

Investment Opportunities within the Corporate Capital Structure

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The corporate capital structure offers unique investment opportunities for institutional investors seeking strategic exposure to credit risk, and specific credit exposure to a particular area within the capital structure. This paper will analyze each investable layer within the capital structure and provide details regarding traditional and alternative investment vehicles (and their fee structures), which can be used to achieve the investor's desired exposure to credit. Additionally, this paper will discuss the growing use of derivatives by credit-focused investors, as they gain exposure to various segments of the credit markets through the use of synthetic securities.

OVERVIEW

This paper will be divided into the following twelve modules and a conclusion.

Module 1: The Corporate Capital Structure

Module 2: Trade Claims

Module 3: Bank Loans

Module 4: Corporate Bonds

Module 5: Distressed Securities

Module 6: Mezzanine Debt and Second Liens

Module 7: Convertible Securities and Convertible Arbitrage

Module 8: Preferred Securities

Module 9: Derivative Use in Credit Related Investments

Module 10: Traditional Investment Vehicles

Module 11: Alternative Investment Vehicles

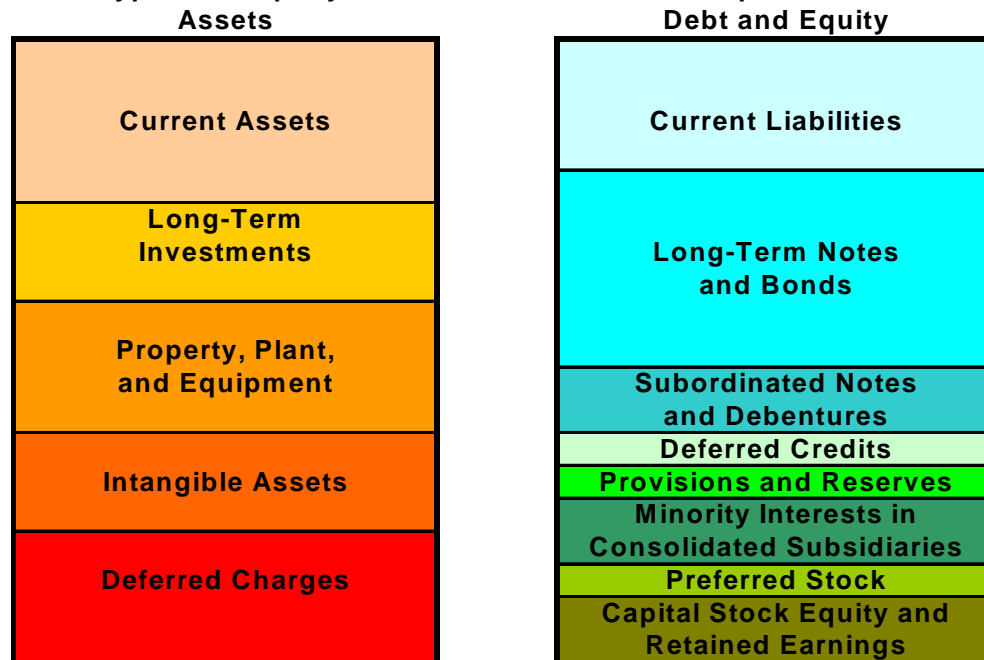
Module 12: Common Vehicles and Fee Structures for Institutional Investors

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MODULE 1: THE CORPORATE CAPITAL STRUCTURE

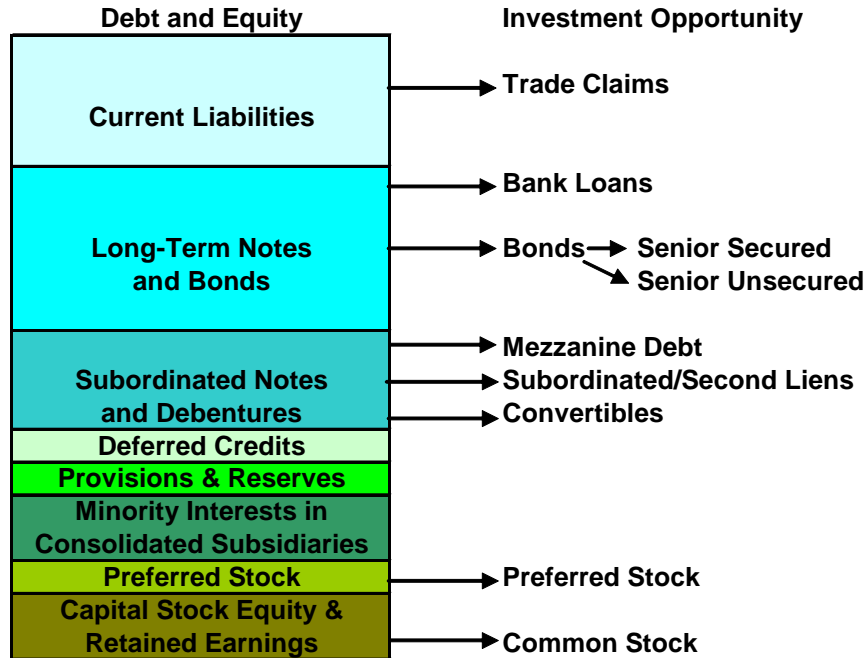
The following chart displays the corporate capital structure for a typical publicly traded company (strategies that invest in private companies will be discussed later in the paper). The asset side of the balance sheet includes current assets, long-term investments, property, plant, and equipment, intangible assets, and deferred charges. The debt and equity side of the balance sheet includes current liabilities, long-term notes and bonds, subordinated notes and debentures, deferred credits, provisions and reserves, minority interests in consolidated subsidiaries, preferred stock, and capital stock equity and retained earnings.

A Typical Company's Asset Distribution and Capital Structure



The chart on the following page details the opportunity set of potential investments available to institutional investors within the corporate capital structure. The current liabilities section contains investment opportunities in trade claims. The long-term notes and bonds section contains investment opportunities in the bank loan and corporate bond market. Mezzanine debt, subordinated debt and convertible securities are investment opportunities found in the subordinated notes and debentures area of the capital structure. Finally, investment opportunities in preferred securities exist within the preferred stock component. Common stock is also included in the structure but will not be analyzed, as this asset category is outside of the focus of this paper.

