

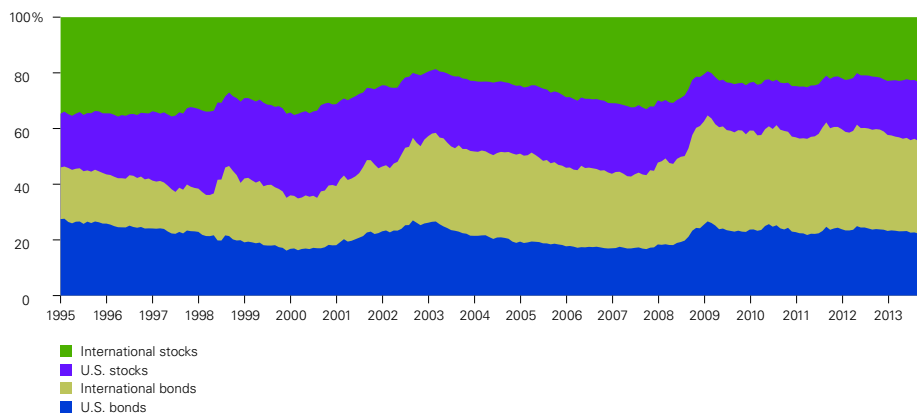
## Finding Yield in a 2% World

Do you know what the largest asset class in the world is?

Many investors are surprised to learn that the answer to this question is foreign debt. The below chart is from a [Vanguard article](#) on bonds.

**Figure 1 - Global asset classes**

Global investable market components, 1995–2013



Notes: International bonds represented by Barclays Global Aggregate ex-USD Bond Index; U.S. bonds represented by Barclays U.S. Aggregate Bond Index; US Stocks represented by MSCI USA Index; international stocks represented by MSCI All Country World Index ex USA. All data through December 31, 2013.

Sources: Vanguard, Thomson Reuters Datastream, Barclays, and MSCI.

How much of your global allocation do you invest in foreign bonds?

Likely very little.

Following the global market capitalization weighted portfolio, investors should have about 30% of their portfolio in foreign government bonds, but very few do. (Likewise US investors should have about half of their global stock allocation in foreign stocks but most only have about 30%.)

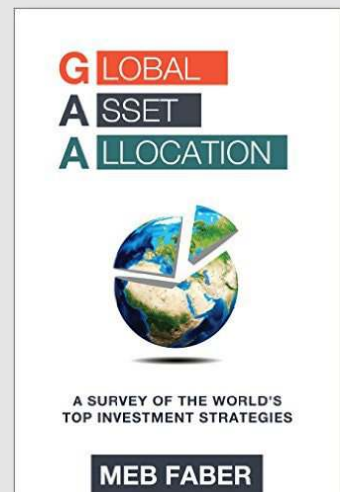
Why does this matter right now?

As of January 2016, US 10-year government bonds yield 2.25%, and 30-year bonds yield 3.00%. Many investors that rely on income, particularly retirees, struggle with such paltry yields<sup>1</sup>.

<sup>1</sup> To be fair, with current inflation at very low levels those nominal yields translate to positive real yields (real yields and returns are after-inflation figures). Historically, 10-year US government bonds have returned about 2.0% after inflation since 1900.



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Thankfully, US investors are not limited to investing within our borders.

Would adding foreign bonds help diversify a US-centric portfolio?

### HISTORICAL RETURNS

Global bonds have seen similar real returns as US bonds all the way back to 1900. The Dimson, Marsh, and Staunton team examined investing in 16 countries stock and bond markets in their outstanding book *The Triumph of the Optimists*. They demonstrated that US bonds had real returns of 2.0% from 1900-2014, and the median country had returns of 1.7%. (Note: real returns are returns after inflation.)

