Failure of the Standard Model of Institutional Investment

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Comments Welcome

<u>Abstract</u>

Large institutional investors in the U.S. commonly diversify their portfolios among 8-12 asset classes. This approach typically involves using 100 or more investment managers at a cost of 1-2% of asset value annually. We refer to this as the Standard Model of Institutional Investment. It has failed to provide diversification benefits and proven to be a serious drag on performance. We propose an alternative approach that employs just two asset classes: a versatile Passive Core and a flexible, efficient Active Portfolio. The Active Portfolio is where the action takes place. Here there are no asset-class silos to be filled and diversified; silos merely serve as constraints in selecting the most promising investments. The proposed approach maximizes freedom of choice, while enabling the investor to reconcile (1) the need for diversification, (2) scarce mispricing opportunities and (3) cost.

Trustees of public pension funds and large endowments in the U.S. are in a bind. With the help of staff, consultants, asset managers, assorted pundits and a media chorus, they have rationalized the division of their portfolios into as many as a dozen different sub-portfolios, commonly known as asset classes. Additionally, they behave as if they believe they can beat the market with 100 or more asset managers, which they compensate to the tune of 1-2% of the value of their assets each year. None of this is working for them, and certainly it is not working for the stakeholders of these funds. Ennis (2020) found that public pension funds collectively have underperformed passive investment by 1.0% per year and large endowments by 1.6% per year. It is time for fiduciaries to recognize that they have not merely been unlucky. Rather, their *strategy* has failed them.

THE STANDARD MODEL

Under what we refer to as the Standard Model[1] of Institutional Investment, the investor identifies a number of *asset classes* that, in the investor's eye, offer the promise of a satisfactory return for the associated risk, i.e., an adequate risk premium. The asset classes include various sub-categories of stocks and bonds. They also include a number of forms of *alternative* investment, such as:

- Leveraged buyouts
- Venture capital
- Private-market real estate
- Hedge funds
- Managed futures
- Various forms of high-risk debt
- Infrastructure
- Natural resources / commodities

Advocates of the Standard Model generally believe that alternative investments transact in markets that are less efficient than stock and bond markets. To the extent this perception is accurate, it provides skillful investment managers with the opportunity to exploit mispricing, adding an active-management premium to the risk premium.
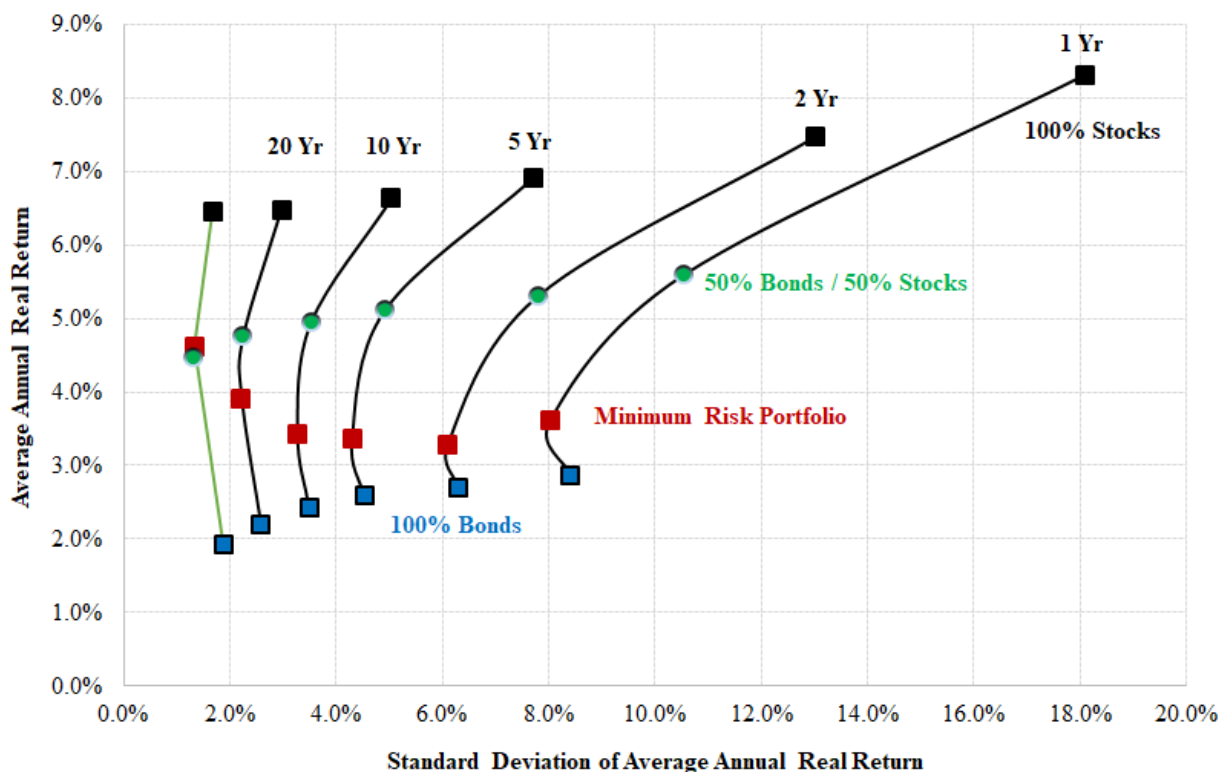
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[1] With apologies to the particle physicists.

A Diversification Effect Like that of Stocks and Bonds

Common stocks provide the expectation of growth with uncertainty. Bonds provide a lesser expected return with relative stability of return. (Bills provide the least return over the long run but with year-to-year certainty.) These are integral features of securities that derive from the design of the instruments and their associated cash flow patterns. By virtue of these fundamental differences, stocks and bonds exhibit consistent patterns of *relative* volatility over time: bonds regularly exhibit a fraction of the volatility of stocks. Furthermore, the average correlation of stocks with bonds in the U.S. has averaged a mere 0.17 during the 44 years ended December 31, 2019, with an upper bound of 0.64 and a lower bound of -0.47.[2] For these reasons, stocks and bonds have proven to be reliable building blocks in bringing about the diversification effect shown in Exhibit 1, resulting in an *efficient frontier* consistently convex in the direction of the vertical axis.

Exhibit 1
The Stock-Bond Diversification Effect
Periods Ended December 31, 2019

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[2] Correlation coefficients are calculated as 36-month moving averages over the 44-year period. Stocks are represented by the S&P 500 index and bonds by the Bloomberg Barclays Aggregate bond index.

The chart plots Average Annual Real Return (y-axis, 0.0% to 9.0%) against Standard Deviation of Average Annual Real Return (x-axis, 0.0% to 20.0%), showing efficient frontier curves labeled 20 Yr, 10 Yr, 5 Yr, 2 Yr, and 1 Yr, with markers for 100% Stocks, 100% Bonds, 50% Bonds / 50% Stocks, and Minimum Risk Portfolio.

