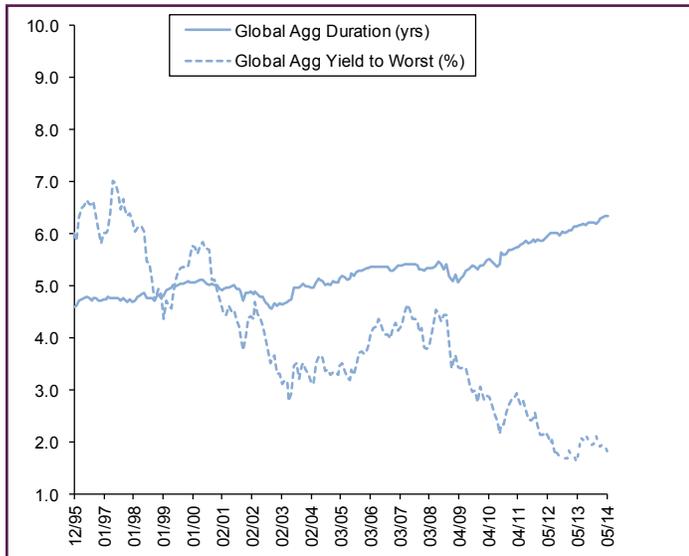


FIXED INCOME INVESTORS HAVE OPTIONS TO INCREASE RETURNS, LOWER RISK

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As all investors are aware, fixed income yields and overall returns generally have been trending downward for many years, impinging on the ability of institutions to meet their return targets. With interest rates at such low levels, the risk of negative returns due to rising rates is a concern. In Exhibit 1, we see that the duration of the Barclays Global Aggregate Index has risen due to declining interest rates and increased issuance of long-dated bonds to meet the appetite among institutional investors for liability matching. At the same time, yield to maturity has declined and consequently, risk in global bond markets has been increasing for a number of years.

Exhibit 1: Barclays Global Aggregate Index

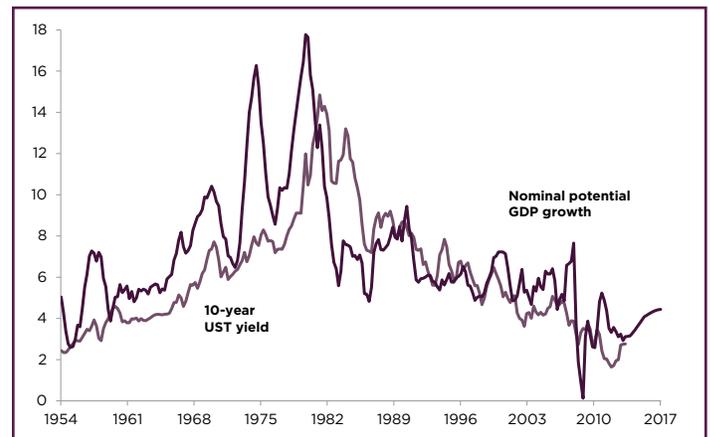


Source: Barclays Capital. Data as of May 30, 2014

As can be seen in Exhibit 2, the 10-year U.S. Treasury yield has historically tracked very closely with nominal GDP growth. In a recent presentation, JPMorgan posited a scenario in which the developed world can no longer expect the high growth experienced since World War II and that real growth of 2.0% to 2.5% is realistic going forward. Add to this inflation of 2.0% and you arrive at an expected nominal GDP growth of 4.0% to 4.5%. As illustrated in Exhibit 2, this could result in a 10-year Treasury yield at similar levels. This scenario

suggests the unappetizing prospect of capital losses due to rising yields (U.S. 10-year Treasury is currently 2.4%) while income remains at low levels by historical standards.

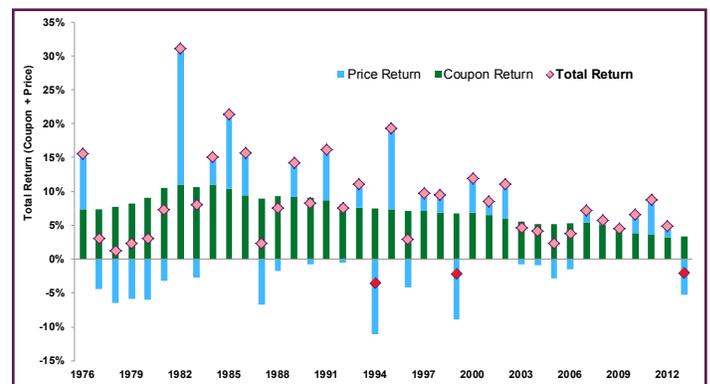
Exhibit 2: US potential GDP growth and 10-year US Treasury yield (%)



Source: Congressional Budget Office, JPMML, JPMAM; data and forecasts as of May 2014

The fear of many investors today is a double hit if equity markets decline during a rising rate environment. Exhibit 3 shows that in prior years when bond prices fell, the coupon had been large enough to minimize losses. Today's low coupon rates provide little income to protect against capital declines.

