

COMMENTARY: Problems with the Endowment Model

Richard M. Ennis

Richard M. Ennis
is the retired chairman
of EnnisKnupp and a
past editor of *Financial
Analysts Journal*.
richardmennis@gmail.com

KEY FINDINGS

- Alternative investments have ceased to be diversifiers and have become a serious drag on performance.
- Having more than 100 managers for the typical large endowment is a source of inefficient diversification.
- An average estimated annual cost of 1.7%, combined with extensive diversification, virtually assures underperformance.

ABSTRACT

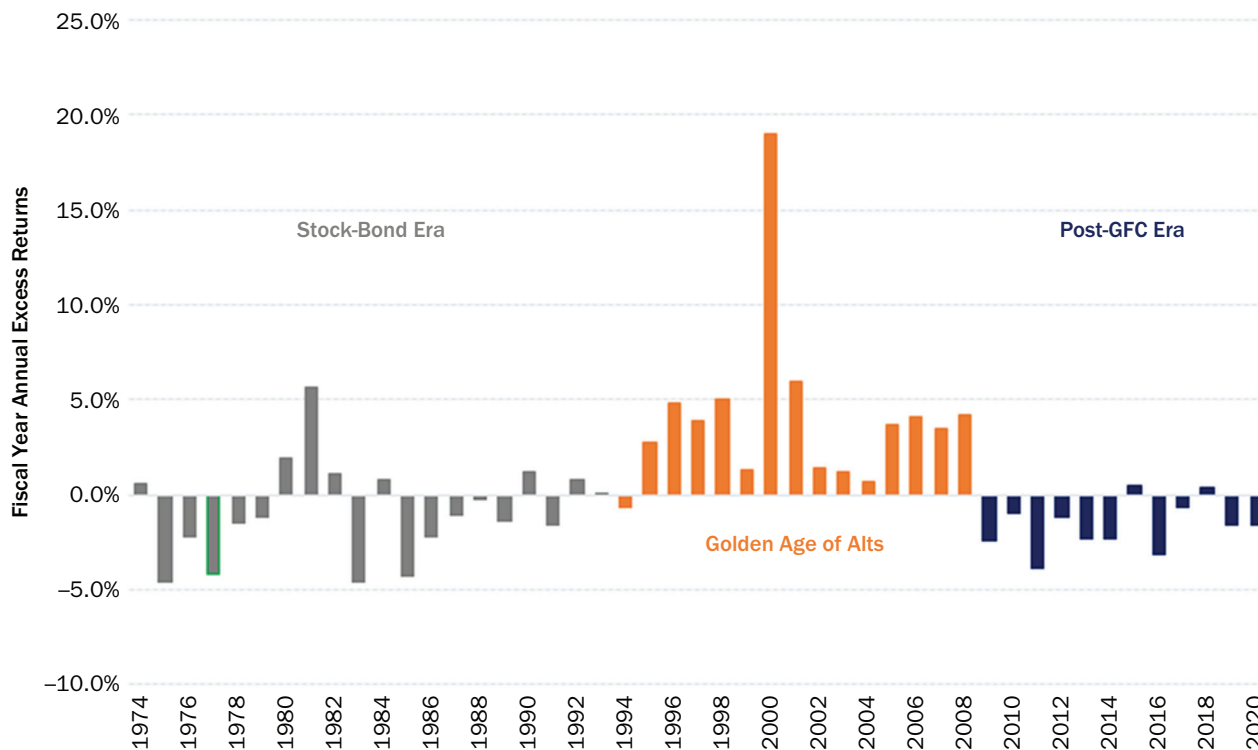
Alternative investments long ago ceased to be diversifiers, as their trading markets became more liquid and pricing there came to be more closely aligned with that of public markets. For the same reason, the principal classes of alts ceased to be sources of alpha and became a serious drag on performance. As a result of this market evolution, the endowment model's signature asset-class diversification scheme now imposes rigidity without benefit: Asset classes have become silos, tantamount to quotas for large-scale investing in pricey alternative investments of uncertain merit. One hundred or more investment managers for an endowment portfolio are way too many: Inefficient diversification abounds. Costs approaching 2% of asset value are implausible on their face.

TOPICS

[Real assets/alternative investments/private equity, foundations & endowments, portfolio construction, performance measurement*](#)

Most large educational endowments in the United States employ an investment approach known as the endowment model (EM). In terms of financial economics, I characterize the EM as follows: It employs several ostensibly uncorrelated asset classes to achieve efficient diversification. The EM is heavily reliant on alternative investments: According to the National Association of College and University Business Officers' (NACUBO's) June 30, 2020, "Study of Endowments," funds with greater than \$1 billion in assets (approximately 100 funds) have an average of 60% of their portfolios in alternatives. The EM is characterized by large numbers of investment managers, defined as managed accounts, commingled funds and partnerships: According to the 2019 NACUBO Study, the large fund cohort mentioned previously employed an average of 108 managed portfolios. Finally, as commonly executed by large endowments, the EM involves annual costs of roughly

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EXHIBIT 1**Forty-Seven Years of Excess (Risk-Adjusted) Return for Large NACUBO Endowments**

1.7% of asset value.¹ Ennis (2021) evaluates the efficacy of the EM and concludes that it stopped working for its adherents about the time of the Global Financial Crisis (GFC) of 2008, as a result of significant structural problems that evolved over time.

LONG-TERM PERFORMANCE IN THREE DISTINCT ERAS

“Failure of the Endowment Model” (Ennis 2021) identifies three eras of excess return (market-risk-adjusted performance) for NACUBO’s large endowment composite between June 30 fiscal year (FY) 1974 and FY 2020.² The results are shown in Exhibit 1. During what I describe as the Stock and Bond Era (FYs 1974–1993), the endowments averaged less than 10% in alternatives. Average annual excess return during the first era was –0.8%, which approximates the margin of cost for that period. During the Golden Age of Alternative Investments (FYs 1994–2008), the endowments

¹The cost figure was originally developed in Ennis (2020, 108). In short, the cost figure of 1.7% represents a 40% weighting of traditional assets with a cost of 0.5% of asset value, plus a 60% weighting of a diverse portfolio of alternative investments with a cost of 2.5%.

²Ennis (2021) employs the quadratic programming technique originated by Sharpe (1988, 1992) in the design of performance benchmarks, using three indexes: the Russell 3000 for US stocks, MSCI ACWI ex-US for non-US stocks, and Bloomberg Barclays US Aggregate bond index for US investment-grade bonds. Popularly known as returns-based style analysis (RBSA), the technique enables the analyst to determine which indexes statistically explain the risk–return characteristics of a portfolio, or composite of them as in the present case. The analyst can introduce—that is, make available—two or more index return series as independent variables to determine the allocation among the indexes that best matches the composite in terms of its risk–return signature. It leads to the identification of passively investable benchmarks that have the best statistical fit with the return series under examination. See Fragkiskos et al. (2018) for an earlier application of RBSA to endowments.

experienced extraordinary risk-adjusted performance, with an average annual excess return of +4.1%. The favorable performance was largely due to the impact of alternative investments, which averaged 34% of the composite's value over the course of that era. During the final era (FYs 2009–2020), which I refer to as the Post-GFC Era, the endowments averaged 54% in alternative investments and underperformed by about 1.6% per year, which is the approximate margin of cost during that era.

Two things stand out in Exhibit 1. The first is the exceptional performance of large endowments during the Golden Age, a topic that has been widely noted and much discussed. Exhibit 1 effectively defines that era in terms of its duration and the magnitude of its gains. The second striking feature is the sharp reversal of fortune beginning about the time of the GFC and the consistent underperformance in the ensuing years. What accounts for the abrupt shift in endowment performance in the wake of the GFC?

THE TIMES THEY ARE A-CHANGIN'

During the Golden Age and in the years following it, alternative markets evolved dramatically. The impetus was the flood of money pouring into private markets and hedge funds then. For example, between 1995 and 2018, the value of publicly traded REITs in the United States grew 24-fold, from \$50 billion to \$1.2 trillion, with private market real estate investing giving way to public.³ 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 management increased 27-fold between 1997 and 2018.⁴ Private equity assets under management increased 37-fold between 1994 and 2019.⁵ As a result, pricing in all three of those markets became better aligned with public-market pricing.⁶ Exhibit 2 shows correlation coefficients among principal asset classes beginning in 2009. The average correlation of the four alternative investment categories with US equities is 0.89. (Note the correlation of US stocks and bonds at –0.35.) 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.

ALTS CEASE TO BE DIVERSIFIERS

The most striking finding of this research is that alternative investments, or alts, have ceased to provide diversification benefits (if they ever did so). All but a tiny fraction of endowment return–variance can be explained using three broad stock and

³ See FTSE Nareit Real Estate Index Historical Market Capitalization 1972–2018 (National Association for Real Estate Investment Trusts [Nareit] 2021).

