

#### CAMBRIDGE ASSOCIATES LLC

### U.S. MARKET COMMENTARY

# DISTRESSED CORPORATE CREDIT FROM AN AFTER-TAX PERSPECTIVE

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Sean McLaughlin Jeanne Rogers Peter Mitsos

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#### Distressed Corporate Credit From an After-Tax Perspective

At the end of last October, in a commentary that looked at high-yield bonds,<sup>1</sup> we wrote that while tax-exempt investors could benefit from an investment in high-yield corporate bonds despite the dismal default prospects, taxable investors may be better off looking at opportunities in other asset classes. Subsequently, we have been encouraged by some clients to put a bit more meat on that bone, so this commentary more closely examines the appeal of corporate credit from an after-tax perspective.<sup>2</sup> First we discuss high-yield bonds, and then we discuss leveraged loans (also called bank loans), and finally we note a few tangible ways that investors can improve the after-tax return prospects through careful selection of managers and investment vehicles.

#### **High-Yield Bonds**

High-yield bonds, as their name suggests, deliver a significant amount of coupon income, which makes the asset class challenging from the perspective of a long-term, taxable investor. In the United States, income and short-term capital gains are taxed at high marginal tax rates that top out at 35% currently (a hike to 39.6% has been proposed), while capital gains for securities held longer than one year are typically taxed at 15%. This differential tax treatment often discourages taxable investors from acquiring assets whose expected return comes largely from income, such as corporate or Treasury bonds, or from short-term capital gains, such as merger arbitrage hedge fund strategies. Table A breaks down return sources for high-yield bonds, leveraged loans, and large-cap equities from the beginning of 1992 through June 2009. The income return accounted for more than 100% of the total return of both high-yield bonds and leveraged loans.<sup>3</sup> For taxable investors in high-yield bonds, that income return will clearly be diminished by the income tax levy. Table B illustrates the after-tax effective yield on the Credit Suisse High Yield Bond Index from 1986 to the present.<sup>4</sup> The index's 12.3% pre-tax yield-to-maturity equates to only about 8.0% after federal taxes, and below 7.5% after federal and state taxes in many jurisdictions. If the yield remains at or near 12%, even average default losses may make high-yield bond absolute returns unattractive to taxable investors (however, we would still generally expect high-yield bonds to outperform equities in bearish scenarios).

In previous work,<sup>5</sup> we have evaluated estimated gross returns for high-yield bonds in several two-year scenarios. The primary variables are default losses (the default rate multiplied by [1 - recovery rate]) and the change in yields (which has an inverse impact on bond prices). There are clearly combinations of default losses and yield changes that would make owning high-yield bonds attractive regardless of tax status.

<sup>&</sup>lt;sup>1</sup> Please see our October 2008 Market Commentary U.S. High-Yield Bonds: Toxic or Tasty?

<sup>&</sup>lt;sup>2</sup> Throughout, we take the perspective of U.S. investors in the (highest) 35% marginal income tax bracket who are not subject to the alternative minimum tax. We assume that short-term capital gains are taxed at the 35% level, and that long-term capital gains are taxed at the 15% level. Unless otherwise stated, we assume that investors are not subject to state or local tax on income or capital gains. State income tax rates are shown in Table C. Cambridge Associates does not provide tax advice and investors should consult with their own tax counsel.

<sup>&</sup>lt;sup>3</sup> The principal return is negative for the full 1992–2009 period, primarily reflecting default losses.

<sup>&</sup>lt;sup>4</sup> We use the Credit Suisse Index here (rather than the Merrill Lynch High Yield Master II Index referenced later) because its relatively long history allows us to show the effect of taxes on yields back to the mid-1980s.

<sup>&</sup>lt;sup>5</sup> Please see our June 2009 Market Commentary *Distressed Investing*.



There are also combinations that would make them unattractive regardless of tax status. All favorable scenarios for untaxed investors will be less favorable for taxable investors, but it is helpful to evaluate how taxes impact potential returns for a variety of scenarios. The scenarios used for high-yield bonds are identical to those used in our June 2009 Market Commentary *Distressed Investing*.