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MODULE 2: TRADE CLAIMS

Trade claims are typically considered an investment option for private investors as there is no public market available to trade in these securities. Sellers of bankruptcy claims can be either creditors that have extended unsecured credit to the debtor company (most commonly trade suppliers of materials or services); or secured creditors (most commonly financial institutions) that have obtained collateral to secure an advance of credit from the debtor. Although unsecured claims are generally not as large as secured claims of institutional creditors, the impact of a delinquent payment to an individual unsecured creditor normally has a much greater impact compared to an institutional secured creditor.¹

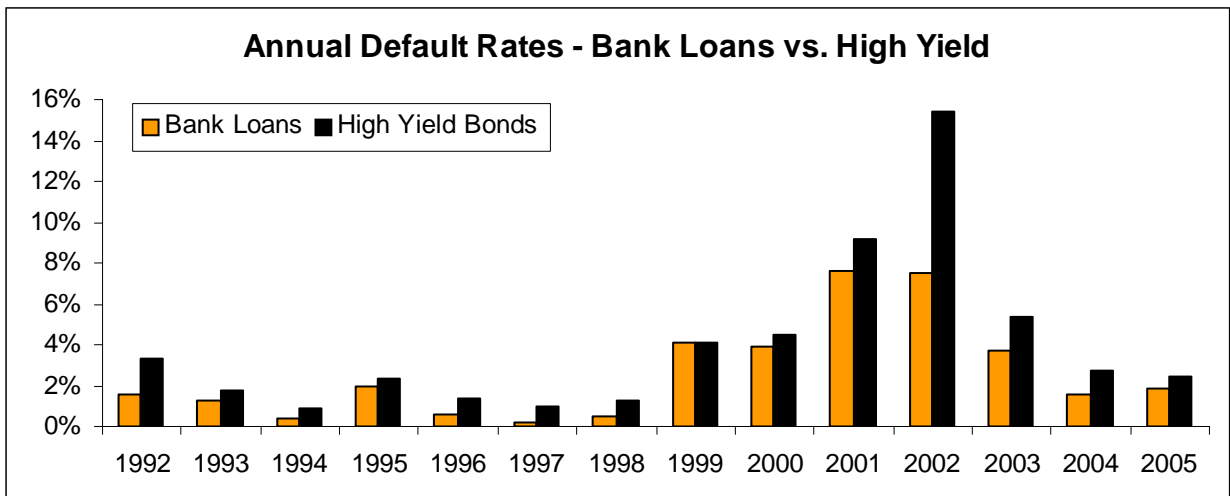
The short-term nature of trade claims leads them to be considered current liabilities, and this positioning in the balance sheet creates a senior position relative to all other investment opportunities in the corporate capital structure. Trade claims are intertwined with the bankruptcy process and are typically sought after by investors seeking to purchase them at distressed levels. This concept will be discussed in more detail in the distressed securities section in module five.

In a typical Chapter 11 bankruptcy case, claims are divided into secured and unsecured claims, with the unsecured claims often divided further based on the type of claims. Secured claims generally receive priority in payment over unsecured claims in any distribution plan, while unsecured claims are again prioritized so that administrative expense claims (including certain professional fees and expenses, certain employee wage and benefit claims, certain tax claims and claims of creditors providing post-petition credit to the debtor) usually take priority over pre-petition general unsecured creditors. Accordingly, creditors who consider selling their claims, as well as buyers who consider buying claims, must be aware of the relative priorities among secured and unsecured claims.²

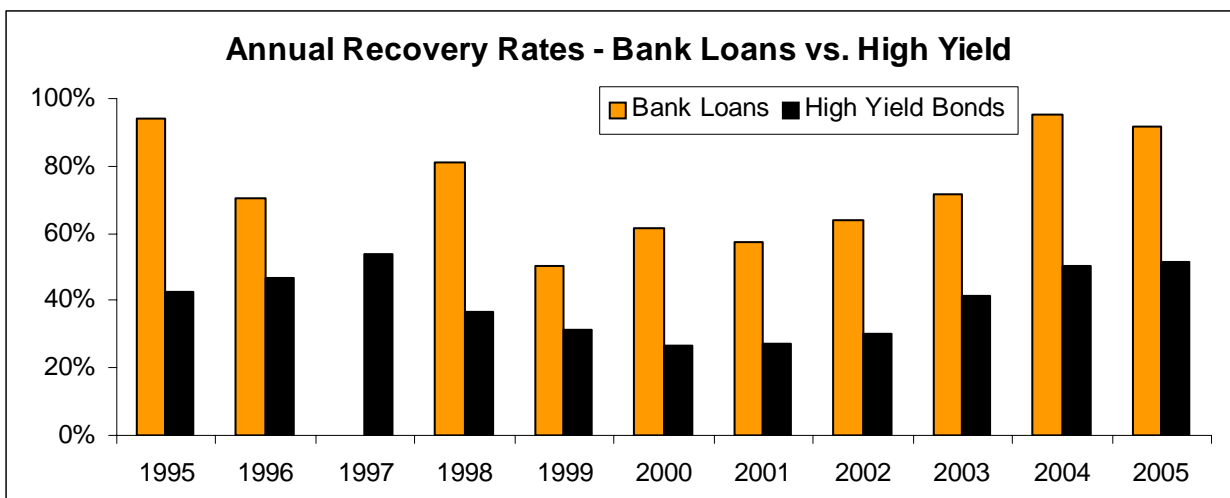
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MODULE 3: BANK LOANS

A broad review of bank loans was conducted in FEG's position paper titled "Investing in Bank Loans" and is available upon request. As the debt and equity chart on page three depicts, bank loans take a senior position relative to all other long-term liabilities (and equity) within the capital structure. The primary benefit of investing in the bank loan of a company is that in the event of bankruptcy or liquidation, the company is legally required to pay down its bank loan prior to other claims on assets, such as corporate bonds or common stock, due to its senior position in the capital structure. The majority of bank loans are underwritten by investment banks to companies that are rated below investment grade by major rating agencies. Due to the fact that bank loans reside higher on the capital structure than bonds, default rates for bank loans have been lower than that of high yield bonds and the subsequent recovery rates for bank loans have been higher than those of bondholders (see charts below).



Source: Credit Suisse First Boston



Source: Credit Suisse First Boston

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Another attractive feature of bank loans is that they pay floating rates that reset frequently (typically every 90 days) and are tied to 3-month LIBOR plus a spread (typically 200 to 300 basis points). As a result, bank loan investments are particularly attractive during a rising rate environment, because when interest rates are increasing, the loan rate rises in commensurate fashion (which has an ancillary benefit of a reduction in interest rate risk). Investments in bank loans are also an appropriate way to benefit from credit exposure from a strategic perspective, as the asset category offers low correlation to other fixed income (and equity) investments (although bank loans are most commonly compared to high yield bonds), as the chart below indicates. In the chart below, the Credit Suisse First Boston Leveraged Loan Index (CSFB LL) is used as a proxy for bank loans, the Lehman Brothers High Yield Index (LBHY) is used as a proxy for high yield bonds, the Lehman Brothers Aggregate Index (LBAG) is used as a proxy for the broad bond market, and the S&P 500 Index is used as a proxy for domestic equities. Bank loans have also provided attractive historical, risk-adjusted returns relative to all three benchmarks, strengthening the argument for a strategic allocation.

