



UNCONSTRAINED FIXED INCOME IS THERE A BETTER WAY?

KRIS KOWAL, PHD, CFA, MANAGING DIRECTOR, FIXED INCOME INVESTMENTS
MARK FOUST, SENIOR PORTFOLIO ADVISOR

Unconstrained bond products have emerged as the strategy “du jour” over the past several years as investors attempt to insulate their fixed income portfolios from rising interest rates. These products have risen in popularity as they typically help mitigate interest rate risk and provide return potential, but at what expense? Higher returns come at a cost.

Allocations to higher yielding and higher returning strategies like high yield, emerging markets debt, and bank loans often entail higher equity-like risk, increased currency risk, and reduced liquidity. An unconstrained approach to these strategies may jeopardize downside protection and expose the portfolio to potentially significant capital losses in periods of high volatility.

An unconstrained approach to higher yielding, higher returning strategies may jeopardize downside protection.

To view our latest research papers and publications, please visit us online:
<http://dupontcapital.com/insights/>

We suggest there is a more prudent approach to building a fixed income strategy designed to generate higher returns. While we see significant value in higher risk fixed income strategies, we believe they should be approached in an opportunistic and risk efficient manner. In the following paper, we would like to present:

- ❖ Current challenges in the fixed income markets.
- ❖ Understanding risk and the real threat to a fixed income portfolio.
- ❖ The drivers of return for fixed income investments.
- ❖ The framework we have used in seeking to build a risk efficient portfolio.

A CHALLENGING LANDSCAPE

To begin our discussion, let's first define the objective of a fixed income allocation. Normally, a fixed income allocation serves the dual purpose of providing downside protection within a broader portfolio, while offering the potential for excess returns. Many fixed income portfolios, particularly within pension plans, allocate to core strategies composed of higher grade securities to provide a stable source of capital for future liabilities and to protect the portfolio in periods of higher volatility. Since a flight-to-quality is common during periods of high volatility, these assets will normally appreciate when higher risk assets are falling. Much smaller allocations may be made to riskier strategies such as high yield, emerging markets debt, bank loans, and private credit, to generate additional returns.

In a perfect world, providing downside protection with upside potential would be relatively easy to achieve. However, investors today are challenged with a complicated financial landscape. Interest rates in most developed countries are at historic lows and return expectations have fallen. At the same time, investors have been thrust into a rising rate environment after the Federal Reserve's recent rate hike in December, the first increase in nearly ten years. This environment has left investors struggling to meet return targets while simultaneously trying to shield their fixed income portfolio from the effect of rising rates.

Cue the rise of the unconstrained bond fund. Unconstrained strategies are typically managed to generate returns and commonly focus on reducing interest rate sensitivity. With few constraints, the manager is able to quickly shift among asset classes to invest in the most attractive investment opportunities. The allure of these strategies is understandable given an absolute return objective and investor concerns about the negative effect of rising rates. However, as mentioned previously, higher returns come at a cost. Within an unconstrained strategy, the investor may be merely exchanging one type of risk for others, specifically liquidity risk and equity risk. As a result, the investor could potentially be increasing the downside risk of their portfolio.

Today's investor often struggles to meet inflation adjusted return targets in the face of historically low interest rates and lackluster returns.



UNDERSTANDING RISK

Why is downside risk such an important consideration? Periods of underperformance increase the probability a portfolio's assets will be unable to support future liabilities. Temporary underperformance caused by market volatility is locked-in when payments are made. Such payments may be due to anything from pension obligations to required distributions from a foundation. As capital is lost, the required rate of return increases, creating additional pressure for the portfolio to perform. To illustrate this point, consider the following example:

A pension fund's sustainability can be threatened by near-term underperformance, or even moderate underperformance over a longer time period.

An investor starts with \$100 in assets to support an annual payment of \$10. This payment liability translates to a 10% required rate of return. The scenarios below illustrate how a capital loss changes the required rate of return needed to meet future payments.

