Moody's Investors Service
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Special Comment

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Historical Default Rates of Corporate Bond Issuers, 1920 - 1997

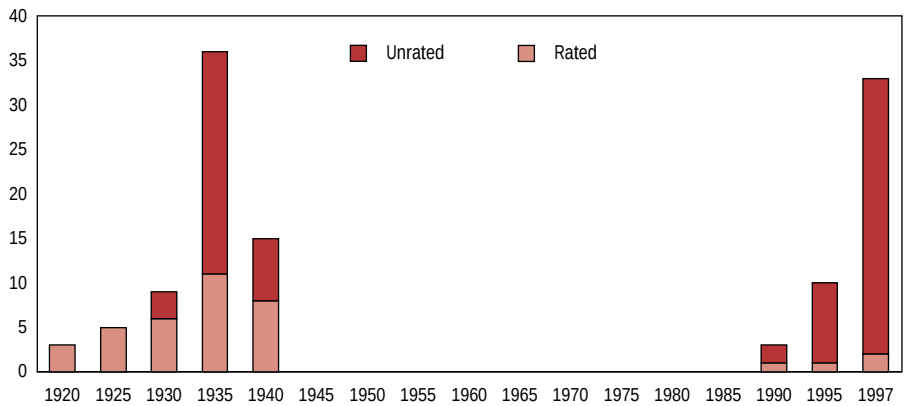
Summary

Moody's continues to extend and expand its corporate bond default research, which now covers the 78-year period from 1920 to 1997. This study reports that:

- Worldwide, 64 issuers defaulted on US $8.6 billion of long-term, publicly held corporate debt in 1997. This marks a sharp increase from 1996, in which just 26 issuers defaulted on US $5.0 billion.
- Until last year, Moody's had recorded only one post-World War II default by an issuer domiciled in an Asian country. In 1997, 22 such defaults occurred, including the first Japanese default, reflecting the depth of the financial crisis affecting large portions of that continent.
- Asia's plight also drove up defaults by emerging market-based issuers over eleven fold in 1997, from two to 25, while increasing from one to two for Moody's-rated emerging market issuers.
- Moody's trailing 12-month default rate for speculative-grade issuers ended 1997 at 1.82% — up from last year's 1.64%, but well below its average since 1970 of 3.38%. Default rates for 1997 do not fully reflect the extent of credit weakness in Asia, as the bulk of such defaults were on privately placed and unrated obligations. However, the Asian crisis is likely to have a negative impact on credit conditions worldwide going forward.
- Moody's expects its speculative-grade 12-month default rate to rise toward the 2.5% level in 1998. This would imply in excess of 35 rated issuer defaults for the year.
- Average recovery rates, as measured by defaulted bond prices, have trended higher since 1990.

The appendix to this study contains several statistical tables of default rates that serve both to document the performance of Moody's ratings and to quantify their meaning in terms of the frequency of default. *For information on software and data capable of generating these default rate tables and more, please refer to the back cover of this report.*

Emerging Market Defaults, 1920 - Present



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Introduction

As a component of Moody's ongoing credit research, we continue to expand and extend our study of historical corporate bond defaults which now covers the 78-year period beginning in 1920. Moody's corporate bond default research began in 1987, in our structured finance group, as part of an effort to ensure the comparability of our long-term debt ratings across asset classes. We initiated this upgrade of that research to further examine the performance of our ratings as indicators of credit quality over a wider variety of economic cycles. We also use these data to study patterns and correlations in the incidence of default and rating changes between industries, domiciles, and rating categories.

In keeping with the spirit of previous Moody's default studies, we limit this report to a general overview of defaults, default rates, and recovery rates. Also, while this report explores the default experience of the better part of this century, we continue to pay special attention and provide extra detail on the more recent period extending from 1970 to the present, under the rationale that more recent experience is of greater interest to investors. We first present a summary 1997's default activity in the following section. In subsequent parts, we explore the entire period from 1920 through 1997.

1997 Defaults and Default Rates

Although 1997 was marked by an increase in default activity over 1996, Moody's bond default rates do not fully reflect this increase because the bulk of such defaults were on privately placed and unrated obligations, primarily of issuers domiciled in Southeast Asia. Moody's trailing 12-month default rate for all corporate issuers climbed throughout the year from 0.54% in January to 0.66% in December. However, the average for the year was 0.59%, still below the 1996 average of 0.88%. Moody's speculative-grade trailing 12-month default rate ended the year at 1.82% versus 1.64% for 1996. These rates remain well below the average since January 1970 of 1.04% for all corporates and 3.38% for speculative-grade.

Globally, 64 issuers defaulted on $8.58 billion of long-term, publicly held corporate debt in 1997. This marks a significant increase from 1996 levels of 26 and $5.04 billion, respectively. Moreover, default activity accelerated over the year, with just 20 defaults in the first half for a total of $3.05 billion and 41 in the second half for a total of $5.53 billion. Exhibit 1 presents a breakdown of 1997's defaults by issuer domicile.

ASIAN MELTDOWN

Moody's recorded 21 defaults on public long-term debt by issuers domiciled in Asian countries in 1997, but believes that even this historically high total does not fully reflect the depth or breadth of credit deterioration in Southeast Asian economies, where bank financing and privately placed debt obligations play a larger role than in financially disintermediated economies. Deterioration in the quality of these non-public debt obligations has produced a wave of firm closings and bankruptcy filings throughout Asia, and has brought larger financial institutions in Korea, Thailand, Indonesia, and Japan to the brink of insolvency. IMF loan packages for Korea, Thailand, and Indonesia, as well as commercial bank agreements for loan rollovers and extensions, so far have helped to alleviate the liquidity crisis in the region. Government intervention to shore up financial institutions has also been widespread.

Because many of the mandated closings of banks and financial institutions that have occurred across Asia have not threatened public bondholders, Moody's has not categorized them as defaults. Nevertheless, the potential for future bond defaults in these countries is real, and credit weakness continues to reverberate back from the industrial to the financial sector. As of December 31, 1997, 74 banks and financial institutions (56 in Thailand 15 in Indonesia and 2 in Japan) had been closed outright by financial regulators.

Exhibit 1 - 1997 Defaulters by Domicile

Domicile	Number of Defaulters
United States	32
Korea	10
Thailand	8
Hong Kong	3
Argentina	2
Mexico	2
Canada	2
Australia	1
Cayman Islands	1
Japan	1
France	1
Switzerland	1

**Includes Moody's-rated and unrated defaulters.*

FIRST JAPANESE DEFAULT

Deterioration in the credit profile of Japan's financial sector became acute last year, as domestic economic weakness and the crisis in Korea and Thailand took their toll. The Japanese government continues to pursue a policy of managed deregulation with respect to the financial sector, allowing some firms to fail while protecting small investors and savers. November saw the closing of Yamaichi Securities and the Hokkaido Tokushoku Bank, although neither firm has defaulted on bonds thus far. Hokkaido Takushoku, Japanese 11th largest bank, was allowed to cease operations and transfer its assets to a rival regional bank. A week after Hokkaido Takushoku Bank closed, Yamaichi Securities Co., Ltd., Japan's fourth largest broker, filed for voluntary closure after admitting of having Y264 billion (US$1.8 billion) worth of losses on hidden off balance sheet deals. To prevent a shock in the financial sector that would have occurred had the firm been allowed to go bankrupt, the government pumped in nearly Yen300 billion (US$2.5 billion) in a move clearly intended to avoid a collapse of confidence in the system.

Yaohan, Inc.'s default represented the first public bond default by a Japanese firm since WWII. Yaohan, a grocery retailer, had amassed nearly Yen 161.3 billion ($1.34 billion) in debt and on September 8, 1997, filed for bankruptcy protection under the Japanese equivalent of the U.S. Chapter 11. The firm's financial difficulties became acute when its commissioned banks asked the company to provide collateral after discovering the company's deteriorated fundamentals. Yaohan's failure to comply strained its relationships with the banks and cut the company off from additional funds.

Importantly, the banks did not agree to repurchase Yaohan's defaulted bonds from the market, a role comissioned banks have traditionally played in Japan. This reflects the strain Japanese financial institutions are under due to their already high exposure to nonperforming loans both at home and in neighboring countries. This deviation from tradition, however, also signals that Japanese capital markets are becoming increasingly "free" in that investors are more directly exposed to credit risk. And as credit risk becomes more accurately recognized and priced, market efficiency will improve in the long run.

Government officials have recently become more aggressive in their attempts to stimulate the economy and to shore up public confidence in the financial sector. Nevertheless, the potential for future public bond defaults by Japanese issuers has now been established.

EMERGING MARKET DEFAULTS

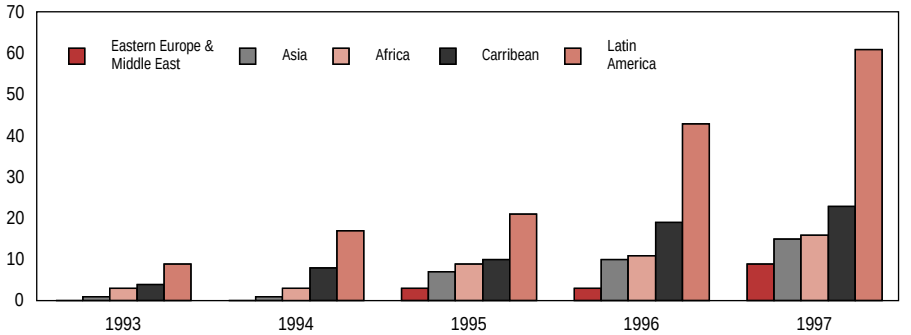
Access to international capital by emerging market borrowers, and particularly lower-rated commercial entities, continues to improve, benefiting from and contributing to robust economic growth worldwide. The proportion of speculative-grade issuers domiciled in emerging market countries has skyrocketed over the past few years, from just 2% in 1993 to over 10% at the beginning of 1997. Exhibit 2 below charts this growth, including the contribution of Latin American issuers, the number of which increased more than fivefold over the period.

Ultimately, such an extension of credit will produce an increase in the absolute number of bond defaults — something we have now begun to see. As shown on the cover of this report, emerging market defaults are approaching levels not seen since the 1930s, with 21 unrated entities defaulting on debt obligations in 1997. Of that 21, 19 were directly tied to the financial crisis in Asia. There has not been any significant increase in default incidence associated with emerging market borrowers outside of the Asia-Pacific region.

The number of defaults by Moody's-rated emerging market issuers remains low as the use of public ratings in such markets is not yet widespread. Commercial borrowers in emerging market economies still rely primarily on bank financing and privately placed credit. However, as emerging market economies pursue liberalization policies to attract capital and encourage disintermediation, the number of Moody's-rated bonds from these countries will continue to grow.

Exhibit 2

Growth of Speculative-Grade Issuers From Emerging Market Countries, 1993-97



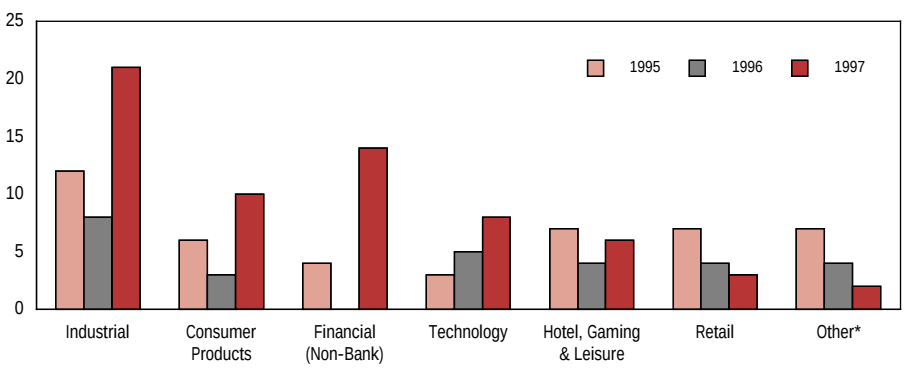
After not experiencing a single Moody's-rated emerging market default in any year since WWII, we saw one in both 1995 and 1996, and two in 1997. Overly aggressive expansion was responsible for the two Moody's-rated emerging market defaulters in 1997; both Latin American based firms. Grupo Mexicano de Desarrollo, S.A. (GMD), a Mexican holding company, was, through its subsidiaries, heavily engaged in the construction of infrastructure projects as a participant in the Mexican government's program to develop a modern highway network through private financing, and thus exposed to the risks of budgetary cutbacks. The Argentinian firm Buenos Aires Embotelladora (BAESA), the largest franchised bottler of PepsiCo products outside the U.S, defaulted in June largely due to its costly expansion in Brazil.

INDUSTRIAL COMPOSITION OF DEFAULTERS

Defaults by industry shifted in 1997. Industrial firms still represent the largest category of defaulters worldwide. Technology, however, dropped from second to fourth despite an increase in the absolute number of defaulters from that sector. Non-bank financial companies (many associated with real estate development) rose to fill the slot at second. Consumer products defaulters also grew, unseating retail and hotel, gaming & leisure at third. The absolute number of defaulters in retail, banking, media, and utilities sectors all fell in 1997, as shown in Exhibit 3.

Exhibit 3

Number of Defaulters by Industry Group, 1995-97



**includes Transportation, Banking, Media and Utilities*

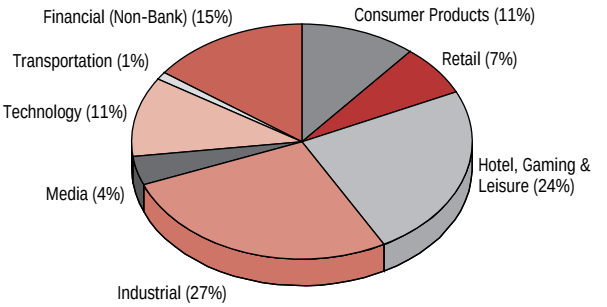
In terms of the dollar amount of debt affected, industrial issuers also accounted for the largest portion of last year's defaulted public debt — $2.23 billion (27%). Following in second place were firms in the hotel, gaming & leisure sector, which contributed another $2.01 billion (24%). The third place slot was filled by non-bank financial institutions, which defaulted on $1.25 billion (15%). Exhibit 4 gives more detail of the composition of 1997's defaults by dollar amount.

While the sectoral composition of defaulters has shown some definite long-term trends (see Exhibit 9), defaulted dollar amounts by sector vary substantially from year to year as shown in Exhibit 5. For instance, the number of retail sector defaulters fell from four in 1996 to three in 1997, but the dollar amount of defaulted debt more than doubled from $220 million to $560 million. This year-to-year volatility is typical. Even the industrial sector, on average the largest contributor of defaults, was superseded in dollar amount in the late eighties as a result of energy and real estate sector weakness.

Exhibit 4

1997's Defaulted Debt by Industry

($8.6 billion = 100%)

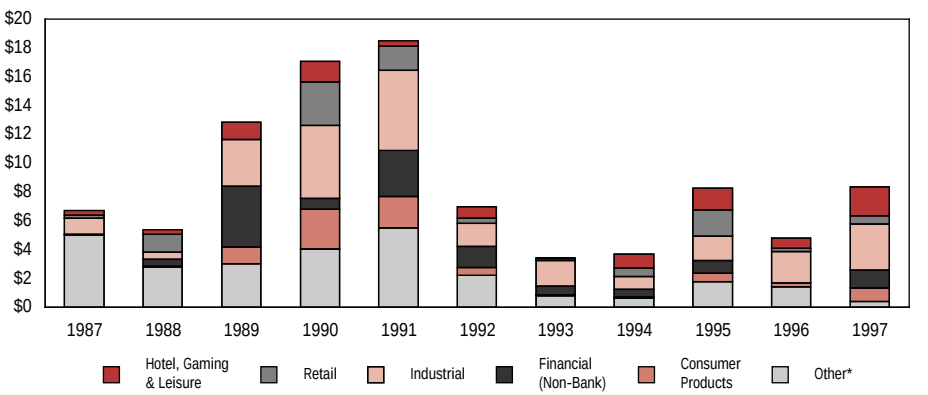


1997 BOND MARKET ACTIVITY

While credit problems and subsequent currency weakness in Asia helped to fuel a fourth quarter rally in US Treasuries, driving long-term Treasury yields below 6%, low inflation, combined with continued economic strength in the US, Europe, and Latin America, supported corporate bond prices. In fact, corporate yields fluctuated in a fairly narrow range over the course of the year, with Moody's speculative-grade bond yield varying by only 58 basis points (bps) from its 9.51% peak in March to its 8.93% trough in September. It finished 1997 at 9.04%, just 13 bps below the average for the year.

Exhibit 5

Defaulted Dollar Amounts by Year and Sector, 1987-97



**Includes banking, transportation, energy, utilities and media.*

With Treasuries rallying and corporate yields holding steady, the spread between Moody's speculative-grade bond yield and seven-year Treasuries widened by 33 bps in 1997 after having narrowed by 90 bps during 1996. Despite this, Moody's speculative-grade total return index outperformed Treasuries by 122 bps over the year, returning 11.06% to investors vs. a 9.84% total return for seven-year Treasuries.

Although corporate bond yields held fairly steady throughout the year, market activity began a shift in complexion and tone in the second half of 1997. Bond issuance began the year strong, buoyed by low default rates, strong investor demand, and a surging equity market. But investment-grade issuance peaked in July as the US stock market rally cooled, default activity began to increase, and the extent of financial weakness in Asia became evident. Speculative-grade issuance continued to soar, reaching a peak of $15 billion in October, at which point total issuance was 24% higher than for the first nine months of 1996. Total issuance then slowed to a trickle in the final two months.

The final total for new issuance in 1997 was $243 billion, an increase of 19% over 1996, but still low given the fast pace through October. Speculative-grade issuance accounted for most of the increase, rising $20 billion, or 30%, to a record $88 billion for the year, while investment-grade issuance rose by only $15 billion, or 12%, to $145 billion.

Growth in structured credit-backed and credit-linked obligations was a major contributor to overall market volumes in 1997, with structured new issuance more than doubling to $51.4 billion from 1996's $23.7 billion. Facilitating this growth has been greater liquidity in swap and other hedging markets, which have made it easier to attain desired credit risk targets for structured deals. The increasing diversity of assets used to support structured issues also bodes well for continued strong growth for this asset class.

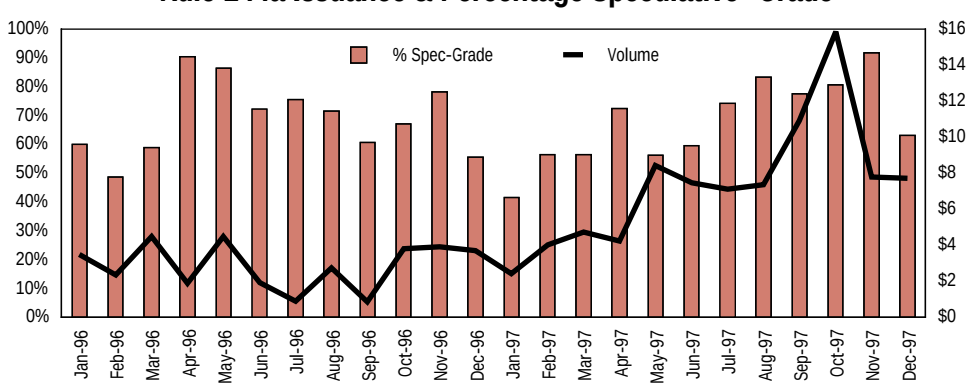
One other driving force behind the growth in both the supply and demand for structured debt instruments has been the continued development and acceptance of credit risk quantification techniques. Such techniques, which help to structure and price these deals, rely on the strong historical relationships between credit ratings on bonds and loans and the historical default and recovery experience of those instruments.

Also behind recent market volumes has been a dramatic increase in quasi-private bond issuance via the 144a market. The Securities and Exchange Commission's Rule 144a relaxes registration requirements, allowing issuers to sell debt more quickly to institutional and other qualified buyers. Issuers pay a premium to borrow quickly, as the universe of sanctioned investors is small. Or, issuers may promise to register the securities at a later date at which point the issue becomes public. As shown in Exhibit 6, total 144a issuance has climbed from $13 billion in the first half of 1996 to over $25 billion in the first half of 1997, exceeding $18 billion in the second quarter alone.

The 144a market has developed into the preferred channel of access to capital for lower-rated issuers. Non-investment-grade issuance has averaged 68% of total 144a issuance per month since January 1996, and exceeded 90% in two of those months. Speculative-grade 144a issuance exceeded public speculative-grade issuance for the first time ever in 1997, as over 60% of the new below-investment-grade debt sold was issued under the rule. Over 80% of such issuance was rated B or lower, versus 41% for public issuance.

Exhibit 6

Rule 144a Issuance & Percentage Speculative -Grade



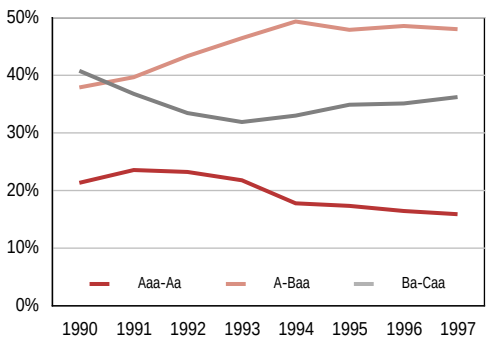
RATING COMPOSITION

Overall, the rating composition of speculative-grade issuers showed a marked deterioration in 1997. New issuance was again skewed towards the riskier end of the credit scale, with 69% of the dollar amount of new debt carrying a B or lower rating, representing a slight improvement over 71% in 1996. However, after taking into account the effects of upgrades, downgrades, calls, and other retirements, the percentage of speculative-grade issuers with outstanding debt carrying the B or lower ratings at the senior unsecured level rose to 55% compared to 1996's 52%. This figure represents a riskier credit mix than existed immediately before the speculative-grade market meltdown of the early 1990s. As of the start of 1989, for example, only 43% of speculative-grade issuers carried B or lower ratings at the senior unsecured level.

Faster growth in the number of speculative-grade issuers relative to Aaa-Aa3 rated issuers has resulted in an overall increase in the share of the all ratings captured by below-investment-grade credits. Exhibit 7 breaks down the composition of rated borrowers into high investment-grade (Aaa-Aa3), low investment-grade (A1-Baa3), and speculative-grade groups and tracks their share of the total since 1990. Low investment-grade credits have continued to account for about 48% of all rated borrowers since 1994. Speculative-grade categories have, however, gained each year since 1993, climbing above 36%, while the high investment-grade categories have declined to less than 16%.

Exhibit 7

Ratings Composition of Moody's-Rated Bond Isuers, 1990-97



Positive rating revisions did, however, help to counterbalance the overall credit deterioration caused by higher issuance by lower-rated firms in 1997. Rating revisions were net positive as the result of 205 upgrades affecting $303 billion in outstanding debt, versus 161 downgrades affecting $144 billion.

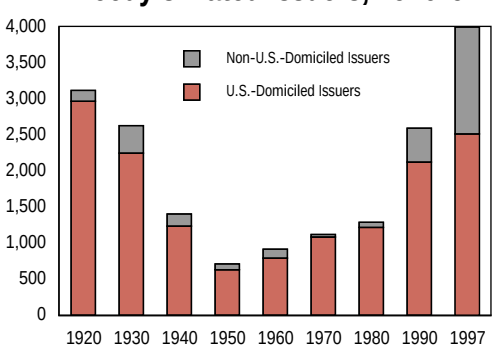
The Rated Universe

Moody's bases the results of this study on a proprietary database of ratings and defaults for industrial and transportation companies, utilities, financial institutions, and sovereigns that have issued long-term debt to the public. Municipal debt issuers, structured finance transactions, and issuers with only short-term debt ratings are excluded. In total, the data cover the credit experiences of over 14,400 issuers that sold long-term debt publicly at some time between 1919 and the start of 1998. As of January 1, 1998, approximately 4,000 of those issuers held Moody's ratings. These issuers account for the bulk of the outstanding dollar amount of U.S. public long-term corporate debt and a substantial part of public issuance abroad.

Exhibit 8 details the number of firms included in our ratings database as of the start of each decade since 1920. The downward trend from 1920 through 1950 reflects the public bond market's retrenchment following the Great Depression and World War II, increasing financial intermediation, and consolidation in the railroad and utilities industries. Since 1950, however, the number of rated firms has increased steadily, with sharp increases during the 1980s and 1990s. The increase of the 1980s reflects, in part, the development of the junk bond market in the U.S., which attracted a new set of issuers to the public bond market. The increase of the

Exhibit 8

Moody's-Rated Issuers, 1920-97



1990s, on the other hand, primarily reflects Moody's expansion into non-U.S. markets. It was not until 1994 that Moody's again rated as many corporate issuers as it did in 1920, when, according to the study by W. Braddock Hickman ("Corporate Bond Quality and Investor Experience," NBER, 1958), nearly 98% of straight corporate bonds outstanding were rated.