	January 1992 to June 2006			
	CSFB LL	LBHY	LBAG	S&P 500
Correlation	1.00	0.50	-0.06	0.14
Standard Deviation	2.2%	6.5%	3.8%	13.7%
Annualized Return	6.7%	8.1%	6.4%	10.1%

Despite the positive merits of bank loans, these investments are not without risk, as bank loans are a pure form of credit risk. In other words, in periods where credit-related debt is out of favor in the market, bank loans will experience relative weakness. As mentioned earlier, the majority of bank loans issuers are companies that are rated below investment grade, increasing the potential for default relative to the debt securities of an investment grade company. As of the end of 2005, the bank loan market was \$1.5 trillion in size, which is 1.5 times the size of the high yield bond market in terms of outstanding issuance.

MODULE 4: CORPORATE BONDS

Corporate bonds fall just below bank loans in the capital structure. There are several layers of corporate bonds within the capital structure of a typical company. These layers, as listed in order of seniority, are senior secured bonds, senior unsecured bonds, subordinated bonds, and junior subordinated bonds. As investors choose bonds that fall lower in a company's capital structure, the level of risk and reward potential increases with each drop in position within the capital structure. Investments in corporate bonds will be discussed in terms of investment grade and below investment grade (i.e., high yield).

Investment grade corporate bonds are issued by companies in order to finance capital investment and provide cash flow for operations. Investors in corporate bonds have a wide range of choices when it comes to bond structures, coupon rates, maturity dates, credit quality and industry exposure. Investment grade corporate bonds are generally considered suitable for preservation of invested capital - ordinarily, those rated Baa3 or better by Moody's Investors Service (Moody's), or BBB- or better by Standard & Poor's Corporation (S&P).³ The investment grade corporate bond market is approximately \$5 trillion in size, and institutional investors typically gain exposure to this area of the market through the core fixed income portion of their overall portfolio.

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Corporate bonds rated below investment grade (i.e., high yield) by the major rating agencies are issued by companies that are considered to be of lower credit quality (i.e., higher credit risk) than companies that issue investment grade corporate bonds. As expected, the potential for default of high yield bonds is greater than that of investment grade corporate bonds. Due to the increased level of credit risk inherent in these securities, the yields on these bonds are higher than those of investment grade corporate bonds (hence the term “high yield”). As a result, many institutional investors have specific guidelines in place that limit the amount of high yield bonds that may be held in their portfolios.

The chart below shows that since the inception of the Lehman Brothers High Yield Index in July 1983, high yield bonds modestly outperformed investment grade corporate bonds, albeit with considerably higher risk (in terms of standard deviation). These returns do not initially provide investors with a strong incentive to make a strategic allocation to high yield bonds, as returns have not been attractive relative to the increased level of risk. A correlation of 0.47 between the two categories, however, bolsters the strategic allocation argument for investors seeking to diversify their portfolios. Historically, many institutional investors have shown a preference to make tactical allocations to high yield bonds, particularly when spreads reach wide levels relative to investment grade bonds and/or Treasuries. A valid argument can be made for either a strategic or tactical allocation to this area of the market depending on the investor’s approach to risk. The high yield market was approximately \$1 trillion in size in terms of outstanding issuance as of the end of 2005.

July 1983 to June 2006		
	LB Credit	LBHY
Correlation	1.00	0.47
Standard Deviation	5.4%	7.3%
Annualized Return	9.1%	9.6%

MODULE 5: DISTRESSED SECURITIES

As the securities of a company decline in price due to varying hardships, the potential for a company’s liabilities to become “distressed” increases. Investors should understand that the term “distressed” has two meanings. First, it means that the company issuing the securities may be in trouble, as its liabilities may exceed its assets or it may be unable to meet its debt service and interest payments. As a result, investing in “distressed” securities typically means that some workout, turnaround, or bankruptcy solution must be implemented for the security to appreciate in value, all of which require patience by the investor.⁴ Second, “distressed” refers to the price and/or yield of the security, as one measure of distressed debt defines these securities as those that yield at least 10% points (1,000 basis points) above the risk-free rate (i.e., three month Treasury Bill).⁵ The number of investment managers seeking to add value in this area of the market has grown considerably in recent years, with at least 160 investment funds domiciled in the U.S. and 25-30 domiciled in Europe that specialize in distressed securities, compared to approximately 100 in the U.S. in 2000 and 60 in 1990, and only a few in Europe five years ago.⁶

Securities purchased by distressed investors can be grouped into four basic categories: public and private bank loans, publicly traded bonds, privately placed debt securities, and trade claims. Investors in distressed securities do not limit themselves to debt, however, as they will invest in instruments across a company’s capital structure, including convertible securities, preferred securities, and common stock. At a basic level, the primary strategy for distressed investors is to purchase a security at a fraction of its face value with the ultimate goal of benefiting from an improvement in the company. In some cases the investor purchases the debt security as a means to eventually gain an equity investment stake in the company, as the investors may agree to forgive the debt that they own in return for equity ownership.

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In other situations, investors may choose to play a more active role in helping the troubled company refocus their efforts to achieve solvency. Some investors prefer this kind of investment approach because it has the potential to offer a more rapid return on their investment than a passive approach. Investing in distressed securities is intertwined with the bankruptcy process, as investors are buying distressed securities at various points in the bankruptcy process (before and in some cases during) as well as different points in the capital structure. As a result, an in-depth understanding of the bankruptcy process is critical to successful investing.

Unlike publicly traded bank loans, investment grade corporate bonds and high yield bonds, which all have industry-accepted indices to use as benchmarks, modeling the returns for distressed securities is difficult, as distressed investors seek the securities of both public and private companies (of which the pricing information for securities is limited at best). Hedge Fund Research, Inc. (HFR) provides indices for a variety of hedge fund strategies, with its Distressed Securities Index producing the most relevant returns for analytical purposes. The following language describes the strategies included in the HFR Distressed Securities Index:

Distressed securities strategies invest in, and may sell short, the securities of companies where the security's price has been, or is expected to be, affected by a distressed situation. This may involve reorganizations, bankruptcies, distressed sales and other corporate restructurings. Depending on the manager's style, investments may be made in bank debt, corporate debt, trade claims, common stock, preferred stock and warrants. Strategies may be sub-categorized as "high-yield" or "orphan equities." Leverage may be used by some managers in the index. Fund managers may run a market hedge using S&P put options or put options spreads.