⁴ Hedge fund assets under management in 1997 totaled approximately \$118 billion. The figure grew 27-fold to \$3.2 trillion in 2018, with much of the influx occurring in a handful of years leading up to the GFC (HFR 2019).

⁵ Private equity assets under management of \$100 billion in 1994 grew 37-fold to \$3.7 trillion in 2019 (HFR 2019; Fenn 1995).

⁶ For evidence on pricing in real estate, see Pagliari et al. (2003) and Beath and Flynn (2018). For evidence on pricing in private equity, see Phalippou (2014), Harris et al. (2014), L'Her et al. (2016), and Ilmanen et al. (2020). For evidence on pricing in hedge funds, see Asness (2018) and Sullivan (2021). See also Ennis (2020, 111–113) for a discussion of the evolution of alternative investment markets over two decades.

EXHIBIT 2

Correlation Matrix (12 years ended June 30, 2020)

Asset Classes	BB Aggregate Bonds	Russell 3000	MSCI ACWI ex US	Cambridge RE	Cambridge VC	Cambridge PE	HFR Fund-of-Funds Composite
BB Aggregate Bonds	1.00						
Russell 3000	-0.35	1.00					
MSCI ACWI ex US	-0.40	0.95	1.00				
Cambridge Real Estate	-0.38	0.88	0.74	1.00			
Cambridge Venture Capital	-0.22	0.76	0.68	0.80	1.00		
Cambridge Private Equity	-0.34	0.98	0.93	0.87	0.76	1.00	
HFR Fund-of-Funds Composite	-0.46	0.94	0.91	0.83	0.79	0.94	1.00

bond indexes. The indexes (and their multiple regression weights) are the Russell 3000 (56%), MSCI ACWI ex-US (16%), and Bloomberg Barclays Aggregate (28%).⁷ Exhibit 3 illustrates the regression of the returns of NACUBO's large fund composite on a benchmark consisting of those indexes and their weights for the 12 years ended June 30, 2020. The slope (beta) is 0.99, the R^2 is 0.985, and the standard error of the regression is a minimal 1.4%. The intercept, or alpha, is -1.46% (t-statistic of -2.7). Exhibit 3 demonstrates that stock and bond indexes alone capture the return-variability characteristics of alternative investments in the endowment composite for all intents and purposes; alternative investments do not have a meaningful impact. This finding runs counter to the notion that the return properties of alts differ materially from those of stocks and bonds. That, after all, is an oft-cited reason for incorporating alternative investments in EM portfolios. But as we see here, alt returns simply blend in with broad market returns in the context of standard portfolio analysis. These results bring into question the merit of maintaining asset-class silos and heavy reliance on alternative investments. The silos introduce rigidity in portfolio management for no apparent benefit.

ALTS BECOME A DRAG ON PERFORMANCE

During the Golden Age of Alternative Investments, alts contributed greatly to the excellent performance of endowments. As noted, that era came to an end about the time of the GFC. A number of studies indicate that alts themselves ceased to be a source of value-added and became a drag on performance. Exhibit 4 attempts to *distill* this work.⁸ My research indicates that alts' underperformance is due to greater pricing efficiency in those markets combined with alts' unrecouped annual costs of 2%–4% of asset value.⁹

⁷ Some readers have expressed curiosity about what might at first appear to be a lopsided allocation toward US equities in the regression results. The 16% allocation to non-US equities comports with the average allocation of endowments reported by NACUBO over the study period. Also noteworthy is that alternative investments load almost exclusively on domestic stocks and bonds in the regression.

⁸ For real estate, I 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 time-weighted returns 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 (2021).

⁹ See Ennis (2021, 131) for a discussion of the cost of alternative investments in support of the 2%–4% figure.

EXHIBIT 3

Regression of NACUBO Large Endowment Composite on the 72% Global Stock/28% Bond Benchmark (12 years ended June 30, 2020)

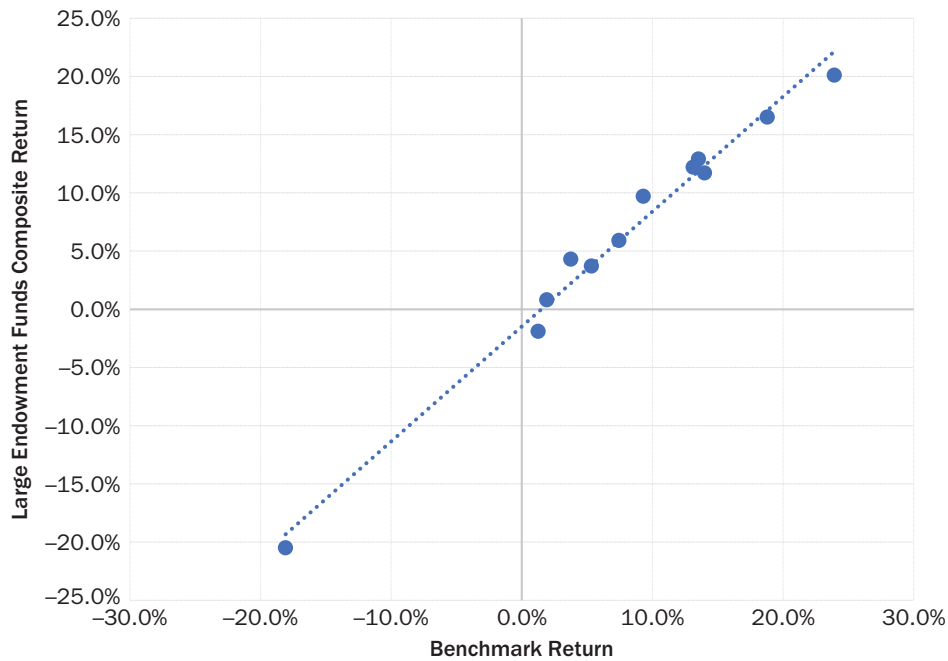
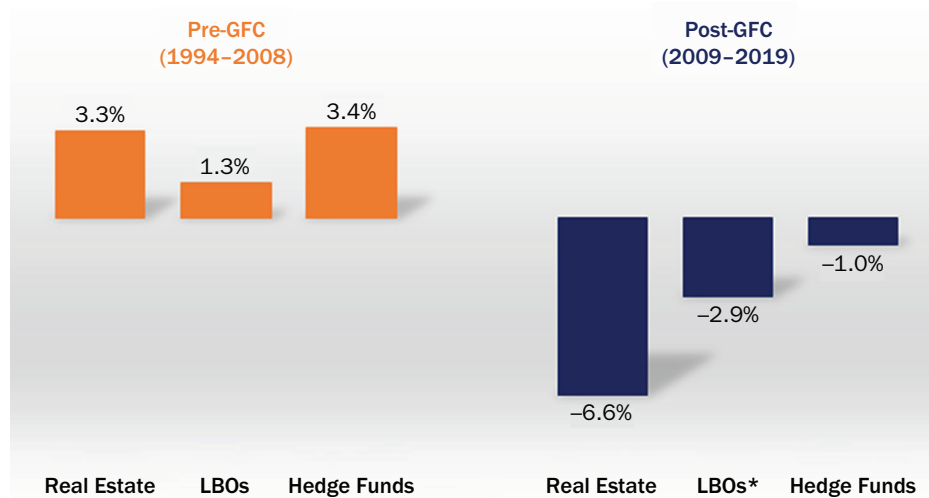


EXHIBIT 4

Excess Annual Return for Three Types of Alternative Investments before and after the GFC



NOTES: *Post-GFC LBO return of -2.9% is for the period 2009-2014.

THE DEATH KNELL OF INEFFICIENT DIVERSIFICATION

Inefficient diversification is a serious problem now that the average number of managed portfolios employed by large endowments exceeds 100, which is up dramatically from about 20 when large endowments began their period of remarkable

performance in the mid-1990s.¹⁰ The typical large endowment has an R^2 with stock and bond indexes of approximately 0.96.¹¹ As stated in the introduction of this article, endowments have a typical level of annual investment expense of 1.7% of asset value. High cost combined with extensive diversification virtually guarantee poor performance.

CONCLUSION

The problem with the EM is not merely its post-GFC performance. All strategies and investors have runs of bad luck. The poor performance is a consequence of dysfunctional features of the EM as it evolved from its heyday in the 1990s. Those dysfunctional features include its outdated asset-class silos, the mind-boggling proliferation of investment managers, and an implausible cost structure. I say it's broke and needs fixing.