#### What Are the Default and Yield-Change Possibilities for High-Yield Bonds?

The first default loss scenario (Default Loss Scenario 1 in Table E) assumes that defaults peak in six months and that they follow the average path of three prior default cycles: the 1930s, 1990s, and early 2000s (see Table D for historical defaults upon which these scenarios are based). In this scenario, defaults peak at 13.6% in six months and then begin to decline rapidly as they have in prior cycles. The full-year default rate for the next 12 months is 11.0% in this scenario, and the full-year rate for the following 12 months is 5.2%. Recoveries on defaulted bonds in this scenario are just 15% for each of the next two years, worse than prior trough levels, reflecting the high leverage during this cycle.

For a more extreme default loss scenario (Scenario 2), we assume that the trailing 12-month default rate is consistently 150% of the Great Depression default path and that recoveries are 10 cents on the dollar. After peaking at 20.4% in this scenario, the default rate declines such that the total default rate over the next 12 months is 16.5% and over the subsequent 12 months is 7.9%.

For changes in yields, we construct two scenarios as well. One scenario (Yield Scenario A) assumes that yields contract at the average pace seen during the early 1990s and early 2000s, shrinking by about three-eighths over the next 24 months from the current yield to worst on the Merril Lynch High Yield Master II Index of 13.1% to 8.2%. The second scenario (Yield Scenario B) assumes that yields are unchanged over the next two years.

#### How Do After-Tax Returns Look in Those High-Yield Bond Scenarios?

Combining the two scenarios gives us four possible combinations. Table E illustrates the pre-tax and after-tax gross estimated returns for each of the four combinations.

Of the four combinations of scenarios that are presented, the least adverse combination (Default Loss Scenario 1 and Yield Scenario A) results in an estimated gross annualized return of 13.6% over two years. After taxes, the return is reduced by more than a quarter (or nearly 4 percentage points), for an estimated after-tax return of 9.9%. This does not take into account state tax rates, and it assumes that the manager's annual turnover is 50%, with 40% of capital gains being short term in nature (and thus subject to marginal income tax rates rather than to a 15% capital gains tax rate). If the manager's turnover was instead 100%, the estimated after-tax return shrinks by about 60 basis points (bps) on an annualized basis, to 9.3%, while decreasing manager turnover to 25% would result in an annualized improvement of 40 bps versus the 50% turnover result.

U.S. Market Commentary 2 June 2009

The most adverse combination of the high-yield bond scenarios presented (Default Loss Scenario 2 and Yield Scenario B) would deliver a 0.1% gross annualized return before taxes. The after-tax gross return would be -1.1%. After manager fees and transaction costs, this combination would likely be a net loser. The difference between pre-tax and after-tax returns in this scenario is slight, of course, because gains are few and are largely offset by default losses, so the relatively tiny tax drag is little consolation. However, it is likely that equities, the funding source for the allocation, would perform poorly in such an adverse environment.

A snapshot of the current environment may help investors evaluate the various scenarios. The trailing 12-month default rate for high-yield bonds continues to worsen, as the low-default months of early 2008 roll out of the measurement period, but the pace of deterioration may be slowing (the number of monthly defaults has declined over the past two months). The default rate at the end of May was 10.2%, according to Moody's. Merrill Lynch in June surveyed 82 institutional investors (the majority were money managers including hedge funds); respondents on average expect the default rate to peak at a 13.4% level. Half of survey participants stated that the peak default rate would be 12% to 14%, and just 2% believe the peak will top 16%. One-third of respondents believe defaults will peak before the end of 2009, while slightly more than half believe the peak will occur in the first half of 2010.

Recovery rates on defaulted cash bonds have averaged 15% so far in 2009, much lower than historical norms and reasonably consistent with the two default loss scenarios. However, recovery rates in May were substantially higher. A wall of money has moved into high-yield bonds (\$11 trillion so far in 2009—nearly six times the total for all of last year). This is boosting recovery rates, prices, liquidity, and prospects of refinancing maturing debt. In May \$23 billion in high-yield debt was issued, more than any single-month total during 2008, and year-to-date issuance is roughly equivalent to 2008's full-year total.

