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IS A DIVERSIFIED PORTFOLIO BETTER THAN A 60/40 PORTFOLIO? A 10-YEAR COMPARISON STUDY OF A UNIVERSITY ENDOWMENT

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ABSTRACT

The following examines the performance of an actively managed university endowment and compares the result to the return of a passive, index-based investment comprised of 60 % U.S. equities and 40 % U.S. bonds. From 2013 to 2022, the results show that the endowment underperformed the passive 60/40 index fund in each of the last 1-, 3-, 5-, and 10-year periods. The compound annualized growth rate (CAGR) over the 10-year period was 6.5% for the actively managed endowment compared to 7.8% for the 60/40 index fund. Incorporating novel asset classes into an actively managed portfolio does not guarantee better returns than investing in a low-cost 60/40 index fund.

JEL: G3

KEYWORDS: Endowment Management, Active Versus Passive Investing, Asset Allocation, ETFs

INTRODUCTION

University endowments consist of cash and other financial assets that executives and trustees intend to hold in perpetuity. Charitable donations by individuals, corporations, or foundations are the main source of funding, but the board of trustees can also elect to add unrestricted gifts or surplus funds to the endowment. For most institutions, the income generated by an endowment supports research, teaching, scholarships, and the overall mission of an institution. Universities typically follow an investment policy that stipulates how much money can be drawn from the endowment each year. For most institutions, the spending rate is approximately 5% of the market value of the assets even when the market is volatile. Many Ivy League universities have billions of dollars in endowment assets, and a 5% spending rate can generate a large amount of available resources (Phung, 2022). Therefore, the size of an endowment can be important for the overall financial health of a higher education institution. An important part of endowment management is asset allocation, which is the strategic distribution of funds across various asset classes such as stocks, bonds, real estate, etc. The goal is to construct a portfolio that generates a high investment return while at the same time minimizing risk. According to Markowitz' (1952) modern portfolio theory, the challenge of constructing an investment portfolio is to balance expected returns with their contribution to risk (Brown, Garlappi, & Tiu, 2010).

University endowments are typically well diversified; thus, an examination of whether an actively managed and well diversified endowment can outperform a basic 60/40 portfolio appears justifiable. Currently, most of the acquired endowment used for this study is managed by a nonprofit organization (NP) that provides investment services to 501(c)3 organizations. The NP offers several investment solutions, and the university board of trustees chose to invest in a "fund of funds" whose goal is to generate a positive return and long-term growth from a variety of investments. The investments include U.S. large-cap and U.S. small-cap equities, international developed markets equities, emerging markets equities, and fixed income.

In addition, the fund of funds includes a real assets fund and an alternative investment fund. The real assets fund consists of global infrastructure equities, commodities, real estate, TIPS, oil and gas interests, and agribusiness. The alternative investment fund includes long/short equities, floating rate bank loans, and merger arbitrage. The percentage allocation of each asset class is noted within the Data and Methodology section. This paper presents an alternative to outsourcing the investment function to professional money managers for university administrators and trustees. An actively managed endowment typically consists of multiple asset classes with the goal of outperforming selected benchmarks. However, as this paper demonstrates, very few investment companies can do so. Clients would have been better off investing in a low-cost index fund, such as a 60/40 portfolio. Actively managing investments requires skill, and investment companies charge a minimum of 0.66% (Boyte-White, 2023), whereas an index fund that tracks the S&P 500 can be obtained for as little as 0.03%. In this example, where the S&P 500 is the benchmark, the actively managed fund must consistently outperform the S&P 500 by 0.63% just to cover its fees. Therefore, aiming to earn the benchmark year after year, while paying a small index fund fee, may be a more worthwhile goal for university administrators than relying on an active investment manager to generate above-average returns.

Few academic studies examine university endowment performance, with most relying on data from the National Association of College and University Business Officers (NACUBO) annual survey. This study contributes to the literature by comparing the investment returns of an actively managed and well-diversified endowment to those of a passive 60/40 portfolio over a 10-year period from 2013 to 2022. In addition, the study contributes to the existing literature by challenging the conventional wisdom of diversification in endowment management and highlighting the potential benefits of passive investment strategies. It also underscores the importance of asset allocation and the need for regular performance evaluation in portfolio construction. This study is organized as follows: the next section is the literature review with a discussion of how diversified portfolios and traditional 60/40 portfolios have been addressed in academic journals and news media. Examples of active versus passive investment strategies and the impact of fees are presented. Following the literature review is the data and methodology section where data are presented to answer the research question. The results and discussion section contains the findings of the study and the limitations of the study. The last section provides concluding remarks and ideas for future research.