Advocates of the Standard Model ascribe these same diversifying features to alternative assets, as well. Their returns are sometimes described as "uncorrelated" with traditional assets and one another. In practice, asset-class returns tend to be positively correlated to some extent, just not perfectly. Even so, imperfect positive correlation is sufficient for a diversification effect to kick in, and the inclusion of alternatives would provide a further bump up in expected return per unit of risk.

Emphasis on Alternative Investments

Most alternative asset classes are actually *active investment strategies* for which there is no passively investable equivalent. Selecting one's asset classes is largely a subjective affair — beauty being in the eye of the beholder. There is no universal set of "approved" asset classes (beyond stocks and bonds) from which to choose. Nor are there hard-and-fast rules governing the weighting of asset classes. Typically, the number of asset classes used is 8 to 12, and they tend to be fairly static once adopted. Exhibit 2 shows the principal asset classes used by large endowments as reported by NACUBO. The aggregate value of alternative investments is just shy of 60% of the value of the NACUBO composite of

endowments with assets greater than $1 billion. Alternatives made up 28% of public pension portfolios in 2019.[3]

Exhibit 2
Asset Allocation: Large Endowments vs. Opportunity Set
June 30, 2019

Asset Class	NACUBO Large Endowments	Opportunity Set	Over/ Underweight
U.S. Equity	14.3%	32.2%	-17.9%
Non-U.S. Equity	17.0	16.1%	0.9%
Public Fixed Income	9.3	41.4%	-32.1%
Subtotal Traditional Assets	**40.6%**	**89.7%**	**-**
Real Estate	6.2	1.1%	5.1%
Venture	9.0	1.0%	8.0%
Leveraged Buyouts	13.6	2.2%	11.5%
Hedge Funds	20.5	3.4%	17.1%
Private Debt	1.2	0.9%	0.3%
Infrastructure and Natural Resources	6.3	0.9%	5.5%
Other[4]	2.4	0.8%	1.6%

[3] See Public Plans Data at the Center for Retirement Research, Boston College.
[4] For Large Endowments, "Other" includes commodities, REITs, and short-term securities/other categories. For Opportunity Set, "Other" includes "Growth" and "Other" private equity assets.

Subtotal Alternative Investments	59.4%	10.3%	-
Total	100.0%	100.0%	-

Exhibit 2 also includes our characterization of the composition of U.S. institutions' investment opportunity set, which had an aggregate value of $94 trillion in 2019.[5] Alternative investments, collectively, account for just 10% of the opportunity set; individual alternative asset categories — at 1% to 3% each — are mere slivers of the whole. The difference between the average allocation and the opportunity set is striking in that the endowments heavily overweight alternative assets at the expense of domestic stocks and bonds. One view of the large differences between actual allocations and the opportunity set is that, in fact, they represent large active *bets* more so than diversification. Under an equilibrium-asset-pricing interpretation of markets, such as CAPM, the "bets" reflect a strong non-consensus view of expected return, variance and covariance for the asset classes. For some observers, this has raised a cautionary flag about the heavy emphasis on alternative assets. We seek to shed light on this issue in the present paper.

Cost

The cost of investing has risen markedly with the advent of alternative investing. We posit that equity-oriented portfolios of marketable securities cost the investor 0.5% to 0.9% of asset value, the percentage varying with fund size, the mix of stocks and bonds, the use of passive versus active management and turnover rates. This serves as an indication of the level of institutional investment expense prior to the introduction of alternative investments. The cost of alternatives begins at about 1% of asset value for open-end diversified (core) equity real estate funds. Estimates of the cost of private equity investing approximate 6.0% of invested capital.[6] The cost of hedge funds, non-core real estate and private debt fall between the extremes. We estimate the cost of a typical portfolio of diverse alternative investments to be in the range of 2 to 4% of asset value annually. We estimate that across the spectrum of institutional investors, their cost of investing at the total-fund level ranges from 1 to 2% of assets. In our empirical work (Ennis, 2020), we estimated the average investment expense for

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[5] Public Fixed Income includes U.S. taxable, investment-grade bonds as represented by the Bloomberg Barclays Aggregate U.S. Bond Index. The composition of the U.S. and non-U.S. Equity components match the respective compositions of the Russell 3000 Stock Index and the MSCI ACWI ex-U.S. Stock Index. All components are market value weighted with the exception of the U.S. and non-U.S. Equity components, which are weighted 2:1 U.S.: non-U.S., to reflect our estimate of the home-county bias observed on the part of U.S. institutions. Sources include NACUBO, SIFMA, McKinsey and BarclayHedge.
[6] See McKinsey & Co. (2017) and Phalippou and Gottschalg (2009).

public pension funds at 1.1% of asset value annually. We estimated the average cost for large endowments, with roughly twice the exposure to alternative investments, at 1.7% of asset value annually.[7]

The Goal

Exhibit 3 illustrates the desired outcome from skillful implementation of the Standard Model. It shows the classic frontier of portfolio theory, consisting of a series of passively-invested combinations of stocks and bonds. Resting atop that frontier is another, comprising a larger number of imperfectly correlated asset classes such as those shown in Exhibit 2. Finally, a hypothetical portfolio, reflecting skillful active management of and within the several asset classes, is plotted above that. It is superior to any portfolio outcome lying on either frontier. This is what the Standard Model is all about — maximizing risk-adjusted return by combining many "uncorrelated" asset classes and employing skillful active management. The next section examines how well the Model has performed.

Exhibit 3
Hypothetical Efficient Frontiers
With Skillful Active Management

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[7] See Ennis (2020) for discussion of the derivation of the cost estimates.
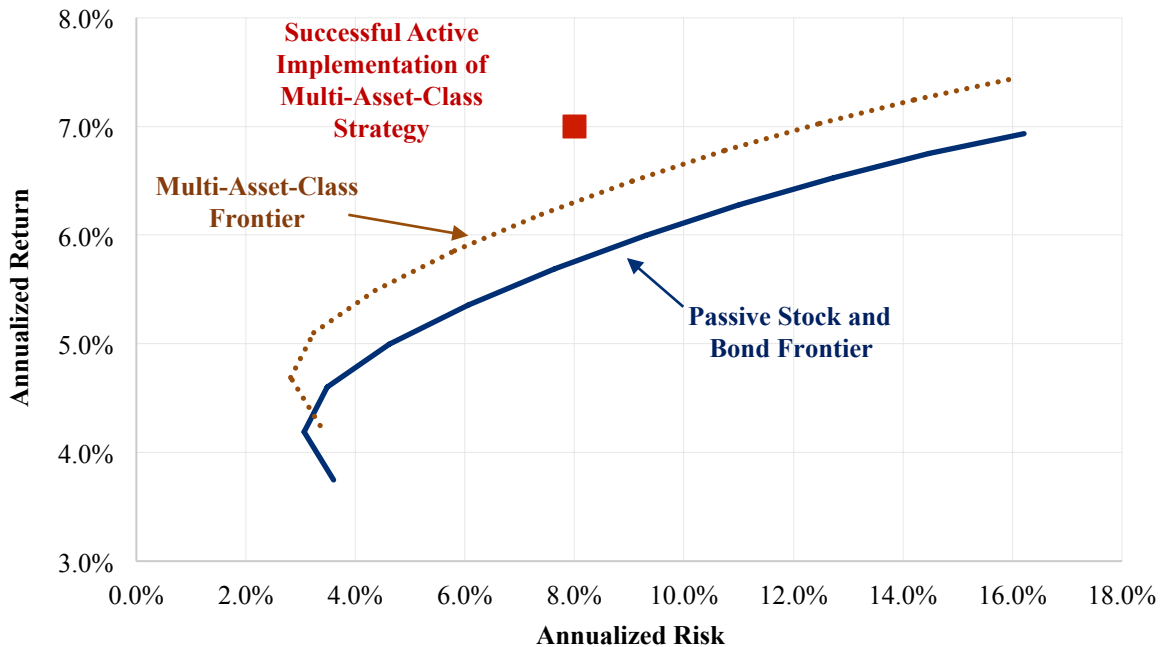
PERFORMANCE OF THE STANDARD MODEL

