

**THE HIGH YIELD BOND MARKET: A DECADE OF ASSESSMENT,  
COMPARING 1990 WITH 2000**

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- **There are some signs of similarity between the record default *rates* and yield spreads of 1990 and the record default *amounts* and increasing yield spreads of 2000.**
- **Despite these recent stormy conditions and relatively poor returns for high yield bonds, there are several *significant differences* between 1990 and 2000 that lead us to conclude that default rates will peak in the coming quarters and not come close to 1990/1991 levels. And, subsequent returns and spreads, starting just prior to or after the peak, could be very attractive.**
- **These differences include (1) a much lower, although still high, distressed proportion of the high yield market, (2) a very minor proportion of defaults recently that are the result of poorly conceived highly leveraged transactions (HLT) compared to the almost 50% contribution to defaults from HLTs in 1990-1992, and (3) a much stronger economic scenario in 2000 than in 1990.**
- **We expect default rates to peak at 5.5 - 6.0% in 2000 or 2001.**

## Introduction and Overview

Ten years ago Professor Altman wrote an article that reviewed the turbulent history of the high yield bond market, from its start in the mid-1970s through the collapse of the leveraged restructuring movement at the end of the 1980s.<sup>1</sup> In the summer of 1990, when he was writing the piece, the high yield bond market was at a critical point in its development. In 1989, the amount of defaulting issues had reached a new high of \$8 billion, representing 4.3% of the then \$190 billion market. That default rate was almost twice the historical average of 2.2% from 1978-1988. And another \$4.8 billion had already defaulted in the first six months of 1990. With defaults high and still rising, the yield spreads over Treasuries of high yield bonds had skyrocketed to more than 700 basis points and the new issue market had all but dried up. Drexel Burnham Lambert, by far the leading market maker and underwriter of these bonds, had recently filed for Chapter 11 bankruptcy and its guru, Michael Milken, had been indicted.

At that time, many market observers were pronouncing the junk bond market “finished.” The conventional wisdom on the Street—and this was Wall Street, mind you, not just Main Street--was that high yield bonds had run their course and neither new investors nor issuers would “play in the junkyard” again. Part of the market’s depressed condition, and the forecast of its demise, can be attributed to the U.S. government’s enactment in August of 1989 of FIRREA, which mandated that S&Ls no longer invest in low-grade bonds and sell their holdings by the end of 1993. The popular stigma attaching to “junk” bonds at that time was reinforced by a widely circulated academic study (by Harvard professors) that challenged the methods and findings of prior studies. The contention of that study, which became the focus of a *Wall Street*

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<sup>1</sup> Edward Altman, “Setting the Record Straight on Junk Bonds,” *Journal of Applied Corporate Finance*, Vol. 3 No. 2 (Summer 1990).

*Journal* article, was that past research had systematically underestimated the true default risk of high yield bonds.<sup>2</sup>

As a financial economist who had devoted considerable time to the study of high yield bonds, Altman was convinced that the market's problems were temporary. And his my 1990 article, he wrote the following

The system needs to be “cleansed” of the excesses of the past few years, especially with respect to highly leveraged restructuring and failed innovations such as deferred interest securities (DIBs and PIKs) and reset provisions. The next wave of junk bond issues--and there will almost certainly be one (although whether the issuers will be publicly or privately placed is not at all clear)--will reflect more conservative capital structures and financing strategies. Prices of leveraged transactions will come down and the proportion of equity underlying such levels will rise.)<sup>3</sup>

In this paper, we will show that almost all of those predictions have become reality (though deferred-interest-bonds continue to be used in some instances). The default rates noted by Asquith and Mullins were not precursors of a permanent increase, as the authors suggested (in fact, default rates averaged less than 2% from 1992-1998). Perhaps most important, our research shows that during the 1990s—and, indeed, over the entire 24-year life of the modern high yield market--investors have essentially gotten what they bargained for. They have earned a rate of

