819 | 4.819 | 4.819 | 5.043 | 5.742 | 7.173 | 8.181 |
| SG | 353 | 3.832 | 7.019 | 10.716 | 18.012 | 20.913 | 23.118 | 26.370 | 32.574 | 38.825 | 40.495 | 42.354 | 42.354 | 42.354 | 42.354 | 43.581 | 44.957 | 46.444 | 47.974 | 51.083 | 54.344 |
| All | 1371 | 0.964 | 1.968 | 2.930 | 5.041 | 6.038 | 7.091 | 7.911 | 9.746 | 11.440 | 11.927 | 12.329 | 12.329 | 12.483 | 12.483 | 12.651 | 12.827 | 13.205 | 13.987 | 15.590 | 16.859 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/84 | | | | | | | | | | | | | | | | | | | | | |
|--------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 79 | 0.000 | 0.000 | 0.000 | 1.429 | 1.429 | 1.429 | 3.018 | 3.018 | 3.018 | 3.018 | 3.018 | 3.018 | 3.018 | 3.018 | 3.018 | 3.018 | 3.018 | 3.018 | 3.018 | 3.018 |
| Aa | 239 | 0.000 | 0.000 | 0.000 | 0.897 | 1.830 | 1.830 | 1.830 | 1.830 | 1.830 | 1.830 | 1.830 | 2.493 | 2.493 | 2.493 | 2.493 | 2.493 | 2.493 | 3.306 | 4.169 | 4.169 |
| A | 450 | 0.000 | 0.236 | 0.476 | 0.735 | 1.534 | 1.534 | 2.673 | 3.867 | 4.495 | 4.495 | 4.495 | 4.495 | 4.495 | 4.495 | 4.495 | 4.495 | 4.995 | 6.519 | 7.051 | 7.674 |
| Baa | 279 | 0.365 | 0.365 | 0.765 | 1.252 | 1.750 | 2.827 | 3.965 | 5.150 | 5.150 | 5.848 | 5.848 | 5.848 | 5.848 | 5.848 | 5.848 | 6.894 | 9.138 | 12.678 | 15.173 | 15.173 |
| Ba | 246 | 0.839 | 3.513 | 11.698 | 14.451 | 18.067 | 21.764 | 27.354 | 32.591 | 33.645 | 34.769 | 34.769 | 34.769 | 34.769 | 36.322 | 36.322 | 38.252 | 40.244 | 42.236 | 46.362 | 46.362 |
| B | 120 | 6.817 | 12.951 | 20.340 | 24.274 | 27.384 | 32.252 | 42.631 | 47.841 | 50.109 | 55.098 | 55.098 | 55.098 | 55.098 | 55.098 | 59.588 | 59.588 | 59.588 | 59.588 | 59.588 | 59.588 |
| 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 |
| IG | 1047 | 0.097 | 0.199 | 0.405 | 0.960 | 1.663 | 1.908 | 2.795 | 3.590 | 3.870 | 4.028 | 4.028 | 4.206 | 4.206 | 4.206 | 4.206 | 4.423 | 5.099 | 6.713 | 7.690 | 7.958 |
| SG | 368 | 3.361 | 7.179 | 15.068 | 18.207 | 21.617 | 25.767 | 33.053 | 38.285 | 39.662 | 41.953 | 41.953 | 41.953 | 41.953 | 43.008 | 44.247 | 45.607 | 47.039 | 48.470 | 51.501 | 51.501 |
| All | 1415 | 0.934 | 1.979 | 4.099 | 5.272 | 6.608 | 7.663 | 9.784 | 11.376 | 11.835 | 12.340 | 12.340 | 12.485 | 12.485 | 12.646 | 12.813 | 13.175 | 13.924 | 15.457 | 16.674 | 16.897 |
| 1/1/85 | | | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 81 | 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 | 294 | 0.000 | 0.000 | 0.000 | 0.799 | 0.799 | 0.799 | 0.799 | 0.799 | 0.799 | 0.799 | 1.419 | 1.419 | 1.419 | 1.419 | 1.419 | 1.419 | 2.183 | 2.991 | 2.991 | 2.991 |
| A | 513 | 0.000 | 0.210 | 1.342 | 2.316 | 2.316 | 3.639 | 4.754 | 5.050 | 5.050 | 5.050 | 5.050 | 5.050 | 5.050 | 5.050 | 5.050 | 5.523 | 6.487 | 7.516 | 8.087 | 8.087 |
| Baa | 274 | 0.000 | 0.855 | 1.288 | 1.796 | 2.903 | 3.468 | 4.675 | 5.294 | 6.017 | 6.017 | 6.017 | 6.017 | 6.017 | 6.017 | 8.311 | 10.858 | 14.835 | 16.254 | 16.254 | 16.254 |
| Ba | 291 | 1.414 | 6.747 | 9.497 | 12.895 | 18.593 | 24.315 | 29.891 | 31.445 | 32.281 | 32.281 | 33.339 | 33.339 | 34.508 | 34.508 | 35.997 | 37.638 | 40.966 | 44.339 | 44.339 | 44.339 |
| B | 149 | 7.573 | 16.899 | 23.027 | 26.307 | 30.447 | 42.274 | 47.025 | 49.144 | 54.497 | 54.497 | 54.497 | 54.497 | 54.497 | 58.634 | 58.634 | 58.634 | 58.634 | 58.634 | 58.634 | 58.634 |
| Caa-C | 5 | 0.000 | 0.000 | 0.000 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 33.333 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 |
| IG | 1162 | 0.000 | 0.283 | 0.882 | 1.642 | 1.873 | 2.701 | 3.449 | 3.714 | 3.863 | 3.863 | 4.035 | 4.035 | 4.035 | 4.035 | 4.453 | 5.112 | 6.459 | 7.411 | 7.671 | 7.671 |
| SG | 445 | 3.470 | 10.120 | 14.061 | 17.687 | 22.826 | 30.444 | 35.693 | 37.347 | 39.190 | 39.190 | 40.711 | 40.711 | 41.558 | 42.532 | 43.638 | 44.863 | 47.342 | 49.911 | 49.911 | 49.911 |
| All | 1607 | 0.960 | 2.999 | 4.486 | 5.997 | 7.387 | 9.691 | 11.348 | 11.873 | 12.340 | 12.340 | 12.753 | 12.753 | 12.904 | 13.062 | 13.575 | 14.291 | 15.758 | 16.921 | 17.133 | 17.133 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/86 | | | | | | | | | | | | | | | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 108 | 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 | 290 | 0.000 | 0.000 | 0.804 | 0.804 | 1.245 | 1.245 | 1.245 | 1.245 | 1.245 | 1.862 | 1.862 | 1.862 | 1.862 | 1.862 | 1.862 | 2.653 | 3.458 | 3.458 | 3.458 | 3.458 |
| A | 572 | 0.000 | 0.196 | 0.807 | 1.020 | 1.678 | 2.364 | 2.364 | 2.364 | 2.364 | 2.364 | 2.364 | 2.364 | 2.364 | 2.364 | 3.166 | 3.991 | 4.884 | 5.377 | 5.377 | 5.889 |
| Baa | 306 | 1.038 | 1.395 | 3.096 | 3.996 | 5.854 | 7.335 | 8.400 | 9.015 | 9.015 | 9.015 | 9.015 | 9.015 | 9.015 | 10.872 | 11.921 | 14.057 | 16.247 | 16.247 | 16.247 | 16.247 |
| Ba | 357 | 2.087 | 6.117 | 8.657 | 13.821 | 20.527 | 26.929 | 28.864 | 30.944 | 32.462 | 33.327 | 33.327 | 35.305 | 35.305 | 35.305 | 38.065 | 44.043 | 45.555 | 45.555 | 45.555 | 47.370 |
| B | 187 | 11.568 | 17.455 | 21.266 | 25.212 | 34.913 | 40.359 | 46.098 | 49.467 | 49.467 | 49.467 | 49.467 | 49.467 | 52.440 | 60.366 | 60.366 | 60.366 | 60.366 | 60.366 | 60.366 | 60.366 |