LITERATURE REVIEW

The pros and cons of asset diversification have received considerable attention in the literature. Proponents of holding a diversified portfolio point to risk mitigation by spreading investments across a variety of asset classes, industries, sectors, companies, and geographic areas. The goal is to pick investments that have a low correlation. When one asset class has a negative return, another asset class might perform better and thereby provide a more consistent investment return. Diversification can protect against losses and might create investment opportunities. Opponents of asset diversification point to potentially lower portfolio returns caused by high management and transaction fees. It requires professional skill and expertise to manage many investments. Furthermore, not every risk can be avoided by diversification. Market risk caused by inflation, interest rates, or geopolitical disturbance is a factor that every investor should be aware of (Lioudis, 2022). Ilmanen and Kizer (2012) argued that investors should consider factor diversification instead of asset class diversification. The factor viewpoint involves a shift in focus from dollar allocations to risk allocations. Factors to consider include equity, size, value, momentum, term, and default premiums. Factor diversification has been shown to generate excess returns in general and, in particular, during severe market downturns. Asness, Israelov, and Liew (2011) studied the short-term and long-term impact of asset diversification and found that the benefits of diversification become evident over time. When a big selloff occurs, losses in most asset classes and markets are well distributed, and the effect of diversification is weak. Over extended periods of time, however, well diversified portfolios – especially the ones including international equities – will return superior results.

The traditional 60/40 portfolio has been popular with investors because it combines historically superior stock returns with lower risk fixed income investments (Matthews, 2019). In general, the returns of bonds and stocks are negatively correlated: bonds usually have a positive return in times when equities lose money during a market crash. In 2019, the 60/40 portfolio came under attack because of lower returns from bonds (Napach, 2019). In addition, stock market returns were limited because of high equity prices and above-average growth that appeared unsustainable. Portfolio advisors recommended a larger allocation to alternative investments such as private equity, emerging markets, infrastructure investments and U.S. real estate. The assumption that stocks and bonds have a negative correlation proved to be wrong in 2022 when both asset classes produced negative returns, and many investment professionals predicted the end of the 60/40 portfolio (Benjamin, 2023). In the aftermath of the pandemic businesses and consumers saw price increases in many areas. Lockdowns in China aimed to fight COVID-19 depressed production and caused supply-chain disruptions. Russia's invasion of Ukraine and the subsequent sanctions by most western countries against Russian goods drove up oil and other commodity prices. Furthermore, the war sparked concerns about Europe's economies (Krauskopf, 2022). To fight the ensuing high inflation, the Federal Reserve raised interest rates which caused bonds and stocks to fall at the same time. Rising interest rates decrease the price of existing bonds and increase overall bond yields (Campbell, Viceira, & Pflueger, 2023). Equity investors feared that rising interest rates would hurt growth and push the economy into a recession. The rise in bond yields presented an alternative to equity investing and made riskier high-growth stocks less attractive (Krauskopf, 2022).

Considering the 2022 market turmoil, researchers at Vanguard evaluated whether higher inflation could lead to greater correlation between equities and bonds and thereby undermine the benefits of asset diversification. To examine this, Vanguard simulated the returns of two portfolios. The first portfolio consisted of 60% global equities and 40% global bonds, representing the company's basic assumptions about asset class correlation and returns over the next 10 years. The second portfolio contained 10% commodities in the equity section and 8% TIPS (treasury inflation protected securities) in the bond section. This approach was designed to anticipate an environment of high inflation for an extended period and high correlation. The results showed that the traditional 60/40 portfolio was more volatile than the inflation-hedged 60/40 portfolio, but the expected annualized 10-year returns were similar. The study also found that the asset allocation has a greater impact on long-term returns than inflation or correlation (Vanguard, 2023). Markowitz (1952) has contributed enormously to the field of investment management. His work is known as "Modern Portfolio Theory." While Markowitz' theoretical assumptions are complex, the general idea is that it is difficult to outperform benchmarks, and investment managers who do so have effectively diversified their portfolios and have taken on more risk (Mangram, 2013). Mean-variance optimization modelling as developed by Markowitz is difficult because expected returns for various assets classes cannot be calculated with accuracy. Instead of a mean-variance optimization strategy, Chaves et al. (2010) used a risk parity methodology and compared the results to other simpler asset allocation approaches such as a 60/40 equity/bond portfolio. Under the risk parity approach, each asset class is equally weighed by its risk contribution to the portfolio. A major advantage of risk parity weighting is that expected return assumptions do not need to be devised. The study revealed that the risk parity performance in comparison to other asset allocation models is strongly influenced by the asset classes and the period included. Overall, the risk parity investment strategy did not consistently outperform an equal-weighted portfolio or a simple 60/40 portfolio.