The best performing sovereign bond market experienced real returns of about 3.3% (Denmark), and the worst, well, there are some unfortunate examples of hyperinflation that destroyed investor's capital. But in general a diversified portfolio of sovereign government bonds did an admirable job of protecting purchasing power over time. [BusinessInsider.com has a good article on the causes of the nine worst episodes of hyperinflation in the past 100 years.](#)

However, even in global developed and emerging markets there is wide disparity between yields. On one hand you have many European countries that are yielding less than 0.5% (and in some cases negative yields!), and on the other, many countries, particularly in the emerging markets, have yields above 5%. The median and average yields for the combined developed and emerging country universe are 2.2% and 3.7%, respectively. So, even in the global bond space you're not getting much more yield than in the US.

However, most bond indexes are market capitalization weighted, which means you invest more in the countries that have the most debt outstanding. Does that make much sense? Would you lend more to your neighbors or family members based only on how much debt outstanding they have?

Global bond indexes are dominated by the five biggest issuers: the United States, Japan, Germany, France, and the United Kingdom. Those five countries alone account for about 70% of total debt outstanding, but less than half of global GDP and about 10% of global population. (For a wonderful overview of the sovereign bond space, with discussion of index construction you can view the Research Affiliates piece, "[Debt be not Proud.](#)")

Is there a better way to invest in global bonds? We know that moving away from market cap weighting in stocks is a smart move, and in particular a value approach has performed well over time. Does applying the same logic to global bonds lead to higher returns?

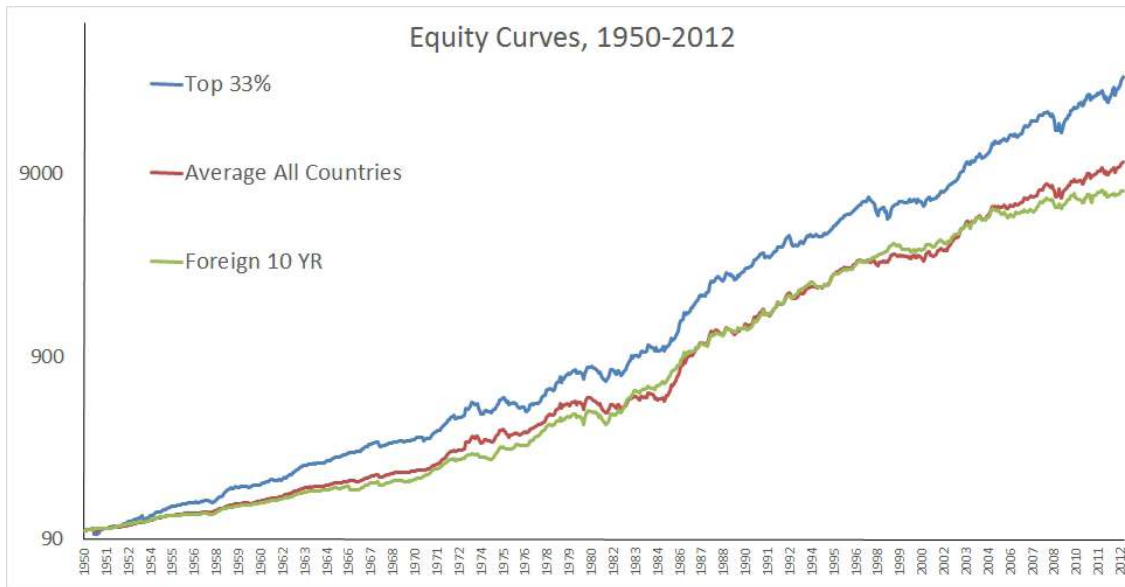
### VALUE INVESTING WITH BONDS

Value investors have long focused on such metrics as dividend yield in stock selection, and the historical results confirm this has been a valid approach to outperformance. How does one define value in bonds? One approach is simply sorting bonds based on their yields. There is ample research that demonstrates that sorting government bonds based on this measure of value has historically produced strong returns. We are not going to go into an exhaustive literature review, but you can find a thorough summary in the book *Expected Returns* by Ilmanen, as well as some papers in the appendix. Below we run our own test to confirm the results in the literature.