| Caa-C | 10 | 22.222 | 22.222 | 37.778 | 37.778 | 37.778 | 37.778 | 37.778 | 37.778 | 37.778 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 |
| IG | 1276 | 0.245 | 0.418 | 1.256 | 1.550 | 2.359 | 2.996 | 3.223 | 3.350 | 3.350 | 3.497 | 3.497 | 3.497 | 3.497 | 3.855 | 4.430 | 5.406 | 6.435 | 6.660 | 6.660 | 6.902 |
| SG | 554 | 5.666 | 10.285 | 13.477 | 18.166 | 25.740 | 31.723 | 34.745 | 37.135 | 38.210 | 39.447 | 39.447 | 40.873 | 41.672 | 43.584 | 45.603 | 49.916 | 51.029 | 51.029 | 51.029 | 52.317 |
| All | 1830 | 1.875 | 3.357 | 4.873 | 6.309 | 8.753 | 10.606 | 11.411 | 12.001 | 12.213 | 12.562 | 12.562 | 12.825 | 12.961 | 13.549 | 14.319 | 15.751 | 16.753 | 16.935 | 16.935 | 17.327 |
| 1/1/87 | | | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 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 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Aa | 305 | 0.000 | 0.000 | 0.000 | 0.398 | 0.398 | 0.398 | 0.398 | 0.398 | 0.974 | 0.974 | 0.974 | 0.974 | 0.974 | 0.974 | 1.697 | 2.436 | 2.436 | 2.436 | 2.436 | 2.436 |
| A | 539 | 0.000 | 0.000 | 0.208 | 1.067 | 1.733 | 1.733 | 1.733 | 1.733 | 1.733 | 1.733 | 1.733 | 1.733 | 1.733 | 2.126 | 2.930 | 3.793 | 4.725 | 4.725 | 5.214 | 5.214 |
| Baa | 337 | 0.000 | 1.066 | 1.446 | 3.384 | 5.029 | 6.307 | 7.276 | 7.276 | 7.276 | 7.276 | 7.983 | 7.983 | 9.530 | 10.400 | 12.166 | 13.071 | 13.071 | 13.071 | 13.071 | 13.071 |
| Ba | 461 | 2.780 | 4.304 | 9.212 | 16.036 | 23.043 | 25.716 | 28.773 | 30.475 | 31.782 | 32.485 | 34.094 | 35.157 | 35.157 | 37.520 | 41.245 | 45.166 | 45.166 | 45.166 | 46.828 | 46.828 |
| B | 270 | 6.525 | 13.901 | 20.719 | 32.428 | 40.298 | 46.080 | 48.115 | 48.115 | 48.115 | 48.115 | 48.115 | 49.968 | 54.516 | 59.304 | 61.847 | 67.525 | 67.525 | 67.525 | 67.525 | 67.525 |
| Caa-C | 10 | 20.000 | 30.000 | 30.000 | 30.000 | 30.000 | 30.000 | 30.000 | 30.000 | 65.000 | 65.000 | 65.000 | 65.000 | 65.000 | 65.000 | 65.000 | 65.000 | 65.000 | 65.000 | 65.000 | 65.000 |
| IG | 1312 | 0.000 | 0.255 | 0.434 | 1.351 | 2.024 | 2.324 | 2.551 | 2.551 | 2.682 | 2.682 | 2.831 | 2.831 | 3.154 | 3.502 | 4.384 | 5.123 | 5.518 | 5.518 | 5.733 | 5.733 |
| SG | 741 | 4.417 | 8.263 | 13.804 | 22.253 | 29.451 | 33.126 | 35.778 | 36.897 | 38.192 | 38.664 | 39.727 | 41.038 | 42.494 | 45.606 | 48.831 | 53.162 | 53.162 | 53.162 | 54.277 | 54.277 |
| All | 2053 | 1.588 | 3.108 | 5.057 | 8.290 | 10.846 | 12.030 | 12.857 | 13.129 | 13.521 | 13.626 | 13.964 | 14.206 | 14.717 | 15.521 | 16.763 | 18.066 | 18.376 | 18.376 | 18.715 | 18.715 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/88 | | | | | | | | | | | | | | | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 136 | 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 | 328 | 0.000 | 0.671 | 1.016 | 1.016 | 1.016 | 1.016 | 1.016 | 1.516 | 1.516 | 1.516 | 1.516 | 1.516 | 2.135 | 2.755 | 3.395 | 3.395 | 3.395 | 3.395 | 3.395 | 3.395 |
| A | 538 | 0.000 | 0.199 | 0.815 | 1.448 | 1.448 | 1.448 | 1.448 | 1.448 | 1.448 | 1.448 | 1.448 | 1.448 | 1.448 | 2.225 | 2.631 | 3.531 | 3.531 | 4.008 | 4.008 | 4.008 |
| Baa | 323 | 0.000 | 0.345 | 1.408 | 2.895 | 4.048 | 4.928 | 4.928 | 4.928 | 4.928 | 5.562 | 5.562 | 6.257 | 7.031 | 9.396 | 11.028 | 11.028 | 11.028 | 11.028 | 11.028 | 11.028 |
| Ba | 504 | 1.250 | 6.703 | 12.672 | 20.221 | 22.674 | 25.927 | 26.870 | 27.946 | 29.113 | 30.426 | 31.245 | 32.094 | 33.996 | 39.134 | 43.546 | 43.546 | 43.546 | 45.031 | 45.031 | 48.696 |
| B | 337 | 6.165 | 12.820 | 25.828 | 33.977 | 39.471 | 42.912 | 44.579 | 46.524 | 46.524 | 47.768 | 53.787 | 57.342 | 61.404 | 63.549 | 68.596 | 68.596 | 68.596 | 68.596 | 68.596 | 68.596 |
| Caa-C | 11 | 27.273 | 27.273 | 27.273 | 27.273 | 27.273 | 27.273 | 27.273 | 63.636 | 63.636 | 63.636 | 63.636 | 63.636 | 63.636 | 63.636 | 63.636 | 63.636 | 63.636 | 63.636 | 63.636 | 63.636 |
| IG | 1325 | 0.000 | 0.327 | 0.916 | 1.529 | 1.804 | 2.012 | 2.012 | 2.133 | 2.133 | 2.270 | 2.270 | 2.419 | 2.740 | 3.721 | 4.403 | 4.767 | 4.767 | 4.965 | 4.965 | 4.965 |
| SG | 852 | 3.551 | 9.420 | 18.046 | 25.738 | 29.313 | 32.583 | 33.757 | 35.446 | 36.204 | 37.466 | 39.995 | 41.705 | 44.216 | 48.256 | 52.669 | 52.669 | 52.669 | 53.655 | 53.655 | 56.032 |
| All | 2177 | 1.372 | 3.736 | 7.138 | 10.099 | 11.379 | 12.458 | 12.777 | 13.299 | 13.487 | 13.889 | 14.429 | 14.886 | 15.609 | 17.106 | 18.414 | 18.694 | 18.694 | 19.001 | 19.001 | 19.339 |
| 1/1/89 | | | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 148 | 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 | 325 | 0.641 | 0.641 | 0.641 | 0.641 | 0.641 | 0.641 | 1.112 | 1.112 | 1.112 | 1.112 | 1.112 | 1.701 | 2.289 | 2.904 | 2.904 | 2.904 | 2.904 | 2.904 | 2.904 | 4.653 |
| A | 556 | 0.000 | 0.188 | 0.778 | 0.778 | 0.778 | 0.778 | 0.778 | 0.778 | 0.778 | 0.778 | 0.778 | 0.778 | 1.893 | 2.280 | 2.710 | 2.710 | 3.165 | 3.165 | 3.165 | 4.744 |
| Baa | 335 | 0.627 | 1.269 | 1.950 | 2.997 | 2.997 | 2.997 | 2.997 | 2.997 | 3.539 | 3.539 | 4.131 | 4.779 | 7.429 | 9.492 | 10.222 | 10.222 | 10.222 | 10.222 | 10.222 | 11.148 |