Yields have contracted sharply from their December 2008 peak level of 22.6%, with the option-adjusted spread of the Merrill Lynch High Yield Master II Index tightening by a record 648 bps in the second quarter (it widened by 716 bps during fourth quarter 2008). Current yields are now about 150 bps lower than their peak level in the prior cycle, and option-adjusted yield spreads are roughly 1.4 standard deviations higher than their average level of the past 13 years.

#### **Leveraged Loans**

Leveraged loans (sometimes referred to as bank loans or bank debt) are floating-rate securities generally issued to borrowers with below investment-grade credit ratings; many issuers that have high-yield bonds outstanding also have leveraged loans. Our June 2009 Market Commentary *Distressed Investing* provides background on the historical development of the leveraged loan market, as well as the genesis of the current investment opportunity, so we will focus here on the return prospects for taxable investors.

Loans and bonds have historically experienced different levels of default loss stresses, with loans defaulting less frequently and recovering a higher percentage of par (Table F). The ratings mix of issuers for

leveraged loans is not radically different from that of high-yield bonds, so there is no compelling reason to assume that default rates will necessarily be lower for loans than for fixed-rate bonds going forward. Recoveries have historically been much higher for loans than for unsecured fixed-rate bonds, because loans are typically at the top of the capital structure and are secured by collateral. Poor underwriting and high leverage plagued the middle part of this decade as private equity sponsors larded their acquisition targets with as much debt as possible and banks competed heavily to underwrite the debt issues; the resulting mix of issuers leaves us with the impression that recoveries are likely to be below historical trough levels (though higher than bonds in most cases due to their structural advantages). Given those assumptions, we construct default loss scenarios that differ from high-yield bonds only by their assumed recovery rate.

#### What Are the Default and Price-Change Possibilities for Leveraged Loans?

Our default *rate* scenarios for leveraged loans are identical to those for high-yield bonds (the base-case path, Default Loss Scenario 1, follows the average historical path of the 1930s, 1990s and 2000s, while the adverse case, Default Loss Scenario 2, multiplies the historical average peak default path by 1.5<sup>6</sup>); however, we assume a recovery rate of 40% for the base scenario and 30% for the adverse scenario.

Together with default losses, the ending price of the loan is the other input that we vary in our scenario analysis. Loans are currently priced at 76 cents on the dollar (up from a low of 62 cents on the dollar near year-end). We propose two price scenarios: under Price Scenario A, loans return to their long-term average price of 95 cents on the dollar over the next two years (this would entail a percentage price increase over the next two years of 25% from the current level for loans, on top of the roughly 21% increase in loan prices so far in 2009). Under Price Scenario B, loan prices do not increase at all during the next two years. The second price scenario is bearish rather than neutral, because normally a loan that moves two years closer to maturity would converge toward its par value unless investors expect it to default.<sup>7</sup>

#### How Would Loan Investors Do From an After-Tax Perspective in These Scenarios?

Four combinations of default loss and price change are shown in Table G. For the most optimistic scenario of loans returning to "normal" prices, after two years of defaults that are in keeping with historical default peaks for high-yield bonds, we estimate investors would experience a gross annualized return of 11.3% (with taxes lowering the annualized return by an estimated 240 bps, assuming manager turnover is 50% and 40% of gains are short term in nature). For the combination of unchanged prices and extreme

<sup>&</sup>lt;sup>6</sup> Under Scenario 1, defaults are 11.0% in the first year and 5.2% in the second year. Under Scenario 2, defaults are 16.5% in the first year and 7.9% in the second year.

<sup>&</sup>lt;sup>7</sup> This is true of loans as well as bonds. A simple example illustrates the principle. Take a security with no credit risk that pays no coupon and matures at the end of 2016; if the price is 95 today, the security's yield-to-maturity is low, but if the price is 95 the month before it matures, the yield is extraordinarily high (because you are effectively buying the rights to receive a dollar bill next month, and it costs you only 95 cents today—providing you with a 5% monthly return or an annualized 85% return).

default loss, we see annualized gross returns of -3.9% (taxes are not detrimental in this scenario). The impact of taxes is likely somewhat less punitive for bank loans, since we would expect more of the return to come from rising prices over time, and less from income taxed at 35%.