The benefits of the 60/40 portfolio strategy became evident in a comprehensive study of university endowments. Hammond (2020) used 58 years of the National Association of College and University Business Officers (NACUBO) endowment return data and assessed the effectiveness of the endowment management with respect to long-term return objectives and annual return needs. The data were grouped into small, average, and large endowment cohorts. Over the 58-year period, the average endowment failed to achieve its annual return need, its long-term return objective, and underperformed the 60/40 benchmark. Over a 50-year period, all three cohorts yielded disappointment with respect to the annual return need and long-term objective, and only the large cohort outperformed the 60/40 benchmark. From 2010 to 2019,

small, average, and large endowments bested the annual return need and long-term objective; however, all three failed to outperform the 60/40 benchmark. A traditional 60/40 portfolio is often passively managed with an index or exchange traded fund (ETF). The active vs passive investment strategy discussion and which investment style is superior has been going on for decades. With an active investment strategy, a portfolio manager selects individual securities with the objective of outperforming a benchmark. This approach requires a considerable amount of research and managerial skill. The investor incurs a transaction fee every time a security is purchased or sold in addition to an investment advisory fee. Over time, even small fees can have a significant impact on a portfolio's return (Investor.gov, 2019). With a passive investment strategy, an investor buys a fund that replicates an index such as the S&P 500 or Dow Jones Industrial Average. The investor holds every security included in the index without being exposed to the risk of a single security. Index funds or ETFs typically have lower fees than actively managed mutual funds. In 2022, the average expense for an ETF was 0.16%, an index fund yielded an average cost of 0.05% while the actively managed mutual funds yield upwards of 0.66% (Boyte-White, 2023).

Investors need to decide whether to pursue an active or passive strategy. S&P Dow Jones Indices publish a scorecard that measures the performance of actively managed funds against their respective benchmarks. The U.S. scorecard for 2022 shows that in the important U.S. large-cap equities category only 49% of active investment managers outperformed their benchmark. The declining markets in 2022 clearly made managers' talent more valuable because in the less volatile year 2021 only 22% of U.S. large-cap fund managers beat the S&P 500. Over the 20-year period ending in 2022, only 5.2% of U.S. large-cap managers consistently outperformed their benchmarks. The fact that most investment managers fail to add value for their clients makes passive investing extremely popular (SPIVA U.S. Scorecard, n.d.).

Inflows into passive investment vehicles have increased steadily since their inception in the seventies. Many investors are no longer trying to beat the market and are satisfied with the returns of their chosen benchmarks for a lower fee. In 2022, global inflows into passive funds amounted to $747 billion, while investors withdrew $1.2 trillion from actively managed funds. Passive funds increased their global market share to 38% (Englundh, 2023). Investors are acquiring passive funds in good times and bad. This paper extends the literature on endowment management by comparing the investment results of a passively managed index fund to an actively managed portfolio.