| Ba | 480 | 3.131 | 9.858 | 17.588 | 20.059 | 23.284 | 23.694 | 24.692 | 26.359 | 27.592 | 29.928 | 30.724 | 33.452 | 38.266 | 44.631 | 44.631 | 44.631 | 44.631 | 44.631 | 48.265 | 52.328 |
| B | 374 | 8.565 | 23.301 | 31.246 | 37.316 | 41.082 | 43.695 | 46.720 | 46.720 | 49.759 | 53.321 | 56.238 | 59.675 | 61.428 | 65.608 | 65.608 | 65.608 | 68.253 | 68.253 | 68.253 | 70.899 |
| Caa-C | 12 | 25.000 | 45.313 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 | 56.250 |
| IG | 1364 | 0.303 | 0.535 | 0.942 | 1.198 | 1.198 | 1.198 | 1.311 | 1.311 | 1.437 | 1.437 | 1.574 | 1.869 | 3.079 | 3.868 | 4.205 | 4.205 | 4.389 | 4.389 | 4.389 | 5.666 |
| SG | 866 | 5.774 | 16.015 | 23.883 | 27.786 | 31.161 | 32.425 | 34.187 | 35.205 | 37.093 | 39.856 | 41.386 | 44.238 | 47.852 | 53.242 | 53.242 | 53.242 | 54.124 | 54.124 | 56.234 | 59.661 |
| All | 2230 | 2.386 | 6.267 | 9.269 | 10.719 | 11.760 | 12.125 | 12.683 | 12.942 | 13.494 | 14.089 | 14.505 | 15.277 | 16.876 | 18.442 | 18.699 | 18.699 | 18.983 | 18.983 | 19.297 | 20.785 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/90 | | | | | | | | | | | | | | | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 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 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Aa | 361 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.400 | 0.400 | 0.400 | 0.400 | 0.400 | 0.400 | 0.921 | 1.469 | 1.469 | 1.469 | 1.469 | 1.469 | 1.469 | 3.058 | 5.469 |
| A | 575 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.340 | 0.681 | 1.039 | 1.435 | 1.435 | 1.856 | 1.856 | 1.856 | 3.335 | 4.854 |
| Baa | 329 | 0.000 | 0.659 | 0.659 | 0.659 | 0.659 | 0.659 | 0.659 | 0.659 | 0.659 | 1.261 | 1.919 | 5.289 | 8.090 | 8.831 | 8.831 | 8.831 | 8.831 | 8.831 | 9.833 | 12.839 |
| Ba | 466 | 3.443 | 11.793 | 14.399 | 17.395 | 18.207 | 19.577 | 20.595 | 21.687 | 23.748 | 24.441 | 26.758 | 32.602 | 37.097 | 37.097 | 37.097 | 37.097 | 37.097 | 39.925 | 44.509 | 44.509 |
| B | 386 | 15.940 | 24.981 | 32.444 | 36.088 | 38.253 | 40.862 | 41.672 | 45.487 | 48.851 | 51.655 | 56.849 | 58.647 | 64.971 | 64.971 | 64.971 | 67.891 | 67.891 | 67.891 | 70.810 | 77.013 |
| Caa-C | 21 | 61.111 | 72.222 | 72.222 | 72.222 | 72.222 | 72.222 | 72.222 | 72.222 | 72.222 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 |
| IG | 1433 | 0.000 | 0.150 | 0.150 | 0.150 | 0.150 | 0.252 | 0.252 | 0.252 | 0.252 | 0.379 | 0.653 | 1.635 | 2.513 | 2.826 | 2.826 | 2.998 | 2.998 | 2.998 | 4.209 | 6.055 |
| SG | 873 | 10.255 | 18.986 | 23.595 | 26.765 | 28.118 | 29.941 | 30.850 | 32.865 | 35.327 | 37.113 | 40.126 | 44.443 | 49.135 | 49.135 | 49.135 | 49.943 | 49.943 | 51.747 | 55.589 | 57.614 |
| All | 2306 | 3.750 | 6.909 | 8.439 | 9.437 | 9.834 | 10.412 | 10.648 | 11.154 | 11.703 | 12.183 | 13.000 | 14.593 | 16.154 | 16.393 | 16.393 | 16.659 | 16.659 | 16.954 | 18.518 | 20.273 |
| 1/1/91 | | | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 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 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Aa | 397 | 0.000 | 0.000 | 0.000 | 0.000 | 0.348 | 0.348 | 0.348 | 0.348 | 0.348 | 0.348 | 0.825 | 1.326 | 1.326 | 1.326 | 1.326 | 1.326 | 1.326 | 2.788 | 5.734 | 5.734 |
| A | 565 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.334 | 0.671 | 1.022 | 1.409 | 1.409 | 1.825 | 1.825 | 1.825 | 3.297 | 4.806 | 5.353 |
| Baa | 354 | 0.290 | 0.290 | 0.290 | 0.290 | 0.290 | 0.290 | 0.290 | 0.290 | 0.793 | 1.333 | 4.080 | 6.378 | 6.990 | 6.990 | 6.990 | 6.990 | 7.765 | 8.611 | 10.304 | 10.304 |
| Ba | 365 | 4.965 | 6.272 | 8.181 | 8.600 | 9.622 | 10.770 | 11.377 | 13.730 | 14.522 | 17.242 | 23.094 | 27.289 | 27.289 | 28.588 | 28.588 | 28.588 | 28.588 | 33.651 | 35.547 | 35.547 |
| B | 334 | 12.206 | 21.803 | 27.089 | 29.779 | 33.632 | 34.422 | 38.996 | 42.328 | 45.077 | 50.404 | 52.312 | 60.813 | 60.813 | 60.813 | 63.827 | 63.827 | 66.842 | 70.157 | 77.263 | 77.263 |
| Caa-C | 20 | 45.000 | 45.000 | 45.000 | 45.000 | 45.000 | 45.000 | 45.000 | 45.000 | 72.500 | 72.500 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 |
| IG | 1472 | 0.070 | 0.070 | 0.070 | 0.070 | 0.165 | 0.165 | 0.165 | 0.165 | 0.284 | 0.537 | 1.447 | 2.264 | 2.555 | 2.555 | 2.717 | 2.717 | 2.898 | 4.035 | 5.765 | 5.972 |
| SG | 719 | 9.450 | 14.502 | 17.839 | 19.250 | 21.441 | 22.409 | 24.551 | 27.202 | 29.166 | 32.534 | 37.354 | 42.547 | 42.547 | 43.356 | 44.255 | 44.255 | 45.233 | 49.427 | 52.839 | 52.839 |
| All | 2191 | 3.091 | 4.635 | 5.605 | 5.991 | 6.624 | 6.854 | 7.346 | 7.880 | 8.348 | 9.144 | 10.698 | 12.222 | 12.456 | 12.579 | 12.841 | 12.841 | 13.131 | 14.670 | 16.552 | 16.721 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/92 | | | | | | | | | | | | | | | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 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 | 0.000 | 0.000 |
| Aa | 409 | 0.000 | 0.000 | 0.000 | 0.307 | 0.307 | 0.307 | 0.307 | 0.307 | 0.307 | 0.731 | 0.731 | 0.731 | 0.731 | 0.731 | 0.731 | 0.731 | 0.731 | 2.111 | 2.842 | 2.842 |
