

Wellesley Asset Management
June 2020 Publication

Convertible Bonds: Strategic Asset Allocation Guide

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Wellesley Asset
Management

Convertible Bond Specialists

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Executive Summary

Given their unique blend of equity and fixed income characteristics, convertible bonds have been a popular asset class among investors seeking improved risk-adjusted returns over traditional stock and bond portfolios. Convertible bonds as an asset class are experiencing a resurgence in popularity as companies seek new sources of financing during COVID-19. Combining both stock and bond features, convertible bonds provide investors with many attractive features including: return of capital (barring default), current income, and the potential for upside appreciation. This is attractive on its own; however, the most attractive characteristic of convertible bonds may be their inherent *asymmetric returns*. A convertible bond may participate in the upside when equity markets are strong, and the underlying equity appreciates. Conversely, during falling or volatile equity markets, convertible bonds tend to behave similar to traditional corporate bonds. This helps to provide an attractive risk/return profile, adding incremental alpha to an investor's portfolio. In this paper, we discuss convertible bonds and how investors can use them to enhance their risk-adjusted returns with diversified portfolios.

I Convertible Bonds: An Overview

Convertible bonds may be seen by some as a relatively new and complex asset class. However, that is hardly the case. Corporate entities have been issuing them for over 100 years, and were commonly used by railroad companies in the 1800s. Today, issuers of convertible bonds range from well-established large-cap companies to small companies seeking lower financing costs.

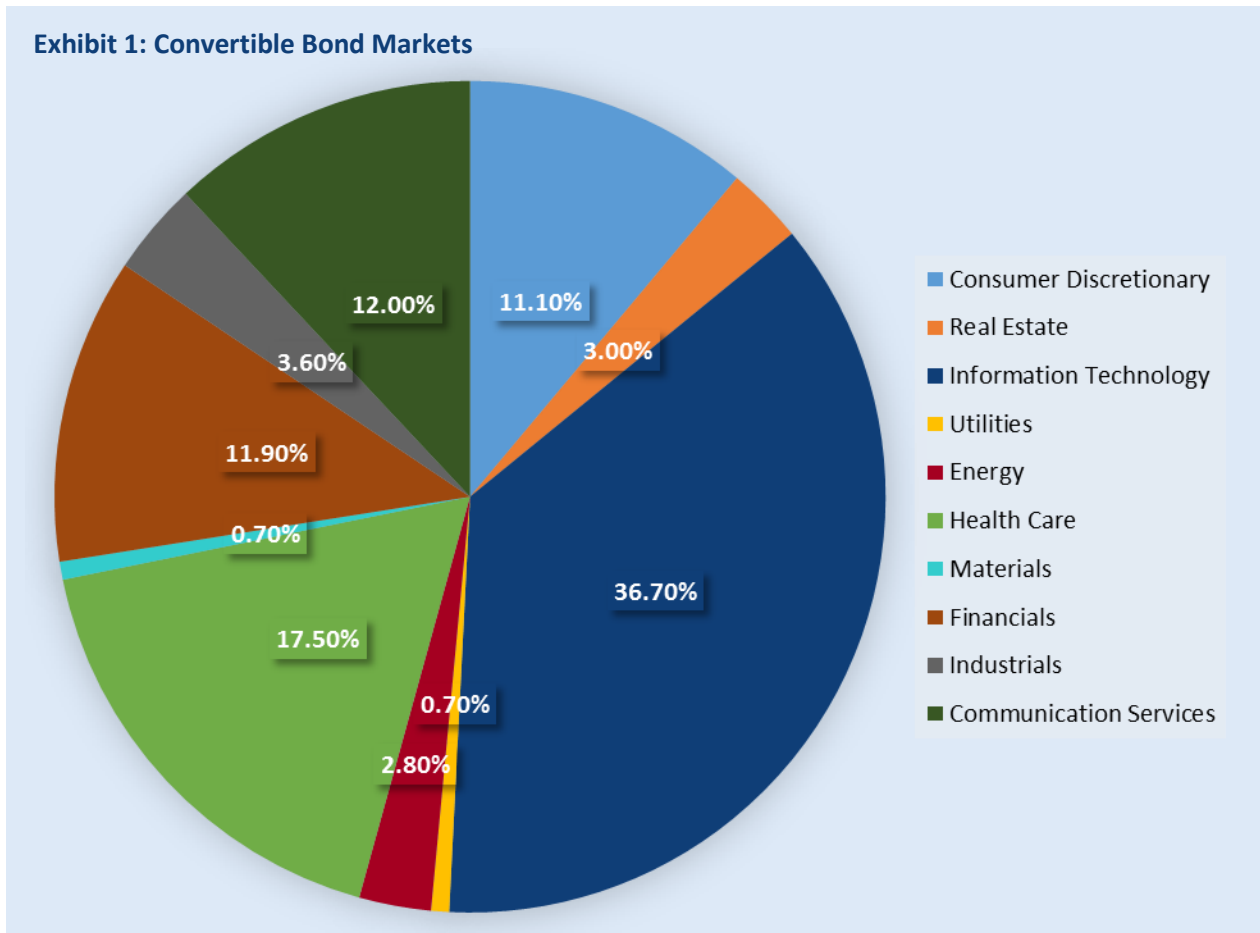
Convertible bonds are traditional bonds that provide repayment of principal, barring default, plus coupon payments. The difference lies in a convertible bond's ability to participate in the appreciation of the issuing company's stock. This is via the embedded call option on the company's stock and is represented by the premium of the convertible bond. To account for potential stock upside, the coupon of the bond is typically lower than its corporate bond counterpart. There are two other features that differentiate convertible bonds: the conversion ratio and often an imbedded put option.