DATA AND METHODOLOGY

This study examines whether a diversified endowment outperformed a traditional 60/40 portfolio from 2013 to 2022. The NP provided the endowment performance report for the 10-year period ending December 31, 2022, used for this study. The results were then compared to a 60/40 passively managed index fund. Many investment companies offer 60/40 funds, and so for this study, the Vanguard Balanced Index Fund Admiral Shares (VBIAX) was identified for comparison purposes. According to Vanguard, "the fund invests roughly 60% in stocks and 40% in bonds by tracking two indexes that represent broad barometers for the U.S. equity and U.S. taxable bond markets". This fund has an expense ratio of 0.07 % (Vanguard, n.d.). In comparison, the NP charges 0.60% for actively managing the endowment. Table 1 shows the asset classes and their respective percentage allocation of the actively managed endowment. The NP offers several investment solutions, and the university board of trustees chose to invest in a "fund of funds" whose goal is to generate a positive return and long-term growth from a variety of investments. The "fund of fund" allocates 63% of total assets to equities and the remaining 37% to a mix of alternative assets and fixed income.

Table 1: Actively Managed Endowment Asset Classes and Allocation

Asset Classes	Allocation
Large-Cap Equity	31.5%
Small-Cap Equity	9%
International Equity	16.5%
Emerging Markets Equity	6%
Real Estate	5%
Alternative investments	5%
Real Assets	5%
Fixed Income	21%
Oil and Gas	1%

This table presents the assets classes of the actively managed endowment and their respective percentage allocation. The university board of trustees chose to invest in a "fund of funds" whose goal is to generate a positive return and long-term growth from a variety of investments. The *"fund of fund" allocates 63% of total assets to equities and the remaining 37% to a mix of alternative assets and fixed income.*

Prior to 2021, the alternatives and fixed income had an allocation of 10% and 24%, respectively. Effective 2021, the NP reduced the allocations to 5% and 21%, respectively and added 3.5% to international equity, 1.5% to large-cap equity, 1% to real assets, and 2% to emerging market equities. The real assets include global infrastructure equities, commodities, real estate, TIPS, oil and gas interests, and agribusiness. The alternative investment fund includes long/short equities, floating rate bank loans, and merger arbitrage. The percentage allocation to each asset class is unknown. Table 2 shows the 1-, 3-, 5-, and 10-year investment returns of the actively managed portfolio and the investment returns for each asset class net-of- fees. The NP provided the investment performance data. Return data for the oil and gas assets was not available. The actively managed and well diversified portfolio includes assets with a low correlation. When one asset class is not performing well in one year, another asset class is supposed to perform better and cushion the portfolio return. Table 2 shows that in 2022 only one asset class, real estate, moved in the opposite direction when all other asset classes produced negative returns. Over the 10-year period, emerging market equities, alternative investment, and real assets were a drag on the portfolio.

Table 2: Investment Returns

	1-Year 12/31/21 to 12/31/22	3-Year 12/31/19 to 12/31/22	5-Year 12/31/17 to 12/31/22	10-Year 12/31/12 to 12/31/22
Overall Portfolio Return	-17.5%	2.2%	4.3%	6.5%
Large-Cap Equity	-28.3%	4.1%	8%	11.7%
Small-Cap Equity	-16.5%	7.9%	9.5%	12.4%
International Equity	-14.0%	-1.2%	0.3%	4.5%
Emerging Markets Equity	-22.1%	-3.4%	-1.3%	0.4%
Real Estate	10.7%	10.1%	6.5%	6.1%
Alternative Investments	-9.3%	2.1%	2.9%	3.2%
Real Assets	-5.7%	3.8%	2.6%	1.3%
Fixed Income	-12.6%	-1.7%	0.5%	1.3%
Oil and Gas	N/A	N/A	N/A	N/A

This table shows the 1-, 3-, 5-, and 10-year investment returns of the actively managed portfolio and the investment returns for each asset class net-of-fees. During the volatile year 2022, real estate was the only asset class that generated a positive return. Both equities and fixed income – asset classes which usually move in opposite directions – lost value during 2022.

Portfolio Visualizer software was used to model the Vanguard Balanced Index Fund Admiral Shares (VBIAX) 1-, 3-, 5-, and 10-year investment returns. Table 3 shows the return of the 60/40 portfolio net-of-fees. The index fund invests approximately 60% in U.S. equities and 40% in U.S. bonds and is passively managed. The assets are periodically rebalanced to maintain the 60/40 allocation. The fund is broadly

diversified to minimize risk exposure to any particular security. Like the actively managed endowment, the passive 60/40 portfolio lost value in the volatile year 2022.