| A | 621 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.289 | 0.581 | 1.186 | 1.520 | 1.520 | 1.520 | 1.520 | 1.520 | 3.630 | 5.791 | 6.742 | 7.714 |
| Baa | 363 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.467 | 0.958 | 3.509 | 5.136 | 5.711 | 5.711 | 6.357 | 6.357 | 7.077 | 7.833 | 9.350 | 9.350 | 10.182 |
| Ba | 344 | 0.332 | 1.092 | 1.092 | 2.101 | 2.664 | 3.246 | 5.445 | 6.977 | 8.735 | 14.388 | 20.406 | 20.406 | 21.670 | 23.068 | 23.068 | 23.068 | 29.002 | 31.153 | 31.153 | 31.153 |
| B | 263 | 9.199 | 16.114 | 19.989 | 24.686 | 27.213 | 31.132 | 34.698 | 37.574 | 44.881 | 46.850 | 53.324 | 53.324 | 53.324 | 53.324 | 53.324 | 53.324 | 56.658 | 67.994 | 67.994 | 67.994 |
| Caa-C | 26 | 29.534 | 34.567 | 34.567 | 34.567 | 34.567 | 45.472 | 45.472 | 63.648 | 63.648 | 81.824 | 81.824 | 81.824 | 81.824 | 81.824 | 81.824 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 |
| IG | 1532 | 0.000 | 0.000 | 0.000 | 0.086 | 0.086 | 0.086 | 0.086 | 0.193 | 0.420 | 1.242 | 1.862 | 2.127 | 2.127 | 2.275 | 2.275 | 2.440 | 3.473 | 5.054 | 5.620 | 6.205 |
| SG | 633 | 5.216 | 8.710 | 10.343 | 12.790 | 14.075 | 16.189 | 18.768 | 21.188 | 24.522 | 29.273 | 35.002 | 35.002 | 35.794 | 36.674 | 36.674 | 37.679 | 42.412 | 47.581 | 47.581 | 47.581 |
| All | 2165 | 1.500 | 2.462 | 2.882 | 3.536 | 3.823 | 4.280 | 4.776 | 5.297 | 6.035 | 7.483 | 8.908 | 9.127 | 9.242 | 9.489 | 9.489 | 9.763 | 11.218 | 13.158 | 13.641 | 14.141 |
| 1/1/93 | | | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 114 | 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 | 408 | 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 | 0.629 | 1.314 | 1.314 | 1.314 |
| A | 659 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.753 | 1.280 | 1.574 | 1.574 | 1.574 | 1.574 | 1.574 | 3.060 | 4.614 | 5.036 | 5.900 | 6.343 |
| Baa | 415 | 0.000 | 0.000 | 0.292 | 0.292 | 0.618 | 0.971 | 1.702 | 2.471 | 4.474 | 5.754 | 6.652 | 6.652 | 7.146 | 7.146 | 7.705 | 9.457 | 11.817 | 12.447 | 13.115 | 13.833 |
| Ba | 365 | 0.604 | 0.604 | 2.951 | 3.800 | 4.715 | 6.406 | 8.825 | 10.188 | 14.520 | 19.141 | 19.141 | 19.141 | 20.177 | 21.286 | 21.286 | 25.479 | 28.402 | 28.402 | 28.402 | 28.402 |
| B | 251 | 4.641 | 9.366 | 14.345 | 16.319 | 19.506 | 22.362 | 26.818 | 35.643 | 39.782 | 44.120 | 45.631 | 47.330 | 47.330 | 49.524 | 51.928 | 55.133 | 65.913 | 65.913 | 65.913 | 65.913 |
| Caa-C | 23 | 27.557 | 27.557 | 34.801 | 44.115 | 44.115 | 44.115 | 72.058 | 72.058 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 |
| IG | 1596 | 0.000 | 0.000 | 0.075 | 0.075 | 0.161 | 0.252 | 0.439 | 0.736 | 1.458 | 2.003 | 2.352 | 2.352 | 2.482 | 2.482 | 2.628 | 3.686 | 5.083 | 5.586 | 6.106 | 6.467 |
| SG | 639 | 3.151 | 5.043 | 8.568 | 10.065 | 11.773 | 13.833 | 17.266 | 21.130 | 25.707 | 30.089 | 30.603 | 31.207 | 31.868 | 33.281 | 34.039 | 37.719 | 42.626 | 42.626 | 42.626 | 42.626 |
| All | 2235 | 0.890 | 1.405 | 2.365 | 2.730 | 3.189 | 3.689 | 4.512 | 5.467 | 6.886 | 8.118 | 8.494 | 8.594 | 8.808 | 9.034 | 9.272 | 10.666 | 12.493 | 12.917 | 13.357 | 13.662 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/94 | | | | | | | | | | | | | | | | | | | | | |
|--------|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Aaa | 110 | 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 | 369 | 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 | 0.685 | 0.685 | 0.685 | 0.685 |
| A | 761 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.198 | 0.597 | 1.012 | 1.463 | 1.463 | 1.463 | 1.463 | 1.463 | 2.640 | 4.177 | 4.512 | 5.561 | 5.923 | 5.923 |
| Baa | 473 | 0.000 | 0.228 | 0.228 | 0.482 | 0.752 | 2.146 | 2.736 | 4.286 | 5.271 | 5.962 | 5.962 | 6.359 | 6.359 | 6.809 | 8.781 | 11.351 | 11.894 | 13.061 | 13.691 | 13.691 |
| Ba | 413 | 0.265 | 1.980 | 2.290 | 3.301 | 5.380 | 8.951 | 11.953 | 15.236 | 18.836 | 19.486 | 19.486 | 20.380 | 21.388 | 21.388 | 25.204 | 32.180 | 32.180 | 32.180 | 33.919 | 33.919 |
| B | 340 | 4.110 | 8.372 | 11.586 | 13.515 | 16.968 | 21.971 | 28.319 | 33.466 | 38.953 | 42.941 | 46.233 | 46.233 | 48.990 | 50.536 | 54.493 | 58.544 | 58.544 | 58.544 | 58.544 | 58.544 |
| Caa-C | 38 | 5.405 | 11.521 | 23.555 | 23.555 | 23.555 | 38.226 | 38.226 | 76.835 | 76.835 | 76.835 | 76.835 | 76.835 | 76.835 | 76.835 | 76.835 | | | | | |
| IG | 1713 | 0.000 | 0.063 | 0.063 | 0.135 | 0.211 | 0.602 | 0.850 | 1.452 | 1.904 | 2.288 | 2.288 | 2.398 | 2.398 | 2.521 | 3.550 | 4.899 | 5.335 | 6.097 | 6.415 | 6.415 |
| SG | 791 | 2.145 | 5.143 | 7.156 | 8.487 | 11.038 | 15.522 | 19.693 | 24.219 | 28.429 | 30.339 | 31.665 | 32.187 | 33.888 | 34.505 | 38.259 | 43.914 | 43.914 | 43.914 | 44.972 | 44.972 |
| All | 2504 | 0.663 | 1.601 | 2.180 | 2.596 | 3.279 | 4.600 | 5.684 | 7.097 | 8.307 | 8.990 | 9.233 | 9.411 | 9.693 | 9.892 | 11.279 | 13.176 | 13.542 | 14.180 | 14.582 | 14.582 |
| 1/1/95 | | | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | |
| Aaa | 107 | 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 | 392 | 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 | 0.592 | 1.221 | 1.221 | 1.221 | 1.221 | |