We decided to examine a global value approach to bonds back to 1950 with 30 countries from the Global Financial Data database. We sort the universe by yield and invest in the top 33% of countries by nominal yield. We compare this strategy to a few different benchmarks. First, we compare the returns to an "Equal

Weighting” of all the countries in the universe. Second, we compare the returns to the “Foreign 10 YR” label which uses a GDP weighted index of 10-year bonds from the countries of Australia, Austria, Belgium, Canada Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, South Africa, Spain, Sweden, and the United Kingdom.

The results: an approximate 2% outperformance for the high yield strategy. More importantly the strategy outperformance is consistent across decades, including both rising and falling interest rate environments.



Note that the high yielding portfolio outperformed both the equal weight and GDP weight bond portfolios in five out of six decades. And in each case where it trailed the other indexes, the underperformance was fairly negligible. These are USD based returns, but local real returns should be very similar. The currency exposure should not matter much over time since real currency returns are fairly stable, although in the short term currency gyrations can have major impact on returns. Vanguard’s has a nice whitepaper on the subject “[The Impact of Currency Hedging in Foreign Bonds](#)”.

1950 - 2012	Top 33%	Equal Weight	Foreign 10 YR	T-Bills	US 10 YR	US 30 YR	SP 500	GOLD
<b>Returns</b>	9.91%	7.70%	7.05%	4.64%	6.21%	6.18%	10.94%	6.08%
<b>Volatility</b>	8.63%	7.11%	6.17%	0.86%	7.39%	11.02%	14.56%	17.35%
<b>Max DD</b>	-24.74%	-17.55%	-15.21%	0.00%	-15.79%	-25.84%	-50.95%	-64.97%
<b>Sharpe</b>	0.61	0.43	0.39	0.00	0.21	0.14	0.43	0.08
<b>Correl W/Top 33%</b>	1.00	0.87	0.64	-0.06	0.16	0.08	0.28	0.31

<b>1950s</b>	5.56%	3.37%	3.23%	2.05%	0.48%	-1.11%	18.15%	-1.62%
<b>1960s</b>	6.36%	4.26%	3.32%	4.09%	2.90%	1.81%	7.70%	-0.01%
<b>1970s</b>	8.77%	9.09%	8.24%	6.52%	5.49%	3.02%	7.23%	35.40%
<b>1980s</b>	14.01%	10.25%	11.90%	9.09%	12.94%	13.89%	15.95%	-4.90%
<b>1990s</b>	8.81%	8.69%	10.07%	4.93%	8.14%	9.68%	18.42%	-4.35%
<b>2000s</b>	13.86%	10.97%	7.25%	2.71%	7.45%	8.36%	1.21%	16.76%

I like to describe this strategy not just as “buying the highest yielding bonds”, but rather, “avoiding the lowest yielding bonds” as well. This is similar to stocks where a value strategy works not just by buying the cheap stocks, but avoiding the crazy expensive growth names too.

Below the returns are divided into quartiles for those that want to see how the returns stair-step down based on yield.

	Top 25%	2nd Quartile	3rd Quartile	Bottom 25%	Equal Weight	Foreign 10 YR
<b>Returns</b>	9.88%	8.42%	7.19%	5.57%	7.70%	7.05%
<b>Volatility</b>	9.27%	7.79%	8.07%	7.40%	7.11%	6.17%
<b>Max DD</b>	-28.48%	-21.73%	-19.90%	-21.79%	-17.55%	-15.21%
<b>Sharpe</b>	0.57	0.49	0.32	0.13	0.43	0.39

Why don’t more people pursue a value strategy with global bonds? From the recent paper “Dissecting Investment Strategies in the Cross Section and Time Series”, the authors comment on why high yield (some describe as “carry”) may have worked historically:

“This trade can be profitable because high-yields are associated with non-diversifiable risk factors such as political turmoil or wavering property rights or persistently high inflation. In the extreme, the yield differential can remunerate a so-called peso effect, meaning that jump risk can be very real even though it has not materialized. Alternatively, a high yield on a currency can reflect a central bank just about to gain or regain anti-inflation credentials that will make its currency more desirable.”