Table 3: Vanguard Balanced Index Fund Admiral Shares (VBIAX)

	1-Year 12/31/21 to 12/31/22	3-Year 12/31/19 to 12/31/22	5-Year 12/31/17 to 12/31/22	10-Year 12/31/12 to 12/31/22
60/40 Portfolio Return	-16.9%	3.8%	5.5%	7.8%

This table illustrates the return of the 60/40 portfolio net-of-fees. The index fund invests approximately 60% in U.S. equities and 40% in U.S. bonds and is passively managed. The assets are periodically rebalanced to maintain the 60/40 allocation. The fund is broadly diversified to minimize risk exposure to any particular security.

RESULTS AND DISCUSSION

The passive 60/40 index fund outperformed the actively managed endowment in each of the last 1-, 3-, 5-, and 10-year periods. Table 4 shows a comparison of the compound annualized investment returns of the actively managed endowment versus the 60/40 portfolio. Both investment returns are shown net-of-fees. The actively managed endowment and the passive 60/40 portfolio are subject to investment management fees of 0.60% and 0.07%, respectively. The university would have been better off with a passive 60/40 index fund throughout the examined period. Even a professionally managed and well diversified portfolio could not beat a passive index fund.

Table 4: Comparison of Investment Returns: Performance of Actively Managed Endowment vs 60/40 Index Fund Net-of-Fees

	Vanguard Balanced Index Fund	Actively Managed Endowment Return	Difference
1-Year	-16.90%	-17.50%	0.60%
12/31/21 to 12/31/22 (Period 1)			
3-Year	3.40%	2.20%	1.20%
12/31/19 to 12/31/22 (Period 2)			
5-Year	5.50%	4.30%	1.20%
12/31/17 to 12/31/22 (Period 3)			
10-Year	7.80%	6.50%	1.30%
12/31/12 to 12/31/22 (Period 4)			

This table shows a comparison of the compound annualized investment return of the actively managed endowment vs the 60/40 portfolio. The passive 60/40 index fund outperformed the actively managed endowment in each of the last 1-, 3-, 5-, and 10-year periods. The university would have been better off with the passive index fund from 2013 to 2022.

A comparison of two investment portfolios that are subject to different investment fees is of limited value because the investment performance of the portfolio with the higher fee will be reduced. Table 5 shows the total investment performance of the actively managed endowment and the passive 60/40 portfolio without the impact of fees. The investment returns of the actively managed endowment were increased by 0.60% to show the total return gross-of-fees. The investment returns of the passive 60/40 portfolio were increased by 0.07% to show the total return gross-of-fees. Eliminating the impact of investment fees highlights the skills of investment managers to select securities. Even without the impact of fees the investment returns of the actively managed endowment were less than the investment returns of the passive 60/40 portfolio. All the time and effort spent on market research did not produce higher returns than a traditional passive 60/40 portfolio.

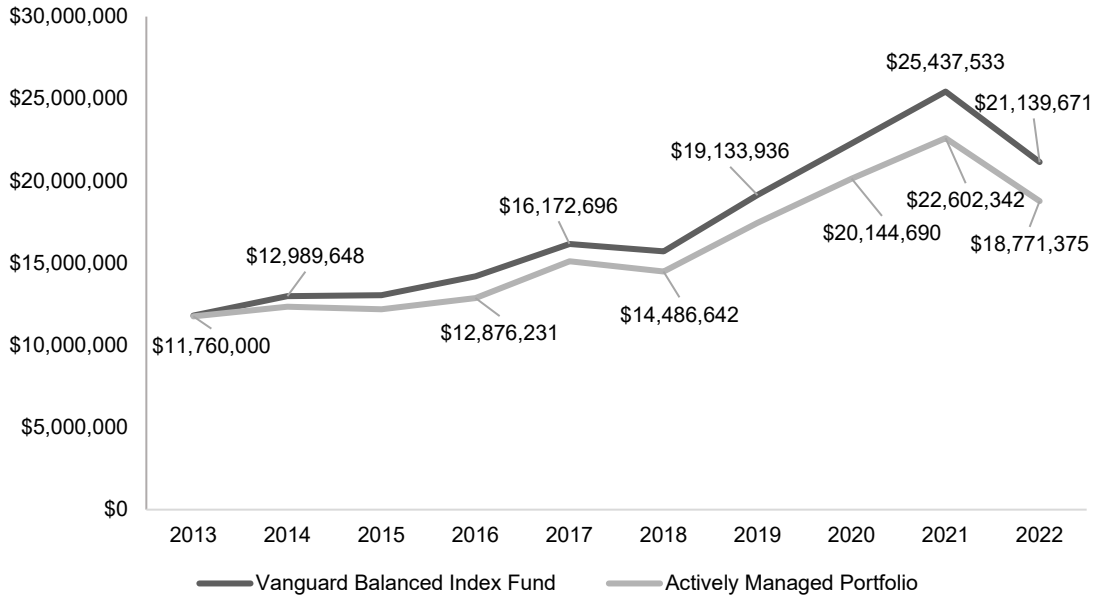
Table 5: Comparison of Investment Returns: Performance of Actively Managed Endowment vs 60/40 Index Fund Gross-of-Fees

