

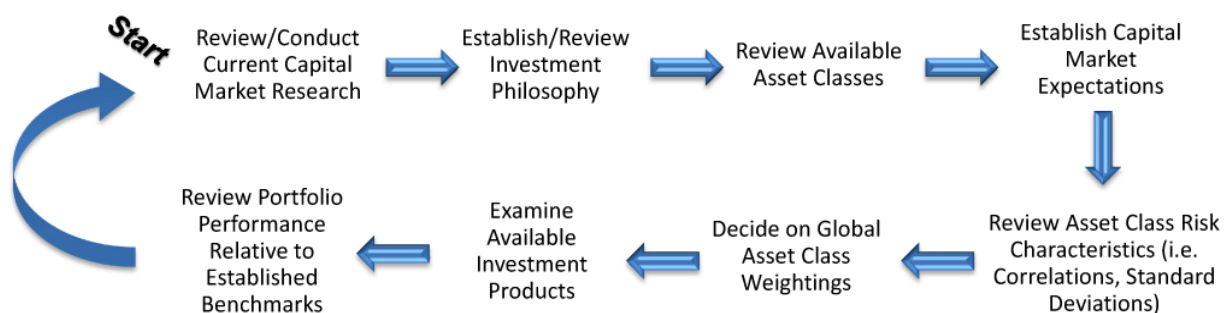
July 9th, 2008

**Second Quarter 2008 Client Letter**  
**“The Empirical Approach to Fixed Income” (Part 1 of 2)**

**Introduction**

The Empirical Investment Committee regularly reviews our asset allocation models and each investment utilized in your portfolio (Figure 1 displays our Investment Research Cycle). Recently we completed a review of our fixed income investments and as result, we made some changes to the fixed income funds utilized in your portfolio.

*Figure 1:* Empirical Investment Research Cycle



A summary table of the asset classes utilized in our current fixed income strategy is shown in Figure 2. Two letters will be used to share our fixed income strategy and the underlying investment philosophy as it relates to fixed income. In this letter, we will discuss the role of fixed income in a portfolio, and the desired interaction between the fixed income/conservative components of your portfolio with the equity/growth portions of your portfolio. In next quarter’s letter, we will explain the risks inherent in fixed income investing and how the new fixed income portfolio is designed to help protect our clients from these risks.

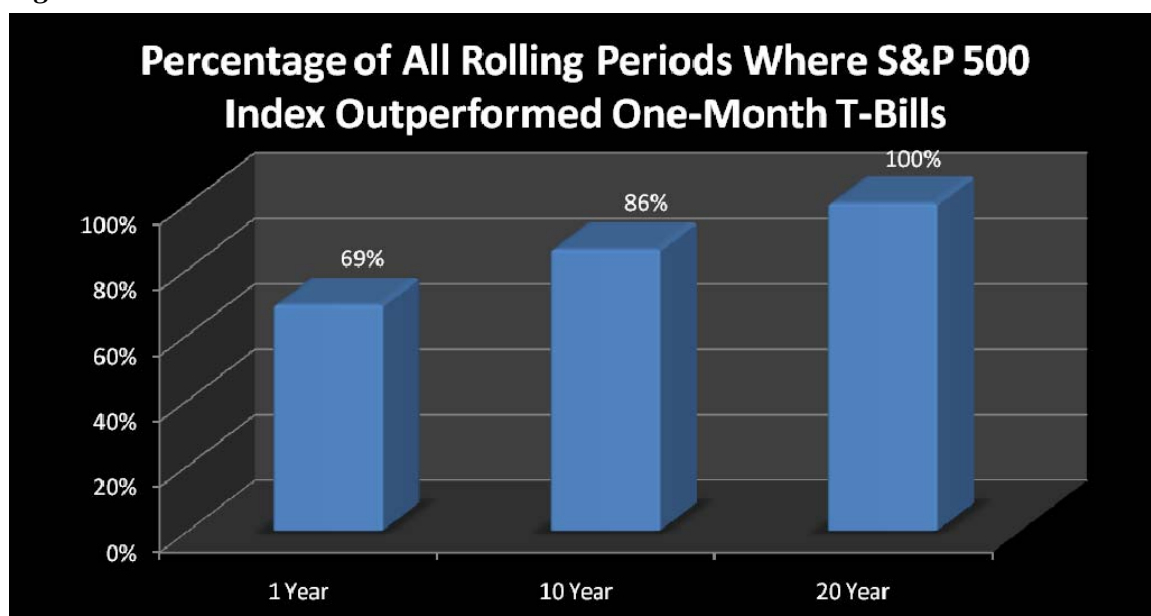
*Figure 2:* Asset Classes Found in the Current Empirical Fixed Income Portfolio