Early Success Accompanied by Market Transformation

The Standard Model performed well during what we have described elsewhere as the *Golden Age of Alternative Investments*.[8] Between June 30, 1994, and June 30, 2008, NACUBO's composite of large endowment funds achieved an average annual excess return of 410 bps (relative to a passive stock-bond benchmark). Principal sources of excess return then were hedge funds, private equity (venture and buyouts) and real estate. During the Golden Age, however, things changed. Those alternative markets themselves began evolving dramatically. The impetus was the flood of money that poured into private markets and hedge funds in that era and in the years that followed. For example, between 1995 and 2018 the value of publicly-traded REITs in the U.S. grew 25-fold, from $50 billion to $1.250 trillion.[9] As Pagliari et al. (2003) put it, "...improved market efficiency, increased market capitalization, and better data availability are all contributing to a more seamless real estate market, where public and private market vehicles display a long-run synchronicity...." Hedge fund assets under

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[8] See Ennis (2020a), which identifies three distinct eras of endowment performance between 1974 and 2019.
[9] See FTSE NAREIT Real Estate Index Historical Market Capitalization, 1972 - 2018 (NAREIT) and REIT Industry Monthly Data for December 2019 (NAREIT 2019).

management increased 27-fold between 1997 and 2018. Private equity assets under management increased 37-fold between 1994 and 2019.[10] As a result, pricing in those markets became better aligned with public-market pricing. Exhibit 4 shows correlation coefficients among principal asset classes beginning in 2009. The average correlation of the four alternative investment categories with U.S. equities is 0.89. As alternative investments' pricing became better aligned with that of public markets, the alternative markets became more efficient, and their returns were subsumed by underlying beta, as elaborated upon in the next section.[11]

Exhibit 4
Correlation Matrix
11 Years Ended June 30, 2019

Correlation Matrix of Fiscal Year Annual Returns	Bloomberg Barclays Aggregate	Russell 3000	MSCI ACWI ex US	Cambridge Real Estate	Cambridge Venture Capital	Cambridge Private Equity	HFR Fund-of-Funds Composite
BB Aggregate Bonds	1.00						
Russell 3000 Stocks	-0.34	1.00					
MSCI ACWI ex-U.S. Stocks	-0.38	0.96	1.00				
Cambridge Real Estate	-0.37	*0.88*	0.74	1.00			
Cambridge Venture Capital	-0.23	*0.77*	0.68	0.80	1.00		
Cambridge Private Equity	-0.29	*0.98*	0.93	0.87	0.78	1.00	
HFR Fund-of-Funds Composite	-0.47	*0.94*	0.91	0.83	0.79	0.95	1.00

Post-GFC (Global Financial Crisis) Performance

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[10] Hedge fund assets under management in 1997 totaled approximately $118 billion. The figure grew twenty-seven-fold to $3.2 trillion in 2018 with much of the influx occurring in a handful of years leading up to the Great Financial Crisis. Private equity assets under management of $100 billion in 1994 grew thirty-seven-fold to $3.7 trillion in 2019. (Sources: HFR (2019); Preqin 2019 Global Report; Federal Reserve Bank of Dallas, December 1995.)

[11] See Ennis (2020) for a fuller discussion of the evolution of alternative investment markets over two decades.

We evaluate the performance of two institutional investor composites. One includes 46 large public employee pension funds in the U.S.[12] The other composite is NACUBO's cohort of approximately 100 endowments with assets greater than $1 billion. Fund returns are net of all costs. Both composites equal-weight individual funds. We devised a benchmark for both composites using the returns-based style analysis originated by Sharpe (1988, 1992) using three indexes: Russell 3000 for U.S. stocks, MSCI ACWI ex-U.S. for non-U.S. stocks and Bloomberg Barclays U.S. Aggregate bond index for U.S. investment grade bonds. Both benchmarks are roughly 70% stocks and 30% bonds.[13] We regressed the composites' returns on their respective benchmark returns for the 12 years ended June 30, 2020, to evaluate their performance in risk-adjusted terms. Exhibit 5 illustrates the results, which are strikingly similar. In fact, we overlay the endowment regression on that of public funds in order to emphasize their near-congruity. Both regressions have a very tight fit, with R^{2}'s of 99% (for public funds) and 98% (for endowments), and standard errors of regression of 1.5% or less. It is worth emphasizing that these are two entirely different sets of institutional actors and investment portfolios. But in terms of their performance footprints, the two are so similar as to be virtually indistinguishable. For example, taking a close look at Exhibit 5 you will see that 9 of the 12 annual endowment plot points (in orange) are so close to their pension fund mates (in blue) as to at least partially obscure them. In the same vein, at first it may not be clear whether there are two regression lines or a single blurry one. The only meaningful distinction between them is the difference in intercepts (alphas). The endowment alpha of -1.57% exceeds the pension fund alpha of -1.14% by 43 bps. This is the approximate margin of incremental cost incurred by the endowments, and which in turn is attributable to their having an average of nearly 60% invested in pricey alternatives compared with about half as much in the case of the pension funds.
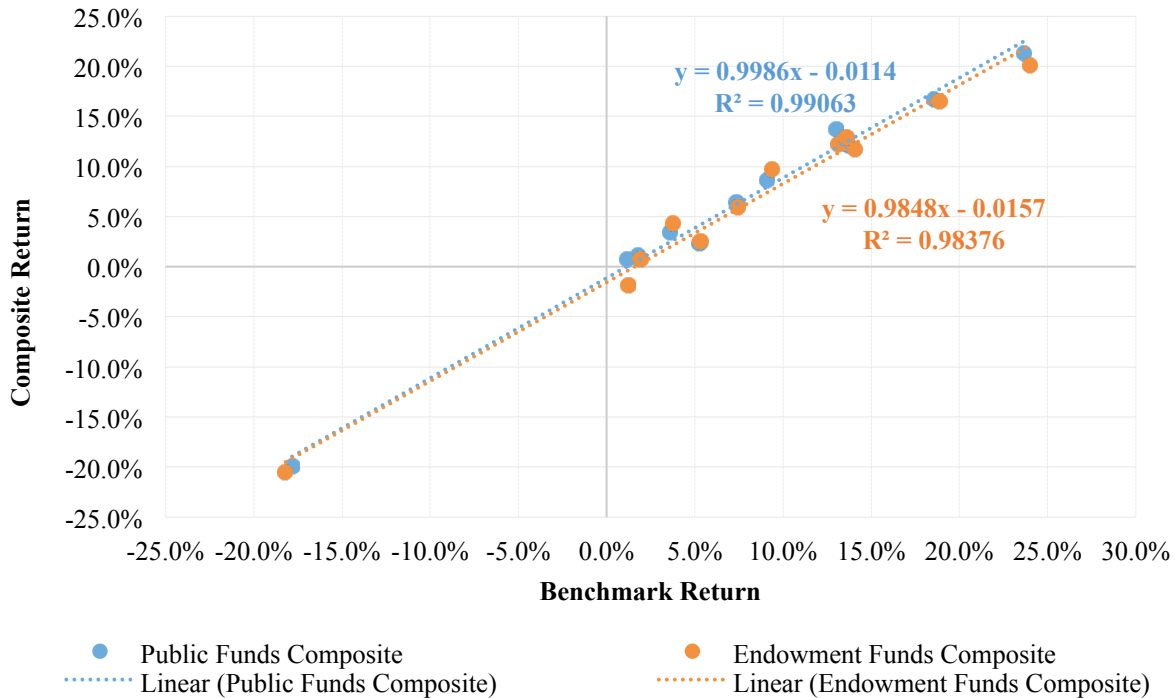
Exhibit 5

