Testing Swensen

Measuring the Value Added by Alternative Assets within the Investment Pools of Non-profit Organizations

Jon M. Luskin

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Signature Page

The thesis of Jon M. Luskin is approved.

Larry Weinman, MBA	date
Seth Weintraub, MBA, CMA	date
Gerald J. Wacker, Ph.D.	date

Dedication

To my family, for their support

Table of Contents

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Abstract

Over the last few decades, many institutional investors, such as university endowments, have jumped on board a new investing bandwagon: alternative assets. Why? Ivy League endowments – with elite money managers at the helm – have posted extremely impressive risk-adjusted portfolio returns using alternative assets.

Alternatives are those investments that are *not* investments in stocks, bonds or cash. This asset class includes a wide range of investments, including hedge funds, oil & gas, timberland, real estate, venture capital, mergers and acquisitions, and even fine art. There is no accurate indexing option for alternative assets. To invest in alternatives, active management is required.

Previous studies have demonstrated that university endowments can often yield higher investment returns through index-based investing strategies as opposed to actively-managed alternative investments. Put simply, low-cost indexing produces higher returns. Only the largest institution can afford to retain the best money managers. Therefore, the best investment strategy is to retain those managers. The second-best strategy is to hold an inexpensive index fund. The worst strategy is active management by a pedestrian money manager.

These studies omit one critical variable: risk. A basic tenet of investing that is higher investment return can only be realized by subjecting principal to higher risk. While the index fund may post a higher a return, it may also subject the investment to higher risk. These studies failed to measure risk-adjusted performance.

This study seeks to examine the value of holding alternative assets without management by elite professionals. Metrics for consideration include not just total return, but volatility (standard deviation), risk-adjusted performance (Sharpe Ratio), risk-adjusted performance above a minimum threshold (Sortino Ratio), and investment performance in years of market shock – including the bursting of the tech bubble and the sub-prime crisis.

Eight case studies are considered, measuring the value of alternative assets. Results show that index-based portfolios not only produced higher returns, but it did so with less volatility (risk) *and* exhibited superior performance during market shocks. Endowments allocating to alternatives should carefully re-evaluate their investment strategies.

Chapter 1: Introduction

Scope

Without perceived sufficient in-house expertise, non-profit organizations often transfer management of their multi-million dollar investment pools to outside firms (Jones and Martinez 2013). These firms often put the non-profit's funds into expensive and complex investment vehicles.

Impressed with the returns of the Ivy League investment pools, and persuaded by professional money managers, non-profit boards and executives are allocating increasingly larger portions of their investments to alternative assets (National Association of College and University Business Officers and Commonfund Institute 2012). Yet in the absence of Ivy League resources (i.e. access to top-decile[1] money managers), these non-profits are witnessing inferior investment returns – most certainly less than could be had by holding a basket of diversified index funds (Ferri 2012, Wallick, Wimmer and Schlanger 2012). The reason for this poor performance is that smaller institutions simply do not have the scale to reward truly skilled investments managers with millions of dollars in compensation.

Further, while the Ivy League endowments have previously consistently posted superior investment returns, recent performances have been inconsistent (Yale Endowment 2012, Mendillo 2012). This is in part because the once inefficient market for alternatives has grown increasingly competitive as more imitators crowd into the marketplace.

Given the asset class's poor performance record, what is the reason for this allocation to alternatives? This paper seeks to evaluate the risk-adjusted return of holding alternative assets *when not managed by top-decile professionals*. In the empirical study to follow, eight non-profit investment pools with assets under management (AUM) under $1 billion are evaluated. Investment performance is juxtaposed against a portfolio absent of alternative assets.

Orientation

With hundreds of millions of dollars on the line, a foundation's annual investment return determines exactly how much the charitable organization can do each year. Higher investment returns mean more grants, meals served, scholarships made available, or medication distributed. Choosing the best investment strategy greatly impacts achieving an organization's mission.

[1] The top-decile being those investment managers above the 90th percentile with respect to creating risk-adjusted return.

One investment strategy in particular, the utilization of active management,[2] makes the promise of stock market-beating returns. However, actively-managed funds fail to beat their respective benchmark over 90% of the time (Bogle 2007; Malkiel 2012; Swensen; Bernstein 2010; Stanyer 2010). In the likely event of poor investment performance, investors are still liable for paying expensive management fees. These fees for actively-managed investments can reach two percent annually – sometimes more.[3] With non-profits' using investment gains to fund programming, market underperformance by two percent can mean cutting back on programming services for the year. A two percent loss compounded over 10 years can mean shutting down entire departments.

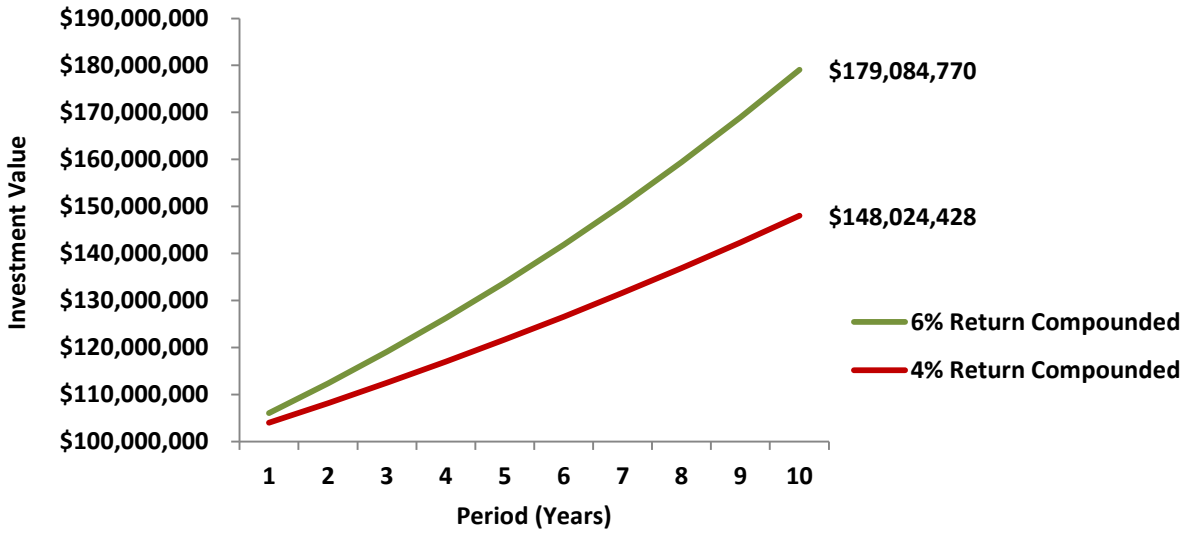


Figure 1 - $31,000,000 Difference on a $100,000,000 Investment

Given the poor track record of active management, why are non-profits putting increasing proportions of their money into alternative investments? Non-profit executives and board members do not believe they have the skill set to invest the money themselves.[4] Thus, they outsource the role to professional money managers. However, for many organizations, their limited assets of *only* several hundred million dollars preclude them from being able to hire the best of the best: the top-decile money manager.

Thus, these organizations hire average money managers, who pitch the value of diversification in holding exotic alternative investment products (McCrum 2013). However, performance data of alternative endowment investments has shown the returns

[2] Alternatives are a type of actively-managed asset. Conventional assets can also be actively managed. The distinction between the two is covered in a following section *The Endowment Model and Alternative Assets.*

[3] Hedge funds are an example of this. Hedge funds typically have a 2 and 20 fee structure. This is where fund management claims 2% of all AUM, and then another 20% on top of any gains.

[4] As I will show in this paper, this is not the case. A simple index-based strategy is easy to execute. Any CFO could more than manage the task.

offered by active management are usually less than what could be had with indexing (Ferri; Wallick, Wimmer and Schlanger).

If studies have already proven the superior returns of indexing over average active management within non-profit investment pools, why does active management still exist? Why do boards of non-profit organizations and finance committees - staffed by seemingly knowledgeable, competent professionals - continue to invest in a failed strategy?

One reason is the just-mentioned value of diversification. Maybe these poorer performing alternative assets help a portfolio produce superior *risk-adjusted* returns. That is, for the level of risk involved, adding alternatives creates a better investment. Including actively-managed alternatives (even when managed by average money managers) may offer a way to reduce risk and even achieve superior risk-adjusted returns because of low correlation to market events.

Personal Background

Prior to my research for this project, my personal investment strategy consisted of chasing temporally high-flying mutual funds. Such behavior was egged on by broker suggestions, who neglected to mention the issue of volatility. Never once did a broker say, "your limited assets prevent you being able to hire a manager who can beat the market after the cost of fees. It is those fees – in the absence of superior performance – that will eat away at returns. Your best bet is to buy and hold the lowest cost index fund available."

If this simple advice was not available to me, with my small retirement portfolio, what chance is there that an outside adviser would suggest the same to a non-profit organization, especially when there are literally millions of dollars in fees on the line?

Conceptual Framework

Non-profit and governmental organizations have billions in invested assets. Much of this wealth is concentrated in educational endowments and pension funds, respectively. Historically, most of these funds were invested in a mix of corporate stock and government bonds. However, within the last few decades, a shift in investment strategy has occurred (Ezra 2012, Swensen). Before this paper covers the consequence of that shift in detail, an investing primer follows. Readers already familiar with the basic tenets of Modern Portfolio Theory (MPT), diversification and correlations, and the endowment model and alternative assets, can skip to section *Questions to Be Addressed in This Thesis* on page 16. For a primer on indexing and active management, see *Appendix A: Indexing vs. Active Management* on page 58.

Correlation & Modern Portfolio Theory

Correlation is the extent to which one asset's performance mimics another asset's performance. Consider an example: Investment A increases in value by 100%. Investment B increases in value by 50%. Investments A and B are said to have a correlation of 0.5. For every increase (or decrease) Investment A undergoes, Investment B undergoes ½ of that increase (or decrease).

The following line graph, *Figure 2 - Asset Class Correlation*, illustrates correlation.[5] Consider how the performance of the S&P 500 (blue) is highly correlated to the performance of international companies (purple). The blue and purple lines rise and fall simultaneously. When blue is up, purple is up. When blue is down, purple is down. Thus, the performance of domestic equities (S&P 500) and international equities are highly correlated.

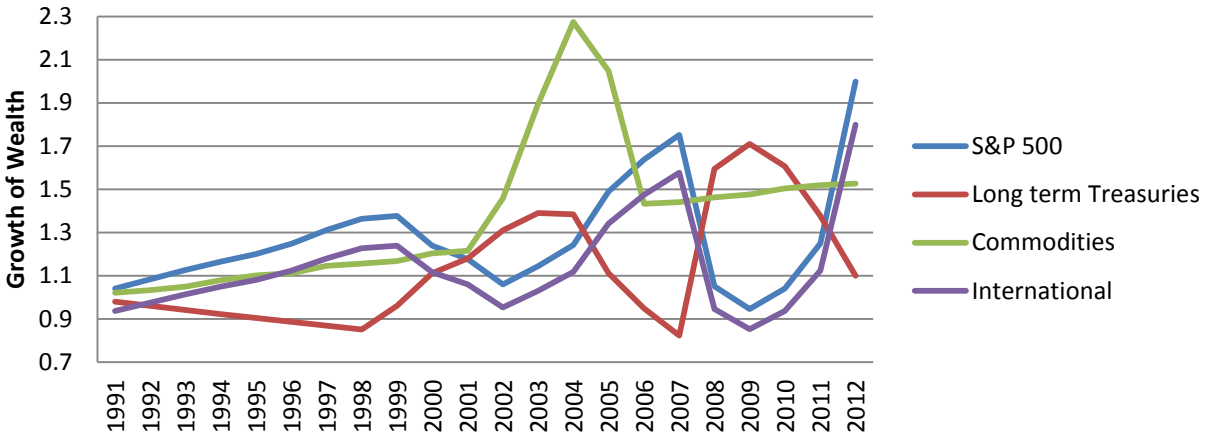


Figure 2 - Asset Class Correlation

Conversely, long-term Treasuries are historically negatively correlated to the S&P 500 (Swensen). Note that in the graph, the long-term Treasuries (red) make opposite moves in value relative to the S&P 500 (blue). When blue is up, red is down. When blue is down, red is up.

Commodities theoretically exhibit little correlation to the other asset classes just mentioned. Consider how commodities (green) rise and fall relatively independently of the other asset classes.

According to Modern Portfolio Theory, a portfolio of investments performs best when it is diversified among assets that have no correlation. Since every asset suffers from periods of poor performance, diversification across uncorrelated asset classes ensures consistent portfolio growth.

The Endowment Model and Alternative Assets

The strategy for institutional investors has changed over time. Before 1980, corporate stock and government bonds (60/40) represented the norm. In the early 1980's, a new investing strategy came into fashion, dubbed the *endowment model* or *Yale model* (Ezra). Under their Chief Investment Officer, David F. Swensen, Yale University gave birth to the endowment model. Swensen pioneered this investment strategy, which received attention for its consistent market-beating returns. Distinguishing Yale's strategy from traditional investment paradigms is its ever-increasing allocation to alternative assets (2012 Yale Endowment).

[5] These are the not the actual returns of the listed asset classes. The example is solely for explanative purposes.

Distinctions of Alternative Assets

Alternative assets are those investments outside of conventional stocks and bonds. Alternatives include hedge funds, real estate, timberland, oil and gas, precious metals, venture capital, merger and acquisitions, and fine art.[6]

Alternative Investment Class	Strategy
Hedge Fund	Absolute Return
Oil & Gas	Real Assets
Timberland	Real Assets
Precious Metals & Mining	Real Assets
Real Estate	Real Assets
Venture Capital	Private Equity
Mergers & Acquisition	Private Equity
Fine Art	Speculative

Several distinctions separate alternatives from conventional assets. What follows are the distinctions relevant to this study. (The breadth of content precludes a full discussion of these distinctions.)

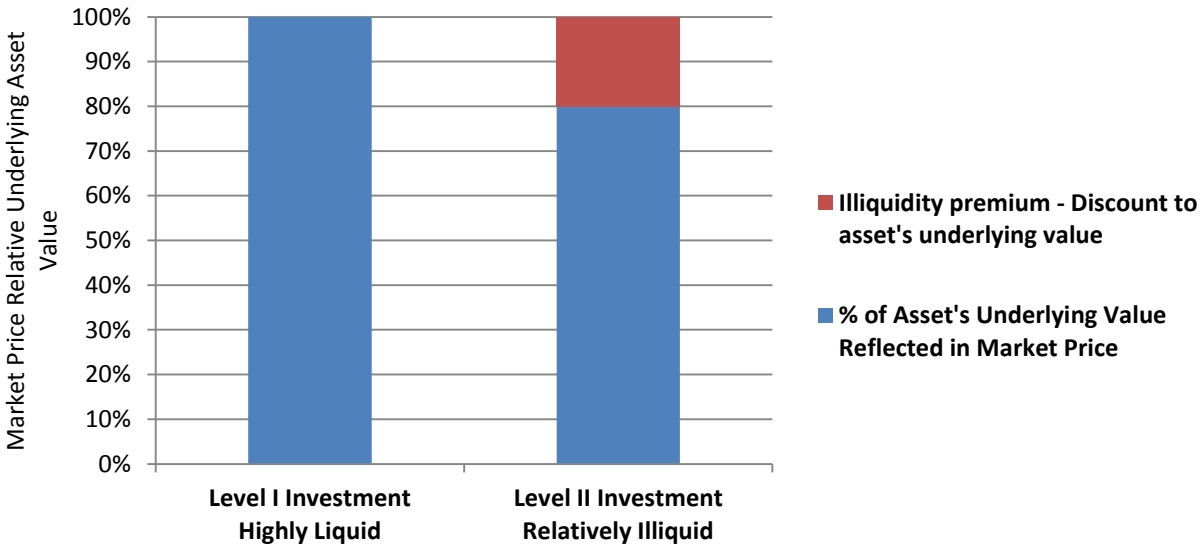
- Correlation: Holding alternative assets can help diversify a portfolio. A lure of alternative assets classes is their low correlation to conventional assets (Malkiel). Recall the performance of commodities displayed in *Figure 2 - Asset Class Correlation* on page 11. Put another way, **what makes alternatives appealing is the idea that their investment return is relatively independent of broad stock market movements.**

- Inefficient Markets: Alternatives trade in inefficient markets. This in contrast to a publicly-traded company, where information relevant to the company's value is readily accessible within seconds. The rapid availability of this information is instantly reflected in that company's share price. This is the opposite case for alternative investments. Whereas information about the investment value of conventional assets (e.g. a publicly-traded company) is widely accessible through mass media, comparable information is not available for most alternative investments (e.g. several acres of privately-held timberland). A truly skilled money manager can exploit this information asymmetry for superior risk-adjusted investment return. Recent crowding into these markets, however, has decreased this potential (Humphreys). Therefore, the market for alternatives assets is becoming increasingly efficient. This is reflected in the poorer investment returns of Ivy League endowments relative to an indexed investment (Yale Endowment).

[6] Fine art, like gold, is a speculative investment. Speculative investments depend solely on price appreciation, providing no income (i.e. paying no dividend). No case study in this paper engaged in fine art as an investment vehicle.

- Active management: **Alternative assets require active management** (Swensen 2009). Unlike conventional stocks and bonds, there exists no true index fund for alternatives.[7]

- Illiquidity: Alternatives assets are those assets that trade in smaller, illiquid markets. Whereas a share of Apple stock can be sold within a millisecond on the New York Stock Exchange (NYSE) for the market price, transferring ownership of a private company may take weeks or even months to execute. Such trading illiquidity risk requires compensation; illiquid assets must sell at a discount relative to liquid assets of equal value (Celati 2005).



For investment pools that have regular distribution requirements, illiquidity can be problematic if significant allocations of an investment portfolio are illiquid. Consider endowments providing operational support, pension funds, charitable foundations making the required distribution of 5% annually, or even individual retirement portfolios that provide for cost of living in the absence of other income. An over-allocation of illiquid assets may mean that an investor is not able cash in the event of an emergency. This is illiquidity risk: "risk of losses due to the need to liquidate positions to meet funding requirements," (Jorion 2012). Further, this liquidity risk is difficult to measure. Jorien explains:

> …liquidity risk creates a major problem for the measurement of risk. After all, risk measures represent potential changes in market prices. If historical prices do not change frequently enough, traditional risk

[7] While there are some investment products that attempt to index alternatives, most fail in their execution. Either these investments do no accurately track the price of the sector they intend to mimic, or excess fee eat away at returns. Real estate is the exception. Many real estate investments are available via inexpensive Real Estate Investment Trust (REIT) indices.

> measures cannot be accurate. Worse, they will tend to underestimate the true economics risks.

The infrequent measurement intervals of alternative assets grossly understate volatility (risk). Risk-adjusted metrics therefore are less valuable when comparing liquid and illiquid investments. It's essentially an apples-to-oranges comparison. The more illiquid an investment is, the more difficult it is to assess its volatility. When correcting for infrequency of available data, one study has shown private equity to be more volatile than conventional assets. Given this, the study's authors deemed the asset classes unworthy of investment (Conroy and Harris 2008)

Over allocating illiquid assets can be problematic. Consider that the recent sub-prime crisis forced many endowments to sell assets at depressed levels (Humphreys). Further, selling *liquid* assets ultimately increases the percent of *illiquid* assets in the portfolio, exacerbating the illiquidity problem.

Types of Alternative Assets

Distinctions between the various types of alternatives assets are covered briefly below. A full discussion is beyond the scope of this paper.

- Hedge funds, using an absolute return strategy,[8] theoretically perform independent of market movements. This is because hedge fund managers have the ability to take either the position that an investment will appreciate in value (long) or depreciate in value (short). This is different from traditional mutual fund managers, who can only be long in a position. After accounting for the fees of hedge funds – usually 2% of AUM and 20% of any investment return – data has shown hedge fund managers have failed to beat the benchmark consistently (Jorion, Swensen, Kolhatkar 2013). This is because most of hedge fund investment successes are consumed as fees before that return ever makes its way back to the investor (Bhardwaj, Gorton and Rouwenhorst). Further, hedge fund managers dictate strict rules for divestment, imposing lockup and minimum redemption notice periods (Swensen; Jorion). Such constrained exit liquidity – "the speed with which one can liquidate the investment in a fund" – is risk (Celati).

- Real estate is considered an alternative asset because it is neither a stock nor bond. When it comes to investing in real estate, there are several options. On the inexpensive end of the spectrum and requiring the least manager skill is a *Real Estate Investment Trust (REIT)* index fund. A REIT index gives an investor a low-cost way to diversify across numerous real estate holdings. Edging closer to active management, an investor may choose to select specific REITs, or may hire a money manager via an actively-managed mutual fund to do so. Privately managed, real estate is at the other end of the cost and liquidity spectrum.

[8] Absolute return investment techniques involve using short selling, futures, options, derivatives, arbitrage, leverage and unconventional assets.

- *Master Limited Partnerships (MLPs)* are investments in the petrochemical transport infrastructure. (Diversification in MLPs can be achieved with moderately-priced index funds.) [9]

- *Commodities* investments range from holding physical assets (like gold bullion) to investing in a trust that holds gold for an investor, minus an ongoing fee. The challenge for such an investment is that the commodity must appreciate in value in excess of inflation to cover the cost of management, storage and transactions. Because the asset does not produce income, a speculative commodity investment, such as gold, is risky.

- *Private Equity* is ownership in privately-held companies. *Venture capital (VC)* and *mergers and acquisitions (M&A*) are the two categories of private equity. VC is the process of investing in a new privately-held company. In this type of investment, skilled money managers make all the difference. Top-decile managers know how to pick the winning start-ups, and further have the skill set to make those start-ups successful. Mergers and Acquisition is the process of purchasing companies using severe leverage (debt) with the intent to restructure, and ultimately to resell the company. Here again, the manager's skills makes the most difference. Problematic is that the best private equity firms are closed to new investors (Swensen).

The Bandwagon

When other institutional investors saw Yale's superior returns, they made the connection that superior performance could be had by investing in alternatives. Without fully comprehending the distinctions of alternatives, these institutions rushed into this new asset class. Unfortunately, **these imitators missed the critical variable that determined Yale's success: Yale.**

Yale's superior performance is only partially due to its asset allocation. The real driving factor is superior money manager skill. **With billions of dollars under management, and as a breeding ground for some of the brightest minds, Yale is able to attract and groom the best money managers in the world.** Further, Yale's success is also due in part to their very aggressive investment strategy. Being first into the alternative asset classes, Yale was able to take advantage of the then-inefficient pricing of alternative assets. A crowded alternative assets market has made more recent superior risk-adjusted returns harder to come by (Humphreys, Yale Endowment). What was once an inefficient market has become increasingly efficient – decreasing the opportunity for excess returns.

The result of smaller institutions jumping on board the alternative bandwagon was predictable. In the absence of superior manager skill and in the absence of having the advantage to being first in line, the copycat institutions posted relatively smaller investment gains. Average active managers dealing in alternative assets in today post

[9] The cheapest MLP indexes (ticker MLPA & MLPX) can be had for 45 basis points, or 0.45%. Not expensive, but not cheap relative to an S&P 500 index fund at just two (2) basis points.

returns similar to average active managers dealing in conventional assets: less than what could be had with an index fund (Swensen). If return alone is the goal of the investor, then the small-time investor is best served by completely avoiding alternative assets. However, alternative assets offer another value as briefly mentioned above: low correlation.

Questions to Be Addressed in This Thesis

This paper examines the investment pools of institutions with AUM between $3 and $600 million. These *multi-million dollar institutional investors* (hereafter MMII) are distinct from those institutions with investments pools in excess of $1 billion because they do not have the scale required to retain top-decile money managers. MMII are best served by utilizing an index fund strategy. This means avoiding alternative assets because alternatives offer no real index fund (Swensen).

But what about the low correlation offered by alternatives – does the value of low correlation mean that is there a role for alternative assets in the portfolios of MMII? With low correlation – but with high fees – can alternative-laden portfolios serve to cushion MMII from market shocks felt by investors holding only conventional assets? Consider volatility. Hypothetically, alternative assets could act in a fixed income-like fashion, keeping the entire portfolio more buoyant against market crisis. Better still, the higher return potential of alternatives would produce superior returns relative to fixed-income products. Alternatives, even in the hands of an average money manager may offer lower returns but superior risk-adjusted performance.

This paper seeks to answer the question: **Will a portfolio with allocation to alternatives between 14% and 38%, *without* top-decile management, underperform an index-based portfolio, but still produce superior risk-adjusted returns?**

The Most Important Concepts and Their Definitions

The following section explains the investing metrics mentioned in this study. More basic investing concepts are covered in Appendix C. Readers already familiar with the concepts of standard deviation, Sharpe Ratio, and Sortino Ratio can skip to Chapter 2: Overview on page 19.

Standard Deviation is calculated by computing the square root of how far a set of numbers is spread out (variance). Standard deviation is a function of variability in returns; it is a measure of volatility or risk. (The terms *standard deviation*, *risk*, and *volatility* have the same meanings and are referred to interchangeably throughout this paper.) A higher standard deviation means that fluctuations in investment returns are more pronounced. Risky assets (like stocks) have higher standard deviations than less-risky assets (such as bonds). See the following tables *Table 1 - Standard deviation illustration.*

The portfolio on the left, with annual returns varying from as high as 10% to as low as negative 5%, has a standard deviation of 6.2%. The portfolio in the middle, with returns varying between 1% and 2% per year, has a much lower standard deviation of 0.4 %.