	Vanguard Balanced Index Fund	Actively Managed Endowment Return	Difference
1-Year 12/31/21 to 12/31/22 (Period 1)	-16.8%	-16.9%	0.1%
3-Year 12/31/19 to 12/31/22 (Period 2)	3.5%	2.8%	0.7%
5-Year 12/31/17 to 12/31/22(Period 3)	5.6%	4.9%	0.7%
10-Year 12/31/12 to 12/31/22 (Period 4)	7.8%	7.1%	0.7%

This table shows a comparison of the compound annualized investment return of the actively managed endowment vs the 60/40 portfolio gross-of-fees. Even without the impact of fees the investment returns of the actively managed endowment were less than the investment returns of the passive 60/40 portfolio.

To demonstrate the superior investment return of the passive 60/40 portfolio and the impact of investment fees, we present the growth of a hypothetical ten million endowment from its inception on January 1, 2013, through December 31, 2022. Figure 1 shows the portfolio growth of a hypothetical ten million endowment assuming the investment returns of the actively managed endowment versus the 60/40 portfolio shown in Table 4. Both investment returns are net-of-fees. The actively managed endowment and the passive 60/40 portfolio are subject to investment management fees of 0.60% and 0.07%, respectively. The passively managed endowment would have grown to $21.1 million, and the actively managed endowment would have grown to $18.7 million. The passive 60/40 portfolio would have earned almost $3.4 million more from 2013 to 2022.

Figure 1: Comparison of Two Hypothetical Investment Portfolios Net-of-Fees



This figure shows the portfolio growth of a hypothetical ten million endowment assuming the investment returns of the actively managed endowment versus the 60/40 portfolio. The actively managed endowment and the passive 60/40 portfolio are subject to investment management fees of 0.60% and 0.07%, respectively. The passive 60/40 portfolio would have earned almost $3.4 million more from 2013 to 2022.

Although the study covers a decade of investment returns, it is limited due to the investing environment during this period. In the aftermath of the 2008/2009 fiscal crisis, the Federal Reserve Bank lowered interest rates to near zero to stimulate the economy. The resulting low bond yields encouraged many investors to look to equities for investment returns. The decade between 2013 and 2022 produced above average equity returns in the United States which may have impacted the results of this study.

CONCLUSION

Based on the findings of the study, it can be concluded that incorporating novel asset classes into an actively managed university endowment does not guarantee better returns compared to investing in a low-cost 60/40 index fund. The results show that the endowment underperformed the passive 60/40 index fund in each of the last 1-, 3-, 5-, and 10-year periods. The compound annualized growth rate (CAGR) over the 10-year period was 6.5% for the actively managed endowment compared to 7.8% for the 60/40 index fund.This conclusion has important implications for managers of university endowments. It suggests that a diversified portfolio may not necessarily lead to better investment performance. Instead, managers should consider the benefits of a low-cost passive investment strategy, such as investing in a 60/40 index fund. This approach can help minimize fees and potentially achieve comparable or even superior returns compared to actively managed portfolios.The analysis covers a specific 10-year period, which may not capture the full range of market conditions and investment cycles. Additionally, the study focuses on a specific university endowment and may not be generalizable to other institutions or investment contexts. Future research could explore the performance of different asset allocation strategies and their impact on endowment returns over longer time periods and across a broader range of institutions.