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[12] See Ennis (2020) for details of the construction of the public fund composite.
[13] The public fund benchmark is 53% U.S. equities, 17% non-U.S. equities and 30% bonds. The endowment benchmark is 56% U.S. stocks, 16% non-U.S. stocks and 28% bonds.

**Public Fund and Endowment Composite Returns
Versus Stock-Bond Benchmarks
(12 Years Ended June 30, 2020)**

In addition to illustrating the underperformance of the two composites, Exhibit 5 also demonstrates that stock and bond indexes have captured the return-variability characteristics of alternative investments in composites of institutional funds for all intents and purposes. Alternative investments have not had a meaningful impact on their risk-return signature. Rather, alternative investment returns simply blend in with broad market returns in the context of standard portfolio analysis. As a result, the composites earned market returns *minus* their respective margins of cost.

Exhibit 6 illustrates the same result in a slightly different way, namely, using the efficient frontier concept. The frontier itself comprises combinations of passively managed global stocks and investment-grade U.S. bonds.[14] Plotted there as well is the public fund composite and that of large endowments, both of which lie beneath the passive portfolio frontier.[15]

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[14] As with the opportunity set, the proportion of U.S. stocks to non-U.S. is two to one.

[15] Ennis (2020 and 2020a) are comprehensive empirical studies of the performance of public pension funds and large endowments in the U.S. They provide further evidence of significant underperformance on the part of these institutional investors post-GFC.

Exhibit 6
Actual Return and Risk
12 Years Ended June 30, 2020
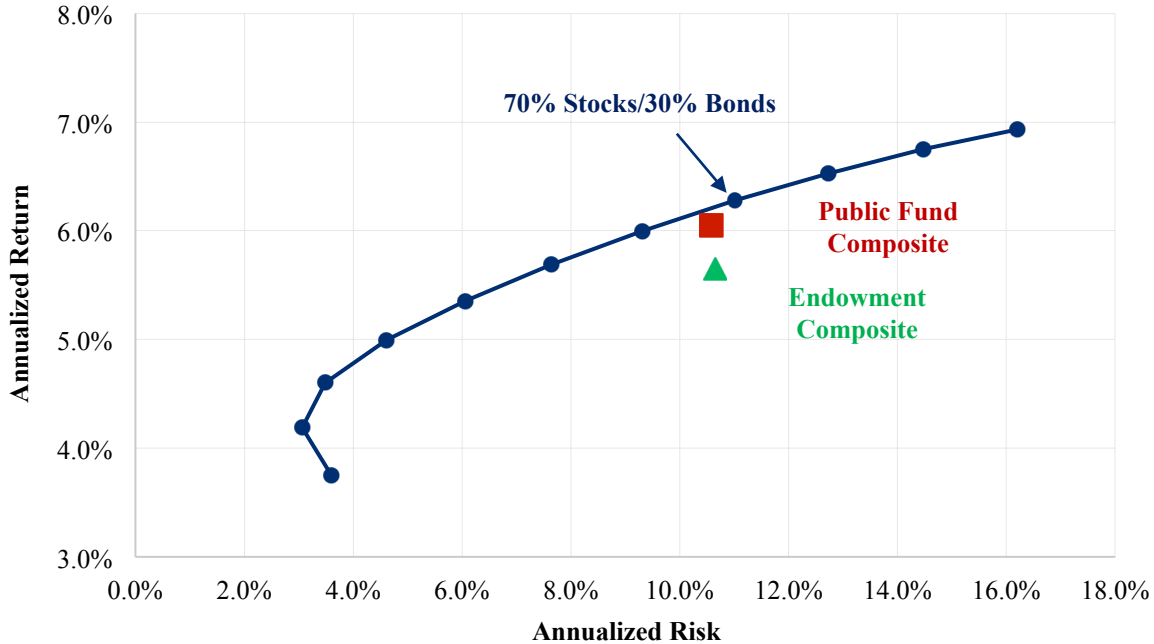
In short, the Standard Model failed to achieve the intended goal of providing superior risk-adjusted performance over the last 12 years. In the next section, we delve into reasons for the failure.

REASONS FOR THE FAILURE OF THE STANDARD MODEL

Three factors have contributed to the failure of the Standard Model of institutional investment.

1. No Diversification Benefit and No Alpha

No Diversification Benefit. A fundamental flaw of the Standard Model is that it inappropriately ascribes to alternative investments a diversification benefit like that of combining stocks and bonds. Exhibit 5 shows that alternative investments played no discernible role in the diversification of institutional portfolios in the post-GFC era. Their return variability was explained by stocks and bonds alone for all intents and purposes. (See the appendix for additional analysis of the performance of endowments. That analysis indicates that the basic risk-

return signature of endowments in the post-GFC period was actually not all that different from that of the preceding era, the Golden Age of Alternative Investments, with the implication that there never was a meaningful diversification benefit associated with alternative investments.)

