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"The Dow (is) hitting 40,000 by the end of the decade"
- Harry Dent (January 2006)

"The cult of equity is dying"
- Bill Gross (August 2012)

Capital Market Expectations and the Equity Premium

Throughout the history of financial markets, participants have endeavored to predict the return prospects of financial assets. Today is no different, as many investors and financial professionals are asking the same question: "What is the 'new normal' for capital markets?" Some, like Bill Gross, founder and managing director of PIMCO, have declared the days of high stock returns to be over. In a recent letter to investors[1], Gross compared stock returns to a Ponzi scheme, and predicted that they will return only slightly more than bonds in the foreseeable future. Mr. Gross has made some very inaccurate market predictions over the years including a statement in April of 2009 that "bull markets as we have known them are over." However, from April 1, 2009 to October 3, 2012, the S&P 500 is up 92.67%; Bill could not have been more wrong. Throughout 2009, PIMCO talked about a "new normal" where corporate growth is slower and profit margins are narrower. Here, again, we can examine the record and see that corporate earnings have actually grown at a rate of around 15% per year since April of 2009.

The above quote from bestselling author Harry Dent was one of several inaccurate predictions he has made (Harry recently appeared on CNBC predicting that the Dow will now drop to 3,000, a remarkable change in sentiment after only 6 years). Other prognosticators have echoed bearish predictions, some predicting another market collapse in the near term. On the other end of the spectrum, there are analysts who believe that the market is in for substantial growth, an example being Don Hays of Hays Advisory who predicts a 30% increase in stock returns over the next year[2]. The reality is that estimating market returns over a short period of time is futile. Further, the most unreliable way to estimate forward market returns is to base the assumption on factors that are unrelated to basic economic principles. With no shortage of baseless market predictions being made in the financial media, it is no wonder that many investors feel anxious about their ability to achieve their financial goals over the long run.

In July of 2007, we presented a prudent approach to creating market return estimates, or "capital market expectations" (CME). In this letter, we update our capital market estimates and discuss the concept of an "equity premium."

Why Develop Capital Market Expectations?

Having a set of market expectations allows an investor to examine their financial objectives in conjunction with a rational estimate of what returns may be during a given time horizon. Further, investment professionals use CME to guide their decisions on how much capital to allocate between various asset classes such as public and private stocks, bonds, public and private real estate, and other alternative investments like hedge funds. For example, if equities are overvalued and interest rates are low, it follows that future return estimates may be low and should be accounted for in a financial plan. The more income demanded of a portfolio over the near term, the higher the potential for an undesired outcome.

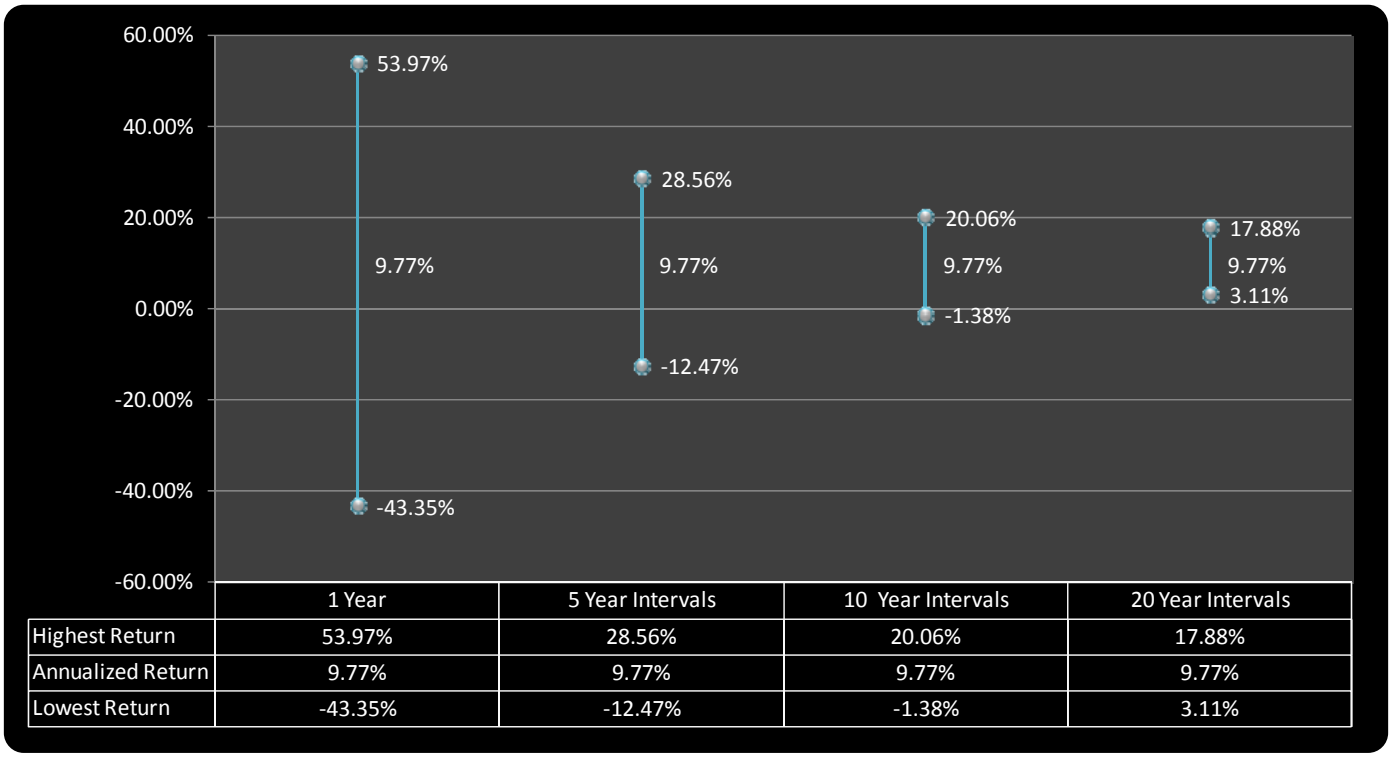
While we believe the exercise of setting CME is useful, we also believe that action taken needs to be measured with prudence and a keen understanding that markets are unpredictable.