	Risky Portfolio		Safe Portfolio		Bad Portfolio	
Year	Return	Value	Return	Value	Return	Value
0		$100.00		$100.00		$100.00
1	5.00%	$105.00	2.00%	$102.00	-1.00%	$99.00
2	10.00%	$115.50	1.00%	$103.02	-1.25%	$97.76
3	-5.00%	$109.73	1.50%	$104.57	-1.00%	$96.78
Total Return		**9.73%**		**4.57%**		**-3.22%**
Annualized Return		**3.14%**		**1.50%**		**-1.08%**
Standard Deviation		**6.2%**		**0.4%**		**0.1%**

Table 1 - Standard deviation illustration

All else being equal, the lower the standard deviation, the better. However, standard deviation can be a misleading metric because it is a strictly a measure of volatility, not value. For example, the 'Bad Portfolio,' with a negative return, actually has the lowest standard deviation of all.

Sharpe Ratio is a measure of how well an investor is rewarded for bearing risk. It is a measure of risk-adjusted performance. The Sharpe Ratio is a mathematical metric that takes both risk and return into account. As risk goes down, or return goes up, the Sharpe Ratio increases. Conversely, as risk goes up, or return goes down, the value decreases. The Sharpe Ratio is calculated as the return (minus the risk-free rate) divided by risk.[10]

	Risky Investment Portfolio		Safe Investment Portfolio	
Year	Return	Investment Value	Return	Investment Value
0		$100.00		$100.00
1	5%	$105.00	2%	$102.00
2	10%	$115.50	1%	$103.02
3	-5.00%	$109.73	1.50%	$104.57
Total Return		**9.73%**		**4.57%**
Annualized Return		**3.14%**		**1.50%**
Standard Deviation		**0.062**		**0.004**
Sharpe Ratio		**0.40**		**2.50**

Table 2 - Sharpe Ratios

In the preceding *Table 2 - Sharpe Ratios*, the "Risky" portfolio generated annualized returns *in excess* of 1.64% per annum over the "Safe" portfolio (3.14% versus 1.50%).

[10] See Appendix A: Indexing vs. Active Management

However, the "Risky" portfolio netted a much lower Sharpe Ratio. Because of the volatility required to generate those excess returns, the Sharpe Ratio deems the higher-returning portfolio inferior. The Sharpe Ratio declares that it is not worth the risk required to generate the higher returns. Higher returns are less valuable in this instance because there was so much additional risk required to realize those higher returns.

Sortino Ratio is similar to the Sharpe Ratio, but where the Sharpe Ratio gives higher scores to a portfolio for producing substantially higher returns with slightly higher risk, the Sortino Ratio gives lower scores to portfolios that fall below a certain performance threshold. **For the case studies to follow, that threshold is set at 5% per annum.**[11] Though an arguably aggressive withdrawal rate, certain charitable foundations are required to spend 5% annually or face tax penalties.[12]

	Risky Investment Portfolio		Safe Investment Portfolio	
Year	Return	Investment Value	Return	Investment Value
0		$100.00		$100.00
1	5%	$105.00	2%	$102.00
2	10%	$115.50	1%	$103.02
3	-5.00%	$109.73	1.50%	$104.57
Total Return		**9.73%**		**4.57%**
Annualized Return		**3.14%**		**1.50%**
Standard Deviation		**0.062**		**0.004**
Sharpe Ratio		**0.4**		**2.5**
Sortino Ratio		**-0.28**		**-0.99**

Table 3 - Sortino Ratio

Why the Sortino Ratio? Non-profit organizations rely on their endowment pool to fund ongoing operations. If an investment portfolio is unable to consistently produce returns above a minimum required amount, that investment portfolio is not appropriate. With the Sortino Ratio, portfolios can be evaluated on their consistency of posting returns above a required minimum.

Consider the preceding example in *Table 3 - Sortino Ratio*. Though the Sharpe Ratio scored the "Safe Investment Portfolio" as more valuable, the Sortino Ratio gives the "risky" portfolio the higher score. This is because for the Sortino Ratio, a portfolio that cannot produce returns in excess of 5% annually is not as valuable as one that does, all else being equal. The higher Sortino Ratio, the better the portfolio.

[11] 5% is a conventional withdrawal rate for foundations.
[12] Endowments are exempt from taxation.

Chapter 2: Literature Review

Overview

The literature studied includes several topics:

- Basic investing principles
- Studies of active management efficacy
- Indexing investment
- History of institutional investing
- Endowment model of investing
- Non-profit board member fiduciary requirements
- Analysis of historical performance of institutional investors: universities, hospitals and other non-profit organizations

Summary of Major Sources

Pioneering Portfolio Management is the authoritative guide on how to produce an investment portfolio based on the endowment model.

A Random Walk Down Wall Street examines the efficacy of active management.

The Little Book of Common Sense Investing is an argument for passive management, made by the pioneer of index funds.

NACUBO-Commonfund Study of Endowments is a statistical report of over 800 endowments across the nation.

Unconventional Success determines inappropriate versus superior investment strategies for retail investors.

2012: The Yale Endowment is the annual endowment report by Yale's Chief Investment Officer, outlining endowment performance and investment strategy.

Once upon a time… is a historical review of investment strategy of nonprofit organizations.

Educational Endowments and the Financial Crisis examines the weaknesses and social consequences of the endowment model of investing.

The Curse of the Yale Model compares existing endowment returns relative to the performance of indexed-based portfolios.

Assessing Endowment Performance is another index-versus-endowment return comparison.

For a complete digest of the literature, see *Appendix E: Digest of the Literature* on page 67.

Methodology

The investigative approach and methods used by the authors in the literature:

- Commonfund Institute's annual publications provide statistical data on institutional investors' performance. This data includes statistical breakdown by such metrics as asset allocation by institution size, return performance by institution size, and return performance by asset class. There is no consideration for volatility. Commonfund acquires this information via survey (Commonfund Institute; National Association of College and University Business Officers and Commonfund Institute).

- The how-to guides, published by investment services companies catering to non-profit organizations, list fiduciary responsibilities of board members with respect to an investment pool. These guides explain the evolution of those fiduciary responsibilities and suggest various investment policy practices to fulfill those responsibilities. Discussed are investment policy statement requirements (templates are provided) and portfolio manager selection and evaluation criteria (Merrill Lynch Center for Philanthropy & Nonprofit Management; Commonfund; Towers Watson Investment Services; Steele, Prout and Larson).

- Two brief comparisons pit the returns of the average endowment – as published in the Commonfund study mentioned above – against hypothetical performance of a portfolio of index funds for the same timetable (Ferri; Wallick, Wimmer and Schlanger).

- The more academic portion of the literature cites studies on the performance of various investment strategies – sometimes their own – and provides anecdotes for illustration (Bogle 2007, Bernstein 2010, Swensen 2005, Malkiel 2012, Stanyer 2010).

Overall Summary and Comparison

What is Known about the Topic

Without retaining top-decile active management, investors are best served by adopting a portfolio of low-cost, index-based funds, utilizing a buy-and-hold strategy (Bogle; Bernstein, Malkiel; Stanyer; Swensen).

Alternative assets require active management (Swensen).

In two brief comparisons, a buy-and-hold, low-cost index-based portfolio outperformed the returns of the average endowment more often than not (Ferri 2012, Wallick, Wimmer and Schlanger 2012).

Institutional investors of all sizes suffered a liquidity squeeze during the recent market downturn, in part because of the illiquid nature of alternative investments (Humphreys 2010, Asch 2010).

Endowments have been consistently increasing their exposure to alternative assets (Commonfund Institute 2012, National Association of College and University Business Officers and Commonfund Institute 2012).

What is Unknown
While indexing strategies outperform, there is no analysis of volatility. Does the risk-adjusted return of actively-managed investments for MMII outperform conventional assets due to lower volatility?

Major Similarities within the Literature Reviewed
Without retaining top-decile management, a strategy of buy-and-hold index-based investing is superior.

Differences within the Literature Reviewed
Appropriate asset allocations – and what defines an appropriate asset – are in debate.

Controversies in the Literature
Despite the growing amount of endowment model practitioners, it has its critics. These critics point to the liquidity squeeze suffered in the midst of the recent sub-prime crisis. Other critics point to an inappropriate role reversal between the endowment and university programming; programming being cut for the purposes of preserving the endowment (Humphreys). Another point of contention is the lack of transparency inherent in alternative assets (The Responsible Endowment Project 2010, The Responsible Endowment Project 2009).

Critique

Inconsistencies
Though it is not the subject of this study, authors do not agree on a single investment strategy; they are not in consensus on the ideal asset allocation nor those asset classes that are suitable for investment. Regarding the subject of bonds, some of the literature suggests emerging bonds or corporate bonds as appropriate investments (Stanyer). Another argument is made for the exclusive holding of long-term Treasuries (Swensen); a third for the exclusive holding of short-term bonds – with no specification made as to the bond issuer (Bernstein).

Strengths

The portion of the literature from the academic community makes a strong case for index investing in without retaining top-decile managers. This idea is supported by extensive studies.

Weaknesses

While Ferris and Vanguard's comparison of investment returns are revealing, they fail to include a critical variable worthy of examination: volatility. Yes, index investing outperformed active management. However, what was the volatility of the returns? Is it superior risk-adjusted performance? Is such volatility appropriate for an endowment? Those subjects are not discussed. Without that information, it cannot be concluded whether alternatives are an appropriate investment vehicle for MMII. The specific point missed is that the value added by alternatives is not necessarily superior returns. It is diversification and low correlation to conventional asset classes.

Some of the literature reviewed was removed from inclusion because of specious reasoning. For example, one book cited a separate study as an authoritative source to prove its argument. The study stated that the inclusion of commodities in an investment portfolio is a good medium for achieving diversification. That study was funded by a company in the business of producing commodities, and therefore represents an obvious conflict of interest.

The less academic portion of the literature suggests a wide range of questionable investment strategies, including charting (technical analysis or 'trend following') and investing in unproven assets with high management fees (Parness 2002, Richardson and Faber 2009, Tuttle 2009).

Gaps

The idea of the total value added by alternatives, outside of returns (volatility, risk-adjusted returns), is not explored.

Limitations

Some of the literature reviewed showed substantial signs of conflicts of interest. The how-to guides by investment services companies are examples of this.

Point of Departure

This empirical study seeks to address the value added by active management and alternative assets within the endowment portfolios of eight non-profit investment pools. Not only will it analyze total return, but also the volatility of annual returns (standard deviation), considerations for the value of returns relative to risk (Sharpe[13] & Sortino Ratios), and portfolio performance in times of market crisis.

[13] See Appendix A: Indexing vs. Active Management

Chapter 3: Empirical Study Method

Hypotheses

This study seeks to test the following hypothesis:

Investment pools will underperform index-based portfolios (in part because of the effect of fees), but will experience less volatility and superior returns in times of market crisis (because of the diversification value of alternative asset allocation).

Said another way, alternative-laden portfolios will forfeit higher returns in exchange for less volatility when compared to portfolios without alternative asset allocation. Specifically, alternative-laden portfolios will outperform conventional portfolios in years of market crisis. For the purposes of this study, market crisis is defined as the bursting of the internet bubble (Fiscal Year (FY) 2001-3); the sub-prime crisis (FY 2008-9); and the more recent poor performance of international and small domestic companies (FY 2012).[14] These periods of poor market performance are referred hereafter to as 'bad years.'

What follows is the description of a simple index-based portfolio. The performance of this comparison portfolio will be used to evaluate the following case studies. Also, included as points of reference is the conventional 60/40 benchmark as well as the S&P 500. [15] For more about these benchmarks, see Appendix D: 60/40 Benchmark on page 63 and *Appendix A: Indexing vs. Active Management* on page 58, for the 60/40 and S&P 500 respectively.

Swensen Portfolio

David Swensen, Chief Investment Officer at Yale and pioneer of the "Endowment Model," suggests a boiler-plate portfolio for those that do not have the resources to retain top-decile active management. This suggestion applies to retail investors and MMII alike. This low-cost index fund model specifies diversification across six distinct asset classes: 15% long-term Treasuries, 15% inflation-protected Treasuries, 20% Real Estate Investment Trust (REIT) index, 5% emerging markets index, 15% foreign developed markets index, and 30% US stock market index. See the following *Table 4 - Asset Class Allocations of Swensen Portfolios*.

[14] Endowments are reporting that "International equities and real assets were affected by the debt and sovereign crisis in the Eurozone as well as slowing growth in China and other emerging markets" (Wo, University of Hawaii Foundation 2012 Endowment Report).

[15] Performance all benchmarks were calculated using DFA Returns 2.0.

Asset Class Allocations – Swensen Portfolios			
Asset Class	**Index**	**Swensen**	**Swensen 65/30/5**
US Broad Market	Dow Jones US Total Stock Market Index	30%	25%
US REIT	S&P United States REIT Index (gross dividends)	20%	20%
International	MSCI EAFE Index (gross dividends)	15%	15%
Emerging	MSCI Emerging Markets Index (gross dividends)	5%	5%
Treasuries	Barclays Treasury Bond Index Long	15%	15%
TIPS	Barclays US TIPS Index	15%	15%
Cash Equivalent	BofA Merrill Lynch 3-Month US Treasury Bill Index	0%	5%

Table 4 - Asset Class Allocations of Swensen Portfolios

In order to provide a relevant benchmark, the Swensen portfolio is modified to meet the liquidity requirements of foundations making regular fund distributions. The rightmost column in *Table 4 - Asset Class Allocations of Swensen Portfolios*, "Swenson 65/30/5" allocates five percent to a cash equivalent. In addition to providing further liquidity, this modification serves a second function: decreasing the volatility inherent in this portfolio. Not only is the largest asset class (domestic broad market) reduced by 5%, but it is replaced by a 5% cash equivalent that adds further stability. Moving forward, any reference to the "Swensen portfolio" shall refer to the modified "Swensen 65/30/5" discussed above. This portfolio is rebalanced annually.

Background of the Data Source

Case studies are non-profit organizations with AUM under $1 billion, which provided data (either publicly or privately) on annual investment returns in excess of nine years. Public data is sourced from annual endowment reports as posted on foundation websites. Private data has been supplied directly to the author from participating institutions.

Procedure Used to Collect Data

Case studies were acquired via endowment publications, and by contacting organizations individually for investment return data.

Advantages and Disadvantages of this Method

Selection Bias

While online research makes for expedient gathering of data, one problem with this method is selection bias; the only information available is that which an organization chooses to make public. This may exclude poorer performing investment portfolios for the reason that the parties responsible do not wish to make their fund's performance public knowledge. While over 100 California-based non-profits were asked to participate in this study, only one agreed – and only on the condition of anonymity.

The Bond Bubble

The time period evaluated is a unique one: two severe market downturns concurrent with a rising bond bubble. With bond prices set to plummet at the culmination of the Federal Reserve's quantitative easing, the future for heavily bond-laden portfolios is bleak.[16] For the period reviewed, the 60/40 portfolio exhibited strong performance, in part, because of rising bond prices. How these portfolios perform in the future – amidst increasing interest rates – will be entirely different.

Infrequent Data

There was only consideration of annual performance. Monthly or quarterly return data was not available. Such infrequent measurements likely understate the true volatility of the endowment portfolios under examination.

[16] Bonds prices have an inverse relationship to interest rates. When interest rates are low, bonds prices are high. With current interest rates at their lowest ever, bond prices are at their highest ever. Any reversion of interest rates to historic averages (read: increase in interest rates) will proportionally decrease the value of any bond.

Chapter 4: Findings

California Social Services Organization

California Social Services Organization[17] (hereafter CSSO), has $3.5 million AUM. Without the resources available by having a large investment pool, CSSO is best served by a strategy of buy-and-hold, utilizing low-cost index funds (Swensen 2009, Stanyer 2010). This, however, is the not the technique used by CSSO's outsourced portfolio manager. In fact, CSSO's portfolio manager utilizes a doubly-opposite technique: frequent trading of actively-managed mutual funds.[18]

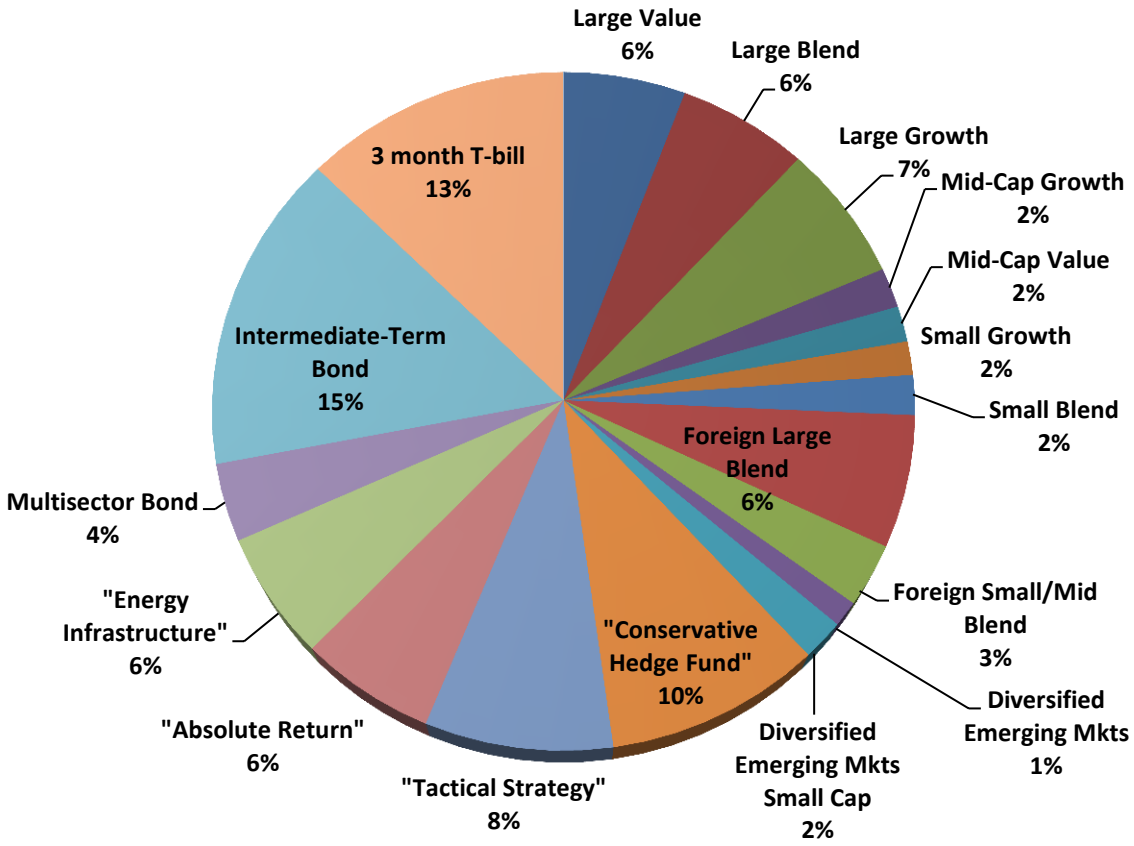


Figure 3 - California Social Services Organization asset allocation

Such a method of active trading, or market timing, is exactly what the literature review advises against (Swensen, Malkiel 2012). Not only do actively managed mutual funds usually fail to match market returns, but frequency of trading is inversely proportional to the growth of wealth (Bogle 2007, Barber and Odean 2000). While such a trading technique can be profitable, CSSO's portfolio's trade history shows multiple losses when selling mutual funds for less than their initial purchase price. Such losses occurred on numerous occasions. Ultimately, these losses were offset by gains, giving CSSO an annualized return of 7.90% before fees. Based on the limited availability of data, CSSO's

[17] CSSO is not the real name of the organization. CSSO provided data for this project on the condition of anonymity.

[18] Such a mode would indeed be unbelievable, if not for the 10-year history of buy and sell transactions made available by CSSO to the author.

portfolio return net of fees is estimated to be 7.50% per annum.[19] See *Table 5 - CSSO 10 Calendar Year Returns, Ending December 31st, 2012* for results.

CSSO 10 Calendar Year Returns, Ending December 31st, 2012					
Index	Annualized	Total	STD Dev.	Sharpe Ratio	Sortino Ratio
CSSO - gross of fees actual	7.90%	113.90%	18.05%	0.38	0.36
CSSO - net of fees, estimate	7.50%	106.15%	17.37%	0.4	0.32
S & P 500	7.10%	98.59%	18.32%	0.37	0.29
60/40	6.77%	92.46%	9.63%	0.53	0.31
Swensen - 65/30/5	9.78%	154.32%	13.41%	0.63	0.64

Table 5 - CSSO 10 Calendar Year Returns, Ending December 31st, 2012

Swensen Portfolio

The index-based Swensen 65/30/5 generated a ten-year annualized return of 9.78%. The Swensen model offers less risk (smaller standard deviation) as well. 'Bad year' performance was also superior: the Swensen model suffered a loss of -22.76% in 2009. This is relative to CSSO's 2009 performance of -33%. Further, in 2011, while CSSO was generating negative returns, the Swensen portfolio posted a positive return of 5.7%.

CSSO Calendar Year 2009 & 2011 Performance		
Portfolio / Index	2009	2011
CSSO, gross of fees actual	-33.31%	-2.32%
CSSO, net of fees estimate	-33.68%	-2.67%
S&P 500	-37.00%	2.11%
60/40	-17.24%	4.88%
Swensen 65/30/5	-22.76%	5.70%

Table 6 - CSSO Calendar Year 2009 & 2011 Performance

[19] See *Appendix F: CSSO Net of Fees Estimate* on page 118 for calculations.

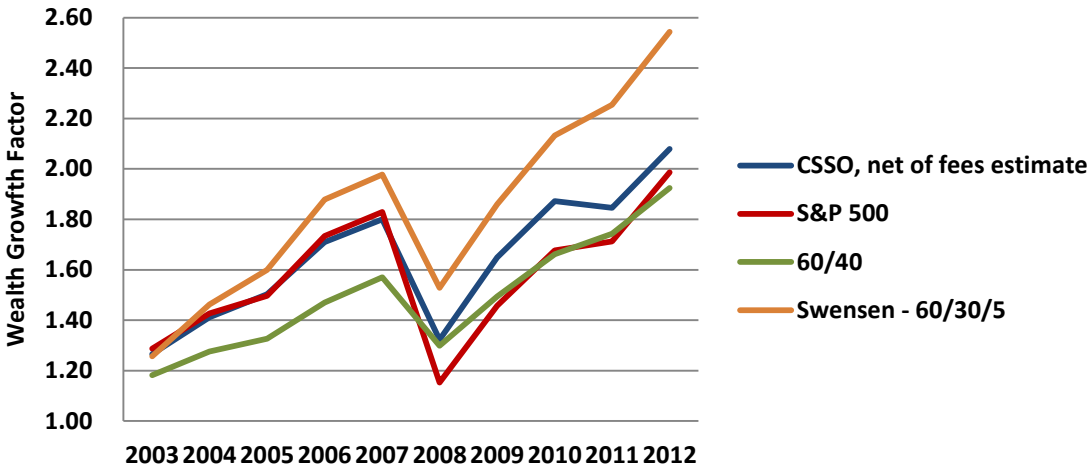


Figure 4 – California Social Services Organization & comparison portfolio growth

Conclusion

The hypothesis states that actively managed portfolios, with their alternative assets, will underperform benchmarks but will experience less risk. For CSSO's portfolio just reviewed, this was not the case. Instead of giving up higher returns in exchange for lower volatility, CSSO's outsourced portfolio manager generated lower returns with *more* volatility. The hypothesis is rejected. Thus, **CSSO's portfolio manager provided less value than the Swensen 65/30/5.**

The following *Table 7 - CSSO Portfolio Performance Relative Benchmarks* illustrates how the CSSO portfolio compares to benchmarks. A red cell indicates. A green value represents outperformance. Against the Swensen portfolio, the CSSO portfolio shows no instances of outperformance given the metrics under consideration.

CSSO Portfolio Performance Relative Benchmarks						
Portfolio / Index	Annualized Return	STD Dev.	Sharpe Ratio	Sortino Ratio	2009 Return	2011 Return
S & P 500	0.40%	-0.27%	0.01	0.03	3.32%	-4.78%
60/40	0.73%	8.42%	-0.15	0.01	-16.44%	-7.55%
Swensen - 65/30/5	-2.28%	4.64%	-0.25	-0.32	-10.92%	-8.37%

Key	CSSO Superior Performance	CSSO Inferior Performance

Table 7 - CSSO Portfolio Performance Relative Benchmarks

Conflicts of Interest

Due to conflicts of interest, the manager was incentivized to over-trade holdings. Therefore, the ability to accurately assess the value of alternative assets is compromised. To learn about the conflicts of interest that manifest themselves in CSSO's portfolio, see Appendix G: CSSO's Problematic Portfolio on page 101.

University of Hawaii Foundation

Suffering from negative returns in FY [20] 2012, University of Hawaii Foundation (UHF) stewards $201.5 million in AUM. Holding a mere 14 funds in 2004, this number more than tripled to 50 funds by 2011. Only six of the original 14 remained in the portfolio by the end of FY 2011.[21] Like California Social Services Organization (CSSO), UHF's portfolio manager trades holdings frequently. The average holding period for an investment is just under three and a half years [22] (Wo n.d.).