No Alpha. During the Golden Age of Alternative Investments (FYs 1994-2008), eye-popping *alphas* were mistaken, in part, at least, for enduring diversification effects such as those associated with stocks and bonds in combination. Alternatives' great run as active investments came to an end at about the time of the GFC. Exhibit 5 reveals significant negative alphas for institutional funds that approximate their cost. Exhibit 7 shows the excess return of real estate, buyouts and hedge funds for the 15 years ended June 30, 2008, and for the 11 years that followed, revealing a sharp turnabout in excess return for these alternatives.[16] In summary, there is no evidence of even a pre-cost alpha in either composite during the post-GFC era.

Exhibit 7
Excess Annual Return for Three Types of Alternative Investments
Before and After the GFC

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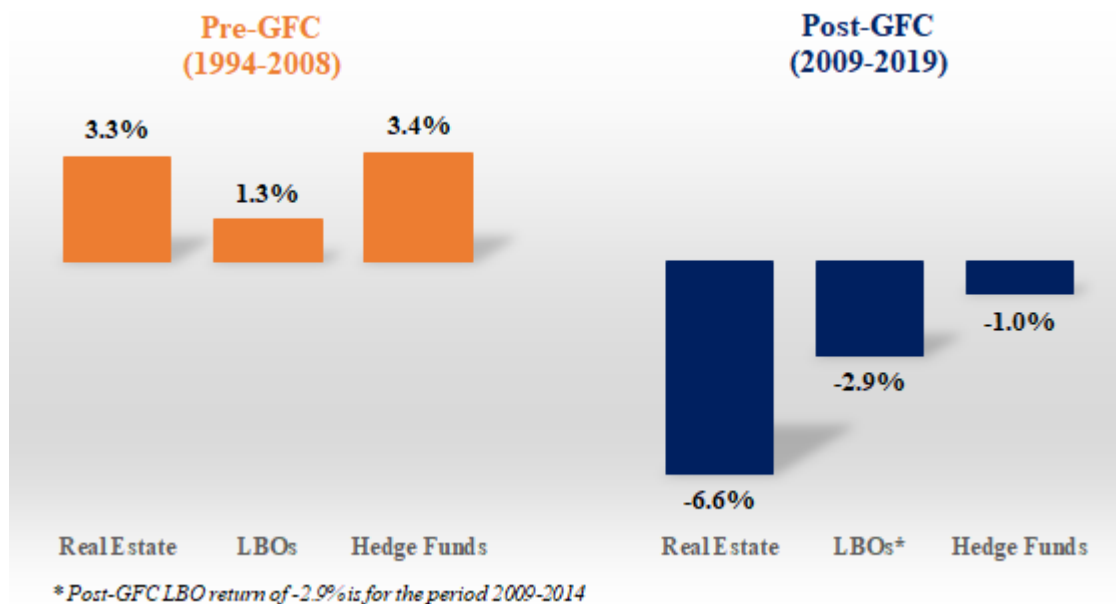
[16] For real estate, we subtract the returns of the FTSE NAREIT All-Equity REIT Index from those of the Cambridge Associates Real Estate Index, using quarterly IRRs to estimate TWRs for the Cambridge series. For buyout funds these are the average excess returns reported by L'Her et al. (2016) in Tables 3 and 4 for size-, leverage- and sector-adjusted returns. The hedge fund excess returns are as reported by Sullivan (2020).

2. High Cost Combined with Extensive Diversification

The level of investment expense is another factor contributing to the poor performance of the Standard Model. As mentioned above, we have estimated the cost of investment for public funds and large endowments at 1-2% of total asset value. At the same time, institutional funds are extensively diversified, having R^2's with the market mostly in the range of .90 to .99+; the great majority of funds have active risk (standard deviation of non-market return, or tracking error) of as little as 1% to 3%. With so little active risk, the cost of investing proved to be an insurmountable hurdle for most investors in their effort to achieve a positive alpha. By way of illustration, assume a pension or endowment fund has an R^2 with stock and bond market indexes of 96% and an associated active risk of 2.0%. Assume, also, costs of 1.5% per year. If a portfolio with that degree of diversification incurs costs of 1.5% annually, the likelihood of it underperforming a passive benchmark over a decade is 99%.[17] High cost with extensive diversification is a recipe for failure.

3. Manager Proliferation

According to NACUBO, large endowments had an average of 108 managers each in 2019.[18] That is up dramatically from an estimated average of 18 in 1994, when the remarkable run of endowment performance was getting underway.[19] We estimate that large public pension funds average more than 100.[20] The funds typically use multiple managers for each of their asset classes. (Some large public funds have scores of managed portfolios in multiple private-market asset classes. A single fund of hedge funds can introduce a dozen or more managed portfolios.) Consequently, as the number of asset classes has increased, so too has the number of managers (and managed portfolios) in the interest of diversification within the asset classes. As the number of managers increases, the potential for offsetting active bets increases. And the investor becomes prone to a form of closet indexing, whereby the potential for earning alpha is smothered by uneconomic manager diversification. We address this issue at greater length in the next section.

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[17] The probability reflects the area under a normal distribution curve with a tracking error of 2.0% and incorporating a cost of 1.5% per year.

[18] This is the average number of individual manager firms. The number of individually managed *portfolios,* a most likely greater number, is not reported by NACUBO. See NACUBO 2019 Study of Endowments.

[19] The author estimated the average number of managers for 1994 from the NACUBO Study of that year.

[20] Citation required.

AN ALTERNATIVE TO THE STANDARD MODEL

It would be understandable if institutional investors, collectively, underperformed passively-investable, equivalent-risk benchmarks by, say, 10-20 bps per year. There are, after all, certain real world frictions associated with institutional investing. But that is not the case. For the last 12 years, we have observed consistent underperformance in excess of 100 bps per year. This is gross inefficiency. The analysis supports the proposition that, what we have observed is a failure of institutional investment *strategy*, and not merely a period in which some institutional investors were unlucky. There is no reason, in other words, to expect the performance pendulum to swing in the other direction. Rather, it is time for institutional investors to devise a strategy that reconciles (1) the need for diversification, (2) scarce mispricing opportunities and (3) cost in a rational way.

A simple resolution would be for institutional investors to go 100% passive at virtually no cost. Unquestionably, theory and evidence support such a course of action. Boards with the ability to adopt and adhere to such a policy would be well served by it. Theory and evidence, notwithstanding, a purely passive strategy would not be the right course of action for most institutions. Many trustees would feel that a purely passive approach would be to surrender control of their investments to the whim and caprice of the capital markets. Moreover, were institutional trustees to look about and "observe how men [sic] of prudence, discretion and intelligence manage their affairs,"[21] they would have a hard time finding other institutions pursuing purely indexed strategies. Most fiduciaries need a practicable solution that moves them in the right direction without causing them to feel they are abandoning their duty as trustees. Here we propose such a solution.

