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Uncover Hidden Value in Credit

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Our approach to selecting investment grade bonds with the highest excess spread relative to their fair value.

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Undervalued bonds which provide an excess spread relative to their fair value may be a source of outperformance versus the broad market, thanks to their upside potential. However, finding value does not simply mean buying highest yielding bonds. Because of the asymmetrical payoff of bonds, upside is limited but downside can be substantial. Yields and spreads imply risk, and investment grade bond investors who do not accurately evaluate the risk of their holdings may be assuming significant default or downgrade risk. Even a small exposure to poorly performing credits within a portfolio can erase any outperformance and put an investor in the red.

Today's prolonged low rates and tight credit spreads are pushing many investment grade bond investors further out on the risk curve. Because investment grade corporate bonds are considered a "core" fixed income asset class, meant to provide both income and safety,

taking on too much risk may backfire in a negative credit environment. We believe that by focusing on bonds that are attractively valued relative to their embedded risks, investors do not need to sacrifice income or assume additional risk without adequate compensation. Our approach to the investment grade market seeks out bonds that have a high market spread (measured by their option adjusted spread) relative to "fair value," which is the spread that is needed to compensate an investor for the embedded credit risk of a bond.

Determining fair value requires investors to look beyond traditional measures of risk such duration or absolute spread levels. It also means that credit ratings alone cannot be used to quantify value. Credit ratings provide useful information around the creditworthiness of a specific rating category relative to others within the same asset class, but can't provide investors with a forward-looking absolute assessment of credit risk. They are also not granular enough to use as a basis for security selection, given the huge diversity within even a single rating category. For example, the fact that the BBB-rated segment now makes up more than 50% of the broad investment grade market means that a bond specific approach is needed to identify attractively valued bonds.

Quantitative Approach to Security Selection

Our approach uses inputs from Moody's Analytics® industry-leading credit model CreditEdge®, which is driven by an extensive dataset and decades of research. Hundreds of the world's largest institutional investors rely upon it for credit risk management. A technical overview and model information can be found here, and additional information is provided in the Appendix. The Moody's Analytics model is used in our strategy to determine the "Expected Default Frequency^{TM"} (EDF), which is a market-based forward-looking measure of expected default risk. It is driven by three key drivers: the value of a company's assets and liabilities, asset volatility and the point of default. A firm's equity price is a key input to value a company's assets, which can then be compared to the book value of its liabilities as a first step in assessing default risk. As a result, EDF and associated risk measures are updated daily as a company's stock price changes, giving a more real time assessment of a company's financial leverage. In simple terms, the closer a company is to its default point (when its market value of assets would be less than the book value of its liabilities) and the higher its asset volatility, the higher its risk of default and the more spread its bonds should pay as compensation.

What Is "Value" in Investment Grade Bonds?

Provided that an investor has the tools to assess the fair value spread of a bond, how does one decide if a bond represents attractive value? Our approach selects bonds with the highest excess spread relative to their fair value, which itself represents an assessment of a bond's risk. Our selection process, detailed in this paper, incorporates not only screening for default risk, but also downgrade risk (the risk of an investment grade bond being downgraded to high yield). A high market spread relative to fair value represents upside potential, as one would expect market spreads to converge to fair value over time. This can be viewed as a relative value opportunity since bonds are priced cheaply relative to the risk they represent, or alternatively it can be described as a market mispricing of risk, provided that the model used to assess risk is accurate.

EDF is a key input into determining the fair value spread of a bond, or the modeled bond spread that would provide adequate compensation for the bond's risk. In addition to EDF, the expected recovery rate, maturity, size of issue and other factors including general market risks are incorporated into the calculation of fair value spread. The market derived option adjusted spread can then be compared against the fair value spread to identify bonds with the highest excess spread.

Market Value of Assets

Based on a firm's stock price

Asset Volatility

Estimate possible future asset market values

Default Point Assumed point which a firm will default based on

value of assets relative to liabilities

Expected Default Frequency: Probability that a bond will default over its duration

Fair Value Spread Credit spread implied by a bond's expected default frequency

Excess Spread

Additional compensation available in the market in excess of the fair value spread

Source: Nazaren and Dwyer, Credit Risk Modeling of Public Firms: EDF9, Moody's Analytics, June 2015

It's important to note that credit quality is inherently modeled into fair value spread, since it is driven by a bond's EDF. A bond with a high EDF results in a high fair value spread, and therefore a higher hurdle to be included into a strategy that screens based on excess spread.

