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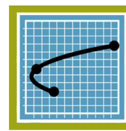

EMPIRICAL
WEALTH MANAGEMENT

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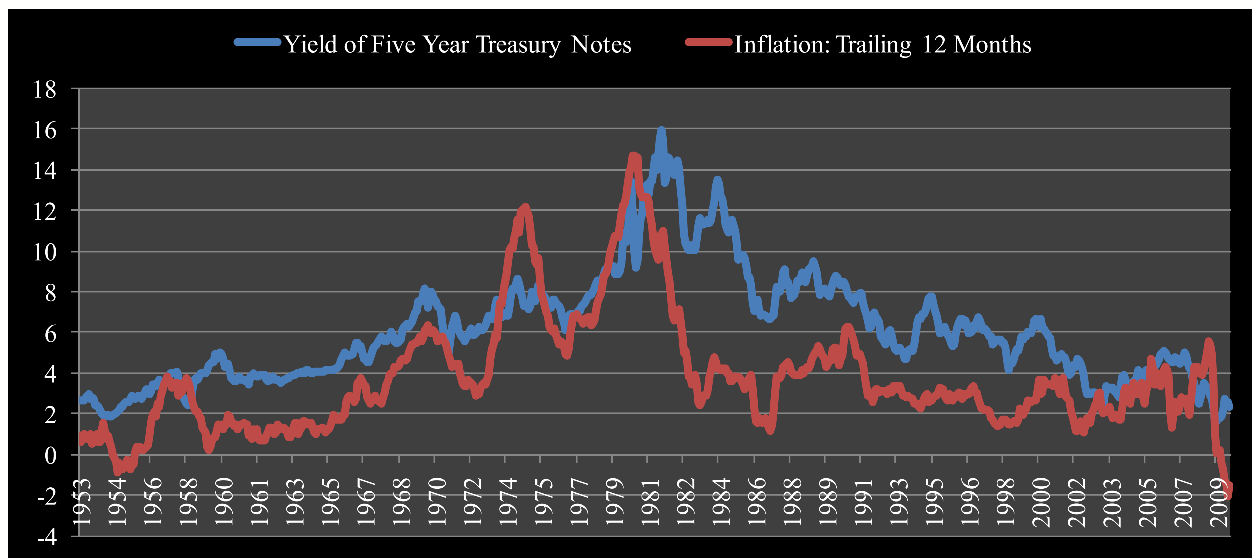
Introduction

In this quarter's letter we address two separate topics: first we examine the Empirical approach to fixed income along with customization options, secondly we discuss socially responsible investing (SRI) and the opportunities to incorporate SRI in your portfolio at Empirical.

The first installment of the Empirical approach to fixed income was written in 2008 just prior to the onset of the global financial crisis. With the FTSE All-World index up over 70% since the market bottom in March of this year and interest rates at historical lows, we thought it apt to complete the discussion on fixed income. You will see that it is our view that while fixed income is a lower returning asset class than equities it is also very complex and critically important to get right. Simple mistakes during a market environment such as we are facing now can detract from an investor's returns for years in the future. The low interest rate environment makes it even more important to have your fixed income properly managed in a total portfolio context. After reading this letter we encourage you to call your advisor and discuss any question or concerns you have about the role of fixed income in your portfolio and the specific approach we are utilizing for you.

Our discussion on socially conscious investing has been prompted by two key factors. First, at the core of our corporate values is a desire to provide our clients with customized investment and financial planning solutions that meet their specific objectives and align with their values. Secondly, sophisticated investment products have now been created that offer our clients the ability to invest in this area without sacrificing the core investment principles investors need to adhere to. Please let your portfolio management team know if you are interested in incorporating any of the SRI investments discussed in this letter into your portfolio.

Figure 1: Historical Treasury Yields and Inflation



Yield of Five Year Treasury Notes from Federal Reserve Statistical Release. Inflation represented by US CPI-U from Stocks, Bonds, Bills and Inflation, Chicago: Ibbotson and Sinquefield.