The Passive Core

The proposed approach involves just two categories of investment. The first is a *Passive Core* portfolio. Investors with a billion dollars or more can secure passive management across major asset classes for a single basis point or less. It is difficult to exaggerate the importance of virtually costless investing in a world in which the competition is routinely paying 1 to 2% of asset value annually for the management of diversified portfolios in highly competitive markets — markets that are likely to generate single-digit returns for the foreseeable future. You can

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[21] See *Harvard v. Amory* (1830).

fashion the Passive Core to have whatever characteristics you want. It can have whatever stock-bond allocation you deem appropriate in accordance with your risk tolerance. It can incorporate international stock diversification to suit your taste. Alternatively, it can be tailored to mimic the market exposures of your peer group, virtually ensuring you earn the return of the peer group *plus* a significant net-return advantage as a result of saving on investment costs of 1-2% per year. Adopting the latter strategy would place the Passive Core portfolio consistently in the top quartile of one's peer group.[22]

The Active Portfolio

Concept. The *Active Portfolio* stands side by side with the Passive Core and operates *without* asset-class silos. This is where you pursue all your best active investment ideas. No type of investment would be excluded on its face. Nor would any be included by virtue of its type, i.e., as part of a program to meet and diversify asset-class quotas. Every investment decision would be made exclusively on its merits, i.e., its potential to contribute alpha net of cost. In this vein, the essential identity of each asset would be its estimated contribution to total fund alpha, which is all that really matters in any institution's ultimate reckoning of its overall performance. This is unfettered selection.

Under this approach it is perfectly appropriate to identify multiple areas of investment that might offer potential for exploiting mispricing. Call them asset classes, if you wish, or simply areas of interest; what you call them does not matter. Freely commit research resources to any or all of the areas of interest, with a view to identifying particular, individual investment opportunities, one at a time. Think of the activity as scouting. The important thing is not to allow these areas of interest — be they hedge funds, private equity or emerging markets — to morph into silos in the course of implementation. There is simply no advantage in maintaining rigid compartments within the portfolio itself. Doing so only encourages diversification within them; at the same time, having a fixed set of silos, or compartments, impedes genuine creativity.

The Selection Challenge. In creating the Active Portfolio, it is vital that we bear in mind that this is primarily a challenge in *choosing well against the odds*

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[22] The median annualized return of the Cliffwater LLC public fund universe for the 10 years ended June 30, 2019, is 9.6%. The pubic fund equivalent-risk, passive benchmark return of 10.3% ranks in the top 22% of the Cliffwater universe. For the same period, the NACUBO large endowments median return was 9.0%. The endowment passive benchmark return of 10.5% ranks in the top 10% of the NACUBO universe for the decade. Saving on investment costs is what accounts for the superior relative performance of the passive strategy.

and not an exercise in diversification. We know that investment opportunities with positive information ratios, net of costs, are not easy to find. We know that, year after year, the great majority of active stock and bond portfolios underperform proper benchmarks; we know, too, that winners in those areas tend not to repeat, which makes identifying them in advance all the more difficult. And we know that we are likely to underperform in private equity unless we choose what will turn out to be, after the fact, top-quartile-performing partnerships, i.e., the winners.[23] In other words, we know it is difficult to win what Charles Ellis, some 45 years ago, dubbed The Loser's Game.[24]

We must appreciate, too, that people do not make assessments of skill in a vacuum or based on a checklist. Rather, they do it by *comparing* and *ranking* performers, whether they be pro athletes, musicians or asset managers. If we are to select more than one skillful actor, i.e., to build out an ensemble of skillful actors, we must accept the fact the second and subsequent choices are likely to possess a lesser degree of perceived skill, even if by an indescribably small margin. That is the nature of the process of choosing skillful actors. In the context of choosing a team of investment managers, as we move down the ranks of candidates, our degree of confidence that the next one will also be a winner tends to decline, as it must. Therefore, hiring myriad managers does not ensure them being winners. To the contrary, the law of averages works *against* us when as we seek to expand the stable of active managers.

Finally, we recommend institutional investors reexamine their manager research and selection process. The conventional consultant-assisted *beauty contest* has outlived its usefulness. We offer suggestions for sharpening the process:

- Manager selection decisions should be made by a highly experienced CIO. Under no circumstances should an investment committee make manager selection decisions. Passive investment is invariably superior to selecting managers by committee.[25]

- Maintain a dedicated team of manager *scouts* to evaluate manager candidates. These are highly experienced (and compensated) investment management professionals with no responsibilities other than identifying

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[23] See Johnson (2017), Exhibit 14.

[24] Ellis (1975) described the chronic underperformance of professional investors that persists to today.

[25] See Ennis (2020a), which reports on the long-term performance of small endowment funds. There we report that small endowments, which have no investment staff and where managers are selected by committee, underperformed passive management by an average of 120 bps per year for the 46 years ended FY 2019.

superior managers. Scouts recommend managers to the CIO. Their experience and expertise are key to succeeding with active investment managers. You cannot succeed in manager selection by means of *process*, no matter how thorough or well documented it might be.

- Scouts source manager candidates from personal experience, industry contacts, databases, brokerage connections and peers organizations. The manager research departments of one or more consulting firms can be used to leverage data collection and analysis, and to recommend promising candidates for evaluation.

There is no way to ensure success in manager selection. But experts know that the conventional manager-selection beauty contest is unproductive. Successful manager selection depends on employing a thoughtful, less conventional and better-resourced approach.

How Many Managers? We reported that the average number among endowments has risen to 108; large public funds now average more than 100. *Dear Reader: 100 or more managed portfolios for a single fund is way, way too many.* Exhibit 8 will be familiar to readers conversant with the literature of managing multiple active-investment portfolios.[26] It describes the theoretical relationship between a portfolio's level of active risk and the number of managers employed. It assumes managed portfolios are weighted equally; that each manager has active risk of 6%; and that active risk is uncorrelated among managers.[27] It shows that active risk is largely mitigated with 10 managers; using 20 managers eliminates more than 80% of the active risk associated with using a single manager. As the number of managers increases beyond 20, the potential for closet indexing via manager proliferation increases.

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[26] See Groenendijk and Gyorgy (2015)

[27] These are simplifying assumptions. Some active strategies, e.g., core bonds, will have active risk less than 6% while other strategies will have 10% or more. Six percent is considered an average figure that is in line with what can be gleaned from fund manager databases.