| A | 811 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.173 | 0.521 | 1.073 | 1.467 | 1.467 | 1.467 | 1.467 | 1.467 | 2.556 | 3.693 | 4.005 | 4.984 | 5.323 | 5.323 | |
| Baa | 478 | 0.000 | 0.000 | 0.000 | 0.255 | 1.572 | 2.136 | 3.916 | 4.543 | 4.868 | 4.868 | 5.251 | 5.251 | 5.685 | 7.592 | 10.070 | 10.596 | 11.713 | 12.318 | 12.318 | |
| Ba | 421 | 0.772 | 1.050 | 2.263 | 4.103 | 8.081 | 10.711 | 14.038 | 17.191 | 18.893 | 18.893 | 19.712 | 20.614 | 20.614 | 22.892 | 33.320 | 33.320 | 33.320 | 34.947 | 34.947 | |
| B | 455 | 4.371 | 6.876 | 9.799 | 13.149 | 17.101 | 23.459 | 32.768 | 40.199 | 44.765 | 47.255 | 48.019 | 49.632 | 50.547 | 53.844 | 56.098 | 56.098 | 56.098 | 56.098 | 56.098 | |
| Caa-C | 58 | 9.206 | 19.117 | 19.117 | 27.807 | 41.200 | 49.600 | 68.500 | 79.000 | | | | | | | | | | | | |
| IG | 1788 | 0.000 | 0.000 | 0.000 | 0.069 | 0.422 | 0.647 | 1.272 | 1.681 | 1.942 | 1.942 | 2.044 | 2.044 | 2.159 | 3.129 | 4.403 | 4.816 | 5.538 | 5.839 | 5.839 | |
| SG | 934 | 3.061 | 4.940 | 6.919 | 9.886 | 14.244 | 18.772 | 25.284 | 30.609 | 33.683 | 34.976 | 35.746 | 37.001 | 37.458 | 40.234 | 46.213 | 46.213 | 46.213 | 47.028 | 47.028 | |
| All | 2722 | 1.031 | 1.647 | 2.267 | 3.180 | 4.616 | 5.934 | 8.016 | 9.612 | 10.530 | 10.814 | 11.051 | 11.301 | 11.478 | 12.730 | 14.748 | 15.081 | 15.662 | 16.029 | 16.029 | |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/96 | | | | | | | | | | | | | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Aaa | 111 | 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 | 430 | 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 | 0.535 | 1.100 | 1.100 | 1.100 | 1.100 |
| A | 877 | 0.000 | 0.000 | 0.000 | 0.000 | 0.150 | 0.452 | 0.772 | 1.115 | 1.115 | 1.115 | 1.115 | 1.115 | 2.082 | 3.334 | 3.607 | 4.463 | 4.759 | 4.759 |
| Baa | 551 | 0.000 | 0.000 | 0.207 | 0.855 | 1.535 | 3.212 | 3.961 | 4.488 | 4.773 | 5.088 | 5.425 | 5.425 | 7.370 | 9.445 | 9.891 | 11.299 | 11.809 | 11.809 |
| Ba | 451 | 0.000 | 0.756 | 2.276 | 6.498 | 8.663 | 12.971 | 16.039 | 17.975 | 17.975 | 19.365 | 20.133 | 20.992 | 22.938 | 31.776 | 31.776 | 31.776 | 33.113 | 33.113 |
| B | 520 | 1.446 | 4.474 | 9.641 | 12.817 | 19.826 | 28.113 | 36.430 | 40.794 | 43.918 | 44.708 | 46.397 | 47.354 | 52.140 | 57.120 | 58.708 | 58.708 | 58.708 | 58.708 |
| Caa-C | 74 | 14.335 | 20.582 | 27.282 | 43.656 | 51.389 | 64.647 | 69.066 | 69.066 | 69.066 | 69.066 | 69.066 | 69.066 | 69.066 | 69.066 | 69.066 | 69.066 | 69.066 | 69.066 |
| IG | 1969 | 0.000 | 0.000 | 0.059 | 0.243 | 0.500 | 1.106 | 1.459 | 1.759 | 1.841 | 1.930 | 2.023 | 2.023 | 2.976 | 4.201 | 4.561 | 5.317 | 5.580 | 5.580 |
| SG | 1045 | 1.719 | 3.975 | 7.659 | 12.150 | 16.823 | 23.274 | 28.760 | 31.724 | 33.165 | 34.210 | 35.356 | 36.226 | 39.312 | 45.984 | 46.627 | 46.627 | 47.369 | 47.369 |
| All | 3014 | 0.588 | 1.330 | 2.502 | 3.927 | 5.368 | 7.484 | 9.108 | 10.016 | 10.385 | 10.661 | 10.953 | 11.109 | 12.381 | 14.429 | 14.817 | 15.429 | 15.751 | 15.751 |
| 1/1/97 | | | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | |
| Aaa | 114 | 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 | 468 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.452 | 0.933 | 0.933 | 0.933 | 0.933 | |
| A | 932 | 0.000 | 0.000 | 0.000 | 0.132 | 0.399 | 0.684 | 1.285 | 1.285 | 1.285 | 1.285 | 1.285 | 2.584 | 3.709 | 3.954 | 4.987 | 5.253 | 5.528 | |
| Baa | 653 | 0.000 | 0.167 | 0.860 | 1.407 | 2.768 | 3.592 | 4.029 | 4.266 | 4.792 | 5.075 | 5.075 | 6.443 | 8.620 | 9.014 | 10.249 | 10.693 | 10.693 | |
| Ba | 537 | 0.195 | 1.824 | 6.231 | 9.709 | 12.825 | 16.413 | 18.376 | 18.376 | 19.502 | 20.116 | 20.817 | 22.366 | 29.135 | 29.135 | 29.135 | 30.133 | 30.133 | |
| B | 619 | 2.054 | 6.758 | 11.001 | 17.368 | 28.328 | 35.860 | 40.110 | 43.269 | 43.785 | 46.387 | 47.856 | 53.455 | 60.333 | 61.535 | 61.535 | 61.535 | 63.284 | |
| Caa-C | 85 | 15.030 | 24.703 | 38.356 | 49.618 | 66.262 | 69.636 | 69.636 | 69.636 | 69.636 | 69.636 | 69.636 | 69.636 | 69.636 | 69.636 | 69.636 | 69.636 | 69.636 | |
| IG | 2167 | 0.000 | 0.051 | 0.261 | 0.483 | 1.006 | 1.376 | 1.766 | 1.837 | 1.990 | 2.072 | 2.072 | 3.015 | 4.201 | 4.523 | 5.310 | 5.544 | 5.664 | |
| SG | 1241 | 2.145 | 5.893 | 10.743 | 16.019 | 23.571 | 29.078 | 32.077 | 33.625 | 34.411 | 35.910 | 36.930 | 40.137 | 46.557 | 47.039 | 47.039 | 47.602 | 48.172 | |
| All | 3408 | 0.765 | 2.062 | 3.739 | 5.470 | 8.015 | 9.783 | 10.832 | 11.249 | 11.538 | 11.912 | 12.113 | 13.435 | 15.513 | 15.848 | 16.468 | 16.747 | 16.936 | |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/98 | | | | | | | | | | | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Aaa | 104 | 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 | 501 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.315 | 0.315 | 0.315 | 0.315 | 0.315 | 0.741 | 1.197 | 1.652 | 1.652 | 1.652 |
| A | 941 | 0.000 | 0.000 | 0.122 | 0.367 | 0.629 | 1.188 | 1.188 | 1.188 | 1.188 | 1.188 | 2.390 | 3.653 | 3.884 | 4.623 | 5.133 | 5.654 |