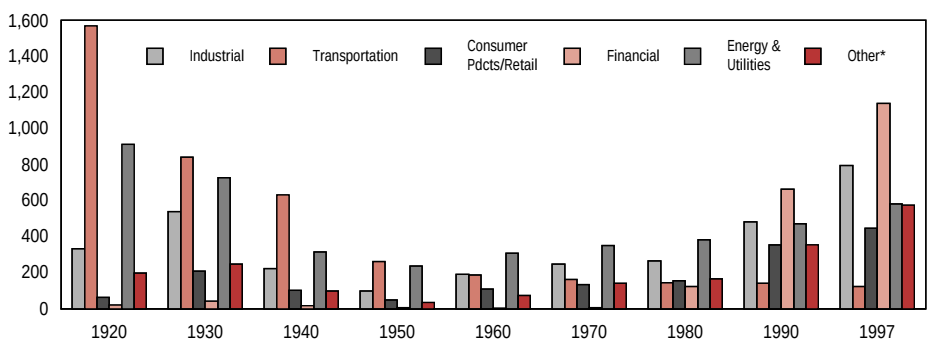
Non-U.S. issuers comprised nearly as large a percentage of the Moody's-rated universe in January of 1930 (15%) as they did in January of 1990 (18%). The portion of rated issuers domiciled outside of the United States began to fall with the decline in international trade that accompanied the Great Depression and continued until it hit an all-time low in 1970. Since then, this fraction has grown significantly, rebounding to 1930 levels by 1990 and moving to the new height of 38% as of the beginning of 1998.

Before 1980, the non-U.S. issuers Moody's rated were predominantly those that tapped the U.S. bond market. In recent years, however, Moody's has extended ratings to many more issuers placing debt in non-U.S. markets. Currently, the two non-U.S. countries contributing the largest number of Moody's-rated companies are Japan and the United Kingdom, followed by Canada and the Netherlands.

Historically, concentrations of bond issuers by industry have shifted with broad patterns in the capital formation process. Consequently, the composition of firms with Moody's-rated debt has also shifted. Exhibit 9 traces the composition by industry of Moody's-rated, corporate issuers from 1920 to the present. In the early part of the century, railroads commanded large amounts of investment capital. As of 1920, more than half of the issuers Moody's rated were railroad companies. Following the railroads were the utilities, industrials, and financial companies; These comprised over 31%, 14%, and 1%, respectively, of rated issuers in 1920. Since 1920, railroads have consolidated so that by January 1998, the entire transportation industry comprised less than 4% of corporate public debt issuers. On the other hand, industrials have expanded to represent 44% of the total number of rated firms. Since Moody's began rating bank debt in 1971, financial companies have also expanded significantly to comprise 32% of the Moody's rated universe as of the start of 1998. The combined categories of consumer products, retail establishments, and hotel & gaming enterprises, have also seen significant growth, rising from just 2% of rated issuers in 1920 to over 12% as of January 1998.

Exhibit 9

Industrial Composition of Issuers, 1920-97



**Includes media, technology and miscellaneous*

MOODY'S INTRODUCES NUMERICALLY MODIFIED Caa RATING CATEGORIES

Over the past several years, investors have developed a need for finer distinction among the increasingly diverse risk profiles of bond issues at the Caa level. In response to this growing need, Moody's announced the assignment of numerical modifiers to long-term issues rated Caa[1] on or after June of 1997. Moody's refined its rating scale for the categories Aaa through B in April 1982 by adding numerical modifiers. These rating categories were expanded to include three numerical modifiers each in order to provide finer gradations of credit risk evaluation.

1 *Excluding municipal issues and preferred stock.*

Caa-rated issues are characterized by high levels of risk with respect to principle and interest payments. Issuers include both young companies whose credit histories are sparse, as well as established players with declining fundamentals. The Caa category also encompasses defaulted obligations with high expected recoveries.

The Caa universe is populated by a broad cross-section of corporate issuers, the majority of which are U.S.-based industrials. The cable TV and telecommunications industries represent the largest portion of this category, accounting for approximately 20% of the number of outstanding issues and 25% of the dollar amount of outstanding debt. Retail establishments also account for a large share of Caa-rated issuance, with approximately 13% of the number of outstanding issues and of the dollar amount of outstanding debt.

Because we do not yet have a full year of experience with the numerically modified Caa category, we cannot calculate one-year default rates for these subsets. Since our first set of cohorts for the numerically modified Caa categories was formed as of January 1, 1998, we will not begin to calculate cumulative default rates for the refined rating categories until January 1999. Subsequent revisions of Moody's corporate bond default research will include statistics based on these refined Caa categories.

Defaults and Default Rates

Our default database covers nearly 3,000 defaults by issuers both rated and unrated by Moody's. We compiled these default histories from a variety of sources, including our own Industrial, Railroad, and Public Utilities Manuals; reports of the National Quotation Service; various issues of The Commercial and Financial Chronicle; our library of financial reports; press releases; press clippings; internal memoranda; and records of analyst contact with rated issuers. We also examined documents from the Securities and Exchange Commission, The Dun & Bradstreet Corp., the New York Stock Exchange, and the American Stock Exchange.

DEFINITIONS AND METHODOLOGY

Moody's defines default as any missed or delayed disbursement of interest and/or principal, bankruptcy, receivership, or distressed exchange where (i) the issuer offered bondholders a new security or package of securities that amount to a diminished financial obligation (such as preferred or common stock, or debt with a lower coupon or par amount) or (ii) the exchange had the apparent purpose of helping the borrower avoid default.

Moody's ratings incorporate both the likelihood and the severity of default. So, in order to calculate default rates, which are estimates of the default probability component of ratings, we must hold severity considerations constant. We do this by taking the rating on each company's senior unsecured debt or, if there is none, by statistically implying such a rating on the basis of rated subordinated or secured debt. In most cases, this will yield an assessment of risk that is relatively unaffected by special considerations of collateral or of position within the capital structure.

This year we have incorporated some improvements to the algorithm used to imply senior unsecured ratings. In the process, some of the implied rating histories have been revised, thereby generating some changes in previously reported default rates. The resulting figures represent a more accurate estimate of the actual risk of default associated with each Moody's rating.

To calculate default rates, we use the issuer as the unit of study rather than individual debt instruments or outstanding dollar amounts of debt. Because Moody's intends its ratings to support credit decisions, which do not vary with either the size or number of bonds that a firm may have outstanding, we believe this methodology produces more meaningful estimates of the probability of default. A detailed explanation of our rationale for adopting this methodology is contained in the appendix. In summary, because the likelihood of default is essentially the same for all of a firm's public debt issues, irrespective of size, weighting our statistics by the number of bond issues or their par amounts would simply bias our results towards the characteristics of large issuers.

The default rates we calculate are fractions in which the numerator represents the number of issuers that defaulted in a particular time period and the denominator represents the number of issuers that could have defaulted in that time period. In this study, the numerators are the numbers of issuers defaulting on Moody's-rated debt. The denominators are the numbers of issuers that potentially could have defaulted

on Moody's-rated debt. Hence, if all of an issuer's ratings are withdrawn, it is subtracted from the denominator. Failing to correct the denominators in this way tends to generate artificially low estimates of the risk of default. It is important to note that Moody's does not withdraw ratings because of a deterioration in credit quality. In such cases, the issuer's bonds are simply downgraded. For further explanation of this methodology please see the appendix.

We define default rates for any rating classification in a manner analogous to that used for calculating overall corporate default rates. For the B rating, for example, the one-year default rate is the number of Moody's-B-rated issuers that defaulted over the following one-year period divided by the number of Moody's-B-rated issuers that could have defaulted over that period. The issuer-weighted average of default rates (defined as of the start of each year) represents an estimate of the risk of default within any one-year period. (The underlying one-year default rates for each rating category from 1970 through the present are included in Exhibit 26 of the appendix.)

Defaults Since 1920

The incidence of default by both rated and unrated issuers is spread unevenly over this century, with large numbers of defaults in the 1920s, the depression of the 1930s, and again in the late 1980s and early 1990s. Exhibit 10, which portrays a monthly time-series of the 12-month trailing default rate for all corporate issuers, provides an overall picture of how aggregate corporate default risk has ebbed and flowed since 1920.

From January 1920 through mid-1929 was a period of cyclical and declining default risk that resembled the 1980s in terms of the average default rate. Interest rates started the 1920s at high levels and drifted lower, supporting booms in corporate debt issuance and the stock market that helped suppress default rates. However, in the next period from mid-1929 through December 1939 produced the heaviest default activity of any period examined in this report. The Great Depression generated a 78-year high, one-year corporate default rate of 9.2% in July 1932, indicating that nearly one in 10 Moody's-rated corporate issuers defaulted over the following year. The number of recorded defaults per year peaked in 1933 at 317.

The severity of the depression and its characteristic asset depreciation ensured that such high rates of default did not quickly subside. For the eight-year period beginning in January 1930, the default rate averaged 3.7% — nearly as high as the recent 4.1% peak set in July 1991. The default rate again jumped at the beginning of World War II, reflecting the war-related defaults of Italian, German, French, Japanese, Czechoslovakian, and Austrian companies. Following the war, however, default risk subsided to very low levels.

These low levels persisted until 1970, when the defaults of Penn Central Railroad and 25 of its affiliates shook fixed-income markets. After 1970, default risk again ebbed and was moderate-to-low by historical standards until 1982, when the modern period of relatively high default risk began.

Exhibit 10

One-Year, Corporate Issuer Default Rate vs. Baa-Aaa Yield Spread, 1920-97

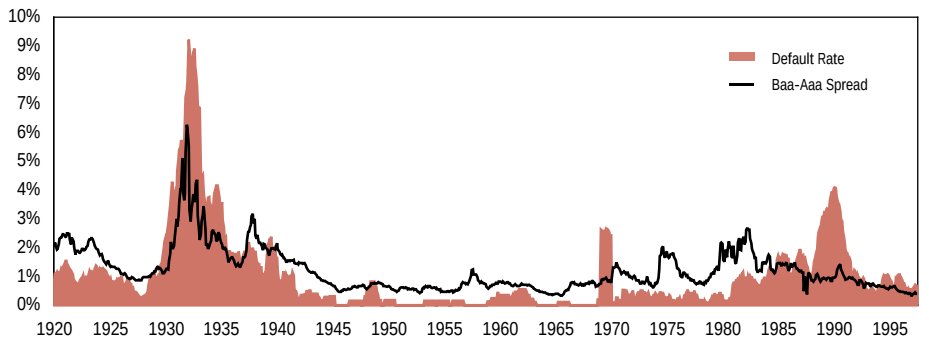


Exhibit 10 also tracks the spread between Moody's average long-term Baa and Aaa-rated bond yields. Month-to-month, the Baa-Aaa spread varies with a variety of market conditions including, and most importantly, the market's perception of the credit risk differential between Aaa and Baa-rated debt. This spread generally tracked the corporate default rate from 1920 through the early 1980s. In the early 1980s, however, it began a pronounced downward trend that it has maintained through today despite the highest corporate default rates seen since the Great Depression.

This divergence signals a fundamental difference between the episodes of high credit risk investors faced in the 1930s versus those recently experienced during the speculative-grade market meltdown of the early 1990s. During the Great Depression, the economy experienced the most severe contraction of this century while deflation increased the real value of fixed debt obligations. This situation placed even highly creditworthy borrowers at considerable risk of default. Consequently, defaults in the 1930s reached quite far up the credit scale, even affecting some investment-grade debt. The market reacted to the surge in credit risk for Baa-rated debt over Aaa-rated debt by demanding greater Aaa-Baa spreads.

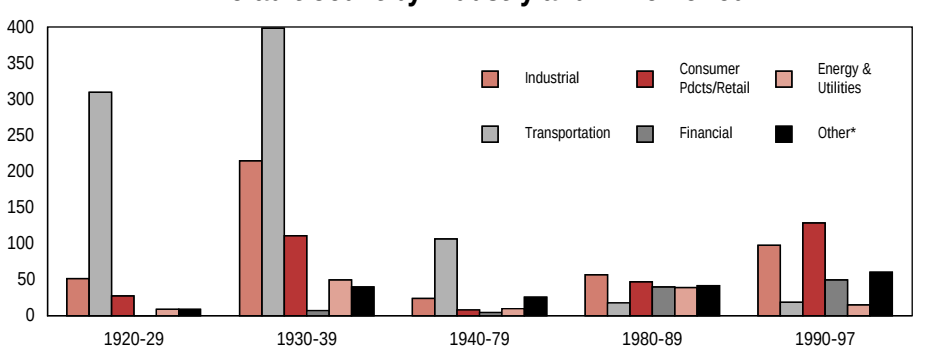
On the other hand, the economic recession that occurred during the early 1990s proved to be the mildest since World War II and was devoid of deflation. Consequently, very little investment-grade debt defaulted during that period, even though defaults were numerous within the speculative-grade bond ratings. A falling Baa-Aaa yield spread reflects the bond market's accurate assessment that the period's defaults were not the result of significant overall and unexpected weakness in the economy, but rather of phenomena specific to the speculative-grade bond market (e.g., the many ill-conceived LBO's of the 1980s).

VARIATIONS BY INDUSTRY

The contributions made by different industries to the total number of defaults have likewise varied substantially through time. Exhibit 11 portrays the total number of defaults, sorted by industry, in each of five decades that span the period from 1920 through the present. At 40%, industrials account for the largest percentage of the total number of defaults over the last 78 years. The remaining defaulters are divided between transportation companies (36%), utilities (16%), financial companies (5%), and miscellaneously affiliated firms (3%). In the 1920s, transportation companies made up the majority of defaulters, with industrial firms coming in a distant second place. However, the number of industrials defaulting surged past those for other industries during the depression years of the 1930s to hit 537.

Exhibit 11

Default Count by Industry and Time Period

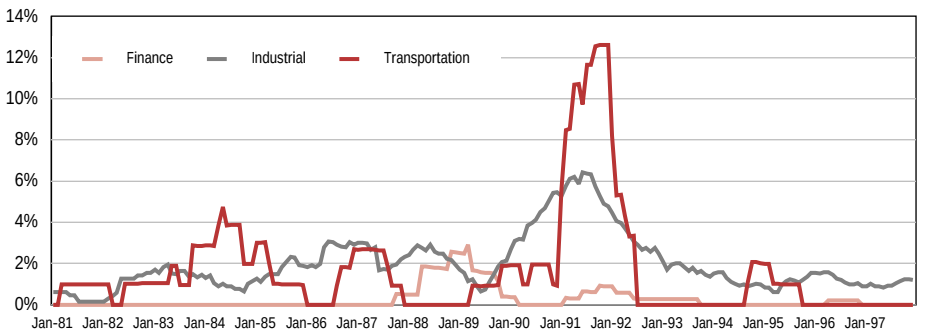


** Includes Media, Technology, and Miscellaneous.*
Note: The 1940-79 period has been compressed as the default totals over this period were low.

Exhibit 12, which presents trailing 12-month default rates by industry, demonstrates some of the same volatility evidenced in Exhibit 11, although the rate for industrial companies, the largest issuer group, is the smoothest of the three. Raw default totals as shown in Exhibit 11 can be somewhat misleading, as different sectors have different numbers of issuers that could potentially default. Dividing defaulters within a sector by the number of potential defaulters in that sector produces default rates that are comparable. The rates shown in Exhibit 12 are therefore calculated as the number of Moody's-rated issuers that defaulted over the following 12-month period divided by the number of Moody's-rated issuers that could have defaulted over that period.

Exhibit 12

12-Month Trailing Default Rates by Sector, January 1981 - December 1997



NON-US DEFAULTS

Non-US defaults reached an historic high during the 1930-1949 period, when they constituted 16% of all defaults. The large number of non-US defaults in the 1930s is at least partially attributable to Germany's 1933 payment moratorium. Of the 317 defaulters on record for the year, 62 (20%) were German companies restricted from making payments under the German Transfer Moratorium. All of these companies carried speculative-grade ratings at the senior unsecured level at least six months prior to the decree. Half were utility companies, a third were industrials, and the remainder were transportation companies. Subsequent related defaults were registered in Austria and Czechoslovakia. Other countries that have declared payment moratoriums, and therefore have generated defaults, include Rhodesia, Chile, and Uruguay. Since WWII, no sovereign state has defaulted on Moody's rated publicly held bonds, although there have been cases in which sovereigns defaulted on private unrated debt obligations.

After falling off significantly during the post-war era, non-US defaults again constitute increasing proportions of the total over the past decade, comprising over 20% of all defaults since 1989. This reflects the increase in the proportion of Moody's-rated non-US issuers, as shown in Exhibit 8.

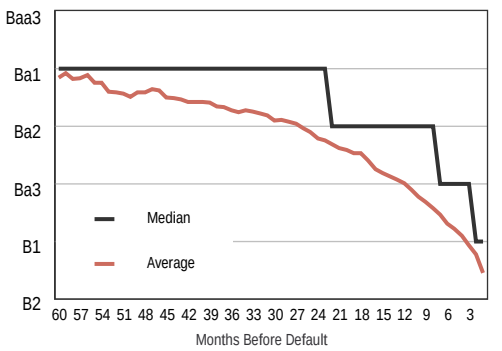
Ratings as Indicators of Default Probability

Over 2,000 of the more than 14,000 corporate issuers that Moody's has rated since 1920 defaulted at some point in time. One year prior to default, only 184 of these carried actual or implied senior unsecured ratings at the investment-grade level. However, at various lengths of time before default, more issuers carried investment-grade ratings.

Exhibit 13 displays this information and clearly shows a decline in the median rating as the time of default approaches. To capture the evolution of ratings as default approached, we calculated the median and average senior or implied senior unsecured rating of issuers between zero and 60 months before default. The average is constructed by translating Moody's rating symbols onto a linear numerical scale and simply taking the average of the numbers to produce a smooth series.[2] Thus, while the value of the "average rating" has no simple interpretation, it can be translated back onto the original symbolic scale to show finer gradations in the change in credit quality of the pool of future defaulters.

Exhibit 13

Median and Average Ratings Before Default

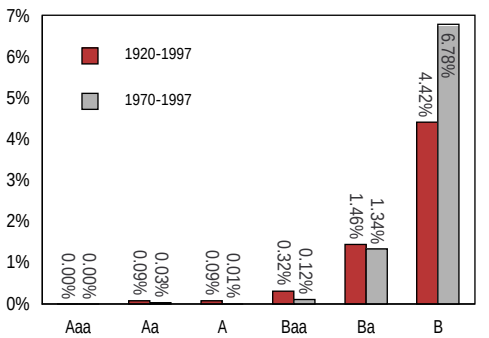


From Exhibit 13, it is evident that five years prior to default the median rating of defaulting companies is speculative-grade and is already beginning to deteriorate. At 22 months before default, the median rating has fallen to Ba2 and falls further to Ba3 eight months prior to default. The average rating falls faster and farther than the median rating, reaching Ba3 about two years prior to default.

The fact that the average lies everywhere below the median rating indicates that the rating distribution for issuers that ultimately default is skewed toward the lower end of the rating scale. The highest rating ever to be held by a Moody's-rated defaulter at the time of default was A3, held in 1982 by Johns Manville, which sought protection under Chapter 11 after being found liable for massive asbestos-related damages.

Exhibit 14

One Year, Weighted-Average Default Rates by Rating



The weighted average default rates shown in Figure 14 clearly show an increased risk of default associated with lower rating categories. An average of 3.27% of speculative-grade issuers have defaulted per year, compared with just 0.17% of investment-grade issuers. And for all but 28 of the past 78 years, the one-year default rate for the investment-grade sector was zero.

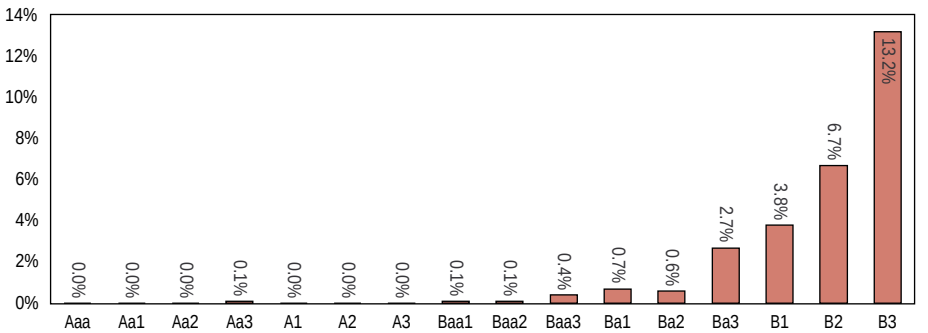
Exhibit 26 (in the appendix) likewise demonstrates a clear pattern of higher default risk associated with the speculative-grade rating categories. The last three rows of the exhibit give the one-year default rates for investment-grade issuers, speculative-grade issuers, and all corporate issuers since 1970. As these data indicate, the default rate for all speculative-grade issuers has averaged 3.41% higher than that for investment grade issuers since 1970, and 4.13% higher since 1980.

2 *A linear mapping is used here for simplicity only.*

The results presented in Exhibit 15 suggest that the relationship between ratings and default likelihood holds for numerically modified rating categories as well as for the non-modified categories. Exhibit 15 and Exhibit 29 (in the appendix) present one-year and weighted average one-year default rates for each of these rating categories. These default rates are drawn from the relatively high default risk period extending from 1983 through the present. Over that times period, average one-year default rates climbed from 0.0% for Aaa to 13.2% for B3.

Exhibit 15

One Year Default Rates by Numerically Modified Ratings, 1983-97



Multi-Year Default Rates

Although the one-year default rates that we have been discussing up to this point may be of greatest interest, some investors find default rates for longer time horizons more relevant. A 10-year default rate, for example, estimates the share of a portfolio of bonds that can be expected to default over a 10-year period.[3]

Moody's employs a cohort approach to calculating multi-year default rates. A cohort consists of all issuers holding a given senior rating at the start of a given year. These issuers are then followed through time, keeping track of when they default or leave the rated universe, in order to estimate the cumulative risk of default over multi-year horizons. By forming and tracking cohorts of all Moody's-rated issuers with debt outstanding as of January 1 of each year, we can replicate the experience of a portfolio of both seasoned and new-issue bonds purchased in a given year.

The cohort methodology also has the advantage that year-over-year comparisons of actual default experience can be made. Cohort-based default rates can answer questions like "What was the probability that a B-rated issuer with bonds outstanding as of January 1, 1985 would default by 1997?" The answer to this question — 57.67% — is found in Exhibit 30 (appendix), in the last row and last column of the section labeled "Cohort Formed January 1, 1985." In cases in which an investor feels that the business conditions of the current year are similar to those of some previous year, she may consult that year's cohort directly to ascertain what default patterns to expect.

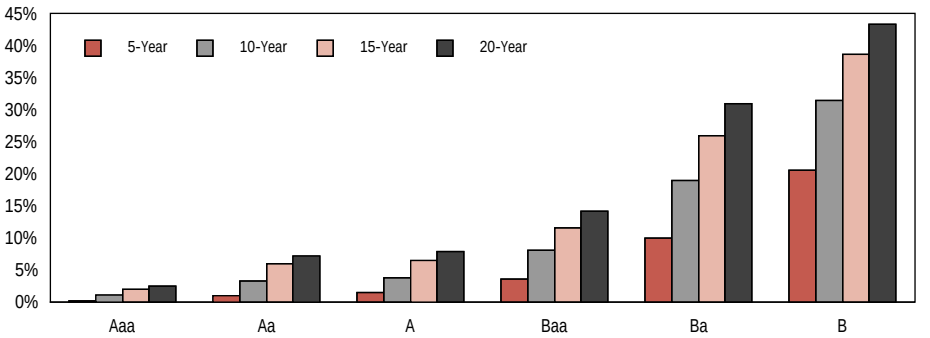
To estimate the average risk of default over time horizons longer than one year, we calculate the risk of default in each year since a cohort was formed. The issuer-weighted average of each cohort's one-year default rate forms the average cumulative one-year default rate. The issuer-weighted average of the second-year default rates cumulated with that of the first year yields the two-year average cumulative default rate. In this manner, we compute average cumulative default rates for one to 20 years for each rating category.

Exhibit 16 presents average cumulative default rates for 5, 10, 15, and 20-year time horizons based on all data available since 1920. Exhibit 16 also shows that higher default risk for lower rating categories remains evident over investment periods exceeding one year. For example, average default rates for five-year holding periods climb from 0.1% for the Aaa rating category to 20.6% for the B rating category. Exhibit 16 also shows that the pattern recurs for average default rates for 10-year and 15-year holding periods. Exhibit 28 in the appendix presents these data in detail for the period 1970 to the present, and Exhibit 29 presents average cumulative default rates by numerically modified ratings for up to eight years.