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<sup>2</sup> The Asquith et al study (“Original Issue High Yield Bonds: Aging Analysis of Defaults, Exchanges and Calls,” *The Journal of Finance*, September 1989) championed a type of aging methodology that Altman, in fact, had advocated earlier through a similar type of “mortality” analysis. (See E. Altman, “Measuring Corporate Bond Mortality and Performance,” *Journal of Finance*, September 1989 and WP NYU Salomon Center, 1988). Mortality rates are updated annually (see Altman et al 2000, cited later) and have become one of the standard measures in the market. The former (Asquith-Mullins approach) is no longer maintained. Both the aging and mortality analysis give similar results—results that, in fact, are not very different from more traditional measures in calculating annualized default rates. Indeed, an article by R. Forsythe in **Barron's** “Junk Defaults: Nothing New,” (April 17, 1989) that appeared just after the initial **WSJ** article (M. Winkler, “Junk Bonds are Taking Their Lumps,” **The Wall Street Journal**, April 15, 1989, Section C, 1) was the most accurate of all the journalistic pieces and correctly reported that the mortality and aging approaches give very similar results.

<sup>3</sup> Altman, 1990, p. 95.

return that, at roughly 300 basis points over the return on 10-year Treasuries, is commensurate with high yield bonds' intermediate level of risk (higher than that of investment grade bonds, but lower than that of common stocks).

Despite the facts, we must acknowledge that many of the same phenomena that we observed in 1989-1990, have again surfaced in 1999-2000. Default rates jumped to 4.15% in 1999 and the dollar amount of defaults reached a new high of \$23.5 billion. And another \$15.2 billion have already defaulted in the first six months of 2000, indicating a second consecutive record year of defaults - - the same phenomena that first occurred in 1990. With defaults relatively high and showing no sign of declining, investors' required yield spread over Treasuries have risen to close to 7.0% as of June 30, 2000 (6.7% to be exact). The benign credit cycle of 1993-1998, when the default rate was below 2.0% each year, has clearly given way to a more turbulent and stormy environment.

Thus, people who remember (or have studied) the state of the high yield market in 1990 may now be experiencing an uneasy sense of *déjà vu* after almost a decade of recovery and growth. But will next 18 months turn out to be as difficult and tumultuous as in 1990-1991? Will we again reach default rates of approximately 10% as we did in both 1990 and 1991? And, will the market almost cease to function? Or, will returns rebound to almost unbelievable returns of over 40%, as it did in 1991? What are the similarities and differences in this market, which has matured but is surely never dull?

Despite their similarities, it is our opinion that there are also sufficient differences between 1990 and 2000 to make this current market downturn, with heightened default worries, less severe and dramatic in terms of the magnitude of defaults and losses as well as the subsequent rebound in returns. We believe the deteriorating credit quality of recent years' new

issuance will be flushed from the system in a short time, perhaps in 2-4 quarters,<sup>4</sup> with a default rate peak of 5.5 – 6.0%.

## **WHAT CAME NEXT**

The story of the high yield bond market in the 1990s was one of a steep decline followed by an even more remarkable recovery. As shown in Figure 1, defaults escalated in 1990 and default rates in both 1990 and 1991 exceeded 10.0% of the market (much larger than the previous high of 5.8% in 1987). The total amount of debt defaulting in each of these two years was over \$18 billion. In Figure 2, we see that yield spreads at the end of 1990 reached double-digit levels--which was also unprecedented. The pundits who predicted the demise of the market were looking like sages when total returns to high-yield investors turned out to be –8.5% in 1990 (only the second year since 1978 that total returns were negative). And since Treasuries earned a positive 6.9% return that year, the return spread of high yield bonds was a shocking –15.4%. What's more, the poor performance of 1990 wiped out virtually all of the gains achieved by investors over the prior decade. At the end of 1990, the average historical annual return (starting from 1978, when the data were first compiled) to high yield investors had fallen from 11.65%, one year earlier, to 9.96% per year and the return spread from 1.64% per year at the end of 1989 to a mere 0.19% per year [--clearly inadequate compensation for the added risk of high yield bonds].