| <b>Asset Class</b>                                 | <b>Maturity</b> | <b>Duration</b> | <b>Average Quality</b> |
|--|-----------------|-----------------|------------------------|
| Short Term US Treasury Securities                  | 1.77            | 1.68            | Treasury               |
| Short-Intermediate Term US Treasury Securities     | 4.52            | 4.02            | Treasury               |
| Short Term US Investment Grade Corporate Bonds     | 2.09            | 1.95            | A+                     |
| Inflation Protected US Treasury Securities         | 9.46            | 5.45            | Treasury               |
| International Government Bonds                     | 7.95            | 5.88            | AA                     |
| Inflation Protected International Government Bonds | 9.23            | 9.90            | AA-                    |
| <b>Weighted Portfolio Average</b>                  | 5.19            | 4.11            |                        |

## Role of Fixed Income

We believe that the primary role of fixed income is to temper the volatility inherent in the equity/growth piece of a portfolio, especially over shorter term periods. Volatility reduction is most important when investors are withdrawing from their portfolio or have short investment time horizons. Figure 3 demonstrates that relative to Treasury bills, the S&P 500 index has afforded better twenty year returns in 100% of the rolling 20 year periods.

**Figure 3:**



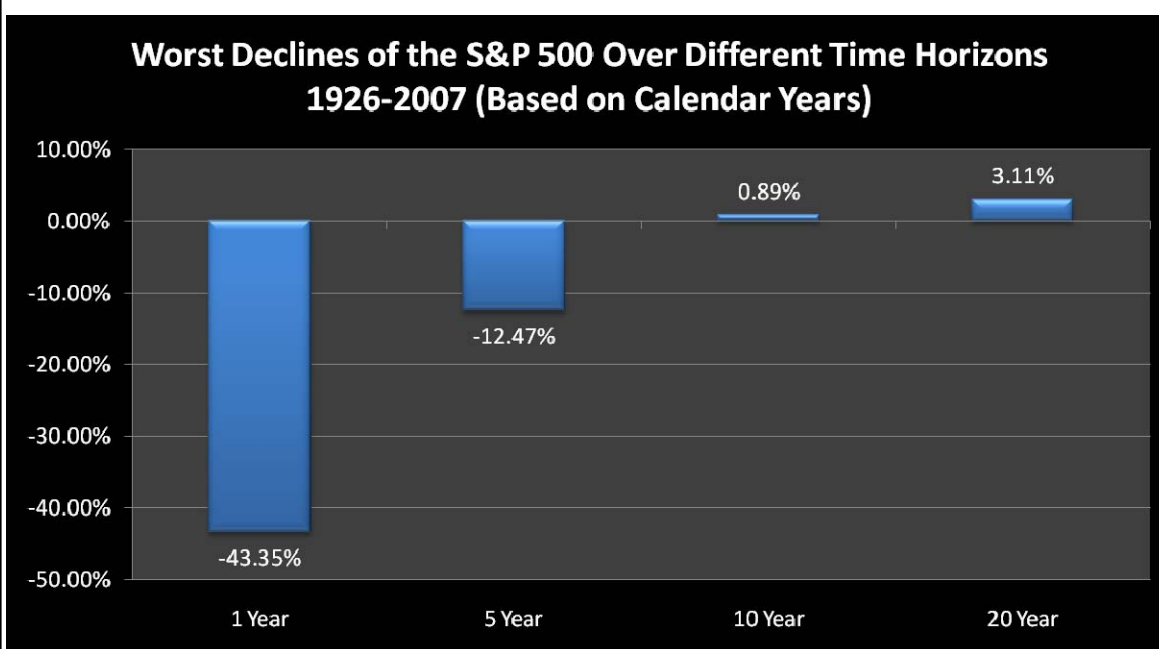
The S&P data are provided by Standard & Poor's Index Services Group. One-Month Treasury Bills © Stocks, Bonds, Bills, and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefeld). Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. 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. Indices are referred to for comparative purposes only and do not represent similar asset classes in terms of components or risk exposure; thus, their returns may vary significantly. The S&P 500 Index measures the performance of large cap US stocks. One-Month T-Bills measure the performance of US government-issued Treasury bills.