#### Improving the After-Tax Return Prospects for Both Bonds and Loans

We believe there may be a few ways to materially impact the after-tax return profile for investments in high-yield bonds and bank loans. These primarily have to do with the selection of managers and investment vehicles. For taxable equity investors, the bar for selecting active managers over passive equity strategies is generally rather high in all but bearish environments, given that most of the expected returns from equity investments are coming from capital gains (and that passive strategies are available to ensure that those equity gains will be primarily long term rather than short term, taxed at 15% rather than 35%). For high-yield bonds and leveraged loans, there is no default position of using a low-cost index fund. How can investors improve their odds when selecting managers?

First, investors should prefer managers that employ a low-turnover approach, *ceteris paribus*. The median annual turnover of the high-yield bond managers in our database is 60%. Looking at the least adverse combination of high-yield bond scenarios shown in Table E, when we vary the turnover and the breakdown of long-term and short-term gains, the high hurdle for selecting high-turnover managers over low-turnover managers becomes clear. A high-yield bond manager with 25% annual turnover and with only 25% of gains coming from securities held less than one year would generate an estimated gross annualized return of 11.4% given that yield change and default loss combination. Instead, imagine a manager with 100% turnover and with 100% of gains characterized as short term (and subject to the 35% tax rate). For that manager to keep up with the lower-turnover manager and deliver 11.4% returns, the portfolio of the high-turnover manager would have to experience much fewer defaults than the market—the after-tax returns of the two managers are equal only when the high-turnover manager's portfolio defaults at a cumulative rate that is nearly 5 percentage points lower.

The benefit of choosing low-turnover managers will only be significant if subsequent returns are attractive in absolute terms, although if the portfolio generates significant losses, investors can harvest those losses yet retain exposure to the asset class (by directing a separate account manager to sell securities and replace them with other securities offering similar but not identical exposure, or by simply selling one manager's mutual fund and purchasing another's). A large number of loan managers have historically employed a lower-turnover approach (more so than high-yield bond managers). However, investors should

<sup>&</sup>lt;sup>8</sup> All of the leveraged loan scenarios assume Libor rates ascend to 1.00% after one year, from their current level of 0.67%. We do not claim any ability to predict interest rates or Libor rates; however, returns are not particularly sensitive to this assumption for short-term holding periods unless Libor accelerates very sharply (which would boost returns moderately by increasing income from the floating-rate loans, if nothing else changed).

<sup>&</sup>lt;sup>9</sup> There is no plethora of traditional index-tracking mutual funds for either category of security. Exchange-traded funds (ETFs) are available for high-yield bonds, such as the iShares iBoxx \$ High Yield Corporate Bond Fund (ticker HYG). The ETF's most recent annual turnover is 27%, lower than many managers, but management fees of 50 bps combined with transaction costs to buy and sell the product make it not particularly attractive relative to professional active managers.

recognize that in this current volatile environment, managers that historically employed a low-turnover approach may switch gears and trade more frequently, despite today's high transaction costs. In fact, a leveraged loan manager with an established history of low turnover management, established when the loan market was largely a "par" market, may now begin to trade the more liquid securities in the portfolio more frequently.

Second, investors should consider the selection of investment vehicles carefully. If the investor's preferred low-turnover manager offers a mutual fund that has been in existence for at least a year and that has a reasonable fee, the mutual fund may be preferable to a separately managed account with that manager. The majority of high-yield bond mutual funds have unrealized capital losses (in spite of the recent run-up in prices) that have the potential to mitigate a portion of future capital gains levies. Compared to separate account investors, mutual fund investors lose some control, but that may be worth the potential tax savings in this environment. Be aware of the possibility that significant and sharp redemptions could have negative impacts on mutual funds. To that end, it is helpful to learn whether any single investor makes up a very large portion of the fund's assets (the fund's Statement of Additional Information, typically available on the manager's website and always available at the Securities and Exchange Commission's EDGAR website, reveals the name of any investor that holds more than 5% of the fund's shares).