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<sup>4</sup> Others are less sanguine and at least one of the major rating agencies (July Default Report, [Moody's] August 7, 2000) is predicting an 8.4% default rate by mid-2001 and another (S&P) is increasingly agitated with the current state of defaults.

Then came the turning point in 1991. Despite a second consecutive year of a default rate over 10%, high yield investors earned a total return of 43.2%, the highest ever recorded in the history of the market (Figure 2). Investors realized that the worst was over and that the excesses of the 1980s had been purged. What remained were, for the most part, viable companies whose bonds, despite their low prices at the start of 1991, were not going to default. And, as the operating performance of these companies continued to improve, the prices of their bonds made a spectacular recovery. The relationship between default rates and total returns is shown in Figure 3. There is a striking parallel between the increasing default rates in 1989-1990 and 1999-2000; note the dip in returns in 1990 and 2000 and finally the resurgence in 1991. A similar dramatic increase occurred in 1995. Will there be a comparable resurgence in 2001?

Because of the high rates of default and almost complete cessation of the new issue market, the size of the high yield market had shrunk from its previous high of \$189 billion in 1989 to \$163 billion in the middle of 1992. Less than \$1.4 billion of new issues were floated in 1990, down from an annual average of over \$30 billion during the three-year period from 1987 to 1989. And, in spite of the high returns in 1991, the new issue market took longer to recover, with just under \$10 billion issued in 1991. The growth in new issues since 1991, however, has been nothing short of spectacular, with over \$100 billion of new issues in each of the last three years of the decade.<sup>5</sup> Moreover, from 1997 through 1999, new issuance of high yield bonds accounted for a substantial part of the total issuance of corporate bonds, representing over half of the bonds issued by industrial companies (that is, excluding financial firms and public utilities). At the end of the decade, about \$600 billion of high yield bonds were outstanding, as compared

to under \$200 billion at the start of the decade--and this \$600 billion today represents roughly a third of the entire corporate bond market in the U.S.

During the 1990s, the annual return spreads over Treasuries of high yield bonds returned from their near zero lowpoint at the end of 1990 to almost 3% per year by the end of the decade. As reported in Figure 2, total compound annual returns on high yield bonds for the 22-year period from 1978 through 1999 averaged 2.96% per year over the returns of 10-year U.S. Treasuries. This means that a \$1,000 investment in high yield bonds in 1978 would have been worth over \$11,000 at the end of 1999, as compared to just over \$6,000 for 10-year treasuries. And if one subtracts the average annual losses from defaults,<sup>6</sup> of about 2% per year over the period 1978-1999, from the average promised yield spread (4.55%) over that same period, the result (2.55%) is quite close to the realized return spread. Thus, one can attempt to predict future relative returns in the high yield market by comparing current yield spreads to actual losses from the primary risk component—defaults. A simple breakeven model uses this concept to estimate breakeven yields and yield premiums over Treasuries for high yield investors in the following years.<sup>7</sup>

Besides its phenomenal growth in the U.S. during the 1990s, the high yield bond market gathered its wings and went global, expanding into emerging markets such as Mexico and Brazil in 1992 and then into Western Europe in 1996. In 1999, \$17.5 billion of high yield, non-investment grade bonds were issued in Europe--about the amount issued in the U.S. in 1984. While there have as yet been no defaults by European issuers, they will begin to appear—

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<sup>5</sup> The vast majority of these new issues were brought to market using the “private” 144a mechanism (primarily because the private process is less cumbersome and time-consuming, although well over 90% of these do register with the SEC and become “public” within 90 days of issuance).

<sup>6</sup> The average annual loss rate adjusts the annual default rate for recoveries (price of the security just after default) plus the loss of a semi-annual coupon payment.

