

# Which Would You Choose?



**Consider this Scenario** | It's December 31st, 2012. The final trading hours crawl toward a close before the celebration of a new year ensues. Your 60/40 portfolio, comprised of the S&P 500 and the Bloomberg US Aggregate Bond Index, returned 11.28%. You are particularly satisfied with the Agg's 4.21% annual return, considering rates were so low and the yield curve barely moved all year.

You open the Wall Street Journal and read the following headline:



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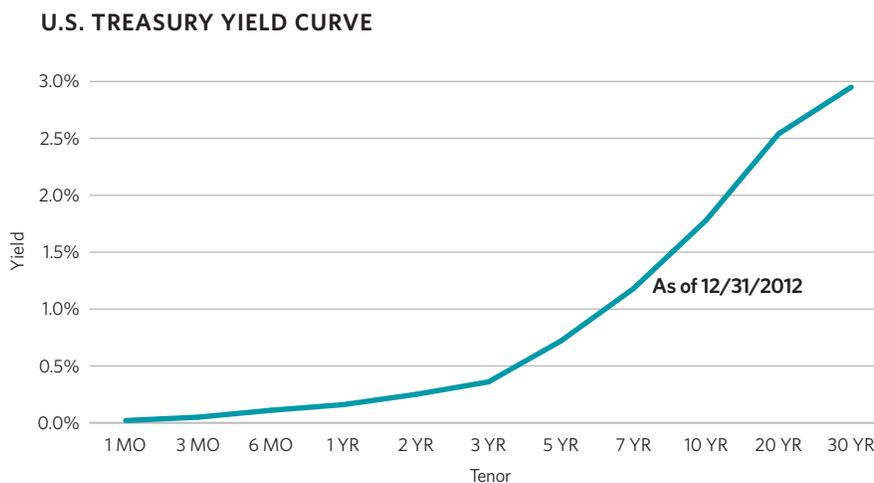


You realize rates are still low, relative to historical numbers, across all maturities...

## U.S. TREASURY YIELDS (AS OF 12.31.2012)

	1 MO	3 MO	6 MO	1 YR	2 YR	3 YR	5 YR	7 YR	10 YR	20 YR	30 YR
Return (%)	0.02	0.05	0.11	0.16	0.25	0.36	0.72	1.18	1.78	2.54	2.95

... and the current yield curve looks as such:



Source: treasury.gov

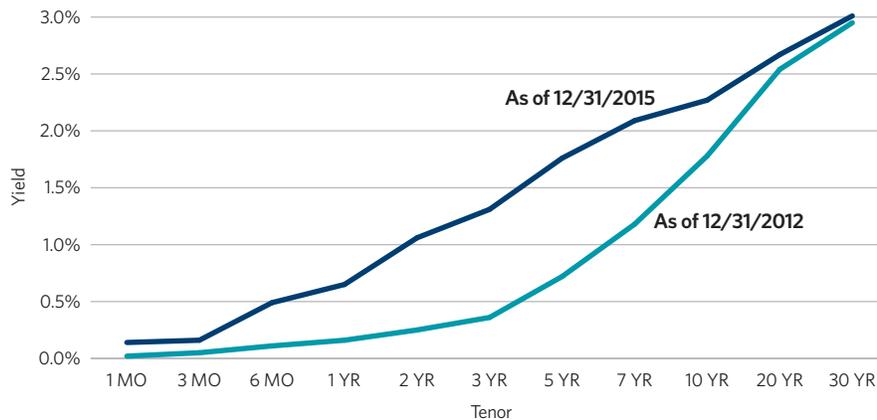
Despite this year’s fixed income returns, you struggle to ignore the constant echoes around rising rates that you’ve heard all year long. This fear that rates will rise in the coming years makes you contemplate if it’s time to update your fixed income allocations.