However, in one year time periods it has underperformed T-bills 31% of the time and by very large numbers on occasion. Figure 4 shows the worst returns for the S&P 500 over varying time periods, we can see that the longer the time frame the less the magnitude of loss. Fixed income should be used to reduce the inevitable short term dips experienced with an all equity portfolio. Nobel Prize winner, James Tobin put this notion forward with his "Separation Theorem" in 1958.

Modern Portfolio Theory tells us that we should seek to maximize the total return of our portfolio for a given amount of acceptable portfolio risk. Each of us has our own unique budget for risk determined by the amount of risk we are comfortable with and financially able to accept. In that context, we want to take risk where we get the maximum amount of return for it. Harry Markowitz (Nobel Prize recipient in Economics) showed us how to

build portfolios which fall on an efficient frontier line (a set of portfolios that offer maximum return for a given amount of risk –note that portfolios offering lower returns for the same amount of risk fall below the efficient frontier line and should be avoided). Designing efficient portfolios requires examining how our investments relate to one another instead of choosing each investment in isolation. This means we need to focus on our entire portfolio rather than each individual component when reviewing results. Investors who take a broad portfolio perspective are willing to include investments that carry lower expected returns than other alternatives (for example, short term bonds instead of long term bonds) if doing so opens up opportunity for the entire portfolio to do better. This occurs when the lower returning investments (such as fixed income) provide stability while other investments (such as stocks) which have higher expected returns are suffering in the short term.

**Figure 4:**



The S&P data are provided by Standard & Poor's Index Services Group. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. 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. Indices are referred to for comparative purposes only and do not represent similar asset classes in terms of components or risk exposure; thus, their returns may vary significantly. The S&P 500 Index measures the performance of large cap US stocks.

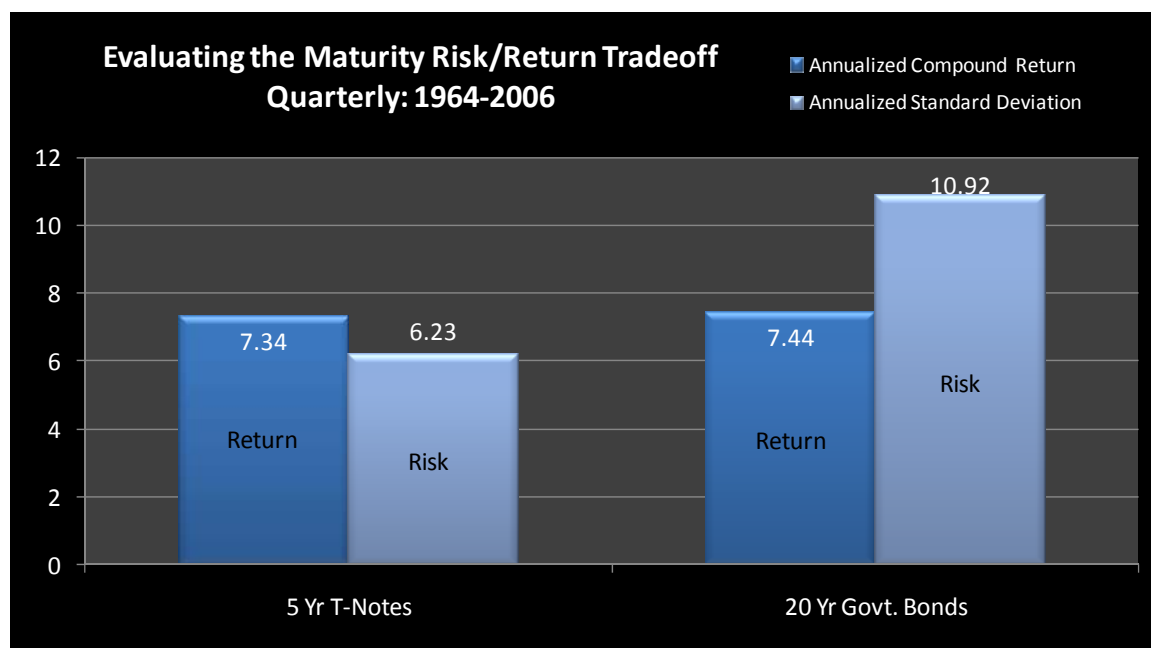
Thus, it is important to keep in mind that the fixed income portfolio we have created is intended to be viewed in the context of your entire portfolio. It is our belief that your risk budget is better spent on the growth side of your portfolio. This is done by including growth asset classes that carry higher expected returns than the S&P 500 Index (small companies, value companies and emerging markets are examples). Research shows us that you will be better served if we construct your bond portfolio to manage several of the

potential risks inherent with fixed income. Doing so means we are willing to give up some of the current yield premium found in securities such as long term bonds, nominal bonds (bonds that do not possess inflation protection), bonds that are rated below investment grade and preferred stocks. Many of these fixed income investments carry large risks and have a poor record of delivering enough excess return to compensate for the risks taken.