Scenario I

If the assets return 10%, we pay out \$10, and \$100 in assets remain in the portfolio. The required rate of return needed to support future payments remains at 10%.

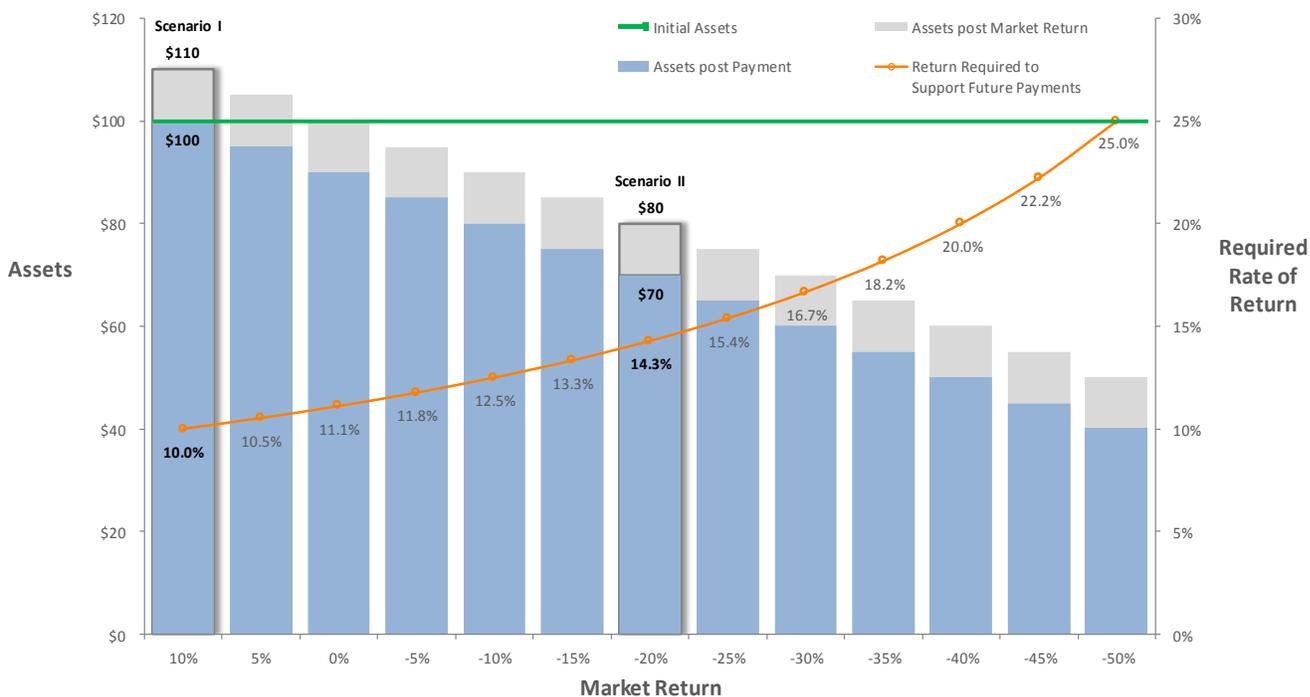
Scenario II

If the assets decline by -20%, only \$70 in assets remain in the portfolio after the \$10 payment. The required rate of return increases to 14.3%. As such a return is unlikely without taking on a significant amount of risk, assets will most likely have to be liquidated to meet future payments.

When assets are liquidated to meet payments, underperformance is locked-in as a permanent loss. Thus, a pension fund's sustainability can be threatened by near-term underperformance, or even moderate underperformance over a longer time period, due to the risk to the underlying assets.

Given the above scenario, we suggest the real risk for a fixed income portfolio is the possibility of permanent losses. Realizing losses puts greater and greater pressure on the portfolio to perform as the required rate of return is pushed higher.

EXHIBIT 1



Source: DuPont Capital

DRIVERS OF RETURN

The stark reality is that there are only two ways to improve return potential: assume more risk or take risk more efficiently. Assuming more risk may increase return potential, but it also increases downside exposure. A more risk efficient portfolio, on the other hand, seeks only those risks that are likely to provide appropriate compensation. Too often, investors drive their decisions based on their return objective, but fail to quantify their risk appetite.