Exhibit 8
Theoretical Active Risk Reduction with an Increasing
Number of Managers
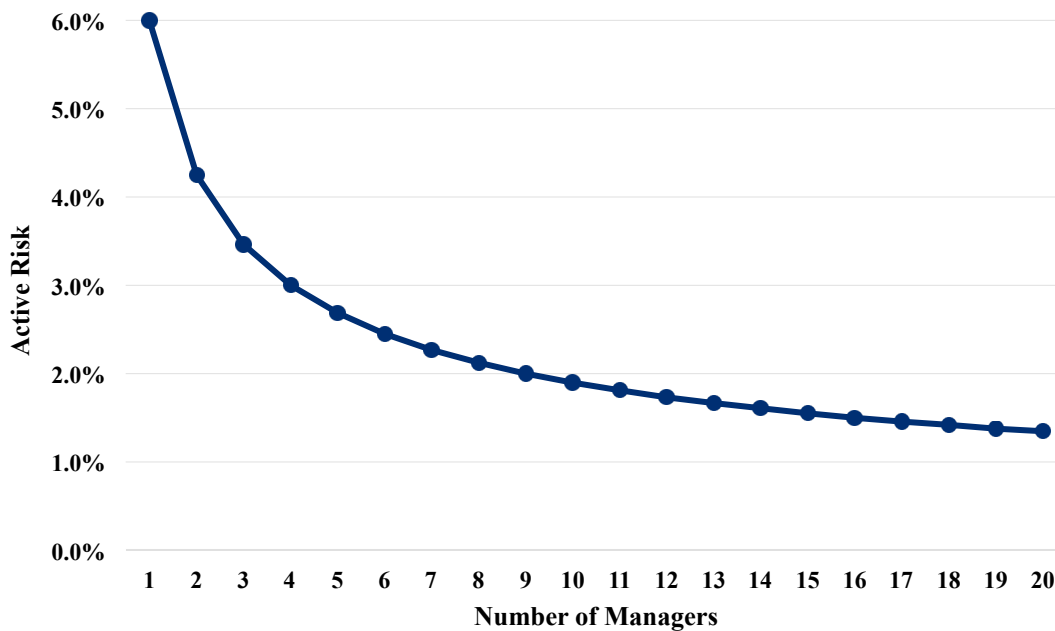
Does 10 to 20 seem like an impossibly few investment managers for a large institutional portfolio? If so, ask yourself these questions:

- Do you believe you have the skill to win The Losers Game consistently while selecting a larger number? Do you have the track record to back-up that belief? (Bear in mind that, based on empirical evidence, not many CIOs do.) And remember that the law of averages works against you as you increase the number of selections.

- Are you unconsciously influenced by the importance of diversification in thinking about the best active-manager structure? If so, separate the two in your mind. You can get diversification for free, and diversifying with active managers (at least beyond 10 to 20) is *always* the wrong thing to do.

- Are you reluctant to establish a sufficiently large Passive Core to enable you to be comfortable with the collective active risk of 10 to 20 managers? If so,

ask yourself why. Bear in mind the extraordinary cost advantage of passive investment and its superior performance historically.

Active-Passive Allocation

We propose that institutional trustees deployed least half their assets to the Passive Core as a starting point.[28] As a corollary, we propose that trustees then increase or decrease their passive investment percentage, incrementally but systematically, in the ensuing years, based on the performance of the Active Portfolio. In other words, if the Active Portfolio, net of all costs, underperforms a properly-constructed, equivalent-risk benchmark over time, trustees would transfer assets to the Passive Core as a matter of policy. Conversely, to the extent active-investing adds value, funds would migrate from the Passive Core to the Active Portfolio — with justification. In either event, the trustees would be acting systematically on their experience, which is responsible behavior. Over the long run this procedure will minimize the regret of having pursued the wrong strategy. The initial condition — at least a 50% passive allocation — reflects the lessons of the financial economics of institutional investing much better than does the status quo. Operationally, the proposal is disciplined, pragmatic and responsible.

The Alternative Approach in a Nutshell

What might an institutional investment program look like under the alternative approach? The Passive Core would constitute at least half of the portfolio at the outset. Passive investing for U.S. institutions can be achieved at essentially no cost with three index funds, namely, ones for Russell 3000 stocks, MSCI ACWI ex-U.S. stocks and Bloomberg Barclays Aggregate U.S. bonds. As we said earlier, it is difficult to exaggerate the importance of virtually costless investing in a world in which the competition is routinely paying 1 to 2% of asset value annually for the management of diversified portfolios in highly competitive markets. Large institutions would maintain a robust, continuous, experienced and well-financed manager research and selection effort — a band of scouts. There would be no more than 20 active investment portfolios and no conventional asset-class silos into which they are parceled. The total cost of operation would be fraction of what investors typically pay now. And last but not least, the investment

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[28] An exception to this statement is that funds that do not have an experienced CIO and substantial manager research resources should invest exclusively in passive funds.

program would have a much greater likelihood of overcoming the gross inefficiency that now characterizes institutional investing.[29]

CONCLUSION

Institutional investors cannot expect to succeed if they continue to rely on a cumbersome asset-class-oriented portfolio structure, investing with 100 or more managers at an annual cost of 1-2% of asset value. Markets are far too competitive for this to work with any degree of consistency. Fiduciaries of these funds owe it to their stakeholders to make a clear-eyed assessment of finance theory and empirical evidence relating to markets and managed portfolios. Doing so would lead them to a simplified approach with much greater use of passive investment, fewer active portfolios (chosen with a greater degree of discrimination) and at a much lower overall cost.

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[29] We leave aside certain implementation particulars in the interest of conveying the alternative approach with conceptual clarity. These include benchmarking active strategies, active-risk budgeting and mitigation of style imbalance arising from active investing, all of which are easily addressed with existing technology.

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APPENDIX: A MOST EXTRAORDINARY YEAR

Fiscal year 2000 was a most extraordinary year for large endowments. Their total return in FY 2000 was 29.2% according to NACUBO. That far outstripped returns of U.S. stocks (9.6%), non-U.S. stocks (18.1%) and bonds (4.6%). An equivalent-risk passive benchmark returned 10.2%, which means the endowment composite had a stunning risk-adjusted return of +19.0% for the year. During FY 2000 hedge funds returned a handsome +20% total return. Buyouts generated an exceptional +38%. And venture capital produced a sizzling +220%![30] It was an extraordinary year, indeed.