this issue

looking ahead

[1] http://www.pimco.com/EN/Insights/Pages/Cult-Figures.aspx
[2] "Near Perfect Conditions Suggest 30% Rally for Stocks in Next 12 Months: Hays", Yahoo Finance, 9/21/2012

Figure 1: **Standard & Poor's 500 Index Overlapping Returns Annualized (1928 - 2011)**



	1 Year	5 Year Intervals	10 Year Intervals	20 Year Intervals
Highest Return	53.97%	28.56%	20.06%	17.88%
Annualized Return	9.77%	9.77%	9.77%	9.77%
Lowest Return	-43.35%	-12.47%	-1.38%	3.11%

Source: Data provided by Standards and Poor's.

Equity Premiums and Market Risk

Since 1928, stocks have outperformed Treasury bonds by around 6%[3] per year. This outperformance of stocks over safer bonds is referred to as the "equity premium." It is widely accepted that this premium is a result of the additional risk stockholders take relative to bond investors, and this relationship is likely to continue in future market conditions.

The equity premium has not been constant over all time periods and, on occasion, has been negative (implying that bonds have had higher returns than stocks at times). However, over long periods, it has been both positive and somewhat predictable. An important consideration to keep in mind is that during periods when bond returns are expected to be low (and inflation is potentially expected to be low as well), it is the relative return between stocks and bonds that may be most critical in making allocation decisions. We want to answer the question: "For the amount of risk taken by investing in stocks, what return premium might an investor expect to receive over safer alternatives?"

Considerations and Limitations

The founder of Vanguard, John Bogle, made this statement about developing market return estimates in his book, Common Sense on Mutual Funds: *"Don't think you know more than the market… Nobody does… Put another way, in volatile and uncertain financial markets, rationality provides only a* ***reasonable range*** *of expectations, and only over a long time horizon at that."*

The goal with CME is to have a basis for setting rational return expectations on a long-term basis for globally diversified portfolios. When developing a long-term investment strategy it is wise to study market history. Doing so helps us to understand where investment returns come from and what patterns of behavior we might expect from the market in the future. Entering into an investment with little understanding of what drives returns or what the inherent risks are is a mistake commonly made by individual investors. Thus, it is logical to examine the historical behavior of broad asset classes when developing a range for future returns.

At Empirical, we advocate an evidence-based investing approach. The evidence is clear that markets are impossible to predict with consistency in the short run, therefore we do not engage in the exercise of speculative investing. However, we do believe (and empirical evidence shows) that over longer periods of time, investment returns can be estimated with a *reasonable* degree of accuracy. Given a long enough time horizon, rationality overcomes the short-term speculative nature of markets, and asset prices gravitate toward their fundamental values (a phenomenon known as "mean reversion"). ***Figure 1*** demonstrates how the range of outcomes of the S&P 500 narrows around the long-term average as the time horizon extends.