Exhibit 3 - FTSE/TMX Universe Return Attribution



Source: Barclays Capital

Given this environment, many investors are considering broadening the scope of their bond portfolios with a focus on increasing yield, overall returns and downside protection. This article provides a cursory overview of the fairly liquid options most commonly available to institutional investors. Pavilion would be happy to discuss these options in more detail and provide supporting research upon request. Illiquid options such as private debt, real estate and infrastructure are outside the scope of this article.

The Usual Suspects

Historically, fixed income investors have attempted to improve returns and income by moving a portion of their Core fixed income allocation to investment-grade corporate bond mandates. More recently, there has been interest in high yield bonds and global fixed income.

Domestic Corporate Bonds

Moving a portion of a Barclays U.S. Aggregate mandate to a stand-alone corporate bond mandate will increase the corporate weight above that already present in the U.S. Aggregate (23%, all investment grade). This has the benefit of adding yield to the portfolio and potentially increasing total return. However, U.S. corporate bond spreads have narrowed considerably since 2009 and are now very tight. We also note that since the Barclays U.S. Aggregate Index already includes a 23% allocation to corporate bonds, investors must carefully decide on the total corporate weight acceptable in their portfolios. The risk in this strategy is that spreads will widen and corporate bonds will underperform. Default risk is also an issue, although mostly for high-yield investing.

Historically, the Barclays U.S. Corporate Bond Index has outperformed the Barclays U.S. Aggregate, but with significantly higher volatility, and the median active U.S. Corporate manager has outperformed the Barclays U.S. Corporate Bond Index with roughly the same volatility. Therefore, there is evidence that, over the long-term, the inclusion of an actively managed U.S. corporate bond mandate can increase returns compared with the Barclays U.S. Aggregate Index. Timing is important as the widening and narrowing of corporate bond spreads will affect the relative returns of corporate versus government bonds.

Bank Loans

Institutional investors have recently shown interest in the bank loan market, which consists of below investment grade, floating rate loans with a senior position in the capital structure and, in most cases, security provided by collateral. These loans are normally arranged by banks and other financial institutions to help companies finance acquisitions, restructurings, or other highly leveraged transactions. The interest rates paid on these loans have two components—the fixed credit spread and the underlying, periodically resetting, floating-rate benchmark (usually three-month LIBOR).

Historical returns show that bank loans (as represented by the CS Leveraged Loan Index) have provided a source of floating rate income with relatively low volatility. Furthermore, the low duration floating-rate characteristics should provide an increasing income stream during rising interest rate environments. Bank Loans also provide an attractive diversification profile relative to other fixed income assets such as Treasuries.

Similar to other high yield investments, bank loans expose investors to the risk of default and associated loss of principal. Also, the majority of bank loans are continuously callable and there is therefore a limited price appreciation potential because any anticipated improvement in the credit risk of the borrower typically results in a repricing or refinancing of the existing loan facility. Finally, during periods of strong demand for bank loans, borrowers may issue unsecured loans in lieu of high-yield bonds, or covenant-lite loans with less protection for investors.

High yield bonds differ from bank loans in that they provide investors with relatively higher coupons that are non-callable, allowing for potentially higher principal returns. This comes with interest rate risk and the associated potential for loss of capital. High yield bonds are also normally lower in the capital structure and therefore have lower recovery rates after a default.

Global Fixed Income

Another option to diversify a fixed income portfolio is the inclusion of global fixed income. In Exhibit 4 we see that the composition of global bond markets has changed over the last 30 years and is now much more focused away from the U.S., providing better diversification for investors.

Exhibit 4: Percentage of Global Bond Market based on asset size

	12/31/1983	12/31/2013
U.S.	60.7%	37.9%
Developed ex-U.S.	38.2%	48.3%
Emerging Markets	1.1%	13.9%

Sources: J.P. Morgan Asset Management

The Barclays Global Aggregate Index is a local currency index composed of investment-grade sovereign and corporate bonds ($\pm 22\%$), including emerging markets ($\pm 6\%$), and is used by many global fixed income managers as a benchmark. Duration is slightly higher than that of the Barclays U.S. Aggregate Index (6.2% vs. 5.5%).