REFERENCES

- Asness, C. 2018. "The Hedgeie in Winter." *AQR*, May 31, 2018. <https://images.aqr.com/-/media/AQR/Documents/Insights/Perspectives/Cliffs-Perspective-05302018.pdf>.
- Beath, A. D., and C. Flynn. 2018. "Real Estate Performance by Implementation Style." *CEM Benchmarking Inc.* https://www.cembenchmarking.com/research/Real_estate_by_implementation_style.pdf.
- Ennis, R. M. 2020. "Institutional Investment Strategy and Manager Choice: A Critique." *The Journal of Portfolio Management* (Fund Manager Selection Issue) 46 (5): 104–117.
- . 2021. "Failure of the Endowment Model." *The Journal of Portfolio Management* (Investment Models Issue) 47 (5): 128–143.
- Ennis, R. M., and M. D. Sebastian. 2003. "A Critical Look at the Case for Hedge Funds." *The Journal of Portfolio Management* 29 (4): 103–112.
- Fenn, G. W., N. Liang, and S. Prowse. 1995. "The Economics of the Private Equity Market." Board of Governors of the Federal Reserve System. <https://www.federalreserve.gov/pubs/staff-studies/1990-99/ss168.pdf>.
- Fragkiskos, A., S. Ryan, and M. Markov. 2018. "Alpha and Performance Efficiency of Ivy League Endowments: Evidence from Dynamic Exposures." *Alternative Investment Analyst Review* 7 (2).
- Harris, R., T. Jenkinson, and S. Kaplan. 2014. "Private Equity Performance: What Do We Know?" *The Journal of Finance* 69 (5): 1851–1882.
- HFR. 2019. "Hedge Fund Assets Eclipse 2018 Record." July 19. <https://www.hfr.com/news/hedge-fund-assets-eclipse-2018-record>.
- Ilmanen, A., S. Chandra, and N. McQuinn. 2020. "Demystifying Illiquid Assets: Expected Returns for Private Equity." *The Journal of Alternative Investments* 22 (3): 8–22.
- L'Her, J. F., R. Stoyanova, K. Shaw, W. Scott, and C. Lai. 2016. "A Bottom-Up Approach to the Risk-Adjusted Performance of the Buyout Fund Market." *Financial Analysts Journal* 72 (4): 36–48.
- Nareit. 2021. <https://www.reit.com/data-research/reit-market-data/us-reit-industry-equity-market-cap>.

¹⁰ Author's estimate based on data contained in the 1994 NACUBO Endowment Study.

¹¹ See Ennis (2021, 13).

Pagliari, J. L., K. A. Scherer, and R. T. Monopoli. 2003. "Public versus Private Real Estate Equities." *The Journal of Portfolio Management* (Special Real Estate Issue) 29 (5): 101–111.

Phalippou, L. 2014. "Performance of Buyout Funds Revisited." *The Review of Finance* 18 (1): 189–218.

Sharpe, W. F. 1988. "Determining a Fund's Effective Asset Mix." *Investment Management Review* 2 (6): 59–69.

———. 1992. "Asset Allocation: Management Style and Performance Measurement." *The Journal of Portfolio Management* 18: 7–19.

Sullivan, R. N. 2021. "Hedge Fund Alpha: Cycle or Sunset?" *The Journal of Alternative Investments* 23 (3): 55–79.

COMMENTARY: The Endowment Model Is Just Active Management

Laurence B. Siegel

Laurence B. Siegel

is the Gary P. Brinson
Director of Research
at the CFA Institute
Research Foundation in
Charlottesville, VA, and an
independent consultant.
lbsiegel@uchicago.edu

KEY FINDINGS

- The endowment model of investing is just a form of active management and is not a magic formula for making (or losing) money.
- Many endowed institutions are free to make substantial bets—on alternative investments, large deviations from policy portfolios, and unconventional structures—that other institutions cannot.
- This freedom should increase the alpha earned by endowments, provided that they are capable of earning alpha in the first place.

ABSTRACT

Endowed institutions and other investors, if they choose to be active rather than indexed, can benefit by considering as potential investments every asset class and strategy in the world. Such unconstrained investing is supported by finance theory, which says that constraints on active bets are always costly in terms of return, conditional on the active management in question being successful (adding alpha) in the first place. Endowment funds are free to do many things that other investors are not, making them more likely to succeed at active management than other classes of institutions or individuals. However, the performance of these funds has varied materially over time, with a recent long period of underperformance, so the success of the endowment model is not guaranteed. Part of this underperformance is due to the high costs of the alternative investments that distinguish endowment-model portfolios from more traditional portfolios, so investors adopting the endowment model should pay special attention to fund fees and other costs.

TOPICS

Portfolio theory, portfolio construction, foundations & endowments, performance measurement*

The endowment model of investing, which involves substantial allocations to non-traditional and often illiquid assets, is the subject of much current controversy. Pioneered by the late David Swensen of Yale University and catching on like wildfire in the 1990s and afterward with university endowments and charitable foundations, the endowment model takes advantage of freedoms that most other kinds of investors do not have. The underlying principle is that, in the production of alpha, constraints of any kind have a cost, and investment performance can be improved by removing them to the extent that it's prudent and practical to do so.

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These freedoms include the following:

- investing in any asset class in the world, whether or not it is in an institution's policy benchmark, as well as in other economic activities that do not clearly belong to any established asset class;
- taking on illiquidity risks and costs by making long-term investments, including those that involve capital calls (requirements to invest additional money if the manager requests it) as well as limited marketability and the inability to assess market value on a regular and accurate basis; and
- using leverage, short selling, futures and options, and other unconventional securities and positions.

Most investors, including most pension funds, mutual funds, and individuals managing their own money, cannot or choose not to do any of these things, typically because they are constrained by their bylaws or other controlling documents.

Should the ability of endowed institutions to invest free of most constraints result in superior performance? Has it done so? Will it in the future? This brief essay attempts to answer these questions in the light of established capital market theory.

SHOULD UNCONSTRAINED INVESTING WIN?

This principle that unconstrained investing should beat constrained investing is theoretically correct *if* the manager is capable of producing alpha in the first place. As Sharpe (1991) showed, active management is always and everywhere a zero-sum game relative to a properly constructed benchmark. Someone earns alpha at the expense of someone else's negative alpha. If it appears that some type of active management is positive-sum, with everyone winning, it must be because the wrong benchmark is being used or there is some other measurement problem. This could happen where it's impractical to construct a benchmark for the type of investment being measured. Such a condition typically exists in private equity, hedge funds, real estate, commodities, and other alternative investments often found in large quantities in endowment-model portfolios.

In other words, the endowment model, correctly understood, does not propose that endowment funds can create money out of nothing. They are making active bets relative to a hypothetical portfolio of every risky security and asset class in the world. And the fruits of these active bets *must*, mathematically, sum to zero before costs, and less than zero after costs. Thus, the endowment fund manager must have skill at active management (more about this in a moment).

Grinold and Kahn (2000) demonstrate mathematically that constraints on investment opportunities have a large cost, presuming the active bets the investor wishes to make are winning ones, on average. In that article, the authors are concerned specifically with the cost of the long-only constraint because in the absence of short selling, a negative view on a security can be expressed only by not holding it, which is weak tea indeed.

But Grinold and Kahn's principle also applies to every other kind of binding constraint, including those enumerated previously in my section on freedoms. Thus, a portfolio unconstrained in many dimensions should be able to beat a constrained one, *if the active manager is capable of making winning bets in the first place.*

THE TWO CONDITIONS FOR CHOOSING ACTIVE MANAGEMENT

We now address this "big if." Is choosing active managers, instead of just indexing, worth the risk and trouble? *Who* should choose active management?

You should “go active” if you meet the “Two Conditions” first enunciated by Waring et al. (2000) for deciding whether to engage active managers.¹ The conditions are that the investor must believe

- (1) that successful active managers exist, because of exceptional skill or access to special information and not because of pure random variation or luck, and
- (2) that he or she has the skill to identify such active managers, choosing from a population of active managers that, mathematically, *must* be average (adding no expected value relative to an index fund) *before* costs and worse than that after costs.

If you don’t meet both of these conditions, you should index. That is fine. All investment skill should be presumed to be rare, and if your modest self-assessment is that you don’t meet both conditions, then indexing is a perfectly reasonable strategy and in fact the optimal strategy.

But, if you do meet the Two Conditions, you should try to earn alpha through active management. Properly understood, that means more than staffing traditional asset class allocations with active rather than indexed managers. It means

- departing from the asset class weights in the policy benchmark, by a considerable amount if justified by your capital market expectations;
- hiring managers who are themselves unconstrained, with the attributes (long-short, leveraged, and so forth) as discussed earlier; and *most importantly*,
- investing outside the traditional asset classes, for example, by becoming limited partners in private equity funds, hedge funds, natural resource and agricultural funds, environmental assets and liabilities, commodities, and so forth. Emerging and frontier equity markets and unusual forms of debt are also sometimes considered “alternative,” but whether you call them alternative or not, I believe they are investments worthy of consideration.

Even More Structural Advantages: Why Most Endowments Should Meet the Second Condition

Endowed institutions are well positioned to meeting Waring’s Second Condition. As I pointed out in Siegel (2021), they offer competitive compensation and a collegial work environment. They can therefore attract highly skilled employees, many of whom also teach in the schools’ graduate business programs where they may rub elbows with Nobel Prize-winning and near-Nobel faculty as well as captains of industry and finance. Managers, understanding their ability to invest free from most constraints, treat them as favored clients.