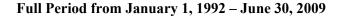
#### Conclusion

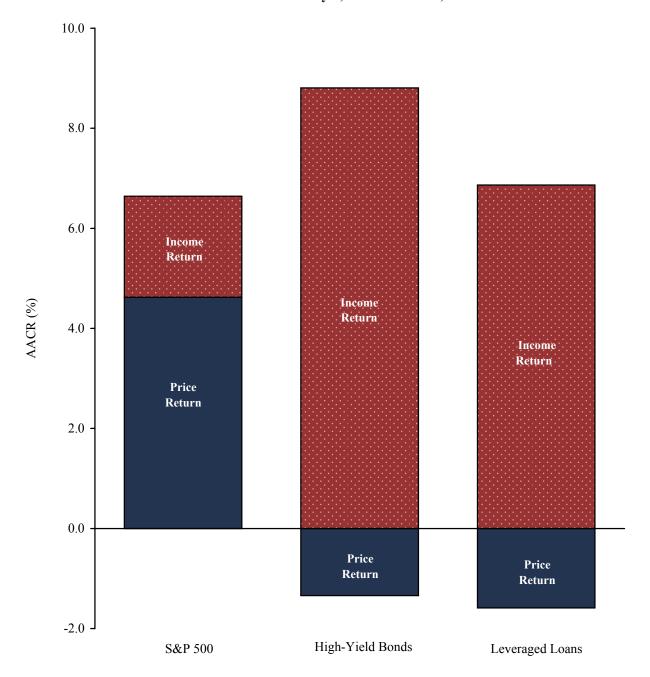
Prices of high-yield bonds and leveraged loans have appreciated remarkably during 2009. The Merrill Lynch High Yield Master II Index has returned 29.5% year-to-date, while the Credit Suisse Leveraged Loans Index has returned 27.1%. Loan and bond prices are no longer discounting Armageddon (prices of both indices are roughly where they were at the end of last September), but even at current levels they are priced to provide slightly negative returns over the next two years if conditions become significantly worse than historical credit busts, and equity-like after-tax return levels if conditions are merely bad. That said, prices have improved much more quickly than fundamentals, and we would be somewhat surprised if prices do not backtrack at least moderately. In the very adverse scenarios that would produce negative returns for credit, equities would likely not perform well. High-yield bonds, however, have outperformed equities by roughly 26 percentage points since the end of October, and it is unlikely that equities will underperform forever.

Equities tend to hold a more or less permanent place in the portfolio and they can be owned in such a way as to create a small amount of tax drag. Leveraged credit, on the other hand, is attractive only opportunistically (at least on a long-only basis) and the structural tax disadvantages are substantial and can be mitigated only somewhat. This makes the hurdle for an opportunistic investment in credit in place of equities particularly high for taxable investors, but those who pay close attention to the selection of managers and vehicles stand a reasonable chance of clearing that hurdle today, despite the strong appreciation in bond and loan prices since the end of the year.

Table A

BREAKDOWN OF EQUITY AND CREDIT RETURNS INTO INCOME COMPONENT AND PRICE/PRINCIPAL COMPONENT



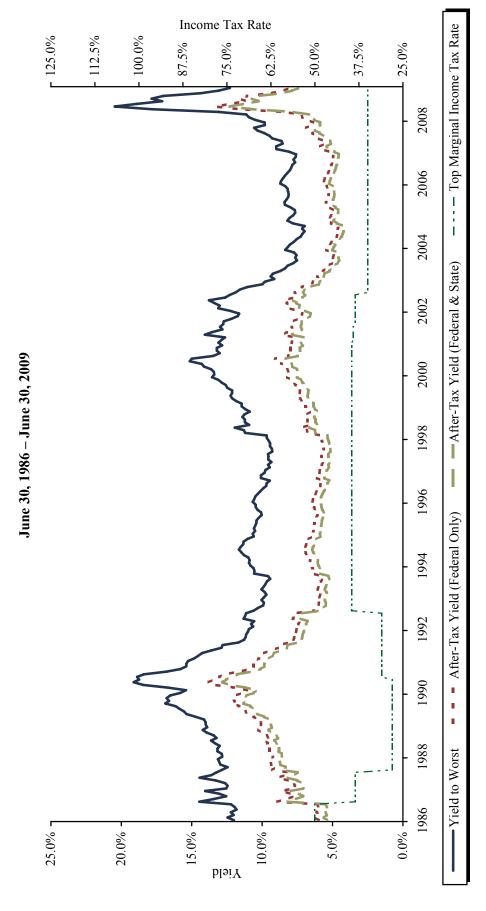


Sources: Credit Suisse, Standard & Poor's, and Thomson Datastream.