3 The precise interpretation of a multi-year default rate with respect to a portfolio of bonds depends on the re-investment policy assumed for the portfolio. For more on this see the "Default Rate Calculation and Interpretation" section of the appendix.

Exhibit 16

5, 10, 15 and 20-Year Default Rates, 1920-97



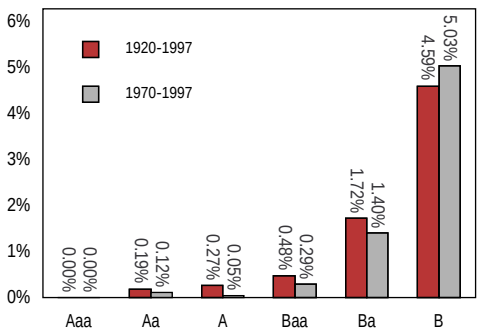
Default Rate Volatility by Rating

An examination of the cohorts presented in Exhibit 30 (in the appendix) reveals the extent to which aggregate default rates vary from one year to the next for a given rating category. For the B rating category in the period from 1920 through 1997, for instance, the one-year default rate ranged from a low of zero in several years to a high of 23.4% in 1970. The sources of this variation are many, but macroeconomic trends are certainly among the most influential factors. To quantify this variability, Moody's calculated the standard deviations of the one-year default rates for each letter rating category. Exhibit 17 presents these statistics defined over the periods from 1920 and from 1970 to the present.

Exhibit 17 highlights a pattern of higher default rate volatility for lower credit ratings for both time periods examined. That is, while the average risk of default is higher for lower rating categories, the chances of the default rate differing significantly from the average in any given year is also higher. The greater investment-grade default rate volatility — except the Aaa rating — for the period including the Great Depression, reflects the uncertainty over default rates provoked by the extreme economic circumstances of that time.

Exhibit 17

One-Year Default Rate Volatilities



The volatility of default rates has important implications for bond pricing. The returns investors earn on lower-rated debt must not only compensate them for the higher average risk of default, but also for the increased risk that the default rate could differ substantially from its historical average.

Default Severity and Recovery Rates

A critical aspect of a corporate bond default is the severity of the loss incurred. Eventually, most bond default resolutions provide bondholders with some amount of recovery, which may take the form of cash, other securities, or even a physical asset. The recovery rate, defined here as the percentage of par value returned to the bondholder, is a function of several variables. These variables include the seniority of the issue within the issuer's capital structure, the quality of collateral (if any), the overall state of the economy, and the market for corporate assets.

What may seem the most straightforward methodology for calculating recovery rates is not particularly practical. This methodology would track all payments made on a defaulted debt instrument, discount them back to the date of default, and present them as a percentage of the par value of the security. However, this methodology is problematic because it relies on many assumptions. One must make a separate estimate of the discount rate to apply to each payment generated by the defaulted instrument. Furthermore, one often must make assumptions concerning the values of certain payments. The resolution may hand bondholders various equity and derivative instruments, enhancements to the terms of the surviving debt, or sometimes even a physical asset in place of cash. As there is frequently no market for such payments, there is no definite measure of their value.

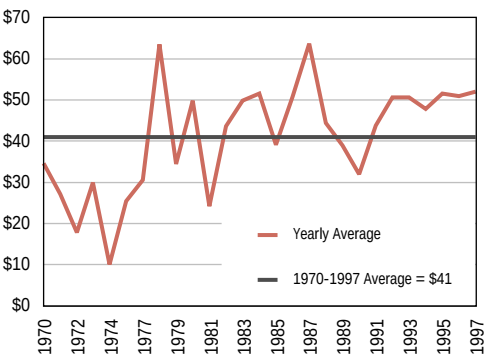
For these reasons, we use the trading price of the defaulted instrument as a proxy for the present value of the ultimate recovery. To do so, we collected from several sources prices for many of the bonds that defaulted between January 1, 1920, and December 31, 1997. For each defaulted issue, we considered the seniority, date of default, and the price approximately one month after default. Although this information provides only an estimate of the actual recovery, it has the advantage of being the definite measure of the recovery realized by those debtholders who liquidated a position soon after default.

We translate defaulted debt prices into recovery rate estimates by presenting them as percentages of par, not as percentages of original issue prices or accreted values. Investors are entitled to receive face value at maturity, even though they may have paid somewhat less or more for the bond either at issue or in the secondary market. Expressing recoveries as a fraction of some price other than par could improperly bias recovery rates. Because discount bonds and convertible bonds have unique pricing features, we have removed them from the sample.

The resulting data reveal correlations of recovery rates with macroeconomic variables and the risk of default. The lows in defaulted bond prices of $21 and $30 hit in 1932 and 1990, respectively, correspond to peaks in the corporate default rate, suggesting a negative correlation of defaulted bond prices with the incidence of default. Additionally, the low values during the late 1970s and early 1980s suggest a negative correlation with interest rates. Since 1970, the average price has been $41, but has been trending higher since 1990 as shown in Exhibit 18. The period since 1990 has also seen a decrease in recovery rate volatility as default rates have also trended lower.

Exhibit 18

Yearly Average Defaulted Bond Prices, 1970-97



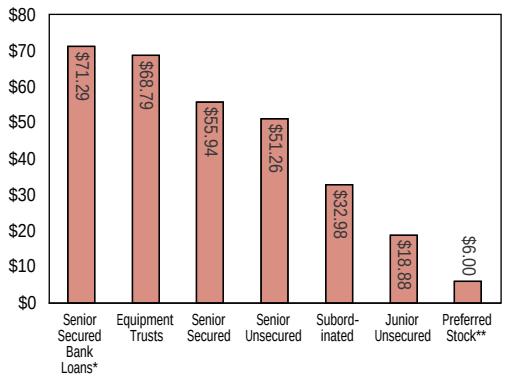
Trends in bond market financing make unreliable the averaging of recovery rate estimates derived from defaulted bond prices over very long time horizons. For example, a much higher percentage of the bonds Moody's rated from 1930 through 1943 were secured than those Moody's rated between 1980 and 1997. The especially dismal circumstances of the Great Depression era conspired with the preponderance of secured financing to generate an average 1920-1997 senior secured bond price lower than that for senior unsecured bonds. In order to mitigate this effect and to facilitate comparison with recent Moody's recovery analysis of senior secured bank loans[4], we limit the sample period to 1977-1997.

4 *Bank loan recovery data cover the period 1989-1996.*

Exhibit 19 breaks out average recovery estimates by seniority of claim and includes Moody's estimate of the recovery investors can expect to receive on senior secured bank loans and preferred stock.[5] The average senior secured bank loan recovery estimate is $67 per $100 defaulted par amount. Considering prices for 88 senior secured bonds, our recovery estimate is $56; prices for 304 senior unsecured bonds generate a recovery estimate of $51. The 239 subordinated bonds sold for $38 on average, while 18 junior subordinated bonds sold for $19 on average. Preferred stock holders can only expect to retrieve about $6 per $100 par or liquidation value of defaulted preferred stock.

Exhibit 19

Defaulted Debt Recovery Estimates by Seniority and Security of Claim, 1977-97



** estimate based on data from 1989 to 1996,*
*** estimate based on data from 1980 to 1997.*

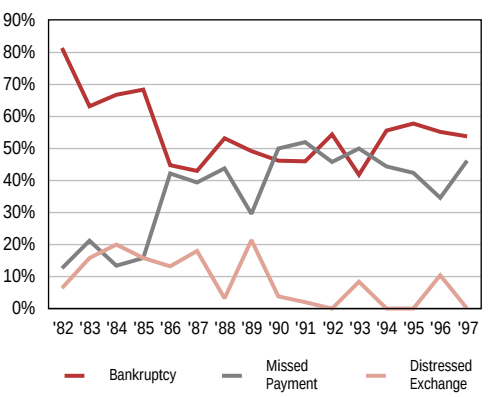
Recoveries, on average, decline as priority of claim declines, lending support to Moody's practice of assigning lower ratings to an issuer's subordinated debt. Generally speaking, a bond default is an issuer-level event that will in time affect all of the issuer's outstanding debt obligations. That is, the probability of an issuer defaulting on a particular debt issue is independent of the seniority of that issue relative to the company's other obligations. However, holding all else constant, severity considerations suggest that although default likelihood is the same across an issuer's debts, Moody's should reflect the greater expected losses for subordinated issues with lower ratings.

Another view of the variability of defaulted bond prices over time is provided by grouping defaults by type. We can then calculate average recovery rates for these default types and apply these averages to the frequency of the event types over time. To do this, we divided a sample of over two thousand bonds that defaulted since 1920, for which we obtained pricing within one month of the default date, into "bankruptcies", "missed payments"[6], and "distressed exchanges." We then compared the recovery estimates across these groups.

Surprisingly, the average recovery for the defaulted bonds of bankrupt issuers was just 2% lower than that for the "missed payment" bond defaults, after controlling for the seniority of the claim. Distressed exchanges, however, resulted in average recoveries almost 20% higher than for defaults ending in bankruptcy. Over the past decade, about half of long-term public bond defaults resulted in bankruptcy, with missed payments accounting for about 43%, and distressed exchanges accounting for about 7%. However distressed exchange incidence has trended lower recently, while missed payment incidence has trended higher, as shown in Exhibit 20.

Exhibit 20

Default Type as Percentage of Total, 1982-97



DEFAULTED BOND PRICE VOLATILITY

An additional important consideration in assessing recovery rates is the variability of defaulted bond prices. The average defaulted bond price for the 78-year period from 1920-1997 is $41, although recovery values over various shorter time horizons vary significantly. The problem then with

5 *See December 1994 Moody's Special Comment, "Preferred Stock Dividend and Credit Risk" and the November 1996 Moody's Special Comment, "Defaulted Bank Loan Recoveries."*
6 *We consider as bankrupticies cases in which missed payments were followed by bankruptcy filings with six months of the payment omission. Defaults were categorized as "missed payments" if bankruptcy filings occurred more than six months after the payment omission or not at all.*

choosing averages as an indicator is that they approximate the most likely bond price to arise from a particular default, but they do not convey the range of possible outcomes. For example, while the estimated recovery for all subordinated bonds is $34 per $100 par amount, one of the underlying issues had a price of just $1 while several had prices above par.

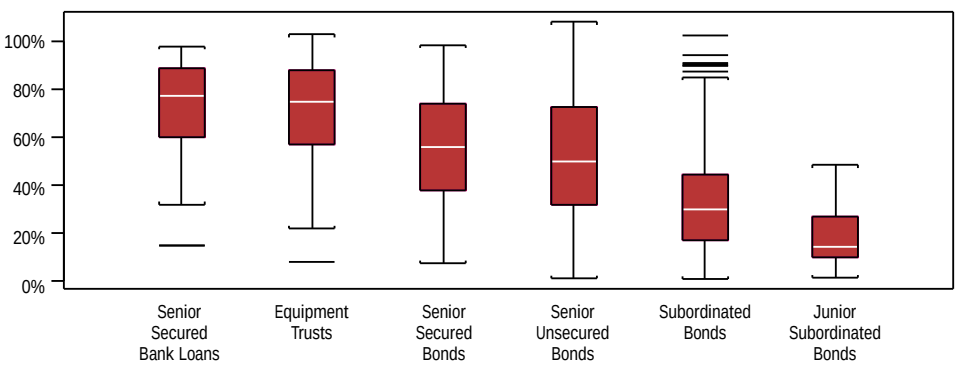
Exhibit 21 and Exhibit 25 of the appendix provide additional statistics describing the distribution of defaulted debt prices. In Exhibit 21, the darkened boxes represent the inter-quartile range, which contains the middle 50% of the data. The white bands across each box indicate the median values, while the "whiskers" above and below each box show the maxima and minima. Values exceeding the 95th percentile are considered outliers and are plotted as discrete horizontal bars.

As is clear from Exhibit 21, equipment trust obligations have median post-default prices significantly higher than other debt classes. This reflects, in part, bankruptcy statutes that accelerate the transfer of assets pledged as security when those assets consist of transportation equipment, the main type of asset used to support equipment trust issues.

Across debt types, median prices tend to fall while the inter-quartile ranges first widen and then tighten as seniority declines. This pattern of greater variance on senior unsecured bonds reflects, in part, the greater number of defaults involving this type of bond relative to equipment trusts and junior subordinated bonds. It also suggests that although the more subordinated investor can expect to receive less in the event of default, there is less uncertainty as to how much the defaulted bond price will vary from its mean. Subordinated debt prices also exhibit a number of high value outliers, indicating that subordination by itself does not always lead to economic loss in the event of default.

Exhibit 21

Defaulted Debt Recovery Rate Estimates by Seniority of Claim, 1977-96



Loss Rates

Moody's long-term debt ratings are statements about protection against credit loss. Conceptually, expected credit loss depends upon both the probability of a default occurring and the extent of the loss investors can expect to incur upon default. As Moody's ratings are designed to capture both default probability and severity, the credit loss one can expect to incur is higher for lower ratings.

Previous sections have detailed Moody's estimation of the historical average probability of default associated with each rating category. They have also detailed average recovery rates for secured debt and unsecured debt of various seniority levels (the severity of loss is simply one less the recovery rate). By multiplying Moody's estimates of the risk of default by our estimate of the severity of loss for senior unsecured debt we can now derive estimates of the credit losses historically associated with each rating category. Exhibit 22 presents these estimates using both the 1920-1997 and 1970-1997 average default rates and the 1989-1997 average recovery rate estimate for senior unsecured debt. (The 51% recovery rate implies a 49% loss rate.)

Exhibit 22

Average One-Year Loss Rates

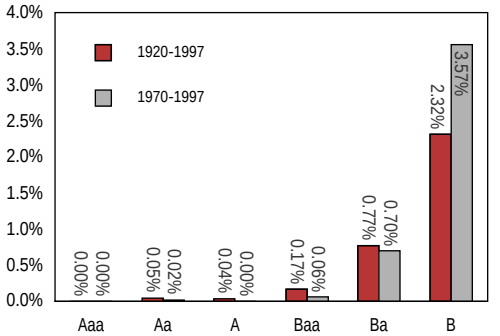


Exhibit 22 indicates that expected credit loss increases dramatically as Moody's credit opinion slips from investment-grade to speculative-grade. The safest speculative-grade rating category, Ba, has generated more than four times the credit loss of the riskiest investment-grade rating category, Baa.

Conclusion

Our calculations of both the likelihood and the severity of default permit the estimation of the default losses that have historically been associated with each of our ratings. That higher default rates and greater average default losses are associated with the lower rating categories is evidence that Moody's has consistently differentiated debt on the basis of the credit risks facing investors for the better part of this century.

Last year may have marked a turning point for bond defaults. Asian credit weakness has not affected our bond default rates because of the private and unrated nature of most of the defaulted obligations. Nevertheless, the potential for future defaults on publicly rated debt in these countries is real. Moody's believes that it is unlikely that the post1970 average default rate of 3.38% will be matched in the near future absent some additional source of instability or economic weakness. However, current conditions easily could drive the rate upwards toward 2.5%. This would imply a number in excess of 35 rated-issuer defaults for 1998.

A deterioration in the average credit quality of speculative-grade issuers and a surge in new speculative grade issuance also suggests a higher level of default risk going forward. While this increase in risky lending can be seen as a normal outgrowth of the strong worldwide economic growth and low interest rates experienced in 1997, it has also produced an increased vulnerability to negative economic trends. The outlook for interest rates remains decidedly positive. Still, possibilities for regional disturbances, including recessions, exchange rate volatility, and political instability abound, and the financial crisis in Asia has yet to play itself out.

Appendix

The purpose of this appendix is to explain further the rationale behind Moody's adoption of the methodologies of this study. What may seem to be the most straightforward methodology for estimating the risk of bond default may not be the method that is most appropriate. Moody's has adopted a number of conventions for specific purposes. An understanding of these conventions will help market participants apply Moody's default research more effectively.

We will demonstrate that reliance on issuer-weighted default rates allows for more flexible application across various portfolios. We will also demonstrate that controlling for bond issuers exiting the public debt markets (i.e., rating withdrawal) increases the reliability of default rates as estimates of the probability of default over various time horizons.

INTERPRETING DEFAULT RATES- MOODY'S VS ALTERNATIVE APPROACHES

As fixed-income market participants become more attuned to credit risk, a variety of methodologies designed to measure default risk have been explored. One such measure is a default rate. Default rates measure historical default incidence over various time horizons.

If we were interested in measuring the default rate for corporate bond *issuers*, the default rate would be a fraction in which the numerator would represent the number of *issuers* that defaulted and the denominator would represent the number of *issuers* that were *at risk of defaulting*. An understanding of this methodology is important to the interpretation of the resulting statistics.

ISSUER VERSUS PAR-WEIGHTED DEFAULT RATES

The results of this study serve to elucidate the meaning of Moody's ratings in terms of the probability of default and to provide market participants with the most accurate and flexible parameters available to help them better understand the credit risks they bear. Focusing on issuer-weighted default rates accomplishes both of these goals.

Moody's ratings are judgments that are intended to support investment decisions. To evaluate our ratings' performance as indicators of the probability of default, we should then use the judgment itself as the unit of study. Because the number of credit judgments or, in terms of the corporate bond default study, default probability predictions, that Moody's must make does not vary with either the par amount or number of bonds of the issuer, we consider the bond issuer itself as the unit of study.

Default rates based on the par amount of defaulting debt are interesting numbers in their own rights. A par-based analysis would, for example, measure the historical default risk associated with a market-weighted portfolio, where the Moody's-rated universe defines the market. Such a number would be a good indicator of the overall health of the bond market, and Moody's calculates a par-weighted speculative-grade default rate to suit this purpose. However, as a credit risk measurement tool, such a statistic is limited in its applicability to portfolios of bonds that mimic the Moody's-rated universe in composition. An issuer-based default rate, on the other hand, can be applied to any portfolio. The par-weighted default rate can then always be re-created from the issuer-weighted default rate simply by weighting the issuer default rate by the exposure to each issuer.

DEFAULT RATE CALCULATION AND INTERPRETATION

Default rates measure default incidence over various time horizons. Using the corporate bond issuer as the unit of study, it is simply a fraction in which the numerator would represent the number of issuers that defaulted and the denominator would represent the number of issuers that were *at risk of defaulting*. Measuring the numerator is simple given a suitable default definition. The denominator — the number of issuers at risk of defaulting — is more difficult to measure.

When corporate debt issuers retire long-term public debt they render themselves incapable of defaulting on such debt and thus no longer belong in the denominator of a default rate. Moody's July 1997 special report, "Moody's Rating Migration and Credit Quality Correlation, 1920-1996," documents that the event of a rating withdrawal is closely correlated with the retirement of a debt issue. From a sample of over 35,000 rated long-term corporate debts, 92% of the ratings were withdrawn because the debt had matured or it had been called or converted.

The differences between default rates calculated controlling for and not controlling for withdrawals are demonstrated in Exhibit 24. The first column of Exhibit 23 shows that 490 issuers carried the Ba rating as of the start of 1989, the second column indicates that 14 of those issues defaulted during the course of that year, and the third column shows that another five issuers had their ratings withdrawn. The fourth column present the 1-year, Ba default rate for 1989 that fails to account for the correlation between rating withdrawal and debt retirement. That figure, 2.86%, presumes that all 490 issuers were at risk of defaulting throughout 1989.

Exhibit 23 - Default Rate Calculations for 1989 Ba-Rated Issuers

Ba Issuer Count N	Default Count D	Withdrawn Rating Count WR	Default Rate (Not controlling for WR) D/N	Default Rate (Controlling for WR) D/(N-WR/2)
490	14	38	2.86%	2.97%

If we assume, however, that on average, issuers whose ratings were withdrawn had rated debt outstanding for one half of the year, then we can remove one half of each issuer from the denominator to adjust for the issuers exiting the bond market. The resulting "adjusted" one-year, Ba default rate for 1989 of 2.97% no longer presumes that all 490 issuers were at risk of defaulting over the entire course of 1989 and is slightly higher than the previously reported default rate.

One way to look at why such differences can be important in understanding the default risk exposure of a portfolio is to examine the effects of two re-investment policies. First, let us consider two identical portfolios of Ba-rated bonds. Over the course of one year, some of the portfolio's bonds ratings will be withdrawn.[7] Assume that a rating withdrawal is synonymous with the issuer retiring the debt, perhaps through call, conversion, or maturity. In such cases, the portfolio manager receives the proceeds of the bond retirement and must reinvest them according to his reinvestment policy.

Next, let us consider two re-investment policies: 1) re-invest the proceeds of any debt retirements (e.g., via maturity) in default risk free bonds, and 2) re-invest the proceeds of any debt retirements (e.g., via maturity) in Ba-rated bonds. If the bond manager applies the first reinvestment policy, only the portion of the portfolio that has not been retired is still at risk of default. The default risk in this situation is best described by a default rate that controls for issues exiting the cohort of issuers at risk of defaulting. However, if the portfolio manager follows the second policy, re-invested proceeds are put back into bonds that continue to be at a Ba-level of default risk and, hence, the entire portfolio is at risk of default over the entire one-year period. The default risk of this situation is best described by a default rate that does not control for issuers exiting the cohort of issuers at risk of defaulting and thereby measures the risk of default over the entire one-year period.

The differences between the default rates calculated under each of these methodologies depend upon the level of the default rate, the rate at which firms are exiting the bond market, and the time span over which the default rate is calculated. Generally, the difference between default rates calculated under each of these methodologies grows as the default rate increases, as the rate of rating withdrawal increases, or as the time horizon of the default rate increases. Since both the default rate and the rate of rating withdrawal generally increase as one moves down the credit scale from Aaa to C, the difference between the estimated probabilities of default also increase as one considers lower ratings, and this difference increases further as we consider longer time horizons. To see this effect, consider Exhibit 24, which demonstrates that the difference in the cumulative default risk measured over the nine years from 1989 through 1997 amounts to nearly 10%.