But how do we quantify risk appropriately? Investors commonly analyze the historical volatility of an asset to measure risk. However, volatility does not drive losses as its very definition implies an asset will eventually revert back to its mean price. While investors may not like volatility, they can typically ride it out.

We believe a more effective approach is to analyze an asset's underlying drivers of return. Fixed income returns are driven by some combination of the following risk factors:

- ❖ Interest rate risk
- ❖ Economic growth risk (equity risk)
- ❖ Liquidity risk
- ❖ Emerging markets risks
- ❖ Currency risk
- ❖ Sector and industry risk
- ❖ Issuer specific risk

Investors commonly understand there are some risks inherent to an asset class. For example, High Yield is generally known to be exposed to equity risk. But in addition to equity risk, high yield assets are typically influenced by issuer specific risk, liquidity risk, and sector risk as well.

A risk efficient portfolio only seeks those risks that are likely to provide appropriate compensation.



During the asset allocation process, it is critical to identify and quantify the components of risk for each asset class. Managers may correctly account for some risks, but if the remaining factors are incorrectly accounted for or ignored, the portfolio may not perform as intended.

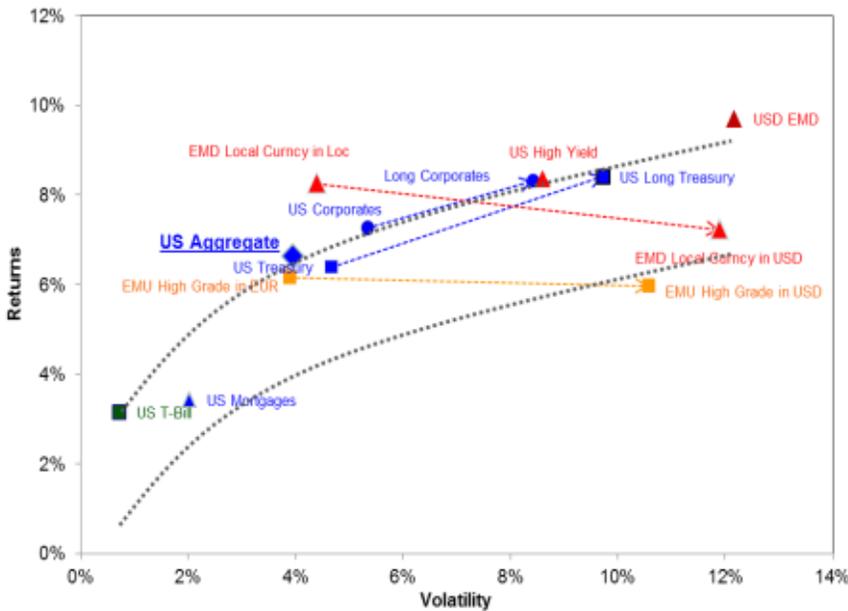
For example, introducing non-domestic investments into a portfolio can significantly increase exposure to currency risk. As seen in Exhibit 3, both developed markets debt in Euros and Emerging Markets Debt in local currency appear to have an attractive risk/return profile. However, volatility increases significantly when returns are expressed in U.S. Dollars due to increased currency risk.

Currency risk is an important consideration given the magnitude of its volatility and the length of currency cycles. As such, these investments are not as appealing within a U.S. Dollar portfolio.

Taking the analysis one step further, we can see from Exhibit 4 that Emerging Markets Debt in local currency expressed in U.S. Dollars is not only volatile, but also exhibits a significant degree of correlation to the S&P 500.