### Interest Rate Risk in a Portfolio Context

The implication is that investors are better off taking extra risk on the growth side of their portfolio where the track record for delivering a return premium is better. Let's look at a couple illustrations to clarify these points. Interest rate risk is one of eight primary risks fixed income investors face. Figure 5 shows that investors who extended the maturities on their treasury bonds from a five year average maturity to a twenty year average maturity received a parse .10% additional return. However, the risk factor as measured by standard deviation increased by 4.69%, that is a 75% increase in volatility. This might be acceptable if longer term bonds carried a lower correlation to the stock market than shorter term bonds. However, in the past, that has not been the case. Research has shown that shorter term bonds actually have a smaller relationship to the movements in stock prices making them better diversifiers from stocks than long term bonds (see Figure 6 for correlations of a few bond indices to the S&P 500 index).

**Figure 5:**



Source: Five-Year US Treasury Notes, and Twenty-Year (Long-Term) US Government Bonds provided by Ibbotson Associates. Ibbotson data © Stocks, Bonds, Bills, and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefeld). 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. Fixed income securities are subject to interest rate risk because the prices of fixed income securities tend to move in the opposite direction of interest rates. In general, fixed income securities with longer maturities are more sensitive to these price changes and may experience greater fluctuation in returns.

**Figure 6: Risk and Correlation of Various Stock and Bond Indexes**

| Asset Class                  | Worst 1 month return | Worst 1 year return | Correlation with S&P 500 | Index  |
|------------------------------|----------------------|---------------------|--------------------------|--|
| US Large Cap Stocks          | -14.5%               | -26.6%              | 1.00                     | S&P 500 Index                                  |
| US Small Cap Stocks          | -19.4%               | -27.0%              | 0.74                     | Russell 2000 Index                             |
| International Stocks         | -12.4%               | -28.5%              | 0.82                     | MSCI EAFE Index (net div.)                     |
| US Total Bond Market         | -3.4%                | -1.9%               | -0.23                    | Lehman Brothers Aggregate Bond Index           |
| US Short-Term Gov. Bonds     | -1.0%                | -0.3%               | -0.38                    | Merrill Lynch US Treasury Index 1-3 Years      |
| US Long-Term Gov. Bonds      | -9.8%                | -9.0%               | -0.29                    | Long-Term Government Bonds                     |
| US Inflation-Protected Bonds | -4.9%                | -1.6%               | -0.24                    | Lehman Brothers US TIPS Index                  |
| US Intermediate Corp. Bonds  | -3.1%                | -1.1%               | -0.12                    | Lehman Brothers Credit Bond Index Intermediate |
| US Long-Term Corp. Bonds     | -8.8%                | -8.8%               | -0.07                    | Long-Term Corporate Bonds                      |
| International Gov. Bonds     | -4.3%                | -6.9%               | -0.11                    | Citigroup World Gov. Bond Index 1-30+ Years    |

*Data is for the ten year period ending 5/31/08. Correlation is calculated on a monthly basis. The S&P Data is provided by Ibbotson data courtesy of © Stocks, Bonds, Bills and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated works by Roger C. Ibbotson and Rex A. Sinquefeld). Russell data from © Russell Investment Group 1995-2008, all rights reserved. MSCI EAFE data copyright MSCI 2008, all rights reserved. Lehman Brothers data provided by Lehman Brothers, Inc. Long Term Government Bonds data provided by Ibbotson courtesy of © Stocks, Bonds, Bills and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated works by Roger C. Ibbotson and Rex A. Sinquefeld). Long-Term government bonds data © Stocks, Bonds, Bills, and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefeld). Lehman Brothers US TIPS Index data provided by Lehman Brothers, Inc. Lehman Brothers Intermediate Credit Bond Index data provided by Lehman Brothers, Inc. Long-Term Corporate Bonds data courtesy of © Stocks, Bonds, Bills, and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefeld). Citigroup World Government Bond Index 1-30+ Years (unhedged) Citigroup bond indexes copyright 2008 by Citigroup (formerly Salomon Smith Barney).*