Note: Represents components of the S&P 500 Index, the Credit Suisse High Yield Index, and the Credit Suisse Leveraged Loan Index.

YIELDS BEFORE AND AFTER INCOME TAXES ON HIGH-YIELD BONDS

Table B



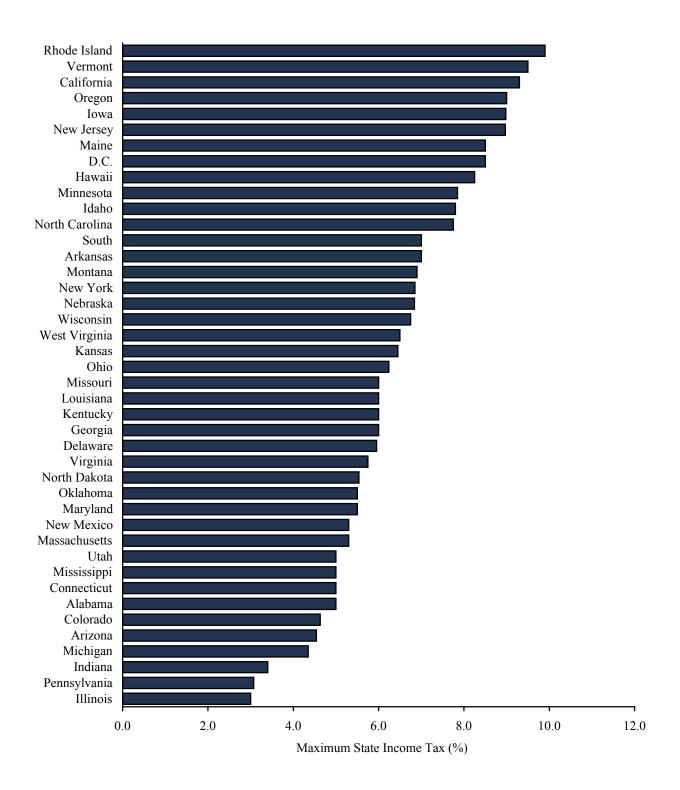
Source: Credit Suisse.

Notes: Assumes income tax is paid at the period's top marginal federal rate. The Federal & State scenario adds an additional 5 percentage points onto the top federal rate in effect at the time.

Table C

MAXIMUM STATE INDIVIDUAL INCOME TAX RATES

#### As of 2008





#### Table C (continued)

#### MAXIMUM STATE INDIVIDUAL INCOME TAX RATES

#### As of 2008

<u>State</u>	Max Tax Rate	<u>State</u>	Max Tax Rate
Alabama	5.00	Montana*	6.90
Alaska		Nebraska*	6.84
Arizona	4.54	Nevada	
Arkansas*	7.00	New Hampshire	**
California*†	9.30	New Jersey	8.97
Colorado	4.63	New Mexico	5.30
Connecticut	5.00	New York	6.85
Delaware	5.95	North Carolina	7.75
District of Columbia	8.50	North Dakota*	5.54
Florida		Ohio*	6.24
Georgia	6.00	Oklahoma	5.50
Hawaii	8.25	Oregon*	9.00
Idaho*	7.80	Pennsylvania	3.07
Illinois	3.00	Rhode Island***	9.90
Indiana	3.40	South Carolina*	7.00
Iowa*	8.98	South Dakota	
Kansas	6.45	Tennessee	**
Kentucky	6.00	Texas	
Louisiana	6.00	Utah	5.00
Maine*	8.50	Vermont*	9.50
Maryland	5.50	Virginia	5.75
Massachusetts*	5.30	Washington	
Michigan*	4.35	West Virginia	6.50
Minnesota*	7.85	Wisconsin*	6.75
Mississippi	5.00	Wyoming	
Missouri	6.00		

Sources: Federation of Tax Administrators and State of Rhode Island Division of Taxation.