This example highlights the importance of decomposing an asset's total risk into its components, and understanding how each risk component will affect the portfolio. A common approach to allocation is to optimize a portfolio based on the overarching risk/return profile of an asset class. Such a strategy would work well if the sole purpose of the portfolio's fixed income exposure were total return. However, fixed income allocations serve the dual purpose of

EXHIBIT 3



Source: Bloomberg, Barclays Capital, JP Morgan Chase as of December 31, 2015

EXHIBIT 4

	US Treasury	US Mortgages	US Corporates	US Long Treasury	US Long Corporates	US Aggregate	US High Yield	EMU IG in USD	Global in USD	USD EMD	Local EM in USD	S&P 500
US Treasury	100%											
US Mortgages	77%	100%										
US Corporates	74%	67%	100%									
US Long Treasury	93%	63%	67%	100%								
US Long Corporates	70%	59%	96%	72%	100%							
US Aggregate	94%	88%	89%	86%	83%	100%						
US High Yield	0%	11%	51%	-5%	49%	25%	100%					
EMU IG in USD	34%	16%	42%	24%	38%	41%	23%	100%				
Global in USD	66%	63%	56%	55%	52%	65%	10%	83%	100%			
USD EMD	19%	42%	51%	17%	48%	38%	55%	23%	19%	100%		
Local EM in USD	12%	23%	54%	5%	49%	39%	65%	69%	51%	79%	100%	
S&P 500	-5%	-15%	30%	-11%	27%	14%	59%	16%	8%	53%	64%	100%

Source: Bloomberg, Barclays Capital, JP Morgan Chase as of December 31, 2015

providing return potential and downside protection. The danger in this approach is failing to truly diversify risk by capturing the same risk premia under a different name. As a result, a portfolio may have:

- ❖ An inappropriate duration vs. a plan's liability
- ❖ More highly correlated risk factors
- ❖ Too much liquidity risk
- ❖ Too much currency exposure
- ❖ Too much equity risk
- ❖ Too high volatility

A MORE RISK EFFICIENT PORTFOLIO

We believe a better solution is to design a custom fixed income benchmark to achieve desired risk exposures. Recall that fixed income returns are influenced by some combination of the several risk factors we presented previously. Since sensitivity to the various risk factors will vary from one portfolio to the next, a custom benchmark is used to tailor risk exposure to the individual portfolio. As opposed to an allocation based purely on asset class exposure, this method allows the investor to actively manage risk, and therefore the portfolio's downside exposure.

Benchmark construction starts with creating a risk matrix to decompose total risk for each asset class into relevant components. A sample risk matrix is provided in Exhibit 5. From the matrix, we can see local currency emerging markets debt has low to moderate interest rate risk with almost no industry specific risk. However, the matrix clearly shows there is significant liquidity, currency, equity, and emerging markets risk. The matrix allows us to identify the drivers of return for each asset class on an individual basis and relative to the other asset classes.

After we have established a risk matrix, we can begin building a custom benchmark based on the desired exposure to each risk component. Simply put, establish a risk budget for each risk factor, and allocate to the various asset classes based on this risk budget. The custom benchmark should include two main sleeves: i) investment grade securities, which are intended to protect the

An allocation based on risk exposures as opposed to asset class exposure allows the investor to actively manage risk.

EXHIBIT 5

	INTEREST RATE	LIQUIDITY SCORE	CURRENCY	EQUITY	EMERGING MARKETS	INDUSTRY	RISK PREMIUM Return ± Standard Dev.
U.S. Governments	1.0	5	---	---	---	---	2.0% ± 4.7%
U.S. Mortgages	1.0 - 1.4	5	---	0.04	---	---	0.6% ± 2.5%
Investment Grade Corp.	0.8 - 1.0	2	0.05	0.1	0.05	1	1.0% ± 5.5%
Int'l Developed Markets	0.8 - 1.0	4	1.1	0.15	0.1	---	0.3% ± 10.1%
High Yield	0.0 - 0.8	1	0.1	0.4 - 0.8	0.0 - 0.1	1	2.0% ± 10.5%
Distressed	---	1	0.2	0.5 - 1.0	0.0 - 0.1	1	4.0% ± 15.0%
USD EMD	0.0 - 0.8	3	0.15	0.3 - 0.5	1	---	3.5% ± 10.5%
Local Currency EMD	0.0 - 0.8	2	1.0	0.4 - 0.8	1	---	3.0% ± 12.8%
Risk Premium Return ± Standard Dev.	1.0 - 2.0 ± 4.7%	0.0 - 0.5 ± 5.0%	-1.0 - 1.0 ± 8.6%	3.0 - 5.0 ± 15.7%	0.0 - 2.0 ± 7.9%	0.0 - 2.0 ± 8.1%	