Endowments have additional institutional characteristics that make them more likely to succeed at generating alpha. Unlike mutual funds, they do not have performance-chasing shareholders who buy high and sell low, so they do not have to trade to accommodate these cash flows. They are not regulated in the ways that pension fund and retirement savings plans are. It’s true that, like any fund, they may have cranky trustees who object to unfamiliar investment strategies, but on the other side,

¹These “Two Conditions” are introduced in Waring et al. (2000), Appendix C, and are discussed in more detail in Waring and Siegel (2003). Waring et al. (2000), write, “Estimating [manager] alpha on a forward-looking basis is every bit as difficult as estimating the alpha for an individual...security.... [Moreover,] any investor who hires active managers is making *implicit* estimates of...alpha that are every bit as real as if made explicitly. Of course, it is far better to be in control of explicit estimates than to make them implicitly, where one would not even know if these implicit forecasts... [were] reasonable.”

they usually have highly respected chief investment officers who are chosen for their independence and intelligence, not their tendency to “go along to get along.”

HAS THE ENDOWMENT MODEL DELIVERED SUPERIOR PERFORMANCE?

So, how has this stellar set of endowment-fund advantages worked out in practice?

Recently, not great. Endowment funds were outgunned by the never-ending rise of the S&P 500 between 2009 and the present. Data are in Ennis (2021). The National Association of College and University Business Officers (NACUBO) endowment fund composite, after costs, outperformed in what Ennis calls the Golden Age of Alternatives (1994–2008) and underperformed before and after that period. In the past 12 years (2009–2020), endowments underperformed a multi-asset-class benchmark constructed by Ennis using returns-based style analysis, as well as lagging the S&P 500. Does this disappointing recent result indicate a fundamental problem with the endowment model? Or is the result time specific?

I believe that the result is time specific and not representative of the underlying economics of the model. Over the 2009–2020 period, the S&P 500 total return index was an incredible 15.05% per year, one of the highest 12-year rates of return ever recorded. Because inflation was low, the real total return on the S&P 500 was 13.01% per year, again one of the highest rates ever. That is not the expected real total return now, nor was it at any time in the past. During the same period, the bond market also did well. As I said in my article (Siegel 2021), it is like racing against Secretariat. You’re not going to win.

Moreover, 12 years is a long time in a human adult’s life but not in the life of a perpetual endowed institution or of the capital markets. Thanks to William Goetzmann, Elroy Dimson, Roger Ibbotson, and others, we have capital market data back to 1695, with sporadic data in prior centuries.² The data begin to be impressively accurate around 1870. So, we can observe periods much longer than 12 years when one market or another appeared to dominate all others. Forecasting that such domination would continue indefinitely would have been a terrible idea each time. US stocks underperformed for long periods ending in 1921, 1939, 1979, and 2008, and US Treasury bonds, over the incredible span of 1941–1981. Developed-country international stocks have now underperformed for 30 years.

So, when an asset class has performed poorly for a long period, should we avoid holding it? Of course not. A market-timing case can be made for buying *more* of it *because* it has gone down. At any rate, investment decisions should only be about the future; the market has no memory. Relative and absolute valuations should determine asset class allocations.

WILL THE ENDOWMENT MODEL OUTPERFORM IN THE FUTURE?

The next decade does not look good for conventional investments. Real bond yields are negative, as indicated by the 10-year TIPS yield, which is a startlingly awful –0.89%—that is, a guaranteed real *loss* of 8.6% if you hold the TIPS bond to maturity.³

² See Goetzmann (1993); Dimson, Marsh, and Staunton (2002); and Ibbotson and Harrington (2021).

³ As of May 7, 2021. If you think TIPS yields are an inaccurate measure of the real yield because there is a small float and a population of noneconomic buyers, consider the nominal 10-year T-bond yield of 1.60%, which compares to the popular inflation assumption of 2% (and rising).

The CAPE ratio of the S&P 500 is 37.8, higher than at any other time in history except 1999–2000.⁴ There is strong evidence that very high CAPE ratios foretell low real stock market returns in the intermediate future.

What are the prospects for alternatives? I do not know. First of all, the category is way too broad to generalize about. Carbon certificates could rise at double-digit rates while office real estate falls—or the opposite. What I do know is that you can't put information about any of these nontraditional investments to work if you're not allowed to invest in them, or simply choose not to. I am not promoting any particular type of investment; I am arguing in favor of the *model* that gives institutions the latitude to use any information they can gather in the way they think will be most profitable.

Finally, if they are to succeed at alternative investing in the future, institutions should be much more aware of costs, liquidity risk, and high correlations with traditional assets than they were over the most recent 12-year period—or, for that matter, the Golden Age period when returns were so high that costs didn't seem to matter, but they always do.

CONCLUSION

I am not advising anyone, institution or individual, to take up active management. It is up to each investor to decide whether they meet Waring's Two Conditions.

If you don't meet Waring's Two Conditions, then index. Indexing is always a defensible and respectable strategy. If you do meet both conditions, however, then you should buy the asset mix you think will have the best performance:

- after *all* costs (including, for example, the cost of illiquidity, leverage, and other financial frictions);
- after taking the usual penalty for expected risk, including hidden risks;
- applying optimization principles to achieve portfolio diversification, at least conceptually if not quantitatively—as Markowitz (1952) wrote, in a very Bayesian spirit, “combin[ing] statistical techniques with the judgment of practical men”;⁵ and
- whether it's in the benchmark or not.

...as long as it's permitted by your institution's investment policies and guidelines.

In fact, once you've chosen to be an active manager, it seems downright irresponsible *not* to take into consideration every opportunity for superior performance that exists. Alpha is unlikely to exist *exclusively* in long-only, unleveraged, benchmark-aware active strategies in traditional asset classes. Considering the amount of money and effort being deployed in those strategies, it's more likely that the fertile fields for generating alpha lie elsewhere.

⁴ Source: <https://www.multip.com/shiller-pe>. In my other writing, I've been critical of the CAPE10—that is, the CAPE ratio using an average of the past 10 years' real (inflation-adjusted) earnings in the denominator—asserting that 10 years is too long a period over which to calculate real earnings. Moreover, I've said that changes in payout policy, industry mix, and accounting conventions make the CAPE10 less than perfect as a measure of market valuation over time. But it's very popular and is readily available, whereas other measures are less so.

⁵Note the connection back to Waring et al. (2000). Like portfolio managers optimizing across securities, what Waring et al. (2000) call “manager structure optimization,” the optimization by institutions across their managers using estimates of the managers' future alphas (and correlations of those alphas), is a problem in decision making under uncertainty, and the solution is (naturally) found by extending Markowitz's original optimization concept to the task at hand.

To sum up, the endowment model is just active management. Importantly, it is picking active managers from a broader opportunity set. It is not just for universities and charitable foundations: it can be used, and is being used, by sovereign wealth funds, individuals, family offices, and some pension funds. It is not an exhortation to “dare to be different”—it does not rely on institutions being run by geniuses—and it is not the only possible way to invest money. Indexing is fine too. *The endowment model is a statement about how to best use active managers*, and it follows from the basic principles of finance.

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REFERENCES

- Dimson, E., P. Marsh, and M. Staunton. 2002. *Triumph of the Optimists: 101 Years of Global Investment Returns*. Princeton, NJ: Princeton University Press.
- Ennis, R. M. 2021. “Failure of the Endowment Model.” *The Journal of Portfolio Management* 47 (5): 128–143.
- Goetzmann, W. N. 1993. “Patterns in Three Centuries of Stock Market Prices.” *Journal of Business* 66 (2): 249–270.
- Grinold, R. C., and R. N. Kahn. 2000. “The Efficiency Gains of Long–Short Investing.” *Financial Analysts Journal* 56 (6): 40–53.
- Ibbotson, R. G., and J. P. Harrington. 2021. *Stocks, Bonds, Bills, and Inflation: 2000 Summary Edition*. Charlottesville, VA: CFA Institute Research Foundation.
- Markowitz, H. “Portfolio Selection.” *The Journal of Finance* 7 (1): 77–91.
- Sharpe, W. F. 1991. “The Arithmetic of Active Management.” *Financial Analysts Journal* 47 (1): 7–9.
- Siegel, L. B. 2021. “Don’t Give Up the Ship: The Future of the Endowment Model.” *The Journal of Portfolio Management* 47 (5): 144–149.
- Waring, M. B., and L. B. Siegel. 2003. “The Dimensions of Active Management.” *The Journal of Portfolio Management* 29 (3): 35–51.
- Waring, M. B., D. Whitney, J. Pirone, and C. Castille. 2000. “Optimizing Manager Structure and Budgeting Manager Risk.” *The Journal of Portfolio Management* 26 (3): 90–104.

