ERA

EXPECTED RETURNS ANALYSIS

An Expected Returns Analysis (ERA) is an analytical tool *Wealth Teams* developed to help investors understand how their portfolio is constructed and has performed over a measured time frame. It was created to help investors do FIVE things.

1. Understand how their portfolio is constructed.
2. Understand the Efficient Frontier and how to stay on it.
3. Understand how their portfolio would have done in comparison to the S&P 500 since January, 2000.
4. Understand the risk associated with their portfolio and whether they are buying too much risk.
5. Understand how much your portfolio is costing you in implicit and explicit fees.

These three outcomes are important because these give a clear picture of how an existing portfolio is doing against an academically researched and scientific based benchmark.

How can a benchmark be called research and scientifically based?

There are hundreds of academic papers written on the science and math of asset allocation. These papers measure the statistical probabilities

of various asset class combinations reaching the historic mean and how these compare against known benchmarks such as the S&P, NASDAQ, CRSP, and Russell Indices. These articles and analytical techniques have been peer reviewed by other academicians who are knowledgeable and well versed in this type of research. The chance of error has been reduced to a small probability given the scrutiny and meticulous analysis these papers attract. It does NOT mean these studies are infallible. But it does mean there is a measurable way to recreate the results through simulation, using the same assumptions. The scientific method of hypothesis testing and research is used extensively in the field of finance and investments.

With this as background, the ERA was developed to help investors benefit from these analytical tools to understand how their portfolio operates day to day. Another benefit is to measure the expected outcome using proxies for their portfolio performance.

Here are some *common questions* we are asked at *Wealth Teams* related to the ERA and our ability to deconstruct portfolios into asset classes and determine a proxy benchmark.

What is an asset class?

It is important to understand the stock market can be divided into many submarkets. These submarkets are called asset classes and are defined based on specific criteria applied to the underlying stocks. A broadly defined sub market should be easy to identify, robust and predictable over long time periods. It should be cost effective to measure and easy to access. If a submarket, meets this criteria, then it could qualify to be used as a component part of an acceptable portfolio.

What are some examples of asset classes?

The two most prominent asset classes are large and small cap stocks. These are identified by calculating the capitalization value of each stock and then ranking them from largest to smallest. By dividing this list at the median, we have large and small cap stocks defined. This list can be further divided by delineate these two classes into value or growth. This is done by determine the ratio of the book value to the previously calculated capitalization value. This then creates four main

subcategories which exist in both the US markets and internationally. A Nobel Prize was given to Henry Markowitz for determining scientifically that consistent portfolio return is attributed to the asset class allocation. This was further corroborated by Gary Brinson in a study he did in 1986 looking at the performance of the 95 largest pension plans in America. He determined 96% of the excess market return (the amount above the risk free rate called alpha) was the result of asset allocation and not stock selection or market timing.

Why is Asset Allocation more important that stock selection or timing?

The Nobel Prize research of Markowitz and Eugene Fama has shown the consistent returns achieved through market performance as contrasted to active management. Most research studies show active management is both unpredictable and inconsistent. A successful active strategy cannot be identified in advance. The most successful investment strategies can barely beat the market. Regardless, you then have to subtract the fees charged to obtain the net performance. The only true way to gain optimum diversification is by having a wide assortment of proven asset classes that are properly mixed using correlations and risk indices.

How is it possible to measure past performance?

Once a submarket has been identified, it is possible to go back in time and see how this market has actually performed. By holding the asset class criteria constant, the market returns can be ascertained as well as the volatility attributed to this market. This data set is called a proxy and can be used to approximate the performance of any client portfolio that holds a comparable mix of stocks. This method can be applied to mutual funds or individual stocks.

How can a Proxy be used to emulate a portfolio of stocks?

Unless all of the stocks were picked at random, with no care or thought, it is likely there is some grid, some election criteria for picking the stock portfolio. Assuming the portfolio is not random, then it follows most analysts, would probably use a similar selection process in the future. So as not to be unfair, can we ascribe a strategy or motive for

how the stocks are selected? If the portfolio is dominated by large growth stocks, as an example, it may be the S&P 500 stocks dominate the portfolio. It follows the S&P would be a good proxy for that group of holdings going back 20-40 years. The S&P is can be considered a proxy for that grouping of stocks, even though the portfolio does not hold the S&P500 index specifically.

How can I know this is an accurate representation of past performance?

A statistical analysis of the data points in the proxy will tell the researcher if the data conforms to a normal distribution. If it does, then it is possible to determine whether a T Test will show how the performance is similar to or different from, the actual performance of the stocks. Since in all probability, the stock is actually held by the proxy, if there are enough stocks to mirror the proxy, or to approximate holdings in the proxy, it is not a stretch of the imagination the two are similar over long time periods. A proxy is exactly what it sounds like, a substitute for the real thing, and in this case, all of those stocks in the portfolio.

How do you deconstruct my portfolio?

Once we have a list of the holdings in your portfolio, we can use a national data base, called Morningstar to find out all of the basic characteristics of the underlying securities. We can determine the fees, the turnover, the risk index and the historic rate of return. There is a lot more information available, but those four are sufficient to analyze most portfolios. Using the data base, we can then ascertain what percentage of the portfolio is held in the various subcategories in the portfolio. This then is the beginning of the ERA analysis.

Why is deconstructing my portfolio an important step in the analysis process?