Almost on cue, an esteemed Wall Street economist, who is *never* wrong when it comes to market predictions, is on air sharing her negative outlook for the bond market. She’s convinced that interest rates will collectively rise over the next three years and next year’s rate movement will be so dreadful that it will be known as the “Taper Tantrum” for years to come. She even presents a graph of the yield curve in three years’ time:

**U.S. TREASURY YIELDS (AS OF 12/31/2015)**

	1 MO	3 MO	6 MO	1 YR	2 YR	3 YR	5 YR	7 YR	10 YR	20 YR	30 YR
<b>Return (%)</b>	0.14	0.16	0.49	0.65	1.06	1.31	1.76	2.09	2.27	2.67	3.01

**U.S. TREASURY YIELD CURVES**



Source: treasury.gov

With this graph in mind, you decide to sell all fixed income holdings and instead invest it in a single tenor Treasury bond — a 3-year Treasury or a 10-year Treasury.

**Which Bond Should You Choose?**

Traditional metrics (mainly duration) would advocate for the 3-year Treasury. Knowing that rates are going up, most investors seek shorter duration bonds.

Even with the knowledge that rates will rise across the board, the question still stands: can you make a more informed, data-driven decision about which type of bond you should choose?

At the time of decision, recall that we were presented with a current yield curve:

**U.S. TREASURY YIELDS (AS OF 12.31.2012)**

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<b>Return (%)</b>	0.02	0.05	0.11	0.16	0.25	0.36	0.72	1.18	1.78	2.54	2.95

There are a couple facts we know from the outset:

- A 3-year Treasury yields 0.36% and will mature at par in 3 years. If held to maturity, the bond will return 1.08% over the 3-year time period, ignoring compounding ( $0.36\% \times 3$ ).
- A 10-year Treasury yields 1.78% and will mature at par in 10 years. If held to maturity, the bond will return 17.80% over the 10-year time period, ignoring compounding ( $1.78\% \times 10$ ).
- After the next three years have passed, the 10-year Treasury will only have seven years of life remaining. In other words: in three years' time, a 10-year Treasury will be a 7-year Treasury.

Given this information, we can calculate the future cash flows to determine exactly how much rates would have to rise for the 3-year Treasury to outperform the 10-year Treasury.

U.S. Treasury Return (%)			U.S. Treasury Return (%)		
	3 YR	10 YR		3 YR	10 YR
2012	0.36	1.78	2012	0.36	1.78
2013	0.36	1.78	2013	0.36	1.78
2014	0.36	1.78	2014	0.36	1.78
2015	?	1.78	2015	2.39	1.78
2016	?	1.78	2016	2.39	1.78
2017	?	1.78	2017	2.39	1.78
2018	?	1.78	2018	2.39	1.78
2019	?	1.78	2019	2.39	1.78
2020	?	1.78	2020	2.39	1.78
2021	?	1.78	2021	2.39	1.78
<b>Total</b>	<b>17.80</b>	<b>17.80</b>	<b>Total</b>	<b>17.80</b>	<b>17.80</b>

Knowing the 10-year Treasury will provide a 17.80% return over the next ten years, we can calculate the "breakeven" return between both the 3-year Treasury and the 10-year Treasury over the next ten years. The 3-year Treasury leaves an additional 16.72% of total return to make up over the seven-year time period following its maturity, in order to match the total return of the 10-year Treasury ( $17.80\% - 0.36\% - 0.36\% - 0.36\% = 16.72\%$ ).

Put another way, at the maturity of the 3-year bond, the 7-year Treasury would have to provide a seven-year total return of 16.72%. That equates to a yield of 2.39% on the 7-year Treasury in three years' time to match the total return provided by the 10-year Treasury.

However, we recall from the time of decision that a 7-year Treasury is yielding 1.18%.

#### U.S. TREASURY YIELDS (AS OF 12.31.2012)

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<b>Return (%)</b>	0.02	0.05	0.11	0.16	0.25	0.36	0.72	1.18	1.78	2.54	2.95

To invest in the 3-year Treasury is to bet that in three years' time, the 7-year Treasury will rise by 121 basis points.