The conversion ratio is determined at the time of issue. It denotes the number of shares of stock for which the bond can be exchanged. For example, a bond issued to investors with a conversion ratio of 50 means that the investor can exchange the bond for 50 shares of the issuing company's underlying stock. This implies that the stock price must reach \$20 per share ($\$1000 \text{ par value of the bond} / 50 = \20 per share) before a holder would consider converting. Importantly, as the stock price reaches the breakeven point of \$20, the bond begins to trade in a more equity-like fashion. This is referred to as the delta of the underlying bond; the greater the delta, the more similar the bond will most likely trade in lock step with the stock. From this basic example, you can see that a convertible bond offers investors a potentially attractive risk/return profile.

The second feature mentioned earlier that is common for longer term convertible bonds is the put feature. This feature provides the investor with the opportunity to sell the bond back to the issuer at par. It essentially provides additional certainty for the investor to receive their money back if there is any concern that the issuer will not be able to make payment or simply if the investor wants to invest in more attractive opportunities.

The Market Environment

The U.S. convertible bond market is valued at more than \$220B as of June 2020. The market provides a diverse opportunity set for investors, but generally has a tilt towards growth-oriented companies, such as the technology sector.



The dynamics of all asset classes change over time due to market conditions, issuance trends and investor sentiment. The convertible market is no different. Of late, issuance has been very strong and diverse, with new issuers coming to market seeking to pay down debt and raise additional cash to have on hand. Year to date, the convert market has witnessed over \$51 billion in new issuance, over double last year's level at this time and the highest amount since 2008.

Our investment universe is not solely dictated by a company's convertible issuance. We can also build what is called a "synthetic convertible." While this may sound complex, it is rather simple and provides numerous advantages for investors. A synthetic convertible is constructed by purchasing the underlying bond plus a call option on the underlying stock. This allows us to invest in a convertible that may not be available within the market. For instance, we have worked with banks to create synthetic convertibles for larger cap names such as Amazon, Google, Apple and Bristol Myers Squibb. These are companies that have not historically issued convertibles, but provide the opportunity for both upside appreciation in the stock and limited downside.

II Digging A Little Deeper: Why Should Investors Consider Convertible Bonds?