This information is being presented to illustrate DuPont Capital investment analytics, and should not be considered a recommendation to trade. Subject to change without notice.

portfolio in distressed environments and provide a stable source of income, and ii) an alpha generating segment. As mentioned previously, instead of building the allocation based on asset class risk premiums (as highlighted in purple), the benchmark construction is built to achieve the desired exposure to the risk premiums for the underlying factors (as highlighted in yellow). Once the benchmark is established, variances are defined to allow for an actively managed portfolio. The custom benchmark allows for a more opportunistic approach to investing with a focus on total return while taking more efficient risk exposure.

Exhibit 6 details a sample actively managed fixed income portfolio with an effective duration in line with the Barclay's Aggregate and a similar liquidity score. However, the yield is over 100 basis points (bps) higher. The higher yield is compensation for increased equity risk and slightly more liquidity risk.

The target allocation is based on the custom benchmark, and includes an 80% investment in core strategies such as U.S. Treasuries, mortgages, and investment grade corporates. As a reminder, this core allocation is intended to provide capital protection in periods of volatility. The balance of the portfolio is allocated to assets with a higher risk/return profile, such as emerging markets debt, global high yield, and distressed debt.

The higher risk securities are managed for total return rather than in an index-like manner. However, it is important to note the goal of this strategy is to identify those asset classes that have the highest risk/reward profile, not necessarily the highest return profile. An opportunistic focus for these strategies does not significantly increase the volatility of the fixed income portfolio as compared to the volatility of the benchmark.

EXHIBIT 6

EXPOSURE	WEIGHTS	EFFECTIVE DURATION	YIELD	LIQUIDITY	EQUITY RISK
CORE STRATEGIES					
US Governments	20%	5.7	1.8%	5	0%
Securitized	30%	4.5	2.8%	5	0%
Investment Grade Credit	20%	7.0 x 0.8	3.7%	2	10%
Long Duration Treasuries	10%	17.3	2.9%	5	0%
HIGHER RISK/RETURN STRATEGIES					
USD Emerging Markets Debt	10%	6.6 x 0.5	6.4%	3	25%
High Yield	8%	4.3 x .25	8.7%	1	50%
Distressed	2%	0.0	16.0%	1	100%
International Developed Markets	0%	7.1	1.0%	4	0%
Local Currency EMD	0%	4.8 x 0	7.1%	2	30%
TOTAL	100%	5.8	3.8%	3.8	10%
Barclays US Aggregate		5.7	2.6%	4.0	3.3%
Core Plus		4.7 to 6.7	2.6 to 3.8%	3.3 to 3.8	8 to 15%
Unconstrained		?	2.0 to 5.5%	2.5 to 4.0	0 to 40%

Source: DuPont Capital

The information above is presented to illustrate DuPont Capital investment analytics and should not be considered a recommendation to trade. All information is subject to change without notice.

Meaningful excess returns may be captured without deviating significantly from the benchmark.

As shown in Exhibits 7 and 8, since we started to actively manage our portfolio around a custom benchmark in 2001, we have historically achieved over 200 bps of alpha versus the Barclay's Aggregate while increasing annual volatility by approximately 130 bps. The increase in volatility is a result of the benchmark allocation to emerging markets debt, global high yield, and distressed debt. Although tracking error is between 200 to 260 bps versus the custom benchmark or the Barclay's Aggregate, the increase in the portfolio's total volatility is only 0.2% compared to the custom benchmark.