But wait! Thanks to the all-knowing economist in the media, recall that we know what the yield curve will look like in three years:

**U.S. TREASURY YIELDS (AS OF 12/31/2015)**

	1 MO	3 MO	6 MO	1 YR	2 YR	3 YR	5 YR	7 YR	10 YR	20 YR	30 YR
<b>Return (%)</b>	0.14	0.16	0.49	0.65	1.06	1.31	1.76	2.09	2.27	2.67	3.01

The 7-year rate rose by 91 basis points to a yield of 2.09%, less than the 121 basis point rise required by our calculations.

Even in a rates-up-across-the-board scenario, the 10-year Treasury outperformed the 3-year Treasury.

Could we have known this ahead of time? Why would a bond with a lower duration underperform a bond with a higher duration in a rates up environment?

**Traditional Metrics Don't Tell The Whole Story**

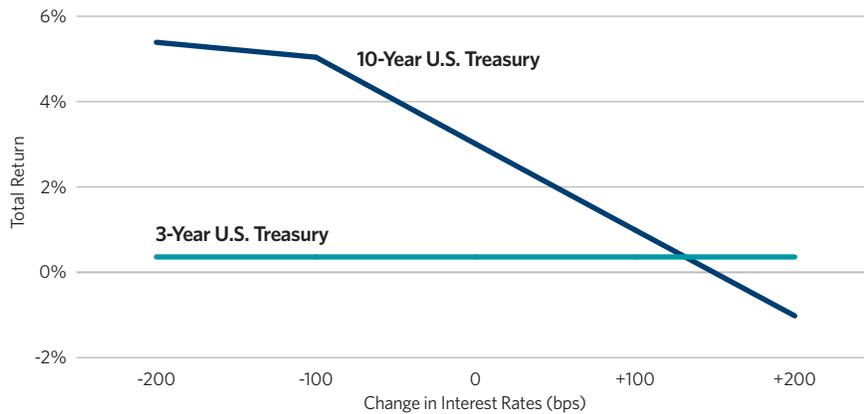
Traditional metrics, like yield and duration, measure return and risk separately when they ought to be measured in conjunction. Total return is the superior measure of what a bondholder will receive and is comprised of two components: income during the life of a bond and changes in price of the bond.

There's a certain predictability of bonds due to their mathematical nature. The coupon is known at issuance, and in the case of a fixed-coupon bond, will not change. The coupon's value relative to outstanding market rates will impact the price of the bond, and interest rates can only do three things: go down, go up, or remain unchanged.

Because of the calculability behind bonds and their cash flows, a bond manager can perhaps be more accurately described as a cash flow manager. Instead of using shorthand metrics, like yield and duration, the ability to count cash flows and assess how various rate movements might impact those cash flows enables bond managers to make better decisions for their clients.

By focusing on the passage of time, potential interest changes, and how they can affect both existing and future cash flows, a bond manager can be prepared for varying total return potential in all scenarios, rather than relying on macroeconomic forecasts and predictions that are oftentimes wrong.

**3-YEAR HORIZON TOTAL RETURN ANALYSIS**



U.S. Treasury Return (%)	DOWN AGGRESSIVE	DOWN MODERATE	NO CHANGE	UP MODERATE	UP AGGRESSIVE
	3 YR	0.36	0.36	0.36	0.37
10 YR	5.39	5.04	3.01	0.99	-1.02

Source: PTAM, Bloomberg and BlackRock AnSer. This graph is provided for illustrative and educational purposes only.

Traditional metrics don't tell the full story. Even without knowing where rates will go, Shape Management® can allow for more insightful decision making and more preparedness for potential future outcomes.

## What Differentiates PTAM?

### Distinctive approach to fixed income investing

We look beyond traditional metrics, and apply a dynamic approach by evaluating the future total return of securities over various interest rate scenarios.

### Expertise in complex structures

Our team uncovers compelling opportunities by applying a bottom up approach that exploits pricing and structural inefficiencies.

### Strong long term results in various market environments

Our objective is simple: to provide excess return for investors over time regardless of interest rate movements.

## RISKS AND OTHER IMPORTANT CONSIDERATIONS

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