Quadrant
A Quarterly Update

WINDHAVEN
INVESTMENT MANAGEMENT

When Defense is the Best Offense

January 2019

Key Points:

1. Analyzing credit (bond) markets and the cost of capital can provide important insights when gauging economic fundamentals and determining portfolio positioning.

2. Windhaven's research continues to suggest an uncertain environment ahead as macroeconomic data and market sentiment remains mixed.

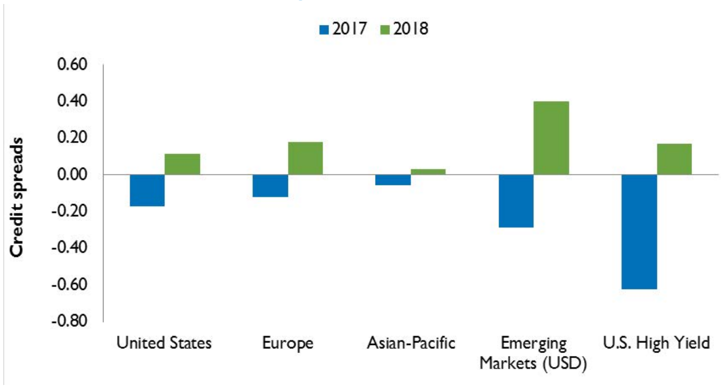
3. Entering 2019, the Windhaven Strategies are tilted more toward protection than participation, meaning we are conservatively positioned.

Credit where credit is due

Our research suggests that analyzing credit (bond) markets and the cost of capital can provide important insights when gauging economic fundamentals and determining portfolio positioning. The interest rate at which private sector corporations are able to borrow or issue debt is priced as a "credit spread" over less risky government-issued debt. The more compensation lenders demand to lend their money (higher credit spread), the greater the risk they perceive in the economy, and vice versa. Importantly, the rate of change in credit spreads, not just their level, can provide valuable guidance when deciding whether to participate in the potential market upside or protect from potential market downside.

In last quarter's Quadrant, we discussed how the global economy enjoyed a synchronized expansion in 2017. In that environment, investors were keen to participate in equity and credit markets, leading to a reduction of credit spreads. The global expansion continued into 2018, but the synchronization began to weaken. The United States continued to grow during 2018, while the rest of the world slowed amid U.S. Federal Reserve tightening and the threat of trade wars. Those factors drove a repricing of credit risk, with credit spreads taking a turn in the other direction as investors started demanding more compensation for the perceived risks across the global economy (fig 1).

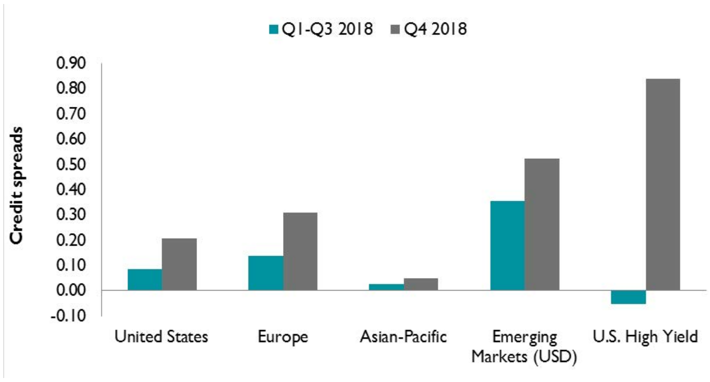
Fig 1: Average 6-month change in credit spreads in 2017 compared to 2018 | Source: Bloomberg 12.31.2018



Looking ahead

The change in credit spreads in 2018 was particularly marked in emerging markets and Europe, which was one of the factors leading the Windhaven Strategies to shift away from international and emerging market equities. Over the past quarter, as markets experienced heightened volatility, credit spreads have continued to widen although the bulk of the widening took place in the U.S. high yield market (fig 2). A combination of increasing risk signaled by the credit markets and deteriorating credit conditions, mostly in the United States, has led us to shift toward a more defensive posture. Over the past quarter we reduced our holdings in U.S. higher-yielding credit and equities.