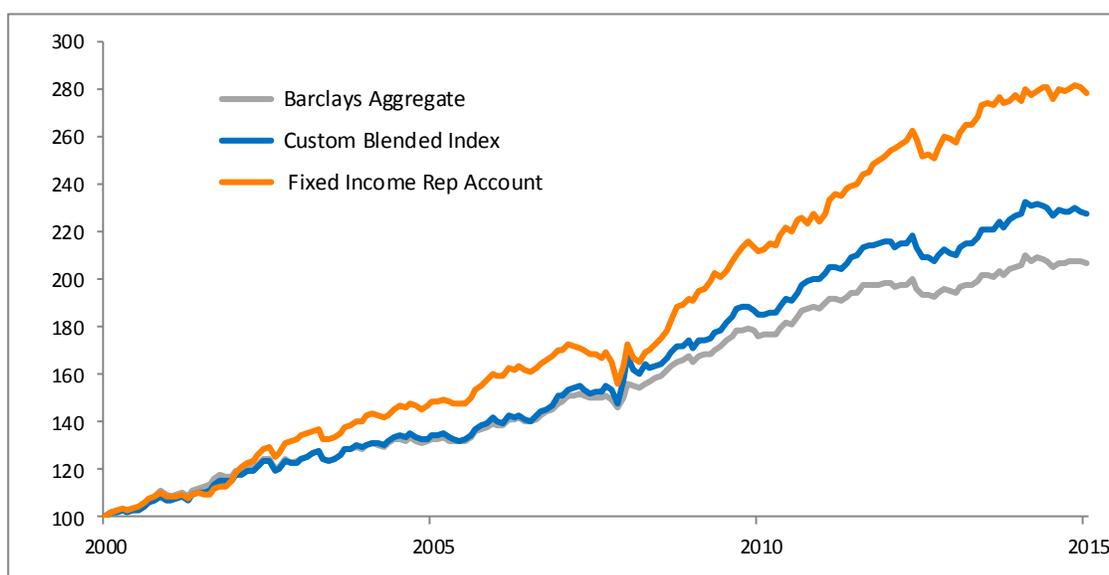
Appropriately assessing and allocating the riskier portion of the portfolio with a total return focus allows an investor the opportunity to capture meaningful excess returns in an efficient manner without deviating significantly from the strategic asset allocation. This approach also allows investors to define and control a portfolio's risk parameters as opposed to the "go anywhere, anytime" approach typically used in unconstrained fixed income products. As such, it should provide better downside protection in distressed environments.

EXHIBIT 7

	FIXED INCOME REP ACCOUNT	CUSTOM BLENDED INDEX	ALPHA VS. CUSTOM BLENDED INDEX	BARCLAYS AGGREGATE	ALPHA VS. BARCLAYS AGGREGATE
as of 12/31/15	Return ± Standard Dev.	Return ± Standard Dev.	Return ± Tracking Error	Return ± Standard Dev.	Return ± Tracking Error
5 years	5.61% ± 3.65%	4.20% ± 3.33%	1.41% ± 2.14%	3.25% ± 2.71%	2.36% ± 2.25%
10 years	6.51% ± 4.95%	5.38% ± 4.79%	1.13% ± 2.40%	4.51% ± 3.22%	2.00% ± 2.75%
Since 2001	7.06% ± 4.75%	5.63% ± 4.54%	1.43% ± 2.25%	4.96% ± 3.49%	2.10% ± 2.62%

The Fixed Income Rep Account is being provided for illustrative purposes only and is not a marketed strategy. This presentation is being used solely for the discussion of investment strategy and market dynamics and is not a marketing piece. Managed strategies returns would be reduced by fees. The returns presented are time-weighted, gross of fees, and annualized. The Custom Blended Index is solely for illustrative purposes and rebalanced quarterly and is weighted as of 12/31/15 as follows: 75% Barclays Aggregate, 8.33% Barclays Treasury 15+, 8.33% Barclays US Corporate High Yield, 8.33% JPM EMBI Global Diversified.