Fixed Income Investing During Low Yield Periods

Today's low yield environment coupled with the recent volatility of stocks has caused many investors to search for higher yielding alternative strategies. While the notion of a better yield with less volatility is at the root of the search it is our stern advice to stay focused on the purpose and role fixed income plays in a diversified portfolio over the course of your entire investment time horizon. Increased yield comes with a price that takes the form of one or more key risks often overlooked by fixed income investors. Investors are best served by having all of their equity and fixed income in one managed portfolio designed to work together efficiently. The relationships between all the investments should be considered so that risk and return are examined collectively rather than each investment in isolation.

This is why investors may be willing to accept a lower yield with their fixed income during the current interest rate cycle. This is also why investors should not become myopic about their fixed income and fail to include their advisors in that component of their portfolio.

How will these low yields affect my return over my investing lifetime?

As of 10/8/09 the current yield of the Five Year US Treasury note is 2.3%. In Figure 1 you can see how historically this is very low, much lower than the average of 6.2% going back to 1953. Inflation, which is correlated with yields, has also been at historic lows. In the short run, the low yields mean that fixed income returns will proba-

bly be low. However since interest rates are currently below the long term average, there is a good probability that rates will rise. In this scenario, investors in short term bonds will see returns increase over the long term as they start to purchase the higher yielding bonds when their low yielding bonds mature. Long-term bond investors however will be locked into the returns of the current low yields until their bonds mature. Since Empirical's bond portfolio is relatively short term (average maturity of less than 5), our clients should not expect low returns over 10-20 years if interest rates rise to historical averages.

Should I seek out higher yielding products to make up for the low return of my current bonds?

Investors are more familiar with interest rates closer to the long term average. During periods of unusually low rates, there is a temptation to seek out higher yielding products, such as junk bonds, preferred equity, annuities, structured notes or option strategies. These securities often seem fairly safe, and offer a much more 'reasonable' interest rate. However, fixed income cannot be judged by the stated interest rate alone. Making prudent fixed income decisions requires a full understanding of the risks and rewards. Below we have identified eight risks associated with fixed income followed by the method Empirical utilizes to manage each type of risk.

Interest Rate Risk:

Definition: *Risk that interest rates rise causing the market value of your bonds to fall. The longer the maturity of the bond the more severe the decline in market value if rates rise. For example, if interest rates rise from 3% to 4%, a 5 year bond would lose 4.5% whereas a 10 year bond would lose 8.2%.*

The Empirical bond approach is to maintain a shorter average maturity than the bond market as a whole. Shorter maturity bonds decline in price less when interest rates rise than longer maturity bonds.

Credit Risk:

Definition: *Risk that the issuer of the bond (such as a corporation or government) defaults on a payment.*

The typical Empirical bond model consists of 65% US Government bonds, which are considered virtually credit risk free. The remaining 35% is invested in a diversified basket of short term, highly rated corporate bonds (investment grade).

Inflation Risk:

Definition: *Risk that a bond's return will not compensate the investor for the loss in purchasing power due to inflation.*

For most clients, 30% of the bond allocation is invested in Treasury Inflation Protected Securities, which are virtually devoid of inflation risk for the average US consumer over the appropriate time horizon. Since these are Treasuries they are devoid of credit risk as well. Another 55% of the bond portfolio is invested in short term bonds, which historically have done a better job of keeping up with inflation than longer term bonds.

Reinvestment Risk:

Definition: *Risk that when you receive a coupon or principal payment, the next bond you purchase with the proceeds will have a lower yield.*

This risk is most applicable to investors with specific long term liabilities that must be met with fixed income. These investors typically want to eliminate the risk of reinvesting fixed income assets that come due at a lower rate and failing to meet their required future liability. We control this risk by using a mixture of equity and fixed income to meet our clients' long term objectives. In specific cases, we may also consider adjusting the average maturity of a client's bond portfolio to better match specific funding needs.