REBUTTAL: The Endowment Model Defense That Wasn't

Richard M. Ennis

Richard M. Ennis is the retired chairman of EnnisKnupp and a past editor of *Financial Analysts Journal*.
richardmennis@gmail.com

KEY FINDINGS

- Siegel's article makes a case for endowment *exceptionalism*. This is a kind of cultural advantage that leads him to conclude that endowment managers should be able to generate superior returns over the long run. The exceptionalism argument falls flat when subjected to logical and empirical analysis.
- In letting the endowments off the hook for an extended period of underperformance, the article makes a specious comparison of endowment returns with those of the S&P 500 stock index during a major bull market. A proper benchmark is 72% all-cap, global equities and 28% bonds.
- The article sidesteps the glaring deficiencies of the endowment model. Siegel simply posits the presence of "skilled employees" in university investment offices who will get the job done despite obstacles of their own making.

ABSTRACT

In "The Endowment Model Is Just Active Management" (Siegel 2021b), Siegel chooses to expound on active investing in conceptual terms, with occasional reference to endowment management. This rebuttal contends that the Siegel article is long on intellectual theory and short on proof. The author takes issue with Siegel's rationalization of endowments' significant underperformance over 12 years and counting. The case for active investing looks past the elephant in the room—theory and evidence casting grave doubt on the merit of diversified—that is, myriad-manager—active investing such as that of endowments. The exceptionalism argument falls flat. The article sidesteps the glaring deficiencies of the endowment model. Siegel simply *posits* the presence of "skilled employees" in university investment offices who will get the job done despite obstacles of their own making. This rebuttal finds the explanation unconvincing and concludes that the endowment model is dead as a doornail.

TOPICS

[Foundations & endowments](#), [portfolio theory](#), [portfolio construction](#), [performance measurement](#)*

The endowment model is a subject of great interest to institutional investors, consultants, and investment managers around the world. Trillions of dollars of institutional assets in the United States alone are managed along the lines of the endowment model. For many years, the approach was venerated. More recently, it has been called into question. In "Problems with the Endowment Model" (Ennis 2021d), I show that the endowment model has become severely dysfunctional.

*All articles are now categorized by topics and subtopics. [View at PM-Research.com](#).

In “The Endowment Model Is Just Active Management” (Siegel 2021b), Siegel does not speak to the endowment model directly. Rather, he discusses active investing in conceptual terms, with occasional reference to endowment management. He justifies active investing under certain rather nonrestrictive conditions. He states that endowed institutions are better suited to succeed with active investing than are other institutional investor types. He says that strong stock and bond markets are as much to blame for endowments’ subpar performance as anything; although alternative investments have performed poorly, their day will come again. He concludes that endowment managers should stay the course.

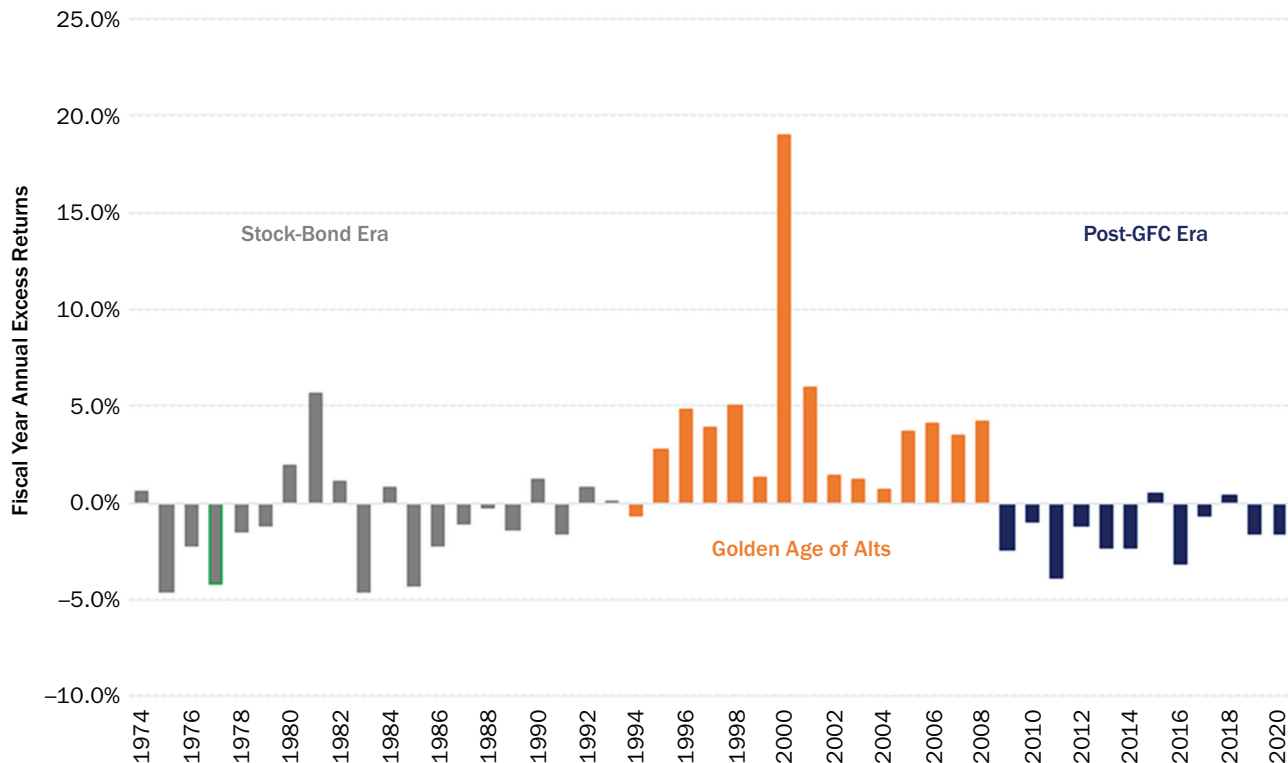
ON THE ECONOMICS OF THE ENDOWMENT MODEL

Siegel says endowments’ poor performance is “not representative of the underlying economics of the model.” I disagree. My research has proven that the poor performance is a direct *result* of the failed economics of the endowment model (EM). Alternative investments long ago ceased to be diversifiers, as their trading markets became more liquid and pricing there came to be more closely aligned with that of public markets. For the same reason, the principal classes of alts ceased to be sources of alpha and became a serious drag on performance. As a result of this market evolution, the EM’s signature asset-class diversification scheme now imposes rigidity without benefit: Asset classes have become silos, tantamount to quotas for large-scale investing in pricey alternative investments of uncertain merit. One hundred or more investment managers for an endowment portfolio are way too many: Inefficient diversification abounds. Costs approaching 2% of asset value are implausible on their face. *These* are the economics of the EM, and they are conspicuously out of whack.

PICK YOUR PERIOD

Siegel makes the point that the poor performance of the EM is “time specific.” I would reply that all empirical results are time specific. The issue is whether or not the results make sense in a fuller temporal context. Exhibit 1 illustrates the value-added achieved by large endowments over the longest time period available to us, which is 47 years.¹ It identifies three distinct eras of endowment performance. The first and third eras account for 32 of the 47 years. They come about as close as you can get to depicting the normal performance of diversified investment portfolios (and in this case, a composite of them). By this I mean the composite underperforms a passively investable benchmark by the approximate margin of cost, or 0.8% of asset value in the first era (stocks and bonds only) and 1.6% of asset value in the third (post-Global Financial Crisis), when costly alternative investments averaged nearly 60% of endowment assets. The first and third eras conform neatly with a dictum among finance scholars that to the extent markets are reasonably efficient, diversified portfolios can be expected to underperform properly constructed benchmarks by the margin of cost. At the same time, the middle era is anything but normal. And if it wasn’t for that strikingly *abnormal* period of endowment performance, there would be no debate taking place now over a thing called the endowment model (that stopped working 12 years ago). There is nothing fluky about the past 12 years. The mangled economics of the EM are simply expressing themselves in the form of rates of return.

¹ See Ennis (2021a).

EXHIBIT 1**Forty-Seven Years of Excess (Risk-Adjusted) Return for Large NACUBO Endowments**

NOTE: National Association of College and University Business Officers (NACUBO).

