Evidence-Based Investing

SUMMARY

A Scientific Framework for the Art of Investing

Science has produced many tremendous advances, from lifesaving medical treatments to instantaneous communication. Historically, though, science has had little influence on investing. Instead of keeping pace with advancements in modern portfolio theory along with historical and statistical evidence, investors and money managers often rely on conventional wisdom and flawed assumptions. How can investors sort through the vast amount of available data to maximize after-tax return and minimize risk? This brief summary of our Evidence-Based Investing white paper provides a framework that we believe can provide investors optimal outcomes based on compelling scientific evidence.

CPAs & Wealth Managers

The Clash of Conventional Wisdom and Science

To expose the many shortcomings of the conventional approach and provide a road map to investing success, our white paper, *Evidence-Based Investing* (EBI), and this brief summary of the paper illustrate the methods and conclusions of EBI. The goal of EBI is to maximize after-tax returns for the individual investor while minimizing risk and protecting portfolios from market downturns. Approaching a problem or a set of questions from an evidence-based point of view has profoundly affected the field of medicine, and now investing. EBI offers a way to answer investment questions in a systematic, analytical, and scientific manner as described in the four steps below.

1 Eliminate Meaningless Questions | **2** Ask Meaningful Questions | **3** Apply the Evidence | **4** Monitor for Effectiveness

1

Eliminate Meaningless Questions

The conventional investment approach rests on spurious assumptions and false hopes. Whether one seeks investing success by picking stocks, timing the market, or by picking skilled money managers, the costs of these speculative techniques are greater than any gains derived by their practice.

What is the next hot stock?

Typically, conventional investors focus on stock selection and market timing while ignoring the primary driver of future return – optimal allocation between different asset classes. Asset allocation is, by far, the most effective means of capturing market returns.

Why wouldn't I hire a money manager who claims they can beat the market?

History shows that on average they do not perform better. The average actively managed fund compared to its relevant passive index for the past 15 years has underperformed by a range of 0.8% to 1.8% annually across the various stock categories.[1]

I just saw a list of last year's top funds, which ones should I buy?

If one attempts to actively select stock funds, there is a good possibility that the fund will not even exist in the future, let alone outperform. In fact, over the past 15 years only 42% of stock funds survived and only 19% of those survivors actually outperformed their benchmark.[2] Chasing performance doesn't work.

I'm afraid the markets are going to drop, should I sell all of my stocks?

Evidence shows that the behavior and ranking of asset classes defies prediction from year to year. Even patterns that seem to appear can often reverse quickly and backfire on investors who chase returns. In fact, just missing the best 25 days in stocks since 1988 would have reduced an investor's return by almost 5% on average per year.[3]

Why should I care about costs, isn't performance more important?

The cost of active management is considerable, and there are many different layers of costs to consider. In short, costs matter. Funds with the highest expense ratios trail their benchmarks by much more than funds with lower costs.[4]

2

Ask Meaningful Questions

Meaningful questions need to be formulated. That means asking questions that can be proven or disproven with reference to evidence. The questions must also have significance for the individual investor. This requires the experience and knowledge of an objective financial advisory team.

What is the role of bonds and what types of bonds are most appropriate?

Bonds have always been a preferred means of protecting principal and providing income. In order to create a strong, defensive bond allocation, intermediate and short-term bonds should be blended with inflation-protected and international bonds to protect against a variety of market conditions.

Is it advantageous to diversify overseas?

The U.S. market only makes up about half of the world's market capitalization. International stocks behave differently than U.S. stocks, making them an excellent source of diversification. Portfolios that include both U.S. and international stocks historically experienced higher returns and lower risk than a portfolio composed solely of either U.S. or international stocks.[5]

Can small stocks be safely included in diversified portfolios?

While it is true that small stocks are more volatile than large stocks, they account for the highest number of stocks globally. There is no way to capture overall stock market returns without including small stocks. They offer higher expected returns and historically have earned an average annual premium of 2% over large stocks.[6]

Are value stocks preferable to growth stocks?

Yes, both history and evidence vindicate the value investor over the growth investor. Since 1927, value stocks have outperformed growth stocks by an average annual return of 1.9%.[7] There are, however, some periods when growth outperforms value so it is wise to include both to maintain broad diversification.

Should diversified portfolios invest in assets other than stocks and bonds?

Portfolios can benefit from alternative investments when they are transparent, liquid, and have low correlations to other major asset classes. REITs, reinsurance, and managed futures are three examples of asset classes that demonstrate these traits and are the logical completion of a broadly diversified portfolio.

3

Apply the Evidence

Once the right questions have been asked, evidence can be applied to solve problems and integrate both advisor expertise and the individual investor's values and goals. The implementation of the portfolio includes several key areas: investment selection, rebalancing, and managing taxes.

- For investment selection, both passive (indexed) and broad-based market funds have the essential characteristics of being low cost, tax-efficient, and transparent.
- Rebalancing ensures a commitment to long-term risk control and can enhance return. Simply put, rebalancing allows you to systematically purchase investments that have declined in price and sell investments that have increased in price.
- As legendary investor Sir John Templeton said, "For all long-term investors, there is only one objective: maximum total return after taxes." We couldn't agree more! Fortunately, there are numerous strategies that can be utilized to maximize after-tax returns, including the use of low turnover funds, tax-managed funds, municipal (tax-free) bonds, tax-loss harvesting, and asset location (tax engineering).

4

Monitor for Effectiveness

The last step, monitoring for effectiveness, is a very important part of the process. We refer to it as "robust investment oversight" which we believe significantly enhances investment results by eliminating needless risk.