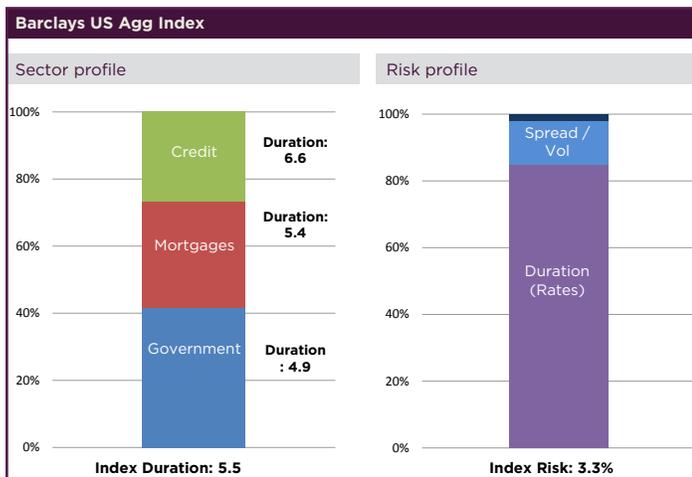
The Barclays Global Aggregate has performed roughly in line with the Barclays U.S. Aggregate over the last 10 years. The Global Index has had somewhat higher volatility than the U.S. Index due to unhedged currency exposure. The median global fixed income manager has outperformed the BG Global Aggregate and the BG U.S. Aggregate by roughly 1% annualized over the last 10 years. Therefore, although a passive global fixed income investment hasn't looked

overly attractive, an active manager could add value to a U.S. fixed income portfolio. This added-value would come with somewhat higher volatility unless a currency hedging program is in place, which would most likely reduce the manager’s value-added.

Problems with the Usual Suspects

The Barclays U.S. Aggregate Index is seen as the most broadly diversified investment grade U.S. bond index and most Core fixed income mandates use it as their benchmark. The index is a mix of Government (45%), Mortgage (32%) and Corporate (23%) bonds. As can be seen in Exhibit 5, despite this diversification the risk (standard deviation of total return using 156 weeks of equally weighted returns) in the index is almost exclusively interest-rate related.

Exhibit 5 – Barclays U.S. Aggregate Risk Profile



Source: BlackRock

The inclusion of a corporate bond allocation will increase the yield of the portfolio and shift some of the overall risk from duration to spreads, but the vast majority of the risk will remain in the duration bucket. A global fixed income allocation will diversify the duration risk by spreading it across multiple countries whose rates may not rise at the same time, but will leave the portfolio exposed to a coordinated increase in interest rates. Conversely, bank loans are a good diversifier of risk as their low duration and floating interest rate make them much less sensitive to interest rate hikes.

Currency exposure is also a major issue as it will increase the volatility of the portfolio. Hedging the currency exposure is a solution, but also removes a source of potential value-added from the global manager’s arsenal.

Opportunistic Mandates

In today’s market, many institutions are considering mandates that provide greater opportunities to invest outside their local bond index constituents in an attempt to increase yield, overall returns and provide some downside

protection in a potential rising-rate environment. As mentioned above, we have provided only a brief introduction to several strategies that could be of interest to our clients. More information and analysis is available upon request.

Core Plus

Core Plus mandates allow the manager to hold roughly 10% to 50% in non-benchmark securities (high-yield bonds, global bonds and emerging markets bonds) or alter the weights of benchmark constituents (government, mortgage, investment-grade corporate). This type of mandate provides the manager with flexibility to move opportunistically between fixed income investments, but only with a limited portion of the portfolio (see Exhibit 6).

The Barclays U.S. Aggregate Index is widely used as the benchmark for both Core and Core Plus portfolios. Given that the index has a great deal of structured debt and investment grade corporate exposure, these should not be considered ‘plus-sectors’ and are frequently found in Core portfolios. Another misconception is that the U.S. Aggregate consists entirely of U.S. issues. As of June 2014, the index had 9.3% exposure to non-U.S. issuers, although it is all denominated in U.S. dollars.

With all having roughly the same volatility, performance analysis shows that the median Core Plus manager has been able to outperform both the FTSE/TMX Canadian Universe and an 80/20 mix of Universe and FTSE/TMX All Corporate. The median Core Plus manager has also outperformed a portfolio of three specialist managers (80/10/10 mix of universe median returns), but not by a large amount. That being said, the ability of a Core Plus manager to move assets into areas of opportunity can be an added advantage during times of dislocation. The outperformance of Core Plus managers has increased over the last few years as many were able to take advantage of extremely wide spreads in 2009.