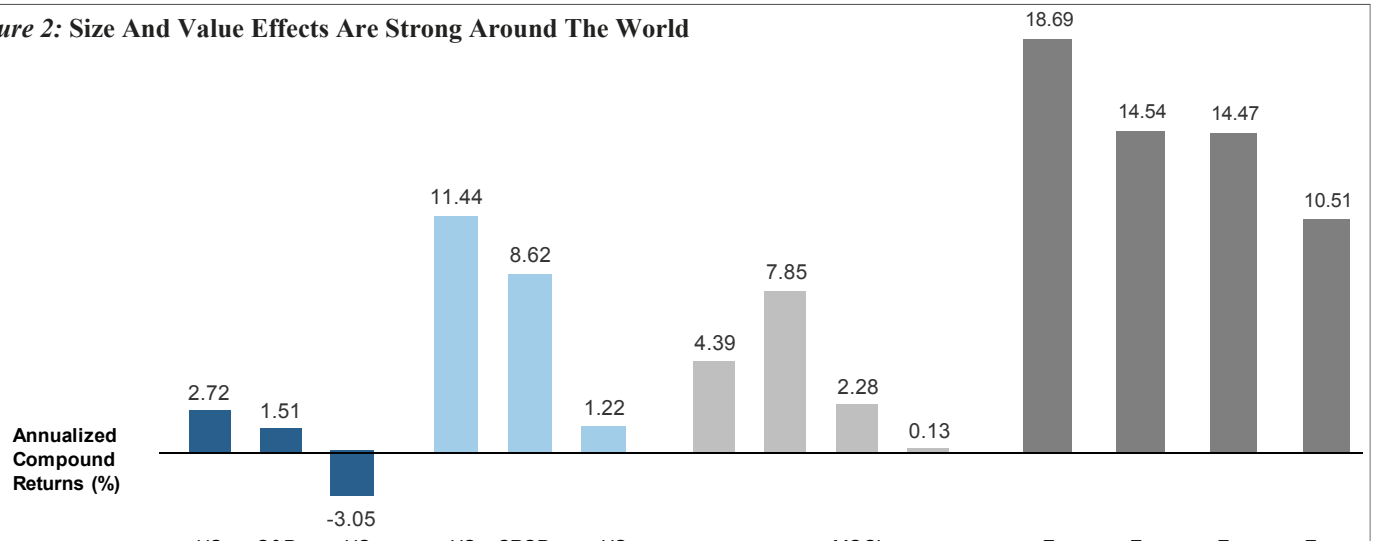
We see a 97.32% range of returns in the one year outcomes, with the highest one year return being 53.97% and the lowest being -43.35%. This range should make it clear why predicting returns over such a short period is an exercise in futility.

Historical Market Returns

Because of the mean reversion phenomenon mentioned

[3]Calculated as the difference between S&P 500 returns and returns on 10-year US Treasuries.

Figure 2: **Size And Value Effects Are Strong Around The World**



	US Large Capitalization Stocks 2000–2011			US Small Capitalization Stocks 2000–2011			Non-US Developed Markets Stocks 2000–2011				Emerging Markets Stocks 2000–2011			
Average Return (%)	2.72	1.51	-3.05	11.44	8.62	1.22	4.39	7.85	2.28	0.13	18.69	14.54	14.47	10.51
Standard Deviation (%)	19.63	16.22	19.61	25.87	23.16	24.25	21.03	19.70	18.64	18.76	25.55	24.68	24.16	24.52

Source: Data provided by Dimensional Fund Advisors.

above, it is helpful to conduct an examination of historical returns. If we have enough historical data (typically we want 30 years or more) for an asset class, we can get a sense of the average return toward which the asset class should gravitate. Further, we can look at the historical risk of that asset class to create reasonable expectations of future risk. We also examine the correlation to the other asset classes when creating investment strategies in order to take full advantage of the diversification potential of each investment. Combining our knowledge of market history with our forward estimates, we have a basis for making rational decisions on how to blend asset classes into a complete portfolio. In addition, we also create a framework for evaluating the merits of market predictions made by CNBC talking heads and other financial "experts." The Appendix shows a table of historical risk and return data for the different asset classes included in the Empirical Targeted Premium models (along with certain fixed income instruments) over various time horizons[4].

Return Variances Explained by Size, Value, and Location

As we examine historical returns, it is worth mentioning the historical precedent of small company stocks and value stocks outperforming large company stocks and growth oriented stocks. This size and value bias exists across geographic lines, occurring inside and outside of the United States. In addition, stocks from emerging (developing) markets have provided better risk adjusted returns than stocks in developed (non-US) markets in recent years. See ***Figure 2*** for an illustration of the size and value effect across global markets.

We have written previously about the research on size and value effects, so we will not delve into it further here. In this letter, we are presenting estimated returns for large US stocks, not for all equity classes. Most of the equity classes used in our Targeted Premium models carry higher long-term return expectations than the S&P 500 index.

Sources of Equity Returns

In order to estimate future equity returns, it is important to be able to explain where past returns came from. John Maynard Keynes, who was one of the most influential economists of the twentieth century, divided returns among two sources: investment and speculation.

1) **Investment**: This is a function of estimating and pricing the prospective yield of an asset over its projected life. We break this into two components collectively referred to as the fundamental sources of return, these are:

   - The beginning dividend yield
   - The growth rate of earnings

2) **Speculation**: This source of return comes from the market forecasting future prospects, and is best seen through the expansion or contraction of price-to-earnings ratios (P/E ratios).

The sources of return can be subdivided further, and a complicated discussion of the factors that drive returns takes place frequently in both investment journals and academia. We will stay focused on a simple model and a description of how it works. In the July 2007 newsletter, we introduced a model to estimate market returns advocated by John Bogle in his book, Common Sense on Mutual Funds. This model uses

[4]Not every asset class existed over the time period used, so different asset classes are added as they are created.