Part of the reason investors avoid high yield bonds, we believe, is that many assume that such a strategy would have higher risk, but in fact the volatility of the high yield strategy is similar to the GDP and equal weight portfolios, albeit with a slightly higher drawdown. Most importantly, the correlation of global bonds is very low to a traditional US focused portfolio of stocks and bonds. Efficient market theory would suggest that investors are receiving a higher yield to compensate for accepting more risk, but is that actually the case? Surprisingly, the answer is no!

We examine our high yield strategy below during the 10 best and worst months for US stocks and bonds. High yield bonds have moderately negative returns during the worst US stock and bond returns, suggesting some diversification benefit.

	Top 33%	Equal Weight	Foreign 10 YR	T-Bills	US 10 YR	US 30 YR	SP 500	GOLD
<b>Ten Worst Bond Months</b>	-1.59%	-2.57%	-3.06%	0.41%	-5.46%	-7.24%	-2.35%	-1.00%
<b>Ten Worst Stock Months</b>	-2.88%	-1.50%	-0.54%	0.43%	1.62%	1.13%	-12.49%	-2.81%

The current yield for the top 33% of global bonds is approximately 7%. The average spread of high yield bonds over the broad universe is around 2.5 percentage points over time. It has been as low as 0.9 and as high as 6.4 during the late 1990s emerging market bond crisis. As of this writing the global equally-weighted bond portfolio would be yielding 3.65%, and the high yield basket 7% for a wide spread of 3.45% percentage points.

Granted, you will be owning such country names as Brazil, Turkey, India, and Mexico, but realize you would own many of these names in a normal emerging markets bond fund as well. In fact, the largest emerging market bond ETF owns bonds issued by Argentina, Kazakhstan, Venezuela, Ukraine, and Iraq!

### VALUE INVESTING WITH BONDS

Academics are often puzzled as to why a simple yield sorting strategy would work so well on bonds. We believe the headline risks of the country list is likely one major reason it works. The thought of investing in many of these countries is scary, and therein lies your risk premium. We examined a similar property of value stock investing in our recent book *Global Value*, and the revulsion of buying cheap countries with terrible geopolitical news is simply hard to do.

If you go tell your clients and investors that you are planning on investing in Greek and Russian debt, you may get some puzzled looks. But if you frame it as applying a value approach to the largest asset class in the world, they may nod in agreement. Particularly if you asked if they would rather hold a diversified portfolio of 15 countries yielding 7%, or the low yielders with a paltry 1.0%? (You can find current yields on Bloomberg or on the internet at [Trading Economics](#) or [Investing.com](#))

Historically applying the concept of value to investing, whether in stocks or bonds, has added returns to a market capitalization weighted portfolio. As you consider your asset allocation, think about just how much you have allocated to the largest asset in the world – likely not enough! Below we post one final table that examines adding a value sort on global bonds to a traditional US stocks and bond portfolio.

The first column is 60% US stocks and 40% US 10 year government bonds.

The second column is 50% US stocks, 30% US 10 year government bonds, and 20% global high yield bonds.

The third column is 40% US stocks, 20% US 10 year government bonds, and 40% global high yield bonds.

Notice that increasing the amount of the value strategy both increases returns as well as lowering volatility, both properties you want to see when adding an asset to a traditional portfolio.

**Figure 2 - Asset Allocation Strategies, 1950 - 2012**

1950 - 2012	60/40	50/30/20	40/20/40
Returns	9.34%	9.62%	9.84%
Volatility	9.49%	8.09%	7.18%
Max DD	-29.28%	-27.58%	-26.02%
Sharpe	0.50	0.62	0.73



## APPENDIX A - LITERATURE REVIEW

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