A Process to Identify Real Value

EDF and the probability of a bond being downgraded to high yield are highly correlated, and an increase in either will result in a higher fair value spread. However, the two risks are distinct in that an investment grade bond, in particular, can have a high risk of being downgraded but a relatively low default risk. Because many investment grade investors cannot, or will not, hold a high yield bond in their portfolios, forced selling often results in a material price decline prior to downgrade. These price declines are greater on average than those associated with downgrades elsewhere along the ratings scale. As a result we believe it is also important to avoid bonds with a high probability of being downgraded to high yield, given the potential that such risk is not being appropriately priced into a bond's market spread. A screen is incorporated to avoid these. The Moody's Analytics model calculates this probability based on the forward-looking EDF measures combined with both market-implied ratings and actual credit ratings actions.



Pricing Dispersion = Opportunity

The investment grade bond market is vast and not always efficient. Individual bond issues are not fungible and carry different terms. Pricing and trading is over the counter and not completely transparent to the marketplace. The result is that there can be significant dispersion in terms of where the market is pricing risk, as measured by the market spread relative to fair value spread.



Source: Moody's Analytics, ICE Data Indices and VanEck, as of 11/18/2020.

When analyzed at a more granular level, there is also pricing dispersion among similarly rated bonds with similar maturities and the same issue size. Below are five examples of BBB3 rated bonds (using the ICE Data Indices composite rating scale) that have approximately five years remaining to maturity and face values of \$1 billion. The dispersion of market spreads shows that the market does not price all bonds with similar duration, liquidity and credit risk (as measured by credit ratings) similarly. It also suggests that bond-specific fair value spreads are needed to identify where real value exists.



Source: Moody's Analytics, ICE Data Indices and VanEck, as of 11/18/2020. This is not an offer to buy or sell, or a solicitation of any offer to buy or sell any of the securities mentioned herein.

Ultimately, investors who purchase attractively valued bonds are seeking to capture the outperformance versus their benchmark as valuations return to fair levels. Analyzing the returns of "high excess spread" versus "low excess spread" bonds, based on their market spread relative to fair value spread, it is clear that attractively valued bonds have historically provided consistent outperformance over low value bonds within the investment grade market versus the broad market. As shown in the chart below, over the past decade, there was only one year in which focusing on the highest excess spread bonds within the broad investment grade market did not outperform, while outperforming within the BBB rated universe every year. Over this timeframe high excess spread bonds have outperformed low excess spread bonds by an average of approximately 170 basis points each year in the broad investment grade space.¹ Within BBB rated bonds only, that outperformance increases to nearly 250 basis points, on average.



Higher Excess Spread Bonds Have Historically Outperformed Low Excess Spread Bonds

Source: VanEck, Moody's Analytics as of 11/18/2020. High Excess Spread Bonds and Low Excess Spread Bonds is represented by the top and bottom, respectively, 40% of the ICE BofA US Corporate index in terms of a factor measuring their excess spread relative to fair value.

The pricing dispersion found in the investment grade marketplace means that investors can construct well diversified portfolios of attractively priced bonds by focusing only on those with the highest excess spread. Ultimately, one would expect to end up with a portfolio that has attractive spreads relative to fair value and a compelling risk profile, given the inherent quality screens in the fair value spread calculation as well as the additional screen for downgrade risk. This is indeed the result of analyzing the constituents of the MVIS Moody's Analytics[®] US Investment Grade Corporate Bond Index and the MVIS Moody's Analytics[®] US BBB Corporate Bond Index against their broad benchmarks. Further, it is clear that investors are not only earning a lower average spread through broad market exposure, but they are also not sufficiently compensated for the embedded risk as determined by the Moody's Analytics model. Default and downgrade risks are actually the same or higher in a broad market strategy than in a value-driven strategy.



Source: VanEck, Moody's Analytics as of 11/18/2020. MVIS IG Index is represented by the MVIS Moody's Analytics US Investment Grade Corporate Bond Index. US IG Benchmark is represented by the ICE BofA US Corporate Index. Default Risk indicates the weighted average 1-year expected default frequency of the portfolio. Downgrade Risk indicates the weighted average probability of BBB- bonds experiencing a downgrade to high yield within the next year

The MVIS Moody's Analytics US Investment Grade Corporate Bond Index and the MVIS Moody's Analytics US BBB Corporate Bond Index are designed to find hidden value in credit markets by identifying the most undervalued securities relative to their risk, using inputs from proprietary credit risk metrics developed by Moody's Analytics. The indices apply the same methodology against different starting universes: the broad investment grade market and the BBB rated subset. Attractively valued bonds, measured by their excess spread, have historically provided outperformance. The key to finding this value is accurately quantifying risk. Both indices feature a bond selection process that is driven by Moody's Analytics' industry-leading credit model, which is supported by Moody's Analytics' extensive dataset, team of researchers and decades of experience in credit risk modeling.