10-year periods to forecast equity returns (represented by the S&P 500). The model divides the components of return amongst the initial dividend yield of the period, average earnings growth over the 10 years in question, and the annualized change in the price-to-earnings (P/E) ratio over the period. Each of these components will be addressed in turn. More explicitly, the model can be viewed as the following equation:

Dividend Yield + Average Earnings Growth + P/E Effect (P/E expands or contracts) = Calculated Return

calculated return of 8.53%, which is quite close to the actual return received over that period of 9.17%. ***Figure 4*** *(on the next page)* shows that the process has generally worked well in explaining where equity returns come from. Before moving on, it is important to note the performance of the model in the last stated period (2000-2009). The model overestimated returns by more than 8%, as it was unable to account for the Financial Crisis. While this difference is significant, it was also anomalous, as the model forecasts were within 2.5% of actual returns 92% of the time, and nearly all of the irregular periods were during times of extreme financial duress (the Great Depression and the Financial Crisis). The 2000-2009 estimate, while inaccurate at 7.38% was far more conservative then the returns of the previous two decades.

Figure 3: **Ten Year Equity Model Return Estimates**

Date Jan 1 - Dec 31	Initial Div Yield	+	10-Year AEG	+	P/E Effect	=	Calculated Return	Actual Return	Difference
1940 - 1949	*5.07%*		*9.82%*		*-6.35%*		**8.53%**	**9.17%**	0.63%
1950 - 1959	*6.81%*		*3.92%*		*9.35%*		**20.07%**	**19.35%**	-0.72%
1960 - 1969	*3.22%*		*5.38%*		*-1.00%*		**7.60%**	**7.81%**	0.21%
1970 - 1979	*3.50%*		*9.56%*		*-7.47%*		**5.60%**	**5.86%**	0.27%
1980 - 1989	*5.14%*		*4.49%*		*7.69%*		**17.32%**	**17.55%**	0.22%
1990 - 1999	*3.28%*		*7.63%*		*6.90%*		**17.80%**	**18.21%**	0.41%
2000 - 2009	*1.16%*		*9.25%*		*-3.04%*		**7.38%**	**-0.95%**	-8.33%
Average	**4.03%**		**7.15%**		**0.87%**		**12.04%**	**11.00%**	**-1.04%**

Source: Data provided by Standards and Poor's and Robert Shiller.

To demonstrate the effectiveness of this model, we have created the table above ***(Figure 3)*** using data provided by Yale professor Robert Shiller showing the model calculations every decade beginning in 1940. This is only a small sample of the period estimates we created, as will be explained later.

The beauty of this model lies in both its simplicity and its accuracy. By isolating the most important factors that drive stock returns, the model is able to create forecasts that are both consistent and intuitive. There are a large number of models designed to predict stock returns over various time horizons, though nearly all of them fail to produce useful forecasts due to the inherent randomness of the market. At Empirical, we are constantly researching new market analysis techniques in both academic and practitioner literature, and it is not uncommon for us to come across the "new market model" that is supposed to solve the unpredictability problem. Most of these models are designed to closely fit historical data, and only work if the future strongly mirrors recent history with no surprises. Our view of the market can be summarized by the following Warren Buffet quote: "*In the short run, the stock market is a voting machine. In the long run, it is a weighing machine.*"

Let's look at the first 10-year period in ***Figure 3*** above (Jan 1940 to Dec. 1949). Summing up the three factors, we get a

Forward Estimates

Having a model that explains where equity returns come from is the easy part, using it to determine future returns is the tricky part. The initial dividend yield is a known quantity at the beginning of our investment period. The rate of earnings growth has been relatively predictable within ranges but is by no means known in advance. The change in the P/E ratio has been a very speculative variable that can have a large impact on the resulting returns. As we mentioned in the considerations section of this letter, making these projections in advance is very difficult, and it will not be precise a great deal of the time.

Dividend Yield

When estimating equity returns in the future, we know what the dividend yield is at the start. Currently the dividend yield on the S&P 500 index is approximately 2.06%. This is much lower than the 4.03% average (of 10-year periods) listed in the table above.

Earnings Growth

We need to make an estimate for earnings growth to calculate the second source of the fundamental return. It is impossible to predict exactly what earnings growth will be over the next 10 years, the best we can do is use history as a guide and look

at reasonable estimates. Historically, corporate earnings have been closely tied to GDP growth making up about 8% of GDP for the last 50 years. We are using a 2.9% real (adjusted for inflation) GDP growth figure for the next 10 years based on estimates made by the Congressional Budget Office (CBO) for 2012 through 2021. Using an estimated inflation rate of 2.2% (the current inflation rate implied by the market using the yield difference between inflation-protected treasuries and standard treasuries) would bring the nominal earnings growth rate to around 5.10%. In our view, a 5.1% nominal earnings growth rate is reasonably conservative as an estimate for the next ten years. This estimate is closer to the long-term earnings growth rate than the higher earnings growth rates experienced in more recent times.

of 7.69% per year.