Exhibit 24 - Cumulative Default Rate Calculations for 1989 Ba-Rated Issuers

	Marginal Default Rate (Not controlling for WR)	Cumulative Default Rate (Not controlling for WR)	Marginal Default Rate (Controlling for WR)	Cumulative Default Rate (Controlling for WR)
1989	2.86%	2.86%	2.97%	2.97%
1990	6.12%	8.80%	7.23%	9.99%
1991	6.53%	14.76%	9.32%	18.37%
1992	1.84%	16.33%	3.30%	21.06%
1993	1.84%	17.86%	4.00%	24.22%
1994	0.20%	18.03%	0.54%	24.63%
1995	0.41%	18.36%	1.20%	25.54%
1996	0.61%	18.86%	2.02%	27.04%
1997	0.61%	19.36%	2.27%	28.70%

7 *Moody's July 1997 special report, "Moody's Rating Migration and Credit Quality Correlation, 1920-1996" finds that ratings are withdrawn for Ba-rated issuers at a pace of 9.39% per year.*

Exhibit 25 - Descriptive Statistics for Defaulted Bond Prices, 1977-1997

Seniority and Security	Number	Average	Standard Deviation
Senior Secured Bank Loans*	96	$71.29	$21.57
Equipment Trust	26	$68.79	$27.00
Senior Secured Public Debt	88	$55.94	$23.87
Senior Unsecured Public Debt	304	$51.26	$25.81
Senior Subordinated Public Debt	239	$38.25	$23.35
Subordinated Public Debt	378	$32.96	$22.05
Junior Subordinated Public Debt	18	$18.88	$14.31
All Subordinated Public Debt	629	$34.60	$22.65
All Public Debt	1019	$41.35	$25.25

** Data covers 1989-1996.*

Exhibit 26 - One-Year Default Rates by Year and Rating, 1970-1997 (Percent)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Aa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.26%	0.00%	0.00%
Baa	0.27%	0.00%	0.00%	0.45%	0.00%	0.00%	0.00%	0.27%	0.00%	0.00%	0.00%	0.00%	0.30%	0.00%	0.36%
Ba	4.12%	0.42%	0.00%	0.00%	0.00%	1.02%	1.01%	0.52%	1.08%	0.49%	0.00%	0.00%	2.75%	0.91%	0.83%
B	23.38%	4.00%	7.41%	3.92%	10.34%	6.15%	0.00%	3.39%	5.56%	0.00%	5.06%	4.71%	4.71%	6.36%	6.78%
Caa-C	53.33%	13.33%	40.00%	44.44%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	33.33%	0.00%	16.67%	36.36%	66.67%
Investment-Grade	0.14%	0.00%	0.00%	0.23%	0.00%	0.00%	0.00%	0.11%	0.00%	0.00%	0.00%	0.00%	0.21%	0.00%	0.09%
Speculative-Grade	9.12%	1.11%	1.88%	1.24%	1.31%	1.73%	0.87%	1.35%	1.79%	0.42%	1.62%	0.71%	3.55%	3.82%	3.32%
All Corporates	2.72%	0.28%	0.45%	0.45%	0.27%	0.36%	0.17%	0.35%	0.35%	0.09%	0.34%	0.16%	1.03%	0.95%	0.91%

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Aa	0.00%	0.00%	0.00%	0.00%	0.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Baa	0.00%	1.33%	0.00%	0.00%	0.60%	0.00%	0.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Ba	1.75%	2.05%	2.48%	1.44%	2.97%	3.33%	5.28%	0.30%	0.55%	0.24%	0.68%	0.00%	0.18%
B	8.28%	11.80%	5.46%	6.31%	9.18%	16.13%	14.98%	9.02%	5.76%	3.79%	4.56%	1.43%	1.90%
Caa-C	0.00%	21.05%	20.00%	28.57%	33.33%	53.33%	40.00%	29.27%	31.58%	5.56%	12.39%	13.70%	12.66%
Investment-Grade	0.00%	0.32%	0.00%	0.00%	0.29%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Speculative-Grade	3.90%	5.67%	3.80%	3.69%	6.01%	9.81%	10.63%	4.84%	3.51%	1.93%	3.20%	1.64%	1.82%
All Corporates	1.06%	1.89%	1.34%	1.40%	2.42%	3.52%	3.34%	1.33%	0.96%	0.57%	1.03%	0.54%	0.62%

Exhibit 27 - One-Year Default Rates by Year and Numerically Modified Rating, 1983-1997 (Percent)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Aa1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Aa2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Aa3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
A1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
A2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
A3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Baa1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Baa2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Baa3	0.00%	1.06%	0.00%	4.82%	0.00%	0.00%	1.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Ba1	0.00%	1.16%	0.00%	0.88%	3.73%	0.00%	0.80%	2.69%	1.07%	0.00%	0.81%	0.00%	0.00%	0.00%	0.00%
Ba2	0.00%	1.61%	1.63%	1.21%	0.95%	0.00%	1.81%	2.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Ba3	2.61%	0.00%	3.77%	3.44%	2.44%	2.97%	4.67%	3.91%	9.78%	0.73%	0.75%	0.59%	1.72%	0.00%	0.47%
B1	0.00%	5.84%	4.38%	7.53%	4.90%	4.32%	6.27%	8.61%	6.04%	1.03%	3.35%	1.92%	3.97%	1.18%	0.00%
B2	11.11%	20.00%	7.69%	16.67%	4.30%	6.90%	8.11%	21.82%	12.58%	1.56%	4.96%	3.61%	6.19%	0.00%	1.44%
B3	17.91%	2.90%	13.86%	16.36%	7.46%	10.81%	19.40%	28.93%	29.47%	22.89%	10.94%	7.74%	4.02%	3.32%	6.57%
Investment-Grade	0.00%	0.09%	0.00%	0.32%	0.00%	0.00%	0.29%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Speculative-Grade	3.82%	3.32%	3.90%	5.67%	3.80%	3.69%	6.01%	9.81%	10.63%	4.67%	3.51%	1.93%	3.20%	1.64%	1.82%
All Corporates	0.95%	0.91%	1.06%	1.90%	1.34%	1.40%	2.42%	3.52%	3.34%	1.28%	0.96%	0.57%	1.03%	0.54%	0.62%

Exhibit 28 - Average Cumulative Default Rates from 1 to 20 Years (Percent)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Aaa	0.00%	0.00%	0.00%	0.04%	0.14%	0.25%	0.37%	0.51%	0.66%	0.82%	1.01%	1.22%	1.45%	1.57%	1.71%	1.85%	2.02%	2.21%	2.21%	2.21%
Aa	0.03%	0.05%	0.10%	0.25%	0.39%	0.55%	0.70%	0.87%	0.99%	1.07%	1.17%	1.29%	1.41%	1.71%	1.79%	1.89%	2.11%	2.24%	2.38%	2.55%
A	0.01%	0.06%	0.21%	0.37%	0.54%	0.73%	0.92%	1.13%	1.38%	1.65%	1.94%	2.24%	2.52%	2.75%	3.06%	3.42%	3.78%	4.14%	4.56%	4.79%
Baa	0.12%	0.39%	0.75%	1.26%	1.70%	2.19%	2.74%	3.29%	3.91%	4.53%	5.21%	5.90%	6.56%	7.25%	7.98%	8.75%	9.53%	10.26%	10.86%	11.35%
Ba	1.34%	3.71%	6.21%	8.77%	11.44%	13.72%	15.53%	17.44%	19.19%	20.88%	22.81%	24.89%	26.99%	28.72%	30.42%	32.24%	33.82%	35.17%	36.47%	37.70%
B	6.78%	13.19%	19.13%	24.11%	28.59%	32.56%	35.91%	38.62%	41.02%	43.85%	45.27%	46.45%	47.51%	48.36%	49.41%	50.69%	51.46%	51.46%	51.46%	51.46%
Caa-C	20.51%	28.55%	34.10%	37.60%	41.44%	47.24%	51.52%	56.91%	60.82%	63.13%	65.96%	65.96%	65.96%	65.96%	65.96%	65.96%	65.96%	65.96%	65.96%	65.96%
Investment-Grade	0.05%	0.16%	0.34%	0.60%	0.84%	1.11%	1.40%	1.71%	2.05%	2.40%	2.77%	3.17%	3.55%	3.94%	4.35%	4.79%	5.26%	5.70%	6.11%	6.40%
Speculative-Grade	3.86%	7.71%	11.32%	14.55%	17.68%	20.38%	22.52%	24.58%	26.44%	28.27%	30.05%	31.88%	33.71%	35.22%	36.73%	38.37%	39.75%	40.88%	41.96%	42.98%
All Corp.	1.14%	2.28%	3.35%	4.33%	5.23%	6.03%	6.70%	7.36%	7.99%	8.60%	9.23%	9.86%	10.48%	11.05%	11.63%	12.27%	12.87%	13.42%	13.92%	14.32%

Exhibit 29 - Average Cumulative Default Rates from 1 to 8 Years (Percent)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Aaa	0.00%	0.00%	0.00%	0.07%	0.24%	0.33%	0.45%	0.59%
Aa1	0.00%	0.00%	0.00%	0.28%	0.28%	0.47%	0.47%	0.47%
Aa2	0.00%	0.00%	0.07%	0.25%	0.56%	0.68%	0.82%	0.99%
Aa3	0.08%	0.13%	0.23%	0.36%	0.50%	0.68%	0.68%	0.68%
A1	0.00%	0.04%	0.42%	0.67%	0.85%	1.06%	1.15%	1.26%
A2	0.00%	0.03%	0.18%	0.49%	0.75%	0.99%	1.13%	1.55%
A3	0.00%	0.17%	0.32%	0.44%	0.51%	0.68%	1.00%	1.12%
Baa1	0.05%	0.33%	0.67%	1.07%	1.46%	1.71%	2.16%	2.53%
Baa2	0.05%	0.22%	0.29%	0.79%	1.31%	1.94%	2.40%	2.59%
Baa3	0.35%	0.85%	1.45%	2.41%	3.09%	3.90%	4.91%	5.89%
Ba1	0.71%	2.36%	4.14%	6.63%	8.98%	11.60%	13.31%	14.94%
Ba2	0.59%	2.93%	5.69%	8.41%	10.79%	12.59%	14.35%	15.49%
Ba3	2.71%	7.32%	12.32%	17.09%	21.67%	25.64%	29.28%	33.26%
B1	3.75%	9.77%	15.97%	21.74%	27.28%	32.84%	37.78%	41.32%
B2	6.73%	13.30%	19.95%	25.32%	29.38%	32.50%	34.33%	35.18%
B3	13.20%	21.91%	28.48%	33.10%	37.44%	40.47%	43.01%	47.54%
Caa-C	19.42%	26.07%	30.59%	34.01%	37.72%	42.91%	42.91%	48.92%
Investment-Grade	0.04%	0.15%	0.35%	0.63%	0.89%	1.15%	1.38%	1.62%
Speculative-Grade	4.37%	9.07%	13.65%	17.83%	21.67%	25.14%	27.98%	30.63%
All Corporates	1.41%	2.91%	4.35%	5.67%	6.80%	7.80%	8.59%	9.32%

Exhibit 30 - Cumulative Default Rates for Cohorts Formed Since 1970

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Cohort Formed January 1, 1970																				
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.70%	2.70%	2.70%
Aa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.42%	1.42%	1.42%	2.88%	2.88%	2.88%	2.88%
A	0.00%	0.00%	0.00%	0.00%	0.00%	0.43%	0.43%	0.43%	0.43%	0.43%	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%	1.41%	1.41%	2.53%	2.53%
Baa	0.27%	0.27%	0.27%	1.14%	1.43%	1.43%	1.74%	2.39%	3.06%	3.06%	3.42%	3.42%	4.59%	5.00%	5.42%	6.29%	7.67%	8.68%	9.77%	10.36%
Ba	4.12%	4.55%	4.99%	5.45%	6.39%	7.37%	7.89%	8.44%	9.60%	9.60%	9.60%	11.07%	13.42%	14.25%	14.25%	17.13%	21.22%	22.37%	22.37%	23.77%
B	23.38%	26.02%	28.66%	28.66%	28.66%	28.66%	28.66%	28.66%	28.66%	28.66%	28.66%	28.66%	35.98%	35.98%	35.98%	35.98%	35.98%	35.98%	35.98%	35.98%
Investment-Grade	0.14%	0.14%	0.14%	0.56%	0.71%	0.86%	1.01%	1.31%	1.63%	1.63%	1.96%	1.96%	2.48%	2.84%	3.02%	3.40%	4.36%	4.97%	5.83%	6.06%
Speculative-Grade	9.12%	10.16%	11.96%	12.70%	13.47%	14.28%	14.70%	15.59%	16.53%	16.53%	16.53%	17.69%	20.79%	21.45%	21.45%	23.69%	26.92%	27.83%	27.83%	28.95%
All Corp.	2.72%	3.02%	3.52%	4.03%	4.35%	4.67%	4.89%	5.35%	5.81%	5.81%	6.07%	6.33%	7.41%	7.83%	7.97%	8.71%	10.09%	10.74%	11.43%	11.80%
Cohort Formed January 1, 1971																				
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	2.78%	2.78%	2.78%
Aa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.75%
A	0.00%	0.00%	0.00%	0.00%	0.38%	0.38%	0.38%	0.38%	0.38%	0.79%	0.79%	1.21%	1.63%	1.63%	1.63%	2.08%	2.08%	3.04%	3.04%	3.04%
Baa	0.00%	0.00%	0.80%	1.07%	1.07%	1.36%	1.96%	2.58%	2.58%	2.92%	2.92%	4.03%	4.41%	4.81%	5.63%	6.94%	7.88%	8.90%	9.44%	10.59%
Ba	0.42%	0.86%	1.31%	2.24%	3.70%	4.21%	4.75%	5.91%	5.91%	5.91%	7.34%	9.64%	10.45%	10.45%	13.24%	18.22%	19.36%	19.36%	20.74%	20.74%
B	4.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	20.27%	20.27%	20.27%	20.27%	20.27%	20.27%	20.27%	20.27%	20.27%
Investment-Grade	0.00%	0.00%	0.39%	0.53%	0.66%	0.80%	1.09%	1.38%	1.38%	1.69%	1.69%	2.34%	2.68%	2.85%	3.19%	3.91%	4.48%	5.28%	5.49%	6.14%
Speculative-Grade	1.11%	3.02%	3.82%	4.64%	5.93%	6.38%	7.34%	8.35%	8.35%	8.35%	9.59%	12.92%	13.63%	13.63%	16.03%	20.33%	21.30%	21.30%	22.50%	22.50%
All Corp.	0.28%	0.77%	1.26%	1.56%	1.98%	2.19%	2.63%	3.08%	3.08%	3.32%	3.58%	4.75%	5.16%	5.29%	6.01%	7.33%	7.96%	8.63%	8.98%	9.53%
Cohort Formed January 1, 1972																				
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.70%	2.70%	2.70%	2.70%	2.70%
Aa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.67%	1.67%
A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.39%	0.78%	0.78%	0.78%	1.19%	1.19%	2.08%	2.08%	2.56%	3.07%
Baa	0.00%	0.73%	0.98%	1.23%	1.50%	2.05%	2.63%	2.63%	3.25%	3.25%	3.94%	4.30%	4.67%	5.43%	6.63%	7.51%	8.46%	9.47%	11.09%	13.33%
Ba	0.00%	0.45%	1.37%	2.80%	3.31%	3.84%	4.96%	4.96%	4.96%	6.34%	9.28%	10.06%	10.89%	14.40%	19.11%	20.16%	20.16%	21.42%	22.74%	29.64%
B	7.41%	7.41%	7.41%	7.41%	7.41%	7.41%	7.41%	7.41%	7.41%	7.41%	18.30%	18.30%	18.30%	18.30%	18.30%	18.30%	18.30%	18.30%	18.30%	18.30%
Investment-Grade	0.00%	0.37%	0.49%	0.62%	0.74%	1.01%	1.28%	1.28%	1.57%	1.57%	2.02%	2.33%	2.49%	2.82%	3.48%	4.01%	4.76%	5.15%	6.17%	7.21%
Speculative-Grade	1.88%	2.66%	3.47%	4.73%	5.17%	6.10%	7.08%	7.08%	7.08%	8.26%	12.04%	12.71%	13.43%	16.47%	20.54%	21.45%	21.45%	22.55%	23.72%	29.88%
All Corp.	0.45%	0.92%	1.20%	1.59%	1.79%	2.20%	2.62%	2.62%	2.85%	3.09%	4.19%	4.57%	4.82%	5.62%	6.86%	7.45%	8.07%	8.56%	9.60%	11.37%

Exhibit 30 - Cumulative Default Rates for Cohorts Formed Since 1970 (cont.)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Cohort Formed January 1, 1973																				
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%
Aa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.56%	1.56%	1.56%
A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.38%	0.76%	0.76%	0.76%	1.16%	1.16%	2.03%	2.03%	2.50%	2.99%	3.51%
Baa	0.45%	0.68%	1.16%	1.40%	1.91%	2.45%	2.45%	3.03%	3.03%	3.67%	4.33%	5.01%	6.07%	7.19%	7.99%	8.87%	9.81%	11.82%	13.92%	13.92%
Ba	0.00%	0.97%	1.99%	2.52%	3.09%	4.27%	4.27%	4.27%	5.70%	9.49%	10.29%	10.29%	12.94%	17.70%	19.85%	19.85%	21.11%	22.44%	30.67%	32.15%
B	3.92%	3.92%	3.92%	3.92%	3.92%	3.92%	3.92%	3.92%	3.92%	15.22%	15.22%	15.22%	15.22%	15.22%	15.22%	15.22%	15.22%	15.22%	15.22%	15.22%
Investment-Grade	0.23%	0.35%	0.59%	0.71%	0.96%	1.21%	1.21%	1.49%	1.49%	1.92%	2.36%	2.66%	3.13%	3.76%	4.27%	4.98%	5.35%	6.52%	7.52%	7.73%
Speculative-Grade	1.24%	2.10%	3.00%	3.47%	4.46%	5.49%	5.49%	5.49%	6.73%	11.31%	12.00%	12.00%	14.34%	18.54%	20.42%	20.42%	21.55%	22.76%	30.29%	31.63%
All Corp.	0.45%	0.73%	1.10%	1.30%	1.70%	2.11%	2.11%	2.33%	2.56%	3.74%	4.23%	4.47%	5.25%	6.45%	7.15%	7.76%	8.23%	9.40%	11.28%	11.65%
Cohort Formed January 1, 1974																				
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	2.44%	2.44%	2.44%	2.44%	2.44%	2.44%
Aa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.24%	1.24%	1.24%	1.24%	1.24%	1.24%	1.24%	1.24%	2.74%	2.74%	2.74%	2.74%
A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.38%	0.76%	0.76%	0.76%	1.16%	1.16%	2.02%	2.02%	2.48%	2.96%	3.47%	3.47%
Baa	0.00%	0.47%	0.71%	1.21%	1.74%	1.74%	2.31%	2.31%	2.94%	3.60%	4.27%	5.32%	5.69%	6.49%	7.37%	8.30%	9.80%	11.89%	11.89%	11.89%
Ba	0.00%	1.06%	1.62%	2.22%	3.47%	3.47%	3.47%	4.22%	8.18%	9.01%	9.01%	11.75%	18.62%	20.83%	20.83%	22.14%	24.87%	33.30%	34.81%	36.53%
B	10.34%	10.34%	10.34%	10.34%	10.34%	10.34%	10.34%	14.72%	23.94%	23.94%	23.94%	23.94%	23.94%	23.94%	23.94%	23.94%	23.94%	23.94%	23.94%	23.94%
Investment-Grade	0.00%	0.23%	0.35%	0.60%	0.85%	0.85%	1.12%	1.12%	1.69%	2.12%	2.42%	2.87%	3.18%	3.68%	4.38%	4.74%	5.69%	6.67%	6.88%	6.88%
Speculative-Grade	1.31%	2.23%	2.71%	3.73%	4.79%	4.79%	4.79%	6.06%	10.74%	11.46%	11.46%	13.85%	19.85%	21.77%	21.77%	22.93%	25.41%	33.20%	34.59%	36.15%
All Corp.	0.27%	0.65%	0.84%	1.23%	1.64%	1.64%	1.86%	2.09%	3.37%	3.86%	4.10%	4.86%	6.05%	6.75%	7.35%	7.82%	8.96%	10.82%	11.18%	11.37%
Cohort Formed January 1, 1975																				
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.96%	1.96%	1.96%	1.96%	1.96%	1.96%	1.96%	1.96%
Aa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	2.23%	2.23%	3.47%	3.47%	3.47%	3.47%	3.47%
A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.37%	0.37%	0.37%	0.76%	0.76%	1.60%	1.60%	2.05%	2.99%	3.50%	4.05%	4.05%
Baa	0.00%	0.00%	0.25%	0.78%	0.78%	1.35%	1.35%	2.30%	2.95%	3.61%	4.66%	5.02%	5.81%	6.24%	7.16%	9.11%	11.15%	11.15%	11.15%	11.15%
Ba	1.02%	2.09%	3.21%	3.81%	3.81%	3.81%	4.52%	8.33%	9.12%	9.12%	11.75%	18.32%	20.44%	21.61%	22.86%	24.17%	30.88%	32.32%	33.91%	33.91%
B	6.15%	6.15%	6.15%	9.45%	9.45%	9.45%	13.30%	21.37%	21.37%	21.37%	21.37%	21.37%	21.37%	21.37%	21.37%	31.19%	42.66%	42.66%	42.66%	42.66%
Investment-Grade	0.00%	0.00%	0.12%	0.36%	0.36%	0.62%	0.62%	1.16%	1.57%	1.85%	2.28%	2.58%	3.05%	3.71%	4.05%	5.13%	6.23%	6.43%	6.64%	6.64%
Speculative-Grade	1.73%	2.63%	4.06%	5.05%	5.05%	5.05%	6.25%	10.68%	11.36%	11.36%	13.62%	19.30%	21.11%	22.10%	23.18%	25.47%	32.63%	33.90%	35.29%	35.29%
All Corp.	0.36%	0.54%	0.92%	1.31%	1.31%	1.52%	1.73%	2.96%	3.41%	3.65%	4.37%	5.50%	6.16%	6.86%	7.30%	8.53%	10.43%	10.77%	11.13%	11.13%

Exhibit 30 - Cumulative Default Rates for Cohorts Formed Since 1970 (cont.)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Cohort Formed January 1, 1976																				
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.59%	1.59%	1.59%	1.59%	1.59%	1.59%	1.59%	1.59%	1.59%
Aa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.97%	0.97%	0.97%	0.97%	0.97%	0.97%	2.09%	2.09%	3.26%	3.26%	3.26%	3.26%	3.26%	3.26%
A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.64%	0.64%	0.64%	1.32%	1.32%	2.44%	2.44%	2.84%	4.10%	4.10%	4.59%	4.59%	5.65%
Baa	0.00%	0.27%	0.55%	0.55%	0.86%	0.86%	2.19%	2.88%	3.59%	4.69%	5.08%	5.91%	5.91%	6.88%	8.95%	10.56%	11.12%	11.12%	11.12%	11.12%
Ba	1.01%	2.06%	3.17%	3.17%	3.79%	4.46%	7.29%	8.03%	8.03%	10.48%	16.56%	18.52%	19.62%	20.77%	21.97%	29.46%	30.81%	32.28%	32.28%	32.28%
B	0.00%	0.00%	3.77%	3.77%	3.77%	8.47%	18.36%	18.36%	18.36%	18.36%	18.36%	18.36%	18.36%	18.36%	33.21%	49.90%	49.90%	49.90%	49.90%	49.90%
Investment-Grade	0.00%	0.11%	0.22%	0.22%	0.34%	0.34%	0.98%	1.49%	1.76%	2.17%	2.59%	3.03%	3.65%	3.98%	4.99%	6.03%	6.22%	6.42%	6.42%	6.86%
Speculative-Grade	0.87%	2.25%	3.68%	3.68%	4.22%	5.38%	9.05%	9.70%	9.70%	11.90%	17.38%	19.14%	20.11%	21.16%	23.36%	31.43%	32.66%	34.01%	34.01%	34.01%
All Corp.	0.17%	0.53%	0.90%	0.90%	1.09%	1.30%	2.45%	2.99%	3.21%	3.90%	5.08%	5.71%	6.38%	6.80%	7.96%	9.92%	10.24%	10.58%	10.58%	10.96%
Cohort Formed January 1, 1977																				
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.59%	1.59%	1.59%	1.59%	1.59%	1.59%	1.59%	1.59%	1.59%	1.59%
Aa	0.00%	0.00%	0.00%	0.00%	0.00%	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%	1.96%	1.96%	3.05%	3.05%	3.05%	3.05%	3.05%	3.05%	3.05%
A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.60%	0.60%	0.60%	1.25%	1.25%	3.02%	3.02%	3.78%	4.98%	4.98%	5.45%	5.45%	6.47%	6.47%
Baa	0.27%	0.56%	0.56%	0.56%	0.56%	1.90%	2.59%	3.31%	4.42%	4.81%	5.65%	5.65%	6.62%	8.18%	9.79%	10.36%	10.36%	10.36%	10.36%	10.36%
Ba	0.52%	1.62%	1.62%	2.23%	2.89%	5.66%	6.39%	6.39%	8.78%	14.72%	16.62%	17.67%	18.78%	19.93%	27.15%	28.46%	29.89%	29.89%	29.89%	29.89%
B	3.39%	6.97%	6.97%	11.40%	16.19%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	43.22%	62.15%	62.15%	62.15%	62.15%	62.15%	62.15%
Investment-Grade	0.11%	0.22%	0.22%	0.22%	0.22%	0.83%	1.33%	1.59%	1.99%	2.40%	2.83%	3.73%	4.05%	5.03%	6.05%	6.23%	6.42%	6.42%	6.85%	6.85%
Speculative-Grade	1.35%	2.76%	2.76%	3.82%	4.96%	8.61%	9.25%	9.25%	11.41%	16.80%	18.53%	19.48%	20.48%	22.60%	30.40%	31.60%	32.91%	32.91%	32.91%	32.91%
All Corp.	0.35%	0.71%	0.71%	0.90%	1.09%	2.22%	2.74%	2.96%	3.63%	4.78%	5.40%	6.31%	6.71%	7.84%	9.74%	10.05%	10.39%	10.39%	10.76%	10.76%
Cohort Formed January 1, 1978																				
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.39%	1.39%	1.39%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%
Aa	0.00%	0.00%	0.00%	0.00%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%
A	0.00%	0.00%	0.00%	0.00%	0.00%	0.61%	0.61%	0.61%	1.27%	1.27%	2.74%	2.74%	3.93%	4.77%	4.77%	5.26%	5.26%	6.31%	6.31%	6.31%
Baa	0.00%	0.00%	0.00%	0.00%	1.30%	1.64%	2.34%	3.43%	3.81%	4.62%	5.05%	5.99%	7.49%	9.56%	10.11%	10.11%	10.11%	10.11%	10.11%	10.11%
Ba	1.08%	1.08%	1.08%	1.74%	4.53%	5.99%	5.99%	9.18%	15.07%	16.94%	17.98%	19.08%	21.38%	28.58%	29.88%	32.74%	32.74%	32.74%	32.74%	32.74%
B	5.56%	5.56%	12.07%	15.52%	23.03%	23.03%	27.69%	27.69%	33.72%	40.35%	40.35%	40.35%	50.29%	64.49%	64.49%	64.49%	64.49%	64.49%	64.49%	64.49%
Investment-Grade	0.00%	0.00%	0.00%	0.00%	0.60%	0.96%	1.21%	1.60%	2.00%	2.42%	3.30%	3.60%	4.72%	5.70%	5.88%	6.07%	6.07%	6.48%	6.48%	6.48%
Speculative-Grade	1.79%	1.79%	2.80%	3.89%	7.35%	8.57%	9.23%	11.94%	18.43%	20.84%	21.73%	22.67%	25.66%	33.10%	34.25%	36.78%	36.78%	36.78%	36.78%	36.78%
All Corp.	0.35%	0.35%	0.53%	0.72%	1.81%	2.32%	2.63%	3.39%	4.73%	5.44%	6.32%	6.72%	8.08%	9.92%	10.22%	10.71%	10.71%	11.07%	11.07%	11.07%