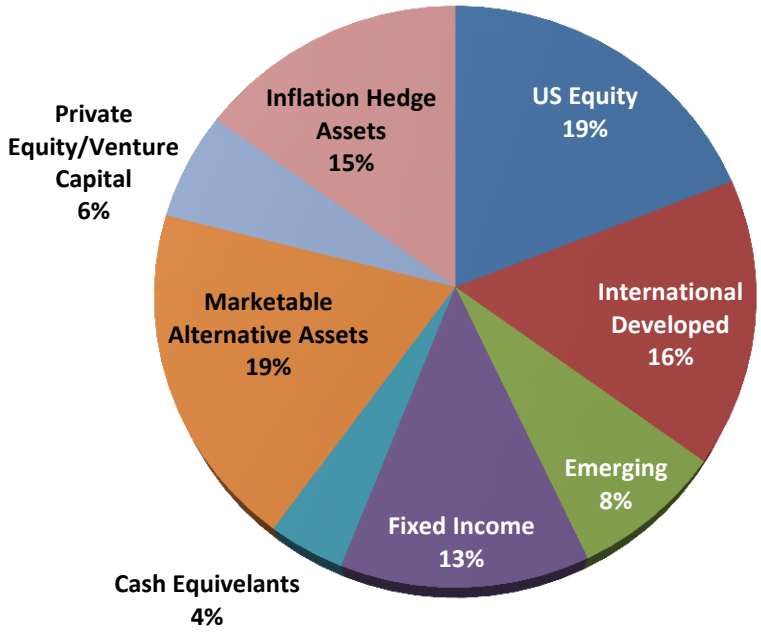


Figure 5 - University of Hawaii Foundation asset allocation

Swensen Portfolio

Relative to UHF's portfolio, the Swensen portfolio produced exceptionally higher returns, though with higher volatility (risk). See *Table 8 - Performance Metrics of Nine Consecutive FYs, ending June 30th, 2012* for the entirety of metrics. This excessive risk is reflected in a greater loss than what UHF's portfolio endured in 2008 and 2009. See *Table 9 - UHF FY 2008, 2009 & 2012 Performance Relative Indices.* Ultimately, for the time period evaluated (July 1st, 2003 to June 30th, 2012), the Swensen portfolio produced superior returns for the volatility – as judged by the Sharpe and Sortino Ratios.

[20] Academic fiscal years run from July 1st to June 30th of the following year. For example, fiscal year 2012, (FY2012), runs from July 1st 2011 through June 30th, 2012.
[21] One fund, State Street Global Advisors S&P 500 Index, underperformed a comparable Vanguard Index by the exact difference of their expense ratio.
[22] As calculated by computing the average years a fund is held, over the 8 years that the holdings were documented in UHF's annual endowment reports.

Performance Metrics of Nine Consecutive FYs, ending June 30th, 2012					
Portfolio	Annualized Returns	Total Return	STD Dev.	Sharpe Ratio	Sortino Ratio
UHF actual	6.37%	74.30%	11.7%	0.414	0.248
S&P 500	5.91%	67.71%	17.5%	0.290	0.193
60/40	5.88%	67.28%	9.8%	0.406	0.194
Swensen 65/30/5	8.86%	114.63%	13.6%	0.540	0.531

Table 8 - Performance Metrics of Nine Consecutive FYs, ending June 30th, 2012

UHF FY 2008, 2009 & 2012 Performance Relative Indices			
Portfolio / Index	FY 2008	FY 2009	FY 2012
UHF actual	-1.7%	-16.8%	-2.1%
S&P 500	-13.12%	-26.22%	5.45%
60/40	-4.00%	-13.08%	6.60%
Swensen 65/30/5	-2.93%	-20.37%	7.34%

Table 9 - UHF FY 2008, 2009 & 2012 Performance Relative Indices

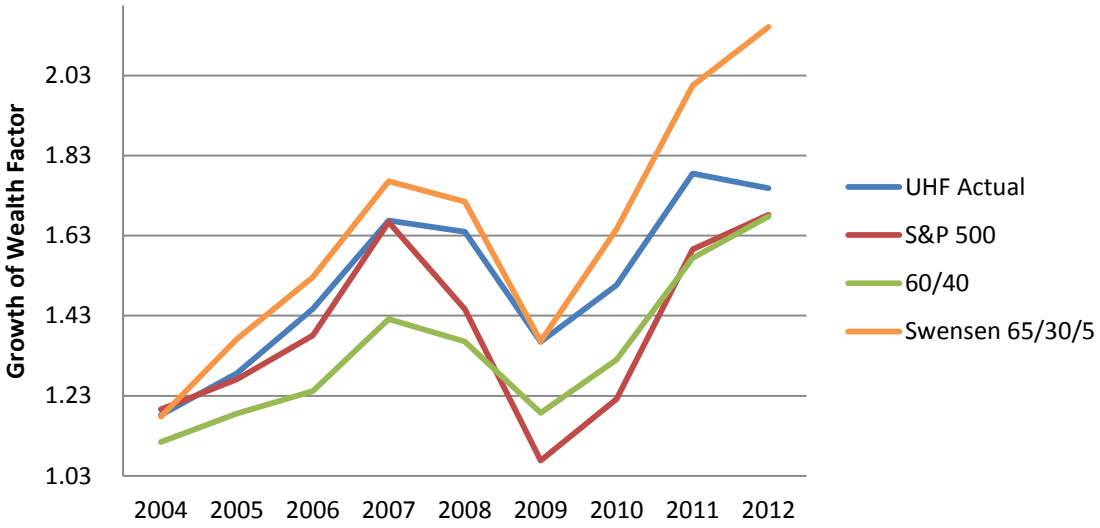


Figure 6 - University of Hawaii Foundation & comparison portfolio growth

Conclusion

In the case of UHF and the data analyzed thus far**, it would appear that active management and the accompanying alternative assets are effectively minimizing portfolio losses in *certain* instances – buffering the portfolio from the sub-prime crisis.** UHF's active management and alternative asset allocation thus acted as a *slight* hedge against sharp market downward movements, making the portfolio more buoyant than the comparison portfolio.[23]

[23] More risk for more return – this is a tenet of modern portfolio theory as discussed in the literature review. The ability to buffer against the sub-prime crisis has come at the expense of

For all its active management and alternative assets, UHF's portfolio manager has *sometimes* managed to reduce negative returns amidst markets shocks. UHF's portfolio outperformed in FY 2008 and 2009, but produced exceptionally poor performance in FY 2012. FY 2012 performance is the basis for the hypothesis's rejection.

UHF Portfolio Performance Discrepancies Relative Index-Based Portfolios							
Portfolio / Index	Return	STD	Sharpe	Sortino	FY 2008	FY 2009	FY 2012
S & P 500	0.46%	-5.80%	0.12	0.06	11.42%	9.42%	-7.55%
60/40	0.49%	1.90%	0.01	0.05	2.30%	-3.72%	-8.70%
Swensen	-2.49%	-1.90%	-0.13	-0.28	1.23%	3.57%	-9.44%

Key	UHF Superior Performance	UHF Inferior Performance

Table 10 - UHF Portfolio Performance Discrepancies Relative Index-Based Portfolios

returns. The same benefit, it be argued, could be had with a less aggressive equity allocation. This idea – that an index-based portfolio with a greater allocation than 30% to fixed income could outperform UHF's portfolio – is discussed in the conclusion. Those readers eager to see the results may skip to *University of Hawaii Foundation* on page 51.

Washington State University Foundation's Endowment Fund

Washington State University Foundation's Endowment Fund (WSUFEF) holds $318.1 million as of June 30, 2012.

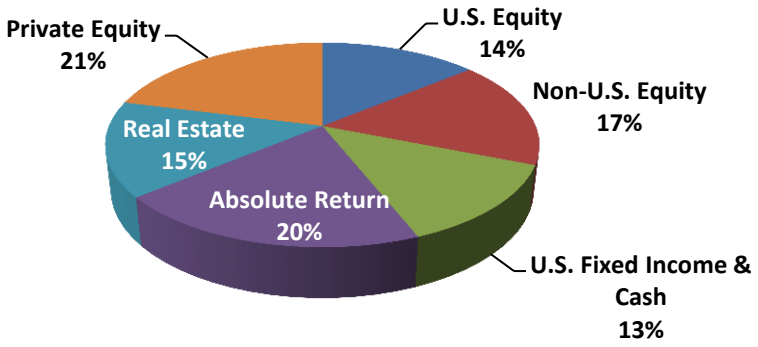


Figure 7 - Washington State University Foundation's Endowment Fund asset allocation

It posted a 6.16% per annum return over the last 10 FYs. WSUFEF's performance in times of market crisis was mixed. For FY 2008, when the first effects of the sub-prime crisis were being felt, WSUFEF pushed out a small positive return of 1.6%. This is in contrast to the S&P, which fell in excess of 13%. However in 2009, WSUFEF fell dramatically with the market.

Performance for 10 FY Returns, ending June 30th, 2012					
Portfolio / Index	Annualized Returns	Total Return	STD Dev.	Sharpe Ratio	Sortino Ratio
WSUFEF actual	6.16%	130.77%	12.16%	0.40	0.217
S&P 500	5.33%	106.98%	16.68%	0.27	0.140
60/40	5.76%	119.11%	9.25%	0.42	0.179
Swensen 65/30/5	8.56%	215.62%	12.87%	0.55	0.514

Table 11 - Performance for 10 FY Returns, ending June 30th, 2012

WSUFEF FY 2003, 2008, 2009 & 2012 Performance				
Portfolio / Index	FY 2003	FY 2008	FY 2009	FY 2012
WSUFEF actual	2.63%	1.60%	-21.10%	0.00%
S&P 500	0.26%	-13.12%	-26.22%	5.45%
60/40	4.68%	-4.00%	-13.08%	6.60%
Swensen 65/30/5	5.89%	-2.93%	-20.37%	7.34%

Table 12 - FY 2003, 2008, 2009 & 2012 Performance

Figure 8 - Washington State University Foundation's Endowment Fund & comparison portfolio growth shows the value added by active management and alternative asset allocation: greater stability in returns. Again, active management and alternative assets are behaving like fixed-income: stifling returns in exchange for safety of principal.

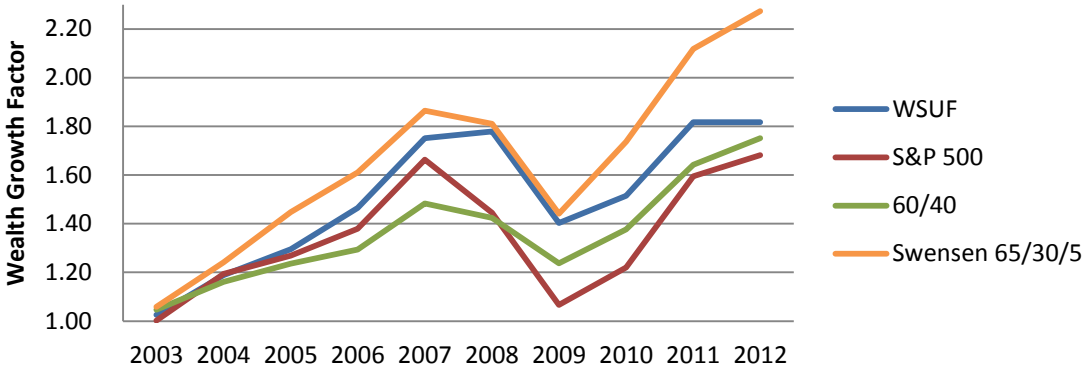


Figure 8 - Washington State University Foundation's Endowment Fund & comparison portfolio growth

Swensen Portfolio

The Swensen portfolio grossly outperformed the WSUFEF portfolio in excess of 2% per annum. The trade-off, as seen in the previous case study, was an increase in volatility, albeit a small one (less than one percent of standard deviation). The Sharpe and Sortino Ratios, laid out in *Table 11 - Performance for 10 FY Returns, ending June 30th, 2012* manifest the value added of the Swensen model over WSUFEF via higher scorings. Further, the Swensen model outperformed in three out of four 'bad years.'

Conclusion

The verdict of WSUFEF is similar to University of Hawaii Foundation (UHF). While WSUFEF's portfolio forfeited performance to gain safety, ultimately poor FY 2012 performance precluded the acceptance of the hypothesis. Actively managed alternative assets undoubtedly added value, functioning to buffer WSUFEF's portfolio, most substantially at the start of the financial crisis (FY 2008). However, in exchange for slightly less volatility and a better 2008 return, the WSUFEF portfolio gives up every other metric to Swensen, including returns in excess of 2% per annum over 10 years.

WSUFEF Portfolio Performance Discrepancies								
Portfolio / Index	Return	STD	Sharpe	Sortino	FY 2003	FY 2008	FY 2009	FY 2012
S & P 500	0.82%	-4.52%	0.13	0.08	2.37%	14.72%	5.12%	-5.45%
60/40	0.39%	2.91%	-0.02	0.04	-2.05%	5.60%	-8.02%	-6.60%
Swensen 65/30/5	-2.40%	-0.71%	-0.15	-0.30	-3.26%	4.53%	-0.73%	-7.34%

Key	WSUFEF Superior Performance	WSUFEF Inferior Performance

Table 13 - WSUFEF Portfolio Performance Discrepancies

University of Northern Carolina, Wilmington

At the conclusion of FY 2012, the University of Northern Carolina, Wilmington (UNCW) had nearly $68 million AUM. The university privately provided 11 years of investment return data for this study.

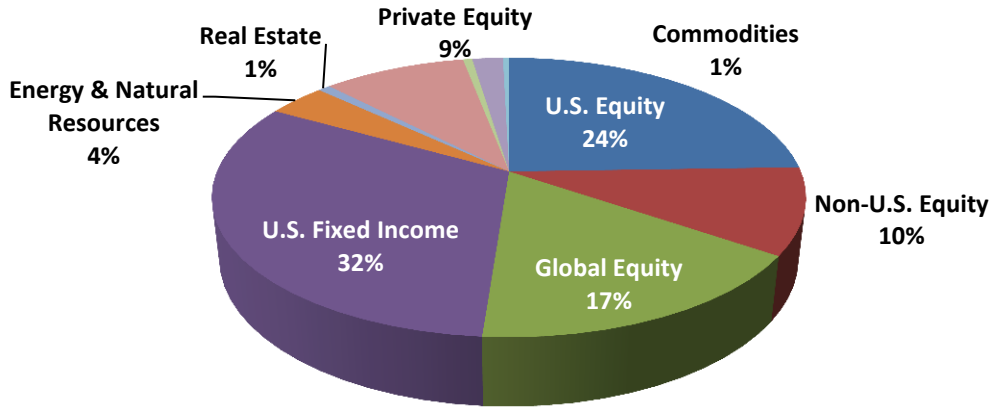


Figure 9 - University of Northern Carolina, Wilmington asset allocation

Swensen Portfolio

The Swensen portfolio again outperforms the case study portfolio UNCW, posting returns in excess of one percent per annum. This gain in returns is offset by additional volatility. Like UHF, UNCW's portfolio exhibited superior sub-prime crisis performance (FY 2008 & 2009).

UNCW Performance of 11 Consecutive FYs, ending June 30th, 2012					
Portfolio / Index	Annualized Returns	Total Return	STD Dev.	Sharpe Ratio	Sortino Ratio
UNCW actual	6.77%	105.54%	10.72%	0.49	0.33
S&P 500	2.96%	37.89%	17.48%	0.13	-0.05
60/40	4.51%	62.39%	9.66%	0.28	-0.01
Swensen 65/30/5	7.81%	128.79%	12.49%	0.50	0.44

Table 14 - UNCW Performance of 11 Consecutive FYs, ending June 30th, 2012

UNCW FY 2002, 2003, 2008, 2009 & 2012 Performance					
Portfolio / Index	FY 2002	FY 2003	FY 2008	FY 2009	FY 2012
UNCW actual	-6.93%	1.90%	4.99%	-14.48%	5.70%
S&P 500	-17.99%	0.26%	-13.12%	-26.22%	5.45%
60/40	-7.27%	4.68%	-4.00%	-13.08%	6.60%
Swensen 65/30/5	0.67%	5.89%	-2.93%	-20.37%	7.34%

Table 15 - - UNCW FY 2002, 2003, 2008, 2009 & 2012 Performance

For the risk endured, the Swensen model outperformed, posting superior risk-adjusted returns. While the difference in Sharpe Ratio was negligible, the difference in Sortino Ratios was notable. (See *Table 14 - UNCW Performance of 11 Consecutive FYs, ending June 30th, 2012*.) And while the UNCW portfolio proved more resilient to the recent subprime crisis (FY 2008 & 2009) than the Swensen model, the Swensen model posted better returns in the wake of tech bubble (FY 2002 & 2003).

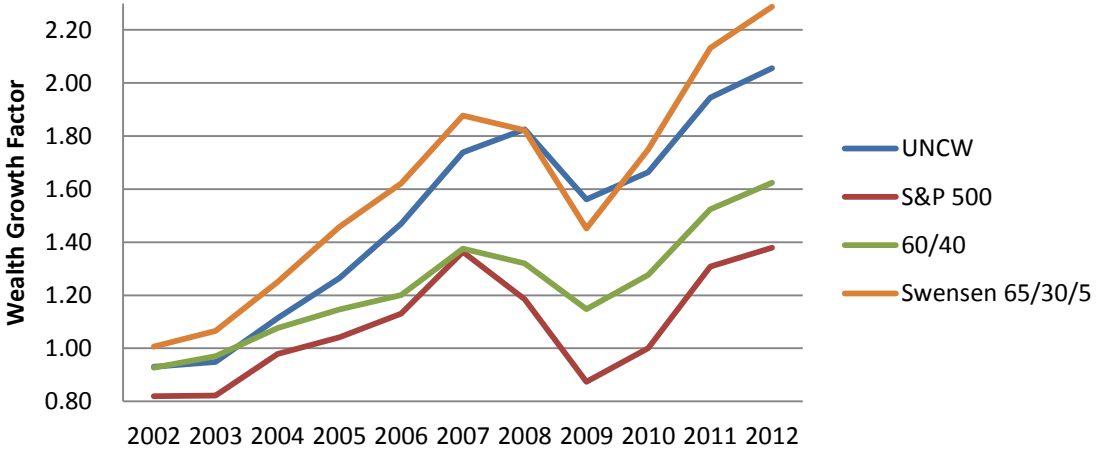


Figure 10 – University of Northern Carolina, Wilmington & comparison portfolio growth

Conclusion

The hypothesis is again rejected. While the UNCW portfolio did underperform the Swensen model with less risk, it did not post superior performance in *every* instance of the 'bad years.' See the following *Table 16 - UNCW Portfolio Performance Discrepancies*.

UNCW Portfolio Performance Discrepancies									
Index	Return	STD Dev.	Sharpe	Sortino	FY 2002	FY 2003	FY 2008	FY 2009	FY 2012
S & P 500	3.81%	-6.76%	0.36	0.38	11.06%	1.64%	18.11%	11.74%	0.25%
60/40	2.26%	1.06%	0.21	0.34	0.34%	-2.78%	8.99%	-1.40%	-0.90%
Swensen	-1.04%	-1.77%	-0.01	-0.11	-7.60%	-3.99%	7.92%	5.89%	-1.64%

Key	UNCW Superior Performance	UNCW Inferior Performance

Table 16 - UNCW Portfolio Performance Discrepancies

University of California, Santa Barbara Foundation

University of California, Santa Barbara Foundation (UCSBF), reported $206,033,000 AUM at the end of FY 2012.

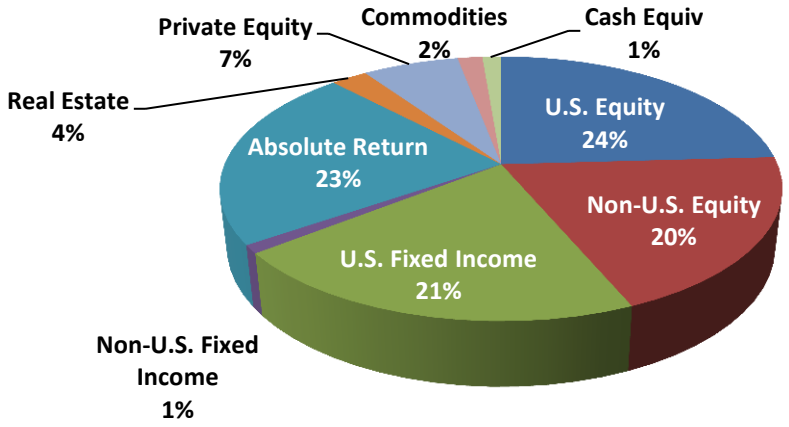


Figure 11 - University of California, Santa Barbara Foundation asset allocation

Among its fellow UC foundations, UCSBF posted the worst returns for the 14 year period evaluated: 4.22% per annum. UCSBF's performance is reflected in a negative Sortino Ratio. It is the only portfolio to generate a negative Sortino Ratio in this study.

UCSBF Fourteen FY Returns, ending June 30th, 2012					
Portfolio / Index	Annualized Returns	Total Return	STD Dev.	Sharpe Ratio	Sortino Ratio
UCSBF actual	4.22%	78.42%	12.64%	0.17	-0.003
S&P 500	3.16%	54.62%	17.03%	0.10	-0.038
60/40	4.65%	88.92%	9.32%	0.23	0.007
Swensen - 65/30/5	7.28%	167.52%	11.16%	0.43	0.393

Table 17 - UCSBF Fourteen FY Returns, ending June 30th, 2012

UCSBF FY 2001, 2002, 2003, 2008, 2009 & 2012 Performance						
Portfolio / Index	FY 2001	FY 2002	FY 2003	FY 2008	FY 2009	FY 2012
UCSBF actual	-6.70%	-9.40%	5.60%	-9.40%	-20.70%	-3.40%
S&P 500	-14.83%	-17.99%	0.26%	-13.12%	-26.22%	5.45%
60/40	-4.76%	-7.27%	4.68%	-4.00%	-13.08%	6.60%
Swensen - 65/30/5	0.52%	0.67%	5.89%	-2.93%	-20.37%	7.34%

Table 18 - UCSBF FY 2001, 2002, 2003, 2008, 2009 & 2012 Performance

Swensen Portfolio

For the time period measured, the Swensen portfolio outperformed, posting annual returns in excess of three percentage points per annum over UCSBF's return.[24] Consider that UCSBF This outperformance occurred while enduring less risk as well. Further, the Swensen portfolio showed smaller losses in all six 'bad' years reviewed, including a return in excess of 7% percent in FY 2012.

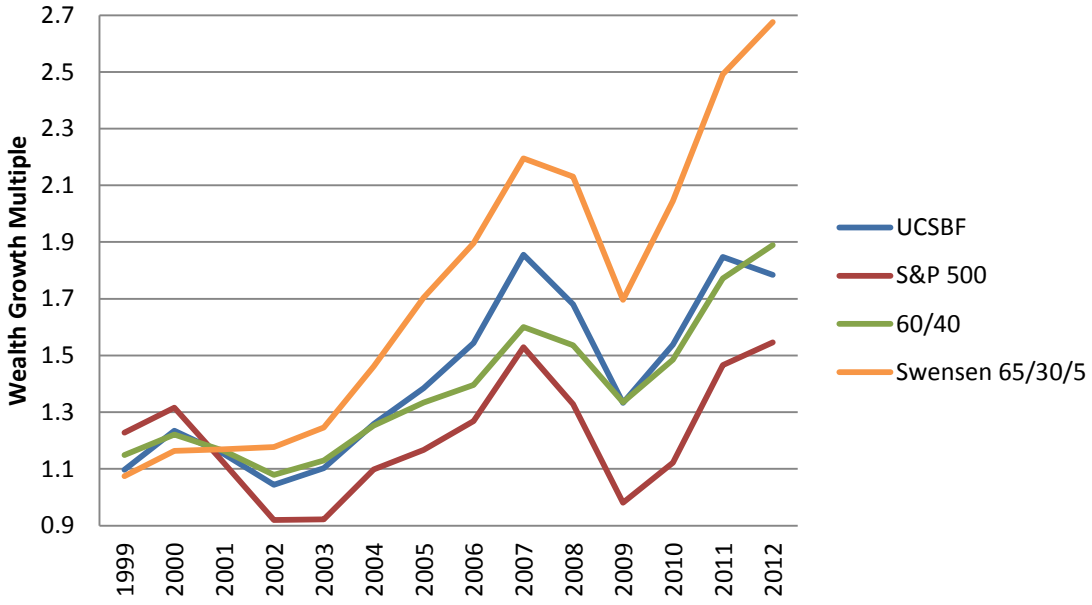


Figure 12 - University of California, Santa Barbara Foundation & comparison portfolio growth

Conclusion

The hypothesis is rejected. **In this instance, it is clear that active management, with its accompanying alternative asset allocation, has failed to provide value.** To the contrary, the strategy has subtracted value. Had UCSBF utilized the Swensen portfolio, its holdings would be estimated at $308 million, over $100 more than its current value.

UCSBF Portfolio Performance Relative Benchmarks										
Index	Return	STD Dev.	Sharpe	Sortino	FY 2001	FY 2002	FY 2003	FY 2008	FY 2009	FY 2012
S & P	1.06%	-4.39%	0.07	0.04	8.13%	8.59%	5.34%	3.72%	5.52%	-8.85%
60/40	-0.43%	3.32%	-0.06	-0.01	-1.94%	-2.13%	0.92%	-5.40%	-7.62%	-10.00%
Swensen	-3.06%	1.48%	-0.26	-0.40	-7.22%	-10.07%	-0.29%	-6.47%	-0.33%	-10.74%

Key	UCSBF Superior Performance	UCSBF Inferior Performance

Table 19 - UCSBF Portfolio Performance Relative Benchmarks

24

University of California, Irvine Foundation

University of California, Irvine Foundation held $293,180,000 AUM at the close of FY 2012.