EXHIBIT 8



In summary, we believe more efficient risk exposure can be achieved by:

- I. Setting return objective, liquidity requirements, and risk appetite.
- II. Establishing a risk exposures and liquidity matrix (as seen in Exhibit 5)
- III. Constructing a benchmark by allocating to desired risk exposures.
- IV. Allowing variances for all risk exposures including liquidity.
- V. Constraining below investment grade to 25%.

We believe there is a better way to find the yield and returns investors desire in their fixed income allocation. By supplementing a portfolio's core positions with controlled exposure to higher risk strategies, the portfolio should benefit from more efficient risk exposure with higher returns.

It is important to maintain sight of one's objectives as a fixed income investor. While it is important to achieve return targets, it is equally important to protect capital. Unfortunately, without fully understanding the underlying risks of an unconstrained fixed income strategy, investors are potentially exposing themselves to increased risk and reduced liquidity without significantly increasing the portfolio's overall return profile. Fully unconstrained fixed income portfolios may be 'too much of a good thing', leading investors to assume the stress of owning equity risk without the liquidity.

A fully unconstrained fixed income strategy may lead investors to assume the stress of owning equity risk without the liquidity. Controlled exposure to higher risk strategies should provide more efficient risk exposure with higher returns.





ABOUT THE AUTHORS



Krzysztof (Kris) A. Kowal, PhD, CFA
Managing Director, Fixed Income Investments

Krzysztof (Kris) A. Kowal, Ph.D., CFA, Managing Director, Fixed Income Investments, is responsible for DuPont Capital's global fixed income portfolios including Core, Core Plus, High Yield, International Developed and Emerging Markets, and Stable Value funds. Since joining DuPont Capital in 1996, Dr. Kowal has served as the senior portfolio manager for interest rate strategies, emerging markets debt, and fixed income analytics.

Dr. Kowal is a member of the CFA Society of Philadelphia, and a member of the CFA Institute. He holds a Ph.D. in Materials Science and Engineering from the University of Pennsylvania, an M.S. in Physics from Jagiellonian University in Krakow, Poland, and is a CFA charterholder.



Mark Foust
Senior Portfolio Advisor

Mark Foust, Senior Portfolio Advisor, is responsible for serving as primary point of contact for the Fixed Income investment team to provide our clients with ongoing communication and in-depth portfolio insight regarding our fixed income strategies. Since joining DuPont Capital in 2009, Mr. Foust has been responsible for understanding and communicating portfolio positioning and buy/sell rationale, attribution analysis and serving as a representative for senior investment professionals such that they are primarily engaged in investment related activities.

Mr. Foust holds a B.S. in Administration and Management Science from Carnegie-Mellon University and he earned an M.B.A. in Finance from the Pennsylvania State University.

ABOUT OUR FIRM

DuPont Capital has a long history of institutional asset management. Our parent company, DuPont, established a retirement pension plan for employees in 1942, and in 1975 created a separate pension management division.

In 1993, DuPont Capital was established and became an SEC registered investment advisor. We share our parent company's history of innovation, and over the years, have been on the forefront of developing global investment opportunities in both traditional and alternative strategies across equity, fixed income, and alternative investments.

DuPont Capital Management
One Righter Parkway, Suite 3200
Wilmington, DE 19803
(302) 477-6000
www.dupontcapital.com

The information contained in this memorandum is intended for the sole use of prospective investors in understanding and evaluating the impact of market events and is not designed or intended to be used for any other purpose. The document may contain forward-looking statements, which are based on current opinions, expectations and projections. We undertake no obligation to update or revise any forward-looking statements. Actual results could differ materially from those anticipated in forward-looking statements. An investment in securities includes risk of loss. There is no guarantee that any investment in the securities mentioned will be profitable. This document is not intended as an offer or solicitation for the purchase or sale of any security or financial instrument or as a recommendation to invest in any of the securities or financial instruments discussed herein. Registration of an investment adviser with the SEC does not imply any level of skill or training.