Despite the limitations of the HFR Distressed Securities Index, the chart below indicates significant risk-adjusted return benefits inherent in making an allocation to distressed securities. The chart also shows correlation benefits relative to other credit indices. This analysis bodes well for a long-term strategic allocation being considered for an investor seeking exposure to this area of the market, as it offers low correlations to high yield bonds, bank loans, and investment grade corporate bonds, with lower risk than high yield bonds and (unsurprisingly) higher risk than bank loans and investment grade corporate bonds. While these numbers are appealing, there are points in the credit cycle where the market does not provide significant opportunities for distressed investors, giving way to a more tactical approach. Tactical investing in distressed securities can be difficult to implement, however, as investors seeking exposure to this area of the market typically have to invest in alternative investment structures. Alternative investment vehicles typically require capital commitments well in advance of the actual investments being made. As a result, these structural limitations tend to shift investors toward making a long-term strategic allocation as opposed to employing a tactical approach.

	January 1992 to June 2006			
	HFR DSI	LBHY	CSFB LL	LB Credit
Correlation	1.00	0.61	0.41	0.13
Standard Deviation	5.6%	6.6%	2.2%	4.8%
Annualized Return	14.5%	7.7%	6.7%	6.9%

Edward Altman, the Max L. Heine Professor of Finance at the Stern School of Business, of New York University, has an international reputation as an expert on corporate bankruptcy, high yield bonds, distressed debt and credit risk analysis. Dr. Altman created three separate indices for classifying and reporting returns for defaulted bonds, bank loans, and a blend of bonds and bank loans. While both the defaulted bond and bank loan index are valuable in their own right, for the purpose of this paper,

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the blended index is a more appropriate measure to use in gauging the potential for investing in distressed publicly traded securities. The fact that the securities measured in this index are all publicly traded is a key differentiator between the three Altman indices and the HFR Distressed Securities Index discussed previously, because the HFR index also includes private securities and international issues. Additionally, the HFR index is a compilation of actively managed strategies, while the Altman indices are passive and are not investable.

The Combined Altman-NYU Salomon Center Index for Defaulted Public Bonds and Bank Loans is a market-weighted, monthly total return index comprised of U.S. companies. The combined index includes the securities of firms at various stages of reorganization either in bankruptcy or restructuring. Returns are calculated for the index using data compiled from just-after-default to the point when the bankrupt firm emerges from Chapter 11, is liquidated, or until the default is “cured” or resolved through an exchange. The securities of distressed restructured companies are also included in the index. The index includes securities of all seniorities, from senior-secured to junior-unsecured debt. The index does not include convertible or international company issues.⁷

The chart below is indicative of the diversification benefits inherent in a passive investment in publicly traded distressed bonds and bank loans. As expected, the Altman index has higher risk than high yield bonds and investment grade bonds. Annualized returns, however, suggest an active approach to investing in distressed securities, as a passive approach failed to outperform high yield bonds during the period measured and modestly outperformed investment grade bonds.

January 1996 to June 2006			
	Altman	LBHY	LB Credit
Correlation	1.00	0.61	0.01
Standard Deviation	10.7%	7.2%	4.7%
Annualized Return	6.2%	6.5%	6.0%

MODULE 6: MEZZANINE DEBT AND SECOND LIENS

Mezzanine debt financing provides a middle tier of funding for companies, as the debt and equity chart on page three suggests, placing these securities below senior debt and above the equity layer. A typical mezzanine debt investment includes a loan to the borrower, in addition to the borrower’s issuance of equity in the form of warrants, common stock, preferred stock, or some other equity investment. Notes typically have a maturity of between six and ten years, with interest paid during the first five years. Because the loan is subordinated, the interest rate is generally higher than the rate on the senior debt, and a limited amount of equity is issued to the mezzanine investor.⁸

Second liens are a key area of focus for mezzanine debt investors. In a second lien loan transaction, the second lien lenders hold a second priority security interest on the assets of the borrower. As their name implies, their security interest ranks second to the liens in those assets securing the first priority lien debt. In the event of a foreclosure on the shared collateral that secures the first and second lien debt, the first lien creditors are entitled to be paid in full from the enforcement proceeds before any payments are made to the second lien lenders out of those proceeds.⁹

While second liens are lower in the capital structure than first liens, they are a secured form of debt and rank higher than any unsecured liabilities and equity. This is of particular importance in the event of bankruptcy, as under the bankruptcy code, creditors’ claims are divided into three basic classes; secured claims (of which first liens and second liens fall), priority unsecured claims (bond holders and those creditors lower in the capital structure), and general unsecured claims (common stock holders).

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Under the bankruptcy code, secured claims are entitled to receive value equal to the full value of their interest in the collateral before any value is given to holders of unsecured claims, and any priority unsecured claims are entitled to receive the full value of their claims before any general unsecured claims receive any value. As mentioned previously, understanding where the investment ranks in the company's capital structure is a critical consideration for any credit-based investment decision in order to understand the potential ramifications of a worse-case scenario.¹⁰

As the vast majority of mezzanine debt and second lien investments are in the form of private equity investments, returns are not available for analysis. More detailed analysis on the vehicle structures available in the mezzanine debt area of the market, as well as the potential impact on client portfolios in conjunction with the "J-curve effect," is offered in modules ten and eleven.

MODULE 7: CONVERTIBLE SECURITIES AND CONVERTIBLE ARBITRAGE

Convertible bonds provide the investor with the right to "convert" or exchange the par amount of the bond for common shares of the issuer at a fixed ratio during a particular period. As bonds, they have some of the characteristics of fixed income securities. Their conversion feature, however, also gives them features of equity securities. Convertibles have a coupon payment and are legally considered to be debt securities, which rank senior to all equity securities in a default situation (see debt and equity chart on page three). Their value depends on the level of prevailing interest rates and the credit quality of the issuer, but unlike bonds, the stock price also has an impact on the value of the convertible. The convertible bond market was more than \$250 billion as of the end of December 2005.

The exchange feature of a convertible bond gives the investor the right to convert the par amount of the bond for common shares at a specified price or "conversion ratio." For example, a conversion ratio might give the holder the right to convert \$100 par amount of the convertible bonds of XYZ Corporation into its common shares at \$25 per share. This conversion ratio would be said to be 4 to 1.¹¹ Issuers of convertible bonds sell them in order to pay a lower current yield to investors, who are buying the security in order to gain a modest current yield and equity-like upside with less downside than owning the equity, since the convertible should not trade below its bond value in the case of a steep drop in the common share price.