ENDOWMENT EXCEPTIONALISM

Siegel makes the case for a kind of *exceptionalism* on the part of endowed institutions that should enable them to outperform other types of institutional investors. He discusses their freedom to invest without constraint.² His argument is that rich universities pay better than some other types of institutional investor and offer collegial work environments, which together enable them to attract highly skilled employees. In this vein, he writes they have “highly respected chief investment officers that are chosen for their independence and intelligence.” He emphasizes the importance of “skilled investors” more than the particular strategy they might employ in managing money. He notes that university investment offices are typically nestled within elite institutions, many of which have distinguished faculty members (Nobel laureates, even) who can add intellectual firepower to investment management. He says that endowment managers rub elbows with captains of industry and finance by virtue of

² I believe this overstates the potential for unconstrained investing by endowments. Educational institutions are the ultimate investors of conscience. They seemingly move from one moral dilemma to the next in managing their wealth. Divestment mandates have included companies doing business in South Africa, Darfur, and Israel. Schools have faced pressure to divest themselves of tobacco, firearms, and gambling. They are currently being forced to exclude fossil fuel investments and are retooling their investment strategy to embrace environmental, social, and governance (ESG) considerations more generally. In the mid-2000s, Harvard University’s trustees experienced the sustained fury of the editors of *The Crimson* over the compensation of its highly successful investment staff, which resulted in the departure of key personnel and a reversal of performance. Constraints take various forms in the world of educational endowments. This is unlikely to change in the years ahead.

connections made through the graduate business school and board room. Investment managers from all over the world call on them, regarding them as very special clients. In his earlier article, “Don’t Give Up the Ship: The Future of the Endowment Model” (Siegel 2021a), Siegel avers, “Endowment funds have...structural advantages...that should allow them to earn above-market risk-adjusted returns in the long run.” That would make them exceptional to be sure.

Is endowment exceptionalism real? Is it myth? Some of both? Let’s see where logic (theory) and the facts (evidence) take us.

Theory

I assume the comparative advantages that Siegel identifies for endowment funds are not shared by the more ordinary public-employee (government-sponsored and government-managed) pension funds in the United States. Proceeding from that premise, I compare the two investor types. Both are tax-exempt investors in the United States. Both are institutional funds that would describe themselves as having an amply-long investment horizon for equity investing. Similar fiduciary standards apply to both. Both operate in the same highly competitive markets. Both diversify their investments extensively. They exhibit remarkably similar effective exposures to major stock and bond markets.³ Their patterns of return variability over time are virtually identical.⁴ Dollars invested don’t know whether they are working for an Ivy League school or public school teachers. From a financial-markets-and-institutions standpoint, there is no difference between endowments and public pension funds in terms of how they might be expected to perform *before costs*.

Evidence

So, how have the two types of institutional investor performed side by side? Will we find a payoff to the cultural advantage Siegel ascribes to endowments? The answer is *no*. Large educational endowments have for many years *underperformed* large public pension funds. For the 12 years ended June 30, 2020, public pension funds had an alpha of -1.14% per year. The alpha of endowments for that period was -1.47% per year. The return patterns of the two investor types are nearly indistinguishable, except for their alphas.⁵ Endowments’ greater negative alpha is in line with their greater cost of investing. This, in turn, is a consequence of their much greater holdings of alternative investments (approximately 60% of total assets versus approximately 30% for public funds). The results of this head-to-head comparison are starkly at odds with the thesis of exceptionalism.⁶ So, theory and evidence trump culturalism when it comes to investing. Long live finance theory and evidence!

ACTIVE MANAGEMENT

Siegel discusses active management in largely theoretical terms, citing the scholarly work of Grinold and Kahn (2000) and his own work with Waring (Waring and Siegel 2003). He contends that if an investor *believes* they are skilled at picking winners,

³The public fund composite has a returns-derived effective exposure to globally diversified equities of 71% and to investment-grade US bonds of 29%. The equity allocation of the endowment composite is ever-so-slightly greater at 72%.

⁴See Ennis (2020, 106–107).

⁵See Ennis (2021b, 134–135).

⁶Sebastian (2012) observes that endowments underperformed public funds over the 2003–2011 period.

EXHIBIT 2

Performance Statistics for Private Equity, Hedge Funds, and Real Estate During the Bull Market Beginning in 2009

	Private Equity	Hedge Funds	Real Estate
Effective Equity Exposure	100%	43%	100%
Alpha	-2.4%	-3.1%	-6.0%
R ²	81%	89%	77%

SOURCES: Asset class returns are from CEM Benchmarking, Beath and Flynn (2020), HFR, and Cambridge Associates.

they should opt for active management over passive. It is unclear, though, how one is to know *who* is skilled before the fact. This is a problem when 99% of the people working in the field of institutional investing *behave* as if they fall into the skilled category, where they hope to be paid more handsomely than the few willing to relegate themselves to the unskilled category. He then asserts that, owing to the ostensible advantages discussed previously, endowments have favorable prospects for value-added investing. The tenor of this rather academic discussion is supportive of active investing on the part of endowments, but short on substance.

Worse yet, in talking up the potential of active management, Siegel's argument does not address directly the overwhelming evidence in the financial economics literature that *active investment managers, collectively, do not even recover their costs, let alone add value*. We are talking hundreds of articles and dozens of books spanning more than half a century. He ignores the related "persistence" literature showing that outperforming managers in one period tend not to repeat as winners in the next period, highlighting the challenge of identifying skillful managers ahead of time.⁷ He tiptoes around all of this, leaving his treatment of active management's potential decidedly unbalanced.

APPLES, ORANGES, AND LOW BETAS

Siegel says a strong stock market is as much to blame for endowments' subpar performance as anything. In referring to my empirical results he says, "Endowment funds were outgunned by the never-ending rise of the S&P 500." He cites return statistics for the S&P 500 in the 2009–2020 period and likens endowments' challenge then to "racing against Secretariat. You're not going to win." Huh? I do not reach conclusions about endowment performance using the S&P 500 as a benchmark. My benchmark includes small-cap US stocks as well as large, non-US stocks and US bonds—72% globally diversified, all-cap stocks and 28% investment-grade bonds. I show that endowments have consistently underperformed a benchmark that closely matches their effective market exposures and risk characteristics. Siegel makes an apples-to-oranges comparison in letting the endowments off the hook for weak performance. I say *piffle*, sir.

In the same vein, Siegel states that endowments' poor showing over the past 12 years is due to their generally following "a low-beta strategy." He argues that alt-heavy portfolios should not be expected to keep up with stocks in rising markets. Exhibit 2 provides performance statistics for three principal classes of alternative investments during the bull market that began in 2009. The statistics result from multiple regression of those alts' returns on relevant stock and bond indexes.⁸ Effective Equity Exposure is the sum of the regression weights of the various equity indexes. The R²'s average 82%. These statistics indicate that the alts moved with the stocks in the bull market. At the same time, all three alt categories had negative alphas, averaging -3.8%. In other

⁷The "persistence" problem has recently been extended to include private equity managers. See Harris et al. (2020).

⁸Real estate returns (from Cambridge Associates) and hedge fund returns (from HFR) are for the 12 years ended June 30, 2020. Private equity returns (from Beath and Flynn 2020) are for the 10 years ended December 31, 2018. All three series begin with the bull market that began in 2009.

words, alt returns played out in accordance with their systematic risk and thus were *not* left behind in the bull market. Rather, they underperformed on a risk-adjusted basis. The main culprit in the alts' underperformance was their annual cost of 2%–4% of asset value.⁹ Siegel discounts alts' betas, which are alive and kicking, while overlooking their very ample negative alphas as the source of their lagging returns.

A more productive line of debate is whether or not there is reason to believe that the winning alternative investments of the 1990s and early 2000s—private equity, hedge funds, and unlisted real estate—as classes of assets will ever become attractive again as sources of value-added investing. In anticipating a bounce-back in alt returns, Siegel's argument ignores the fact that the Golden Age of Alts was a period in which private-market deal prices were incredibly cheap. This may never be the case again unless demand for alts falls. More generally, pricing in the alt markets is much more efficient now than it was 20 years ago, as a result of huge cash inflows and maturation of markets. Alts have ceased to be diversifiers. And they cost 2%–4% of asset value each year. What might *change* in the years ahead to alter what is, by my lights, a discouraging outlook for yesterday's stellar alts?

SUMMING UP

I said in the introduction that Siegel chooses to expound on active investing in conceptual terms, with occasional reference to endowment management. I find the essay long on intellectual theory and short on proof. I am unmoved by the rationalization of endowments' significant underperformance over 12 years and counting. The case for active investing looks past the elephant in the room—theory and evidence casting grave doubt on the merit of diversified—that is, myriad-manager—active investing such as that of endowments. The exceptionalism argument falls flat. The article sidesteps the glaring deficiencies of the EM. Siegel simply *posits* the presence of “skilled employees” in university investment offices who will get the job done despite obstacles of their own making. I find this explanation unconvincing. The endowment model is dead as a doornail.

WHAT LIES AHEAD?

What is the future of institutional portfolio management? “How to Improve Institutional Fund Performance” (Ennis 2021c) makes recommendations for improving the odds of successful endowment management. The time has come for endowment managers to begin to explore simpler, more flexible concepts in asset allocation, by gravitating away from asset-class silos that impose rigidity with no assurance of benefit. As they do, they should suspend the practice of maintaining de facto quotas for various types of active investments, such as 20% in private equity or 15% in hedge funds. Each and every active investment must earn a place in the portfolio based on its specific merits and estimated cost, without consideration for whether its *type* is a good fit or not. (Type, i.e., asset-class identity, has proven irrelevant.) Endowment managers *must* reduce cost and the number of actively managed portfolios they employ. Maintaining a passive core portfolio may be in their future as a means of gaining diversification more efficiently. In the end, endowment managers have to reconcile the reality of largely efficient *and* integrated markets (with their limited mispricing opportunities)—and the need for efficient diversification and cost. That challenge faces even the most skillful among them.