Adding Credit to Your Core

The MVIS Moody's Analytics US Investment Grade Corporate Bond Index and the MVIS Moody's Analytics US BBB Corporate Bond Index track bonds within the investment grade and BBB-rated universe, respectively, that have the most attractive valuations as selected based on their methodologies. These strategies seek to outperform their broad market benchmarks by only selecting bonds that have the highest excess spread relative to their embedded risk, using inputs from proprietary credit risk metrics developed by Moody's Analytics, representing potential upside. Ultimately, these strategies provide investment grade bond exposure and can therefore fit within a core bond portfolio, providing income potential without adding significant risk.

Many core bond funds are benchmarked to an "aggregate" benchmark that tracks the broad U.S. investment grade bond market. This includes investment grade corporate bonds, but also U.S. Treasuries, Agency bonds, and mortgage-backed and asset-backed securities. Over the past 15 years, as the U.S. government has issued more and more debt, U.S. Treasury bonds have comprised an increasingly larger share. In addition, the effective duration has increased as a result of both declining interest rates and increased issuance of longer dated bonds to take advantage of lower funding costs.



Source: ICE Data Indices, as of 11/18/2020. Core Bonds is represented by the ICE BofA US Broad Index. Sovereign % represents the portion of the ICE BofA US Broad Index that is comprised of U.S. Treasury Securities

This suggests that investors who gain long-term exposure to investment grade bonds through a core bond strategy, perhaps within a typical 60/40 allocation, have a more interest rate sensitive exposure than they did previously. With rates expected to remain extremely low for the foreseeable future, income oriented investors need solutions that provide higher yield potential. Many have looked outside the core for this, adding exposure to asset classes such as high yield bonds, emerging markets bonds, bank loans and even equity income solutions. These can all be attractive solutions, but they incorporate additional risk into an overall portfolio. Many investors may not want this level of risk within the core portion of their bond portfolio, as it is meant to produce income while also preserving capital and acting as a "ballast" against their equity exposure. Within the core, we believe that increasing exposure to investment grade credit may be attractive, but that investors should incorporate value and quality into their selection process rather than gaining exposure through a broad-based strategy. By doing so, investors can maintain an attractive yield within their core bond exposure, without having to go further out on the risk curve. Given the increased rate sensitivity of core bonds over the past 15 years, as evidenced by the higher duration, exposure to credit is also attractive as a diversifier. Credit spreads and interest rates tend to move inversely to one another. Accordingly, we believe a strategy that selects bonds with the most attractive valuations relative to their risk may be well-suited for a core, income-oriented portfolio.

A Value Driven Credit Portfolio

Below we show various bond strategies that could be constructed by incorporating a value-oriented investment grade or BBB-rated bond strategy alongside a core bond exposure. We believe that adding additional corporate exposure to core bonds may be attractive given the higher income potential and the diversifying impact of credit spread exposure. However, as seen below, replacing a portion of broad investment grade exposure with attractively valued bonds with high excess spread can provide additional yield potential. As described earlier, this can be done without adding significant default or downgrade risk in a credit portfolio. The result is exposure to bonds with not only higher absolute yields and spreads, but similar or lower levels of credit risk, representing potential upside. For investors who seek somewhat higher returns and are willing to add additional credit risk into their investment grade exposure, exposure to BBB-rated corporate bonds may be an attractive solution. It is important to keep in mind, however, that as investors move away from the broad investment grade corporate exposure they may have through either a core bonds strategy or a standalone investment, individual issuer exposures may be more concentrated. Also, sector exposures may deviate more significantly from the broad benchmark, which may introduce added volatility and tracking risk relative to the broad benchmark.

	YTW	Spread OAS	Duration	IG Corporate	HY Corporate
Core Bonds	1.14	55	6.31	27	0
50% Core Bonds 50% Broad IG Corporates	1.53	84	7.35	64	0
50 % Core Bonds 50% High Value IG Corporates	1.74	104	6.98	64	0
50 % Core Bonds 35% High Value IG Corporates 15% High Value BBB Corporates	1.77	108	6.93	64	0
50% Core Bonds 25% High Value IG Corporates 25% Fallen Angels HY	2.28	160	6.71	39	25

Source: ICE Data Indices and MVIS as of 9/30/2020. Core Bonds is represented by the ICE BofA US Broad Market Index. Broad IG Corporates is represented by the ICE BofA US Corporate Bond Index. High Value IG Corporates is represented by the MVIS Moody's Analytics US Investment Grade Corporate Bond Index. High Value BBB Corporates is represented by the MVIS Moody's Analytics US BBB Corporate Bond Index. Fallen Angel HY is represented by the ICE US Fallen Angel High Yield 10% Constrained Index