Exhibit A.1 provides descriptive statistics for the endowment composite during three eras. During the first era (1974-1993), with an R^2 of .97, composite returns are explained near-exclusively by stock and bond indexes alone for the simple reason that the era precedes significant use of alternative investments. During the second era (1994-2008), the endowment composite, with an average allocation to alternative investments of 34%, exhibited an R^2 with its stock-and-bond benchmark of just 78%, an indication that other variables were at work in accounting for performance in that period. During the third era, with the greatest average allocation to alternatives over time (56%), R^2 was .98 with the stock-bond benchmark. Exhibit A.1 indicates just how *non*-market-like the returns of the Golden Age appear to be in comparison with the eras that precede and follow it. Exhibit A.2 shows the year-by-year excess return for the entire 46-year period. The 19% excess return for the year 2000 towers over and stands apart from other highly favorable years of excess return during the Golden Age.
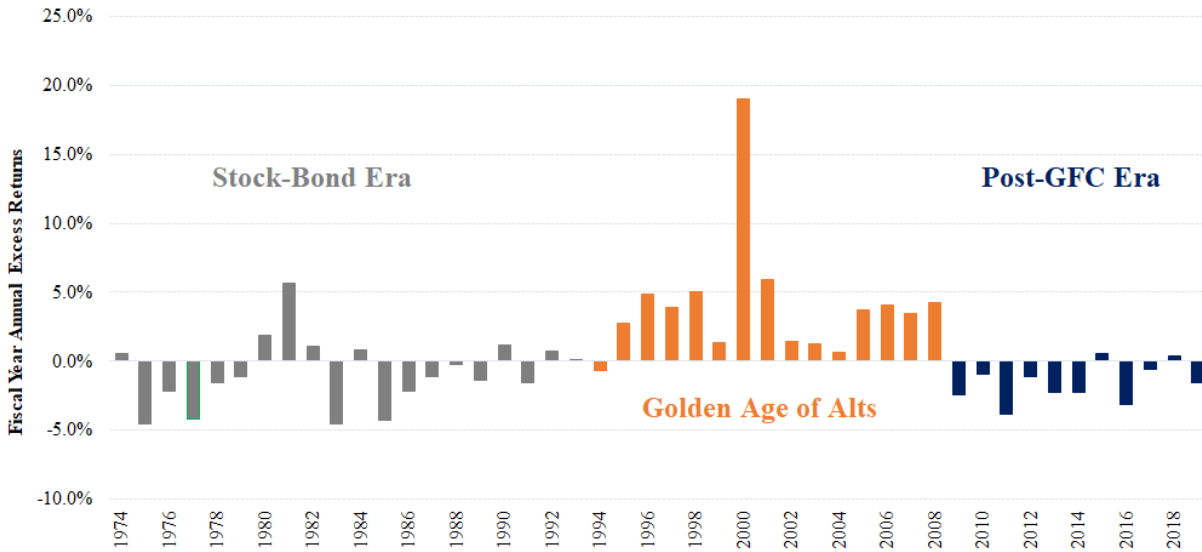
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[30] Source of hedge fund returns is HFR. Source of buyout and venture capital returns is Cambridge Associates.

Exhibit A.1
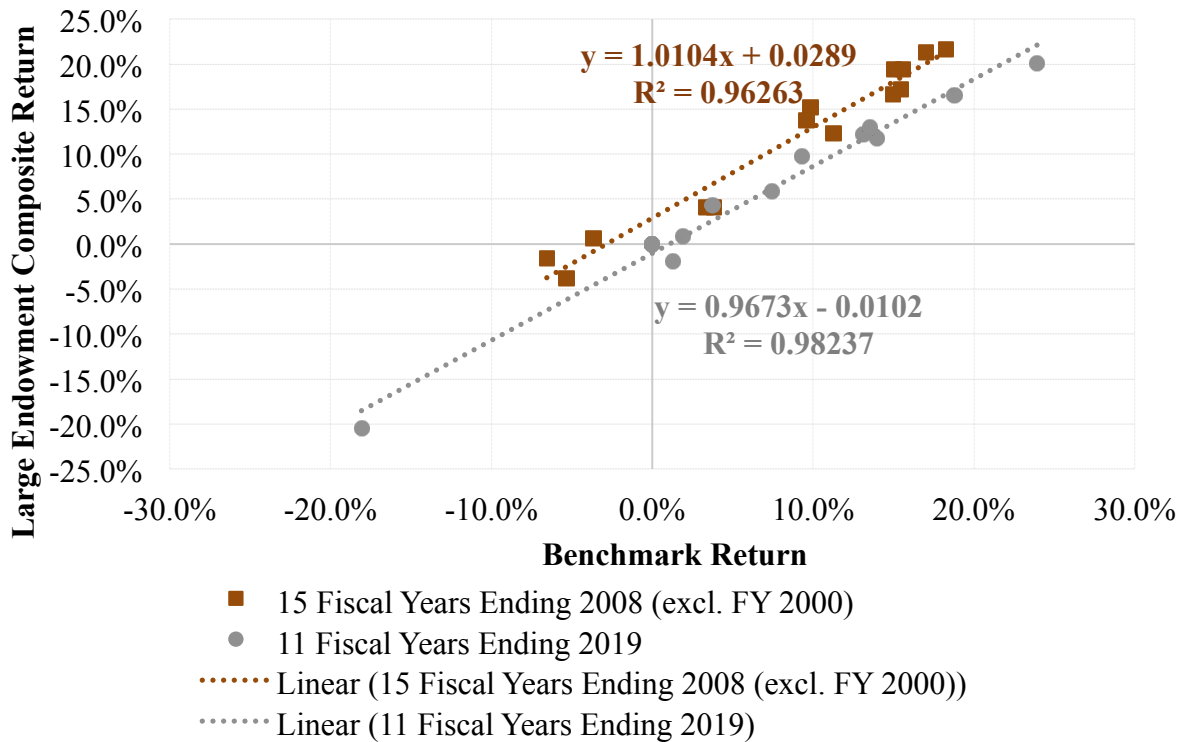**Endowment Performance, 46 Years**
Ended June 30, 2019

Period (Fiscal Years)	Effective Equity Exposure	Excess Return	Std. Dev. of Excess Return	R^2
Stock-and-Bond Era (1974-1993)	56%	-0.8%	2.5%	.97
Golden Age of Alt. Investments (1994-2008)	64	+4.1	4.5	.78
Post-GFC Era (2009-2019)	72	-1.6	1.4	.98

Exhibit A.2
46 Years of Excess Return for Large NACUBO Endowments

Exhibit showing Fiscal Year Annual Excess Returns bar chart spanning 1974–2018, with "Stock-Bond Era," "Golden Age of Alts," and "Post-GFC Era" regions.

But what happens if we remove the single FY 2000 from the regression analysis for the Golden Age of Alternative Investments? Exhibit A.3 illustrates the result. The upper regression line of the two pertains to the period in question, FYs 1994-2008 (with the exclusion of FY 2000). The R^2 of that regression is 96% (versus 78% including FY 2000). The line below it pertains to years 2009-2020, i.e., the post- GFC era, the same line shown in Exhibit 5. The R^2 for that period is 98%. In other words, stock and bond indexes largely explain the return variance of the composite in *both* eras if we ignore the outlier year of FY 2000.

Exhibit A.3
Regression of Composite Returns on Stock-and-Bond Benchmarks
in Two Eras
(Excluding FY 2000)

y = 1.0104x + 0.0289
R² = 0.96263

y = 0.9673x - 0.0102
R² = 0.98237

X-axis: **Benchmark Return**
Y-axis: **Large Endowment Composite Return**

■ 15 Fiscal Years Ending 2008 (excl. FY 2000)
● 11 Fiscal Years Ending 2019
······· Linear (15 Fiscal Years Ending 2008 (excl. FY 2000))
······· Linear (11 Fiscal Years Ending 2019)

In the earlier period, the composite exhibited a statistically significant positive alpha (intercept) of +2.9%, excluding the exceptional contribution of FY 2000. This is testimony to the effectiveness of asset management during the period, even ignoring FY 2000. It compares very favorably to the statistically significant negative alpha of -1.5% in the post-GFC era. At the same time, however, these results cast doubt on the notion that alternatives *ever* provided endowments much of a diversification benefit, while strongly suggesting that nature of their extraordinary gains during the Golden Age of Alternatives was alpha rather than any type of diversification effect that might have been associated with alternative investments.