Exhibit 30 - Cumulative Default Rates for Cohorts Formed Since 1970 (cont.)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Cohort Formed January 1, 1979																			
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.30%	1.30%	1.30%	2.61%	2.61%	2.61%	2.61%	2.61%	2.61%	2.61%	2.61%
Aa	0.00%	0.00%	0.00%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	1.71%	1.71%	1.71%	1.71%	1.71%	1.71%	1.71%	1.71%	1.71%	1.71%
A	0.00%	0.00%	0.00%	0.00%	0.60%	0.60%	0.60%	1.25%	1.25%	2.69%	2.69%	3.47%	4.29%	4.29%	4.77%	4.77%	5.80%	5.80%	5.80%
Baa	0.00%	0.30%	0.30%	1.58%	1.92%	2.26%	3.34%	3.34%	4.14%	4.57%	5.51%	8.01%	10.10%	10.64%	10.64%	10.64%	10.64%	10.64%	10.64%
Ba	0.49%	0.49%	1.05%	3.41%	5.88%	9.14%	11.87%	18.31%	19.89%	20.75%	21.66%	24.55%	31.68%	32.78%	35.14%	35.14%	35.14%	35.14%	35.14%
B	0.00%	6.67%	10.19%	17.83%	17.83%	22.53%	27.69%	40.27%	47.73%	47.73%	47.73%	60.80%	60.80%	60.80%	—	—	—	—	—
Investment-Grade	0.00%	0.11%	0.11%	0.69%	1.05%	1.17%	1.55%	1.81%	2.22%	3.08%	3.39%	4.64%	5.60%	5.78%	5.96%	5.96%	6.37%	6.37%	6.37%
Speculative-Grade	0.42%	1.31%	2.27%	5.28%	7.40%	10.80%	13.76%	21.35%	23.43%	24.20%	25.01%	28.48%	35.02%	36.04%	38.24%	38.24%	38.24%	38.24%	38.24%
All Corp.	0.09%	0.35%	0.54%	1.58%	2.26%	2.96%	3.79%	5.30%	5.98%	6.82%	7.20%	8.78%	10.56%	10.85%	11.32%	11.32%	11.67%	11.67%	11.67%
Cohort Formed January 1, 1980																			
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.14%	1.14%	1.14%	2.31%	2.31%	2.31%	2.31%	2.31%	2.31%	2.31%	2.31%	
Aa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.91%	1.83%	1.83%	1.83%	1.83%	1.83%	1.83%	1.83%	1.83%	1.83%	1.83%	
A	0.00%	0.00%	0.28%	0.86%	0.86%	0.86%	1.79%	2.11%	3.16%	3.16%	3.91%	4.69%	4.69%	5.15%	5.15%	6.14%	6.14%	6.14%	
Baa	0.00%	0.00%	0.94%	1.27%	1.60%	3.00%	3.00%	3.39%	4.22%	5.55%	7.93%	9.91%	10.94%	10.94%	10.94%	10.94%	10.94%	10.94%	
Ba	0.00%	0.53%	3.86%	5.01%	8.69%	11.88%	17.96%	19.44%	21.08%	23.77%	26.60%	34.70%	36.93%	39.33%	39.33%	39.33%	39.33%	40.73%	
B	5.06%	7.74%	16.25%	22.34%	28.95%	32.60%	45.64%	50.58%	50.58%	50.58%	62.94%	71.17%	71.17%	71.17%	71.17%	71.17%	71.17%	71.17%	
Investment-Grade	0.00%	0.00%	0.45%	0.79%	0.91%	1.40%	1.77%	2.30%	3.13%	3.56%	4.76%	5.68%	6.01%	6.19%	6.19%	6.58%	6.58%	6.58%	
Speculative-Grade	1.62%	2.48%	6.55%	8.44%	12.48%	15.65%	23.01%	24.87%	26.25%	28.48%	32.43%	40.23%	42.16%	44.24%	44.24%	44.24%	44.24%	45.44%	
All Corp.	0.34%	0.51%	1.68%	2.33%	3.19%	4.17%	5.81%	6.56%	7.48%	8.20%	9.82%	11.77%	12.32%	12.77%	12.77%	13.10%	13.10%	13.28%	
Cohort Formed January 1, 1981																			
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.14%	1.14%	1.14%	2.32%	2.32%	2.32%	2.32%	2.32%	2.32%	2.32%	2.32%		
Aa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.84%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%		
A	0.00%	0.28%	0.28%	0.28%	0.28%	1.19%	1.52%	2.21%	2.21%	2.96%	3.75%	3.75%	4.22%	4.22%	5.22%	5.22%	5.22%		
Baa	0.00%	0.60%	1.86%	2.51%	3.53%	3.53%	3.91%	4.71%	6.00%	8.28%	9.70%	10.67%	10.67%	10.67%	10.67%	10.67%	10.67%		
Ba	0.00%	3.58%	4.98%	7.95%	12.09%	18.72%	19.95%	21.32%	24.31%	28.34%	36.40%	38.44%	40.63%	40.63%	40.63%	40.63%	41.94%		
B	4.71%	12.13%	17.38%	25.78%	28.81%	42.70%	42.70%	42.70%	42.70%	53.12%	59.37%	59.37%	59.37%	59.37%	59.37%	59.37%	59.37%		
Investment-Grade	0.00%	0.32%	0.77%	1.00%	1.35%	1.72%	2.23%	3.04%	3.46%	4.63%	5.38%	5.70%	5.88%	5.88%	6.26%	6.26%	6.26%		
Speculative-Grade	0.71%	4.78%	6.72%	10.43%	14.32%	22.21%	23.75%	24.88%	27.36%	32.09%	39.68%	41.40%	43.28%	43.28%	43.28%	43.28%	44.38%		
All Corp.	0.16%	1.33%	2.11%	3.09%	4.20%	6.13%	6.85%	7.71%	8.51%	10.30%	12.16%	12.69%	13.12%	13.12%	13.44%	13.44%	13.61%		

Exhibit 30 - Cumulative Default Rates for Cohorts Formed Since 1970 (cont.)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cohort Formed January 1, 1982																
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	1.13%	1.13%	1.13%	2.31%	2.31%	2.31%	2.31%	2.31%	2.31%	2.31%	2.31%
Aa	0.00%	0.00%	0.00%	0.00%	0.00%	0.75%	2.30%	2.30%	2.30%	2.30%	2.30%	2.30%	2.30%	3.41%	3.41%	3.41%
A	0.26%	0.26%	0.26%	0.26%	1.16%	1.16%	1.83%	1.83%	2.93%	3.69%	3.69%	4.14%	4.14%	4.14%	4.14%	4.14%
Baa	0.30%	0.30%	1.30%	2.34%	2.70%	3.48%	4.30%	5.62%	7.95%	9.39%	10.39%	10.39%	10.39%	11.00%	11.00%	11.00%
Ba	2.75%	5.24%	7.90%	12.04%	18.92%	20.00%	21.21%	23.88%	27.54%	32.48%	34.36%	36.38%	36.38%	36.38%	36.38%	37.68%
B	4.71%	12.04%	17.14%	19.85%	31.95%	31.95%	31.95%	31.95%	37.18%	61.11%	61.11%	61.11%	61.11%	61.11%	61.11%	61.11%
Investment-Grade	0.21%	0.21%	0.54%	0.88%	1.36%	1.86%	2.66%	3.07%	4.37%	5.11%	5.43%	5.60%	5.60%	5.98%	5.98%	5.98%
Speculative-Grade	3.55%	7.65%	10.55%	14.34%	22.03%	23.37%	24.36%	26.59%	30.27%	37.21%	38.79%	40.50%	40.50%	40.50%	40.50%	41.59%
All Corp.	1.03%	2.01%	2.94%	4.08%	6.20%	6.88%	7.71%	8.48%	10.21%	12.02%	12.54%	12.96%	12.96%	13.27%	13.27%	13.44%
Cohort Formed January 1, 1983																
Aaa	0.00%	0.00%	0.00%	0.00%	2.06%	2.06%	2.06%	3.20%	3.20%	3.20%	3.20%	3.20%	3.20%	3.20%	3.20%	
Aa	0.00%	0.00%	0.00%	0.00%	0.49%	1.99%	1.99%	1.99%	1.99%	1.99%	1.99%	1.99%	2.70%	2.70%	2.70%	
A	0.00%	0.00%	0.00%	0.26%	0.26%	0.83%	0.83%	1.77%	2.74%	3.43%	3.81%	3.81%	3.81%	3.81%	3.81%	
Baa	0.00%	1.16%	1.56%	3.27%	3.74%	4.26%	5.36%	6.52%	7.73%	7.73%	7.73%	7.73%	7.73%	7.73%	7.73%	
Ba	0.91%	2.39%	5.58%	13.22%	13.91%	17.05%	20.68%	25.83%	31.49%	31.49%	32.93%	32.93%	34.53%	34.53%	36.37%	
B	6.36%	11.12%	18.03%	25.39%	27.60%	29.99%	32.76%	40.86%	50.89%	55.80%	58.56%	58.56%	58.56%	58.56%	58.56%	
Investment-Grade	0.00%	0.30%	0.40%	0.94%	1.39%	2.11%	2.36%	3.14%	3.82%	4.11%	4.27%	4.27%	4.44%	4.44%	4.44%	
Speculative-Grade	3.82%	6.97%	11.32%	18.64%	20.27%	23.05%	26.25%	32.37%	39.35%	40.96%	42.77%	42.77%	43.77%	43.77%	44.95%	
All Corp.	0.95%	1.93%	3.03%	5.09%	5.80%	6.94%	7.74%	9.44%	11.11%	11.59%	11.99%	11.99%	12.28%	12.28%	12.44%	
Cohort Formed January 1, 1984																
Aaa	0.00%	0.00%	0.00%	1.21%	1.21%	1.21%	2.57%	2.57%	2.57%	2.57%	2.57%	2.57%	2.57%	2.57%		
Aa	0.00%	0.00%	0.00%	0.89%	1.81%	1.81%	1.81%	1.81%	1.81%	1.81%	1.81%	2.45%	2.45%	2.45%		
A	0.00%	0.23%	0.46%	0.71%	1.48%	1.75%	2.60%	3.48%	4.10%	4.10%	4.10%	4.10%	4.10%	4.10%		
Baa	0.36%	0.36%	0.77%	1.23%	1.74%	2.81%	3.94%	5.73%	5.73%	6.43%	6.43%	6.43%	6.43%	6.43%		
Ba	0.83%	4.38%	13.05%	14.14%	17.87%	22.12%	26.89%	33.81%	34.78%	35.87%	35.87%	37.10%	37.10%	38.58%		
B	6.78%	12.88%	20.29%	23.23%	27.46%	32.47%	42.86%	50.11%	52.33%	57.35%	57.35%	57.35%	57.35%	57.35%		
Investment-Grade	0.09%	0.19%	0.39%	0.93%	1.61%	1.97%	2.71%	3.49%	3.76%	3.92%	3.92%	4.08%	4.08%	4.08%		
Speculative-Grade	3.32%	7.69%	15.87%	17.61%	21.51%	26.02%	32.72%	39.68%	41.02%	43.26%	43.26%	44.10%	44.10%	45.12%		
All Corp.	0.91%	2.07%	4.21%	5.03%	6.44%	7.65%	9.53%	11.40%	11.85%	12.34%	12.34%	12.62%	12.62%	12.77%		

Exhibit 30 - Cumulative Default Rates for Cohorts Formed Since 1970 (cont.)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13
Cohort Formed January 1, 1985													
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	1.36%	1.36%	1.36%	1.36%	1.36%	1.36%	1.36%	1.36%
Aa	0.00%	0.00%	0.00%	0.79%	0.79%	0.79%	0.79%	0.79%	0.79%	0.79%	1.40%	1.40%	1.40%
A	0.00%	0.21%	1.33%	2.28%	2.53%	3.58%	4.41%	4.69%	4.69%	4.69%	4.69%	4.69%	4.69%
Baa	0.00%	1.20%	1.20%	1.70%	2.77%	3.34%	5.12%	5.75%	6.46%	6.46%	6.46%	6.46%	6.46%
Ba	1.75%	7.05%	9.21%	12.68%	18.78%	23.76%	30.60%	32.11%	32.95%	32.95%	34.89%	34.89%	36.01%
B	8.28%	17.78%	22.45%	26.76%	31.07%	43.23%	50.11%	52.38%	57.67%	57.67%	57.67%	57.67%	57.67%
Investment-Grade	0.00%	0.36%	0.85%	1.59%	1.92%	2.62%	3.34%	3.60%	3.74%	3.74%	3.91%	3.91%	3.91%
Speculative-Grade	3.90%	10.55%	13.58%	17.64%	23.07%	30.20%	36.89%	38.54%	40.38%	40.38%	42.51%	42.51%	43.33%
All Corp.	1.06%	3.10%	4.26%	5.83%	7.35%	9.42%	11.33%	11.84%	12.30%	12.30%	12.81%	12.81%	12.95%
Cohort Formed January 1, 1986													
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Aa	0.00%	0.00%	0.79%	0.79%	1.23%	1.23%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%	
A	0.00%	0.19%	0.79%	1.20%	1.86%	2.31%	2.31%	2.31%	2.31%	2.31%	2.31%	2.31%	
Baa	1.33%	1.33%	3.00%	3.87%	5.25%	6.70%	7.75%	8.34%	8.34%	8.34%	8.34%	8.34%	
Ba	2.05%	5.96%	8.57%	14.06%	20.25%	28.28%	30.12%	32.89%	33.64%	34.44%	34.44%	36.32%	
B	11.80%	15.98%	20.65%	24.72%	34.63%	44.31%	48.83%	52.36%	52.36%	54.80%	54.80%	54.80%	
Investment-Grade	0.32%	0.40%	1.22%	1.60%	2.29%	2.81%	3.03%	3.16%	3.16%	3.30%	3.30%	3.30%	
Speculative-Grade	5.67%	9.62%	13.15%	18.08%	25.34%	33.70%	36.25%	39.16%	39.70%	41.44%	41.44%	42.80%	
All Corp.	1.89%	3.10%	4.67%	6.21%	8.47%	10.70%	11.39%	12.07%	12.17%	12.61%	12.61%	12.85%	
Cohort Formed January 1, 1987													
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
Aa	0.00%	0.00%	0.00%	0.39%	0.39%	0.39%	0.39%	0.39%	0.93%	0.93%	0.93%		
A	0.00%	0.00%	0.41%	1.25%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%		
Baa	0.00%	1.04%	1.78%	3.34%	4.97%	6.27%	7.23%	7.23%	7.23%	7.23%	7.86%		
Ba	2.48%	4.49%	9.55%	15.97%	24.08%	27.50%	30.97%	32.09%	33.31%	33.99%	35.51%		
B	5.46%	12.73%	19.63%	31.28%	42.62%	46.09%	48.17%	48.17%	49.55%	49.55%	49.55%		
Investment-Grade	0.00%	0.25%	0.59%	1.39%	1.95%	2.25%	2.47%	2.47%	2.59%	2.59%	2.72%		
Speculative-Grade	3.80%	7.86%	13.51%	21.66%	30.72%	34.09%	37.05%	37.79%	39.45%	39.91%	40.92%		
All Corp.	1.34%	2.90%	4.97%	8.00%	10.92%	12.00%	12.88%	13.06%	13.52%	13.61%	13.92%		

Exhibit 30 - Cumulative Default Rates for Cohorts Formed Since 1970 (cont.)

Year	1	2	3	4	5	6	7	8	9	10
Cohort Formed January 1, 1988										
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Aa	0.00%	0.33%	0.67%	0.67%	0.67%	0.67%	0.67%	1.14%	1.14%	1.14%
A	0.00%	0.38%	0.98%	1.40%	1.40%	1.40%	1.40%	1.40%	1.40%	1.40%
Baa	0.00%	0.33%	1.03%	2.49%	3.65%	4.50%	4.50%	4.50%	4.50%	5.05%
Ba	1.44%	7.14%	12.97%	20.99%	24.01%	27.18%	28.08%	29.07%	30.16%	31.37%
B	6.31%	13.34%	25.95%	37.19%	41.36%	46.46%	47.32%	50.36%	50.36%	51.62%
Investment-Grade	0.00%	0.31%	0.80%	1.32%	1.59%	1.79%	1.79%	1.90%	1.90%	2.02%
Speculative-Grade	3.69%	9.84%	18.17%	27.27%	30.66%	34.44%	35.31%	37.26%	37.98%	39.17%
All Corp.	1.40%	3.83%	7.04%	10.30%	11.49%	12.68%	12.91%	13.48%	13.65%	14.01%
Cohort Formed January 1, 1989										
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Aa	0.61%	0.61%	0.61%	0.61%	0.61%	0.61%	1.06%	1.06%	1.06%	
A	0.00%	0.18%	0.56%	0.56%	0.56%	0.56%	0.56%	0.56%	0.56%	
Baa	0.60%	1.23%	1.88%	2.93%	2.93%	2.93%	2.93%	2.93%	3.40%	
Ba	2.97%	9.99%	18.37%	21.06%	24.22%	24.63%	25.54%	27.04%	28.70%	
B	9.18%	23.00%	33.42%	38.47%	44.09%	46.13%	50.09%	50.09%	52.12%	
Caa-C	33.33%	42.86%	57.14%	57.14%	57.14%	57.14%	57.14%	57.14%	57.14%	
Investment-Grade	0.29%	0.51%	0.82%	1.06%	1.06%	1.06%	1.17%	1.17%	1.28%	
Speculative-Grade	6.01%	15.84%	25.07%	28.64%	32.68%	33.68%	35.65%	36.60%	38.34%	
All Corp.	2.42%	6.05%	9.33%	10.61%	11.80%	12.07%	12.66%	12.89%	13.37%	

Exhibit 30 - Cumulative Default Rates for Cohorts Formed Since 1970 (cont.)

Years	1	2	3	4	5	6	7	8
Cohort Formed January 1, 1990								
Aaa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Aa	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.4%	0.4%
A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Baa	0.0%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Ba	3.3%	12.0%	14.5%	17.4%	18.2%	19.5%	20.4%	21.8%
B	16.1%	27.8%	34.7%	39.9%	41.5%	44.2%	45.0%	46.9%
Investment-Grade	0.0%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%
Speculative-Grade	9.8%	19.7%	24.0%	27.8%	28.9%	30.9%	31.7%	33.3%
All Corp.	3.5%	7.0%	8.3%	9.5%	9.8%	10.4%	10.6%	10.9%
Cohort Formed January 1, 1991								
Aaa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Aa	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.3%	
A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Baa	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	
Ba	5.3%	6.5%	8.3%	8.8%	10.1%	11.2%	12.2%	
B	15.0%	24.2%	31.1%	33.3%	36.6%	37.3%	40.0%	
Investment-Grade	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	
Speculative-Grade	10.6%	15.3%	19.2%	20.4%	22.7%	23.6%	25.2%	
All Corp.	3.3%	4.7%	5.8%	6.1%	6.7%	6.9%	7.3%	
Cohort Formed January 1, 1992								
Aaa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Aa	0.0%	0.0%	0.0%	0.3%	0.3%	0.3%		
A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Baa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Ba	0.3%	1.0%	1.0%	2.3%	2.8%	3.9%		
B	9.0%	17.0%	20.3%	24.3%	26.6%	29.1%		
Investment-Grade	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%		
Speculative-Grade	4.8%	8.7%	10.1%	12.7%	13.8%	15.7%		
All Corp.	1.3%	2.3%	2.7%	3.3%	3.6%	4.0%		

Years	1	2	3	4
Cohort Formed January 1, 1994				
Aaa	0.0%	0.0%	0.0%	0.0%
Aa	0.0%	0.0%	0.0%	0.0%
A	0.0%	0.0%	0.0%	0.0%
Baa	0.0%	0.2%	0.2%	0.4%
Ba	0.2%	1.5%	1.8%	2.7%
B	3.8%	9.1%	12.2%	13.9%
Investment-Grade	0.0%	0.1%	0.1%	0.1%
Speculative-Grade	1.9%	5.2%	7.0%	8.2%
All Corp.	0.6%	1.5%	2.1%	2.4%
Cohort Formed January 1, 1995				
Aaa	0.0%	0.0%	0.0%	
Aa	0.0%	0.0%	0.0%	
A	0.0%	0.0%	0.0%	
Baa	0.0%	0.0%	0.0%	
Ba	0.7%	0.9%	2.0%	
B	4.6%	7.0%	9.8%	
Investment-Grade	0.0%	0.0%	0.0%	
Speculative-Grade	3.2%	4.9%	6.7%	
All Corp.	1.0%	1.6%	2.1%	
Cohort Formed January 1, 1996				
Aaa	0.0%	0.0%		
Aa	0.0%	0.0%		
A	0.0%	0.0%		
Baa	0.0%	0.0%		
Ba	0.0%	0.7%		
B	1.4%	4.4%		
Investment-Grade	0.0%	0.0%		
Speculative-Grade	1.6%	3.8%		
All Corp.	0.5%	1.2%		

Exhibit 30 - Cumulative Default Rates for Cohorts Formed Since 1970 (cont.)