Liquidity Risk:

Definition: *Risk that you will need to sell a bond before it matures and are unable to do so, or can only sell at a steep discount.*

Most Empirical clients are invested in extremely liquid ETFs or mutual funds, which can be sold any trading day. Some clients have less liquid CDs or individual bonds in their portfolio in cases where they do not need to sell before maturity. The ETFs and mutual funds utilized purchase extremely liquid treasury securities or corporate bonds. The liquidity of our portfolio is especially useful for rebalancing across stocks and bonds, as well as within the bond portfolio.

Tax Risk:

Definition: *Risk that changes in tax laws will impact the value of your bonds.*

The bonds most susceptible to tax risk are municipal bonds, because they are generally more highly priced than non-muni bonds based on their exclusion of income from state and federal income tax. This risk can be mitigated by purchasing both tax free and taxable bonds at the same time. Further, keeping the maturities shorter prevents long term effects of potential negative tax changes. Lastly, it is prudent to invest in a large variety of jurisdictions and muni-bond subtypes.

Prepayment Risk:

Definition: *Certain corporate bonds and mortgage-backed securities can be repaid by the issuer prior to maturity. This usually occurs when interest rates fall, hurting the investor who would prefer to earn the higher yield rather than be repaid early.*

Because of their negative characteristics, we typically avoid fixed income products containing securities that can be prepaid, such as mortgage-backed securities or callable corporate bonds.

Currency Risk:

Definition: *Risk that the value of foreign-currency denominated bonds will fall due to exchange rate changes.*

Currently, Empirical is not targeting foreign currency denominated bonds in fixed income portfolios.

A review of the purpose of fixed income in your portfolio

In our previous quarterly letter we discussed extensively the role of fixed income in our investment strategy (Second Quarter 2008 Client Letter – "The Empirical Approach to Fixed Income". This is posted on our website under "Resources"). In short, we believe that investors seeking higher returns are better off looking to equities rather than taking on additional risk within their fixed income portfolio. This is because the empirical evidence shows us that the payoff in terms of higher return is much greater on the equity side than on the fixed income side. In other words, the highest and best use of fixed income is to provide stability within the portfolio. Therefore

investors unsatisfied with their fixed income return should evaluate their entire portfolio allocation rather than view fixed income in isolation. In our next letter we are excited to introduce another level of portfolio customization by offering clients additional equity model portfolios to choose from, each targeting different return and risk characteristics.

Viewing the portfolio as a whole, rather than each of the constituent parts individually, creates greater opportunity for enhanced returns though systematic rebalancing, rather than chasing higher yields. This is because systematic rebalancing forces investors to follow the golden rule of investing: "buy low and sell high" and places risk where the expected reward is highest – on the equity (stock) side.

One size does not fit all – custom bond portfolios at Empirical

While chasing higher yields through riskier products is not a prudent strategy, there are other ways to improve a fixed income portfolio. At Empirical we have developed several ways to customize our standard bond model to improve your portfolio: tax-management, liquidity needs and scale of the portfolio.

Standard or Tax-Managed bond model

For certain clients we take advantage of municipals bonds because the interest payments are exempt from federal income tax. The stated yield of municipal bonds is almost always lower than comparable taxable bonds. However, the tax break usually makes up for this shortfall for investors in the highest tax brackets. The precise tax bracket where it is advantageous to use municipal bonds changes over time, as conditions in the bond markets fluctuate. We monitor the situation by comparing the yields of our Standard bond model and our Tax-Managed bond model. The Standard and Tax-Managed bond models have similar exposure to the eight risk characteristics of fixed income, the only difference being that the Tax-Managed bond model is composed 50% of municipal bonds. At current yields anyone in the 25% or higher marginal tax bracket would benefit from the Tax-Managed model. For investors in lower tax brackets, the tax advantage of the municipals bonds doesn't make up for their lower pre-tax yields. By reviewing your tax status with your advisor we can ensure that you are taking advantage of municipal bonds if it is sensible.