A niche area of investment within the convertible bond market is the "busted" convertible, in which the security is trading well below its conversion value. Due to the market's pricing of the convertible, the security is subsequently valued as a "normal" bond because there is little chance the stock price will ever reach the convertible price before maturity. The conversion feature for these bonds is particularly attractive to some investors because even in the unlikely event that the bond will be converted, the fact that the bond is valued as a "normal" bond can create an inexpensive, if not free opportunity, to earn extra income if the conversion takes place.

Despite having both fixed income and equity characteristics, convertible bonds (using the Merrill Lynch All Convertibles Index as a proxy) are more highly correlated to equities than to bonds (see chart below). As a result, convertible bonds are generally considered to be a fixed income diversifier as opposed to an equity diversifier.

January 1995 to June 2006			
	ML All	S&P 500	LBAG
Correlation	1.00	0.79	-0.02
Standard Deviation	12.3%	14.8%	3.8%
Annualized Return	10.2%	11.1%	6.8%

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Hedge funds often invest in the convertible space through the use of convertible arbitrage strategies. At its most basic level, a convertible arbitrage transaction consists of the purchase of a convertible bond and the simultaneous short sale of the stock of the underlying bond. This strategy attempts to benefit from a pricing miscalculation in the conversion factor of a convertible bond. As mentioned earlier, the convertible bond itself is comprised of both a straight bond, with a regular coupon payment, and an embedded call option that gives the bondholder the right to purchase a certain number of shares of the issuing company at a given price.

The call option's value is determined by a mathematical formula that requires several inputs. The two most powerful of them are the price of the underlying stock upon which the option is based, and the "implied" volatility of the stock, which is an assessment of how that stock's price will behave over the life of the option. As the value of the implied volatility level increases, the value of the option increases. The option's value also increases as the price of the underlying stock rises. The sensitivity of the option's value to this movement in the stock prices is called the "delta." It is this sensitivity, or delta, that the convertible arbitrageur is attempting to neutralize by selling a certain amount of stock short against the long convertible bond position. Once this exposure to the underlying stock's price has been neutralized, the convertible bond's value will continue to be affected by the volatility level of the embedded option, the credit spread inherent in the bond resulting from the issuer's credit quality, and the level of interest rates in general.¹²

A convertible arbitrageur can generate profits in a myriad of ways. As the convertible arbitrage market has matured, a complex set of strategies and tactics have evolved to take advantage of this space. Three of the most common strategies are *volatility*, *credit*, and *carry* which are discussed on the following page.

Volatility can be a source of profits in several ways. First, the investor must come to the conclusion that the volatility implied in a particular stock option is inaccurate, which would lead the investor to find another option on the same stock that approximates the embedded option which is priced at a higher implied volatility level. The manager would then sell that option against the convertible bond to create an arbitrage. Another way to profit from volatility is when the investor believes that the option embedded in the bond was priced inaccurately low and wishes to take a directional bet that volatility will increase. Because convertible bond arbitrageurs own the embedded call option, they are long volatility. Any increase in the level of that stock's volatility would result in profits from this strategy.

The *credit* of an issuer also provides the convertible arbitrageur with a potential stance for action. The bond is presumably priced to reflect the credit quality of the issuing company. Any compression in the credit spread will result in a capital appreciation of the bond's value, and profits for the investor.

The *carry* component in a convertible transaction offers a third opportunity. The arbitrageur has sold the appropriate amount of stock to neutralize the impact of equity movements on the bond's value. The investor receives not only the coupon payment from the bond, and the interest on proceeds from the stock sale, less any cost for borrowing the stock.¹³

Beyond these tactics, more complex strategies such as reverse hedging, convergence hedging, and capital structure hedging are currently used by arbitrageurs in an effort to achieve profits in the convertible bond space. Details of these strategies, however, are beyond the scope of this paper.

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The chart below offers an analysis of the HFR Convertible Arbitrage Index relative to the S&P 500 Index and the LBAG, and shows the strategy's potential as a low correlation portfolio diversifier. A basic definition of the HFR Convertible Arbitrage Index follows:

Convertible arbitrage involves purchasing a portfolio of convertible securities, generally convertible bonds, and hedging a portion of the equity risk by selling short the underlying common stock. Certain managers may also seek to hedge interest rate exposure under some circumstances. Most managers employ some degree of leverage, ranging from zero to 6-to-1. The equity hedge ratio may range from 30% to 100%. The average grade of bond in a typical portfolio is BB-, with individual ratings ranging from AA to CCC. As the default risk of the company is hedged by shorting the underlying common stock, however the risk is considerably better than the rating of the un-hedged bond indicates.

January 1987 to June 2006			
	HFR CA	S&P 500	LBAG
Correlation	1.00	0.31	0.02
Standard Deviation	4.4%	15.1%	4.1%
Annualized Return	11.2%	11.4%	7.3%

MODULE 8: PREFERRED SECURITIES

Preferred securities combine features of both fixed income and equity but tend to perform more like traditional bonds because regular income distributions (most pay quarterly at a fixed rate) are the principal source of return, as opposed to capital appreciation. Preferreds also provide the issuer with the option to defer and accumulate dividend payments over time. The majority of preferred securities are listed on a major stock exchange and are rated by the major rating agencies. As the debt and equity chart on page three suggests, in the event of bankruptcy, preferred securities shareholders are paid after bondholders and before common stockholders, which translates into higher yields on preferred securities relative to other fixed income investments.¹⁴

Issuers of preferred securities generally receive equity treatment on their balance sheets, unlike corporate bonds and other fixed income securities. Obtaining equity treatment is important to regulated industries such as banking, brokerage, or insurance, because these industries need to meet certain statutory capital levels. Historically, how much equity treatment an issuer receives has changed, but investment bankers are constantly working to create the optimal structure to maximize equity treatment while keeping the cost of capital down. Although at times issuing preferred securities has been an expensive form of financing for the issuer, it has consistently translated into attractive yields.¹⁵

The approximate size of the preferred securities market is \$350 billion. There are five types of preferred issuers in the market. The largest issuer of preferreds is domestic taxable preferred securities (retail), followed by domestic taxable preferred securities (institutional). Non-U.S.-issuer, tax-advantaged preferred securities are the third-largest issuer, with tax advantaged preferred stock and domestic Real Estate Investment Trust (REIT) preferreds comprising the fourth and fifth slots.