| Baa | 794 | 0.133 | 0.676 | 1.101 | 2.293 | 3.584 | 3.927 | 4.292 | 4.703 | 4.921 | 4.921 | 6.032 | 7.533 | 7.854 | 8.859 | 8.859 | 8.859 |
| Ba | 605 | 0.895 | 3.828 | 7.142 | 11.223 | 15.054 | 17.544 | 18.263 | 19.579 | 20.075 | 20.638 | 21.880 | 29.192 | 29.192 | 29.192 | 30.775 | 30.775 |
| B | 829 | 4.019 | 10.522 | 18.396 | 29.715 | 36.342 | 41.873 | 45.870 | 46.515 | 48.920 | 51.212 | 55.261 | 59.579 | 60.264 | 60.264 | 60.264 | 61.210 |
| Caa-C | 121 | 10.327 | 27.659 | 39.118 | 55.463 | 61.047 | 65.638 | 69.074 | 69.074 | 73.492 | 73.492 | 86.746 | 86.746 | | | | |
| IG | 2340 | 0.045 | 0.228 | 0.421 | 0.926 | 1.472 | 1.817 | 2.005 | 2.140 | 2.211 | 2.211 | 3.061 | 4.144 | 4.436 | 5.151 | 5.365 | 5.583 |
| SG | 1555 | 3.298 | 9.233 | 15.613 | 24.501 | 29.962 | 34.165 | 36.759 | 37.643 | 39.264 | 40.663 | 43.442 | 48.768 | 49.086 | 49.086 | 49.852 | 50.247 |
| All | 3895 | 1.317 | 3.660 | 6.083 | 9.515 | 11.713 | 13.263 | 14.157 | 14.489 | 14.948 | 15.281 | 16.518 | 18.478 | 18.763 | 19.290 | 19.606 | 19.849 |
| 1/1/99 | | | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | |
| Aaa | 88 | 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 | 522 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.282 | 0.282 | 0.282 | 0.282 | 0.282 | 0.662 | 1.480 | 1.889 | 1.889 | 1.889 | |
| A | 971 | 0.000 | 0.000 | 0.228 | 0.348 | 0.865 | 0.865 | 0.865 | 0.865 | 0.865 | 1.985 | 3.150 | 3.150 | 3.823 | 4.288 | 4.765 | |
| Baa | 908 | 0.112 | 0.590 | 1.597 | 2.973 | 3.410 | 3.720 | 4.069 | 4.435 | 4.435 | 5.595 | 7.619 | 7.883 | 8.736 | 8.736 | 8.736 | |
| Ba | 603 | 1.420 | 3.581 | 6.146 | 9.530 | 12.017 | 12.641 | 13.781 | 14.614 | 15.091 | 17.184 | 23.278 | 23.918 | 23.918 | 25.382 | 25.382 | |
| B | 996 | 5.139 | 14.162 | 25.131 | 33.787 | 38.694 | 42.282 | 43.706 | 45.837 | 48.329 | 51.994 | 56.953 | 57.491 | 57.491 | 57.491 | 58.177 | |
| Caa-C | 240 | 18.541 | 29.536 | 48.812 | 55.651 | 61.918 | 66.646 | 66.646 | 68.869 | 68.869 | 74.058 | 74.058 | 74.058 | 91.353 | 91.353 | 91.353 | |
| IG | 2489 | 0.041 | 0.215 | 0.672 | 1.215 | 1.578 | 1.747 | 1.869 | 1.997 | 1.997 | 2.843 | 4.066 | 4.327 | 4.973 | 5.166 | 5.364 | |
| SG | 1839 | 5.694 | 12.786 | 22.125 | 28.809 | 32.980 | 35.580 | 36.763 | 38.304 | 39.725 | 42.506 | 47.329 | 47.848 | 48.403 | 49.016 | 49.331 | |
| All | 4328 | 2.409 | 5.393 | 9.376 | 12.267 | 13.979 | 14.957 | 15.399 | 15.924 | 16.303 | 17.588 | 19.634 | 19.942 | 20.531 | 20.807 | 21.019 | |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/00 | | | | | | | | | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Aaa | 99 | 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 | 518 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.806 | 1.210 | 1.210 | 1.210 |
| A | 1034 | 0.000 | 0.206 | 0.431 | 0.902 | 1.033 | 1.033 | 1.033 | 1.033 | 2.381 | 3.979 | 3.979 | 4.586 | 5.214 | 5.643 |
| Baa | 986 | 0.421 | 0.969 | 2.172 | 2.810 | 3.083 | 3.540 | 3.860 | 3.860 | 4.430 | 6.777 | 7.004 | 7.977 | 8.234 | 8.234 |
| Ba | 533 | 0.792 | 2.529 | 5.218 | 7.136 | 7.136 | 8.624 | 9.053 | 9.542 | 12.854 | 21.119 | 21.799 | 21.799 | 23.340 | 23.340 |
| B | 1080 | 6.253 | 17.277 | 26.632 | 32.156 | 35.740 | 37.770 | 40.852 | 42.958 | 45.973 | 52.033 | 52.485 | 52.485 | 52.485 | 53.072 |
| Caa-C | 277 | 19.706 | 42.442 | 52.606 | 59.764 | 66.330 | 67.933 | 69.715 | 69.715 | 73.500 | 78.800 | 78.800 | 92.933 | 92.933 | 92.933 |
| IG | 2637 | 0.157 | 0.444 | 0.979 | 1.402 | 1.555 | 1.720 | 1.835 | 1.835 | 2.590 | 4.063 | 4.300 | 4.967 | 5.316 | 5.495 |
| SG | 1890 | 6.685 | 16.802 | 24.343 | 28.916 | 31.649 | 33.393 | 35.339 | 36.616 | 39.554 | 45.878 | 46.362 | 46.883 | 47.452 | 47.743 |
| All | 4527 | 2.852 | 7.106 | 10.363 | 12.306 | 13.346 | 13.997 | 14.633 | 14.976 | 16.235 | 18.822 | 19.104 | 19.703 | 20.080 | 20.274 |
| 1/1/01 | | | | | | | | | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | |
| Aaa | 99 | 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 | 566 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.743 | 1.115 | 1.115 | 1.532 | |
| A | 1063 | 0.190 | 0.500 | 0.825 | 0.825 | 0.825 | 0.825 | 0.825 | 2.516 | 3.810 | 3.982 | 4.534 | 4.911 | 5.301 | |
| Baa | 960 | 0.216 | 1.612 | 2.229 | 2.630 | 3.076 | 3.388 | 3.388 | 3.758 | 6.224 | 6.224 | 7.154 | 7.650 | 7.650 | |
| Ba | 483 | 1.510 | 3.444 | 5.063 | 5.063 | 6.593 | 7.049 | 7.574 | 10.540 | 18.919 | 19.676 | 19.676 | 21.386 | 21.386 | |
| B | 1037 | 9.954 | 20.068 | 26.067 | 29.523 | 31.640 | 34.830 | 36.823 | 40.445 | 48.543 | 48.979 | 48.979 | 48.979 | 49.539 | |
| Caa-C | 261 | 31.968 | 43.886 | 55.491 | 62.981 | 65.449 | 67.019 | 67.019 | 70.017 | 73.765 | 73.765 | 82.510 | 82.510 | 82.510 | |
| IG | 2688 | 0.153 | 0.773 | 1.122 | 1.263 | 1.417 | 1.524 | 1.524 | 2.356 | 3.719 | 3.940 | 4.562 | 4.887 | 5.138 | |
| SG | 1781 | 10.831 | 18.905 | 24.288 | 27.143 | 29.059 | 31.139 | 32.418 | 35.572 | 43.042 | 43.535 | 44.065 | 44.645 | 44.943 | |
| All | 4469 | 4.345 | 7.799 | 9.960 | 11.007 | 11.692 | 12.336 | 12.664 | 14.005 | 16.717 | 16.988 | 17.562 | 17.924 | 18.172 | |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