We also illustrate a bond portfolio that includes an allocation to fallen angel high yield bonds. We chose to focus on fallen angel bonds which are bonds originally issued with investment grade ratings and subsequently downgraded—because we believe they provide an attractive complement to the value-oriented investment grade strategies, which also incorporate value and quality into their selection process. With fallen angel high yield bonds, there is an inherent value component because bonds tend to enter the strategy at deep discounts following the forced selling by investment grade investors as they anticipate a ratings downgrade. These bonds have a higher quality credit profile compared to the broad high yield market, with over 93% rated BB compared to 55% in the broad high yield market (as of 9/30/2020). Further, while the fallen angel strategy takes advantage of the lag in credit ratings to gain exposure and the upside potential of deeply discounted bonds, the value oriented investment grade strategies explicitly screen out bonds with the highest levels of downgrade risk in order to potentially avoid the sometimes dramatic price declines associated with downgrades.

An Active Replacement?

We believe the MVIS Moody's Analytics US Investment Grade Corporate Bond Index and the MVIS Moody's Analytics US BBB Corporate Bond Index provide a smart approach to the investment grade bond market through a process that incorporates both value and quality elements. Many active managers also seek outperformance through security selection based on a similar concepts, although we believe the rules-based, quantitative approach using inputs from Moody's Analytics' industry-leading credit risk model may be an attractive alternative. On average, most actively managed investment grade strategies have underperformed the broad market over the past 1, 3, 5, 10 and 15 year periods.²

In addition to the outperformance potential of the strategies described here compared to a broad market exposure, investors may prefer the transparency, low-cost and liquidity that can be accessed through the VanEck Vectors Moody's Analytics IG Corporate Bond ETF (MIG) and the VanEck Vectors Moody's Analytics BBB Corporate Bond ETF (MBBB). MIG seeks to track, before fees and expenses, the price and yield performance of the MVIS Moody's Analytics US Investment Grade Corporate Bond Index while MBBB seeks to track, before fees and expenses, the price and yield performance of the MVIS Moody's Analytics US BBB Corporate Bond Index.

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² Source: Morningstar, as of 9/30/2020.

Appendix: The Moody's Analytics Expected Default Frequency Model

The probability of a bond defaulting is ultimately the primary driver of credit risk, and measuring that probability is the central goal of any credit analysis. However, this is not an easy task for many reasons, including the complexity of corporate balance sheets, lack of timely data, and other exogenous factors that can impact whether a company defaults. Some investors rely on fundamental data to make this assessment, but relying on backwards-looking data that can be impacted by a company's accounting decisions carries its own issues. The Moody's Analytics model is quantitatively driven, and can be described as an "options-pricing based structural credit risk model." This means that the model is predicated on the assumption that an explicit linkage exists between a company's capital structure and the potential for default, and that options-pricing models are used to evaluate that likelihood. The basis for using options-pricing techniques is the concept that a firm's equity can be viewed as a call option on a firm's assets. Accordingly, equity has unlimited upside, but due to limited liability, it cannot be valued at less than zero. In other words, an increase in the market value of a firm's assets in excess of a firm's liabilities (the "strike price") will accrue to equity holders. However if assets cannot satisfy debts, equity holders exercise their option to default and essentially turn over the firm's assets to debt holders.

Assessing the likelihood of equity holders exercising this "option" requires a determination of the market value of a company's assets. For publicly traded firms, only the market value of equity is observable. A firm's assets and liabilities, however, are generally reported at book value rather than the value that would be realized if a firm had to liquidate its assets to cover debt obligations. Investors must therefore not only estimate the market value of assets, but also future values, to estimate the forward-looking probability that assets will be insufficient to cover liabilities.

The Moody's Analytics credit model estimates default risk based on three key drivers: the market value of the firm's assets, asset volatility, and the point at which a company will default. The firm's stock price is the key input to value assets using options-pricing theory. Theoretically, default will occur when the market value of a firm's assets falls to a default point level which is driven by the book value of its liabilities. It incorporates the complexities of a company's balance sheet, including its term structure of debt, types of funding used, and cost of funding to assess the potential of this occurring. This probability depends on the distribution of asset returns, which is driven by asset price volatility. Moody's Analytics uses a combination of both empirical and modeled asset price volatility, as well as a forward-looking adjustment. Ultimately, the Moody's Analytics model determines how far away a company is from defaulting (its "distance to default") and maps that to a probability, which is referred to as the "Expected Default FrequencyTM" (or "EDF"). The EDF can therefore be used as a forward-looking measure of expected default risk.

IMPORTANT DEFINITIONS AND DISCLOSURES

¹ Source: Morningstar, as of 9/30/2020.

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