P/E ratios have demonstrated the same tendency to revert to a long-term average as market returns have. Knowing this, we can keep perspective when market valuations go to extremes. Yale professor Robert Shiller studied the validity of using P/E ratios to guide market return expectations over 10-year time frames. He concluded that there is a statistically significant relationship between the starting P/E ratio and subsequent 10-year returns. Similar results have been found by other financial researchers, such as AQR founder Cliff Asness, and we conducted our own study that yielded a positive correlation as well.

Figure 4: **Hypothetical Equity Return Range (2012-2021)**

Varying Growth Rates							
				Baseline			
Initial Dividend Yield (Constant)	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%
10 Year AEG	**2.10%**	**3.10%**	**4.10%**	**5.10%**	**6.10%**	**7.10%**	**8.10%**
P/E Effect (Constant)	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Total Calculated Annual Return	**4.96%**	**5.96%**	**6.96%**	**7.96%**	**8.96%**	**9.96%**	**10.96%**
				Baseline			
Varying Ending P/E Ratios							
				Baseline			
Initial Dividend Yield (Constant)	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%
10 Year AEG (Constant)	5.10%	5.10%	5.10%	5.10%	5.10%	5.10%	5.10%
P/E Effect (Ending P/E Ratio)	**-13.13%** (3.50)	**-6.25%** (7.50)	**-2.16%** (11.50)	**0.80%** (15.49)	**3.15%** (19.50)	**5.09%** (23.50)	**6.76%** (27.50)
Total Calculated Annual Return	**-5.97**	**0.91%**	**5.00%**	**7.96%**	**10.31%**	**12.25%**	**13.92%**
				Baseline			

Source: Dividend yield data provided by Standards and Poor's.

P/E Ratio Changes

The market re-prices itself frequently through an adjustment of how much it will pay for a dollar of earnings. This change in market attitude is apparent in the P/E ratio. The P/E ratio is simply the price of the market divided by the amount of earnings the market generates per share. In times of extreme optimism about future prospects, P/E ratios expand, and during times of pessimism about future prospects, P/E ratios compress. This part of the return is subject to the short-term irrationality of markets. The movement of P/E ratios can explain a lot of the short-term volatility that occurs in the market, and fundamental components of return dominate in the long run. The average historical P/E multiple for the market is equal to about 15.49 (1871-2011).

For insight into how much the change in P/E ratios can affect 10-year stock market returns, we will focus specifically on the two decades covering the 1970's and the 1980's. Heading into the 1970's, the P/E was near its long-term average sitting at 15.9, but closed the decade at 7.3[5]. This compression of the P/E ratio detracted an average of 7.47% per year from the market return, which can be seen in ***Figure 3*** as the P/E effect. During the 1980's, the P/E expanded to close the decade at 15.5, This expansion of the P/E added an average

The approach we take is to assume that the P/E ratio will gravitate towards its long-term average over our projected 10-year period. For example, the P/E ratio for the S&P 500 at the beginning of the year was 14.3. If the P/E ratio expands to the long-term average of 15.49, we would expect an increase in returns approximating .8% per year. When John Bogle tested the approach mentioned earlier, he found that it worked very well 1/3rd of the time, reasonably well 1/3rd of the time and not well at all 1/3rd of the time (again, showing it is impossible to be accurate all the time). It is wiser to make an assumption that is based on a reversion to the long-term average than to estimate what the P/E ratio will be based on speculation of future market attitudes (which is what most market timers do whether they realize it or not). It is also prudent to examine a number of scenarios rather than a single estimate.

Tying it all together

Let's examine some possible return scenarios for the S&P 500 using our calculations for the fundamental and speculative sources of returns. ***Figure 4*** above shows our base assumption highlighted in the middle with lower return scenarios on the left and higher return scenarios on the right. The top part of the table holds P/E ratios constant and varies the resulting

[5]Calculated from the S&P500. Not shown in Figure 3.

earnings growth rates. The bottom portion of the table holds earnings growth constant and varies the ending P/E ratio. This should give you an idea how the two unknown variables (earnings growth and the ending P/E ratio) can affect the return outcome over the next decade.

It is clear to see how small differences can have a large effect on the resulting return. For example, if we look at the top portion of the table and assume that earnings will grow at 7.1% per year instead of 5.1%, the S&P 500 return goes up by 2% to average 9.96% per year. If earnings stay constant at 5.1%, but the P/E ratio expands to 23.50, the return increases by 4.29% resulting in an annual return of 12.25% per year. Now, if we combine 7.1% earnings growth with an ending P/E of 23.50 the total annual return equals 14.25% per year (this is not in the table but can be deduced by adding the return differences from varying earnings and ending P/E ratios).