The chart on the following page (using the taxable Merrill Lynch DRD (Dividends Received Deduction) Eligible Index as a proxy for the Preferred Securities market) suggests correlations to the LBAG and LB Credit Indexes that indicate potential diversification benefits. Preferreds are modestly riskier (in terms of standard deviation) than the LBAG, and less risky than the LB Credit Index. Since the index's inception in February 1997, the benchmark produced returns that are modestly higher than the LBAG and slightly lower than the LB Credit. This analysis suggests that while preferred securities offer some

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diversification benefits, a dedicated allocation to this area of the market may not be rewarding for institutional investors. Preferred securities should be considered as part of an overall asset allocation decision, since exposure may be obtained through an investment with a credit-focused manager who is experienced in investing throughout the capital structure in order to take advantage of tactical opportunities within the preferred space.

February 1997 to June 2006			
	ML DRD	LBAG	LB Credit
Correlation	1.00	0.60	0.65
Standard Deviation	4.4%	3.6%	4.6%
Annualized Return	6.2%	6.0%	6.3%

MODULE 9: DERIVATIVE USE IN CREDIT RELATED INVESTMENTS

A broad review of derivative use in fixed income portfolios was discussed in FEG's position paper titled "Bridging the Gap: Investment Opportunities in Traditional, Non-Traditional, and Alternative Fixed Income Strategies" and is available upon request. The derivatives discussed in this module focus solely on creating credit-related exposures across individual corporate bonds, credit indices, and specific capital structure investments. The primary vehicles used by investors with credit-focused strategies are credit default swaps (CDS) for individual corporate bonds, and credit default indices (CDX) for broad credit exposure, as well as customized structures, such as basket default swaps (BDS).

A CDS contract enables investors to effectively manage and trade credit exposure. In a standard CDS contract, one party purchases credit protection from the other party to cover the loss of the face value of an asset following a credit event. A credit event is a legally defined event that typically includes bankruptcy, failure to pay, and restructuring. Buying credit protection is the economic equivalent of shorting credit risk. Equally, selling credit protection is economically equivalent to going long the credit risk. Another way to think about CDS is to note their similarity to an ordinary insurance policy on a house or car. The policy holder pays a premium in return for protection against some sort of loss. In the case of a CDS, the spread is the cost of the insurance policy and is usually expressed in basis points.¹⁶

In addition to being long or short credit risk, CDS investors are also exposed to counterparty risk. Counterparty risk is the risk that one of the parties in a CDS contract may fail to perform its obligations, causing losses to the other party. Losses are typically quantified in terms of the replacement cost of the defaulted CDS and include the potential market impact of large and/or illiquid positions. Counterparty risks are bilateral, as both parties may face exposures depending on the value of the positions they hold against each other. Counterparty risk has increased in recent years with the growth of the derivatives market, but so has the ability of professionals to hedge for specific risks.¹⁷ There has been considerable work done in this area to discuss the variety of risks facing counterparties, however, it is outside of the scope of this paper.

A key advantage for investors using CDS is that these instruments isolate credit risk from all other risks (interest rate, currency, call, etc.) that are often packaged in a traditional corporate bond. Therefore, CDS investors can use these instruments to evaluate exposures to a particular entity based solely on their thoughts about the likelihood of default and severity of loss given default. This evaluation is particularly useful when considering foreign entities or entities whose bonds have embedded call options. For this reason, the CDS market is the fastest growing derivatives market today.¹⁸

Stepping away from individual CDS, investors seeking broad exposure to credit (in general) typically

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use one of the Dow Jones (DJ) CDX Indices. There are four primary CDX indices available for credit investors to choose from as well as sub-indices for more specific investments.

The DJ CDX indices are broken down as follows.

Index Name	# of Ref Entities*	Term (Years) Available
DJ CDX NA High Yield	100	5 & 10
DJ CDX NA Investment Grade	125	1,2,3,4,5,7 & 10
DJ CDX NA Investment Grade HiVol (sub-index of DJ CDX Investment Grade)	30	1,2,3,4,5,7 & 10
DJ CDX Emerging Market	14	5 & 10
DJ CDX Emerging Market Diversified	40	5 & 10

**each index has an equally-weighted number of reference entities
(reference entities are existing bond issuers)
Source: Markit Group*

The DJ CDX North America Investment Grade Index can be broken out into six sub-indices as follows.

DJ CDX NA IG Consumers
DJ CDX NA IG Industrials
DJ CDX NA IG Energy
DJ CDX NA IG HiVol (High Volatility)
DJ CDX NA IG Financials
DJ CDX NA IG TMT (Telecom, Media)

Source: Markit Group

The DJ CDX North America High Yield Index can be broken out into three sub-indices as follows.

DJ CDX NA High Yield B
DJ CDX NA High Yield BB
DJ CDX NA High Yield High Beta

Source: Markit Group

Neither the DJ CDX Emerging Market Index nor the DJ CDX Emerging Market Diversified Index offer sub-indices. Investors seeking specific regional credit exposure in international market have a variety of CDS indices to choose from. These vehicles are known as the DJ iTraxx indices.

The DJ iTraxx indices are broken down as follows.

Index Name	# of Ref Entities	Term (Years) Available
DJ iTraxx Europe	125	3,5,7 & 10
DJ iTraxx Europe HiVol	30	3,5,7 & 10
DJ iTraxx Europe Crossover	30	5 & 10
DJ iTraxx Credit Japan	50	5 & 10
DJ iTraxx Asia ex-Japan	30	5 & 10
DJ iTraxx Korea	8	5
DJ iTraxx Greater China	9	5
DJ iTraxx Rest of Asia	13	5
DJ iTraxx Australia	25	5

Source: Markit Group

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Within each of these indices, tranches exist for further specific investment. Using the DJ CDX NA High Yield Index as an example, CS First Boston provides four different tranches (0-10%, 10-15%, 15-25%, and 25-35%) with each tranche measuring a lower degree of risk (i.e., lower number of defaults required in the 0-10% tranche than in the more senior 25-35% tranche). Due to the transparency and liquidity in the iTraxx market, credit investors can optimize their credit views, either by gaining specific credit exposure or hedging existing positions across different tranche seniorities.

Due to the high degree of transparency and liquidity found in both the DJ CDX and iTraxx indices, it is significantly easier for credit investors to execute curve trades and relative value trades between sectors. Additionally, investors can trade within the same sector, buying or selling single issuers versus the issuer's industry in order to further specify the risk they seek to take or hedge (for example, buy consumer index protection through the DJ CDX NA IG Consumer Index and sell Procter and Gamble CDS if the investor believes in a better relative behavior of the company versus its industry).