Years	1	2	3	4	5
Cohort Formed January 1, 1993					
Aaa	0.0%	0.0%	0.0%	0.0%	0.0%
Aa	0.0%	0.0%	0.0%	0.0%	0.0%
A	0.0%	0.0%	0.0%	0.0%	0.0%
Baa	0.0%	0.0%	0.3%	0.3%	0.3%
Ba	0.5%	0.5%	2.6%	3.4%	4.6%
B	5.8%	10.0%	14.8%	16.6%	19.3%
Investment-Grade	0.0%	0.0%	0.1%	0.1%	0.1%
Speculative-Grade	3.5%	5.1%	8.6%	9.9%	11.7%
All Corp.	1.0%	1.4%	2.3%	2.6%	3.0%

Years	1
Cohort Formed January 1, 1997	
Aaa	0.00%
Aa	0.00%
A	0.00%
Baa	0.00%
Ba	0.18%
B	1.90%
Investment-Grade	0.00%
Speculative-Grade	1.82%
All Corp.	0.62%

Chronological List of 1997 Public Corporate Bond Defaulters

Company	Defaulted Amount ($US MM)	Default Description
January		
Biber Holding AG	$74.80	Bankruptcy
Claridge Hotel and Casino Corporation	$85.00	Missed interest payment
Gatic S.A.I.C.F.I.A.	$37.00	Missed principal and interest
Hanbo Steel Industry Co.	$45.00	Receivership
In-Flight Phone Corporation	$285.80	Chapter 11
RXI Holdings, Inc.	$60.00	Missed interest payment
Somprasong Land Public Company	$80.00	Missed interest payment
Defaulted Debt	$667.60	
Number of Defaulting Companies	7	
February		
Defaulted Debt	$0.00	
Number of Defaulting Companies	0	
March		
Flagstar Corporation	$1,521.70	Prepackaged Chapter 11
Defaulted Debt	$1,521.70	
Number of Defaulting Companies	1	
April		
Jinro (H.K.) International Ltd.	$80.00	Bankruptcy
Jinro Limited	$108.40	Bankruptcy
Sahaviriya City PCL	$29.60	Missed interest payment
Defaulted Debt	$218.00	
Number of Defaulting Companies	3	
May		
Arizona Charlie's, Inc.	$55.00	Missed interest payment
Barry's Jewelers, Inc.	$50.00	Chapter 11
Builders Transport, Inc.	$46.80	Missed interest payment
Decorative Home Accents, Inc.	$118.10	Chapter 11
Harvard Industries, Inc.	$299.90	Chapter 11
Tee-Comm Electronics, Inc.	$72.50	Receivership
Defaulted Debt	$642.30	
Number of Defaulting Companies	6	
June		
Buenos Aires Embotelladora S.A.	$60.00	Missed interest payment
Grupo Simec, S.A. de C.V.	$68.00	Missed interest payment
Home Holdings, Inc.	$280.00	Missed interest payment
Merisel, Inc.	$125.00	Missed interest payment
Defaulted Debt	$533.00	
Number of Defaulting Companies	4	

Chronological List of 1997 Public Corporate Bond Defaulters

Company	Defaulted Amount ($US MM)	Default Description
July		
Alliance Entertainment Corp.	$125.00	Chapter 11
Asia Motors Co., Ltd.	$336.30	Bankruptcy
BGLS Inc.	$232.90	Missed interest payment
First Merchants Acceptance	$66.10	Chapter 11
Kia Motors Corp.	$204.00	Bankruptcy
Kia Precision Works Co., Ltd.	$18.00	Bankruptcy
Kia Steel Co., Ltd.	$26.00	Bankruptcy
Kisan Corporation	$280.30	Bankruptcy
Koll Real Estate Group	$186.00	Prepackaged Chapter 11
Liggett Group, Inc.	$152.00	Grace period default
Payless Cashways, Inc.	$173.70	Chapter 11
Reeves Industries, Inc.	$122.50	Missed interest payment
Rymer Foods, Inc.	$23.50	Prepackaged Chapter 11
Defaulted Debt	$1,946.20	
Number of Defaulting Companies	13	
August		
First Central Financial Corp.	$4.90	Missed interest payment
Grupo Mexicano de Desarrollo, S.A.	$250.00	Missed interest payment
RDM Sports Group, Inc.	$53.90	Missed interest payment
Defaulted Debt	$308.80	
Number of Defaulting Companies	3	
September		
American Restaurant Group, Inc.	$170.00	Grace period default
Consolidated Hydro, Inc.	$202.30	Prepackaged Chapter 11
Finance One PCL	$185.80	Missed interest payment
Levitz Furniture Corp.	$191.60	Chapter 11
Property Perfect Public Company	$42.00	Missed interest payment
Yaohan Japan Corp.	$306.70	Bankruptcy
Defaulted Debt	$1,098.30	
Number of Defaulting Companies	6	
October		
Bangkok Land (Cayman Islands) Limited	$99.40	Missed interest payment
Farm Fresh, Inc.	$206.10	Missed interest payment
Newmax International (H.K.) Co., Ltd.	$70.00	Bankruptcy
Tae Il Media (H.K.) Co., Ltd.	$82.00	Bankruptcy
Tae Il Media Co., Ltd.	$10.50	Bankruptcy
Defaulted Debt	$468.00	
Number of Defaulting Companies	5	

Chronological List of 1997 Public Corporate Bond Defaulters

Company	Defaulted Amount ($US MM)	Default Description
November		
Australis Media Limited	$346.30	Missed interest payment
Hyundai Metal Co.	$15.00	Receivership
L.A. Gear, Inc.	$50.00	Missed interest payment
MIDCOM Communications Inc.	$97.70	Chapter 11
SA Telecommunications, Inc.	$27.20	Chapter 11
Town & Country Corporation	$68.80	Prepackaged Chapter 11
Unison HealthCare Corporation	$100.00	Missed interest payment
Westbridge Capital Corp.	$85.00	Missed interest payment
Defaulted Debt	$790.00	
Number of Defaulting Companies	8	
December		
CMIC Finance & Securities PCL	$12.60	Seized by regulators
Juldis Develop Public Company Limited	$60.00	Missed interest payment
Mando Machinery Corporation	$25.50	Bankruptcy
Molten Metal Technology, Inc.	$143.80	Chapter 11
Multi-Credit Corp. of Thailand PCL	$65.00	Seized by regulators
Rea Gold Corp.	$9.20	Bankruptcy
Sofco S.A.	$12.30	Missed interest payment
Wall Street Finance & Securities PCL	$55.00	Seized by regulators
Defaulted Debt	$383.50	
Number of Defaulting Companies	8	

Year-to-date through December, 31

	1997	1996	1995
Defaulted Debt ($US Millions)	$8,577.3	$5,935.8	$8,915.8
Number of Defaulting Companies	64	29	53
Moody's Trailing 12-Month, Issuer-Based Default Rate (Spec. Grade)	1.82%	1.64%	2.99%
Moody's Trailing 12-Month, Dollar-Based Default Rate (Spec. Grade)	2.84%	1.61%	3.63%

Detail of 1997's Public Corporate Bond Defaults

Alliance Entertainment Corp.

Distributor of pre-recorded music

$125.0 million 11.25% Guaranteed Senior Subordinated Notes, Ser. B due 7/15/2006

Alliance Entertainment Corp., headquartered in New York City, is the nation's largest wholesale distributor of pre-recorded music and music related products. The company markets its products and services to retail music chains and other wholesalers worldwide. Alliance's aggressive growth through acquisition resulted in the accumulation of burdensome levels of debt and interest expense at a time of little or no growth in the domestic music industry. Rapid expansion in a stagnant market coupled with significant changes in music consumption demographics led to decreasing sales. Alliance recorded a net loss of $23.1 million in the first quarter of 1997 versus a net loss of $4.6 million in the same period a year ago on sales of $126.3 million and $176.2 million, respectively. Having missed the amortization payments on bank loans on July 1, 1997, Alliance filed for Chapter 11 protection against all creditors on July 14, 1997.

07/14/1997 - Chapter 11 (Contact: Marie Menendez, 553-4126)

American Restaurant Group, Inc.

Operator of restaurants

$116.5 million 13% Senior Secured Notes, Ser. 92 due 9/15/98
$50.0 million 13% Senior Secured Notes, Ser. 93 due 9/15/98
$3.5 million 12% Senior Secured Notes due 9/15/98

American Restaurant Group, Inc. (ARG), headquartered in Newport Beach, California, operates 232 restaurants in 15 western states. The company is a wholly owned subsidiary of American Restaurant Group Holdings, Inc. ARG has experienced declining sales and weak operating margins in the intensely competitive casual dining and quick service segments of the restaurant industry. ARG has suffered recurring losses as operating profit has not covered the interest burden associated with its sizable debt load, recording its latest pre-tax loss of $12.8 million for the thirty-nine weeks period ended September 29, 1997 compared to a pre-tax loss of $14.8 million for the same period in the prior year. Weak operating performance strained ARG's liquidity and resulted in a $104.3 million negative net worth as of September 29, 1997. The company missed the $40.9 million sinking fund payment on its senior secured notes and interest payments on publicly traded senior secured and privately placed subordinated notes on September 15, 1997. It had been negotiating the sale of its Stuart Anderson Black Angus operation, but failed to get the bondholders' consent to the sale which would have provided for the repayment of the bulk of the senior notes. Within the grace period, though, ARG paid the past due interest on its senior secured notes, but remained in default on its privately placed subordinated debt due to restrictions of the sinking fund provisions.

09/15/1997 - Missed interest payment on publicly traded senior secured and privately placed subordinated notes; missed $40.9 million sinking fund payment on senior secured notes

10/06/1997 - Made interest payment on senior secured notes (Contact: Michael Rowan, 553-4465)

Arizona Charlie's, Inc.

Casino operator

$55.0 million 12% Gtd. First Mortgage Notes, Ser. B due 11/15/2000

Arizona Charlie's, Inc. (AC) owns and operates Arizona Charlie's Casino & Hotel located in Las Vegas, Nevada. AC is a wholly-owned subsidiary of Becker Gaming, Inc. From January 1994 to February 1995, the company expanded its operations through the addition of new casino space, hotel rooms, specialty restaurants, and other facilities, spending approximately $35.6 million. Decreased gaming revenues, low operating margins and high interest costs resulted in net losses of $7.1 million and $4.6 million for the years ended June 30, 1997 and June 30,1996, respectively. As a result, the company did not have sufficient resources to satisfy May 15, 1997 interest payment on its 12% first mortgage notes due 2000. Moreover, having provided a guarantee on Capitol Queen & Casino's (its sister company) notes, which are in default

since November 15, 1995, AC received a letter from the trustee demanding the full repayment of the notes on July 3, 1997. Subsequently, the company filed Chapter 11 petition on November 14, 1997.

05/15/1997 - Missed interest payment
11/15/1997 - Missed interest payment (Contact: Jeremy Hawes, 553-1653)

Asia Motors Co., Ltd. — Car manufacturer

KWon 100,000.0 million 11% Bonds due 8/12/97 [$112.1 million]
KWon 200,000.0 million 11% Bonds due 8/29/97 [$224.2 million]

See accompanying critique on Kia Motors Corp.

07/15/1997 - Placed under bankruptcy protection
09/22/1997 - Applies for court receivership (Contact: Teresa McCarthy, 553-3878)

Australis Media Limited — Telecommunications provider

$346.3 million 15.75% Gtd. Sr. Sub. Discount Notes due 5/15/2003

Australis Media Limited, located in Sydney, Australia, is in the business of providing subscription pay-TV services via satellite and microwave technology throughout Australia. High start up costs in the underdeveloped pay-TV market and continuous need to fund the rapid deployment of pay-TV infrastructure resulted in high leverage, while price competition lowered the company's revenues and high market penetration costs increased operating expenses. Australis has generated negative cash flows and losses since inception, recording a net loss of A$308.8 million (US$231.3 million) for FY1997 ended June 30, 1997, compared to a loss of A$262.5 million (US$206.6 million) a year earlier. Experiencing constant liquidity pressures, Australis had hoped that the now failed merger with Foxtel, a broadband pay-TV operator, would have provided additional funds. With the merger falling through, Australis was not able to secure any other sources of financing and did not make an interest payment due on November 15, 1997, indicating it would commence insolvency proceedings by December of 1997.

11/15/1997 - Missed interest payment on 15.75% guaranteed senior subordinated discount notes due 5/15/2003 (Contact: Russell Solomon, 553-4301)

Bangkok Land (Cayman Islands) Limited — Real estate developer

$99.4 million 4.5% Guaranteed Convertible Eurobonds due 10/13/2003

Bangkok Land (Cayman Islands) Limited is an offshore finance subsidiary of Bangkok Land PCL, a Thai property developer of housing and infrastructure projects. By issuing bonds through its subsidiary, Bangkok Land avoided a large withholding tax that is usually imposed on overseas bond borrowings by the Thai government. The company's, and the country's, largest residential development is Muang Thong Thani, and most of that development's buildings are vacant due to a continuing slump in Thai property market caused by overbuilding. Therefore, high vacancy rates, coupled with high interest rates and unstable currency, negatively affected company's finances and caused a liquidity crunch. Net profit plunged to Thai Baht 7.4 million ($US0.3 million) for the fiscal year ended March 31, 1997, a 99% drop compared with the same period from a year ago. As a result, Bangkok Land did not find sufficient resources to make an interest payment due October 27, 1997 on its dollar denominated convertible eurobonds due 2003.

10/27/1997 - Missed interest payment
12/05/1997 - Made interest payment (Contact: Teresa McCarthy, 553-3878)

Barry's Jewelers, Inc.

Owner and operator of jewelry stores

$50.0 million 11% Senior Secured Notes due 12/22/2000

Barry's Jewelers, Inc., headquartered in Monrovia, California, owns and operates retail jewelry stores in 16 western and southwestern states, and utilizes credit financing to enhance sales. The 1992 Chapter 11 filing and subsequent reorganization did not prove effective. The company remained highly leveraged and its continued focus on risky credit sales proved costly, resulting in historically low cash flows. The company's revenue and cash flow continued to decline over the course of 1996 and the first quarter of 1997 mostly due to a more restrictive credit policy implemented in November of 1995. Barry's posted a net loss of $19.2 million for the nine-month period ending February 28, 1997 versus net income of $1.7 million for the comparable period of last year. Bank debt increased from $20 million to $85 million in 1996 to finance proprietary credit card receivables. Continuing losses forced the company to break certain financial covenants under its revolving credit facility in February of 1997. At about the same time, Barry's changed top management. The new executive team reviewed and re-evaluated the restructuring and cost savings initiatives and deemed filing for Chapter 11 protection necessary in order to assure the continued flow of merchandise to its stores and to position the company for 1997's Christmas shopping season.

05/12/1997 - Chapter 11 (Contact: Marie Menendez, 553-4126)

BGLS Inc.

Operating company

$232.9 million 15.75% Senior Secured Notes due 1/31/2001

See accompanying critique on Liggett Group Inc.

07/31/1997 - Postponed interest payment (Contact: Bruce Clark, 553-4814)

Biber Holding AG

Paper manufacturer

SwFr 26.3 million 2.25% Swiss Debentures due 3/10/97 [$18.6 million]
SwFr 50.4 million 4.5% Convertible Swiss Debentures due 6/15/99 [$35.6 million]
SwFr 8.9 million 3.5% Convertible Swiss Debentures due 12/31/99 [$6.3 million]
SwFr 20.2 million 6.75% Swiss Debentures due 7/12/2001 [$14.2 million]

Biber Holding AG, headquartered in Biberist, Switzerland, manufactures paper and printing materials. The company's products include newsprint, printing, writing and magazine paper, envelopes, and writing pads. Biber has posted mounting losses since 1991 and last year ended with a net loss of 322.6 million Swiss francs (US$228 million) on sales of 673.2 million Swiss francs (US$476 million). In order to improve its financial situation, the company sold two of its paper mills to Metsa-Serla Oy of Finland on December 17, 1996. The proceeds from the sale, though, were insufficient to cover Biber's debts, including 106 million Swiss Francs (US$74 million) in bonds. Subsequently, Biber Holding AG filed for bankruptcy on January 21, 1997.

01/21/1997 - Filed for bankruptcy (Contact: Nelson Noel, 553-1611)

Buenos Aires Embotelladora S.A.

Soft drinks bottler and distributor

$60.0 million 8.5% Euro Negotiable Obligations due 12/29/2000

Buenos Aires Embotelladora S.A. (BAESA), headquartered in Buenos Aires, Argentina, is the largest franchised bottler and distributor of the soft drink products of PepsiCo., Inc. outside the United States. BAESA also produces, sells and distributes other soft drink products and bottled water under its proprietary trademarks. The company lost $29 million in the second quarter of fiscal year 1997, compared with a loss of $26 million in the same period a year earlier. For fiscal year 1996, BAESA posted a net loss of $452 million. Losses were driven by the lingering effect of significant operating inefficiencies in Brazil coupled with the decline in case sales volume. Signing a Standstill agreement with its creditor banks on

October 18, 1996 did not help turn around the situation, and in May of 1997 the company was delisted from the stock exchanges after its net worth fell to a negative $18.7 million. As a result, BAESA did not have sufficient funds to pay interest on its 8.5% negotiable obligations due 2000 on June 30, 1997.

06/30/1997 - Missed interest payment
07/29/1997 - Signed an agreement with creditors to exchange negotiable obligations for equity
10/23/1997 - Brazilian operations sold to Companhia Cervejaria Brahma (Contact: Bruce Clark, 553-4814)

Builders Transport, Inc. — Trucking company

$22.4 million 6.5% Convertible Subordinated Debentures due 5/1/2011
$24.4 million 8% Convertible Subordinated Debentures due 8/15/2005

Builders Transport, Inc. (BT), located in Camden, South Carolina, is a truck carrier that transports a wide range of commodities in both intrastate and interstate commerce. The company incurred losses of $7.1 and $15.2 million for both 1995 and 1996, respectively, due to poor equipment utilization because of high driver turnover, industry-wide rate discounting, higher fuel rates, and increased driver wages. Although utilization ratios had improved during the first half of 1997, BT still showed losses of $2.4 million for the six months ended June 30, 1997. Moreover, substantial capital expenditures to operate and maintain its fleet had limited its financial flexibility, resulting in company's inability to pay interest on both of its convertible subordinated debentures.

05/01/1997 - Missed interest payment on 6.5% convertible subordinated debentures
08/15/1997 - Missed interest payment on 8% convertible subordinated debentures (Contact: T. Keller, 553-1027)

Claridge Hotel and Casino Corporation — Casino operator

$85.0 million 11.75% First Mortgage Notes due 2/1/2002

Claridge Hotel and Casino Corporation, headquartered in Atlantic City, New Jersey, through its subsidiary, Claridge at Park Place, Incorporated, operates the Claridge Casino Hotel in Atlantic City. The casino hotel opened in July of 1981 and has 59,000 square feet of casino gaming space. Claridge had a loss of $2.7 million for the third quarter of 1996, partly because it closed its new 1,200-car parking garage from July 10 to September 20 due to a fatal car accident. The loss is also attributed to increased marketing costs and the competitive pressures, namely from the newly opened Trump World's Fair Casino. As a result, the company announced a prepackaged reorganization and submitted a proposal to restructure its debts and lease agreements on November 7, 1996. Subsequently, Claridge missed the interest payments on its First Mortgage Notes on February 3, 1997.

01/31/1997 - Announced that it will not make interest payment due 2/3/97
02/03/1997 - Missed interest payment
03/04/1997 - Made interest payment (Contact: Andrew Susser, 553-4312)

CMIC Finance & Securities PCL — Non-bank financial institution

$12.6 million 3.5% Convertible Eurobonds due 11/8/2003

Headquartered in Bangkok, Thailand, CMIC Finance & Securities PCL is involved in financing of the commercial and housing development, and in underwriting and brokering of securities. Being an aggressive lender to the property sector, CMIC was highly hit by the meltdown of the Thai real estate values, posting a loss of 3 billion of Thai Baht (US$116 million) for the first half of the fiscal 1997 compared to a profit of 183 million of Thai Baht (US$7 million) for the same period a year earlier. Citing insolvency, the Thai government suspended the firm on June 27, 1997 and permanently shut it down on December 8, 1997. As a result, CMIC's assets will be liquidated by the government-appointed receivers in order to pay off creditors.

06/27/1997 - Temporarily suspended by the government (Contact: E. Young, 553-1653)
09/02/1997 - Missed interest payment on privately placed bonds
12/08/1997 - Closed permanently by the government; bond repayments subject to liquidation of the company's assets

Consolidated Hydro, Inc.

Independent power producer

$202.3 million 12% Senior Discount Notes due 7/15/2003

Consolidated Hydro, Inc. (CHI), headquartered in Stamford, Connecticut, is principally engaged in the development, operation and management of hydroelectric power plants. The company's hydroelectric projects are located in 15 states and one Canadian province. CHI has expanded by acquiring existing hydroelectric facilities and financing its capital needs mainly through issuance of long-term debt and preferred stock. Having become highly leveraged and facing considerable future interest obligations, CHI solicited and received the consent of its bondholders to swap senior discount notes for equity through filing of the Prepackaged Chapter 11 on September 15, 1997.

09/15/1997 - Prepackaged Chapter 11 (Contact: Andrew Oram, 553-1649)

10/24/1997 - Reorganization plan confirmed by the court

11/07/1997 - Emerged from Chapter 11: holders of 12% senior discount notes due 2003 will receive $25-30 million in cash plus 100% of new common stock - the recovery is estimated to be worth 52 cents on the dollar

Decorative Home Accents, Inc.

Textiles & apparels manufacturer

$118.1 million 13% Guaranteed Senior Notes due 6/30/2002

Decorative Home Accents, Inc. (DHA), headquartered in Abbeville, South Carolina, produces home accessories, including jaquard throws, bath furnishings, furniture covers and bedding products, through its wholly owned subsidiaries, The Rug Barn, Inc., Home Innovations, Inc., Calvin Klein Home Inc., and R.A. Briggs and Company. The sharp decline in sales across all product lines, intense competition, seasonality, and cyclicality of the home textiles industry contributed to the company's inability to stay afloat and fund its operations. The 1995 acquisition of Home Innovations, Inc. left DHA highly leveraged and significantly decreased financial flexibility. Additionally, high working capital needs associated with the roll-out of the Calvin Klein Home line of products in 1996 resulted in increased borrowings under the revolving credit facility. The company posted a net loss of $10.4 million for the three months ended September 1996, compared to a net loss of $1.9 million for the same period of 1995. Consequently, DHA announced the capital restructuring plan and entered into agreement with 76% of its bondholders to exchange 13% Senior Notes into common equity on May 16, 1997.

05/16/1997 - Entered into agreement with 76% of its bondholders on a capital restructuring plan that converts the 13% senior notes into common equity

06/30/1997 - Missed interest payment

09/30/1997 - Chapter 11 (Contact: Catherine Guinee, 553-4385

Farm Fresh, Inc.

Supermarket chain operator

$165.0 million 12.25% Senior Notes due 10/1/2000
$36.9 million 12.25% Senior Notes, Ser. A due 10/1/2000
$4.26 million 7.5% Convertible Subordinated Debentures due 3/1/2000

Farm Fresh, Inc., based in Norfolk, Virginia, operates 47 supermarkets in Hampton Roads, Richmond and Shenandoah Valley areas of Virginia. The company is a wholly owned subsidiary of FF Holdings Corporation, which has no independent operations. Farm Fresh's high leverage limited its ability to meet the competitive challenges, and its sales continued to decline as several competitors remodeled existing stores and opened new stores in its market. The company lost $10.2 million on sales of $483.7 million for the 36-week period ended September 6, 1997 versus a loss of $8.8 million on sales of $539.6 million in the same period a year ago. On September 9, 1997 the company agreed in principle to be acquired by Richfood Holdings, Inc., its primary distributor, through a prepackaged Chapter 11 filing in early 1998. Consequently, on October 1, 1997 Farm Fresh failed to make required interest payments on both issues of senior notes due 2000 in order to preserve working capital and improve short-term liquidity, pending the completion of acquisition.

09/09/1997 - Reached an agreement in principle to be acquired by Richfood Holdings, Inc. (acquisition to be completed through a prepackaged Chapter 11 filing by Farm Fresh in early 1998)

10/01/1997 - Missed interest payment on both issues of senior notes

01/07/1998 - Prepackaged Chapter 11 (Contact: Michael Rowan, 553-4465)

Finance One PCL

Non-bank financial institution

T Baht 2,400.0 million 3.75% Subordinated Bonds w/warrants due 3/15/2001 [$65.8 million]
$120.0 million 2% Convertible Subordinated Eurobonds due 8/31/2001

Finance One PCL, based in Bangkok, Thailand, provides commercial, consumer and real estate financing and investment banking. Once the country's biggest finance company, Finance One lost Thai Baht 5.2 billion (US$173 million) in the first half of 1997 due to stock market and property market collapse. Crippled by bad loans to property developers and equity investors, the company was among 16 Thai finance firms ordered shut by the government in June of 1996. The shutdown prohibits Finance One from paying the interest payment due September 15, 1997.

06/27/1997 - Temporarily suspended by the government

09/03/1997 - Announced that it will not make the interest payment due 9/15/97 on 3.75% subordinated bonds

09/15/1997 - Missed interest payment

12/08/1997 - Closed permanently by the government; bond repayments subject to liquidation of the company's assets

(Contact: E. Young, 553-1653)

First Central Financial Corp.

Insurance holding company

$4.9 million 9% Convertible Subordinated Debentures due 8/1/2000

First Central Financial Corporation, based in New York City, is the holding company for First Central Insurance Company. Until March 10, 1997 First Central Insurance wrote multiple lines of property and casualty insurance. During 1996 and the first half of 1997, the company's liquidity and capital resources eroded significantly as a result of increased competition from larger firms offering similar products. First Central's losses from operations precipitated the downgrade of its insurance financial strength to D ("very vulnerable") by A.M. Best & Co., an insurance strength rating company. Both the rating downgrade and the decision to stop writing new policies resulted in a 40.5% drop in direct written insurance premiums for the three months of 1997, compared with the same period of 1996. Consequently, the company omitted interest and sinking fund payments due August 1.

08/01/1997 - Missed interest and sinking fund payments

(Contact: Bruce Ballentine, 553-7136)

First Merchants Acceptance Corporation

Auto finance company

$51.8 million 9.5% Subordinated Reset Notes due 12/15/2006
$14.4 million 11% Subordinated Reset Notes due 3/15/2005

First Merchants Acceptance Corp. (FMAC), based in Deerfield, Illinois, is a specialty consumer finance company. It is primarily engaged in financing the purchase of automobiles through the acquisition of dealer-originated retail installment contracts, collateralized by the underlying automobiles. The company's annual purchases of contracts rose by 105% to $528.8 million in 1996, compared to $257.9 million in 1995, which resulted both in increased borrowing under its credit facility and considerable losses from a more-than-expected number of defaulted loans. In April of 1997, FMAC announced that it had discovered accounting irregularities involving unauthorized entries made in the company's financial records, which led to earnings revision for 1996 and cost its top executives their jobs. Having only $3.4 million in net assets, FMAC could not pay its bills on July 8 and filed Chapter 11 on July 11,1997.