Bond Market Return Estimates

Projecting the returns of fixed income instruments is a much simpler process. Here again, John Bogle's explanation is appealing to us because of its simplicity and the historical accuracy of its bond return projections. To avoid the issue of company or counterparty risk in our analysis, we use 10-year U.S. Treasury bonds. The initial interest rate on the 10-year treasury at the start of a given decade is used as the return for that decade. Over the time period sampled, the initial yield of 10-year Treasury bonds was a very effective tool for forecasting the returns of those bonds over the following 10 years, and it is this tool that we will use in our model. ***Figure 5*** shows the historical performance of this model using bond data provided by NYU professor Aswath Damodaran.

Figure 5: **Ten Year Bond Model Return Estimates**

Date Jan 1 - Dec 31	Initial Yield	Actual Return	Difference
1940 - 1949	2.21%	2.31%	0.10%
1950 - 1959	2.32%	3.06%	0.74%
1960 - 1969	4.72%	4.85%	0.13%
1970 - 1979	7.79%	7.61%	-0.18%
1980 - 1989	10.80%	10.34%	-0.46%
1990 - 1999	8.21%	6.60%	-1.61%
2000 - 2009	6.66%	4.40%	-2.26%
Average	**6.10%**	**5.60%**	**-0.50%**

Source: Bond return data provided by Dr. Aswath Damodaran.

The current yield for the 10-year treasury bond is 1.97%, and is the best estimate going forward. That being said, if interest rates change, then the rate available to reinvest the interest payments received will change. A change in the "reinvestment rate" will have an effect on the ultimate return achieved over the next decade. The reinvestment rate effect is impossible to predict in advance, and within reasonable ranges, does not drastically change the projected return.

Current Projection of Equity Premium

Before creating any kind of forecast, it is important to test the effectiveness of this model on historical data. For this purpose, we used S&P 500 data along with returns on U.S. Treasury bonds[6] beginning in 1928 and ending in 2011, creating 75 different 10-year periods for a rolling analysis. Over each of these decade-long samples, we computed the initial dividend yield, annualized earning growth, and P/E effect. We also found the initial bond yield for each period, and finally the annualized returns of both stocks and bonds over each 10-year interval. Using our calculated returns for each period, we estimated the period-by-period equity premium, and compared our estimation to the actual premium over each interval. The results of this analysis are in the table below.

Figure 6: Rolling Equity Premium Analysis (1928-2011)

75 Periods	Calculated Return	Actual Return	Difference
Equity Return	10.91%	10.64%	-0.27%
Bond Return	5.28%	5.20%	-0.08%
Equity Premium	5.63%	5.44%	-0.19%

Source: The S&P 500 is being used for equity returns. Equity returns data provided by Standard and Poor's. Bond return data provided by Dr. Aswath Damodaran[7].

As can be seen from the table above, on average this model has performed quite well over the sample period. While the predictions can be inaccurate from time to time, particularly in times of extreme market stress (such as the Great Depression and the recent Financial Crisis), the model does appear to account for much of the market movement over the previous 85 years.

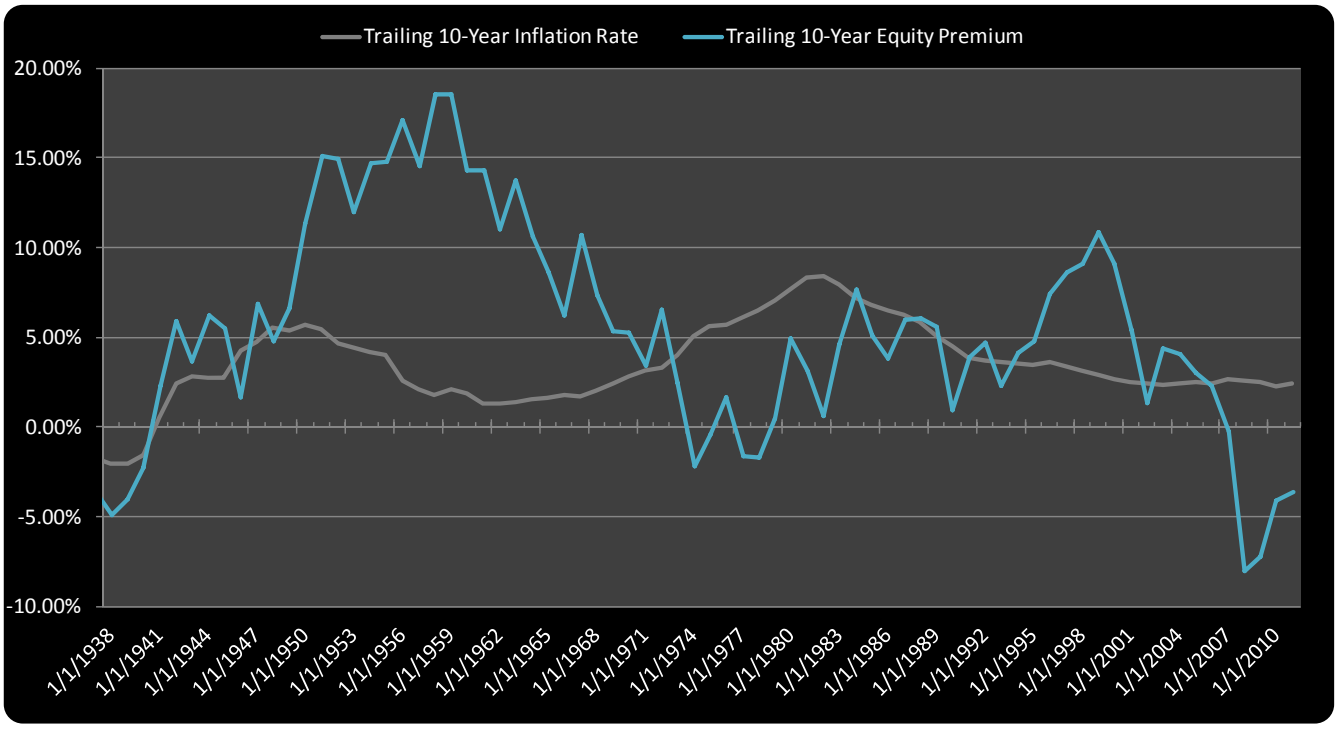
Using methods discussed above, we estimate an average annualized equity return of 7.96% and a bond return of 1.97% over the next 10 years. Thus, after subtracting the estimated bond returns from equity returns, we come up with a forecasted equity premium of 5.99% for the 10-year period beginning in 2012 and ending in 2021. In other words, we expect that on average stocks will return about 6% more per year than bonds over the next decade. Interestingly enough, this estimate is quite close to the long-term average of the equity premium.