Note: Tax rates shown as "---" indicate that there is no state income tax.

<sup>\*</sup> Sixteen states have statutory provision for automatic adjustment of tax brackets, personal exemption, or standard deductions to the rate of inflation. Massachusetts, Michigan, Nebraska, and Ohio index the personal exemption amounts only.

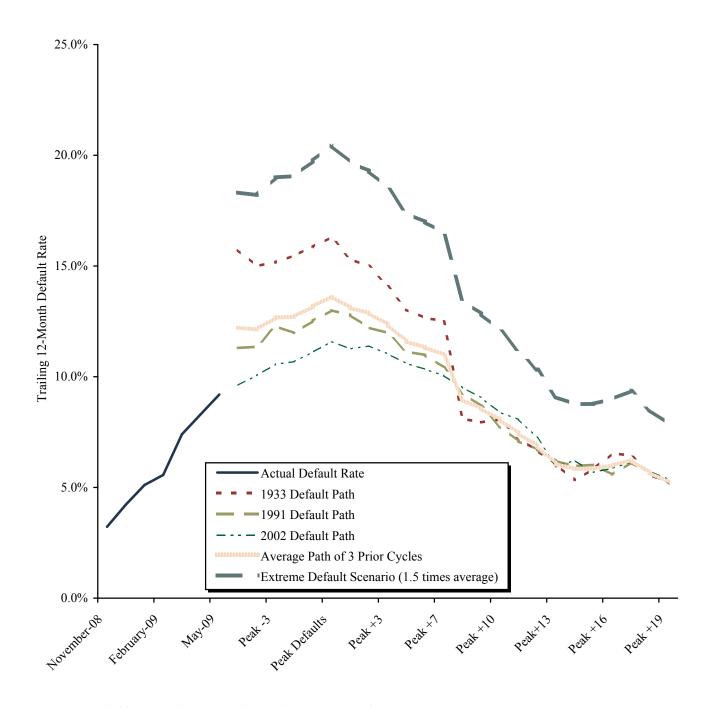
<sup>\*\*</sup> State income tax is limited to dividends and interest income only.

<sup>\*\*\*</sup> Taxpayers have the option of computing tax liability based on a flat 7.0% (6.5% in 2009) of gross income.

<sup>†</sup> An additional 1% tax is imposed on taxable income over \$1 million.

Table D

DEFAULT RATE SCENARIOS FOR U.S. HIGH-YIELD BONDS



Sources: Cambridge Associates LLC and Moody's Investor Service.

Notes: Scenarios assume that defaults peak in six months from starting point. Default rate refers to percentage of speculative-rated issuers defaulting in the trailing 12 months. Global high-yield bonds are used for the 1933 default path.



#### **Table E**

## ESTIMATED TWO-YEAR ANNUALIZED RETURNS FOR HIGH-YIELD BONDS IN VARIOUS SCENARIOS OF DEFAULT LOSS AND YIELD CHANGE

#### **Gross Annualized Estimated Return**

(After Default Losses but Before Fees and Transaction Costs)

	Scenario 1: Defaults Are Average of Prior Downcycles		Scenario 2: Defaults Are 50% Worse than Prior Downcycles	
	Pre-Tax	After-Tax	Pre-Tax	After-Tax
Scenario A: Yields decline at historical average pace	13.6%	9.9%	9.5%	6.8%
Scenario B: Yields do not contract	4.2%	2.1%	0.1%	-1.1%

#### **Assumptions for Yield Scenarios**

Scenario A: Yields decline by 37.5% over the next two years

(from 13.1% today to 8.2% at the end of Year 2)

Scenario B: Yields are steady

#### **Assumptions for Default Loss Scenarios**

Scenario 1: Default rate is average of 1933, 1991, and 2002 peak default cycles

Defaults peak at 13.6% in six months

Year 1 defaults are 11.0%, Year 2 defaults are 5.2%

Recoveries are 15% in Years 1 and 2 (lower than prior troughs)

Scenario 2: Default rate is 150% of average peak default cycle

Defaults peak at 20.4% in six months

Year 1 defaults are 16.5%, Year 2 defaults are 7.9%

Recoveries are 10% in Years 1 and 2 (markedly lower than prior troughs)

Sources: Cambridge Associates LLC calculations, using historical data from Barclays Capital and Moody's Investors Service.