Customized structures such as default basket swaps (DBS) are another option for credit investors and work similarly to CDS. DBS returns are typically linked to the first-to-default of a group of reference issuers. The buyer of "first to default" protection pays a premium to another counterparty (i.e., the seller of protection) for taking risk on the underlying credits in the default basket. If any one of the reference issuers suffers a credit event, then the seller of protection pays the loss on the reference security to the buyer and the swap transaction terminates.¹⁹

Derivatives in fixed income investments are used to establish very specific positions on issuers, sectors, markets and components of markets for investors to more accurately define the risk they want to take in order to achieve a particular return target. The CDS, CDX, and DBS markets should allow investors to have a better understanding of how credit managers can move through various parts of the capital structure and credit markets in order to achieve their investment goals.

MODULE 10: TRADITIONAL INVESTMENT VEHICLES

There are a number of traditional investment vehicles for institutional investors seeking a specific exposure within a company's capital structure. The following traditional investment vehicles (i.e., separate accounts, commingled funds, and institutional mutual funds) are available for institutional investors in the following categories: bank loans, investment grade corporate bonds, high yield bonds, convertible bonds, and preferred securities.

Until recently, suitable options for institutional investing in bank loans were rare. Prior to 1993, minimum bank loan positions were high, with the lowest available level being \$5 million. With bank loans only comprising a small portion of a client's portfolio, the amount of capital committed to invest in a diversified portfolio of 75 to 100 bank loans would be daunting. As a result, there were not many attractive products available to institutions and no institutional mutual funds available for investors seeking to make small allocations. Today, with many bank loan deals available at the \$1 million level, a diversified institutional separate account requires an investment of approximately \$100 million. \$100 million is still a considerable amount of capital to all but the largest investors, as smaller investors would not be able to access the separate account. To counter this problem, some firms now offer commingled vehicles designed for institutional investors for a minimum of \$1 million with fees that are comparable to high yield commingled and institutional funds, typically in the neighborhood of 40 to 60 basis points. While institutionally focused mutual funds are still somewhat rare in the bank loan market, they do exist, although their fees are somewhat higher than commingled funds, typically in the 70 to 80 basis point range. Despite relatively higher fees, institutional commingled funds and mutual funds are currently the most attractive options available for institutional investors seeking exposure to bank loans.

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Floating rate mutual funds also exist, but these funds are not directly comparable to bank loan funds in that they generally invest in floating rate securities that are unrelated to bank loans.

The majority of institutional investors receive exposure to the investment grade bond space through their investment in a core fixed income portfolio. For investors seeking a dedicated investment grade corporate portfolio, there are a handful of managers willing to manage an investment grade corporate only portfolio in a separate account structure, with a minimum investment ranging from \$10 to \$75 million and management fees that range from 28 to 40 basis points. There are few commingled or institutional mutual funds available in the investment grade corporate space, as the demand for these products has been limited to special situations. As a result of limited demand, it has been considered unprofitable for managers to offer an institutional fund in this space, although retail funds with higher management fees are available.

Institutional investors seeking a dedicated allocation to high yield bonds benefit from a more broad selection of products and managers than in the investment grade space. There are two key reasons why managers offer a more broad selection of high yield vehicles. First, there is a high level of institutional (and retail) demand for dedicated high yield bond management to support the amount of offerings and make it a profitable business for the manager. Second, high yield bonds tend to be treated as a separate asset category within the fixed income market and require a more specialized focus than investments in the investment grade corporate bond space. Separate accounts minimums for high yield portfolios range from \$5 to \$100 million, with management fees that range from 45 to 75 basis points. Commingled funds are available as well, with lower minimum investments than separate accounts, at \$1 to \$5 million with management fees that are slightly higher than those of separate accounts at 50 to 75 basis points. Institutional mutual funds are also available with minimum investments of \$1 to \$5 million, with management fees that range from 55 to 85 basis points.

For institutional investors seeking exposure to the convertible bond space, offerings are primarily in the form of separate accounts, with investment minimums ranging between \$5 and \$20 million and management fees ranging from 50 to 125 basis points. There are a few commingled funds and institutional mutual funds available to investors. The commingled funds have minimums of \$1 million with higher management fees than separate accounts. Institutional mutual funds are available with minimums of \$1 to \$5 million and management fees of approximately 90 basis points.

The preferred securities market is fairly limited in terms of traditional investment vehicles, with only a few managers offering separate account management at this time. The typical minimum investment for a separate account is approximately \$25 million with a management fee of around 40 basis points.

MODULE 11: ALTERNATIVE INVESTMENT VEHICLES

Traditional investment vehicles do not offer complete access for institutional investors seeking specific exposures within the corporate capital structure. Investors seeking exposure to opportunities such as distressed securities, mezzanine debt, and convertible arbitrage are required to consider hedge funds or private equity investments in order to participate.

Consider the investor who believes that default rates are likely to increase significantly and wishes to invest in the distressed market because of the improved opportunity set. The investor could make a direct investment with a hedge fund or private equity manager that focuses exclusively on investing in distressed securities. Each manager has a specialized or niche focus within the distressed area. Investors in distressed securities can invest in either a control or non-control strategy. In a strategy where the investor seeks to take control of the company, the investment strategy would include buying

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enough of the debt of a company to own a controlling (i.e., minimum of 34%) equity stake in the company. The investor would seek to create value through the company's restructuring of its operations and finances and will eventually sell his stake in the company. For investors who are not seeking to take a controlling interest in the firm, the investor will buy a minority interest in a company's distressed debt and then hope to resell the securities at a later date when the value of the debt has recovered.

Investors seeking exposure to mezzanine debt, a niche component within the private equity market, can achieve this exposure only through investing directly with a private equity manager, as hedge funds do not typically focus on this area of the capital structure.

Hedge funds focused solely on credit-related investments, in which the manager invests throughout the capital structure, are also available. As each hedge fund offers a unique approach, the investor must review the manager's strategy completely (contained in their private offering memorandum) in order to be certain that the investment achieves the investor's desired exposure. The same advice should be used for any investment strategy under consideration.