Factoring in Inflation

An extremely important factor that we have yet to focus on is the rate of inflation, and the effect it has on investment returns. In terms of purchasing power, the inflation rate has the effect of creating negative returns. For example, if an investor only held cash and the economy experienced the 2.2% rate of inflation that we predict for 2012, they would have in effect lost 2.2% over the year. Staying with our earlier estimate, this implies that an investor with a portfolio composed entirely of U.S. Treasury bonds would lose 0.23% over the year. As the focus of this letter is the equity premium, it is useful to compare this premium over time to

[6]The S&P 500 data was provided by Dr. Robert Shiller on his website, and the bond data came from the St. Louis Federal Reserve. Bond returns used were as calculated by Dr. Aswath Damodaran, http://pages.stern.nyu.edu/~adamodar/
[7]http://pages.stern.nyu.edu/~adamodar/

Figure 7: **10 Year Equity Premium vs. 10 Year Inflation Rate (Trailing)**



Source: Data provided by Standard and Poor's, US Treasury, and Consumer Price Index

the inflation rate over time, as is done in ***Figure 7***.

This graph illustrates an interesting fact; the equity premium and the rate of inflation seem to move in opposite directions over time. In fact, the two data series have a correlation coefficient of approximately zero across our entire sample. If we only use data after 1950, this correlation drops to -0.26, meaning that a one unit movement in one series would be expected to lead to an opposite movement in the other series of around 26% of the magnitude. This finding implies a fairly negative relationship between inflation and equity premiums in recent years.

At first, this result might appear counterintuitive. Common sense would seem to imply that due to the fixed nature of bond payouts, stocks would be a superior inflation hedge, and this relationship would cause equity premiums to rise and fall with inflation. However, what we see from the graph is that periods of low, stable inflation tend to drive up equity premiums (stocks beating bonds), and that periods with particularly high and volatile inflation have the opposite effect. A plausible explanation for this phenomenon is that, simply put, investors get nervous during periods of economic uncertainty and forego the riskier stock market for the relative safety of bonds. This effect can be clearly seen in the several years spanning the Financial Crisis and its fallout. As the financial sector appeared to be on the brink of collapse, investors withdrew from the market *en masse*, opting instead to place their money in safer assets like bonds. This "flight to quality" caused stock prices to plummet while sending bond prices soaring. The combined effect was to create a largely negative equity premium, which can be seen in ***Figure 7***. However, if the economy recovers, and investors begin to feel more confident about the future, money is likely to flow from bonds back into equities, creating a long-run equity premium that is more in line with historical averages.

What it All Means

Now that an estimate for the equity premium over the next decade has been made, we need to ask an important question: What is the significance of this to the average investor? To answer that, it is important to first address the limitations of this forecast. We are not claiming that the equity premium will be at or around 6% per year over the next decade with certainty, nor are we insisting that inflation will be higher than the rate of returns of Treasury bonds. This model is merely intending to illustrate what the returns on stocks and bonds are likely to be if they follow a similar process to what they have been throughout recent history. While predictions over a long time horizon tend to be far more reliable than those made for short-term prediction, they are still only an estimate, and as such, are susceptible to error just like any other model-based prediction.