REFERENCES

Asness, C. S., Israelov, R., & Liew, J. M. (2011). International diversification works (eventually). Financial Analysts Journal, vol. 67(3), p. 24-38.

Benjamin, J. (2023, April 27). Asset managers hash out the future of the 60/40 portfolio. Retrieved from InvestmentNews: https://www.investmentnews.com/asset-managers-hash-out-the-future-of-the-60-40-portfolio-236865

Brown, D. C., Garlappi, L., & Tiu, C. (2010). Asset allocation and portfolio performance: evidence from university endowment funds. Journal of Financial Markets, 13 (2010), p. 268-294.

Boyte-White, C., (2023, October 09). Why are ETF fees lower than mutual fund fees? Retrieved from Investopedia: https://www.investopedia.com/articles/investing/102915/why-are-etf-fees-lower-mutual-funds

Campbell, J. Y., Viceira, L. M., & Pflueger, C. (2023, May 30). When do stocks and bonds move together, and why does it matter? Retrieved from Econofact: https://econofact.org/when-do-stocks-and-bonds-move-together-and-why-does-it-matter

Chaves, D., Hsu, J., & Li, F., Shakernia, O. (2010). Risk parity portfolio vs. other asset allocation heuristic portfolios. The Journal of Investing, vol. 20(December) p. 1-11.

Englundh, J. (2023, May 30). A world without active funds? boring and maybe dangerous. Retrieved from Morningstar: https://www.morningstar.co.uk/uk/news/235711/a-world-without-active-funds-boring-and-maybe-dangerous.aspx

Hammond, D. (2020). A better approach to systematic outperformance? 58 years of endowment performance. The Journal of Investing, vol. 29(5), p. 1-25.

Ilmanen, A., & Kizer, J. (2012). The dearh of diversification has been greatly exaggerated. The Journal of Portfolio Management, vol. 38(3), p. 15-27.

Investor.gov. (2019, June 26). Updated investor bulletin: how fees and expenses impact your investment portfolio. Retrieved from U. S. Securities and Exchange Commission: https://www.investor.gov/introduction-investing/general-resources/news-alerts/alerts-bulletins/investor-bulletins/updated

Krauskopf, L. (2022, May 11). Explainer: why the stock market is tumbling in 2022. Retrieved from Reuters: https://www.reuters.com/business/finance/why-us-stock-market-is-tumbling-2022-2022-05-11/
Lioudis, N. (2022, June 15). The importance of diversification. Retrieved from Investopedia: https://www.investopedia.com/investing/importance-diversification/

Mangram, M. E. (2013). A simplified perspective of the Markowitz portfolio theory. Global Journal of Business Research, vol. 7(1), p. 59-70.

Markowitz, H. (1952). Portfolio Selection. The Journal of Finance, vol. 7(1), p. 77-91.

Matthews, C. (2019, November 9). Bank of America declares "the end of the 60-40" standard portfolio. Retrieved from Market Watch: https://www.marketwatch.com/story/bank-of-america-declares-the-end-of-the-60-40-standard-portfolio-2019-10-15?mod=search_headline

Napach, B. (2019, November 12). Wirehouses warn: 60/40 asset allocation is dead. Retrieved from Think Advisor: https://www.thinkadvisor.com/2019/11/12/wirehouses-warn-6040-asset-allocation-is-dead/

Phung, A. (2022, June 21). How do university endowments work. Retrieved from Investopedia: https://www.investopedia.com/ask/answers/how-do-university-endowments-work/

SPIVA U.S. Scorecard. (n.d.). SPIVA Institutional Scorecard Year-End 2022. Retrieved from S&P Dow Jones Indices: https://www.spglobal.com/spdji/en/spiva/article/institutional-spiva-scorecard/

Vanguard. (2023, June 30). Higher inflation not the end of the 60/40 portfolio. Retrieved from Vanguard: https://investor.vanguard.com/investor-resources-education/news/higher-inflation-not-the-end-of-the-60-40-portfolio

Vanguard. (n.d.). VBIAX Vanguard Balanced Index Fund Admiral Shares Product Summary. Retrieved from Vanguard: https://investor.vanguard.com/investment-products/mutual-funds/profile/vbiax#overview

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