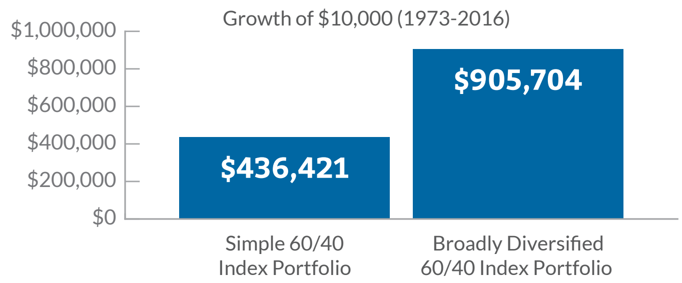
The Investment Committee is at the helm of Beaird Harris's investment management and is responsible for overseeing all investment-related activities including the firm's investment philosophy, process, asset allocation, investment selection, ongoing due diligence and implementation.

Evidence-Based Investing–The Positive Results

Evidence clearly shows that the added wealth generated by a broad, globally diversified portfolio is substantial. Investors in a broadly diversified global index portfolio (using the aforementioned EBI principles) accumulated more than twice the wealth of investors owning a simple index portfolio. It pays to defy conventional wisdom and follow the evidence. We encourage you to read the full white paper which contains details of the evidence.

Simply put, we believe the broadly diversified global index portfolio is a better investment solution. This approach can be used to create portfolios ranging from 100% stocks to 100% bonds, depending on the goals and risk tolerance of the individual investor. This evidence presents a scientific framework investors can use to enhance the art of investing.

Broadly Diversified Portfolios Deliver Higher Returns and Similar Risk[8]



	Simple 60/40 Index Portfolio	Broadly Diversified 60/40 Index Portfolio
Annualized Return	8.96%	10.78%
Standard Deviation	10.98%	11.30%
Worst 10-Year Return	0.27%	4.15%

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REFERENCES, NOTES, SOURCES OF DATA AND METHODOLOGY

Data source is Morningstar Direct unless otherwise noted.

1. Active fund returns are Morningstar open-end fund category average returns for U.S. Large-Cap, U.S. Mid-Cap, U.S. Small-Cap, Developed International, Emerging Markets.

2. Source: Dimensional Fund Advisors, 2015. Equity funds – performance periods ending 12/31/2014.

3. S&P 500 Index data 1/1988-12/2015.

4. Low expense funds are defined as funds in the first quartile of expense ratios in their category. High expense funds are defined as funds in the fourth quartile of expense ratios in their category. For example, as of 12/31/2015, low expense funds in the U.S. Large Cap category had an annualized average return of 6.1% versus high expense funds having an average return of 4.2%.

5. Data period: 1/1973-12/2015. U.S. Large Stocks - S&P 500 Index (10.1% return, 15.4% risk (standard deviation)). International Developed (8.9% return, 17.4% risk), Emerging Markets (11.8% return, 21.4% risk), Global Blend (10.3% return, 14.7% risk) - 67% U.S. Large Stocks, 24% International Developed, 9% Emerging Markets. International Developed: A blend of the MSCI EAFE and International Small (DFA International Small Company Index 1/1973 - 9/1996, S&P EPAC after 9/1996). Emerging Markets: MSCI EAFE 1/1973-12/1987, MSCI EM GR 1/1988-12/1998, MSCI EM NR 1/1999-12/2015.

6. Data period: 1/1926-12/2015. Annualized return for the S&P 500 Index is 10% and for the Ibbotson Small Stock Index is 12.0%.

7. Data period: 7/1927-12/2015. Annualized return for the Fama-French Large Value Index is 11.2% and for the Fama-French Large Growth Index is 9.3%.

8. All Dimensional portfolio returns are net of all fees unless otherwise indicated. All Dimensional trust returns are net of administrative fees only unless otherwise indicated. Prior to April 2002, certain international equity portfolios charged a reimbursement fee to the purchasers of shares of those portfolios. Dimensional 60/40 Balanced Strategy Index: 01/1973-12/2016, January 1973 - Present: Dimensional 60/40 Balanced Strategy Index, Previously: DFA Normal Balanced Strategy Index, Total returns net of all fees in USD, Mix of various benchmark indices. 1994 – Present: Dimensional 60/40 Balanced Strategy Index, Previously: 12% S&P 500 Index, 12% Dimensional US Large Cap Value Index, 6% Dow Jones US Select REIT Index, 6% Dimensional International Value Index, 6% Dimensional US Small Cap Index, 6% Dimensional US Small Cap Value Index, 3% Dimensional International Small Cap Index, 3% Dimensional International Small Cap Value Index, 2.4% Dimensional Emerging Markets Small Index, 1.8% Dimensional Emerging Markets Value Index, 1.8% Dimensional Emerging Markets Index, 10% Bloomberg Barclays Treasury Bond Index 1-5 Years, 10% Citigroup World Government Bond Index 1-5 Years (hedged), 10% Citigroup World Government Bond Index 1-3 Years (hedged), 10% BofA Merrill Lynch 1-Year US Treasury Note Index. For details prior to 1994, refer to the Balanced Strategy section of the Matrix Book. Currency: USD. Data includes composite data from multiple sources or custom blends; see data descriptions for additional details. Basic Diversified Portfolio: 07/1963-01/2017, Basic Diversified Portfolio From 07/1963 To 12/2016. Constructed under USD. Period 1: From 07/1963 (Earliest) To 12/2016 (Latest). Rebalance: Per 1 Month. BofA Merrill Lynch 1-Year US Treasury Note Index: 20%. S&P 500 Index: 60%. Five-Year US Treasury Notes: 20% Currency: USD.

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