<sup>7</sup> See E. Altman and J. Bencivenga, “A Yield Premium Model for the High Yield Debt Market,” **Financial Analysts Journal**, September/October 1995.



defaults, after all, are a natural occurrence in this higher risk market. Emerging market high yield bonds now total about \$100 billion, with the vast majority coming from Latin America. Defaults by emerging markets issuers began to show up with increased frequency in Latin America starting in 1996 and in Asia in the following year.

## **DETERIORATING CREDIT QUALITY IN RECENT YEARS**

As stated earlier, the default rate in 1999 registered a sizeable increase from 1998, topping 4% for the first time since 1991 and well above the 1.6% rate of one year earlier. One of several apparent reasons for the increase in defaults in 1999 was the seeming deterioration in credit quality of new issuance in recent years. This is demonstrated by the significant increase in the percentage of bonds that defaulted in the first and second year after issuance. Indeed, over one fourth of a sample of 125 issues that defaulted in 1999 had been outstanding less than 12 months before they defaulted--and 55% had been outstanding less than 24 months (Figure 4). These percentages compare with just 4% and 20% from the period 1991-1998, and 7.7% and 24.3% for 1971-1999.<sup>8</sup> Thus, there was a sizeable increase in the one- and two-year defaults in the 1999 group of defaults. For a sample of 91 defaults in the first six months of 2000, that proportion has dropped to 42%, but as much as 72% defaulted within 36 months. The latter figure is actually higher than in 1999 (67%).

To better understand these mortality statistics, however, it is important to analyze the purpose of the financing. Whether companies are using junk bonds to fund LBOs, growth opportunities, or just to refinance debt can tell us a good deal about whether these one or two-

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<sup>8</sup> R. Grossman and M. Verde, "High Yield Industry Default Risk," December 1999, FITCH/IBCA, New York.

year mortality results are truly symptomatic of a decline in credit quality or can be explained by other factors. We will return to the uses of new issue high yield financing at a later point.

To analyze this recent change in bond default mortality, we gathered data on original issuance by S&P bond rating over the last decade (1990-1999). As stated earlier, there was a sharp increase in high yield bond new issuance starting in 1997, with new issues exceeding \$100 billion in each of the three years 1997-1999. High yield new issuance as a percentage of all corporate bond issuance increased dramatically over the same three-year period. Within the high yield sector, the percentage of new issues rated B and CCC also increased.

The high yield bond industry's enthusiastic reception of new issues in the recent past and the apparent deterioration in credit quality needs to be monitored closely. At the start of 2000, we felt (and said in print) that investors would likely require additional promised yields to compensate them for the uncertainty about possible higher default rates in the next few years (much as banks set aside higher reserves for expected losses and capital allocations for unexpected losses). And the large spike in yield spreads during the first two quarters of 2000 seems to bear out our predictions.

## **OTHER REASONS FOR THE INCREASE IN DEFAULTS**

In addition to the deterioration in credit quality and the earlier occurrence of defaults, at least four other factors contributed to the sizeable increase in 1999: (1) the recent increase in new issuance, (2) the Russian default in 1998; (3) a number of "sick" industries despite the economy's overall strength and (4) banks' reluctance to refinance or give additional waivers to the marginal firm.

Because of the huge new issuance years during 1997-1999, some increase in default rates is expected as these new issues age. In the absence of any other developments, two simple principles known as “regression to the mean” and the mortality or “aging” effect would have led us to expect both the default amounts and the default rate in 1999 to increase vis-à-vis the prior years’. Indeed, we predicted this increase, but underestimated the extent.

The surge in the default rate to over 4% was caused by additional factors. One important consideration, though difficult to document with statistics, is the ability of distressed firms to refinance their indebtedness. Refinancing occurred with increasing difficulty in the aftermath of Russia’s default and the flight-to-quality that ensued. Without the Russian contagion, the default rate would most likely have been lower, as some companies that faced financial distress would have succeeded in renegotiating their debt claims.