⁹See Ennis (2021b, 131) for a discussion of the cost of alternative investments in support of the 2%–4% figure.

REFERENCES

- Beath, A. D., and C. Flynn. 2018. "Real Estate Performance by Implementation Style." *CEM Benchmarking Inc.* https://www.cembenchmarking.com/research/Real_estate_by_implementation_style.pdf.
- Ennis, R. 2020. "Institutional Investment Strategy and Manager Choice: A Critique." *The Journal of Portfolio Management* (Fund Manager Selection Issue) 46 (5): 104–117.
- . 2021a. "Endowment Performance." *The Journal of Investing* 30 (3): 6–20.
- . 2021b. "Failure of the Endowment Model." *The Journal of Portfolio Management* (Investment Models Issue) 47 (5): 128–143.
- . 2021c. "How to Improve Institutional Fund Performance." Available at SSRN: <https://ssrn.com/abstract=3816608> or <http://dx.doi.org/10.2139/ssrn.3816608>.
- . 2021d. "Problems with the Endowment Model." *Journal of Investing* [current issue].
- Grinold, R. C., and R. N. Kahn. 2000. *Active Portfolio Management: A Quantitative Approach for Producing Superior Returns and Controlling Risk*. New York: McGraw-Hill.
- Harris, R. S., T. Jenkinson, S. N. Kaplan, and R. Stucke. 2020. "Has Persistence Persisted in Private Equity? Evidence from Buyout and Venture Capital Funds." NBER Working Paper No. w28109. Available at SSRN: <https://ssrn.com/abstract=3735676>.
- Sebastian, M. D. 2012. "Public Funds Can Compete." Available at SSRN: <https://ssrn.com/abstract=2114449>.
- Siegel, L. B. 2021a. "Don't Give Up the Ship: The Future of the Endowment Model." *The Journal of Portfolio Management* (Investment Models Issue) 47 (5): 144–149.
- . 2021b. "The Endowment Model Is Just Active Management." *The Journal of Portfolio Management*, forthcoming.
- Waring, M. B., and L. B. Siegel. "The Dimensions of Active Management." *The Journal of Portfolio Management* 29 (3): 35–51.

REBUTTAL: The Market Portfolio Is Bigger Than You Think

Laurence B. Siegel

Laurence B. Siegel

is the Gary P. Brinson
Director of Research
at the CFA Institute
Research Foundation in
Charlottesville, VA, and an
independent consultant.
lbsiegel@uchicago.edu

KEY FINDINGS

- The true world market wealth portfolio is much larger than the total capitalization of public stock and bond markets.
- Active investors should consider the entire world market wealth portfolio, to the extent that it can be accessed, as their opportunity set.
- Alternative investments are not new and have been used by endowments and other investors over a long period of historical time.

ABSTRACT

The true opportunity set and hypothetical benchmark for investors is, and always has been, the aggregate portfolio of every asset in the world. This portfolio is very diverse and complex. To control risk and make the investor's job more manageable, most of these assets have been excluded from institutional portfolios, which have instead focused on public equities and bonds. The endowment model opens up the investment process to the true opportunity set and makes it possible to earn returns from sources that have traditionally been closed to both institutional and individual investors.

TOPICS

[Portfolio theory, portfolio construction, foundations & endowments, performance measurement*](#)

In this article, I respond to some comments in Ennis's "Problems with the Endowment Model" (Ennis 2021a). The gist of his argument is that the endowment model burdens institutions with high fees and, at least over the past 12 years, has had meaningfully inferior performance. He suggests indexing, which is of course always a defensible choice. His article is paired with my article defending the endowment model in this issue of *The Journal of Investing* (Siegel 2021a).¹

My earlier article argues that the extra degrees of freedom in the endowment model make it easier for investors to earn excess return (alpha)—not that it is ever easy—than if one is heavily constrained. This argument is supported by the literature I cited in that article on the opportunity costs of constraints. In the current essay, I take a different tack, emphasizing the fact that the true market portfolio is much larger than the global public stock and bond markets. Therefore, an investor can add value to traditional portfolios by choosing from this larger array of assets; this

*All articles are now categorized by topics and subtopics. [View at PM-Research.com](https://www.pmr-research.com).

¹ Ennis and I also wrote paired articles on the endowment model for *The Journal of Portfolio Management* (Ennis 2021b and Siegel 2021b).

is called the “market completion” hypothesis, and there is, likewise, a rich literature on it, going back to Roll (1977).

Although Ennis and I probably agree on every important principle of investing, we differ on the endowment model, whereby—coming from the same place in terms of theory—we arrive at nearly opposite conclusions. Having worked at an endowed institution for 15 years, I am keenly aware of the high costs and variable performance of the alternative investments that make up so much of endowment portfolios. I also believe each of us would be capable of making the other side’s points quite effectively. I have often spoken on the beauty, simplicity, and cost effectiveness of indexing, and I am pretty sure Ennis can find arguments to support active management, including unconstrained active management across both traditional and nontraditional asset classes.

FIRST, SOME GENERAL THOUGHTS ON ACTIVE MANAGEMENT

In 1980, when I was 26 years old, I read this passage from Grossman and Stiglitz’s (1980) “On the Impossibility of Informationally Efficient Markets”:

“[B]ecause information is costly, prices cannot perfectly reflect the information which is available, since if it did, those who spent resources to obtain it would receive no compensation.”

It stuck with me. Add that to the title of the article and you have an airtight argument that active management is not useless. Ironically, it *cannot* be useless, even if active managers in aggregate don’t add any value for their clients. They add value for everyone else. Without active management, indexers would be buying securities at prices not tethered to fundamentals in any way. Indexers rely on active managers for all of the information that informs the prices they pay and receive.

In the 40 years since I read this passage—called by Ibbotson and Brinson (1987) the “student’s proof” that markets are inefficient, because there is a bright student in every class who intuits this truth before they’ve ever heard of Grossman and Stiglitz—the idea has not been refuted.² And it will not be.

Sharpe’s (1991) “Arithmetic of Active Management” does not subtract from the truth of this argument. It adds to it. The returns of all active managers, properly weighted by assets under management, sum to the return of the market minus costs. Some will beat the market or their particular benchmark; others will be beaten by it. As I noted in Siegel (2021a), you as an investor must decide whether you think you can identify the winning managers, on average; if not, you should most assuredly just index. But there will be some active managers that add value, because they either gather information more successfully than their competitors or process it more skillfully, thus earning returns larger than the costs they incur in doing so.

EVALUATING THE ENDOWMENT MODEL

OK, enough about active management in general. The question on the table is whether the endowment model is any good—whether it is worth pursuing as an alternative to indexing. The beginning of my answer is the title of Siegel (2021a), *the endowment model is just active management*. A portfolio constructed using the

²Ibbotson and Brinson (1987, 58–60). I highly recommend this brief passage about why markets cannot be perfectly efficient. Although the book is now out of print, it is available on used-book websites.

endowment model may depart materially from the asset class weights in an institution's policy benchmark; it may use assets and asset classes not in the benchmark, such as private equity and real estate; and it may use investment structures, such as hedge funds, that are active management on steroids.

Each of these examples just expresses one, or possibly both, of these two ideas:

1. "I know more than the market" [about something]; or
2. "The real set of investment opportunities is broader than what the policy benchmark contains."

The first assertion is arguable and testable. Sometimes you'll know more than the market, and sometimes you'll think you know more than the market when you don't. I've already covered this question, under what conditions to choose active management, in some detail.

The second assertion is patently true, and is the topic on which I focus in the rest of this article.

THE VERY LARGE OPPORTUNITY SET OF ALL ASSETS IN THE WORLD

The real "market portfolio," the opportunity set from which investors should hypothetically choose their investments, is bigger than you think. It's much bigger than the publicly traded equity and bond markets. It includes every asset in the world that you can get your hands on. You'll probably wind up excluding most of these assets for various reasons. But you should evaluate them all, taking into account any negative attributes they have as well as their potential for return. That's what the endowment model does, and it is what all active investors should do.

Choosing to ignore any of these assets or investment opportunities is itself an active bet against that asset, because the real market portfolio includes it. There are many reasons not to like an asset, including high costs or limited marketability, but at least you should know you're excluding it.

How big and how diverse is the true world market wealth portfolio? Many researchers have tried to answer this question, including me, with Ibbotson and Love, in the mid-1980s (Ibbotson, Siegel, and Love 1985). The latest plausible answer, from Bain & Company (Harris 2012), is a quadrillion dollars.³ That is not a typo. In round numbers, that's \$130,000 for every man, woman, child, and dog in the world. Just kidding about the dog. *This does not include human capital*, by far the largest asset in the world, consisting of the future income-generating capacity of the people in it.