Liquidity and Investing in Certificates of Deposit

Clients who are not planning on making large withdrawals from their portfolios can take advantage of certificates of deposits in order to earn a higher yield than treasuries. CDs are insured by the FDIC up to certain limits (currently $250,000 per person per bank). The CDs replace the US Treasury bond funds. A properly constructed portfolio of CDs should behave very similarly to the treasury fund, the only two differences being that the CDs earn a higher return and are less liquid. As we can see in Figure 2, the sample CD portfolios had similar yields to our Short and Intermediate Treasury ETFs, and both CD portfolios had an additional yield greater than 1.1%.

Brokered CDs have an advantage over CDs from your local bank in that they can generally be resold to other investors in a liquid market without incurring bank penalties. The other main advantage is that you can hold them in your investment account, and we can manage your CDs within the context of your entire portfolio. Also for larger accounts it is easy to diversify across banks to make sure your entire balance is insured by the FDIC. The strategy is only feasible for accounts with greater than $100,000 allocated to fixed income.

Bond model size

Depending on the account size, we will use one of 3 different size bond models. The Full bond model represents the most efficient bond portfolio we could design. For smaller accounts 4 funds is too many to purchase and rebalance efficiently due to trading costs, so we created the Compact and Single Fund models, which use less funds but approximate the Full model as closely as possible. Despite the fewer number of positions, both the Compact and Single Fund models are fully diversified.

The advisors at Empirical consistently assess client accounts to determine which customized bond model is appropriate. If you have questions about different bond models, discuss your current circumstances with your advisor and they will ensure the correct approach is being used with your fixed income.

Figure 2: Treasury ETFs versus CD Portfolio

	Treasury ETFs		CD Portfolio		
Maturity	Yield	Average Maturity	Yield	Average Maturity	CD Yield Premium
Short (1-3 Years)	0.76	1.98	1.95	1.92	1.19
Intermediate (3-7 Years)	2.29	4.87	3.44	4.91	1.15

CD Portfolio is an example composed of available CDs on 9/29/09.

Investing with a Conscience: Socially Responsible Investing at Empirical

Socially Responsible Investing (SRI) has been gaining in popularity since the advent of the first SRI mutual fund in 1971. Until recently most of the available options were excessively expensive, actively managed, or focused on a narrow segment of the economy such as renewable energy companies. Fortunately Dimensional Fund Advisors created a set of SRI mutual funds much superior to other available funds. We now are able to offer reasonably priced and efficient SRI portfolios to clients who prefer to invest in a socially conscious manner.

Two distinct strategies: Sustainable & Social

At Empirical we employ two distinct strategies that fall under the umbrella of socially responsible investing: Social and Sustainable. The Social portfolio uses the more well-known SRI model of excluding companies operating in undesirable industries, such as Tobacco, Military Weapons, Gambling, Alcohol, etc. These are the industries most often cited as making investors uncomfortable. The Sustainable portfolio has a single objective of promoting environmental sustainability. A third-party expert rates each company

based on certain factors such as greenhouse gas emissions, environmental regulatory actions, recycling policies, etc. The portfolio then excludes the worst offenders, underweights the poor performers and overweights the companies with the best environmental record. The portfolio is then normalized so that the allocations to each sector are similar to the market as a whole. Without this normalization, certain sectors such as energy would not be adequately represented because on average energy companies have a higher environmental impact than other sectors like financials. This methodology allows investors to reward good corporate citizens while still maintaining an adequately diversified portfolio.