In 1999, there were notable concentrations of defaults in a number of chronically or newly ailing industrial sectors. Such sectors as energy, retailing, communications, healthcare, leisure/entertainment, and shipping were hit hardest.<sup>9</sup>

The energy sector’s difficulties reached their peak fairly early in 1999, while retailing and textiles have long experienced chronic problems. Industries such as communications and healthcare became new “leaders” in defaults, reflecting the frenetic new issuance in the former and the overcapacity and governmental changes in regulation of fees in the latter. In sum, despite a vigorous economy driven by technology and productivity growth, a number of sectors have been ailing, and going forward some will continue to flounder.

Finally, we have observed the increasing trend of banks and other lenders who are no longer willing to waive violations of covenants after just a few prior violations. Although this

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<sup>9</sup> As points of reference, Grossman and Verde (1999) concluded that retail, insurance, supermarkets, drug stores, and textiles/furniture had the highest default rates in the 1991-1998 period.

“evidence” is anecdotal, it is consistent with the marginal firm’s difficulty in surviving in this hostile environment. A number of factors may be motivating banks to take a tougher stand on forgiveness of covenant violations. For one thing, there appears to be pressure from the FED in the last 12-18 months for banks to setup and record higher loss reserves and actual charge offs when bank profits are high. In other words, a pro-cyclical approach to loss reserves is inhibiting marginal firm survival. Coupled with some indications of a slowing of the United States economy and higher interest rates, especially on lower quality issues, these factors are acting to increase the likelihood of defaults on bank loans and publicly held bonds.

## **THE DIFFERENCES BETWEEN NOW AND THEN**

Although storm clouds hang over the high yield market in 2000, especially in view of recent default experience, the current situation is different in a number of important respects from a decade ago. Viewed from a purely statistical standpoint, 10% default rates in the near future are certainly possible, but not likely. Since the historic standard deviation of default rates around the average default rate of 3.2% is about 3.0% (Figure 1), statistical analysis would suggest there is something like a 2.5% probability of default rates returning to their 1990 and 1991 highs of over 9.0% (which is about two standard deviations above the mean). Interestingly, in the last 29 years (1971-1999), we have observed two data points (about 7%) of default rates two standard errors above the mean.

The market, however, is not anticipating such a dire scenario, since yield spreads were 6.7% as of June 30, 2000, as compared to over 7.2% in mid-1990. One of the most important differences between 1990 and 2000, however, is the proportion of the market that is distressed. If we define distressed bonds as those with a yield-to-worst at least 10% (1000 basis points)

above the risk free rate, 28% of high yield bond issues were in this precarious position at the end of 1990, as compared to 17% as of June 30, 2000 (Figure 5). The proportion of high yield bonds that are distressed increased somewhat in July 2000. It's also important to recognize that a high percentage of those distressed issues in 1990 were the result of LBOs and other highly leveraged transactions (HLTs). Although HLTs made a comeback in the '90s, they are far more conservatively financed today than their '80s counterparts, with 25-35% equity, as compared to only about 10% in the late 1980s.

From Figure 6, we can observe that defaults resulting from highly leveraged restructurings (LBO's and leveraged recaps) accounted for at least \$19.7 billion in 1990-1992; about 46% of total defaults in those years.<sup>10</sup> Indeed, in 1990, \$7.9 billion of total defaults of \$18.4 billion (43%) were from those ill-fated HLTs and \$9.3 billion of \$18.9 billion (49%) in 1991.

In contrast, the most recent years' results show that defaults from highly leverage restructurings in 1999-2000 did not account for any material amount and the outlook is for this source to continue to not be very important. Figure 7 shows the proportion of total new high yield bonds issued for a number of stated reasons, including acquisitions, leverage restructurings (e.g., LBOs), capital expenditure and other general corporate investments, and the refinancing of existing debt. The latter category has been the most important use of new debt financing every year since our data series begins (1986-1999). The levels of refinancing in 1997-1999 are not exceptionally high - - in fact, they are below the average over this 14-year period. One reason for this is that, although Treasury rates did fall in these years from 1996 levels, the yields on high yield debt actually increased (see Figure 2) making refinancing actually more expensive. But

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<sup>10</sup> Data on LBO defaults is derived from **The Bankruptcy Almanac**, New Generation Research, Boston, MA and the **NYU Salomon Center** default database.

even so, 40-45% of more than \$100 billion of new issues in each year is a great deal of financing that did not provide new cash to issuers.