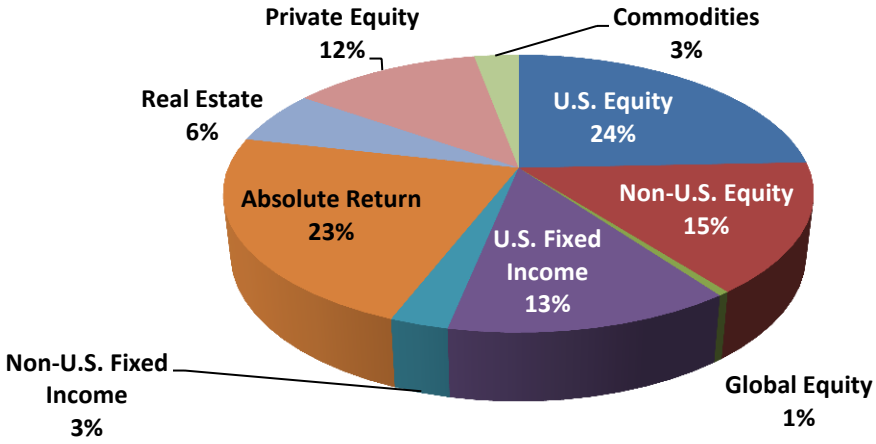


Figure 13 - University of California, Irvine Foundation asset allocation[25]

University of California, Irvine Foundation (UCIF) produced annualized returns of 4.83%.

UCIF Performance of 14 Consecutive FYs, ending June 30th, 2012					
Portfolio / Index	Annualized Returns	Total Return	STD Dev.	Sharpe Ratio	Sortino Ratio
UCIF actual	4.83%	93.47%	11.08%	0.23	0.049
S&P 500	3.16%	54.62%	17.03%	0.10	-0.038
60/40	4.65%	88.92%	9.32%	0.23	0.007
Swensen 65/30/5	7.28%	167.52%	11.16%	0.43	0.393

Table 20 - UCIF Performance of 14 Consecutive FYs, ending June 30th, 2012

UCIF FY 2001, 2002, 2003, 2008, 2009 & 2012 Performance						
Portfolio / Index	FY 2001	FY 2002	FY 2003	FY 2008	FY 2009	FY 2012
UCIF actual	-3.40%	-7.20%	6.50%	-2.90%	-20.60%	0.40%
S&P 500	-14.83%	-17.99%	0.26%	-13.12%	-26.22%	5.45%
60/40	-4.76%	-7.27%	4.68%	-4.00%	-13.08%	6.60%
Swensen 65/30/5	0.52%	0.67%	5.89%	-2.93%	-20.37%	7.34%

Table 21 - UCIF FY 2001, 2002, 2003, 2008, 2009 & 2012 Performance

[25] Not pictured is 0.1% cash equivalent.

Swensen Portfolio

Against the Swensen portfolio, UCIF's actual portfolio provides little advantage. With a negligibly larger standard deviation, the Swensen portfolio generates returns of 2.45% per annum, and produced superior performance in four of the six 'bad years.'

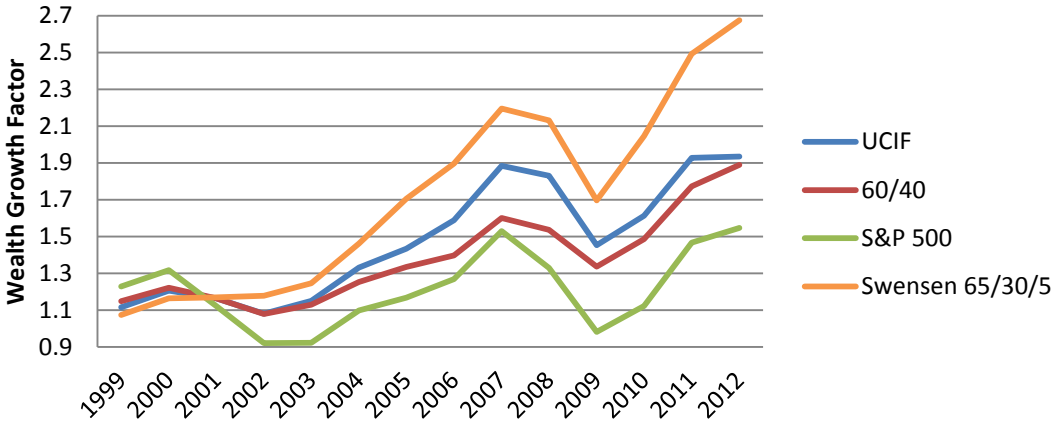


Figure 14 – University of California, Irvine Foundation & comparison portfolio growth

Conclusion

The hypothesis is rejected. While there were instances where UCIF provided lower returns in exchange for less risk, the UCIF portfolio was not able to produce superior returns in *all* of the 'bad' years considered; the UCIF portfolio did not *consistently* buffer UCIF's investments against market shocks. Further, the difference in risk is negligible at eight basis points (0.08%) of standard deviation.

UCIF Performance Relative Benchmarks										
Index	Return	STD	Sharpe	Sortino	FY 2001	FY 2002	FY 2003	FY 2008	FY 2009	FY 2012
S & P	1.67%	-5.95%	0.13	0.09	11.43%	10.79%	6.24%	10.22%	5.62%	-5.05%
60/40	0.18%	1.76%	0.00	0.04	1.36%	0.07%	1.82%	1.10%	-7.52%	-6.20%
Swensen	-2.45%	-0.08%	-0.20	-0.34	-3.92%	-7.87%	0.61%	0.03%	-0.23%	-6.94%

Key	UCIF Superior Performance	UCIF Inferior Performance

Table 22 - UCIF Performance Relative Benchmarks

University of California, Riverside Foundation

University of California, Riverside Foundation held AUM of $138,816,000 at FY 2012 end.

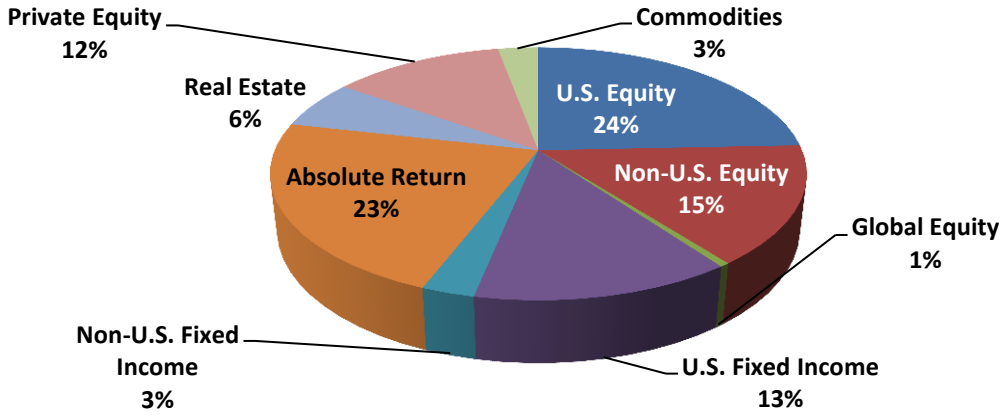


Figure 15 University of California, Riverside Foundation asset allocation[26]

UCRF posted returns of 6.68% per annum.

UCRF Performance of 14 Consecutive FYs, ending June 30th, 2012					
Portfolio/Index	Annualized Returns	Total Return	STD Dev.	Sharpe Ratio	Sortino Ratio
UCRF actual	6.68%	147.16%	11.95%	0.38	0.293
S&P 500	3.16%	54.62%	17.03%	0.10	-0.038
60/40	4.65%	88.92%	9.32%	0.23	0.007
Swensen	7.28%	167.52%	11.16%	0.43	0.393

Table 23 - UCRF Performance of 14 Consecutive FYs, ending June 30th, 2012

UCRF FY 2001, 2002, 2003, 2008, 2009 & 2012 Performance						
Portfolio/Index	FY 2001	FY 2002	FY 2003	FY 2008	FY 2009	FY 2012
UCRF actual	0.50%	-4.10%	4.10%	2.80%	-22.10%	-2.60%
S&P 500	-14.83%	-17.99%	0.26%	-13.12%	-26.22%	5.45%
60/40	-4.76%	-7.27%	4.68%	-4.00%	-13.08%	6.60%
Swensen 65/30/5	0.52%	0.67%	5.89%	-2.93%	-20.37%	7.34%

Table 24 - UCRF FY 2001, 2002, 2003, 2008, 2009 & 2012 Performance

Swensen Portfolio

UCRF still failed to outperform the Swensen model by almost every metric considered. When comparing UCRF's performance against the Swensen portfolio, the Swensen model outperforms by less than one percent per annum. Higher returns coupled with less volatility gives the Swensen portfolio higher Sharpe and Sortino Ratios. In four out of six

[26] Not pictured is 0.1% cash equivalent.

instances, the Swensen portfolio exhibited superior 'bad year' performance. (In FY2001, the two portfolios posted similar returns.) FY 2008 performance is the exception.

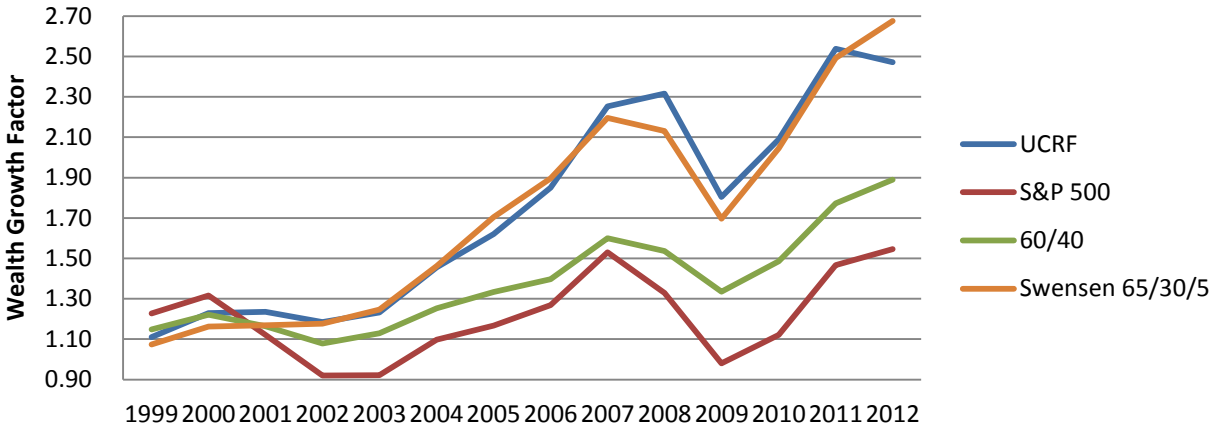


Figure 16 – University of California, Riverside Foundation & comparison portfolio growth

Conclusion

The hypothesis is rejected. The numbers show UCRF's failure to provide any consistent value over the Swensen model. The differences are laid out in *Table 25 - UCRF Portfolio Performance Relative Benchmarks*.

UCRF Portfolio Performance Relative Benchmarks										
Index	Return	STD	Sharpe	Sortino	FY 2001	FY 2002	FY 2003	FY 2008	FY 2009	FY 2012
S & P 500	3.51%	-5.08%	0.28	0.33	15.33%	13.89%	3.84%	15.92%	4.12%	-8.05%
60/40	2.03%	2.63%	0.15	0.29	5.26%	3.17%	-0.58%	6.80%	-9.02%	-9.20%
Swensen	-0.60%	0.79%	-0.05	-0.10	-0.02%	-4.77%	-1.79%	5.73%	-1.73%	-9.94%

Key	UCRF Superior Performance	UCRF Inferior Performance

Table 25 - UCRF Portfolio Performance Relative Benchmarks

University of California, San Francisco Foundation

Among this paper's case studies, University of California, San Francisco Foundation holds the greatest amount of assets under management: $675 million.

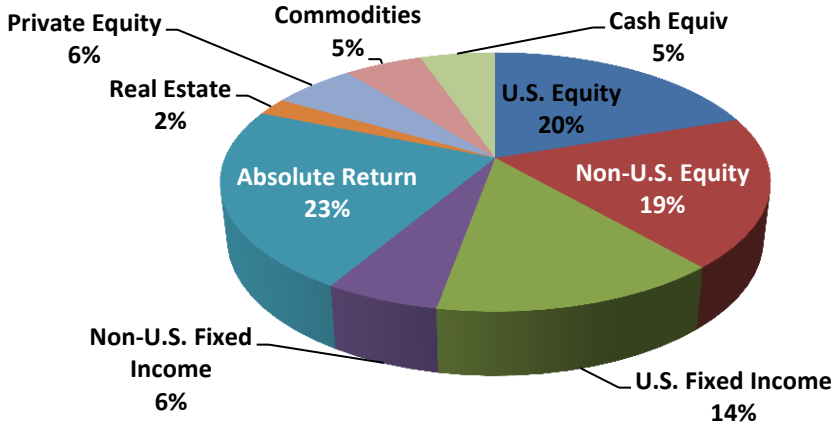


Figure 17 - University of California, San Francisco Foundation Asset Allocation[27]

UCSFF set an annualized return of nearly six percent per year. Part of UCSFF's success is from an extremely high return in FY 2000: 23.9%.

UCSFF Performance of 14 Consecutive FYs, ending June 30th, 2012					
Portfolio/Index	Annualized Returns	Total Return	STD Dev.	Sharpe Ratio	Sortino Ratio
UCSFF actual	5.95%	124.62%	11.98%	0.32	0.205
S&P 500	3.16%	54.62%	17.03%	0.10	-0.038
60/40	4.65%	88.92%	9.32%	0.23	0.007
Swensen	7.28%	167.52%	11.16%	0.43	0.393

Table 26 - UCSFF Performance of 14 Consecutive FYs, ending June 30th, 2012

USSFF FY 2001, 2002, 2003, 2008, 2009 & 2012 Performance						
Portfolio/Index	FY 2001	FY 2002	FY 2003	FY 2008	FY 2009	FY 2012
UCSFF actual	-1.50%	-6.80%	0.90%	-7.50%	-16.50%	-0.90%
S&P 500	-14.83%	-17.99%	0.26%	-13.12%	-26.22%	5.45%
60/40	-4.76%	-7.27%	4.68%	-4.00%	-13.08%	6.60%
Swensen 65/30/5	0.52%	0.67%	5.89%	-2.93%	-20.37%	7.34%

Table 27 - USSFF FY 2001, 2002, 2003, 2008, 2009 & 2012 Performance

[27] Not pictured is 0.1% cash equivalent.

Swensen

UCSFF's portfolio did not outperform the Swensen model. Further, UCSFF's underperformance was not with less risk. On the contrary, it came with more risk. When back-to-back with the Swensen model, it was another instance of more risk for less return. UCSFF's portfolio failed in every metric, save superior performance in FY 2008. During this period, USCFF bested the Swensen model by a significant 5%. All other metrics go to Swensen.

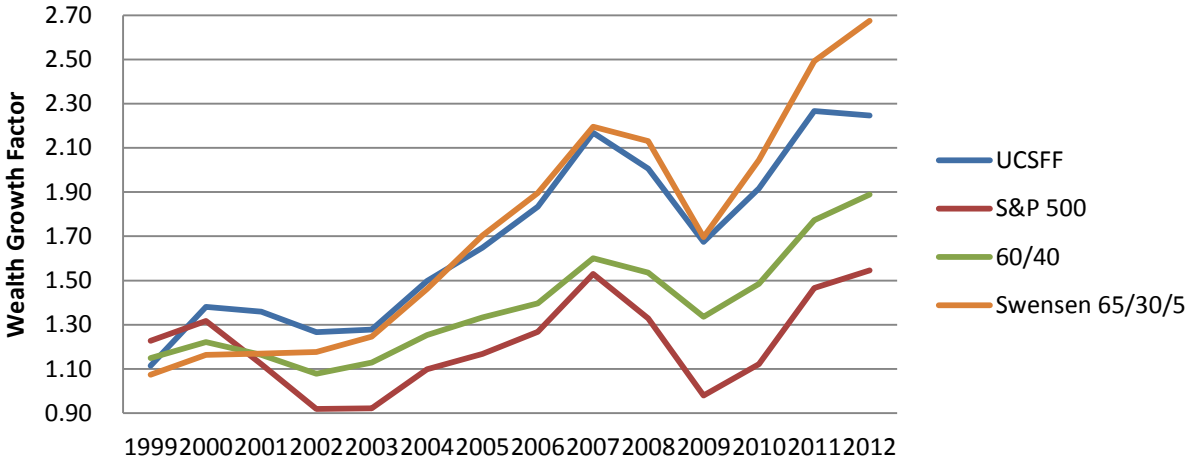


Figure 18 – University of California, San Francisco Foundation & comparison portfolio growth

Conclusion

The hypothesis is rejected. The following *Table 28 - UCSFF Performance Relative Benchmarks* illuminates the inferiority of UCSFF's portfolio relative to the Swensen portfolio. Like with UCRF, the UCSFF portfolio showed a significant advantage over the Swensen model in only one metric: performance in FY 2009.

UCSFF Performance Relative Benchmarks										
Index	Return	STD	Sharpe	Sortino	FY 2001	FY 2002	FY 2003	FY 2008	FY 2009	FY 2012
S&P 500	2.79%	-5.05%	0.22	0.24	13.33%	11.19%	0.64%	5.62%	9.72%	-6.35%
60/40	1.30%	2.66%	0.09	0.20	3.26%	0.47%	-3.78%	-3.50%	-3.42%	-7.50%
Swensen	-1.33%	0.82%	-0.11	-0.19	-2.02%	-7.47%	-4.99%	-4.57%	3.87%	-8.24%

Key	UCSFF Superior Performance	UCSFF Inferior Performance

Table 28 - UCSFF Performance Relative Benchmarks

Chapter 5: Conclusions

Theoretical Insights

The Effectiveness of Active Management and Alternative Assets

For the case studies evaluated, if safety of principal is paramount, then alternative assets proves the inferior investment. Only three of the eight case studies managed to produce less volatility – and only then at the sacrifice of risk-adjusted performance.

Alternative Asset Correlation

A purpose of this study was to measure the value of alternative assets in the absence of top-decile management**.** Theoretically, an alternative-laden portfolio should outperform a conventional portfolio in years of market crisis because of low correlation. However, more often than not, this was not the case. **(**FY 2008 – the beginning of the sub-prime crisis – was the exception.) Usually, the alternative-laden portfolios outperformed the Swensen portfolios in FY2008. However, the record showed that an alternative-laden portfolio outperformed the Swensen portfolio just 23.68% of the time. On the flip side, the chance that a diversified model of index funds (the modified Swensen model) will outperform an alternative-laden portfolio during a year in market crisis is 76.32%. Utilizing an index-based portfolio serves as a better defense against market downturns than alternative asset allocation.

'Bad Year' Performance Differential Relative Swensen Portfolio							
Portfolio	Index	FY 2001	FY 2002	FY 2003	FY 2008	FY 2009[28]	FY 2012
UHF	Swensen	N/A	N/A	N/A	1.23%	3.57%	-9.44%
WSUFEF	Swensen	N/A	N/A	-3.26%	4.53%	-0.73%	-7.34%
UNCW	Swensen	N/A	-7.60%	-3.99%	7.92%	5.89%	-1.64%
UCSBF	Swensen	-7.22%	-10.07%	-0.29%	-6.47%	-0.33%	-10.74%
UCIF	Swensen	-3.92%	-7.87%	0.61%	0.03%	-0.23%	-6.94%
UCRF	Swensen	-0.02%	-4.77%	-1.79%	5.73%	-1.73%	-9.94%
UCSFF	Swensen	-2.02%	-7.47%	-4.99%	-4.57%	3.87%	-8.24%
Portfolio	Index			Calendar Year		2009	2011
CSSO	Swensen					-10.92%	-8.37%

Key	Alternative-laden Superior Performance	Inferior Performance

Table 29 - 'Bad' Year Performance Differential Relative Swensen Portfolio

[28] The Swensen portfolio suffered from lackluster performance in FY 2008 and FY 2009, in part, from its allocation to real estate.

Conclusion

It if was not clear before this study that MMII should avoid active management and alternative asset allocation, then it is now. On average, alternative asset allocation proved riskier than a well-diversified indexed-based portfolio. As demonstrated in two previous studies (Ferri 2012, Wallick, Wimmer and Schlanger 2012) actively-managed portfolios provide lower returns than index funds. Moreover, active management usually resulted in higher portfolio volatility as well. Additionally, alternative-laden portfolios are less likely to produce superior returns during times of macroeconomic shocks. Risk-adjusted performance was consistently higher with the index-based portfolios.

Why? All assets – even those with supposedly low correlation to traditional assets, decline in tandem during macro-economic shocks (Harvard Magazine 2009, Cambridge Associates LLC 2013). Holding alternatives – with their inherent illiquidity – exacerbates this problem (Humphreys 2010). Thus, the conventional wisdom for holding alternatives – low correlation to traditional assets – is simply inaccurate.

Practical Recommendations

Swensen: The Superior Risk-Adjusted Portfolio

The Swensen portfolio outperformed the case studies. If there was an increase in risk, that risk was compensated with an outsized return. In answering the question, "is it worth it?" or, "is the risk worth the return?" the Sharpe and Sortino Ratios consistently answer "yes."

The question then is, "should endowments be taking this much risk?" This answer is for those respective organizations' Finance Committees to decide. That issue boils down to what function an endowment plays in its respective organization.

- Does the endowment serve to cushion the institution against financial crisis – to act as a financial reserve and *not* be tapped annually for ongoing operational support?
    - This scenario may not be appropriate for the Swensen portfolio.

- Is the investment portfolio simply a place to park cash from a capital campaign?
    - This scenario also may not be appropriate for the Swensen portfolio.

- Is the endowment regularly funding operational expenses?
    - If an endowment continuously supports the operating budget of an organization, then it is critical that the endowment principal grow with inflation *and* the growth of the organization. Such a goal may require an *aggressive* investment portfolio.

California Community Services Organization

For CSSO, the issue is clear: the portfolio manager is subtracting wealth from CSSO. **There is no benefit to maintaining CSSO's existing investment strategy. CSSO would be far better served by implementing a simple buy-and-hold strategy using index funds**. Relative CSSO's existing portfolio, such a strategy would produce higher returns, less risk, higher risk-adjusted returns, and superior performance against market shocks.

University of Hawaii Foundation

UHF's actively managed portfolio is giving up substantial growth in exchange for lower volatility – *sometimes*. Yet, this level of safety may be inappropriate given UHF's unusually high distribution requirements. This is because the historic return is problematic considering its payout ratio. UHF payout is calculated as "4.9% applied to the twelve-quarter average market value" for the ending FY. This is in addition to a 1.5% administrative fee charged by UHF (Wo, University of Hawaii Foundation 2011 Endowment Report). The combined withdrawal rate of 6.4% is actually three basis points *above* UHF's performance for the last nine years. This deficit of three basis points makes no consideration for inflation.

The Higher Education Price Index (HEPI)[29] measures inflation at 3.1%, over 10 years, ending June 30th, 2012 (Commonfund Institute 2013). UHF's aggressive withdrawal rate, the endowment's value is not keeping up with inflation (controlling for donor contributions). Given UHF's aggressive distribution rates, a more aggressive portfolio is necessary for those distributions to keep up with inflation.

While the risk-adjusted performance of the Swensen portfolio measured higher than UHF's existing portfolio, the total risk may still be more than what UHF's board is willing to stomach. A solution may be to decrease equity allocation, and increase bond holdings, in the index-based comparison portfolio.

Asset Class Allocations – Swensen Portfolios			
Asset Class	**Swensen**	**Swensen 65/30/5**	**Swensen 55/40/5**
US Broad Market	30%	25%	17.5%
US REIT	20%	20%	17.5%
International Developed	15%	15%	15%
Emerging	5%	5%	5%
Treasuries	15%	15%	20%
TIPS	15%	15%	20%
Cash Equivalent	0%	5%	5%

Table 30 - Original and modified Swensen portfolios by asset class allocation

A bond-heavy Swensen portfolio holding a 40% allocation to government bonds (nominal and inflation-linked) produces less risk and still higher return than UHF's alternative-laden portfolio.

Performance Metrics of Nine Consecutive FYs, ending June 30th, 2012					
Portfolio	**Annualized Returns**	**Total Return**	**STD Dev.**	**Sharpe Ratio**	**Sortino Ratio**
UHF Actual	6.37%	74.30%	11.7%	0.414	0.248
Swensen 65/30/5	8.86%	114.63%	13.6%	0.540	0.531
Swensen 55/40/5	8.85%	114.43%	11.6%	0.606	0.591

Table 31 - Greater allocation to bonds outperforms UHF's actual portfolio in every metric examined

Washington State University Foundation Endowment Fund

Consider that WSUFEF has a similar scenario to UHF. WSUFEF has aggressive annual distributions of 5.5%[30] (Washington State University Foundation, National Association of College and University Business Officers and Commonfund Institute 2012). With an annualized return of 6.16% over the last 10 years, a distribution rate of 5.5% leaves only 0.66% for inflation annually. HEPI shows 3.3% annual inflation over the last 10 fiscal

[29] Higher Education Price Index. HEPI grows in excess of the more traditional inflation index, the Consumer Price Index (CPI). This is because some of the costs particular to higher education cannot be decreased by an increase in efficiency (Swensen, Pioneering Portfolio Management).

[30] It should be noted that the move from a 5% annual distribution to a 5.5% annual distribution is a big jump – especially with respect to the risk of decreasing investment principal.

years (Commonfund Institute). In order for WSUFEF to meet those requirements and keep up with HEPI, WSUFEF will need to produce higher investment returns.

The bond-heavy Swensen portfolio produces superior returns relative the alternative-laden portfolio while simultaneously undergoing less risk. (For this particular time period, the bond-heavy Swensen bests the Swensen 65/30/5.)