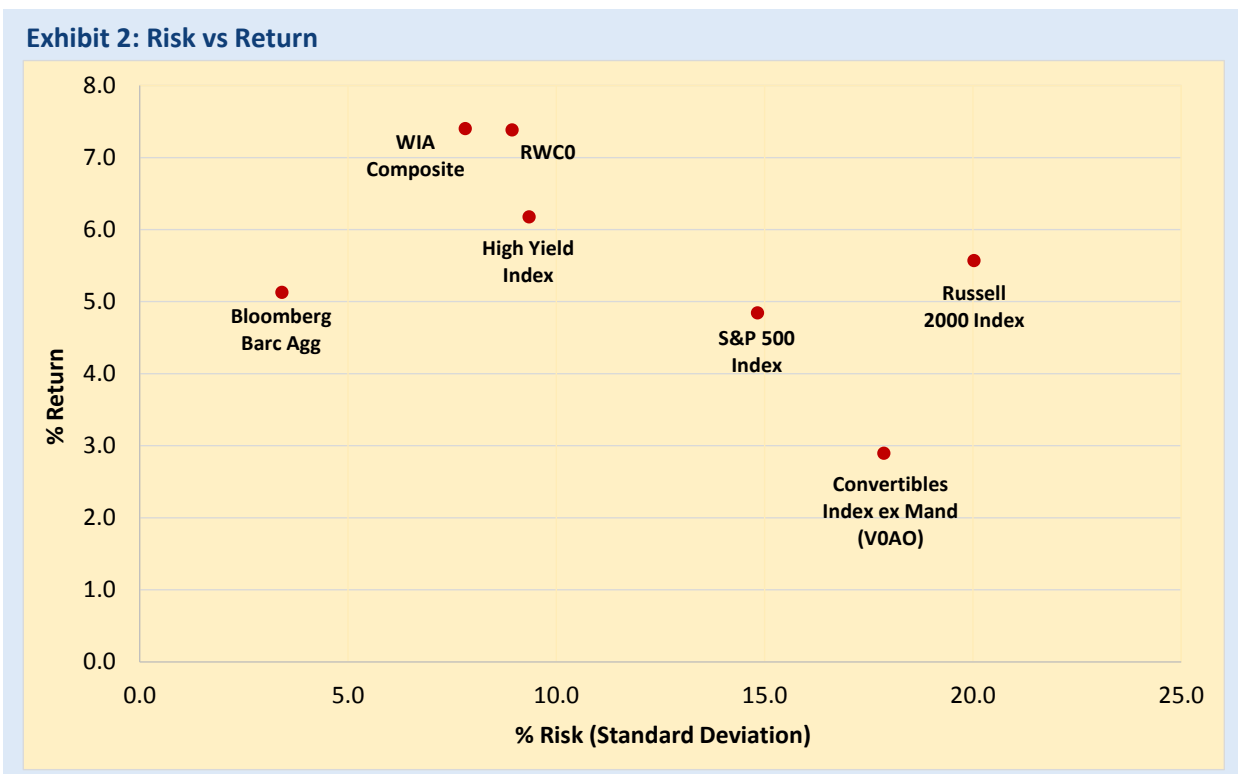
Asymmetric Returns

As we have discussed, convertible bonds are a unique investment option, containing the attributes of both stocks and bonds. These features can result in an attractive *asymmetric return profile*. Typically, a diversified portfolio of properly chosen balanced convertible bonds will historically participate in some of the upside of a rising equity market. Conversely, when equity markets fall a convertible investor will historically participate in a smaller percentage of the downside. While the exact up and down market capture varies based on the profile, historically over a full market cycle, this profile will participate in 50-60% of the upside and 30-40% of the downside.

The capture feature of convertible bonds is compelling for investors that seek to avoid large losses during market downturns. Simple math tells us that it is more costly to lose money because a greater percentage needs to be made in the future to make up for that loss. A “real world” instance of this can be understood by the historic movement in the S&P 500 Index, which fell 36.1% from October 2007 to February 2009 and did not recover until March 2012. More specifically, we have analyzed the data and are able to show that sacrificing returns in up markets for downside protection benefits investors over full market cycles. For example, over the past 20 years from January 2000 to December 2019, if an investor realized 60% of the S&P 500 upside and 40% of the downside, their return would have been 7.2%. This compares to a return of 5.4% for investing simply in the S&P 500 and 5.3% investing in a balanced 60/40 portfolio of the S&P 500 and the Bloomberg Barclays Aggregate Bond Index.

Better Risk Adjusted Returns

Convertible bonds also historically offer investors the benefit of long-term total returns in line with equities and high yield bonds, but lower levels of volatility. Exhibit 2 below tracks the risk and return performance of various popular indexes from January 1, 2000 through December 31, 2019.



Active Management and the Different Styles of Managing Convertible Bonds

We have established that convertible bonds offer investors a unique risk/return profile which has historically generated attractive absolute and risk-adjusted returns. There are three basic types of convertible bonds: *balanced convertibles*, *busted convertibles* and *equity-like convertibles*.