07/11/1997 - Chapter 11

(Contact: Tom Keller, 553-1027)

Flagstar Corporation

Owner and operator of restaurants

$125.0 million 11.375% Senior Subordinated Debentures due 9/15/2003
$99.3 million 10% Convertible Junior Subordinated Debentures due 11/1/2014
$722.4 million 11.25% Senior Subordinated Debentures due 11/1/2004
$300.0 million 10.875% Senior Notes due 12/1/2002
$275.0 million 10.75% Senior Notes due 9/15/2001

Flagstar Corporation, headquartered in Spartanburg, South Carolina, is a wholly owned subsidiary of Flagstar Companies, Inc. and is one of the nation's largest restaurant companies with over 3,200 moderately-priced restaurants. Flagstar owns and operates the Carrows, Coco's, Denny's, El Pollo Loco and Quincy's Family Steakhouse restaurant brands and is the largest franchisee of Hardee's. Since the 1989 leveraged buyout, Flagstar has accumulated about $2.1 billion in debt. In the company's first attempt to restructure its debt in 1992, Kohlberg, Kravis, Roberts & Co. infused about $300 million in order to refinance over $1 billion in high-cost debt at lower rates. Overall, the refinancing was unsuccessful and Flagstar remained highly leveraged. In January of 1997, the company retained a financial advisor to assist in exploring alternatives to improve its capital structure. As of December 1996, the company posted $261.6 million in interest expense and a net loss of $85.5 million. High debt service requirements have limited Flagstar's ability to reinvest in its businesses and put the company at a competitive disadvantage resulting in lower revenues. Flagstar opted not to pay the interest on its 11.375% Senior Subordinated Debentures on March 17 and, subsequently, filed a prepackaged Chapter 11 plan on March 24, 1997. The plan proposes the exchange of company's 11.375% and 11.25% Senior Subordinated debentures, 10% Convertible Junior Subordinated Debentures into common equity. Additionally, the restructuring plan calls for a reduced interest rates and extended maturity on all outstanding senior debt.

03/17/1997 - Missed interest payments on 11.375% senior subordinated debentures and 10.75% senior notes; announced that it has reached an agreement in principle on a financial restructuring plan with its bondholders
05/01/1997 - Missed interest payments on 11.25% Senior Subordinated Debentures and 10% Convertible Junior Subordinated Debentures
07/09/1997 - Reorganization plan approved by creditors and shareholders
07/11/1997 - Filed prepackaged Chapter 11
11/07/1997 - Reorganization plan confirmed by the court
01/07/1998 - Emerged from Chapter 11 and commenced operations as Advantica Restaurant Group, Inc.

(Contact: Frances Schulman, 553-4542)

Gatic S.A.I.C.F.I.A.

Sports clothing and footwear manufacturer

$37.0 million 7.375% Euronotes due 1/27/97

Gatic S.A.I.C.F.I.A. based in Buenos Aires, Argentina, is the manufacturer of sport footwear and sportswear, holding 55% of the domestic market. It is licensed to distribute its products under brand names such as Adidas, New Balance, L.A. Gear, Bata, etc. Gatic experienced lower sales over the last couple of years due to slumping consumer spending and increased competition in the Argentinian footwear market. Although sales increased during 1996, the firm still hasn't recuperated from the loss of 60 million pesos (US$60 million) in 1995. As a result, Gatic didn't have sufficient resources to repay $37 million of maturing bonds on January 27, 1997 and indicated that it would have to sell assets in order to satisfy this obligation.

01/27/1997 - Missed interest and principal payment
01/28/1997 - Paid $1.5 million interest payment

(Contact: Richard Mercier, 553-7885)

Grupo Mexicano de Desarrollo, S.A.

Construction company

$250.0 million 8.25% Gtd. Euronotes due 2/17/2001

Grupo Mexicano de Desarrollo, S.A. (GMD), based in Mexico City, Mexico, is a holding company that conducts all of its operations through subsidiaries engaged in the construction of highways, toll roads, bridges, dams, airports, and other infrastructure projects. Since 1990, GMD has been an active participant in the Mexican government's program to develop a modern highway network by granting concessions to operate toll roads to construction companies willing to arrange private financing for their construction. The company was among the most agressive of all Mexican construction companies involved in the program, amassing an exposure of $938 million to toll road projects which constitutes three-quarters of its assets. Due to the peso devaluation in December of 1994, the Mexican economy contracted sharply, causing a decline in construction activity and expected traffic on the toll roads. Cash flow generation has been greatly reduced, putting pressure on GMD's liquidity. The recently announced Mexican government's toll road restructuring caused the company to write-off approximately $629 million of its investment as losses, resulting in a negative net worth of 1.3 billion pesos (US$167 million). Subsequently, GMD missed the interest payment on its eurobonds on August 17, 1997.

08/17/1997 - Missed interest payment (Contact: George Meyers, 553-1608)

Grupo Simec, S.A. de C.V.

Steel producer

$65.0 million 8.875% Guaranteed Euro Medium Term Notes due 12/15/98

Grupo Simec S.A. de C.V. (Simec), headquartered in Guadalajara, Mexico, manufactures a broad range of steel and aluminum products for the residential, commercial and industrial construction industries. Simec experienced some difficulties in 1995 due to the devaluation of the Mexican peso and high interest rates but rebounded in 1996 posting a net income of $51.3 million, compared to a net loss of $26.5 million in 1995. Simec's outstanding medium term notes are unconditionally guaranteed by its parent company Grupo Sidek S.A. de C.V. The decision to defer interest payment due 6/12/97 and offer to exchange its public notes for new non-guaranteed notes was prompted by persistent financial difficulties of Grupo Sidek, which is currently restructuring after failing on commercial paper payments in 1996.

06/05/1997 - Announced that it has begun discussions with creditors to restructure debt and that the interest due 6/12/97 will not be paid until completion of the restructuring

06/12/1997 - Missed interest payment

12/17/1997 - Distressed exchange completed: the company exchanged US$55.5 million of 8.875% notes due 1998, or 81.6% of the total US$68 million outstanding principal amount of MTNs, for 10.5% third priority notes due November 15, 2007 (Contact: Todd Baker, 553-4999)

Hanbo Steel Industry Co.

Metals and metal product producer

$45.0 million 1.5% Convertible Eurobonds due 12/31/2009

Hanbo Steel Industry Co., headquartered in Seoul, Korea, is the country's second largest steel producer. The company is a part of Hanbo Group, South Korea's 14th largest industrial group with 23 units and 22,000 employees. The failure comes as the Korean steel industry faces surging overcapacity and falling demand. Hanbo's problems started in 1988, when it began the construction of a $6.7 billion, state-of-the-art steel mill in the western town of Tangjin. The rapid development of this mill was financed by nearly $6 billion of unsecured loans from government-controlled banks, and there is an investigation into whether some of Korean government officials helped Hanbo attain these astronomical loans which amounted to about 20 times the company's net worth. Moreover, the company lost 89.9 billion KWon (US$107 million) on sales of 332.6 billion KWon (US$396 million) in the first half of 1996. Hanbo Steel was declared bankrupt by its creditor banks and filed for court receivership on January 23, 1997.

01/23/1997 - Filed for receivership

07/30/1997 - Pohang Iron & Steel Co. and Dongkuk Steel Mill Co. submitted a letter of intent to take over production facilities of insolvent Hanbo (Contact: Todd Baker, 553-4999)

Harvard Industries, Inc.

Auto parts manufacturer

$199.9 million 11.125% Senior Notes due 8/1/2005
$100.0 million 12% Senior Notes due 7/15/2004

Harvard Industries, Inc., headquartered in Tampa, Florida, designs, develops and manufactures a broad range of components for car and light truck manufacturers in North America and overseas. Since acquiring Doehler-Jarvis, Inc. in July of 1996, operating cash flow has fallen sharply. For the six months ending March 31, 1997, the company had a negative cash flow from operations of $9 million compared to $10.5 million for the six months ending March 31, 1996. The negative cash flow resulted principally from operating losses incurred at the Doehler-Jarvis subsidiary. Doehler-Jarvis operations suffered significant losses due to its poorly priced contracts and machine capacity constraints resulting in negative gross margins of over 8.4% as well as lost contracts from major customers such as Ford. The net loss increased nearly ninefold from $22.7 million at the end of the first quarter of 1996 to $198.3 million at the end of the first quarter of 1997. Moreover, the interest expense rose 19.5% to $24.3 million due to the company's increased borrowings under the revolving credit facility. Harvard Industries' inability to meet its continuing future obligations prompted the Chapter 11 filing on May 8, 1997, which marked the company's second Chapter 11 filing in 25 years.

05/08/1997 - Chapter 11 (Contact: Teresa McCarthy, 553-3878)

Home Holdings, Inc.

Insurance holding company

$100.0 million 7% Senior Notes due 12/15/98
$1.2 million 7.875% Senior Notes due 12/15/2003
$178.8 million 7.875% Senior Sinking Fund Debentures due 12/15/2003

Home Holdings Inc., headquartered in New York, is a holding company whose primary business was the writing of commercial property and casualty insurance through its subsidiary, Home Insurance Company. Worse than expected losses relating to asbestosis and pollution claims led to the recapitalization of Home Insurance in 1995 and the concurrent decision to liquidate. Following the recapitalization, Home Insurance has not been an active underwriter of the insurance business which, in turn, negatively impacted its revenues. The company recorded a net loss of $468 million in 1996 versus a loss of $1.3 billion in 1995 on revenues of $713 million and $1.4 billion, respectively. Consequently, the insurance company was placed under formal supervision by the New Hampshire Insurance Department on March 3, 1997. Home Holdings Inc. has no material assets of its own and depends primarily on dividends from Home Insurance to fund its debt obligations. Thus, after Home Insurance's decision to defer dividends, the parent company failed to pay a total of $11.6 million in interest payments on June 15, 1997.

06/14/1997 - Announced that it would not make June 15th interest payment
06/15/1997 - Missed interest payment
07/15/1997 - Made interest payment
12/12/1997 - Announced that it would not make December 15th interest payment
12/15/1997 - Missed interest payment
01/15/1998 - Prepackaged Chapter 11 (Contact: Ted Collins, 553-7903)

Hyundai Metal Co.

Manufacturer of door locks

$15.0 million 0.375% Convertible Bonds due 12/31/2009

Hyundai Metal Co., based in Taegu-Shi, Korea, is the country's largest manufacturer of door locks. The company has experienced cash shortages after its unsuccessful raid into the auto parts manufacturing and sewage businesses during the period of the nation's slowest economic growth in 4 years. Hyundai Metal had debts of 115 billion KWon (US$129.5 million) at the end of June 1997, up from 80.7 billion KWon (US$95.4 million) at the end of 1996, whereas shareholders' equity stood at 72.5 billion KWon (US$81.6 million) and 66.9 billion KWon(US$79.1 million), respectively. The company applied for court receivership on November 20, 1997 in a attempt to resolve its cash flow problems.

11/20/1997 - Applied for court receivership (Contact: Per Regnarsson, 553-1673)

In-Flight Phone Corporation

Telecommunications provider

$285.8 million 0% Senior Discount Notes, Series B due 5/15/2002

In-Flight Phone Corporation (IFPC), a wholly-owned subsidiary of IFP Holdings, Inc., was formed in 1990 and is headquartered in Oakbrook Terrace, Illinois. It is a leading supplier and developer of air-to-ground telecommunications, information and entertainment systems. MCI Telecommunications Corporation, the nation's second largest long distance carrier, through its interests in IFP Holdings, Inc., owns approximately 66% of IFPC on a fully diluted basis. The company's problems stemmed from the unreliability of the Flightlink system, one of its major products. As a result, IFPC has incurred considerable costs for additional research and development necessary to improve the design and integration of its on-board systems. The ongoing technical problems hurt the marketability of its products and strained the relationships between the company and its major customers. For the three months ended September 30, 1996, the company suffered a loss of $30.1 million. In 1997, the company no longer had sufficient resources to meet existing capital expenditures and to continue operations. Consequently, it voluntarily filed for Chapter 11 bankruptcy protection on January 24, 1997.

01/24/1997 - Filed Chapter 11 (Contact: Eric Goldstein, 553-3779)

Jinro Limited

Liquor manufacturer

$30.0 million 0.25% Convertible Eurobonds due 9/30/2009
KWon 70,000.0 million 17% Bonds due 7/6/97 [$78.4 million]

Jinro Ltd. is the flagship unit of Jinro Group, Korea's 19th largest conglomerate. The Jinro Group has 22 subsidiariaries in liquor, beer, construction, distribution, foods, electric cables and trading. The group had collected nearly $3.5 billion in debt at the end of February 1997 due to its ambitious expansion into new ventures. Jinro recorded losses for the second consecutive year in 1996, posting a loss of 50 billion KWon(US$56.2 million), with even its key businesses, including liquor and construction, contributing to the poor performance. Jinro's financial problems are compounded by high financing costs stemming from investment in a joint-venture beer plant with Adolph Coors Co. of the U.S. Group's efforts to sell its real estate holdings in order to generate cash have been futile due to the slumping domestic real estate market. The Jinro Group could not find sufficient resources to finance its debt, and on April 21, 1997 its creditor banks decided to put the group under bankruptcy protection, freezing all payments and extending emergency loans to the troubled group.

04/21/1997 - Put under bankruptcy protection

09/08/1997 - Applied for court mediation

09/13/1997 - Court ruling allows the company to postpone repayments of their debts for the next five years, and to reschedule the payment of debts with creditors

01/15/1998 - Jinro Ltd. and its major creditor, Commercial Bank of Korea, agreed on terms for rescheduling debts: the bank will levy a 11.5% rate on Jinro's debts and allow the company to repay debts in pieces over five years after a five-year grace period (Contact: Bruce Clark, 553-4814)

Jinro (H.K.) International Ltd.

Finance conduit

$50.0 million Floating Rate Guaranteed Eurobonds due 6/29/2001
$30.0 million Floating Rate Guaranteed Eurobonds due 2/25/2002

See accompanying critique on Jinro Ltd.

04/21/1997 - Parent, Jinro Ltd., put under bankruptcy protection

08/20/1997 - Missed interest payment on guaranteed floating rate eurobonds due 2/25/2002

09/08/1997 - Parent applied for court mediation

09/13/1997 - Court ruling allows the company to postpone repayments of their debts for the next five years, and to reschedule the payment of debts with creditors

12/24/1997 - Missed interest payment on guaranteed floating rate eurobonds due 6/29/2001

01/15/1998 - Jinro Ltd. and its major creditor, Commercial Bank of Korea, agreed on terms for rescheduling debts: the bank will levy a 11.5% rate on Jinro's debts and allow the company to repay debts in pieces over five years after a five-year grace period (Contact: Bruce Clark, 553-4814)

Juldis Develop Public Company Limited

Real estate developer

$60.0 million 4.25% Convertible Eurobonds due 12/22/2003

Located in Bangkok, Thailand, Juldis Develop Public Company Limited develops real estate and provides project and construction management services in Bangkok and the provinces. During 1997, sales fell because of the shrinking demand and oversupply of housing. The firm posted a net loss of 786.9 million Thai Baht (US$30.4 million) for the six month ended June 30, 1997 compared to a net profit of 59.7 million Thai Baht (US$2.4 million) for the same period a year earlier. Thai currency depreciation in July of 1997 further depleted company's reserves. As a result, Juldis missed a principal payment on a privately placed bond on August 18, 1997 and an interest payment on publicly traded convertible eurobonds on December 22, 1997.

12/22/1997 - Missed interest payment

(Contact: Takahiro Morita, 553-1653)

Kia Motors Corp.

Car manufacturer

$80.0 million 0.25% Convertible Eurobonds due 12/31/2006
$80.0 million 0.25% Convertible Eurobonds due 12/31/2007
$44.0 million FLT% Euronotes w/warrants due 2/6/2000

Kia Motors Corp., Kia Precision Co., Ltd., and Kia Steel Co., Ltd. are subsidiaries of Kia Group, Korea's eighth largest industrial conglomerate. Kia Group is one of Korea's leading motor vehicle manufacturers, producing passenger cars, vans and trucks for the domestic and international markets. Kia borrowed heavily in early 1990s to finance rapid expansion amassing about $10.7 billion in debt. Excess capacity and a saturated domestic market in 1996 and the first half of 1997 caused serious cash flow problems. Moreover, Kia has continued to lose market share, sliding to third place in total car sales behind Hyundai and Daewoo. A 25% drop in domestic market share coupled with substantial losses at its subsidiaries Kia Steel Co., Ltd. and Asia Motors Corp. limited its ability to meet current debt obligations. Consequently, the Korean Stock Exchange suspended trading of six Kia Group companies and creditor banks granted bankruptcy protection extending emergency loans and freezing all debt payments on July 15, 1997.

07/15/1997 - Placed under bankruptcy protection
09/22/1997 - Applies for court protection

(Contact: David Andrews, 553-7776)

Kia Precision Works Co., Ltd.

Auto parts manufacturer

$18.0 million 0.5% Convertible Eurobonds due 12/31/2009

See accompanying critique on Kia Motors Corp.

07/15/1997 - Placed under bankruptcy protection

(Contact: Teresa McCarthy, 553-3878)

Kia Steel Co., Ltd.

Steel producer

$26.0 million 3.5% Convertible Eurobonds due 12/31/2007

See accompanying critique on Kia Motors Corp.

07/15/1997 - Placed under bankruptcy protection
07/17/1997 - Missed interest payment
09/22/1997 - Applies for court protection

(Contact: Todd Baker, 553-4999)

Kisan Corporation

Car dealer and general contractor

KWon 50,000,0 million 11% Bonds due 7/26/97 [$56.1 million]
KWon 50,000,0 million 13% Bonds due 1/16/98 [$56.1 million]
KWon 50,000,0 million 13% Bonds due 1/27/98 [$56.1 million]
KWon 50,000,0 million 13% Bonds due 4/17/98 [$56.1 million]
KWon 50,000,0 million 12% Bonds due 8/18/98 [$56.1 million]

See accompanying critique on Kia Motors Corp.

07/15/1997 - Placed under bankruptcy protection
09/22/1997 - Applies for court receivership

(Contact: Teresa McCarthy, 553-3878)

Koll Real Estate Group

Real estate developer

$155.0 million 12% Senior Subordinated Pay-in-Kind Debentures due 3/15/2002
$31.0 million 12% Junior Subordinated Pay-in-Kind Debentures due 3/15/2002

Koll Real Estate Group, (KREG) headquartered in Newport Beach, California is a developer of residential and commercial real estate. The company provides its services both nationally and internationally. KREG has been overleveraged since its December 1989 spin-off from Henley Group, Inc. when it had $290 million of debt and $268 million of accounts payable against $707 million of assets and stockholders equity of $149 million. Depending primarily on real estate asset sales for cash to fund its development operations, the company experienced significant problems during the slump in California's real estate market. KREG has reported continuing losses since 1991, with the exception of 1993, losing $28.9 million in 1996 compared to a loss of $116.9 million in 1995. Having just $2.1 million in cash as of December 31, 1996 and facing about $24 million in interest expense in 1997, KREG got an approval from its bondholders to exchange both senior and subordinated notes into equity on July 11, 1997 and filed a prepackaged Chapter 11 petition on July 14, 1997.

07/11/1997 - Debtholders approved prepackaged Chapter 11 reorganization plan
07/14/1997 - Filed prepackaged Chapter 11
07/24/1997 - Company announces an offer to exchange debentures for common stock
08/19/1997 - Reorganization plan confirmed by court
09/02/1997 - Emerged from Chapter 11

(Contact: Teresa McCarthy, 553-3878)

L.A. Gear, Inc.

Sporting goods manufacturer

$50.0 million 7.75% Convertible Subordinated Debentures due 11/30/2002

L.A. Gear, Inc., located in Santa Monica, California, designs, develops and markets a broad range of athletic and lifestyle footwear for adults and children worldwide through its principal subsidiary L.A. Gear California, Inc. The company's greatest challenge has been to increase and maintain sales and margins in an intensely competitive and consolidating branded athletic footwear industry. The firm was not successful in its efforts, experiencing an overall drop-off in sales volume and gross margins and recording consecutive operating losses over the last several years. Poor decisions managing the inventory and product lines were compounded by a soft market for athletic shoes. For the nine months ended August 31, 1997, L.A. Gear's net sales decreased 44.2% to $95.2 million compared to $170.6 million in the prior year period, resulting in net losses of $21.5 million and $11.3 million, respectively. Following PCH Investments PLC's acquisition of 42% of L.A. Gear, Inc., the company announced on November 3, 1997 that approximately 60 percent of the employees have been laid off, and subsequently, on November 24, it determined that it had insufficient resources to make the interest payment due November 30 on its convertible subordinated debentures maturing in 2002.

11/24/1997 - Announced it would not make an interest payment due November 30
11/30/1997 - Missed interest payment
01/13/1998 - Prepackaged Chapter 11

(Contact: Catherine Guinee, 553-4385)

Levitz Furniture Corp.

Furniture retailer

$100.0 million 9.625% Senior Subordinated Notes due 7/15/2003
$91.6 million 13.375% Senior Notes due 10/15/98

Levitz Furniture Corporation (Levitz), headquartered in Boca Raton, Florida, is one of the largest U.S. furniture retailers. It operates a chain of warehouses, showrooms and satellite stores located in 26 states. Levitz incurred losses of $51.3 million during the past two fiscal years, while cash provided by operating activities decreased from $34 million during the fiscal year ended March 31, 1995 to $1.3 million during the fiscal year ended March 31, 1997. Declining sales across the retail sector and the company's inadequate efforts to appeal to broader customer base resulted in a 6.4% drop in sales in the quarter ended June 30, 1997. Additionally, because of Levitz's high fixed interest and rent costs, lost sales are very damaging to margins and cash generation, resulting in liquidity problems. Although the company obtained amendments under its bank loan facilities to lower the interest coverage ratio requirements three times during the course of 1997, latest being on June 30, 1997, it could not finance its debt and filed for protection from creditors on August 5, 1997.

09/05/1997 - Chapter 11 (Contact: Marie Menendez, 553-4126)

Liggett Group, Inc.

Cigarettes manufacturer

$119.7 million 11.5% Senior Notes, Series B due 2/1/99
$32.3 million VR% Senior Notes, Series C due 2/1/99

Brooke Group Ltd., based in Miami, Florida, is a holding company which through BGLS Inc. owns Liggett Group Inc., the fifth largest manufacturer of cigarettes in the United States in terms of unit sales. The company incurred substantial losses due to tobacco litigation and costs associated with it. The Group's decision not to join the tobacco industry's recent agreement to settle all lawsuits means that the company by law has to make annual payments to escrow fund in case their customers win in court. That, coupled with considerable short-term obligations, prompted the company to enter negotiations with bondholders to restructure its debt on July 31, 1997. At the same time, the company decided to postpone interest payments until a favorable agreement is reached.

07/31/1997 - Said it will postpone interest payment on both issues of senior notes
08/01/1997 - Missed interest payments
08/29/1997 - Made interest payments (Contact: Bruce Clark, 553-4814)

Mando Machinery Corporation

Auto parts manufacturer

KWon 20,000.0 million 11% Bonds, Ser. 69 due 9/1/2000 [$12.8 million]
KWon 20,000.0 million 11% Bonds, Ser. 71 due 9/29/2000 [$12.8 million]

Mando Machinery Corporation, South Korea's biggest auto parts manufacturer, supplies 60% of the auto parts to the domestic car manufacturers. Its products include steering, brakes, alternators, etc. Mando is a part of Halla Group, Korea's 12th largest conglomerate, which was declared bankrupt on December 6, 1997 after piling up of 6.5 trillion won in debt (US$ 5.3 billion), becoming the nation's second largest bankruptcy ever. A slowing economy has limited the Group's ability to service these massive debts, which were incurred in an aggressive expansion binge. Additionally, huge losses at a subsidiary, Halla Engineering & Heavy Industries, further depleted the Group's reserves and stricter policies exercised by creditor banks due to conditions of the IMF bailout plan made it impossible to find the additional financing. After defaulting on 641 billion Kwon ($US521 million) in bank loans, the Group filed for court receivership for two of its units, Halla Engineering & Heavy Industries and Halla Merchant Marine Co., and for court-sanctioned mediation for three other companies - Mando Machinery Corporation, Halla Engineering & Construction Co. and Halla Cement Manufacturing Co.

12/10/1997 - Filed for court-mediation (Contact: Christina Padgett, 553-4164)

Merisel, Inc.

Computers/Peripherals

$125.0 million 12.5% Senior Notes due 12/31/2004

Merisel, Inc., headquartered in El Segundo, California, is a leading distributor of computer hardware and software. Through its subsidiaries, Merisel Americas, Inc. and Merisel Canada, Inc., the company distributes a full line of 25,000 products to more than 45,000 resellers. The company's biggest challenges of the past few years have been managing its PC distribution business and controlling costs to offset rapidly declining profit margins. Merisel encountered significant operating difficulties and high costs as the result of an infrastructure upgrade needed to support current businesses. Merisel's decision to divest of its unprofitable ComputerLand franchise and all overseas subsidiaries in order to fund remaining operations resulted in further chargeoffs. Merisel reported a loss of $140 million for 1996, a 66% increase from 1995. Facing substantial scheduled debt payments, Merisel entered into an agreement with holders of more than 75% of the outstanding principal amount of its 12.5% Senior Notes to exchange their notes for common shares.