The hypothetical world-wealth opportunity set thus includes real estate, commodities, private capital (equity and debt), farmland and timberland, intellectual property, and environmental contracts. There are probably more assets omitted from this list than included in it. It also includes human capital to the extent there's a way to trade it; slavery is forbidden, so we have to use proxies for the present value of people's future incomes.⁴

This kind of asset management is complicated, and much harder than picking benchmark-aware, long-only, unleveraged managers in traditional equity and bond

³Bain's number is a little less than a quadrillion, but markets have risen a lot since 2012, so a quadrillion is a good round-number estimate.

⁴A market is emerging in higher-education financing where the student pays back a percentage of his or her student's future income, so securities based on these contracts are a form of tradable human capital. We will see if this market amounts to anything. The contracts do not cover a lifetime of income, are limited in size, and apply only to people who want a college education and need to raise funds to pay for it, so they are not by any means a *complete* human capital market.

asset classes. Please don't try it at home. But large institutions with skilled staffs and access to the world's best managers (as well as the worst and the mediocre) will be leaving a lot of money on the table if they just ignore these opportunities, because of legal restrictions or the desire not to differ too much from one's peers.

THE LONG VIEW

When unraveling a tough question, it often helps to take the long view. There were almost no stocks and bonds in 1700. Most investments were what we'd now call alternative. And there is no guarantee that, in 2100, stocks and bonds will be the primary vehicles for investing. While the liquidity and transparency of these instruments probably guarantees them a future, the move into alternatives in the last quarter-century and the huge size and diverse characteristics of the true world market portfolio show that "there are more things in heaven and earth, Horatio, than are dreamt of in your philosophy."⁵

Who in 1950 or even 1975 would have thought that crowdfunding and digital currencies would be a thing?⁶ How about private investment in public equity (PIPE) deals, special purpose acquisition companies (SPACs), and carbon credits? A little farther afield, how about life settlements, litigation funding, and weather derivatives? It is possible some of these are uncorrelated with stocks and bonds and have positive expected returns?

PREHISTORY OF ALTERNATIVES

Moreover, the *institutional* use of alternative investments—and, for that matter, the endowment model—wasn't invented in the mid-1980s.⁷ Before then, some endowment, pension, and individual portfolios contained heavy doses of real estate, more so than today. Many classes of investors diversified into venture capital, oil and gas partnerships, commodities, and gold. Emerging market equities, and before that, all non-US equities, were considered unconventional: starting in 1973, Nilly Sikorsky at Capital International made a career out of researching and promoting investment in edgy equity markets like Italy, Japan, and Spain.

Before that, Oxford University owned forests, and Cambridge, farmland. For the endowment of Cambridge University's King's College, John Maynard Keynes moved toward equities (he liked the liquidity) and built highly concentrated stock portfolios, which he knew at the time were risky active bets. (Keynes's writings show that he intuited some aspects of the later work of Markowitz.) Unconstrained investing has a long and honorable history—although we don't know if Keynes was the only one who succeeded at it. Most likely, he wasn't, but the unavailability of benchmarks and accurate performance measurement makes the history of alternative investing something of a mystery.⁸

⁵ Shakespeare, W. *Hamlet*. Act 1, scene 5: 187–188.

⁶ I am not endorsing crypto *in any way*. (Actually, I am not endorsing any particular investment.) Digital currencies of the future will include central bank digital currencies, which are forms of sovereign-backed cash. I expect them to be safe and useful.

⁷ For more history of the alternative investment universe, see <https://www.preqin.com/academy/lesson-1-alternative-assets/past-present-future-of-the-alternative-assets-industry>.

⁸ We have some idea of how well Keynes himself did as an endowment manager. During Keynes's tenure, Chambers, Dimson, and Foo (2004) estimate that "the King's Discretionary Portfolio generated over the quarter century to 1946 an annualised return of 16.0% compared to 10.4%...and 7.1% for the UK equity market...and UK government bonds respectively.... [T]he Discretionary Portfolio generated a Jensen's alpha of 7.7% with a very high tracking error relative to the UK equity index of 13.9%."

A DELICATE BALANCE

In case you think I am seriously making the case for the paleolithic style of investing that I've described in the previous section, I'm not. I'm a believer in portfolio theory and the timeless innovations of Markowitz, Sharpe, Black, Merton, and their many successors, and I hope I've contributed a little to that body of work. I'm just pushing back gently on the misunderstanding that their ideas mean we should all index our portfolios to conventional asset benchmarks. And I've overstated my case a little, for fun and dramatic effect.

Endowment investors who choose to be active should seek a balance between the index-everything strategy at one extreme and the do-whatever-you-want philosophy at the other. Note that the indexing end of this continuum is a valid strategy and the whatever end is not. That said, where you fit on the continuum depends on your resources, self-evaluation of skill, past results, and tolerance of outcomes that differ from those of the crowd and the policy benchmark. Each institution will have to decide those questions for themselves, but I've outlined the parameters of the decision.

I am fond of Meir Statman's dictum (posted on his office wall): "You are not so smart and other people are not so stupid." The wisdom of crowds is not an empty notion. Thus, I lean toward the indexing end of this continuum—but *not all the way*. For everyone to hold the same portfolio, differing only in beta, is absurd. It denies the difference between people in their analytical and information-gathering talent, their ability to manage risks and costs, and in particular, their social and professional situations that enable some to have one kind of special knowledge, others to have a different kind, and yet others to have none at all. There is a place for many different investment models, including the endowment model.

CONCLUSION: IMPROVING THE ENDOWMENT MODEL

Ennis's article concludes, "I say it's broke and needs fixing." In a personal communication, he also said that he would have preferred to see an article explaining how to improve the endowment model, rather than just defending the existing one. That is, of course, a whole separate article, but here's the executive summary:

- Do your own damn due diligence. Buying something because Harvard or the Ford Foundation did the due diligence on it is not investing.⁹ And, if you're going to march to a different drummer, don't all march to the same different drummer. Widespread acceptance of an investment by the endowment "community" is a reason not to make an investment, not a reason to make it.
- Keep a very close watch on costs. In addition, be aware of the frictions imposed by capital calls, lockups, and other liquidity-related matters. Liquidity is a little-appreciated risk factor (Siegel 2008); you get compensated for taking illiquidity risk except when you get crushed by it. That's why it's called "risk."
- Be wary of correlation with traditional assets, especially hidden correlation caused by infrequent or inaccurate measurement of asset value. High correlation is bad. Just because other endowment-model institutions have assembled portfolios that are highly correlated with public equities and bonds doesn't mean you should; you should do the opposite.
- And repeat, six times before breakfast, "I am not so smart, and other people are not so stupid." Learn from the mistakes of others, not just your own.

⁹Mentioned only because I worked at the Ford Foundation for 15 years and have earned the right to pick on it. It is a well-managed institution full of fine people.

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REFERENCES

Chambers, D., E. Dimson, and J. Foo. 2004. "Keynes, King's and Endowment Asset Management." NBER Working Paper 20421. https://www.nber.org/system/files/working_papers/w20421/w20421.pdf.

Ennis, R. M. 2021a. "Problems with the Endowment Model." *The Journal of Investing*, forthcoming.

———. 2021b. "Failure of the Endowment Model." *The Journal of Portfolio Management* 47 (5): 128–143.

Grossman, S. J., and J. E. Stiglitz. 1980. "On the Impossibility of Informationally Efficient Markets." *American Economic Review* 70 (3): 393–408.

Harris, K., A. Schwedel, and A. Kim. 2012. "A World Awash in Money: Capital Trends through 2020." Bain & Company, November 14, 2012. https://media.bain.com/Images/BAIN_REPORT_A_world_awash_in_money.pdf.

Ibbotson, R. G., and G. P. Brinson. 1987. *Investment Markets*. New York: McGraw-Hill.

Ibbotson, R. G., L. B. Siegel, and K. S. Love. 1985. "World Wealth: Market Values and Returns." *The Journal of Portfolio Management* 12 (1): 4–23.

Roll, R. 1977. "A Critique of the Asset Pricing Theory's Tests Part I: On Past and Potential Testability of the Theory." *Journal of Financial Economics* 4 (2): 129–176.

Sharpe, W. F. 1991. "The Arithmetic of Active Management." *Financial Analysts Journal* 47 (1): 7–9.

Siegel, L. B. 2008. "Alternatives and Liquidity: Will Spending and Capital Calls Eat Your 'Modern' Portfolio?" *The Journal of Portfolio Management* 35 (1): 103–114.

———. 2021a. "The Endowment Model Is Just Active Management." *The Journal of Investing*, forthcoming.

———. 2021b. "Don't Give Up the Ship: The Future of the Endowment Model." *The Journal of Portfolio Management* 47 (5): 144–149.