- **Balanced convertible bonds** trade near par value and therefore offer the investor the aforementioned asymmetric return profile. If the underlying equity appreciates and the conversion value exceeds par, then the investor will participate in the equity appreciation. If the underlying equity does not appreciate, the investor is holding a corporate bond and collecting interest.
- **Busted convertible bonds** have fallen far below par value, most likely due to concerns around the issuer's creditworthiness or the convertible bond's low conversion value. Busted convertibles can offer investors a larger yield, assuming the issuer does not default. However, participation in the equity upside – a key reason for investing in convertible bonds – is unlikely.
- **Equity-like convertible bonds** are trading far above par value because the underlying equity has appreciated significantly. However, it is important to note that this bond is now trading in lockstep with the underlying equity, and the investor is now susceptible to an equity market correction. In essence, the potential downside protection offered by convertible bonds has been forfeited.

Given these three basic approaches to managing convertible bonds, we believe that the evidence shows that a balanced approach results in superior long-term absolute and risk-adjusted returns. This is largely because balanced convertible portfolios adjust with market conditions, historically reducing the investor's downside risk.

Specialized Managers

Given the complexity of convertibles, we believe that specialized active management is the best way to gain exposure to this asset class. Unconstrained managers by definition are not committed to convertibles (or any other asset class for that matter) and may be attempting to time their entries in and out of various markets. Historical analysis has shown that this type of tactical asset allocation is not successful in many cases.

III How Do Investors Use Convertible Bonds?

Being a hybrid security, convertible bonds are flexible instruments which can be used in a variety of ways by investors. In fixed income portfolios, they can be an excellent source of alpha that may be substituted for an asset class such as high yield, floating rate, or an unconstrained bond fund. In equity portfolios, they provide diversification and the potential for downside protection versus traditional U.S. equity allocations.

Fixed Income Allocations – Alpha and Diversification

It is no secret that fixed income investors have struggled to find sources of return within the asset class and have increasingly turned to various strategies for incremental yield. Convertible bonds can be an alternative for these investors. Most fixed income investors within diversified portfolios utilize a variety of allocations including traditional core fixed income, high yield, credit focused, low duration, emerging market bonds, etc. Substituting these allocations for convertibles or adding an allocation can increase returns and decrease risk, improving Sharpe ratios. This is due to the historically low correlation with other types of fixed income securities. Given the current low interest rate environment and economic conditions, convertibles may allow fixed income investors to improve their risk/reward, while lowering the duration of portfolios. Since bonds tend to lose value during rising interest rates, convertibles may offer some protection. This is because while the bonds are influenced by interest rate movements, they are also affected by the price movements of the underlying stock. This has historically helped lessen the negative effect of rising interest rates.

RISING INTEREST RATE COMPARISON

	Yield Increase	BBgBarc US Agg Bond TR USD	Wellesley Investment Advisors SA
1/18/1996 TO 6/12/1996	150	-3.40	5.48
10/5/1998 TO 1/21/2000	263	-1.33	22.98
11/7/2001 TO 4/1/2002	122	-2.07	10.26
6/13/2003 TO 6/14/2004	176	-2.16	7.35
6/1/2005 TO 6/28/2006	134	-0.80	8.43
12/18/2008 TO 6/10/2009	190	0.27	24.46
10/6/2010 TO 2/8/2011	134	-2.67	7.63
7/25/2012 TO 12/27/2013	159	-1.27	15.32
7/5/2016 TO 12/18/2016	123	-3.81	6.78

Equity Allocations – Lower Volatility Returns

Convertibles may provide long-term returns more in line with many equity indexes, with lower levels of volatility. This results in more attractive risk-adjusted returns and a more efficient profile for those investors concerned about equity volatility risk. Many investors may be concerned about equity volatility risk if they are more cautious about the asset class, following an eleven-year plus bull market. Additionally, many investors have found it difficult to rebalance portfolios by taking assets from appreciating equities and moving them into poorly performing fixed income investments, resulting in an over-allocation to equities which may require some adjustments.

The advantages of convertibles in an equity allocation are the potential for: better risk-adjusted returns, current income, and a known timeframe for the return of principal, barring default.