Performance for 10 FY Returns, ending June 30th, 2012					
Portfolio / Index	Annualized Returns	Total Return	STD Dev.	Sharpe Ratio	Sortino Ratio
WSUFEF	6.16%	130.77%	12.16%	0.40	0.217
Swensen 65/30/5	8.56%	215.62%	12.87%	0.55	0.514
Swensen 55/40/5	8.70%	221.64%	10.97%	0.63	0.595

Table 32 - The Swensen 55/40/5 provides less risk and greater return than UHF's actual portfolio.

University of Northern California Wilmington

Similar to WSUFEF, UNCW's investments offer less return for less risk when juxtaposed to the Swensen 65/30/5. Unlike WSUFEF, UNCW may be best served by maintaining its less risky portfolio. The reason being is the UNCW puts a smaller demand on its endowment for operational support. UNCW's withdrawal rates fluctuate between relatively aggressive (4.5%) and conservative (3.5%)[31] – with UNCW voting to shrink distribution rates as their investment principal recovers from the recent financial crisis (Miller n.d.).

At the end of FY 2012, UNCW allocated 31% of its portfolio to fixed-income securities (with as much as a 40% allocated in FY 2002). What qualifies as fixed income, however, may be misleading. Roberta LaSure, the university's foundation and endowment accountant, explains:

> … I'm reporting the asset classes used by our external fund managers, but these are mapped somewhat differently to the asset classes per the NACUBO Endowment Study. The 31% fixed income allocation includes cash…, certain real estate investments (included in alternative strategies in bottom pie chart) and diversifying strategies…

What would performance look like if that fixed income allocation was not alternative fixed-income, but conventional? Again, the index-based portfolio (55/40/5) outperforms.

Performance of 11 Consecutive FYs, ending June 30th, 2012					
Portfolio / Index	Annualized Returns	Total Return	STD Dev.	Sharpe Ratio	Sortino Ratio
UNCW	6.77%	105.54%	10.72%	0.49	0.33
Swensen 65/30/5	7.81%	128.79%	12.49%	0.5	0.44
Swensen 55/40/5	8.11%	135.87%	10.61%	0.59	0.53

[31] By one standard, 4% is an aggressive withdrawal rate (Cambridge Associates LLC 2013).

University of California, Santa Barbara, Irvine, Riverside & San Francisco Foundations
All of the UC endowment portfolios would perform better by replacing the actively-managed assets with indexed investments. The outcome would be not only greater investment returns, but greater risk-adjusted investment returns.

Inside Management
The Swensen portfolio is so simple that professional money managers are unnecessary. Rebalancing may only be required annually – if at all. Distributions and deposits could counteract the effects of disproportionate growth of the asset classes making rebalancing unnecessary. Using low-cost ETFs, the Swensen model could cost as little as 0.08% annually. Consider that cost relative to the fees of 2% of AUM and 20% of returns.

Asset Class	ETF Ticker	ER
US Broad Market – 25%	SCHB	0.04%
US REIT – 20%	SCHH	0.07%
International Developed – 15%	SCHF	0.09%
Emerging– 5%	SCHE	0.15%
Long-term Treasuries – 15%	VGLT	0.12%
TIPS – 15%	SCHP	0.07%
Cash Equivalent – 5%	BIL	0.13%
Portfolio Total Expense Ratio		**0.08%**

Table 33 - Swensen Portfolio Expense Ratio

Potential Challenges of the Swensen Model in the Years Ahead
The period evaluated was distinguished by two successive market downturns, all under a rising bond bubble. The Swensen model was so successful during the period partly because of a 30% allocation to United States Treasuries. This enabled the portfolio to take advantage of rising bond prices, and profitably rebalance at market downturns. A future featuring rising interest rates, or a rallying equity market, (or lower volatility in general), will likely produce lower returns for the Swensen model. How this index-based portfolio performs in future periods is simply unknowable. What is knowable is that high fees charged by active managers will net less investment return relative to a low-cost index.

Additional Considerations
Board members can be trained on the principles of the failure of active management, the exclusivity of top-decile managers, the increasing efficiency of alternative asset classes, and the myth of low correlation offered by alternatives. In order for boards to make the best decisions with respect to their endowments, they need be informed. Crafting an appropriate Investment Policy Statement (IPS) can prevent boards from participating in the herd mentality. A well-structured IPS focuses on the importance of maximizing mission delivery. This will preclude an organization's investment from being invested into unproven asset classes (Vielhaber 2013).

What this Study Adds to the Literature

Existing literature notes the superior returns of index-based portfolios in the absence of top-decile management. However, these analyses did not consider the importance that volatility plays in an endowment portfolio. With annual distribution requirements, endowments often cannot afford to suffer multiple years of returns below 5%.This study confirms that index-based portfolios not only produce higher investment returns, but do so with lower volatility, and superior risk-adjusted performance. Based upon the case studies, university endowments should carefully re-evaluate their existing investment strategies.

Suggestions for Future Research

The small sample size of this study makes it challenging to apply the conclusion more broadly. Future research can increase the sample size. The period examined was unique because of falling interest rates and two successive market downturns. Re-evaluating the performance of the Swensen model over the next 10 years could validate low-cost indexing as an enduring strategy.

Further research could also evaluate *why* boards consistently put their assets into unproven investments. This could be the counterpart to this paper, focusing on behavioral finance. Researchers should examine the extent of influence professional investment advisors have over board members, including potential conflicts of interest. Other points of interest may include the herd mentality bias mentioned in *Orientation* on page 8.

Works Cited

Asch, Burton A. Weisbrod & Evelyn D. *Endowment for a Rainy Day.* Magazine Article, Stanford Review, 2010.

Bank of America. *Bank of America | Profile – Company Facts – Vision & Future.* n.d. http://about.bankofamerica.com/en-us/our-story/our-company.html#fbid=ekkG3dtTCVg (accessed November 25, 2012).

Barber, Brad M., and Guojun Wang. *Do (Some) University Endowments Earn Alpha?* Draft, Davis, California: University of California, Davis, 2013.

Barber, Brad M., and Terrance Odean. "Trading Is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors." *The Journal of Finance*, 2000: 773-806.

Bernstein, William. *The Four Pillars of Investing: Lessons for Building a Winning Portfolio.* McGraw-Hill Companies, 2010.

Bhardwaj, Geetesh, Gary B. Gorton, and K. Geert Rouwenhorst. *Fooling Some of the People All of the Time: The Inefficient Performance and Persistence.* Working Paper, Cambridge, MA: National Burea of Economic Research, 2008.

Bogle, John C. *The Little Book of Common Sense Investing.* Hoboken, New Jersey: 2007, 2007.

Cambridge Associates LLC. *The Risk Allocation Framework.* Arlington, VA: Cambridge Associates LLC, 2013.

Celati, Luca. *The Real Liquidity Risks in Alternative Investments.* January 2005. http://www.eurekahedge.com/news/05jan_archive_Abraxas_Real_Liquidity_Risks.asp (accessed October 10, 2013).

Commonfund Institute. *2012 HEPI: HIGHER EDUCATION PRICE INDEX.* Update, Wilton, CT: Commonfund Institute, 2013.

—. "Commonfund Hedge Funds." *Commonfund Hedge Funds.* Commonfund Institute, October 2012.

—. "Nonprofit Healthcare Organizations Report." WILTON, CT: Commonfund Institute, August 20, 2012.

Commonfund Institute. *Principles of Endowment Management: The seven key issues facing trustees and financial officers.* How To Guide, Wilton, CT: Commonfund Institute, 2006.

Conroy, Robert M., and Robert S. Harris. ""How Good Are Private Equity Returns?"." *CFA Digest*, 2008: 96-108.

Ezra, Don. *once-upon-a-time-nonprofit.pdf (application/pdf Object).* September 2012. http://www.russell.com/documents/institutional-investors/research/once-upon-a-time-nonprofit.pdf (accessed 2012 25, November).

Fed Funds Target Rate History (Historical). 2013. http://www.fedprimerate.com/fedfundsrate/federal_funds_rate_history.htm (accessed September 23, 2013).

Ferri, Rick. *The Curse of the Yale Model.* April 6th, 2012. http://www.forbes.com/sites/rickferri/2012/04/16/the-curse-of-the-yale-model/ (accessed 3 2013, April).

Governale, Nancy B. Gardiner & Marcia M. *Charitable Giving: Asset Allocation Reporting and Effective Philanthropy.* Thinly vieled advertisement, Hemenway & Barnes, LLP, 2011.

Harvard Magazine. *The endowment's swoon | Harvard Magazine Nov-Dec 2009.* November 2009. http://harvardmag.com/pdf/2009/11-pdfs/1109-50.pdf (accessed September 30, 2013).

Huebscher, Robert. *The Futility of the Endowment Model.* Summary of other works, Lexington, MA: Advisor Perspectives, 2013.

Humphreys, Joshua. *Educational Endowments and the Financial Crisis: Social Costs and Systemic Risks in the Shadow Banking System; A Study of Six New England Schools.* Statistical Study, Boston, Massachusetts: Tellus Institute, 2010.

Jarvis, John S. Griswold & William F. "The Investment Policy Statement." Commonfun Institute, August 2011.

Jones, Howard, and Jose Vicente Martinez. *HOW INSTITUTIONAL INVESTORS FORM AND IGNORE THEIR OWN EXPECTATIONS.* Report, Oxford, United Kingdom: University of Oxford, Saïd Business School, 2013.

Jorion, Philippe. *Risk Management for Alternative Investments.* June 18, 2012. http://merage.uci.edu/~jorion/varseminar/Jorion-CAIA-Risk_Management.pdf (accessed October 10, 2013).

Keynes, John Maynard. *The General Theory of Employment, Interest and Money.* London: Macmillan, 1935.

Kolhatkar, Sheelah. *Hedge Funds Are for Suckers - Businessweek.* July 11, 2013. http://www.businessweek.com/articles/2013-07-11/why-hedge-funds-glory-days-may-be-gone-for-good (accessed September 30, 2013).

Malkiel, Burton G. *A Random Walk Down Wall Street.* New York: W. W. Norton & Company, 2012.

McCrum, Dan. *The great diversification bait and switch.* October 9, 2013. http://ftalphaville.ft.com/2013/10/09/1661742/the-great-diversification-bait-and-switch/ (accessed October 10, 2013).

McDonald, Michael. "Can Timber Rebuild Harvard's Endowment?" *BloombergBusinessWeek.* September 20, 2012. http://www.businessweek.com/articles/2012-09-20/can-timber-rebuild-harvards-endowment#p2 (accessed 6 2013, February).

Meketa Investment Group. *Rebalancing.* web report, Boston, MA: Meketa Investment Group, 2010.

Mendillo, Jane L. *Harvard Management Company Endowment Report.* Endowment Report, http://www.hmc.harvard.edu/docs/Final_Annual_Report_2012.pdf: Harvard Management Company, 2012.

Merrill Lynch Center for Philanthropy & Nonprofit Management. *Nonprofit Guide to Prudent Investing.* 2009. http://www.michiganfoundations.org/s_cmf/bin.asp?CID=2523&DID=35905&DOC=FILE.PDF (accessed November 25, 2012).

Miller, Gary L. *Endowment Activity Report.* Endowment Report, Wilmington: UNCW Office of University Relations, n.d.

Moody's Investor Service. *One Third of US Colleges facing falling or stagnant tuition revenues.* Press Release, New York, New York: Moody's Investor Service, 2013.

Morien, Travis. *Index funds vs active funds.* n.d. http://www.travismorien.com/indexactive.htm (accessed October 2, 2013).

National Association of College and University Business Officers and Commonfund Institute. *NACUBO-Commonfund Study of Endowments.* Statiscal Survey, Washington

DC: National Association of College and University Business Officers and Commonfund Institute, 2012.

Nelson, Eric D. "Lessons From the Big Money." *Servo Wealth Management.* July 2012. http://www.realclearmarkets.com/blog/July%202012%20Factors%5B1%5D.pdf (accessed April 3, 2013).

OpalesqueTV. *Mark Yusko: The Endowment Model isn't broken - Opalesque.TV.* May 19, 2010. http://www.youtube.com/watch?v=_OiO5Avv3bw (accessed November 26, 2012).

Parness, Michael. *Rule the Freakin' Market.* New York: St. Martin Press, 2002.

Principles of Nonprofit Investment Management: The key issues facing trustees and financial officers. online publication, Wilton, CT: Common Fund Institute, 2006.

Richardson, Eric W., and Mebane T. Faber. *The Ivy Portfolio.* Hoboken, New Jersey: Wiley, 2009.

Russell Investments. *Russell Index Performance Calculator | Russell Investments.* n.d. http://www.russell.com/indexes/data/calculator/index_calculator.asp (accessed April 3rd, 2013).

Stanyer, Peter. *Guide to Investment Strategy: How to Understand Markets, Risks, Rewards and Behavior.* New York: Bloomberg Press, 2010.

Steele, Grant, William Prout, and Courtney Larson. *Spending Policy Practices.* Statical Survey, Arlington, VA: Cambridge Associates, LLC, 2012.

Swensen, David F. "Guest Lecture by David Swensen." New Haven, CT: YouTube, on behalf of Yale University course Financial Markets (ECON 252), November 9, 2008.

—. *Pioneering Portfolio Management.* New York, New York: Free Press, 2009.

—. *Unconventional Success: A Fundamental Approach to Personal Investment.* New York: Free Press, 2005.

Tellus Institute. *Josh Humphreys - The Tellus Institute for a Great Transition.* 2012. http://www.tellus.org/about/Humphreys.html (accessed November 28, 2012).

The Responsible Endowment Project. *Realizing Responsibility: A Modern Responsible Investment Framework for the Yale Advisory Committee on Investor Responsibility.* Essay, New Haven, CT: The Responsible Endowment Project, 2010.

The Responsible Endowment Project. *Responsible Returns: A Modern Approach to Ethical Investing for the Yale Endowment.* Essay, New Haven, CT: The Responsible Endowment Project, 2009.

Towers Watson Investment Services. *Asset Allocation Considerations for Nonprofits.* Towers Watson, 2010.

Tuttle, Matthew. *How Harvard and Yale Beat the Market.* Hoboken, NJ: John Wiley & Sons, 2009.

Vielhaber, Steven, interview by Jon Luskin. (October 12, 2013).

Wallick, Daniel W., Brian R. Wimmer, and Todd Schlanger. *Assesing endowment performance: The enduring role of low-cost investing.* Valley Forge, CA: Vanguard, 2012.

Washington State University Foundation. *WSU FOUNDATION.* Endowment Report, Pullman: Washington State University Foundation, n.d.

Weinman, Lawrence. *Sensible Investments.* December 20, 2012. http://www.sensibleinvestments.blogspot.com/search?updated-max=2013-01-24T10:24:00-08:00&max-results=7 (accessed 16 2013, February).

Wo, C. Scott. *University of Hawaii Foundation 2011 Endowment Report.* Endowment Report, Honolulu, HI: University of Hawaii Foundation, n.d.

Wo, C. Scott. *University of Hawaii Foundation 2012 Endowment Report.* Endowment Report, Honolulu, HI: University of Hawaii Foundation, n.d.

Yale Endowment. *2012 Yale Endowment.* Endowment Performance, New Haven, CT: Yale Investment Office, 2012.

Yale News. "YaleNews | Yale Endowment earns 4.7% investment return." *Yale News.* September 27, 2012. http://news.yale.edu/2012/09/27/yale-endowment-earns-47-investment-return (accessed January 11, 2013).

Appendices

Appendix A: Indexing vs. Active Management

All stocks offered for trade in the stock market generate a group return. A measure used to track the performance of a group of assets is called an index. One commonly used index is the Standard & Poor's 500 (S&P 500). The S&P 500 tracks the stock performance of some of the largest publicly-traded companies, and is broadcasted daily across radios, televisions and the internet: "S&P 500 down 5 points today in trading, at the closing bell."

The S&P 500 is just one of many indices. There exist other indices, like the Russell 2000, which tracks the performance of the stocks of 2,000 small companies. The Wilshire 5,000 tracks the returns of almost every single domestic company stock on offer. The Wilshire 5,000 includes large companies, small companies, and everything in between. A comprehensive index like the Wilshire 5000 is called a broad market index.

Asset Class	Index
Domestic Large Capitalization	Dow Jones Industrial Average (DJIA)
Domestic Large Capitalization	S&P 500
Technology Stocks	Nasdaq
World Large & Mid Capitalization	MSCI World Index
Domestic Small Capitalization	Russell 2000
Domestic Broad Market	Wilshire 5000
Domestic Real Estate	Dow Jones U.S. Select REIT Index
International Markets	FTSE Developed ex-US Index
Emerging Markets	FTSE Emerging Index
International Real Estate	S&P Global ex-U.S. Property Index
Domestic Fixed Income	Barclays Aggregate Bond Index

Table 34 - Common Asset Class Indices

An investor can invest in an *index fund* – that is, put money into an investment vehicle that tracks, follows, or mimics the return of a specific index. An investment in an S&P 500 index fund is an investment in the 500 companies making up the S&P 500. With an index fund, the investor gets exposure to the aggregate investment returns of those companies. This is a much easier and usually cheaper strategy than purchasing individual shares in all 500 companies.

Why is this method easier and cheaper? There are several reasons. Firstly, the stock market, in aggregate and on long timelines, has showed consistent returns, far in excess of inflation (Bogle, Swensen, Stanyer).[32] On a long enough timeline, it is virtually guaranteed that an investment in the broad market will appreciate in value. For shorter timelines, anything is possible – including loss of principal of up to 90% - as was case in the Great Depression (Swensen 2008).

[32] Since the 1920s, when data appropriate for later analysis was first recorded.

Secondly, index investing, or *indexing*,[33] offers a low cost way to invest. Imagine the fees required to execute the 500 trades necessary to capture the performance of the S&P 500. With an index fund, an investor can make a single trade to purchase a product that tracks the performance of the entire index. For this convenience and value, the investor pays a small *expense ratio (ER)*: a percentage of assets (money) under management. Sometimes these fees are as small as 4 basis points, or 0.04%.[34] To put this number into context, consider that the expense ratio on an actively-managed fund can be upwards of 2% - or literally 50 times as much.

But why would an investor want to hold stock in as many companies as offered by the S&P 500 index? The answer therein illuminates the third reason to invest in an index: to reduce risk.

Modern Portfolio Theory & Diversification

The premise of investing in a multitude of assets[35] is called *diversification*. *Modern Portfolio Theory (MPT)* – one of the modern dominant investment strategies – posits that with diversification, an investor can have equivalent returns for less risk – or greater returns for equivalent risk. Diversification is accomplished by adding distinct assets to the investment portfolio. An investment in a Wilshire 5000 index fund realizes the diversifying power of the entire United States stock market. Were an investor to hold a Wilshire 5000 index fund, that investor would generate market returns minus the cost of a small expense ratio.

Consider the value of diversification with the following example: An investor purchases the stock of five different companies. Now, imagine that one of those companies goes out of business; or loses value because of government regulation or a loss of market share to a competitor, etc. The investor just suffered a hit to 20% of their portfolio.

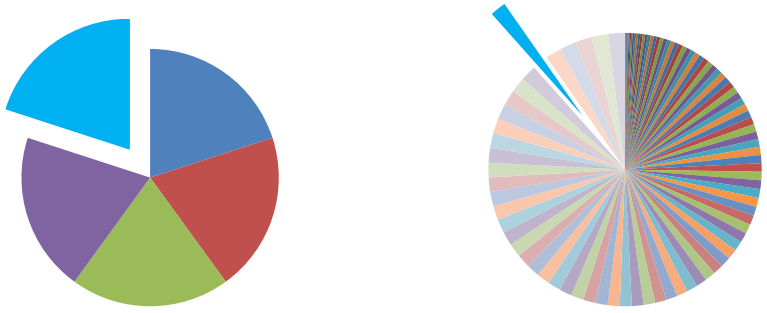


Figure 19 – From left to right: a visual representation of a non-diversified, and diversified portfolio, respectively

Now, consider that instead of investing in just five companies, the investor chose to buy an investment product that tracks the performance of the S&P 500. In the instance that

[33] Sometimes also referred to as passive management – though there is a distinction between indexing and passive management.
[34] Charles Schwab Broad Domestic Broad Market Index Exchange Traded Fund (ETF), ticker SCHB :NYSE Arca.
[35] Company stock is one class (type) of asset. Bonds are another class of assets.

one, or even two, of those companies in the S&P 500 lose value, the investor would not even blink. This is because the slice of the portfolio affected by the poorly-performing companies is so small relative the total value of the portfolio. In summation, index investing offers a low-cost way to generate market returns, with less risk than holding individual companies alone.

Active Management

The alternative to index investing is active management. Active management is the practice of investment picking. It is selecting those investments that the manager discovers, through extensive research or otherwise,[36] presents the best yield opportunity. Stock picking, or security selection, offers the promise of market-beating returns. Thus, active management purports to find those higher-performing stocks, giving the investor market-beating, or above average, returns over time. Active management is the alternative to indexing, where an investor reaps exactly what the market in aggregate produces.[37] The challenge is that the active manager must select those stocks *before* they rise in value.

How is outperforming the market's aggregate – 'beating the market' – possible? The subject was touched on earlier, when the premise of diversification was discussed. While diversification reduces risk by holding as many companies as possible, *concentration* increases risk by holding a select group of companies (or investments) that the money manager feels will outperform the market average. If a money manager can skillfully select just those 'winners,' the money manager will outperform the market average.

Consider an example with respect to the following line graph *Figure 20 - Performance Snapshot of Four Companies*. At the close of 2008, the *successful* money manager would have had the foresight to purchase the stock of Berkshire Hathaway (green) and Johnson & Johnson (yellow), while avoiding the stock of ExxonMobil (red) and General Electric (purple). (Conversely, an index fund would invest in all those companies and more.)

Figure 20 - Performance Snapshot of Four Companies

[36] i.e. quantitative analysis.
[37] Minus a small fee.

Active management – also known as stock picking or security selection – is inherently more risky than index investing. Selecting individual companies from a larger body means that the investor's portfolio is now more susceptible to loss given the bad luck of just a single company (recall the previous pie graph illustration in *Figure 19 – From left to right: a visual representation of a non-diversified, and diversified portfolio, respectively*). On the other hand, all else being equal, an active-management – or stock picking – strategy is more susceptible to outsized gains. Therein lies the classic conundrum, as posited by Modern Portfolio Theory. All else being equal, greater returns can only be had by enduring greater risk.

In addition to assuming greater risk because of greater relative volatility, active management has another disadvantage: high fees. So, even if a money manager performs poorly, the investor must still pay for those services. Further, in the event a professional money manager outperforms the market (benchmark), he will need to outperform the market by his investment fund's expense ratio just to break even. To put this into perspective, know that producing market returns in excess of even 1% on a long timeline is a rare feat (Bogle; Swensen; Stanyer).

Why is it so difficult to 'beat the market?' It is simple math. The median (index) is a division that evenly separates a population (stocks): half the population lands above and half the population falls below that division. Sheer statistics dictate that when picking one sample from the population, that selected sample has a 50% chance of being either above or below the median. Mathematically, there is no way around that. When it comes to investing, above average picks cancel out below average picks. After pulling several samples (stocks) from the population (market), the money manager has generated market returns. The fees charged by the money manager will leave the principal with below market returns.

The above ignores one variable: skill. Money managers practicing stock-picking *should* have some special ability to predict which companies will appreciate in value above others. The literature review, however, has shown this is not the case for 90% of money managers –after accounting for the cost of fees. While there will always be outliers who will perform exceptionally over extended periods of time (the top-decile), these skilled individuals are usually not available for hire – at least not by investors with finite assets (Swensen). In fact, these *highly skilled* top-decile money managers – those individuals who can beat the market *after* accounting for fees – are not even available to those institutional investors with hundreds of millions of dollars. Market-beating skill can only be acquired with *billions* of dollars of AUM. Thus, the only money managers available for hire are those whose performance trails the market index after accounting for fees. Unfortunately, after subtracting the high cost of fees, sub-75 percentile skill does not generate market-beating returns (Swensen).

The logical conclusion is that an investor is best served by buying a low-cost index fund. The index fund strategy will produce market returns by avoiding the transaction fees and high expense ratios (ER) of active management.

Appendix B: Risk-Free Rate

FY ending June 30th	Risk Free Rate
2012	0.25%
2011	0.25%
2010	0.25%
2009	1.87%
2008	3.77%
2007	5.25%
2006	4.18%
2005	2.17%
2004	1.00%
2003	1.42%
2002	2.31%
2001	5.74%
2000	5.60%
1999	4.98%

Calendar Year	Risk Free Rate
2012	0.25%
2011	0.25%
2010	0.25%
2009	0.25%
2008	2.09%
2007	5.05%
2006	4.96%
2005	3.19%
2004	1.34%
2003	1.12%

Appendix C: Basic Investing Principles Glossary

Investment **return** is the return an investor receives for their investment. Returns are extremely variable, ranging from a total loss of capital (-100%) to infinite growth. Returns are expressed as percentage of the original investment capital. For example, a $10 return on an investment of $100 is a return on investment of 10% for the period measured.

Investment returns are posted relative a **period**. That period can be as a short as less than one second, or as long as infinity.

A **FY** varies by reporting agency. Academic institutions usually run on a FY running from July 1st through June 30th of the following year. For example, FY 2012 will describe the period from July 1st, 2011 to June 30th, 2012.

Total Return is the return an investor receives during the period measured. This includes the appreciation in an asset's value, as well as the value of any dividends/coupon payments or capital gains/appreciation during that time.