1/1/02

| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Aaa | 110 | 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 | 562 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.702 | 1.053 | 1.053 | 1.452 |
| A | 1069 | 0.196 | 0.400 | 0.400 | 0.400 | 0.400 | 0.400 | 1.997 | 3.065 | 3.389 | 4.075 | 4.789 | 5.341 |
| Baa | 1049 | 1.115 | 1.544 | 1.655 | 1.912 | 2.050 | 2.050 | 2.537 | 4.684 | 4.684 | 4.891 | 5.547 | 5.547 |
| Ba | 489 | 1.516 | 3.671 | 4.808 | 6.088 | 7.198 | 7.660 | 9.716 | 16.518 | 17.141 | 17.141 | 18.621 | 18.621 |
| B | 804 | 4.668 | 10.080 | 12.762 | 15.386 | 18.631 | 20.176 | 25.579 | 36.486 | 37.851 | 38.878 | 38.878 | 39.466 |
| Caa-C | 305 | 29.503 | 43.754 | 52.982 | 55.255 | 59.484 | 62.299 | 64.184 | 70.402 | 70.402 | 76.979 | 76.979 | 76.979 |
| IG | 2790 | 0.492 | 0.731 | 0.772 | 0.866 | 0.916 | 0.916 | 1.736 | 2.924 | 3.194 | 3.620 | 4.144 | 4.452 |
| SG | 1598 | 8.373 | 14.231 | 17.410 | 19.481 | 21.991 | 23.214 | 26.795 | 35.325 | 36.241 | 37.267 | 37.818 | 38.101 |
| All | 4388 | 3.319 | 5.485 | 6.527 | 7.201 | 7.913 | 8.223 | 9.661 | 12.495 | 12.901 | 13.442 | 13.956 | 14.250 |

1/1/03

| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Aaa | 111 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Aa | 511 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.741 | 1.111 | 1.111 | 1.528 |
| A | 1035 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.569 | 2.476 | 2.798 | 3.647 | 4.187 | 4.743 |
| Baa | 1007 | 0.000 | 0.000 | 0.242 | 0.371 | 0.371 | 0.521 | 1.859 | 1.859 | 1.859 | 2.456 | 2.456 |
| Ba | 492 | 1.052 | 1.547 | 2.363 | 2.989 | 3.377 | 6.240 | 12.133 | 13.126 | 13.126 | 14.879 | 14.879 |
| B | 790 | 2.190 | 3.914 | 6.382 | 9.101 | 10.390 | 14.988 | 26.776 | 28.306 | 29.180 | 30.622 | 31.617 |
| Caa-C | 297 | 22.925 | 36.259 | 38.666 | 43.707 | 45.864 | 48.714 | 56.135 | 56.135 | 62.715 | 62.715 | 62.715 |
| IG | 2664 | 0.000 | 0.000 | 0.091 | 0.139 | 0.139 | 0.827 | 1.682 | 1.945 | 2.357 | 2.795 | 3.098 |
| SG | 1579 | 5.528 | 8.711 | 10.594 | 12.851 | 13.893 | 17.521 | 26.303 | 27.434 | 28.497 | 29.875 | 30.344 |
| All | 4243 | 2.018 | 3.111 | 3.776 | 4.481 | 4.774 | 6.222 | 9.128 | 9.609 | 10.173 | 10.829 | 11.167 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

1/1/04

| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Aaa | 119 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Aa | 483 | 0.000 | 0.000 | 0.000 | 0.000 | 0.299 | 0.299 | 1.034 | 1.402 | 1.402 | 1.822 |
| A | 1010 | 0.000 | 0.000 | 0.000 | 0.000 | 1.509 | 1.936 | 2.244 | 3.060 | 3.576 | 4.296 |
| Baa | 1050 | 0.000 | 0.216 | 0.216 | 0.216 | 0.348 | 2.142 | 2.142 | 2.142 | 2.843 | 2.843 |
| Ba | 486 | 0.450 | 0.690 | 1.579 | 1.942 | 4.207 | 10.299 | 10.768 | 10.768 | 11.887 | 11.887 |
| B | 879 | 0.879 | 2.304 | 4.509 | 5.469 | 8.982 | 20.788 | 21.977 | 22.637 | 24.490 | 25.660 |
| Caa-C | 257 | 12.660 | 19.844 | 24.791 | 28.339 | 33.808 | 47.503 | 48.753 | 57.196 | 59.057 | 59.057 |
| IG | 2662 | 0.000 | 0.085 | 0.085 | 0.085 | 0.778 | 1.633 | 1.879 | 2.263 | 2.739 | 3.092 |
| SG | 1622 | 2.556 | 4.436 | 6.590 | 7.680 | 10.994 | 21.079 | 22.035 | 23.298 | 24.863 | 25.478 |
| All | 4284 | 0.939 | 1.646 | 2.342 | 2.674 | 4.105 | 7.564 | 8.004 | 8.615 | 9.365 | 9.781 |

1/1/05

| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|--------|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| Aaa | 118 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Aa | 499 | 0.000 | 0.000 | 0.000 | 0.271 | 0.271 | 1.259 | 1.594 | 1.594 | 1.972 |
| A | 1039 | 0.000 | 0.000 | 0.000 | 1.004 | 1.533 | 1.824 | 2.596 | 3.086 | 3.955 |
| Baa | 1067 | 0.198 | 0.198 | 0.198 | 0.712 | 2.240 | 2.240 | 2.240 | 3.047 | 3.215 |
| Ba | 480 | 0.000 | 0.773 | 1.087 | 3.754 | 9.905 | 10.687 | 10.687 | 12.083 | 12.083 |
| B | 937 | 1.049 | 3.007 | 4.012 | 7.809 | 20.242 | 21.217 | 22.055 | 24.308 | 25.665 |
| Caa-C | 323 | 7.049 | 11.505 | 14.846 | 22.936 | 41.020 | 45.016 | 54.619 | 55.916 | 57.436 |
| IG | 2723 | 0.078 | 0.078 | 0.078 | 0.716 | 1.512 | 1.797 | 2.156 | 2.663 | 3.129 |
| SG | 1740 | 1.875 | 3.952 | 5.173 | 9.327 | 20.731 | 22.111 | 23.755 | 25.548 | 26.403 |
| All | 4463 | 0.760 | 1.501 | 1.910 | 3.662 | 7.816 | 8.441 | 9.164 | 10.023 | 10.592 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