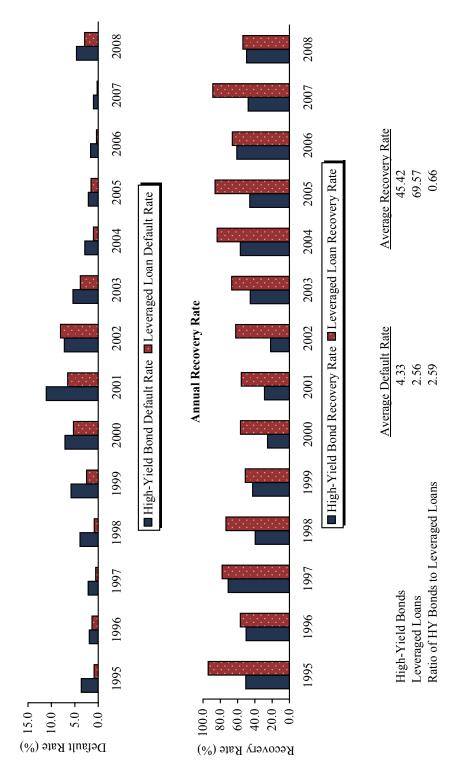
Note: Assumes any yield changes occur smoothly; portfolio turnover is 50%; 40% of gains are short term; and 35% marginal federal income tax applies to income and to short-term gains.

RECOVERY RATES AND DEFAULT RATES FOR HIGH-YIELD BONDS AND LEVERAGED LOANS

Table F



December 31, 1995 - December 31, 2008



Sources: Edward I. Altman - NYU Salomon Center, Credit Suisse, and Moody's Investor Service.

Notes: Loan data from Credit Suisse, bond default rates from Moody's, and bond recovery rates from Altman.



#### Table G

## ESTIMATED TWO-YEAR ANNUALIZED RETURNS FOR LEVERAGED LOANS IN VARIOUS SCENARIOS OF DEFAULT LOSS AND YIELD CHANGE

#### **Gross Annualized Estimated Return**

(After Default Losses but Before Fees and Transaction Costs)

	Scenario 1: Defaults Are Average of Prior Downcycles		Scenario 2: Defaults Are 50% Worse than Prior Downcycles	
	Pre-Tax	After-Tax	Pre-Tax	After-Tax
Scenario A: Price rises to historical average (95 cents)	11.3%	8.9%	7.6%	6.0%
Scenario B: Price remains at current level (76 cents)	-0.2%	-0.7%	-3.9%	-3.6%

#### **Assumptions for Loan Price Scenarios**

Scenario A: Price rises to 95 cents over the next two years

Scenario B: Price is steady at 76 cents even as loan moves toward maturity

#### **Assumptions for Default Loss Scenarios**

Scenario 1: Default rate is average of 1933, 1991, and 2002 peak default cycles

Defaults peak at 13.6% in six months

Year 1 defaults are 11.0%, Year 2 defaults are 5.2%

Recoveries are 40% in Years 1 and 2 (lower than prior troughs)

Scenario 2: Default rate is 150% of average peak default cycle

Defaults peak at 20.4% in six months

Year 1 defaults are 16.5%, Year 2 defaults are 7.9%

Recoveries are 30% in Years 1 and 2 (markedly lower than prior troughs)

Sources: Cambridge Associates LLC calculations, using historical data from Barclays Capital and Moody's Investors Service.

Note: Assumes any yield changes occur smoothly; portfolio turnover is 50%; 40% of gains are short term; and 35% marginal federal income tax applies to income and to short-term gains.