Exhibit 3: Sharpe Ratio¹ of Selected Equity and Bond Indexes Over the Past Twenty Years

Equity Index	Return	Std Dev	Sharpe Ratio
S&P 500	4.85%	14.83%	0.28
Russell 2000	5.57%	20.03%	0.29
Convertible Index	Return	Std Dev	Sharpe Ratio
VOA0	2.90%	17.87%	0.16
RWC0	7.38%	8.94%	0.65
High Yield Index	Return	Std Dev	Sharpe Ratio
H0A0	6.18%	9.35%	0.50

¹Returns and standard deviation data are annualized for the period Jan. 1, 2000 – March 31, 2020. Sharpe ratio is a commonly used method to calculate risk-adjusted performance of a stock portfolio. The ratio determines whether a portfolio's profit can be attributed to correct thinking or high risk. The higher the ratio, the better the portfolio has performed after being adjusted for risk. The equation is Sharpe Ratio = (Fund return - risk free return)/ standard deviation. For this exercise we use the average T-Bill rate for the time period examined as the risk-free rate, which is 167 bps.

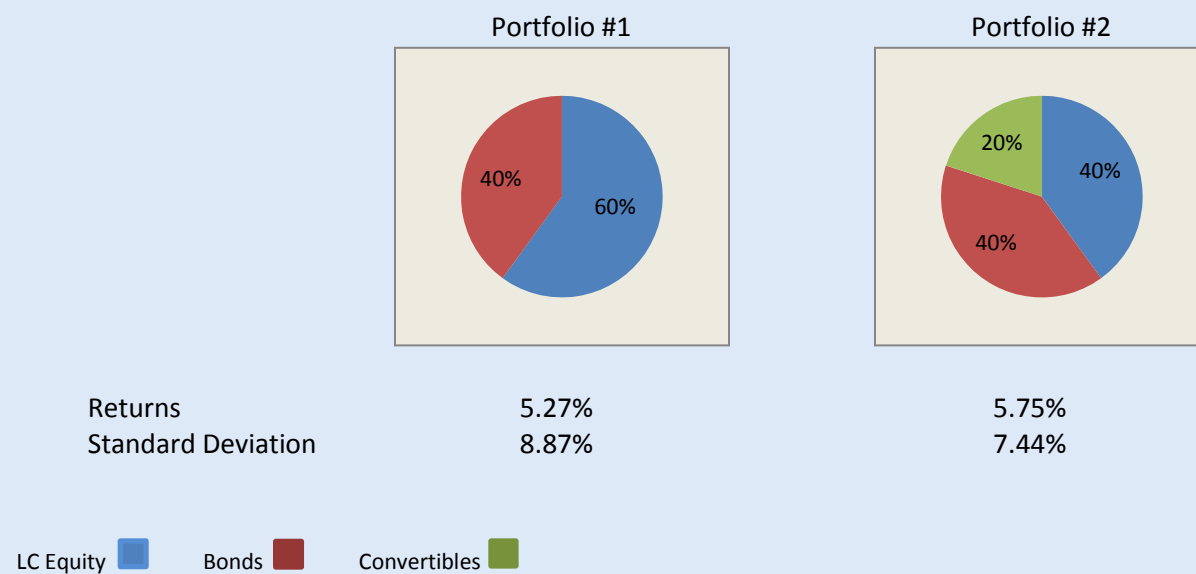
The above graphic provides an illustration of a few asset classes and their relative performance over the past 20 years. Returns, standard deviation (risk) and the Sharpe Ratio for each asset class are depicted. As you may expect, investing exclusively in the S&P 500 or Russell 2000 indices yield a relatively low Sharpe Ratio. One may be actually surprised to see, over this period, the returns for the U.S. markets in general, were actually quite low, yielding less than 6% for both asset classes. When turning to convertibles, the first index shown in the VOA0. This is the broad universe for convertible bonds excluding mandatories and preferred securities. The index is market-capitalization weighted, thus weighting the largest issuers the highest and does not take into account the balance sheet, income statement or any features of the company. The next convertible index shown, the RWC0 is the Refinitiv Wellesley Convertible Index. This is a representation of our strategy, focusing on companies with reasonable levels of debt and positive earnings. As you can see, the return and Sharpe Ratio for the RWC0 is the highest out of all the selected equity and bond indexes. In our view, over the long term, the quality of the company is important for investors and combined with the potential for strong downside protection, our strategy provides investors with both stock and bond characteristics.