Fig 2: Average 6-month change in credit spreads in 2018
Source: Bloomberg 12.31.2018



As we look ahead at 2019, our research continues to suggest an uncertain environment as macroeconomic data and market sentiment remain mixed, and the potential risk for the United States to join the fray of slowing economies looms. Additional concerns include policy uncertainty related to trade, as well as future central bank policies in the United States and across the globe.

As always, we maintain our discipline and continue to stay true to our research process of actively seeking to participate in opportunities, while proactively managing risk and striving to protect against large losses.

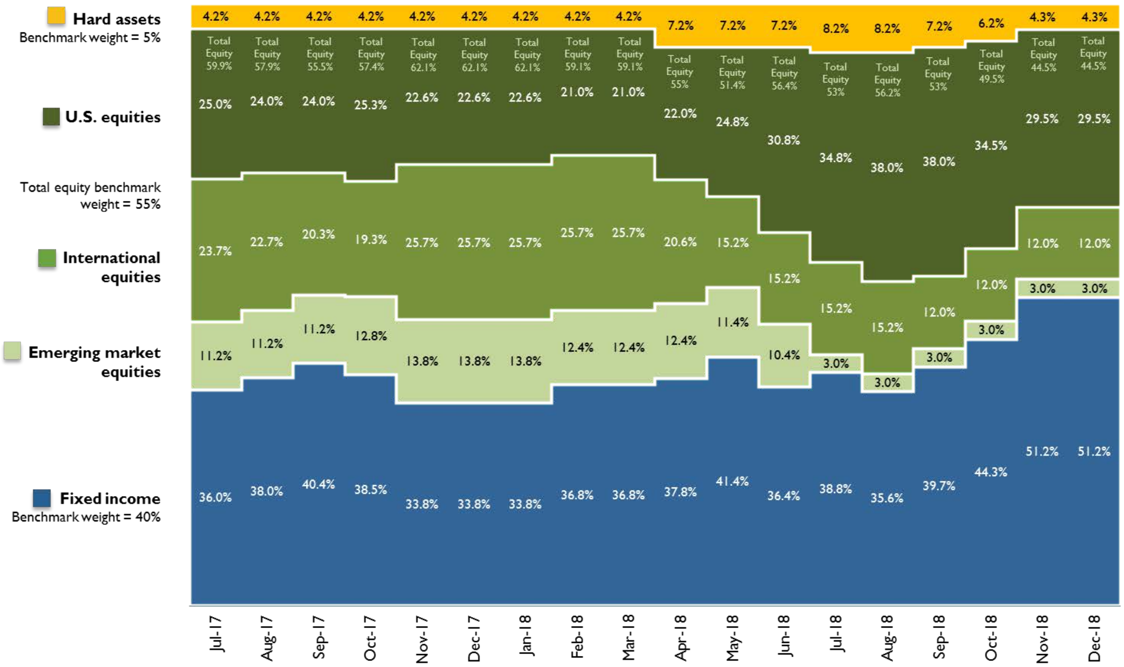
Positioning

The end of the global synchronized recovery in late 2017 and early 2018 led to fairly substantial changes in the positioning of the Windhaven Strategies during 2018, including the fourth quarter. At the beginning of the year, all three strategies were at or near their highest allocation to equities since 2002. This reflected both our bullish view of global equities by our research process and a largely muted outlook for other asset classes, including fixed income, hard assets, and real estate. Also notable was the change in composition of the equity allocation: at the start of 2018, both the Diversified Growth and Diversified Aggressive strategies had nearly two-thirds of their allocation to equities in international equities. Diversified Conservative, which as the name suggests, tends to have a much smaller overall allocation to equities, had a bit more than half of its equity allocation in international equities. Throughout 2018, the overarching theme was quite clear, as figure 3 on the following page depicts: the reduction of the overall equity allocation and the shift away from international towards U.S. equities, and the increase in our fixed income exposure.