Figure 7 illustrates three hypothetical index portfolios to show how we can use these concepts in portfolio construction. Hypothetical Portfolio 1 is a simple two index portfolio with 60% allocated to stocks through the S&P 500 index and 40% invested in bonds through an intermediate bond index. Hypothetical Portfolio 2 changes the bond component from an intermediate bond index to a short term bond index. Hypothetical Portfolio 3 keeps the short term bond index but divides the stock portion of the portfolio into several unique asset classes in addition to the S&P 500. Some of the new equity asset classes carry more risk in isolation than the S&P 500 and some also carry higher expected returns. Some of the risk is dampened by the fact that each asset class has a less than perfect relationship to the other asset classes. However, overall equity risk has been increased in Hypothetical Portfolio 3. As we examine the returns and risk of all three portfolios we begin to see something interesting. When we moved from Hypothetical Portfolio 1 to Hypothetical Portfolio 2 we gave up some return; the short term bond index underperformed the intermediate bond index in Hypothetical Portfolio 1. We also notice that the risk factor (standard deviation) declined as well. If we were comfortable with the risk of Hypothetical Portfolio 1 and set that as our risk budget then we now have some risk budget left to spend. We spend that budget in Hypothetical Portfolio 3 using the Modern Portfolio Theory

concepts we previously discussed by adding in growth assets with higher expected returns. Hypothetical Portfolio 3 experienced greater returns than Hypothetical Portfolio 1 while staying within our desired risk budget. This is an example of why we do not purchase long term bonds and willingly accept lower returns on the fixed income side of the portfolio. The same theory applies to the other fixed income risks we will discuss in next quarter's letter.

**Figure 7a & 7b: Benefits of diversification in hypothetical index portfolios**

**7a: Portfolio Return & Risk Data**

|                    | Annualized Compound Return | Annualized Standard Deviation | Ending Value of \$100,000 Investment |
|--------------------|----------------------------|-------------------------------|--------------------------------------|
| Portfolio 1        | 10.31%                     | 10.94%                        | \$2,548,538                          |
| Portfolio 2        | 9.82%                      | 10.03%                        | \$2,200,328                          |
| <b>Portfolio 3</b> | <b>12.22%</b>              | <b>10.76%</b>                 | <b>\$4,490,748</b>                   |

**7b: Portfolio Constructions**

|                    | Lehman Brothers US Govt./ Credit Bond Index | S&P 500 Index | Merrill Lynch One-Year US Treasury Note Index | US Small Cap | US Small Value Index | US Large Value Index | Int'l Value Index | Int'l Small Index |
|--------------------|---|---------------|---|--------------|----------------------|----------------------|-------------------|-------------------|
| Portfolio 1        | 40%   | 60%           |   |              |                      |                      |                   |                   |
| Portfolio 2        |   | 60%           | 40%   |              |                      |                      |                   |                   |
| <b>Portfolio 3</b> |   | <b>7.5%</b>   | <b>40%</b>                                    | <b>7.5%</b>  | <b>7.5%</b>          | <b>7.5%</b>          | <b>15%</b>        | <b>15%</b>        |

Lehman Brothers data provided by Lehman Brothers, Inc. The S&P data are provided by Standard & Poor's Index Services Group. The Merrill Lynch Indices are used with permission; copyright 2007 Merrill Lynch, Pierce, Fenner & Smith Incorporated; all rights reserved. US Small Cap is the CRSP 6-10 Index data provided by the Center for Research in Security Prices, University of Chicago. US Small Value Index and US Large Value Index provided by Fama/French. International Value Index provided by Fama/French (January 1975-December 2004) International Small Cap Index: 1970-June 1981: 50% UK small cap stocks provided by Hoare Govett and 50% Japan small cap stocks provided by Nomura Securities; July 1981-present: compiled by Dimensional from StyleResearch securities data; includes securities of MSCI EAFE countries, market-capitalization weighted, each country capped at 50%; rebalanced semiannually.

**Conclusion**

In this letter, we established that the purpose of fixed income is to temper the risk involved with the equity/growth side of an investor's portfolio. With that end in mind, it is important to build a fixed income portfolio that is stable and has a low correlation to the growth side of the portfolio. It is important to understand the potential risks that come with fixed income investing so that we can determine how much if any of these risks we should expose our fixed income portfolio to. In this letter, we touched on one of those risks, interest rate risk (maturity risk) and how we manage it. In next quarter's letter, we will examine all eight major risks with investing in fixed income and how we addressed them when designing your fixed income portfolio.

Sincerely,



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