IV How Convertibles Can Help Enhance Portfolio Efficiency

First off, let’s define how to create an “efficient” portfolio. An efficient portfolio is one that is on the efficient frontier, meaning that for its given level of risk, it offers the highest level of return. Investors should only select portfolios that are on the efficient frontier, as selecting a portfolio that offers a lower level of return for the same level of risk as another investment would not be rational. The following illustrations show how an allocation to convertible bonds can increase portfolio

efficiency and help investors achieve long-term investment goals. The first portfolio is the classic “60/40” portfolio of stocks and investment grade bonds, represented by the S&P 500 and the Bloomberg Barclays Aggregate Bond Indexes. The second portfolio is a 40/40/20 portfolio of stocks, bonds, and 20% allocated to convertible bonds via the RWCO Index. Reduced volatility, better returns, and improved portfolio efficiency are all achieved in this example by making a minor allocation to convertible bonds.

Exhibit 4: Moderate Growth Portfolios² (January 1, 2000 – March 31, 2020)

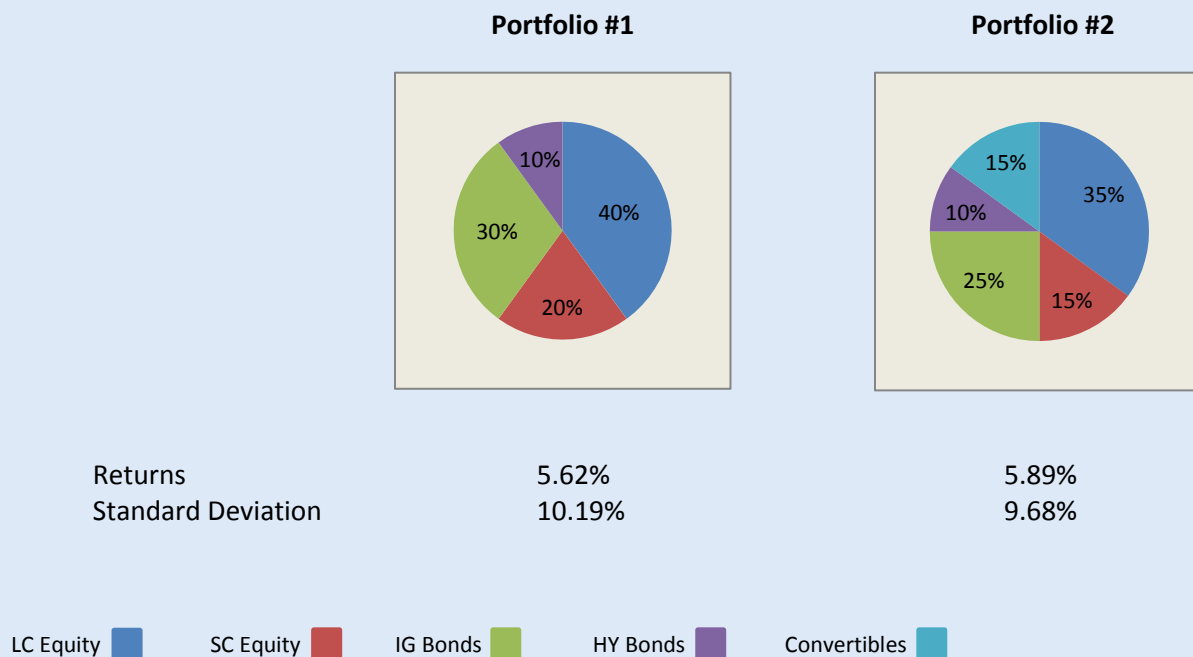


²Assumes trailing annualized returns and standard deviation for the time period Jan. 1, 2000 – March 31, 2020. Indexes used to calculate this exhibit results include: Large Cap Equity: S&P 500 Index TR, Bonds: Bloomberg Barclays Agg. Bond Index, Convertibles: RWCO

In the Exhibit 4 example, adding a convertible bond strategy into the allocation resulted in a 9% increase in return while risk fell. This is a relatively simplistic example, so let’s take a look at a more diverse portfolio containing small cap equity exposure plus an allocation to high yield bonds.