Overall, we can see that in recent years about 20% of high yield bond new issuance was used for acquisitions and only 4-5% for leveraged restructurings. This compares to 10-15% for acquisitions and well over 30% for LBOs and Recapitalizations in the years leading up to the market's problems a decade ago. Since leveraged restructurings can lead to unsustainable levels of debt and possible financial distress, the new issue market was decidedly more risky in the earlier period.

To return to the proportion of the high yield market that is distressed, we see, in Figure 5, that in early 1990 the proportion of distressed and defaulted bonds was 42%, with 28% distressed (the total market includes defaulted bonds in this case). About one-third of the 28% actually defaulted in 1990 and again in 1991.<sup>11</sup> Incidentally, 5.7% of a market that is almost \$600 billion works out to a default total of over \$35 billion for the next 12 months. Moody's forecast of 8.4%,<sup>12</sup> on a somewhat smaller base, results in defaults of over \$42 billion!

We believe that the default rate will be in the 5.5 - 6% range over the next 12 months and not reach the levels that Moody's and others are forecasting. And, we are persuaded by the market's dynamics in the past, that returns will be substantial after the peak of defaults - - as Figure 3's interesting dynamics indicate. Of course, it is difficult to forecast when the peak will occur. But it will occur, and the resulting recovery will probably be substantial, although not likely to achieve returns above 40% unless yield spreads first spike dramatically.

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<sup>11</sup> We do not have data on the distressed proportion as of the end of 1990, but it was substantial.

<sup>12</sup> "July Default Report," Moody's Risk Management Services, D. Hamilton, Editor, August 7, 2000.

## **A WORD ON THE ECONOMY**

The relationship between overall economic activity and default rates has always been tricky. Clearly, depressed economic growth and declining corporate profits and cash flows are related, in a negative sense, to default rates. But, the lead-lag relationship is not very stable over time, especially when dealing with quarterly or even annual data series. Still, it was clear that the economic recession at the start of the 1990's was an additional factor that helped to increase default rates to double-digit levels. Although there may be signs of economic growth slowing or declining as of mid-2000, virtually no economists are forecasting a recession in the next year or two. Indeed, the second quarter's growth in 2000 was surprisingly high and the continued robust growth in the economy is impressive. And, there are recent signs from the FED that interest rates are at or nearing a peak, at least until there are unmistakable signs of growing inflation rates.

A recent study by Osler and Hong, "Rapidly Rising Corporate Debt: Are Firms Now Vulnerable to an Economic Slowdown?" of the New York FED (June 2000), concludes that despite rapid growth in debt of U.S. non-financial firms, the corporate sector is currently in good financial health. Their study, admittedly covering a broader group of firms in addition to high yield bond issuers, also concludes that the corporate bond sector would likely withstand a major stock market correction but a large rise in interest rates could bring corporate liquidity risk back to the relatively high levels common in the 1980's.

## **CONCLUSION**

Are we in for another crisis, then? In our opinion, the high yield bond market will weather this downturn, just as it did in the early 1990s and again in the aftermath of Mexico's

peso crisis in 1994-1995. The present deterioration in credit quality will run its course, as investors refuse to continue providing capital to undercapitalized entities. New issue activities have already started to fall off somewhat in this retrenchment period. Defaults will probably continue at levels that, although unsettling, are not catastrophic--and yield spreads will possibly widen further. But, as long as the vast majority of issuing entities in the high yield market remain viable enterprises, the market for high yield bonds will retain its position as an important major source of finance for companies worldwide and a legitimate asset class for investors.

On balance, we do not foresee the same economic pressures on default rates in 2000 and 2001 as occurred a decade ago.