Portfolio performance is a function of the internal holdings. If those holdings mirror the market as a whole, then it would be expected the return would be comparable to the market. But if the holdings are weighted towards on specific asset class, then the returns attributed to that asset class would bias the portfolio return towards that weighting.

It is important to know how the asset class weightings are determined and what impact it has on the portfolio as a whole. Otherwise, there is no way to really understand why a portfolio has performed as it has over time or to determine where the portfolio is on the Efficient Frontier.

What is the Efficient Frontier?

There is an optimum return and minimum risk for every portfolio based on historic performance. The risk index (called the standard deviation) measures the variance between the average the real return for all events during the measured period. The Std Dev tells the range of volatility in that data set for two thirds of all returns (closest to the average). The outliers are not included in the index. This does NOT mean there will be the same volatility going forward. But it does suggest the volatility will at some level of probability be similar. If a portfolio can closely approximate the Efficient Frontier, it will then deliver the highest possible return for that allocation at the same risk index. The best way to think about it is as a target or goal to shoot for. It is never going to be attained, but it can be approached over a long period of time.

Why is it important to manage the risk in a portfolio?

How close are your returns to the average? The closer the actual returns achieved by the portfolio are to the average the higher the internal rate of return. The more volatility, the further actual returns will be from the average return. By taking measures to control the volatility, the closer the portfolio return will be to the historic performance of the proxy.

Two portfolios could have the same average return, but then have incredibly different results because the volatility was so much greater in the one than the other. This is why we ask the question, “Do You Know How Much Risk You Are Buying?” Most people don’t even think of it as buying risk. But every portfolio has risk. Some have more risk than others. With the Efficient Frontier, there is an optimum risk index for every expected return.

What are the key metrics to look for in the ERA?

There are three important measures of performance that are incorporated in the ERA. The first is a comparison of the Current Portfolio to the Efficient Frontier. Here, the ERA measures how far from the Efficient Frontier (or close) the current portfolio is. If the current portfolio is close, then it is properly structured and will likely deliver acceptable results over time. But if it is not close to the Efficient Frontier, then it will be obvious why and adjustments can be made to improve the performance. It is the beginning of measuring the Cost of Risk compared to the expected return.

The second important measure is the cost associated with the current portfolio compared to the cost for an Efficient Frontier portfolio. Turnover drives costs. If the turnover is high, then there will be high trading costs and losses in the portfolio due to the bid/ask spread. The lower the turnover, the lower the internal fees, that are almost impossible to measure, but do dramatically impact performance.

The third important measure in the ERA is a comparison of how current portfolio did when compared to a comparable allocation structure using the efficient frontier. This shows over the last 14 years the growth in the current portfolio compared to the Efficient Frontier portfolio. Again, this is an illustration only and it is based on assumptions that are not realistic. But it is a way to measure the potential differences were the assumptions to be correct.

How are Costs measured in the ERA?

There are four costs the ERA measures. Two are implicit and two are explicit. Morningstar provides us with the explicit costs for all mutual funds. Morningstar also provides an estimate of the turnover. So these are easy to identify. There are numerous academic papers that have attempted to measure the implicit costs of turnover. But it is impossible to get an exact number. So the ERA has developed two algorithms to estimate the trading costs and the bid ask spread caused by turnover. It is NOT perfect, but it is a reasonably accurate estimation based on the research provided in this area.

What is the Bid Ask Spread?

When a stock is purchased, the buy is determined the current market value. But stocks rarely trade for the quoted market value. They are usually traded for at a premium. This means you have to pay slightly more than the quoted price. The same is true for the Sell. When a stock is sold, it never sells for the quoted price, it sells at a discount. So that spread between the discount and the premium represents a loss to the investor. It can be significant over an extended period of time.

What should I know about the ERA?

There are four critical elements to the ERA that pertain to your success as an investor.

1) The ERA, first and foremost, deconstructs your portfolio and shows you exactly why you are getting the historic return you have achieved.

2) Next is the importance of understanding "how much risk you are buying and how to reduce it, if possible." This information combines the deconstruction with the algorithms programmed to determine the efficient frontier.

3) The third benefit from the ERA is the illustration that matches the proxy performance for your portfolio to the DFA portfolio over the same time frame.

4) And finally, a breakdown of expenses to see what your portfolio is costing compared to a WTS model.

Summary

Most Advisors have no idea how much risk is in the portfolios they recommend, nor can they tell you whether you are near the "Efficient Frontier." The ERA is an important tool in an investor's tool chest. Knowing how to interpret the information can help you learn the best way to construct your portfolio going forward so you can reach the "Efficient Frontier", efficiently. It also shows you how much risk you are accepting for the expected return and the costs associated with

your portfolio. This is a valid question every investor should be asking their advisor.

If you don't know how much risk you are buying, you need to get a *second opinion* and have it measured. *Wealth Teams* provides this service as a way of building a relationship with potential investors. Regardless of whether you choose to use *Wealth Teams* as your advisor or not, it would be a good idea to know these **four** things.

1. How Is Your Portfolio Constructed?

2. How Much Risk Have You Purchased In Your Portfolio?

3. What Is The Expected Return And Are You Near The "Efficient Frontier?"

And

4. What Is It Costing You In Fees And Taxes To Get This Return?

If you don't know the answers to these questions or would like to have a better understanding of them, then contact a *Wealth Teams Advisor* and let us provide you with this analysis.

Remember: "Knowledge is Power" – Helen Keller.