Exhibit 6

	U.S. Core Plus Universe	Global Unconstrained	Barclays U.S. Aggregate
Duration	± 2 years of index	0 to 10 years; May be short in individual countries	5.6
Non-Index Positions	15% to 50%	100%	---
Foreign Issuers	Max 30%	100%	9.3%; all USD denominated
Unhedged Foreign Currency	Max 30%	---	0%
Hedged Foreign Currency	0%	Up to 150% gross; Net shorts permitted	0%
Emerging Markets Debt	Max 15%	Max 50%	2.4%
Average Portfolio Quality	A or better	BBB or better	AA+
Below Investment Grade	Max 20%	Max 30%	0%
Minimum Quality	CCC	C	BBB

Source: Pavilion database

Unconstrained Global Fixed Income

Opportunistic mandates allow managers to invest as they see fit in any area of the fixed income markets. These mandates are global in nature as the goal is to allow the widest range of investment options possible. Overall, we expect Global Unconstrained managers to: (1) take larger duration bets than standard Global Fixed Income products; (2) hold more emerging markets and high yield debt; (3) take outright long and short currency positions; and (4) be more aggressive in their rotation between strategies.

The median Global Unconstrained manager has outperformed the Barclays Global Aggregate by a wide margin and has outperformed index-constrained Global Fixed Income managers with lower volatility. Also, the median Unconstrained manager has outperformed the median Global Fixed Income manager quite handily.

This strategy is quite interesting for investors focused on increasing the returns of their bond portfolios. The volatility, although lower than for Global Fixed Income, is much higher than for domestic-only bond mandates. Also, there will be currency exposure, as a hedging program is inappropriate since currencies are one of the ways that the managers add value. Finally, given the unconstrained nature of the mandate, the spread between the returns of the highest and lowest returning managers is quite high, putting extra importance on manager selection.

What's Outside the Box

Some institutional investors have been looking for investment ideas outside the long-only, pure fixed income options described above. To that end, the Unconstrained Balanced and hedge fund mandates described below have been implemented by a small number of our clients. We do note that these options address capital protection to a much greater degree than portfolio yield and income.

Unconstrained Balanced Mandates

These mandates allocate opportunistically between stocks and bonds and between sectors of the equity and fixed income markets. Implementing an opportunistic balanced approach involves shifting assets from fixed income and equity allocations to be managed in combination. This gives the manager great flexibility by increasing the opportunity set and providing the ability to exit fixed income altogether if it's felt that rates will rise dramatically. This option is potentially of interest to investors worried about losses due to higher interest rates as it provides wide latitude to generate returns and protect capital.

The strategies used by managers in this mandate are variable, focusing on different geographic areas and asset classes, so performance comparisons are difficult. Our work in this area has shown, however, that unconstrained balanced mandates have generally been able to outperform static allocation structures.

Hedge Funds

Historical returns show that many hedge fund strategies perform well during periods of rising interest rates. This is not by coincidence and if one drills down into the strategies, the fundamental reasons for this become apparent. It is therefore possible to construct a diversified portfolio of hedge funds that should provide fixed income like returns and volatility with limited duration exposure and interest rate risk. As with the Unconstrained Balanced option, hedge funds are more likely of interest to investors worried about capital losses due to rising interest rates than those seeking increased yield and income.

Hedge fund portfolios tailored as fixed income replacements may invest solely in fixed income or be more broadly based. This usually depends on the client's investment policy statement and the comfort level of the investment committee. The argument can be made that there is no reason to limit an absolute return strategy to a specific asset class, but simply target the desired return stream using all options available. The focus would then be on all hedge funds that are able to produce the desired risk/return profile.

Summary

In this article we have identified several fairly liquid options that investors could implement to improve the long-term returns of their fixed income portfolios. These strategies include:

- Core Plus;
- Increased corporate bond allocation;
- Bank Loans;
- Global fixed income;
- Opportunistic global fixed income;
- Opportunistic balanced; and
- Hedge funds.

We believe that one or more of these strategies could help investors increase returns and lower risk in their portfolios. Any new investment must, of course, be viewed in the context of the entire portfolio and match with the organization's long-term goals. Pavilion would be happy to discuss any of these strategies with you and provide more details on any or all of these options.



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