Annualized Return is the return an investor receives over a period, expressed as a time-weighted annual percentage. Said another way, annualized return is the return an investor receives each year when compounded over the previous year's return. For example, an investment produced the following consecutive calendar year returns:

Year	Return	Investment Value		Return	Investment Value
2009		$ 100.00			$ 100.00
2010	5%	$ 105.00		3.14%	$ 103.14
2011	10%	$ 115.50		3.14%	$ 106.38
2012	-5.00%	$ 109.73		3.14%	$ 109.73
Total Return		**9.73%**			**9.73%**
Annualized Return		**3.14%**			**3.14%**

Table 35 - Annualized Return

Note that for the portfolio on the left, returns vary from year. The portfolio on the right, however, has a consistent return.

Diversification is the principal of holding as many as assets (and asset classes) as possible to reduce risk. The idea behind diversification is that while one asset may decline in value, a different asset will simultaneously increase in value (or decrease less).

An **asset class** is a category of assets. Some examples of assets classes are stocks, bonds and cash. Each of those classes can be further broken down. For example, stocks can be differentiated between large company stocks and small company stock. That can be further broken down. Large company stocks can be divided between those with a high

prospect for earnings growth (large growth stocks) and those companies whose stocks are attractively priced, representing a good value for the investor (large value stocks). Other examples of asset classes include emerging market stocks, like those from Brazil, Russia, India or China.

Modern Portfolio Theory posits that higher returns can be had for equal risk through diversification. Alternatively, equivalent returns can be had for less risk. For example, a portfolio of a mix of stocks and bonds will outperform a portfolio of 100% stocks or 100% bonds. This concept is covered in greater detail in the literature review.

A premise of Modern Portfolio theory is that **Risk vs Return** is the quintessential trade-off in investing. Higher returns can be had for bearing more risk. Stocks and bonds are an example of this. While stocks perform better over a long-enough time than bonds, stocks do so with greater risk, producing a higher variability in returns.

Rebalancing is the process of selling assets that have appreciated value so as to purchase assets that have depreciated in value. Rebalancing effectively has an investors buying low and selling high. Annual rebalancing is customarily recommended.[38]

Passive Management or **Indexing** is the process of investing in a fund that represents the total of an asset class, or representative sample of that asset class, for purposes of riding the market waves, earning the average of all security returns. Mutual funds or Exchange Traded Funds (ETFs) composed of the S&P 500 are the most common vehicles utilizing indexing.

An **Index fund** is a mutual fund or Exchanged Traded Fund (ETF) that tracks an index. Expense ratios are usually minimal, between 20 and 4 basis points (0.2% and 0.04%).

An **Expense Ratio** is a fee for service, expressed as a percentage of assets. Mutual funds, exchanged traded funds (ETF), and portfolio managers charge varying expense ratios.

A **Basis Point** is one hundredth of a percent, or 0.01%.

Active Management, or active investing, is the process of picking specific positions (securities) in the hopes that those positions will outperform the market aggregate. Thousands of mutual funds offer active management, wherein money managers pick particular companies they think will outperform the respective benchmark. Active management, as reported by the literature review, shows a 99.2% failure rate to meet the benchmark/index after fees (Bogle).

A **Benchmark** is a return metric serving as a reference point, though usually as a hurdle. For example, an actively managed mutual fund will use the S&P 500 as a benchmark.

[38] Yale Chief Investment Officer, David Swensen, father of the Endowment Model of Investing, rebalances the Yale Portfolio daily not so much as measure to generate to profit but as to reduce risk.

Returns above that benchmark show that the mutual fund manager is performing exceptionally well.

Fees are a critical element of any investment. The difference between a 5% and 6% on a $100 million investment return over 30 years is a difference of $142 million dollars.

Alternative Assets classes are those assets that do not fit into one of the three stock, bond, or cash-equivalent categories. Some examples of alternative assets include real assets (commodities and real estate), absolute return (hedge funds, long-short equity) and private equity (venture capital, and mergers & acquisitions).

AUM: Assets under management

Appendix D: 60/40 Benchmark

Composed of 60% equities (stocks) and 40% bonds, the 60/40 is a commonly used benchmark. For the purposes of the case studies to follow, this benchmark will be composed of 60% S&P 500, and 40% Barclays US Government bond index, rebalanced annually. The Barclays US Government bond index, and not the Barclays Aggregate bond index (which includes corporate and securitized bonds in addition to government bonds) is used because non-profit organizations traditionally invested in a mix of corporate stock and government bonds (Ezra).

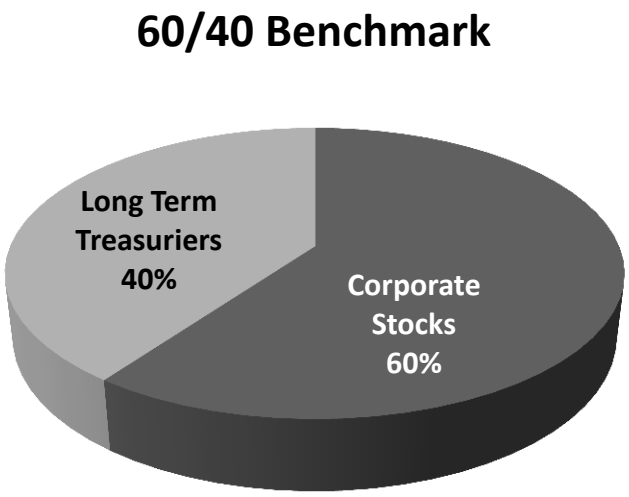


Figure 21 - Convectional 60/40 Benchmark

Appendix E: Digest of the Literature

Pioneering Portfolio Management
David Swensen, 2010
Type of Work: Case study
About the Author(s): Yale endowment's Chief Investment Officer, creator of the Endowment model of investing
Summary of the Scope, Approach, and Research Method: Discusses his approach to endowment management
Summary of Key Findings or Insights

- Asset allocation is the most important decision.
- Market timing and security selection (without expertise in active management) failed to add to portfolio returns.
- Spending rules work best with an averaging process of previous returns.
- Higher Education Price Index (HEPI) is 1.4% higher than Consumer Price Index (CPI) historically.
- Portfolios should have equity bias makes for higher returns and diversification to reduce risk.
- Illiquid assets usually fail to return on a risk-adjusted basis when considering thhe cost of illiquidity.
- Use passive management (index) for efficient market and active management for inefficient markets, such as alternatives.
- Higher interest rates usually lead to lower stock prices.
- Rebalancing is a tool for reducing risk, not enhancing returns, though it can enhance returns, just don't count on it.
- Not rebalancing is the equivalent of market timing, a proposition that usually fails more than not.
- Finding good active management in illiquid market is easier and more profitable than doing the equivalent in liquid markets.
- Asset class correlations in economic downturns are unusually higher pg 129
- Swensen posits that no asset class should be more than 30 percent of the portfolio, not less than 5 percent, with at least 6 distinguishing asset classes. pg 101.
- Below investment grade bonds are not worth investing in. pg 102
- Mean variance analysis fails to incorporate fat tails or black swan events into its analysis, assuming a bell curve distribution of returns, which is inaccurate.
- During particular periods of time, mean-reversion fails to exemplify itself. Pg 108
- There is no benchmark for alternatives. pg 112
- Stock and bond correlation is low, or low or negative, during inflation and deflation respectively. pg 118
- Real estate has bond- and equity-like characteristics pg 121
- Traditional asset classes derive returns from the market as a whole, not active management. p152
- Government backed U.S. Treasury bonds create diversification power.
    - Avoid GSE debt
- Foreign holdings improve diversification.

- Alternative asset classes fail to produce results for risk adjustment without superior active management.
- Correlation of alternatives to marketable securities increases during down trends, otherwise there is relatively low correlation, thus good diversification.
- There is a greater spread in returns relative the best and worst active managers in alternatives vs. marketable securities.
- Survivorships bias skews results on alternative assets as a class.
- Alternatives asset class fees present a hurdle to investors in generating returns. Significant co-investment on part of the fund manager is a way to align fund manager and investor interest.
- Commodity indexes fail to provide the value that owning real assets do.
- Holding foreign bonds expose investors to currency exchange risk.
- Timberland is the one alternative that does not need superior active management.
- The best active managers for venture capital are not accepting new investors. Thus, do not invest in this category.
- Posits that entrepreneurial investment managers are the best bet in active management.
- Posits that existing active management structure incentivizes management to pursue growth of assets under management, not investment returns.
- Active management investing via a large financial institution creates a whole range of conflicts of interest. It is best to avoid doing so.
- Co-investment serves to align fiduciary and investor interest, the larger the co-investment, the better.
- Soft dollars are a scheme that saps investor wealth, not disclosed in a stated prospectus.
- Selecting the appropriate active manager is critical to achieving investment returns. Entrepreneurial firms with a deal structure that has them act as fiduciaries are the best bet.
- While active management offers the opportunity for generous returns, institutions that attempt active management w/o the sufficient resources face disappointing results. pg 297
- Investments must be made with consideration for spending pay out pg 306
- Fund of funds pose risks, including an additional layer between investor and manager. Problematic is trusting someone's else judgment on the worth of an active manager, someone else who has less incentive to perform due diligence than the investor themselves. pg 310
- Consultants that offer investment services have an inherent conflict of interest. pg 314
- Asset allocation, the most important decision, needs be reviewed only annually, and not in response to a recent market crisis. pg 315
- Quantitative analysis should be used in conjunction w/ qualitative analysis when defining risk. pg 335

A Random Walk Down Wall Street
Burton G. Malkiel, 2007
Type of Work: Scholarly synthesis
About the Author(s): Professorship's Chairman at Princeton, served on board of Prudential and Vanguard
Summary of the Scope, Approach, and Research Method: Explains investment principles and best course for lay investor.
Summary of Key Findings or Insights

- Individual investors are best suited to buy and hold an index mutual fund over trading securities or using an actively managed fund.
- Intrinsic value theory: everything has intrinsic value. When an item is inappropriately valued by the market, there is the opportunity to buy or sell it. Based on Graham and Dodd in Security Analysis.
- Castle in the air theory: analyze crowd expectations and invest in securities before they appreciate.
- Malkiel explains a scheme in the roaring twenties wherein day traders worked together to artificially inflate the price of stock. Malkiel also explains the tulip bulb in Holland in 1700's and the English South Sea Bubble of the 1800's.
    - In all these instances, buyers purchased speculative securities that rose in price only to quickly crash.
    - The governing SEC body played the only card it had, enforcement of disclosure, which served to do nothing to prevent the market waves and crashes.
- In one bubble, conventional blue chip stocks (Nifty-fifty) were overvalued.
- During the IPOs of the 80s (biotech), new valuations methods were computed to presume earnings for a company that not only had no revenue to speak of, but no product as well.
- At many instances, the market inflates on the presumption that someone will buy an obviously over-valued position at a later time – the castle in the air, or greater fool theory.
- Japan's rise in real estate and securities rose on the false premise that the stock and real estate markets could only go up.
- The internet bubble also created new and useless valuation methods to justify the prices of worthless IPOs.
- Bubbles are a positive feedback loop, with overvalued securities moving onto greater fools. Eventually, you run out of greater fools.
- Wall Street firms, traditionally divided their research and investing departments. This process was watered down, making for the offering of overvalued IPOs.
- Media added to the frenzy of the internet bubble.
- Historically, new tech securities have proven overvalued, from the internet to the railroad.
- In the short run, stock prices are impossible to predict.
- Technical analysis looks at stock patterns, and is based upon the greater fool theory.
    - Technical analysis may not work because those using the paradigm may move to slowly too take advantage of market trends

- Fundamental analysis is based on the firm foundation theory, evaluating a stock on the basis of its assets, growth potential, etc.
    - The market gives higher value to those securities with greater growth potential as evidenced by a higher price/earnings (P/E) ratio.
    - Posits that fundamental analysis consistently fails to accurately gauge future stock value. The basis for fundamental analysis is earnings growth, which is impossible to predict successfully.
- There is inherent conflict of interest in analysts' predictions, as brokerage firms issue IPOs.
- To buy and hold an index fund produces better returns, on average, than a mutual fund that is actively managed. pg 178
- Mutual fund managers have consistently failed in market timing efforts. – pg185
- Investors bear greater return for greater risk. p200
- With MPT, one can decreasing risk by adding risker, less correlated assets to a portfolio.
- However, when markets are down, correlation increases. pg210
- Diversification can reduce some (unsystematic) risk. But systemic risk still exists.
- There is not perfect risk metric. – pg 232
- Countless technical analysts, but most academics, do indeed discover statically profitable patterns in the market. However, while they work on paper, they fail in reality due to trading costs or proliferation of knowledge of the technique. Pg 300
- Small cap stocks show historically higher returns, rewarding investors for bearing greater risk. More recent returns of small caps have not demonstrated this.
- Market prices are based on expectations, which often turn out to be incorrect pg 298
- Real estate is an inflation hedge, has low correlation w/ other assets pg 327
- Low interest rates = stocks w/ low dividend yield and high price earning multiples pg 342
- High interest rates = high dividend yields and low price-earnings multiples
- Stock returns are determined by dividend yield at time of purchase, growth rate of earnings, and change in valuation via price-earnings or price dividend ratios pg 346
- Alternative investments have tended to be negatively correlated to the stock market. pg 349
- Says rebalancing can add to a portfolio by over 1% a year. – pg 370

Weaknesses and Limitations

- When reviewing some of the newer risk metrics, Malkiel fails at the opportunity to assess their accuracy, as he does with other theories/ideas in the rest of his book. Given his thoroughness, it is surprising he does not do so.
- Malkiel argues for dollar cost averaging (DAC), and at the very least, keeping a reserve to take advantage when prices sink. Swenson, however, makes a strong argument against market timing, which in all instances, he says, fails. Pg 369

Other Comments

- Malkiel's approach, humorous and thorough, does a good job of always analyzing the issue.
- Malkiel and Swensen differ on some issues: like that of high yielding (junk), corporate and tax free bonds. Swensen makes the case that these instruments have no place in in an investor's portfolio. Malkiel disagrees. Swensen goes into much greater detail as to "why not." Malkiel briefly mentions it. As such, Swensen's argument is much more compelling.
- Malkiel suggests adjusting asset allocation dependent upon one's time horizon. Swensen makes no such suggestion, giving a one-size-fits-all approach. Malkiel, who goes into greater detail for his argument, is more convincing.

Guide to Investment Strategy
Peter Stanyer, 2010
Type of Work: Scholarly synthesis
About the Author(s): "Economist and strategist" at a "private wealth manager," and serves on investment committees at two pension funds and a college endowment
Summary of the Scope, Approach, and Research Method: A sort of investing 101
Summary of Key Findings or Insights

- Posits investors are subject to loss when they do not comprehend the true nature of risk associated with investments. pg6
- References a study that states that the volatility of assets matters to investors, not just the end value of the investments. pg 7
- Attempts by advisers to asses an investor's (client's) risk can fail (when using a questionnaire), as the investors, unfamiliar with investing, leans on the adviser for help.
- The adviser, with a greater tolerance for risk, pushes the investor towards riskier investments.
- Like Swensen, Stanyer advises investing into those assets where the investor has expertise. In the absence of that, diversify. Pg 11
- Self-attribution – investment success is due to skill. Lack of success is due to misfortune. pg 16
- Increasing amount of information will steer investors towards using mental shortcuts, because the breadth of information is impossible to process. pg 17
- Behavioral finance: mental accounting: separate assets by different purposes via different tolerances for risk. This is unlike traditional finance. pg 24
- Prospect theory: people will take huge risks to defer loss but will quickly capitalize on gains pg 19
- Term premium: the rate difference in long treasury bonds vs short treasury bills to lure investors into the higher risk of the longer time horizon pg 29
- Inflation risk premium: compensation for expected inflation AND the risk that actual inflation may be higher than expected. pg 30:
- Suggests the investor have more or less inflation indexed relative conventional bonds as that investor anticipates more or less inflation. Pg 35
- Prevailing view that 21st century may post less rewarding equity returns than the 20th century pg 42

- There is the risk of equities underperforming bonds over 5, and even 20 year, timelines.
- Bonds serve less a role for income generation than for diversification in a portfolio. pg 58
- Argues for diversified bond maturities. pg 56
- Posits that time horizon and risk tolerance are distinct. There is a such a thing, says Stanyer, as a long-term cautious investor. pg 61.
- Dips from volatility can be seen as buying opportunities. pg 30
- Posits cash is more risky in the long term than TIPS. pg 70
- Bond ladders mitigate interest risk, relative to a fixed annuity. Bonds should be of government quality pg 71-2
- Change in strategy involves unavoidable market timing. pg 80
- Illiquidity requires a premium for returns pg 91
- With great skill, inefficiency can also be profited from, because these anomalies are difficult to arbitrage. pg 93-5
- Fundamental risk, noise trader risk and transaction fees are barriers to exploiting inefficiencies pg 94-8
- Small cap and value stocks have tendency to outperform the market. Pg 107
- But since the observation the value of small caps stocks has been bid up pg 111
- Overweighting small & value stocks is for aggressive investors pg 117
- International equity provides diversification and opportunity
- A little diversification into international equities goes a long way pg 122
- Correlation of International equities to domestic has been increasing pg 123
- Company management sides with equity over bond holders pg 128
- Agrees with Swensen in that rating agencies fail to go do a good job on bonds pg 129
- A high yield bond fund can help diversify individual, but not systemic, risk pg 134
- Emerging market debt is similar to US equities in volatility, but more susceptible to sudden shocks pg 136
- Mortgage securities fail to provide assurances of those of gov't bonds in exchange for a premium pg 140
- Hedging international bonds against the US dollar decreases the volatility of returns pg 147
- Currency exchange is highly volatile with no expected pay off pg 149
- Hedge funds are lightly regulated pg 151
- Co-investment, the ability to short, and opaqueness, define hedge funds
- Hedge fund performance data is skewed positive pg155
- Hedge fund can switch to an asset gathering strategy pg156
- Diversification, via the addition of a wholly risky asset, is an attraction of hedge funds as an investment/asset class pg158
- With exception of hedge funds dedicated to short selling, hedge funds success correlates with market success. pg 171
- Incentive structures of hedge funds prompt them to close their doors, and management start a new, than work to earn back previous losses pg 173

- Fund of funds have to overcome an additional layer of fees, while hedge funds already charge high fees pg 178
- Avoid private equity without the presence of superior active management pg185
- Should be part of an investor allocation to equity
- Illiquid, not for short term investors
- Investors should expect a premium return for leverage in private equity
- Fund of funds may fail to diversify away high volatility from leverage p193
- One study found private equity to match the returns of the S&P 500 pg 194
- Failing to compensate investors with a premium for the higher risk involved pg195
- Real estate performance is determined by investor skill, market performance and leverage level pg 197
- Manager skill can be misestimated given leverage
- Real estate offers premium/secure yields, inflation protection and total return pg 201, 206
- REITs are typically leveraged 40 to 60%
- Property value is reflected in the future rental stream pg 208-9
- International real estate should be currency hedged pg213
- In what has been deemed an unrepresentative study, art has tracked inflation pg 215
- Art has no basis for value, where equities have fundamentals
- Manager performance needs to be evaluated against the appropriate benchmark pg242
- There exist conflicts of interest from financial advisors who sell products pg248

Weaknesses and Limitations

- Explains the investors have more or less inflation indexed relative conventional bonds as that investor anticipates more or less inflation. Pg 35 – why not take out all the guess work and just have an even split of both? Given Malkiel's random walk, it seems unlikely than anyone can predict the market.
- Cites the many weakness of municipal bonds, but does not ardently oppose them as Swensen does pg 73
- Oddly, and briefly, suggests outsourcing market timing to a professional pg80. Yet expands upon the difficulty of successfully executing market timing.
- Does not give sufficient argument against currency swaps
- **Other Comments**
- Would have been interested to see what the risk rate was for under performance of equities relative bonds over 30, and 40 year timelines.
- A Hard read.
- Agrees with Swensen in that equity holders are put ahead of bond holders.

The Little Book of Common Sense Investing
John C. Bogle, 2007
Type of Work: Conceptual Model
About the Author(s): Former CEO & founder of Vanguard group, father of indexing
Summary of the Scope, Approach, and Research Method: Argues case for indexing over alternative investment vehicles, most especially against active management.
Summary of Key Findings or Insights

- Argues for buying and holding of a broad-based index market fund.
- After calculating expenses, active management is a negative sum game. pg XV
- Investment return is inversely proportional to the level of investment services contracted and frequency of trades pg 6 & pg 36, 44
- Attempting to beat the market is a loser's game.
- Stock market returns are based on
- Investment return: earnings growth and dividend yields AKA intrinsic value pg 192
- Speculative return: change of P/E ratio pg 14
- In the long run, speculations washes out pg 192
- Investment return, over speculative return, is the basis for stock market returns. pg 18-9
- Cap-weighted index, the index mode of choice, automatically adjusts to stock price, thus never having to buy and sell securities, avoiding transaction fees and tax consequences.
- S&P 500 has .98 correlation to the total stock market index. pg 28
- Investor's pay too little attention to costs. pg 40
- Compounded costs take a bit chunk out of one's investments. pg 43
- Dollar-weighted returns are a good measure of performance chasing. pg 50
- Wall street is eager to aggressively market and offer the newest investing fads. pg 58
- Like Stanyer, argues that speculative returns have artificially drummed up stock prices.
- As this rights itself in the future, along with the combination of smaller dividends, subdued stock returns are imminent. pg 70
- Chances are slim to pick a mutual fund that beats the market after fees, especially over long time horizons. pg 81
- Mutual funds suggested by advisors underperform relative those picked by investors themselves. pg 104
- Investment advice works best on a fee-only basis. pg 112
- Index funds can vary in expense ratios significantly. pg 127
- Market timing has made for low dollar-weight returns in small-cap and value index funds. pg 134
- Foundations can suffer management costs as high as 3 percent. pg137
- Fundamental index investment products are active management manifestations.
- ETFs, that are not low cost and are not held for eternity, fail to produce the benefits of an index fund. pg 165

- Diversification eliminates risk from security selection, leaving only market risk. pg 193
- Mutual funds have a conflict of interest where board members are not investors. pg 195
- Mutual fund managers chase asset size for fees, not pursue performance. pg 195
- Argues against commodity funds, which are now in a bubble. pg 203
- Funds of funds layer another fees on top of the already-high fee hurdles of hedge funds. pg 204
- Suggests bond laddering via index funds. pg 207
- Tilting a portfolio towards small or value risks lower return relative the market. pg 206

Weaknesses and Limitations

- Gives much more elaboration on his argument for index stocks than he does bond funds.
- Argument for subdued market returns is a very interesting argument, and a slight departure from the topic of his book. Could do well to more greatly elaborate on this as well.
- Suggests municipal bonds, but his argument for it is very short. Especially relative Swensen's argument against munis. Pg 200.

Study of Endowments

National Association of College and University Business Officers and Commonfund Institute, January 2011

Type of Work: Statistical survey

About the Author(s): National Association of College and University Business Officers and Commonfund Institute.

Summary of the Scope, Approach, and Research Method: Analysis of investment management and governance practices at 850 higher education institutions via web-based questionnaires and field interviews.

Summary of Key Findings or Insights

- Institutions are deeply committed to the Yale model – allocating more than the majority (52%) of their holdings to alternative asset classes.
- Larger institutions, with a greater percentage of allocation to alternatives, paid the most in management fees 1.00%, versus an average of 0.66% and a median of 0.52%.
- Larger endowments posted the highest returns, because of their ability to diversify more greatly and the ability to pay top talent.
- Institutions employ an average 1.5 FTE investment managers.
- The opposite was the case last year, as smaller endowments, invested in more traditionally assets, posted smaller losses.
- Large endowments have more exposure to alternatives and less to fixed income and domestic equity. Vice versa for small institutions.
- Argues that aggressive allocation to alternatives is the way of the future. Institutions with traditional (conservative) holdings made the biggest gains (smallest loses) last FY was just a fluke, so says the study.

- Institutions are allocating a larger percent of their positions to alternatives at the expense of domestic equities over the last ten years. Larger institutions have alternative/less domestic & fixed income holdings that smaller institutions.
- Three quarters of domestic equity positions are actively managed.
- Larger institutions rebalanced more frequently.
- Rebalancing took place at either calendar based intervals (monthly, quarterly, semi-annually) or when an asset class fell out of range.
- Smaller institutions were less diversified in the alternative asset allocations, with allocation mostly going to hedge funds.
- 1/3 of endowments are now making considerations for liquidity in constructing their portfolios, the percentage is greater for larger endowments. The smallest endowments have the most liquid portfolios.
- The largest institutions were ten times as likely to pay additional fees for superior performance of fund managers relative smaller institutions.
- Smallest institutions had the highest percentage of assets underwater, with the largest institutions the smallest percentage.
- Smallest institutions had $1/20^{th}$ the amount of staff devoted to endowment management that the largest institutions had

Other Comments

- The 3/5/10 year returns put the 5% suggested spending into serious question.
- It would be interesting to compare Yale's endowment returns of the same FY to the average – real estate especially. This will speak to the value/talent of the Yale staff.
- With a larger endowment, organizations have the option to put more assets into risker (alternative) assets, with the potential for greater growth. The greater growth gives greater returns, hence the larger spending rate.
- Emphasizes at the conclusion of chapter 1 and 2 that aggressive allocation to alternative strategies is the way to go.
- With more resources, larger institutions are able to do more, to be the better investor.

Guest Lecture by David Swensen

David Swensen, Nov 19, 2008

Type of Work: Recorded video presentation

About the Author(s): Chief Investment Officer of the Yale Endowment

Summary of the Scope, Approach, and Research Method: Case study

Summary of Key Findings or Insights

- Asset allocation is the overwhelming determinant of investment results, followed by market timing and security selection.
- Asset allocation explains more than 100% of returns because the other modes, mentioned above, require costs in the form of trading fees, consultants, etc.
- Investment in small cap stocks show the greatest returns.
- Time-weighted returns are misleading – dollar-weighted returns, which calculate the buy in and close out time, show losses for investors across the board. Time-

weighted returns time the market (mutual funds) improperly – buying high and selling low.