Figure 3: Two Styles of Socially Responsible Investing: Sustainable Versus Social

	Sustainable	Social
Objective	Promote environmental sustainability in public corporations	Avoid investing in controversial industries
Method	Overweights companies with strong environmental policies, underweights or excludes companies with poor track records	Excludes companies that do business in the following industries: Tobacco, Military Weapons, Gambling, Alcohol, etc.
Additional Expense Ratio	0.10%	0.11%
Additional Cost per $10,000 Invested in Equities	$10	$11
Mutual Funds Used	• DFA US Sustainability Core 1 • DFA International Sustainability Core 1	• DFA US Social Core Equity 2 • DFA Emerging Markets Social Core

Data provided by Dimensional Fund Advisors. Past performance is not a guarantee of future results. Values change frequently and past performance may not be repeated. There is always the risk that an investor may lose money. Even a long-term investment approach cannot guarantee a profit. Economic, political, and issuer-specific events will cause the value of securities, and the portfolios that own them, to rise or fall. Because the value of your investment in a portfolio will fluctuate, there is a risk that you will lose money.

Return expectations of socially responsible portfolios

A common question is whether to expect higher or lower returns from SRI stocks compared with the entire stock market. As believers in market efficiency, we would expect that SRI stocks would perform similarly to other stocks. Traders and analysts will have considered a firm's industry, environmental liabilities, regulator risks etc. when determining an appropriate price.

Empirical studies by academics have shown this to be the case. Historically SRI companies have had similar performance to non-SRI firms. With SRI stocks, like any equity investment, the main drivers of returns are exposure to equity risk, size and value characteristics. The funds we utilize from Dimensional Fund Advisors are unique in that they carefully control the size and value characteristics of SRI portfolios to match non-SRI portfolios.

Cost Considerations

While SRI stocks should perform similarly to non-SRI stocks, there are other important investment considerations. First of all, determining which companies are socially responsible and which aren't costs money. These costs are passed down to the firm's shareholders in the form of higher expense ratios. Figure 3 shows the additional percent

Figure 4: Annualized Returns of SRI and Comparison Funds

SRI Fund	Comparison Fund	Return Difference	Time Period
DFA US Sustainability Core 1	**DFA US Core Equity 1**		**4/08 - 9/09**
-10.14	-9.51	-0.63	
DFA Emerging Markets Social Core Equity	**DFA Emerging Markets Core Equity**		**9/06 - 9/09**
9.84	11.03	-1.19	
DFA US Social Core Equity 2	**DFA US Core Equity 2**		**11/07 - 9/09**
-16.15	-15.18	-0.97	

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age cost for each SRI portfolio, as well as the cost per $10,000 invested in equities. This is the explicit cost you will pay each year in exchange for an SRI portfolio. There are also other implicit costs that are harder to calculate. For one, SRI portfolios by definition have fewer stocks than non-SRI portfolios. This means less diversification and potentially higher risk. However, the mutual funds we use still own thousands of securities, so this increase in risk should be minimal. There will also be slightly more internal fund trading costs as the fund buys and sells stocks that move between being socially responsible and not socially responsible.

We can evaluate how the funds have performed comparing them with an equivalent fund without SRI restrictions, as shown in Figure 4. Over their short lifetimes the funds have performed worse than the comparison fund, more so than is explainable by higher expense ratios. This deviation demonstrates that SRI portfolios will perform differently than non-SRI portfolios because of the investment restrictions. The fact that the funds underperformed is random, the funds could have just as easily outperformed (after taking into account the higher expense ratio). We cannot use the underperformance during the short time period these funds have existed as a reliable guide to how they will perform in the future.

The Social and Sustainable portfolios are not appropriate for all investors, even those whose values may align with one or the other or both. Many people decide that they can more effectively change the world through philanthropy, volunteering or political action, supported by a portfolio that is unhampered by SRI restrictions. If you believe you may gain satisfaction by incorporating SRI into your portfolio strategy please talk to your advisor about it. Both the Social and Sustainable strategies are easily integrated into most portfolios.

Sincerely,

The Empirical Wealth Management Team
Kenneth R. Smith, CFP®, MS
Chief Executive Officer

[i] Renneboog, Horst and Zhang, 2008. Social responsible investments: Institutional aspects, performance and investor behavior. Journal of Banking & Finance 32, 1723 – 1742.

[ii] Statman, M., 2000. Socially responsible mutual funds. Financial Analysts Journal 56 (3), 30-39.