As we can see in the Exhibit 5 example on the following page, adding in small cap equity and high yield exposure did in fact improve the rate of Portfolio #1’s return over time, along with an (expected) increase in the volatility risk. We then added in a 15% allocation to convertible bonds, reducing the investment grade fixed income, large cap equity, and small cap equity allocations to make room. The addition of convertibles to Portfolio #2 resulted in a higher total return along with a decrease in the risk. Again, the addition of the balanced convertible allocation resulted in a more efficient portfolio.

Exhibit 5: Aggressive Growth Portfolios³ (January 1, 2000 – March 31, 2020)



³Assumes trailing annualized returns and standard deviation for the time period Jan. 1, 2000 – March 31, 2020. Indexes used to calculate this exhibit results include: Large Cap Equity: S&P 500 Index TR, Small Cap Equity: Russell 2000 Index TR, Investment Grade Bonds: Bloomberg Barclays Agg. Bond Index, Convertibles: RWCO, High Yield Bonds: ICE BofA US High Yield TR USD

V Conclusion

Convertible bonds are a hybrid security that can offer investors an attractive tool when seeking to optimize risk-adjusted returns. Convertibles historically over full market cycles have provided returns in excess of some fixed income and equity indexes; and on a risk-adjusted basis, the relative returns may be even more impressive.

Importantly, convertibles are an asset class which can be used in a variety of market conditions. We have noted that active management can be used to enhance the returns of convertible bonds. We believe that convertibles offer the best risk/return profile, when managed as a balanced portfolio, by avoiding the dual “tails” of extreme equity-like characteristics at one end of the spectrum, and distressed credit qualities on the other.

Legal Disclosures

Past performance is no guarantee of future results.

This presentation is meant for broad discussion purposes only, and is not intended as a recommendation to buy or sell any security. The information presented herein has been developed internally and/or obtained from sources believed to be reliable; however, Wellesley Asset Management does not guarantee the accuracy, adequacy, or completeness of such information.

No representation is made that the investor will obtain similar results to those shown. The performance presented may not be representative of investments held in any one client account or performance realized in any one client account. An investor's actual performance may differ from the performance presented due to timing of investment, contributions and withdrawals. Performance does not reflect the effects of taxation, which result in lower returns to taxable investors.

Convertible bonds, like all fixed income securities, are subject to increased loss of principal during periods of rising interest rates and are subject to various other risks including changes in credit quality, market valuations, liquidity, prepayments, early redemption, corporate events, tax ramifications and other factors. Lower-rated securities are subject to greater credit risk, default risk, and liquidity risk. Convertible bonds will fluctuate in value with the price changes of the company's underlying stock. Before purchasing convertible bonds, investors should carefully review the bond prospectus and consult with a financial advisor who has experience in investing in and trading convertible bonds. Individual convertible bonds should be purchased based on risk tolerance, time horizons and other factors in concert with an investment professional.

Notes on the Indexes Referenced in this Paper

The Refinitiv Wellesley Convertibles Index ("RWCO") is a joint venture between Refinitiv and Wellesley Asset Management, Inc. ("WAM"). RWCO is intended to represent a strategy with the goals of absolute returns and outperforming both equities and fixed income over complete market cycles deploying convertible bonds. There can be no assurance that RWCO will achieve its goals. WAM has discretion over the selection of index constituents and their weighting in the index. The S&P 500 Total Return Index is a cap-weighted index of 500 common stocks regarded as a leading proxy for the US stock market; the Bank of America / Merrill Lynch V0A0 Index represents all US convertibles, excluding mandatory convertibles, small issues and bankruptcies. The Bloomberg Barclays Aggregate Bond Index represents most investment grade bonds traded in the United States. The Bank of America / Merrill Lynch H0A0 represents most US High Yield Bonds. Index returns assume reinvestment of all distributions and do not reflect the effect of fees, transaction costs or taxes. A direct investment in an index is not possible.

Footnotes Pertaining to Exhibit 2

Returns are for trailing annualized performance for the period January 1, 2000 – March 31, 2020. Standard deviation data is annualized for the period Jan. 1, 2000 – March 31, 2020. Equity performance is based on the S&P 500 Total Return Index and the Russell 2000 Index (SPX and R2000, respectively). Balanced Convertibles are measured by the Refinitiv Wellesley (RWCO) Index. High Yield bonds are measured by the Bank of America / Merrill Lynch H0A0 Index. Investment grade bond performance is measured by the Bloomberg Barclays Aggregate Bond Index. Please see additional information regarding indexes used in the Notes section at the end of this paper.



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