- Marketing timing, spurned by greed and fear, is to be avoided as an investing tactic.
- Security selection is a negative sum game, when fees are included.
- "Survivorship bias" skews performance results of mutual funds because those mutual funds that fail/ no longer exist are not included in the calculation.
- Backfill bias operates in a similar fashion, skewing real performance, producing better looking numbers.
- Active managers in alternative asset classes have a much wider range of performance spreads relative traditional asset classes. Thus, alternative asset classes are much less efficiently priced.
- Swenson argues for an equity-biased portfolio that shuns market timing.
- Argues that the large degree of diversification into alternatives lowers the portfolios entire risk, because the assets have low correlation.
- Swenson argues for either full active management or total passive management. When an effort is made to put partially active manage a fund, the result is failing to match the market. He says it's incredibly tough to beat the market. Suggests index funds for those do not have the resources to acquire top active management.

Unconventional Success
David F. Swensen, 2005
Type of Work: Scholarly synthesis
About the Author(s): Chief Investment Officer at Yale University, who set unprecedented investment returns and modern model for institutional investing with his allocation to alternative assets.
Summary of the Scope, Approach, and Research Method: Argues for his asset allocation model, referencing other studies to make his point.
Summary of Key Findings or Insights

- Argues for diversification and an equity bias.
- Argues against anything other U.S. backed bonds for the fixed income positions of a portfolio.
- Argues for over allocation to asset classes where the individual investor has superior skill in security selection. However, for most people, they do not possess such a skill set.
- Explains that even the highest-rated corporate bond has nowhere to go in value but down. This is contrary to stocks which fluctuate in value.
- Callability of corporate bonds allows the corporate bond issuer to call the bond if interest rates drop. The investor cannot exercise any such option if interest rates rise.
- On a best case scenario, corporate bonds can pay their coupons and return principal expected. In a worst case scenario, the investor loses everything. This is in contrast to equities that have unlimited upside and the finite downside of company going out of business.
- Bond holders suffer at the gain of stock holders of the same company, executing a call on bond to take advantage of more favorable rates is an example of this.

- Asymmetric information and call options benefit sellers and issuers of tax-exempt/municipal bonds respectively over buyers.
- The model of hedge fund fees has investor sharing profits with fund managers while absorbing all loses themselves.
- Ventura capital needs upper decile active management to post returns consistent with its level of management fees, risk and illiquidity. Otherwise, investing in the broad market posts greater returns for less risk.
- Venture capital firms charges high fees and fail to compensate investors for the high level of risk. Only those firms with the top 10 or 25% of performance merit consideration for investment. None of the top venture management firms are currently accepting new donors.
- When investors chase performance of hot mutual funds or stocks, only those with recent strong growth, they are usually bound to end up buying high and selling low. Internet mutual funds are an example of this. Investment losses are compounded by management fees regardless of performance, and unfavorable tax treatment of gains relative losses.
- Mutual funds have a variety of methods to spin their performance numbers, masking poor performance.
- The tendency for investors to chase performers is further increased by Morningstar, a rating system that puts most of its emphasis on past results.
- Active rebalancing affords investors the opportunity to sell high and buy low. Yale added 1.3% return to its endowment in 2003 via rebalancing.
- With its nearly guaranteed rate of return over actively managed mutual funds and its favorable tax treatment, Swensen argues for passively managed index funds.
- A mix of 83% S&P 500 w/ 17% MSCI EAFE has the least volatility of either combination of those two assets.
- Mutual fund companies give brokers a fee for selling that fund company's funds.
- Roughly ninety percent of 401K companies practice pay to pay, limiting investor access to more cost effective mutual funds, like Vanguard
- ETFs indexes are most tax-efficient mutual fund indexes, in part due to arbitrage related to change in net asset value.

Weaknesses and Limitations

- Fails to mention some of the more other options open to investors – like commodities, international REIT. These offer an additional level of diversification.
- Fails to properly discuss time horizons. Should all investors follow the time strategy if one has a 3 year investment timetable and other 30 years?
- Written before 2009, when assets showed to be much more highly correlated than once thought.
- Needs greater detail regarding how to allocate different time horizons and other liabilities/existing holdings, but only provides brief rules of thumb.
- Swenson discusses equity allocation in chapter 4, but did not mention how they intermingle with bond holdings. Given his suggestion at the beginning of the book regarding asset class allocation, the chapter's lack of reference does not make sense.

- Makes no effort to distinguish between taxable and tax-deferred accounts.
- Makes large efforts throughout the book to push index, but then changes course towards the ends of the book, giving ideas on how to select individual stocks.
- Does not address the place of bond funds, especially high yield funds in the function of diversifying risk

Other Comments
Swensen touts Vanguard as providing the lowest fees, and therefore the best values for investors. Already dated, exchanged traded funds offer even lower fees. Charles Schwab currently has even cheaper offerings than Vanguard.

2012; The Yale Endowment
Yale Investment Office, 2012
Type of Work: Endowment Report
About the Author(s): Chief Investment Officer at Yale University since 1985
Summary of Key Findings or Insights

	2011	2010	2009	2008	2007
Asset Allocation (as of June 30)					
Absolute Return	17.5%	21.0%	24.3%	25.1%	23.3%
Domestic Equity	6.7	7.0	7.5	10.1	11.0
Fixed Income	3.9	4.0	4.0	4.0	4.0
Foreign Equity	9.0	9.9	9.8	15.2	14.1
Private Equity	35.1	30.3	24.3	20.2	18.7
Real Assets	28.9	27.5	32.0	29.3	27.1
Cash	-1.1	0.4	-1.9	-3.9	1.9

- Yale's portfolio's get progressively heavier into alternatives each year.
- Surpassed all industry benchmarks, both the market other endowment portfolios
- In its reporting, separated real estate from natural resources, breaking up the single category of real assets. This gives the portfolio a hair more transparency.
- With positions in real estate, an endowment receives protection against inflation, with property values fluctuating with market supply and demand.
- With positions in real assets, an endowment receives protection against inflation – as the price of real assets rise, so too does the value of the Yale endowment. As Yale must purchase some of these assets – for the purposes of heating, construction, etc. – the institution is buffered.
- The endowment contains "thousands of funds." This really speaks to Swenson as a "manager of [fund] managers."
- Endowment provided $987 in funds for FY 2011. This increased by over $100 million last year.
- Yale endowment allocates assets on the basis of mean variance, diversifying the holdings based on risk weights for each asset allocated.
- Yale expects long term returns of 6.3% per annum with the current allocation.
- Argues that nontraditional asset classes have greater potential for returns, and make for greater diversification. Claims that current allocation, with only a small sum allotted to domestic equities, the rest in alternative asset classes, is less volatile than the previous portfolio that held a majority in domestic equity positions.

- Claims alternatives as "less efficiently priced" than conventional equities, giving the opportunities to exploit these opportunities for profits via active management.
- Yale's spending rule aims to provide income and protect the "real" fund's value.
- Spending rule aims to mitigate the market fluctuations/value of the endowment.

Weaknesses and Limitations

- States the need to keep up with inflation, thus the funds be invested in more aggressive holdings. This seems counter to conventional logic. If one needs the money very badly, why put it at such great risk?

Other Comments [optional]

- Given the current increasing rate of allocation to alternatives, at which point the portfolio will be fully alternatives?
- Is it really possible that Swenson manages "thousands" of funds?

Nonprofit Guide to Prudent Investing
The Merrill Lynch Center for Philanthropy & Nonprofit Management, 2009
Type of Work: How-To Guide
About the Author(s): Merrill Lynch, owned by Bank of America, is financial services company. The company serves "clients in more than 150 countries with operations based in 40 countries, providing services ranging from investment and corporate banking to investing and equity execution services." (Bank of America n.d.)
Summary of the Scope, Approach, and Research Method: This piece is an introduction for trustees on investing a non-profit organization's assets. It gives basic, practical advice, written for those initially looking at investing.
Summary of Key Findings or Insights

- In decades past, fiduciaries were held accountable for each individual investment made by a non-profit organization, skewing investments toward "safe" assets. With passage of various legislature, portfolios are now examined in their entirety, allowing for a more balanced approach to investing. All of these acts share the goal of eliminating outmoded concepts of charitable investment in favor of Modern Portfolio Theory (MPT).

    - The Uniform Management of Institutional Funds Act (1972) gave the board authority to outsource investment management, requiring the board to monitor investment manager's performance on a regular basis. Also enabled fund managers to use modern investment techniques, such as total-return investing, a tenant of Modern Portfolio Theory (MPT).
    - Restatement of the Law of Trusts 3d: Prudent Investor Rule (1992) holds trustees liable for improper conduct as measured by reference to the total portfolio return that should reasonably have been expected from an appropriate investment program in light of the purpose(s) of the trust or portfolio. Investments must be judged in relation to the total portfolio, not in isolation. Risk versus return is the fiduciary's central consideration.
    - The Uniform Prudent Investor Act (1995) requires trustees of charitable trusts to use modern investment practices.

    - The Uniform Prudent Management of Institutional Funds Act (2006) gives the board more flexibility in making endowment expenditure decisions so that the board can cope with fluctuations in the value of the endowment. It provides modern guidance for the prudence standards fiduciaries should follow in making investment decisions.
- When investing, consider the following risks:
    - Individual investment risk is devaluation of a security below the initial purchase price; AKA specific risk.
    - Market risk is the devaluation of all securities as a symptom of total market devaluation. i.e. correction or recession.
    - Inflation risk is the loss of purchasing power of assets.
    - Liquidity risk is inability to sell an asset due to a lack of buyers.
    - Interest-rate risk is the change in interest rates that will lower an asset's value. i.e. bonds.
    - Currency risk is devaluation of a foreign asset when the dollar rises relative that country's currency.
- Modern Portfolio Theory:
    - All assets do not equally or simultaneously lose, or gain, value.
        - Diversification performs best when different asset have low (uncorrelated) or opposite (inverse) performance with each other.
    - The appropriate mix of assets can ensure greater portfolio returns over time, irrespective market fluctuations.
        - Diversification can be achieved by not only asset classes, but also within the asset classes.
    - The riskier the asset, the greater the potential return.
    - Success in an investment strategy is how assets are divided among the various asset classes (stocks, bonds and cash, for example).
- Different monies (operating reserves, retirement plan assets, capital campaign reserves, etc.) need to be invested differently, relative timeline for withdrawal, investment goals and risk parameters. Board communicates the requirements for growth, income and liquidity needs; time requirements of each monies invested to fund manager.
- Timetables for withdrawal determine acceptable levels of risk, and thus the assets that will be invested into.
    - operating reserves: "very short time frame, " wherein the objective is to preserve capital and maintain liquidity. This means investing in interest-bearing checking accounts and money market funds, etc.
    - Capital campaign funds: with a longer timeline, medium-term fixed income investments are an option.
- Boards should have an investment policy that:
    - Defines general objectives.
        - reasons for establishing the policy and the fund portfolio's purpose and size.
        - create terms of return requirements, risk tolerance, time horizon and liquidity.

                - return requirements depend on the purpose of the fund and timeline for withdrawal
                - set return goals for each asset class and each fund's total return.
        - Delegates investment management to a financial committee or professional manager(s)
        - Sets asset allocation parameters
            - determines percentage of assets for investment class
                - consider timeline for withdrawal, rate of return, liquidity and risk
                    - investment manager can deliberate on the above
                - set diversification guidelines to limit the limit exposure to any particular sector (Energy, Information Technology, etc.) or company
                - sets protocols for rebalancing portfolio of investments when those original percentages change over time
        - Describes asset quality
            - Determines investments that meet investment objectives
                - determines exposure to various securities, economic sectors, countries, cash holdings, etc.
                    - restricts investments based on quality ratings of independent third parties. i.e. Standard & Poor's or Moody's.
        - Provides for regular policy review
        - Sets guidelines for hiring and firing fund managers
        - Provides appropriate guidance without hindering a fund manager's ability to perform their job
- Period reports by the fund manager reports detail transactions, demonstrating meeting investment goals, detail asset class breakdown, declaring realized and unrealized gains and annualized income and yield.

Weaknesses and Limitations

- This piece uses a broad brush with a short stroke, briefly detailing responsibilities and recommendations for investing. The piece does not describe the numerous principles in depth. While the "how to" portion is satisfactory, the opening portion, defining laws, is lacking. The portion of the guide could offer greater elaboration. Total material could be equal if more time was put into legal requirements, and less material put into practiced solution.
- While by no means comprehensive, the article is good starting point for the subject. The article itself is less a guide as it is a promotional piece for Merrill Lynch's financial services. As it a promotional piece, the document substitutes complex processes for simpler ones. As mentioned, there is opportunity for elaboration, but in order to retain the audience, the author has kept it simple and brief. This serves to hold the reader's attention, but makes it less valuable for those looking for more complex content.

Once upon a time…: A historical overview of the development of asset allocation for nonprofit organizations
Don Ezra, September 2012
Type of Work: Case Study
About the Author(s): Don Ezra is Co-Chairman of Global Consulting and Director of Investment Strategy at Russell Investments, which has $152 billion in assets under management, and creator of the Russell Global Indexes, including the Russell 2000® Index.
Summary of the Scope, Approach, and Research Method: Reviews the history of advents in analyzing risk/return in investing, including models and for analysis and portfolio compositions.
Summary of Key Findings or Insights

- Diversification can reduce risk. Risk and covariance are the foundations of Modern Portfolio Theory.
- While more precise definitions of assets classes may vary, there is common consensus on the distinctions of equities, bonds and cash equivalents.
- Uniform Prudent Management of Institutional Funds Act recommended that total returns be the investment goal.
- "The early days of asset allocation" results in a 60/40 split of equities to bonds.
- Early studies on risk/return where inherently flawed in their variables.
- Illiquid, infrequently traded, assets returns are based on subjective estimates. Early theoretical formulas technically favored holding these assets.
- One mode to portfolio composition begins with selecting "broad, liquid asset classes," then adding "some" illiquid, more volatile assets.
- The author feels that amongst all these models, the greatest challenge is evaluating an investor's risk tolerance.
- Yale Chief Investment Officer, David Swensen changed the traditional portfolio to model that put a "heavy reliance on private equity and other so-called alternative asset classes, and an inclination to passive (and much smaller) exposure to traditional asset classes.
- Classic financial analysis tools failed to accurately predict extreme market conditions – like the financial crisis of 2008.
- Multiple asset classes can all be affected by the same return drivers. Sophisticated investors now focus on risk management, and a portfolio's exposure to return drivers, not just asset classes.

Weaknesses and Limitations

- The technical aspect of this paper can make it unintelligible without simultaneous research/previous knowledge on the subject.
- This biggest short coming of this paper, however, is failing to elaborate on what is now the standard for investing: the model set by Yale Chief Investment Officer David Swensen.

Other Comments

- This is a moderately technical paper. Previous experience or knowledge in investing is required to understand some of the principles mentioned here.

Principles of Nonprofit Investment Management: The key issues facing trustees and financial officers's
Common Fund Institute, 2006
Type of Work: How-To Guide
About the Author(s): Commonfund Institute works to advance "investment knowledge and the promotion of best financial management practices among nonprofit organizations." Commonfund serves charities, educational institutions, foundations, and health care institutions.
Summary of the Scope, Approach, and Research Method: Billed as a summary of a "comprehensive approach to nonprofit investment management."
Summary of Key Findings or Insights

- Investment committee defines investment objectives with respect to the nonprofit's philanthropic mission in the form of an investment policy statement (IPS), guiding investment decisions. Policy statement should be jargon-free, reviewed annually, and may cover such issues as:
- How to select an investment manager and how to manage the investments
- How investments will contribute to the organization
- Desired total return from investments
- Expected donations
- legal stipulations
- Percent of endowment to be spent vs. re-invested
- liquidity of assets to meet organization's needs
- level of tolerable risks for the fund's monies, and those assets deemed not investworthy
- decision making processes for investment decisions
- Investment expertise can be obtained by hiring an outside professional.
- Timelines for distribution determines investment management's actions.
- UMIFA: there is no specificity as to what the payout percentage should be; governing board decides.
- Fund exists to fund organization programming via growth, dividend payout, etc.
- Goal is to grow fund concurrent to the rate of cost increases the organization faces.
- Traditionally, "5 percent of a three-year moving average of market value" has been the pay out from funds. Recent market volatility now makes this mode ineffective, causing some foundations to up fund's consumption rate 6% in order to fulfill previous commitments.
- Cash payments, dividends and interest alone fail to match economic growth. As such, equity fund positions themselves must be sold off.
- The average life of foundation's endowment is a decade and a half. Foundations on longer timelines will require cash infusions, smaller payouts and more aggressive investing.
- "Allocation of the portfolio among the principal asset classes is the committee's most crucial investment strategy decision."
- Organizations that require a high volume of liquidation of assets on short notice, like the Red Cross, should choose an arguably less-risky, fixed income-centric

portfolio. Over a long-enough timeline, such a portfolio equates to a smaller returns relative a portfolio with an equity bias.

- UMIFA in 1972 broadened the "prudent man rule" into a "prudent investor rule," permitting fiduciaries to consider the expected total return (i.e., capital appreciation as well as income). Most nonprofits now use this approach.
- Modern portfolio theory balances the risks of various kinds of investments against one another.
- investment risk is measured in volatility, called the "standard deviation," a percentage of the investment's value changes.
- Offset an asset's volatility by holding other assets with low degree of correlation. Combining risky assets within a single portfolio can lower the overall volatility of the portfolio.
- Proper asset allocation determines successful returns.
- Diversification among *and within* asset classes can further lower a portfolio's volatility.
- Organizations are moving from fixed income assets into equities and alternatives
- Alternatives: hedge funds, private equity, venture capital, equity real estate, distressed debt strategies, commodities, and energy and natural resources.
- alternatives tend to have a reduced correlation to traditional investments
- manager performance should be monitored on a continuing basis
- Investment committee hires an array of investment managers to execute the intentions of the board's investment policy.
- nonprofits often outsource the entire selection process
- number of managers used increases with fund size
- Managers should now be given the freedom to maximize investment opportunity as they know best.
- A strategy for investment firms is to create a fund around a particular manager, using buying power to lower fees, making manager available to smaller investors – just like a mutual fund.
- Monitoring fees is critical, as managed funds can fail to meet the market average.

Weaknesses and Limitations

- Commonfund's model predictions suffer in their accuracy from what Ezra discusses: fat tails. In extreme market fluctuations, such we that have experienced in recent times (sub-prime crisis), the possibility of great loss is greater.
- This article, similar to the one by Merrill Lynch, is one part educational, one part advertisement. Commonfund discloses that they are in the business of placing fund managers with nonprofit organizations seeking to invest their cash assets. As such, the piece is written for the board member, not the fund manager. Language is simple, to keep reader attention, forgoing the more complex financial instruments.
- Could do more to elaborate on a risk manager's role, duties, challenges, etc.

Other Comments

- This simply written, non-technical piece is meant specifically for board members. No previous knowledge of financial instruments is needed to comprehend the article.
- Says "For nonprofits, this decision must embody the philanthropic mission and perhaps deeply held feelings of founders and members of governing boards…" One can infer that this means that the companies invested in be in line the NPOs values. For example, the Sierra Club may not find itself putting its endowment funds into shares of ExxonMobil.
- This will, it can be argued, a affect portfolio's rate of return. Exxon Mobil, a top equity that pays a dividend, can be a lucrative investment, most especially in coming years as oil conglomerates continue to merge, setting prices (and profits) to the highest degree that the market will bear it.

Educational Endowments and the Financial Crisis: Social Costs and Systemic Risks in the Shadow Banking System; A Study of Six New England Schools,
Joshua Humphreys, May 27, 2010
Type of Work: Statistical study
About the Author(s): "Joshua Humphreys is a fellow at Tellus Institute. An historian of the social problems of capitalism, Humphreys has become a leading advocate for more sustainable and transparent forms of finance in today's exceedingly complex capital markets." (Tellus Institute 2012)
Summary of the Scope, Approach, and Research Method: Examines returns and affected communities of six Ivy-league endowments
Summary of Key Findings or Insights

- Endowments sought growth and total return at the price of consistent/reliable income, liquidity & volatility.
- Endowments sought risky investments, like emerging markets, made possible for by long time horizon.
- Swenson turned Yale's traditionally modeled portfolio of stocks and bonds into a portfolio heavily invested in alternatives.
- The effect of leveraging multiplied investment losses.
- Conflicts of interest arise when board members in the financial sector recommend their firm to management an institution's investments.
- This is problematic when those board members specialize in alternative investments – those investments that carry greater risk.
- The implementation of a Chief Investment Officer position has skewed investments into risker assets.
- The loss of value in investment positions has caused funding cuts within the institutions, manifesting in a detrimental effect on the economy of the college's local communities.
- Investment managers can trade positions more frequently, not penalized by the tax consequences – as the universities are tax-exempt.
- Universities issued public bonds to pay operating expenses, allowing them to keep their cash invested in risky assets, generating high returns. This is not quite technically illegal, but costs tax payers millions annually. Humphreys describes this as 'indirect arbitrage.'

- Some schools are financing debt as high as 75% of total assets.
- Humphreys suggests that endowments pursue higher liquidity/lower volatility investments, setting aside a portion of funds in good years for utilization in bad years.
- With regard to those highly-risky/illiquid assets, Humphrey critiques that risk must be measured beyond just portfolio return. Instead, he suggests the measure be the consequences of smaller endowment payouts. The consequence from a down markets in the form of layoffs, and stalled projects, etc. must be measured when calculating the volatility of assets, argues Humphreys.
- Overtime, endowments have moved from mortgages and real estate into government bonds, into a split of bonds and equities and then onto the endowment model; moving from pursuing income, to growth, and then onto total return.
- Endowment's entering into previously un-entered markets created greater risk, risk that was attempted to mitigate by diversification. In an attempt to lower entire portfolio's risk by diversifying into other asset classes (i.e. commodities), risk was actually increased. This is because the commodities market was effectively now more risky than previously. The infusion of the endowment's capital was the cause for this risk – the drive up in prices had essentially created a bubble.
- By endowments investing heavily into alternatives, it lends credibility to these dubious asset classes. Imitators (pension funds) arise, overcrowding the market.
- When universities attempted to sell assets from those small, overcrowded markets, prices dove due to the unusually high number of sellers.
- Despite the financial crisis, endowments have allocated even more aggressively into alternative assets.
- Of the six endowments studied, that with the highest proportion of liquid assets (Boston College) suffered the smallest decline in value, 5% less than average.
- CIO positions are seeing high turnover as CIOs leave to start their own firms, usually hedge funds. This is despite the million dollar salaries that investment staff have been paid.
- By pursuing speculative investments, the endowment model no longer performs its original function: stable income for operational expenses.

Weaknesses and Limitations

- Humphreys notes the decline in value of endowment assets from the recent financial crisis, inferring that such losses could have been avoided where those assets invested in less risky positions.
- Yet, he does not provide substantial comparisons in his critique. For example, a more thorough paper could write, "The endowment model showed portfolio declines in X value. A mode modestly allocated portfolio of the 60% stocks and 40% bonds would have declined only Y percent." He cites the NCSE, which notes a higher return of 3.7% during the financial crisis. Considering that the market at one point literally halved its value, 3.7% below a more conservative approach in a single down year is arguably insignificant given the gains produced by some of the more aggressively-allocated portfolio.
- Makes the claim that commodities become more volatile once endowments dump their money into it, but gives no data to prove it.

- Could elaborate on how daily trading to take advantage of market volatility spurs market volatility. Common sense dictates that buying a position when it is low, increases demand, thus driving up the price, thus restoring the original market price.
- Though Humphreys does invest considerable time in discussing pay inequity, it is still difficult to discern what pay inequities, though an important issue, has to do the failure of the endowment model
- Yes, lower pay outs from an endowment mean lay-offs. But does the endowment perform any differently than conventionally held positions? Humphrey seems to ignore the fact that a down market means a down market. That means less money in all kinds of investments, not just the aggressive/alternative ones.

Other Comments

- Mentions that social inequity is increased by the current system, with universities executives increasingly compensated, while others are laid off in down markets. It seems inappropriate, the subject of another paper entirely.
- Humphrey's analysis is sort of a catchall. There seem to be many subjects in the paper that could be the subject of an entire paper. There are numerous opportunities to delve more deeply into the content mentioned, but for the sake of brevity, it is not. For example, conflicts of interest alone could be more thoroughly discussed – with trustees at the universities managing the respective endowment's funds with their respective financial institution: Morgan Stanly, etc.