MODULE 12: COMMON INVESTMENT VEHICLES AND FEE STRUCTURES FOR INSTITUTIONAL INVESTORS

Investing in alternative investment vehicles (using hedge funds as a proxy) is more complex than it is for traditional and non-traditional areas of the fixed income market. Unlike separate accounts, commingled funds, and institutional mutual funds, hedge funds charge performance-based fees, with the typical starting point of a 1% management fee, then 20% of the profits the investor earns. In industry jargon this is known as 1 and 20. Many hedge funds also have a "high water mark," meaning they will not pay the manager a performance fee in a profitable quarter until the manager has made up a certain amount that was lost in prior quarters.²⁰

Hedge fund investors can invest in either onshore or offshore funds or through fund-of-funds. Onshore funds are U.S.-based private investment partnerships that are available only to "accredited investors" Securities and Exchange Commission (SEC 3(c) 1) or "qualified purchasers" (SEC 3(c) 7). An investment vehicle structured under Section 3(c)1 of the Investment Company Act of 1940 permits the exclusion of investment companies from standard registration requirements with the SEC if they have no more than 99 U.S. investors and those investors are either "accredited investors" or "qualified purchasers." An investment vehicle structured under Section 3(c) 7 of the Investment Company Act of 1940 permits the exclusion of investment companies from standard registration requirements with the SEC if all U.S. investors are considered to be "qualified purchasers." There is no numerical limit of investors if they are all "qualified." Offshore funds are non-U.S.-based private investment partnerships open to non-U.S. and non-taxable U.S.-based investors. Investors in offshore funds are confined to the same parameters as onshore funds. Tax-exempt U.S. entities tend to invest in offshore funds to avoid UBTI (unrelated business and taxable income). Fund-of-funds can be either onshore or offshore private investment partnerships that invest in other hedge funds. These funds are structured and limited as above.

Accredited investor guidelines for businesses apply to those with investment discretion on more than \$5 million. For individual investors to be considered accredited, they must have an individual net worth, or joint net worth with their spouse, in excess of \$1 million or have had individual income (exclusive of any income attributable to their spouse) of more than \$200,000 in each of the past two years, or joint income with their spouse of more than \$300,000 in each of those years, and a reasonable expectation to reach the same income level in the current year. Accredited investors are limited to a 3(c) 1 investment vehicle that limits the total number of investors to 99 or an SEC registered product.

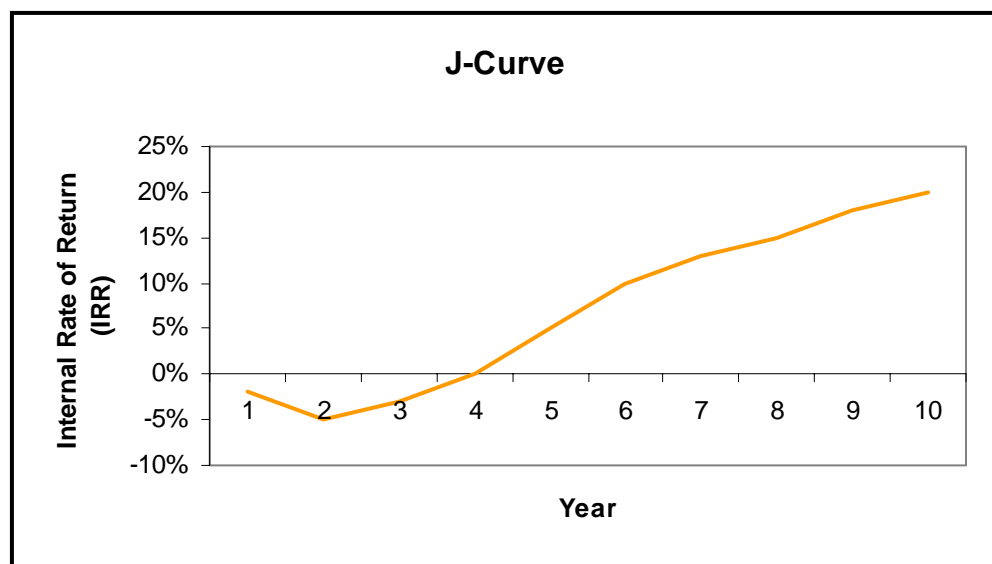
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An investor is considered a qualified purchaser if the business has discretion of more than \$25 million in investments. For an individual to be qualified, a person must own \$5 million or more in investments including those held jointly with a spouse. Also, a family-held business that owns \$5 million or more in investments or trusts sponsored by qualified purchasers is considered to be a qualified purchaser.

Private equity investments are structured differently than hedge funds. Generally, private equity funds are organized as limited partnerships that are controlled by the private equity firm that acts as the general partner (GP). The fund obtains commitments from qualified investors such as pension funds, financial institutions, and wealthy individuals to invest a specified amount. These investors become passive limited partners (LP) in the fund partnership and at such time as the GP identifies an investment opportunity, the GP is entitled to “call” the required equity capital and each LP funds a pro rata portion of their commitment. All investment decisions are made by the GP. Over the life of a fund, which often extends up to ten years, the fund will typically generate 15 and 25 separate investments, usually with no single investment exceeding 10% of the total commitments.²¹

The GP is usually compensated with a management fee, defined as a percentage of the fund’s total capital, as well as a carried interest, defined as a percentage of profits generated by the fund (so long as some minimum return for the investors, known as the “hurdle rate,” is achieved). Typically, the GP will receive a management fee of 2% and carried interest of 20% (although the carry is normally reduced by the amount of the management fees).²²

A key difference between investments in hedge funds and private equity funds is the “J curve” effect. The term “J curve” describes the pattern of returns produced by private equity funds that produce negative returns in the early years of the partnership and increase in value several years after the initial investment (see chart below). Additionally, the left-hand (downward) side of J-like returns are attributable not only to poor performing investments which have declined in value (as positive performers are held at cost), but also to the deleterious impact of fees and upfront expenses. Theoretically, investors in private equity funds are essentially giving up short-term returns in favor of more attractive long-term returns in the later years of the life of the fund.



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CONCLUSION

The corporate capital structure offers unique investment opportunities for institutional investors seeking strategic and tactical exposure to credit risk. FEG believes clients should invest in a broadly diversified fixed income portfolio in conjunction with a well-diversified portfolio of equity and alternative investments (for investors meeting the guidelines outlined in this paper). Through the strategies discussed in this paper, the investor has been provided with the basic insight required to consider further diversification within their portfolios. While each strategy discussed in this paper should be further discussed and analyzed with an advisor prior to investment, the purpose of this paper is to provide the investor with a general understanding of investment opportunities throughout the corporate capital structure and in the credit markets overall. We believe that investors who have a general understanding of the concepts and opportunities discussed in this paper will be able to make more informed decisions with the help of their advisor. FEG remains focused on reviewing and conducting due diligence on managers focused on investing throughout the corporate capital structure and in the credit markets in general, and we will continue to develop our platform of institutional managers for client use.

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