1/1/06

| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------|------|-------|--------|--------|--------|--------|--------|--------|--------|
| Aaa | 112 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Aa | 511 | 0.000 | 0.000 | 0.244 | 0.244 | 1.125 | 1.424 | 1.424 | 1.757 |
| A | 1058 | 0.000 | 0.000 | 0.918 | 1.405 | 1.675 | 2.390 | 2.843 | 3.966 |
| Baa | 1069 | 0.000 | 0.000 | 0.354 | 1.244 | 1.244 | 1.244 | 1.848 | 2.005 |
| Ba | 513 | 0.218 | 0.218 | 3.028 | 10.768 | 10.768 | 10.768 | 11.902 | 12.302 |
| B | 1005 | 1.213 | 2.172 | 7.292 | 19.101 | 21.007 | 22.892 | 25.848 | 27.027 |
| Caa-C | 341 | 6.272 | 10.500 | 20.608 | 40.177 | 46.691 | 52.786 | 53.730 | 56.053 |
| IG | 2750 | 0.000 | 0.000 | 0.540 | 1.074 | 1.336 | 1.666 | 2.075 | 2.626 |
| SG | 1859 | 1.858 | 3.127 | 8.409 | 20.330 | 22.425 | 24.234 | 26.224 | 27.226 |
| All | 4609 | 0.721 | 1.185 | 3.386 | 7.909 | 8.797 | 9.587 | 10.470 | 11.148 |

1/1/07

| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------|------|-------|--------|--------|--------|--------|--------|--------|
| Aaa | 119 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Aa | 531 | 0.000 | 0.218 | 0.218 | 1.012 | 1.281 | 1.281 | 1.586 |
| A | 1059 | 0.000 | 0.951 | 1.399 | 1.646 | 2.302 | 2.863 | 4.048 |
| Baa | 1045 | 0.000 | 0.332 | 1.404 | 1.404 | 1.404 | 1.970 | 2.116 |
| Ba | 526 | 0.000 | 1.957 | 8.969 | 9.262 | 9.262 | 10.632 | 10.992 |
| B | 1158 | 0.000 | 4.738 | 17.220 | 20.961 | 23.009 | 26.420 | 28.065 |
| Caa-C | 325 | 6.069 | 18.789 | 41.562 | 46.019 | 50.797 | 52.424 | 57.038 |
| IG | 2754 | 0.000 | 0.538 | 1.118 | 1.359 | 1.664 | 2.097 | 2.665 |
| SG | 2009 | 0.981 | 6.236 | 18.893 | 21.812 | 23.617 | 26.087 | 27.647 |
| All | 4763 | 0.401 | 2.793 | 8.109 | 9.374 | 10.198 | 11.301 | 12.173 |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/08 | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | 6 |
| Aaa | 143 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Aa | 588 | 0.715 | 0.715 | 1.366 | 1.816 | 2.057 | 2.567 |
| A | 972 | 0.543 | 1.236 | 1.487 | 1.885 | 2.612 | 3.853 |
| Baa | 1018 | 0.522 | 1.191 | 1.191 | 1.191 | 1.451 | 1.451 |
| Ba | 529 | 1.218 | 7.354 | 7.605 | 7.884 | 9.351 | 10.254 |
| B | 1151 | 2.144 | 13.958 | 17.374 | 19.117 | 22.143 | 23.571 |
| Caa-C | 418 | 15.085 | 39.101 | 45.955 | 50.945 | 53.697 | 56.857 |
| IG | 2721 | 0.544 | 1.044 | 1.269 | 1.504 | 1.907 | 2.440 |
| SG | 2098 | 4.493 | 17.300 | 20.599 | 22.559 | 25.052 | 26.611 |
| All | 4819 | 2.252 | 8.066 | 9.584 | 10.480 | 11.644 | 12.524 |
| 1/1/09 | | | | | | | |
| Rating | n(0) | 1 | 2 | 3 | 4 | 5 | |
| Aaa | 133 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |
| Aa | 520 | 0.000 | 0.228 | 0.693 | 0.941 | 1.468 | |
| A | 957 | 0.220 | 0.457 | 0.580 | 1.133 | 2.302 | |
| Baa | 1006 | 0.937 | 0.937 | 1.288 | 1.411 | 1.411 | |
| Ba | 504 | 2.325 | 2.805 | 3.073 | 4.759 | 5.642 | |
| B | 961 | 7.529 | 9.361 | 10.338 | 13.244 | 14.152 | |
| Caa-C | 523 | 34.770 | 43.791 | 48.919 | 52.739 | 55.999 | |
| IG | 2616 | 0.442 | 0.573 | 0.846 | 1.138 | 1.652 | |
| SG | 1988 | 13.320 | 16.680 | 18.558 | 21.343 | 22.840 | |
| All | 4604 | 6.002 | 7.491 | 8.382 | 9.593 | 10.443 | |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

| 1/1/10 | | | | | |
|--------|------|--------|--------|--------|--------|
| Rating | n(0) | 1 | 2 | 3 | 4 |
| Aaa | 88 | 0.000 | 0.000 | 0.000 | 0.000 |
| Aa | 402 | 0.000 | 0.000 | 0.000 | 0.000 |
| A | 928 | 0.228 | 0.578 | 1.218 | 2.299 |
| Baa | 1078 | 0.000 | 0.201 | 0.307 | 0.530 |
| Ba | 479 | 0.000 | 0.000 | 1.063 | 2.168 |
| B | 866 | 0.509 | 1.498 | 3.961 | 5.033 |
| Caa-C | 456 | 11.971 | 18.518 | 25.853 | 31.570 |
| IG | 2496 | 0.084 | 0.301 | 0.581 | 1.070 |
| SG | 1801 | 3.305 | 5.437 | 8.702 | 10.890 |
| All | 4297 | 1.408 | 2.357 | 3.736 | 4.816 |
| 1/1/11 | | | | | |
| Rating | n(0) | 1 | 2 | 3 | |
| Aaa | 76 | 0.000 | 0.000 | 0.000 | |
| Aa | 375 | 0.000 | 0.000 | 0.000 | |
| A | 913 | 0.000 | 0.125 | 0.897 | |
| Baa | 1168 | 0.090 | 0.183 | 0.572 | |
| Ba | 542 | 0.197 | 1.677 | 2.351 | |
| B | 1054 | 0.112 | 1.815 | 3.237 | |
| Caa-C | 449 | 8.628 | 18.687 | 25.360 | |
| IG | 2532 | 0.042 | 0.129 | 0.584 | |
| SG | 2045 | 2.011 | 5.462 | 7.742 | |
| All | 4577 | 0.890 | 2.381 | 3.558 | |

EXHIBIT 41

Cumulative Issuer-Weighted Default Rates by Annual Cohort, 1970-2013 (Data in Percent)

1/1/12

| Rating | n(0) | 1 | 2 |
|--------|------|--------|--------|
| Aaa | 72 | 0.000 | 0.000 |
| Aa | 294 | 0.000 | 0.000 |
| A | 902 | 0.000 | 0.000 |
| Baa | 1242 | 0.084 | 0.428 |
| Ba | 614 | 0.170 | 1.621 |
| B | 1136 | 0.486 | 1.515 |
| Caa-C | 508 | 11.654 | 19.537 |
| IG | 2510 | 0.042 | 0.213 |
| SG | 2258 | 2.915 | 5.607 |
| All | 4768 | 1.381 | 2.669 |

1/1/13

| Rating | n(0) | 1 |
|--------|------|-------|
| Aaa | 51 | 0.000 |
| Aa | 239 | 0.000 |
| A | 849 | 0.000 |
| Baa | 1431 | 0.072 |
| Ba | 604 | 0.520 |
| B | 1211 | 0.892 |
| Caa-C | 584 | 9.526 |
| IG | 2570 | 0.040 |
| SG | 2399 | 2.883 |
| All | 4969 | 1.381 |

Rate this Research



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