Investment Policy Statement template

supplied by Steven Vielhaber, retired investment banker at Commonfund

Summary of the Scope, Approach, and Research Method: Platform for delineating the necessary details for an investment policy statement

Summary of Key Findings or Insights

- Sample allocations include no suggestions for alternative investments
- IPS serves to:
- Set terms for the investment of the organizations' funds
- Determine how the money is invested (asset allocation, diversification, etc.)
- Ensure assets are invested within levels of tolerable risk
- Establish communication and evaluation criteria
- Ensure legality of investment initiatives
- IPS creates objectives for the investments
- Determine on what basis to draw funds from the endowment
- Moving average
- Annual percentage increase
- as needed, as determined by the board
- To ensure that asset allocation ensures positive returns (total returns) while still providing proper liquidity for spending needs
- Manage costs of investment services
- IPS establishes time horizon and cash (liquidity) requirements
- IPS establishes risk tolerances based on
- Level/rate of future contributions to the organization/endowment

- The subjective "strength" of donor base
- IPS sets a targeted rate of return.
- Withdrawals/new investment purchases will function to bring the portfolio into balance over time. Only with the board's permission will certain assets be sold/bought to re-allocate the portfolio in the absence of the above.
- IPS defines restricted investment practices, such as investing in too new a company, or the use of trading on margin.
- IPS defines requirements for diversification. For example, not holding/allocating more than 10% of a portfolio to a single company
- Defines requirements for
- investments in bonds, as in the minimum level permissible credit rating, and maximum amount of holdings of certain credit ratings.
- high yield bond holdings, including credit ratings and diversification requirements.
- international holding, restricting percentages of exposure to companies, sectors and countries. Allows currency hedging, but not speculation.
- Allows for currency futures contracts with limited applications.
- Defines
- fund manager selection, which includes consideration of a manager's past performance.
- liquidity needs for all holding, including mutual funds.
- Notes annual evaluation, giving performance comparisons for benchmarks: S&P 500, etc. Deems mutual fund performance evaluation *at least* quarterly.
- Sets "Review and Analysis" mandates or fund manager and change 'considerations' should a fund manager/mutual fall below a certain performance thresholds.

Weaknesses and Limitations

- It is difficult to understand the distinction between "To maintain the purchasing power of the current assets and all future contributions" and "Maintain a constant funding-support ratio." Both speak to cost increase, but the difference is not clear.
- Does not specify the limits at which a fund manager can be compensated.

Other Comments

- One of the objectives states "To maximize return within reasonable and prudent levels of risk." The statement almost seems counter-intuitive. To maximize return is to take risks.
- The layout restricts the much more aggressive practices of what has been called the Endowment model: short selling, hedge funds, use of leverage, etc.

Investment Policy for XYZ Institution
sample submitted by Steven Vielhaber
About the Author(s): Steven Vielhaber, investment professional, former Commonfund staffer
Summary of the Scope, Approach, and Research Method: Sample investment policy statement
Summary of Key Findings or Insights

- Like the IPS above,
    - suggests quarterly review
    - sets diversification guidelines for cash equivalents
- Unlike the previous IPS above
    - this one lists alternative assets in the allocation section.
    - suggests taking advantage of market fluctuations to rebalance the portfolio as appropriate
    - discusses an investment committee, a good suggestion, as deliberating on much of this subject matter could be time consuming for the board proper in its entirety
- Also sets standards for domestic equity screening and diversification, though not as precise as the above IPS
- While this IPS did provide guidance, it provided much less guidance than the sample above. Thus, a fund manager would have more freedom in his investment decisions. There are benefits and disadvantages to both scenarios.
- Both pieces use indexes as performance as well as peer performance when evaluating their fund manager
- **Weaknesses and Limitations**
- The policy seems to contradict itself, initially looking to retain purchasing capital, but later stating the focus of total returns.
- Given very specific instructions on quarterly reports as composed by the investment manager.
- **The reading's author, title, and publication date**
- Investment Policy Statement, supplied by Steven Vielhaber
- See above two examples
- **Summary of Key Findings or Insights**
- Set income as a secondary objective over preservation/growth of capital
- Using index benchmarks as a performance metric is standard in all pieces reviewed
- Suggests annual review of IPS

Weaknesses and Limitations

- Due to its brevity, gives much guidance than previous pieces

The Investment Policy Statement
John S. Griswold and William F. Jarvis, 2011
Type of Work: How-To Guide
About the Author(s): John S. Griswold, Executive Director, Commonfund Institute
William F. Jarvis, Managing Director, Commonfund Institute
Summary of Key Findings or Insights

- Suggests annual review of IPS
- IPS should proclaim
- purpose/role of endowment in supporting the organization
- time horizon of funds, withdrawal rate, reinvest rate of gains realized
- who manages the funds and how that manager is selected and evaluated
- Return on investment (ROI)

- Investment guidelines (strategy, diversification, approved assets, Liquidity requirements Etc.)
- relative agreed upon permissible risk
- Payout rate (monthly, annual, bi-annual) will determine asset allocation
- Uniform Prudent Management of Institutional Funds Act (UPMIFA) dictates that unless otherwise declared by the donors, maintenance of purchasing power is a priority for funds invested –as opposed to a finite endowment timeline
- Investment committee can be composed of non-trustees. Research shows that at least two to three, of an average of 6 to 8, committee members are investment professionals.
- Between 25 to 33 percent of investment managers are outsourced.
- Financial modeling using long-term simulation tools can visualize various outcomes of different portfolios.
- Suggests outlining certain asset classes that may not yet have place in the current portfolio, so as to better educate trustees as to the various asset class distinctions.
- Tolerances for risk need to be quantified by probing trustees.
- Financial crisis left those using the endowment/Yale model short on cash, with a majority of highly illiquid assets in their portfolio. Studies show that Institutions are now holding larger-than-previous cash allocations: between 5 and 9 percent.
- IPS needs to declare intention/duration (life AKA time horizon) of the fund.
- Risk, not return, should be the center piece of IPS debate. Once a tolerable level of risk can be agreed upon, returns can then be determined – not vice versa. From this idea comes the Risk-based IPS. Its counterpart is the traditional IPS.
- Set alternatives at a maximum of 25% of portfolio.

Weaknesses and Limitations

- Did not speak to value or relevance of rebalancing a portfolio at pre-specified times over when the portfolio gets out of balance. Also, did not elaborate on why moving to rebalance on market timing is perilous.
- Could elaborate further on asset class selection
- Says that 9 percent is the targeted growth rate to retain purchasing power – this is unrealistic for a portfolio over a long enough timeline, especially if that portfolio includes a portion of bonds instead of equities. A more sustainable model would make for smaller draw rate from the endowment – less than 5% annually – which is not an option for private foundations. However, many endowments draw at rates much higher than this.

Understanding the Managed Futures Strategy and its Role in an Institutional Policy Portfolio

Commonfund Institute, October 2012

Type of Work: How To Guide/ Advertisement

About the Author(s): "Commonfund is an institutional investment firm serving nonprofit institutions, pension funds and other leading institutional investors offering a broad range of investment solutions in traditional and alternative strategies."

Summary of the Scope, Approach, and Research Method: Touts benefits of portfolio diversification with CTAs - Commodity Trading Advisors

Summary of Key Findings or Insights

- Over long periods of time, Managed Futures Funds, CTAs has low correlation to market dynamics, showing positive returns in any market.
- Composed of liquid assets.
- Managed future funds are data driven, using empirical market metrics as a call to buy/sell
- They are driven by position fundamentals (price per earnings ratio, cash on hand, etc.)
- Managed future funds benefit most from greater market volatility, producing losing returns in times of low volatility.

Weaknesses and Limitations

The technical complexity of this piece makes it hard to follow. This is especially bad considering that this is an advertising piece for a product. Would someone want to purchase something that they don't understand?

Endowment for a Rainy Day, Winter 2010 & How Much Is Enough?

Burton A. Weisbrod & Evelyn D. Asch, February 22, 2010

Type of Work: Essay

About the Author(s): Weisbrod has written or edited 16 books and authored nearly 200 articles on the economics and public policy analysis of nonprofit organizations, education, health, the causes and consequences of research and technological change in health care, poverty, manpower, public interest law, the military draft, and benefit-cost evaluation.

Summary of Key Findings or Insights

- Nonprofits with large endowments slashed spending as their endowments declined in value from the financial crisis.
- Author sees this as contrary to the entire intention of endowments – as a source of funds when other income streams are depleted, or costs expand.
- Wealthier/larger endowments, have greater flexibility to invest in more volatile investments, and thus generate greater returns. These more lucrative investments are in alternative asset classes.
- Authors argue that future generations will be wealthier than current generations. Therefore, expenditures from existing endowment funds should be made today so as to serve the current generation, who have less funds available to them then future generations.
- Argues that the endowment serves the organization, not vice versa. Money should be taken from the endowment to serve the organization, not the other around – as some organizations are doing: cutting spending and cancelling expansions plans to preserve the endowment.
- Organizations use endowment size/returns as an indicator of success/bragging rights, luring in more endowment donors, instilling confidence in the organization.
- Argues for nonprofits to spend down endowments to keep up with operating costs.

Weaknesses and Limitations

- Asks the important question, "How much is enough" but not does provide his opinion on the answer.
- Authors argue that future generations will be wealthier than current generations. This is counter to the current trend of wealth distribution in the United States.
- Good point that the whole purpose of the endowment is being changed. Endowments function for the mission statement. It is not the mission that is compromised for the sake of the perpetuity of the endowment.

Nonprofit Healthcare Organizations Report
Commonfund Institute, August 20, 2012
Type of Work: Statistical study
About the Author(s): "Provides fund management and investment advice for nonprofit institutions."
Summary of the Scope, Approach, and Research Method: "The design of the Commonfund Benchmarks Studies of Healthcare Organizations took place in the winter of 2011. Field interviews with the participating institutions followed in the first and second calendar quarters of 2012.
Summary of Key Findings or Insights

- Healthcare organizations are moving toward the endowment model, allocating a greater percentage of assets to alternatives.
- Greater allocation to fixed income than other organizations, in part to satiate creditors.
- Organizations with larger endowments had greater returns.
- Portfolios with a smaller allocation to cash saw higher returns – thus it was a good year on the stock market.
- Number of investment managers is 1.6, on average, per fund.

The Curse of the Yale Model
Rick Ferri, 4/16/2012
Type of Work: Essay
About the Author(s): Contributing author to Forbes investment magazine. Covers low cost index investing
Summary of the Scope, Approach, and Research Method: Comparison of NACUBO findings versus benchmarks.
Summary of Key Findings or Insights

- Posits that investment returns of copycat endowments fail because their investment committee does not have the experience that the Yale investment committee has – if these investment committees have any experience at all.
- Argued that the best bet would be to have simply invested in low-cost index funds instead of going with risky hedge funds, and their accompanying high management fees.
- Show how sample portfolio surpassed endowment returns.
- Notes that one way hedge funds "beat the index" is by changing the index to their liking.
- Posits that schools lose and hedge fund managers win when under-skilled schools pursue the Yale model.

Weaknesses and Limitations
Does not discuss volatility of returns

Principles of Endowment Management; The seven key issues facing trustees and financial officers
Commonfund Institute, 2001
Type of Work: How to guide
About the Author(s): "Provides fund management and investment advice for nonprofit institutions."
Summary of the Scope, Approach, and Research Method: Introductory piece for investment committees
Summary of Key Findings or Insights

- Endowments differ relative other investments in that the funds are invested forever.
- Endowments are governed by the UMIFA, Uniform management of investments funds act
- UMIFA lets investors consider total return over just income generation.
- Endowments function to support the operating budget and provide a financial reserve (in cases of emergency, expansion).
- Board determines endowment purpose, creates IPS which is regularly reviewed.
- IPS considers Role of the endowment in
- supporting the organizations mission – short term (operating budget) vs. long term (financial cushion/operating budget for future generations)
- contributing to the balance sheet's assets
- rate of withdrawal, rate of re-investment from realized gains
- investment strategy (asset allocation)
- delegation of authority to fund managers, if any
- increasing endowment withdrawal for the purposes supporting the operating budget to keep pace with the rate of inflation risks the total endowment value in a "bad year."
- smoothing rule to average payouts over five years
- choose your return required and then choose assets (backwards from another suggestion that proposes choosing level of acceptable risk first)
- review allocation and rebalance annually
- MPT, modern portfolio theory, which now guides investment decisions, argues that higher risk of an asset provides higher return. Risk can be managed by diversifying across assets classes, particularly those with low correlation to each other.
- Software can help determine possible returns relative various asset allocations.
- Asset allocation is one of the primary responsibilities of boards/investment committee.
- Commonfund recommends outsourcing investment management – which is their business.
- Look at a potential manager for conflict of interest/connection to the board.

- Put expectations of investment officer, trustees and consultants in writing so that each party knows and understands its obligations.
- In order to preserve the value of the endowment, it must grow at a rate equal to the spending rate, plus inflation, plus management fees.
- John Bogle:
- On average, active management fails to beat market benchmarks. With a large enough pool, active management will beat the market. Thus, average active management will perform below the market after management fees.
- Use a board market index to contain costs.
- Over time, international funds provide no superior value.
- Consultants have a conflict of interest in recommending indexing funds because it would mean a short term job for them.
- Investment committee should meet regularly
- Make asset class allocation targets and justify them
- One argument that a conservative approach risks more than an aggressive one – because of inflation.
- The market has shown above average returns over the last few decades. Previous to that, if an endowment used a 5% spending rate, total endowment value would decline.
- Diversification outside the traditional US stock and bonds may help to deal with the problem above.
- Spend less of endowments funds in good times so as to create more of a cushion for bad times.
- Valuation for assets is based on a single point in time – liquidating those assets, if large enough, could distort their value.
- Valuation can be made on a bid or ask price, each producing different values.

Weaknesses and Limitations
The shortest section of the paper is cost management. Perhaps this is because Commonfund does not want potential (existing) customers analyzing their cost structure too closely.

Can Timber Rebuild Harvard's Endowment?
Michael McDonald, September 20, 2012
Type of Work: News article on Harvard endowment
About the Author(s): Michael McDonald is a reporter for Bloomberg News.
Summary of the Scope, Approach, and Research Method: News article on Harvard endowment
Summary of Key Findings or Insights
- 10% of Harvard's endowment is in timberland
- By the CIO of Harvard's endowment's own admission, other endowment's don't have the resources she does to do the research into alternatives.
- Harvard cashed out on certain timberland holdings three (of ten) years early, because other endowments were driving up the price via increased demand.

Weaknesses and Limitations

Short news article doesn't offer in depth analysis.

Other Comments

It's extremely interesting that Harvard sold it timberland holdings early. This speaks EXACTLY to what Humprehys discuss in his piece – this overcrowding of a small alternative market. This is driving up prices in this market precisely because endowments are participating.

Asset Allocation and Portfolio Performance: Evidence from University Endowment Funds

Keith C. Brown, Lorenzo Garlappi & Cristian Tiu, March 31, 2009

Type of Work: Statistical Study

About the Author(s): Keith C. Brown, CFA, University Distinguished Teaching Professor & Fayez Sarofim Fellow, McCombs School of Business, Department of Finance, The University of Texas at Austin

Lorenzo Garlappi, Associate Professor, TSX Venture Exchange Professorship in Finance, Department of Finance, Sauder School of Business, University of British Columbia

Cristian Tiu, Assistant Professor, Finance and Managerial Economics Department

Summary of the Scope, Approach, and Research Method

Statistical analysis of pension fund and mutual funds returns from mid 80's to mid 2000s using NACUBO data

Summary of Key Findings or Insights

- Posits that security selection (active management), not asset allocation (including asset allocation into alternatives), accounts for the returns of the largest endowments.
- Unsurprising, large endowment have a larger allocation to alternatives than small endowments.
- Calculations posit that asset allocation accounts for 75% of returns on average.
- Security selection separates returns.
- Active management, in this sample pool, outperforms passive management.
- lLarger endowments outperform the smaller ones.
- Endowments overweight assets that they the ability to actively manage exceptionally.

Weaknesses and Limitations

- The mathematical computations are difficult to follow/understand.
- Lots of room to explain, in layman's terms, findings. Though the authors fails to take that opportunity.
- Data tables lack descriptors, making the data all but useless to those statistically wired.

Other Comments

From what I understood, it makes sense that active management can account for returns over asset allocation. The big institutions have the resources that enable them to do so.

Assessing endowment performance: The enduring role of low-cost investing
Vanguard Group, October 2012
Type of Work: Statistical analysis
About the Author(s): Not for profit investment services
Summary of the Scope, Approach, and Research Method: Compared NACUBO endowment study with own calculations from Morningstar
Summary of Key Findings or Insights

- Posits that endowments would be better investing in low-cost traditional vehicles as opposed to exotic alternatives.
- Large endowments directly invest in alternatives, where half of small endowments invest in funds of funds.
- Using the low-cost method also created higher returns when adjusted for risk.

Weaknesses and Limitations
Fails to consider volatility of returns in analysis.

Secrets of the Academy: The Drivers of University Endowment Success
Josh Lerner, Antoinette Schoar, and Jialan Wang, 2008
Type of Work: Statistical study
About the Author(s): Josh Lerner is the Jacob H. Schiff Professor of Investment Banking, Harvard Business School Boston, Massachusetts.
Antoinette Schoar is the Michael M. Koerner Associate Professor of Entrepreneurial Finance, Massachusetts Institute of Technology, Cambridge, Massachusetts.
Jialan Wang is a doctoral student in Financial Economics, Sloan School of Management, Massachusetts Institute of Technology, Cambridge, Massachusetts.
Summary of the Scope, Approach, and Research Method
Analyzes endowment returns relative other variables.
Summary of Key Findings or Insights

- Says high portfolio returns are a function of endowment size and use of alternatives.
- Endowment size is a better predicator of return than allocation to alternatives.
- Ivy league schools lead the way with allocation to alternatives, trailed by the categories of those institutions with large endowments. Private schools barely have alternative holding above average.
- Suggests that ivy league returns are correlated to their level of available expertise, given they the most experience investing in alternatives
- This in part due to the large institutions ability to pay for such talent – upwards of $30 million salaries in some instances.
- Relationships and organizational structures set top performing endowments apart.

Smart Institutions, Foolish Choices?
Josh Lerner, Antoinette Schoar, and Jialan Wang, February 2005
Type of Work: Statistical study
Summary of the Scope, Approach, and Research Method: Statistical analysis
Summary of Key Findings or Insights

- Different classes of institutional investors have received different returns for private equity investments.
- Endowments show the highest return for this asset class, with the greatest ability to forecast future growth. Other institutions tend to chase performance.
- Endowment's superior performance in private equity may be their earlier access/selection of active managers.
- The more successful private equity deals are from veteran managers.
- Endowments being the first to invest in Private Equity, have the most experience, and thus correlate to the highest returns.
- Lower returns may be a function of inexperienced investment staff. As they become more experienced, they leave lower positions for higher salaried opportunities.
- Banks, when running a private equity offering, have conflicts of interest that may return a loss on private equity investment, but generate fees for the banks.
- Private universities have the highest returns for private equity.
- Data shows that funds of funds chase performance, and thus returns suffer. Banks and advisors show a high tendency to chase performance.
- Endowments invest in venture capital at a higher rate than buy out, and those follow up funds perform better than follow up funds of other categories of institutional investors.
- Endowments are able to pick the best performing general partners.
- The top 25 percent of endowments skew the entire class's performance upwards.
- Endowments of universities with higher rankings and high alumni giving have higher returns.
- Funds selected by investment advisors and bank perform poorly.

Weaknesses and Limitations
Mentions that the top 25 endowment skew VC performance, but does not go in depth to the degree of which.

Other Comments
It is the resources of these optimally performing endowments that has them perform so highly, not their allocation to alternatives.

Appendix F: CSSO Net of Fees Estimate

Fees for AUM vary. Many portfolio managers will charge a rate that declines as AUM increases. For example, a portfolio manager may charge 0.9% for the first million under management, and 0.5% for the successive million under management.
Precise information as to CSSO's net of fee performance was not available. However, for certain years, CSSO's AUM figures, as well as amount paid in fees *were* available. With a little extrapolation, net of fee performance can be estimated.

CSSO's 990's provided the amount of fees paid to investment managers for years 2006 through 2010. The same 990s reported year start, and year end assets under management. By dividing the dollar amount in fees paid by the year's average of AUM, one arrives at a percentage of AUM, expressed as the possible fees paid to money managers. Due to the numerous variables ignored and inaccuracy of this technique, the resulting fee calculation was halved in an effort to be conservative. The lowest fee estimate was applied to years absent data.

Again, the process is surely inaccurate; halving the calculation undoubtedly grossly *under*estimates the total amount of fees paid to outside money managers.

CSSO 10 Year Performance Gross of Fees, and Net of Estimated Fees								
Calendar Year	**Gross Return**	**Investment Fees, per 990**	**Year Start AUM**	**Year End AUM**	**Year Average AUM**	**% Fees of Year's Average**	**1/2 Estimated Fees**	**Estimate Return Net of Fees**
2003	25.96%						0.35%	25.61%
2004	14.96%						0.35%	14.61%
2005	10.59%						0.35%	10.24%
2006	14.73%	$33,054	$ 4,507,840	$ 4,217,023	$ 4,362,432	0.76%	0.38%	14.35%
2007	9.25%	$29,834	$ 4,217,023	$ 4,276,003	$ 4,246,513	0.70%	0.35%	8.90%
2008	-33.31%	$24,285	$ 4,276,003	$ 3,279,451	$ 3,279,451	0.74%	0.37%	-33.68%
2009	29.58%	$20,041	$ 3,279,451	$ 1,940,385	$ 1,940,385	1.03%	0.52%	29.06%
2010	13.46%	$16,461	$ 1,940,385	$ 1,160,337	$ 1,550,361	1.06%	0.53%	12.93%
2011	-2.32%						0.35%	-2.67%
2012	11.23%						0.35%	10.88%
Annualized Return	**7.90%**							**7.50%**
Total Return	**113.83%**							**106.15%**

Table 36 - CSSO 10 Year Performance Gross of Fees, and Net of Estimated Fees

Appendix G: CSSO's Problematic Portfolio

Conflicts Of Interest

The literature review raises troubling issues that manifest when trading mutual funds: *sales loads,*[39] *stale dollar trading*, and *soft dollars* (i.e. kickbacks) (Swensen 2005). The sales load is essentially a wealth transfer from investor to broker.

The successful investor avoids fees whenever possible. The succesful broker, however, looks to collect fees whenever possible. A portion of the mutual fund load (fee) go into the broker's pocket (Bogle 2007, Bernstein 2010, Malkiel 2012, Swensen 2005). The frequency of CSSO's portfolio manager trading, and the manager's use of loaded mutual funds, manifests the conflict of interest inherent in the broker/client structure. Each trade executed generates income for the portfolio manager, to the detriment of CSSO's wealth. One could even make the argument that CSSO's portfolio manager is frequently trading not for the purposes of generating higher returns, but to generate more fees for himself.

Stale dollar trading is the effect of arbitrage on a mutual fund closing price. Mutual funds, unlike modern exchange traded funds (ETFs) are bought or sold at a price specified at the day's end. While the specifics of this arbitrage are beyond the scope of this paper, know that a savvy arbitrager could use this phenomenon to his advantage, extracting wealth for himself at the expense of the mutual fund shareholder. In this instance, that mutual fund shareholder is CSSO.

Soft dollars are kickbacks that a broker receives from a mutual fund services company for selling that company's mutual fund. Money is extracted out of the mutual fund shares, travels into the mutual fund company's balance sheet, and from there, a portion of that money moves to the broker's pocket (Swensen). This equates to a smaller investment return offered by the mutual fund.

To see another example as to how and why active management failed CSSO, read on.

Case Study of a Mutual Fund -Why do actively managed funds underperform their benchmark?

CSSO's portfolio manager is underperforming simple index funds. An analysis of one of CSSO's holding may explain why.

Consider the first holding listed on CSSO's regular statement from its portfolio manager: the Blackrock Equity Dividend Fund (ticker: MDDVX). As a point of comparison, reference Vanguard's Dividend Growth Fund Investor Shares (VDIGX). The Vanguard fund has not only outperformed Blackrock's fund by a slight margin, but has done so with less volatility, and at a fraction of the expense ratio.

Naturally, any analyst can go back in time to make the observation, "but if you had done in this instead…" The point here is that Vanguard functions as *the* low-cost purveyor of investment products by which other investment products (read: mutual funds and Exchange Traded Funds) are judged. CSSO's portfolio manager originally entered into

[39] A sales load is a fee charged for a mutual fund transaction. The more frequently loaded mutual funds are traded, the more frequently these funds are charged.

the position in 2009, and continues to purchases more shares (26 more times as late as May 1st, 2013). A simple analysis at any point before any further purchases would have revealed the fund's underperformance relative the low-cost Vanguard option.

Holding	BlackRock Equity Dividend Fund Investor A Shares	Vanguard Dividend Growth Fund
Ticker	MDDVX	VDIGX
3 Month	5.83%	8.68%
1 Year	13.90%	17.33%
3 Year	12.29%	13.67%
5 Year	4.35%	7.46%
10 Year	10.07%	10.12%
Exp. Ratio	0.99%	0.31%
Standard Deviation	13.17	12.2
Sharpe Ratio	0.91	1.07
12-1b fee	0.25%	None

Table 37 - Vanguard vs. Blackrock Fund Comparison

Further analysis shows that the BlackRock fund manifested substantial growth relative the S&P 500 and large value benchmarks beginning mid 2004 until mid-2008. Its performance since then has failed to keep up with the same benchmarks. With CSSO's portfolio manager originally entering into the position in 2008, this begs the question, "Is CSSO's portfolio manager chasing performance?"

With comparable products on offer, why did CSSO's portfolio manager opt for the more expensive, and poorer-performing, option? To rephrase the question, "CSSO's portfolio manager is paying more to get less in way of investment returns. Why?" One can only hypothesize, though the literature digest suggests some possibilities for this seeming error in logic: soft dollar trading (read; kickbacks) (Swensen, Unconventional Success: A Fundamental Approach to Personal Investment). The existence of a quarter of a percent (0.25%) 12-1b[40] fee speaks to the inefficiency that is an investment in BlackRock Equity Dividend Fund Investor A Shares.

To put it more clearly, a possible reason why the portfolio manager of CSSO's investments choose to continually invest in a poor performing mutual is because that mutual fund company is paying that portfolio manager to do so via soft-dollars.

[40] 12-1b fees are marketing fees for the mutual fund. Essentially, a 12-1b fee is the cost for advertising. Only some funds (read: expensive actively-managed funds) have these fees.