All that being said, we have seen that this particular model has performed fairly well throughout history, accurately predicting the equity premium within 3% in 66 of 75 periods (or 88% of the time). Therefore, though we may not have a great deal of confidence in the exact precision of our estimate, we can say with relative certainty that we believe the equity premium will be positive, on average over the next 10 years.

Conclusion

We began this newsletter with a quote from PIMCO's Bill Gross in which he claimed the cult of equity is dying. The purpose of this letter was to examine that claim under the microscope of both empirical evidence and financial theory.

For Mr. Gross's assertion to be accurate, it would require a change in fundamental risk preferences and investor beliefs, as well as a permanent break from historical market relationships, none of which seems particularly likely in our opinion. While we are agnostic about the level of market returns in the near future, we do not agree that investors should expect a zero or negative return premium for holding risky assets over the long run.

At Empirical, we still believe that the best way to achieve stable long-term growth in an investment portfolio is to hold a balanced, well-diversified set of assets tailored specifically to your return needs, risk preferences, and investment time horizon. We will continue to base our investment decisions on thorough fact-based research, and not on any claims made by various market prognosticators or daily news items, and we encourage all investors to do the same.

Sincerely,

Kenneth R. Smith, CFP®, MS
Principal | Chief Executive Officer

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Director of Research

Disclosure

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. The information provided herein should not be construed as a recommendation to purchase or sell any particular security or an assurance that any particular security held in a portfolio will remain in the portfolio or that a previously held security will not be repurchased. It should not be assumed that any of the transactions discussed herein have been or will prove to be profitable or that future investment decisions will be profitable.

Appendix :Asset Class Annualized Return (January 1927—December 2011)

	From 1927			From 1970			From 1980			From 1990		
Asset Class Index	**Annualized Returns** (ranked)		**Standard Deviation**	**Annualized Returns** (ranked)		**Standard Deviation**	**Annualized Returns** (ranked)		**Standard Deviation**	**Annualized Returns** (ranked)		**Standard Deviation**
US Large Blend *(S&P 500 Index)*	9.75	*5*	19.22	9.80	*6*	15.69	10.98	*6*	15.60	8.22	*8*	15.22
US Large Value *(Fama/French US Large Value Index (ex utilities))*	11.54	*4*	26.31	10.36	*5*	19.56	9.16	*9*	20.27	5.13	*15*	21.42
US Small Blend *(Fama/French US Small Neutral Research Index)*	13.94	*2*	24.71	13.91	*2*	19.34	14.45	*1*	18.20	12.67	*2*	18.41
US Small Value *(Fama/French US Small Value Index (ex utilities))*	14.51	*1*	30.17	13.84	*3*	22.70	13.72	*3*	22.06	11.91	*3*	23.44
US Microcap Blend *(CRSP Deciles 9-10 Index)*	13.04	*3*	32.87	10.82	*4*	23.52	10.81	*7*	21.51	10.96	*4*	22.26
One-Month US Treasury Bills	3.72	*7*	0.88	5.42	*9*	0.90	4.65	*15*	0.80	3.49	*19*	0.62
Five-Year US Treasury Notes	5.28	*6*	4.44	8.04	*8*	5.59	8.49	*12*	4.97	6.80	*11*	4.54
US Inflation Rate *(US Consumer Price Index)*	**3.05**		**1.84**	**4.36**		**1.28**	**2.97**		**1.10**	**2.69**		**1.16**
International Large Blend *(MSCI EAFE Index (net div.))*				8.87	*7*	17.32	8.86	*11*	17.86	3.42	*18*	17.79
International Small Blend *(Dimensional International Small Cap Index)*				14.34	*1*	18.38	11.33	*5*	18.16	4.54	*16*	18.69
International Small Value *(Dimensional International Small Cap Value Index)*							13.77	*2*	18.13	6.64	*12*	18.51
International Large Value *(Fama/French International Value Index)*							13.40	*4*	19.11	8.09	*9*	19.80
Commodities *(S&P Goldman Sachs Commodity Index Total Return)*							7.32	*13*	19.66	4.41	*17*	21.70
1-3Yr. Treasury Index *(BofA Merrill Lynch US Treasury Index 1-3 Years)*							6.79	*14*	2.19	5.21	*14*	1.69
US Total Bond Market *(Barclays Capital Aggregate Bond Index)*							8.98	*10*	4.66	7.03	*10*	3.77
US Real Estate *(Dow Jones US Select REIT Index)*							10.64	*8*	18.56	9.53	*6*	20.48
Emerging Mkts. Large Blend *(MSCI Emerging Mkts. Index (gross div.))*										9.45	*7*	24.18
Emerging Mkts. Large Value *(Fama/French Emerging Mkts. Value Index)*										14.40	*1*	25.87
Emerging Mkts. Small Blend *(Fama/French Emerging Mkts. Small Cap Index)*										10.55	*5*	24.75
Global Real Estate *(S&P Global ex US REIT Index (gross div.))*										6.23	*13*	15.93

Source: Data Provided by Dimensional Fund Advisors