06/30/1997 - Missed interest payment (Contact: Joel Lustig, 553-4760)

MIDCOM Communications Inc.

Telecommunications provider

$97.7 million 8.25% Convertible Subordinated Notes due 8/15/2003

MIDCOM Communications Inc., based in Southfield, Michigan, provides long distance voice and data telecommunications services to small and medium-sized businesses. The company experienced rapid expansion through the end of 1995 mainly through acquisitions. Although the acquisitions resulted in revenue growth, it was more than offset by high costs associated with integrating and consolidating the acquired businesses. MIDCOM recorded losses of $46 million, $97.3 million and $33.4 million for the six months ended June 30, 1997 and for the years ended December 31, 1996, and 1995, respectively. As a result of these recurring operating losses and significant past and current capital expenditures, the company has experienced a severe working capital shortfall and on October 31, 1997 announced that it did not have sufficient resources to satisfy its current obligations. Subsequently, MIDCOM filed for Chapter 11 protection on November 7, 1997.

11/07/1997 - Chapter 11

01/07/1998 - Bankruptcy court has approved the sale of substantially all assets to WinStar Communications, Inc. for $92 million (Contact: Doug Bontemps, 553-3779)

Molten Metal Technology, Inc.

Environmental technology company

$143.8 million 5.5% Convertible Subordinated Notes due 5/1/2006

Based in Waltham, Massachusetts, Molten Metal Technology, Inc. (MMT) is an environmental technology company that commercializes pollution prevention and waste recycling methods. The company incurred significant expenditures related to commercialization of its patented CEP (Catalytic Extracting Processing) technology, recording consecutive yearly losses since inception, with the exception of 1995 when it showed a net income of $0.36 million. MMT has not yet demonstrated that a commercial CEP system, once installed at a customer's location, will efficiently process waste materials, raising a concern whether the CPE technology can pay off. For the nine months ended September 30, 1997, MMT had a net loss of $112.5 million, compared to a net loss of $5.6 million from a year earlier on revenues of $16.9 million and $55.3 million, respectively. These substantial losses drained the company's finances. MMT has not been able to raise additional financing due to a recent congressional investigation into the campaign contributions to Vice President Al Gore allegedly in return for government contracts. As a result, it filed for Chapter 11 on December 3, 1997.

12/03/1997 - Chapter 11 (Contact: Catherine Guinee, 553-4385)

Multi-Credit Corp. of Thailand PCL

Non-bank financial institution

$65.0 million FLT% Eurobonds due 5/29/98

Multi-Credit Corporation of Thailand PCL (MCCT) is a brokerage and consumer finance company based in Bangkok, Thailand. Overexposure to battered property market in time of slowest economic growth in three decades prompted the government's suspension of the firm on August 5, 1997 and the subsequent permanent shutdown on December 8, 1997. MCCT completely mismatched its liabilities and assets, having nearly 70% of its long-term loan portfolio funded by short-term promissory notes. The firm reported a loss of 1.45 billion Thai Baht (US$40 million) for the nine months ended September 30, 1997 compared to a net profit of 258.5 million Thai Baht (US$10.2 million) for the same period a year ago.

08/05/1997 - Temporarily suspended by the government

12/08/1997 - Closed permanently by the government; bond repayments subject to liquidation of the company's assets

(Contact: E. Young, 553-1653)

Newmax International (H.K.) Co., Ltd.

Finance conduit

$20.0 million Floating Rate Guaranteed Eurobonds due 6/12/2001
$50.0 million Floating Rate Guaranteed Eurobonds due 11/1/2001

A wholly-owned subsidiary of Newmax Co., Ltd. See accompanying critique on Tae Il Media Co., Ltd.

10/15/1997 - Parent, Tae Il Media Co., Ltd., put under bankruptcy protection

11/01/1997 - Missed interest payment on guaranteed floating rate eurobonds due 11/1/2001

11/08/1997 - Parent applied for court mediation

12/09/1997 - Missed interest payment on guaranteed floating rate eurobonds due 6/12/2001

(Contact: Wolfgang Draack, 553-1653)

Payless Cashways, Inc.

Building materials specialty retailer

$173.7 million 9.125% Senior Subordinated Notes due 4/15/2003

Payless Cashways, Inc., based in Kansas City, Missouri, is a full-line building materials specialty retailer operating 194 stores in 22 states across the Midwestern, Southwestern, Pacific Coast, Rocky Mountain, and New England areas. With nearly 100 new warehouse stores opened by competitors over the last two years, Payless Cashways incurred net losses of $19.1 million and $128.5 million on net sales of $2.65 billion and $2.69 billion in 1996 and 1995, respectively. Net sales for both 1995 and 1996 were negatively impacted by increased competition and, to a lesser degree, by lower prices, a slower overall housing environment, and softness in consumer spending. Net sales continued to decline in the first quarter of 1997, recording a 4.5% drop on a same store sales basis. As a result, Payless Cashways did not find sufficient resources to quickly implement a new competitive strategy. A debt burden of almost $642 million and high debt service requirements placed additional pressure, and on July 21, 1997 the company filed Chapter 11 in order to restructure its debt and improve financial flexibility.

07/21/1997 - Chapter 11

08/20/1997 - Receives court approval on permanent DIP financing

11/19/1997 - Reorganization plan approved

12/02/1997 - Emerged from Chapter 11

(Contact: Michael Rowan, 553-4465)

Property Perfect Public Company Limited

Real estate developer

TBaht 1,500.0 million 12.5% Debentures due 9/27/98 [$42.0 million]

Property Perfect Public Company Limited, based in Bangkok, Thailand, specializes in development of residential housing communities. Slowing sales in an oversupplied market resulted in cash shortages, with net profit falling 53% to 109 million Thai Baht ($US4.2million) for the six months ended June 30, 1997 from 230 million Thai Baht ($US9.1 million) of the same period a year earlier. High interest rates and devaluation of the baht in July further limited Property Perfect's ability to serve its debts. Facing an interest payment of Thai Baht 94 million ($US 2.6 million) on its 12.5% domestic debentures, the company could not find the necessary cash and defaulted on September 27, 1997.

09/27/1997 - Missed interest payment (Contact: Teresa McCarthy, 553-3878)

RDM Sports Group, Inc.

Manufacturer of fitness equipment and toys

$51.8 million 8% Convertible Junior Subordinated Debentures due 8/15/2003
$2.1 million 11.75% Senior Subordinated Notes due 7/15/2002

RDM Sports Group, Inc. (RDM), headquartered in Atlanta, Georgia, is a manufacturer and distributor of fitness equipment, toys, and other recreational products. Both in 1996 and the first half of 1997, the company's performance was adversely affected by reduced sales and increased warranty claims for some of its fitness products. RDM experienced lower sales due to the divestiture of camping and bicycle businesses, increased price pressure from its competitors, and higher raw materials costs. These factors, coupled with a softness in the company's particular retail environment, have put a considerable strain on RDM's liquidity. As a result, the company engaged the services of an investment banker to explore the prospects of selling all or a part of RDM's remaining businesses, and on August 15, 1997 it missed $2.07 million interest payment on its 8% convertible subordinated debentures.

08/15/1997 - Missed interest payment
09/02/1997 - Chapter 11 (Contact: Pamela Stumpp, 553-1311)

Rea Gold Corp.

Gold and silver mining company

$9.2 million 9.5% Convertible Subordinated Debentures due 9/30/2004

Rea Gold Corp., headquartered in Vancouver, Canada, is a gold and silver producer engaged in the exploration, development and operation of silver and gold mining properties and businesses primarily located in North and South America. Persistently low gold and silver prices, coupled with high development costs from opening several new mining operations and maintaining existing operations, have resulted in consistent operating losses and net losses over the last couple of years. Moreover, substantial asset write-offs at its Mt. Hamilton Gold Mine put an additional pressure on company's financial position. Rea Gold reported losses of $28.3 and $23.2 million for the nine months ended September 30, 1997 and 1996, respectively. Attempt to work out an agreement with Rea Gold's principal creditor, NM Rothschild & Sons Ltd., failed and the company filed a petition under Canadian Bankruptcy & Insolvency Act on December 16, 1997.

12/16/1997 - Filed for bankruptcy under the Bankruptcy & Insolvency Act (Canada) (Contact: Todd Baker, 553-4999)

Reeves Industries, Inc.

Textiles manufacturer

$122.5 million 11% Senior Notes due 7/15/2002

Reeves Industries, Inc., located in Spartanburg, South Carolina, manufactures textile and coated products through its wholly owned operating subsidiary, Reeves Brothers, Inc. Reeves Industries is a wholly owned subsidiary of Hart Holding Company, Inc., a privately held company. In September of 1996, the company's management announced that it is looking to sell all or parts of Reeves Industries. Suffering from overall depressed demand for textiles and especially intense competition in the auto airbag manufacturing market, Reeves could not come up with required interest payments on July 15, 1997., indicating considerable deterioration in company's earnings and uncertainty surrounding the sale of the company.

07/15/1997 - Missed interest payment

08/14/1997 - Reached agreement in principle with bondholders to exchange debt for new bonds and equity

11/21/1997 - Prepackaged Chapter 11 (Contact: Catherine Guinee, 553-4385)

RXI Holdings, Inc.

Plastics manufacturer

$60.0 million 14% Gtd. Senior Secured Notes with Warrants, Ser. B due 7/15/2002

RXI Holdings, Inc. (RXI), headquartered in Los Angeles, California, manufactures rigid plastic containers, closures, and fitments for the food, agricultural and specialty chemicals, pet supply, personal care, pharmaceutical and automotive markets. The company maintains manufacturing facilities in Texas, Ohio, West Virginia, Missouri, Indiana and California. The company had a net loss for both FY95 and FY96 due to continued competitive pressures and a weak operating performance arising from under-utilized capacity and aggressive expansion in a tight market. The company's interest costs rose to $10.7 million for 1996 from $7.3 million for 1995. RXI began experiencing liquidity troubles in the third quarter of 1996, when it received a waiver from its financial institution for covenant violations on a $15 million revolver, and consequently it missed the interest payments on its senior notes on January 15, 1997.

01/15/1997 - Missed interest payment (Contact: Brian Oak, 553-4688)

Rymer Foods, Inc.

Food processor and distributor

$23.5 million 11% Senior Notes due 12/15/2000

Rymer Foods Inc., headquartered in Chicago, Illinois, is engaged in the development and production of frozen, pre-seasoned, portion controlled meat entrees and the importing and distribution of various seafood products. Although the company reorganized under Chapter 11 in 1993, its efforts to be competitive and be able to generate sufficient revenues to meet outstanding obligations failed. Rymer posted $44.3 million in net sales in 1996, a drop of 45% from $79.9 million in 1995. Sales decreased primarily due to the loss of sales to certain major customers and the company's inability to adjust to changing market conditions. Net losses of $9.2 million and $29.3 million for 1996 and 1995, respectively, depleted Rymer's cash reserves. The interest payments due 12/15/1995, 6/15/96, and 12/15/96 were paid by issuing additional bonds. Experiencing constant financial challenges, the company received the requisite approval of its senior noteholders and shareholders for a prepackaged Chapter 11 on July 8, 1997.

07/08/1997 - Filed prepackaged Chapter 11

08/22/1997 - Reorganization plan confirmed

10/03/1997 - Reorganization plan effective

10/06/1997 - Emerged from Chapter 11: bondholders received 132.2 shares of the new common stock per $1,000 of face value (Contact: Philip Li, 553-4578)

SA Telecommunications, Inc.

Telecommunications provider

$27.2 million 10% Convertible Subordinated Notes due 8/15/2006

SA Telecommunications, Inc., based in Richardson, Texas, is a full-service regional interexchange carrier providing a wide range of domestic telecommunications services through its network of owned and leased transmission and switching facilities. The company entered the telecommunications business in 1991 through an acquisition and has aggressively expanded through numerous subsequent acquisitions. SA Telecommunications funded its rapid growth through amassing debt. As of June 30, 1997, the company had a stockholders' equity deficit of $3.9 million versus a positive $6.3 million from the same period a year ago. Not being able to stem losses and facing a possible service shutdown due to nonpayment of past due invoices to its transmission carriers, SA Telecommunications filed for Chapter 11 protection on November 19, 1997 in order to remain an ongoing concern and obtain relief from the immediate collection of obligations owed to existing creditors.

11/19/1997 - Chapter 11 (Contact: Doug Bontemps, 553-3779)

Sahaviriya City PCL

Real estate developer

T Baht 750.0 million 14.25% Thai Debentures due 4/29/98 [$29.6 million]

Sahaviriya City PCL (SV City), based in Bangkok, Thailand, is a developer of the high-rise residential condominium projects and office towers. The company is 60% owned by Sahaviriya Group's founding shareholder, the Viriyaprapaikit family, and 40%t owned by Hong Kong-based New Wave Holding Ltd., a privately held investment group. Although Sahaviriya City recorded a net profit of about 26 million Baht (US$1 million) on sales of 3.1 billion Baht (US$120.9 million) in 1996, it was unable to avert a liquidity crunch caused by slumping real estate prices, severely depressed stock market, and double-digit interest rates. A planned initial public stock offering was postponed late last year, thus denying the company additional funds which could have been used to finance its operations. In addition, SV City has run into cash flow problems because of the overly aggressive strategy it had pursued in the hardest hit high-rise segment of the real estate market. Having nearly 2/3 of its projects currently under construction, the company fell short of cash and missed interest payment on its publicly traded debentures on April 29, 1997.

04/29/1997 - Missed interest payment (Contact: Teresa McCarthy, 553-3878)

Sofco S.A.

Automobiles distributor

FrFr 73.1 million 6.75% Convertible Debentures due 1/1/2001 [$12.3 million]

Headquartered in Lyon, France, Sofco S.A.'s main business is wholesale distribution of automobiles. Until deconsolidation in 1996, the firm was also involved in real estate and construction. Sofco's financial condition deteriorated considerably after Mercedez-Benz France cut relations with Sofco Automobiles S.A., the company's main subsidiary. As a result, Sofco sought bankruptcy protection for its ailing subsidiary on August 25, 1997 and on Decmeber 21, 1997 it reached an agreement with its bondholders to postpone interest payment due January 1, 1998 for 6 months.

12/21/1997 - Announced the agreement with bondholders to pospone interest payment due 1/1/98 until 6/30/98
01/01/1998 - Missed interest payment (Contact: Christina Padgett, 553-4164)

Somprasong Land Public Company Limited

Real estate developer

$80.0 million 3.875% Convertible Eurobonds due 1/21/2004

Somprasong Land Plc, headquartered in Bangkok, Thailand, is a real estate development company which designs and builds housing projects for single houses, duplex houses, townhouses and condominiums. The company also invests in property development projects in China and Hong Kong. At the root of

Somprasong's difficulties is its inability to liquidate its assets. Overbuilding during the early 1990s — when Thailand's economy was one of the fastest growing in the world — prompted a bubble in property prices to burst in 1995. Somprasong struggled in the aftermath with the resulting plunge in sales. In FY95, sales declined by almost 46% to 919.8 million Thai Baht (US$35.74 million). The company's inability to cope with a property market slump and rising interest rates have caused it to miss interest payments on January 21, 1997.

01/21/1997 - Missed interest payment (Contact: Teresa McCarthy, 553-3878)

Tae Il Media Co., Ltd. — Computer parts maker

$10.5 million 0.75% Convertible Eurobonds due 12/31/2009

Tae Il Media Co., Ltd. is a South Korean manufacturer of magnetic heads used in computers, printers, and other peripherals. Although the company's core product lines are profitable, its aggressive expansion into battery production and material distribution proved costly. Moreover, its unsuccessful takeover attempt of Daegu Merchant Bank at the end of 1996 further depleted its cash reserves and resulted in increased borrowings. As of December 31, 1996 Tae Il and its 13 units had debts totalling 848 billion KWon ($US1 billion) compared to 489 billion KWon ($US630 million) at the end of 1995, whereas shareholders' equity stood at 254 billion KWon ($US300 million)and 224 billion KWon ($US289 million) in 1995 and 1996, respectively. On October 15, 1997, after missing a payment of 430 million KWon ($US0.5 milion) worth of promissory notes on October 14, creditors decided to put Tae Il along with 6 subsidiaries, including Newmax Co., Ltd., under the bankruptcy protection, exempting them from servicing their debts,.

10/15/1997 - Put under bankruptcy protection
11/08/1997 - Applied for court mediation
12/31/1997 - Missed interest payment (Contact: Robert McCreary, 553-0424)

Tae Il Media (H.K.) Co., Ltd. — Finance conduit

$50.0 million Floating Rate Guaranteed Eurobonds due 8/7/2000
$32.0 million Floating Rate Guaranteed Eurobonds due 4/29/1999

See accompanying critique on Tae Il Media Co., Ltd.

10/15/1997 - Parent, Tae Il Media Co., Ltd., put under bankruptcy protection
10/31/1997 - Missed interest payment on guaranteed floating rate eurobonds due 4/29/99
11/08/1997 - Parent applied for court mediation (Contact: Robert McCreary, 553-0424)

Tee-Comm Electronics, Inc. — Digital satellite communications provider

Can$ 100.0 million 9.5% Convertible Subordinated Debentures due 8/9/2001 [$72.5 million]

Tee-Comm Electronics, Inc., headquartered in Milton, Canada, is a manufacturer of home satellite systems and a provider of digital satellite television service both in Canada and, through its wholly owned subsidiary Alphastar Television Network Inc., in the United States. Tee-Comm's traditional business in analog satellite television equipment dropped off significantly throughout 1995 and 1996 as a result of a new small dish digital satellite systems capturing the consumer digital TV market. In an effort to stay abreast of the competition, Tee-Comm incurred significant capital and operating costs designing and launching its new Alphastar direct-to-home satellite television service in the United States. Still, the introduction of a new product did not help Tee-Comm reclaim its previous market share, and company reported a net loss of $52.4 million in 1996 compared to a loss of $7.9 million in 1995. The company missed interest payments on its convertible subordinated debentures on May 9, 1997. Within two weeks of Tee-Comm missing the interest payment, the Bank of Montreal demanded full repayment of bank loans, forcing the company into receivership.

05/08/1997 - Announced that it will not make interest payment due May 9th
05/09/1997 - Missed interest payment
05/22/1997 - Entered receivership (Contact: Eric Goldstein, 553-3779)

Town & Country Corporation — Jewelry manufacturer

$68.8 million 13% Senior Subordinated Notes due 5/31/98

Headquartered in Chelsea, Massachusetts, Town & Country Corporation designs, manufactures, and markets fine jewelry products on a wholesale basis throughout the United States, and to a lesser extent, internationally. The company has manufacturing facilities in Massachusetts, Texas, and Thailand. Town & Country has experienced recurring losses over the last several years due to the overall softness of the fine jewelry retail market and a failure to adjust to changes in consumer tastes. As a result, the company took a charge of $35.5 million dollars in the FY1997 due to recycling of inventory to recover gold and diamonds, bringing the total net loss for the year ended February 23, 1997 to $62.3 million, compared to a net loss of $1.9 million for the year earlier period. Town & Country has developed a restructuring plan in FY1997 which involved the disposition of non-core assets and the improvement of product quality and design. Although the sale of certain assets infused some additional cash, the book equity continued to erode and stood at negative $14.4 million at the second quarter ended August 24, 1997 versus a negative $4.5 million at February 23, 1997. With the large portion of its debt becoming current, Town & Country solicited the consent of bondholders to exchange the bonds for equity and filed a prepackaged Chapter 11 petition on November 17, 1997, thus defaulting on its debt for the second time in company's history.

11/17/1997 - Prepackaged Chapter 11 (Contact: Kevin Kusnierek, 553-3835)

Unison HealthCare Corporation — Healthcare provider

$100.0 million 12.25% Guaranteed Senior Notes due 11/1/2006

Unison HealthCare Corporation (Unison), headquartered in Scottsdale, Arizona, provides long-term and specialty health care services through a network of 49 nursing and 8 assisted living facilities in 12 states. Unison's aggressive growth strategy through acquisitions resulted in high leverage. Financial reporting and management information systems proved inadequate for the needs of the company, failing to help properly monitor costs and eventually resulting in restatement of results for the nine months ended September 30, 1996 from a pretax income of $0.3 million to pretax loss of $15 million. The decision made in April of 1997 to curtail an expansion program and reduce costs did not have immediate effect, and Unison posted a pretax loss of $4.3 million for the quarter ended June 30,1997 compared to the pretax income of $1.7 in the same period a year earlier. The company's tight liquidity and a failure to finalize a mortgage refinancing on a number of its facilities, which would have provided the funds, prevented it from disbursing interest payment on its 12.25% senior notes on November 1, 1997.

11/01/1997 - Missed interest payment

12/02/1997 - Made interest payment

01/08/1998 - Unison HealthCare Corporation announced that three of its subsidiaries, which operate a total of 26 nursing home facilities in Texas and Indiana, have filed for protection under Chapter 11 of the federal bankruptcy laws in Arizona. (Contact: Margaret Sunier, 553-4946)

Wall Street Finance & Securities PCL — Non-bank financial institution

$55.0 million 3.75% Convertible Subordinated Eurobonds due 2/3/2004

Wall Street Finance & Securities PCL (WSFS), located in Bangkok, Thailand, provides financial and investment services including commercial and consumer financing, security brokerage, investment advisory and underwriting. Having accumulated a significant amount of bad loans and borrowed more than its capital funds, WSFS was suspended, along with 42 other debt-laden companies, on August 5, 1997. The financial situation was further exacerbated by the devaluation of Thai Baht on July 2, 1997. Subsequently, after the firm's failure to come up with viable financial rehabilitation plan, the Thai government closed the doors of the company for good on December 8, 1997, forcing the liquidation of assets in order to repay creditors.

08/05/1997 - Temporarily suspended by the government

12/08/1997 - Closed permanently by the government; bond repayments subject to liquidation of the company's assets (Contact: E. Young, 553-1653)

Westbridge Capital Corp.

Health insurance underwriter

$20.0 million 11% Senior Subordinated Notes due 3/1/2002
$65.0 million 7.5% Convertible Subordinated Notes due 5/1/2004

Located in Fort Worth, Texas, Westbridge Capital Corp., through its units and independent agencies, underwrites and markets individual medical expense and supplemental health insurance products and managed care health plans to individuals in 38 states. During 1997, the company experienced a significant increase in claim submissions on its medical expense and Medicare supplements products, which, coupled with inadequate pricing of these products, resulted in a net loss of $20 million for the quarter ended September 30, 1997 compared to a net income of $2.2 million for the same period a year earlier. Expecting further losses and trying to preserve capital and maintain flexibility while it considers its strategic alternatives, Westbridge has elected to withhold its scheduled debt service payment due November 3, 1997 on both of its publicly traded bonds.

11/03/1997 - Missed interest payment (Contact: Patrick Finnegan, 553-4192)

Yaohan Japan Corp.

Grocery chain operator

JpnY 8,774.9 million 1.875% Convertible Debentures due 9/30/98 [$71.9 million]
JpnY 8,838.1 million 1.8% Convertible Debentures, Ser. 1 due 5/20/99 [$72.4 million]
JpnY 19,826.8 million 0.9% Convertible Debentures, Ser. 3 due 9/28/2001 [$162.4 million]

Yaohan Japan Corporation (Yaohan), based in Numazu, Japan, is a medium sized supermarket and department store operator. The company operates 43 supermarkets and department stores in Japan, and about 200 stores in 13 other countries. Present problems stem directly from Yaohan's overly aggressive international expansion during 1980s and 1990s. This rapid expansion left the company financially strapped and especially vulnerable to increased competition from discount and convenience stores. Posting its first ever loss of 35.9 billion Yen (US$300 million) in its 70-year history in the fiscal year ended March 31, 1997, Yaohan was further hurt by the increase in national sales tax in April of 1997, which resulted in lower revenues and prompted the company to sell some of its most profitable stores in order to pay off current obligations. In addition, the company's inability to adjust to changing market conditions both domestically and overseas led to its failure to attract and retain shoppers. Financing its rapid expansion, Yaohan had amassed nearly Yen 161.3 billion ($1.34 billion) in debt and collapsed on September 8, 1997, filing under Japan's equivalent of Chapter 11's bankruptcy protection.

09/18/1997 - Filed for bankruptcy protection (Contact: T. Mishima, 553-1653)

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