As the fourth quarter of 2018 began, all three strategies held minimal allocations to international equities. Our research continued to suggest that the slowing global environment would prove challenging for risk assets, leading to the reductions in our holdings of U.S. equities and commodities. Another important

Fig 3: Diversified Growth Strategy 18-month changes

Model allocations as of the end of each month



aspect to both our fourth quarter and full year trading was a fairly dramatic reduction in credit risk and interest rate sensitivity, a measure known as duration, in the fixed income portion of all three strategies. As our exposure to fixed income grew throughout the year, the holdings with more credit risk and longer maturities were sold in favor of less risky, shorter-term bonds. In the case of the moderate-risk Diversified Growth strategy, duration of the fixed income component of the portfolio was reduced by nearly 20%, from 6.7 years to 4.4 years. The Diversified Conservative strategy saw a similar reduction, while the Diversified Aggressive strategy was cut nearly in half, from 8.1 years to 4.1 years.

As we exit the first negative year for the S&P 500 Index since the 2008 Financial Crisis and 2019 begins, the Windhaven Strategies are tilted more toward protection; all three are well below benchmark in their equity allocations, and well above in bonds. However, we stand ready to adjust that positioning as the environment changes and our research indicates adding or further reducing risk.

We appreciate your investment in the Windhaven Strategies. Please contact your Investment Professional if your investment objectives or circumstances have changed such that a review of your Windhaven Strategy account(s) might be necessary, or if you have any specific questions about how your account is managed. We value the trust our clients have placed in us, and we are passionate about the Windhaven Strategies and the role they play in helping each of you reach your investment goals.

-The Windhaven Portfolio Management Team

Important Notes and Disclosures:
Portfolio Management for the Windhaven Strategies is provided by Windhaven Investment Management ("Windhaven"), a division of Charles Schwab Investment Advisory, Inc. ("CSIA"). CSIA is a registered investment adviser and an affiliate of Charles Schwab & Co, Inc. ("Schwab"). Both CSIA and Schwab are separate entities and subsidiaries of The Charles Schwab Corporation.

The information provided herein is for general informational purposes only and should not be considered an individualized recommendation or personalized investment advice. The investment strategies mentioned here may not be suitable for everyone. Each investor needs to review an investment strategy for his or her own particular situation before making any investment decision.

All expressions of opinion are subject to change without notice in reaction to shifting market conditions. Data contained herein from third party providers is obtained from what are considered reliable sources. However, its accuracy, completeness or reliability cannot be guaranteed and CSIA expressly disclaims any liability, including incidental or consequential damages, arising from errors or omissions in this publication.

Asset classes and the proportional weightings in the strategies may change at any time without notice subject to the discretion of the Windhaven Portfolio Management Team.

Indexes shown in the charts throughout are unmanaged, do not incur fees or expenses, and cannot be invested in directly.

Past performance is no guarantee of future results.

Diversified Growth Strategy 18 Month Changes: Model allocations shown are as of the end of each month. Allocations do not necessarily reflect our current investment views and should not be used as the basis for investment decisions. Holdings of individual client portfolios may differ, sometimes significantly, from those shown in the mode allocation chart. Cash positions whether in US dollars or other currency are included in the relevant fixed income section. Hard Assets are physical assets and include exposure to gold, commodities and energy.

The following Global benchmarks for each Windhaven strategy are:
Global Conservative is composed of 20% MSCI All-Country World Index (ACWI), 75% Bloomberg Barclays US Aggregate Bond Index, and 5% S&P GSCI Total Return Index (GSCI), rebalanced monthly.
Global Growth is composed of 55% MSCI ACWI, 40% Bloomberg Barclays US Aggregate Bond Index, and 5% S&P GSCI, rebalanced monthly.
Global Aggressive is composed of 70% MSCI ACWI, 20% FTSE World Government Bond Index (WGBI), and 10% S&P GSCI, rebalanced monthly.

International investments may involve additional risks, which could include differences in financial accounting standards, currency fluctuations, political instability, foreign taxes and regulations, and the potential for illiquid markets. Investing in emerging markets may accentuate these risks.

Fixed income securities are subject to increased loss of principal during periods of rising interest rates. Fixed income investments are subject to various other risks including changes in credit quality, market valuations, liquidity, prepayments, early redemption, corporate events, tax ramifications and other factors.

Hard assets can be significantly affected by commodity prices, world events, import controls, worldwide competition, government regulations, and economic conditions.

Windhaven's risk management process includes an effort to monitor and manage risk, but should not be confused with and does not imply low risk or the ability to control risk.

Please refer to the Windhaven Strategies Disclosure Brochure for additional information.

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