ILLUMINATING THE RETURNS OF ELITE INVESTORS

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The endowments of elite universities have produced exceptional long-term returns. Indeed, many investors now try to emulate the endowment model of investing, which can be characterized as employing asset allocation with a heavy weight to alternative assets and the pursuit of additional returns by hiring skilled investment managers. We will illuminate the true sources of those returns, with clear lessons for investors seeking to improve their investment portfolios.

Exhibit 1 compares the long-term performance of Ivy League university endowments to both the average university endowment and global equities from fiscal 1992 to 2013.[1] Ivy endowments have generated meaningfully higher absolute and risk-adjusted returns than both the average university endowment and global equities. Are these results due to long-term asset allocation policy, hiring the most skilled investment managers or some combination of the two?

Exhibit 2 compares the high-level asset allocation of the average university endowment for fiscal year 2013 with the target asset allocations of the three largest Ivy League endowments. Alternatives represent all assets and strategies other than conventional stocks, bonds and cash, which may include hedge funds, private equity and real assets. The exhibit shows that most university endowments have a meaningful allocation to alternatives, with a heavier weighting among Ivy endowments in particular.

In a widely cited 1986 study of large corporate pension plans, Brinson et al. showed that more than 90% of portfolio return variation is explained by asset allocation policy, and that security selection and market timing detracted from returns on average.[2] This study convinced many investors to focus on asset allocation as the primary determinant of portfolio performance. The success of elite university endowments – with their focus on selecting skilled active managers – has partly called this view into question. However, in 2013, Barber and Wang found results similar to Brinson's for elite endowments by extending asset allocation to include alternative asset classes.[3] We build on Barber and Wang by updating returns to 2013 and applying more precise performance attribution that

EXHIBIT 1 – THE EXCEPTIONAL PERFORMANCE OF IVY LEAGUE ENDOWMENTS

Fiscal 1992 to 2013	Compound Return	Standard Deviation
Average Ivy League Endowment	10.9%	10.8%
Average University Endowment	8.2%	9.9%
Global Equity	7.4%	15.7%

EXHIBIT 2 – ASSET ALLOCATION WITH ALTERNATIVES

2013 Target	Public Equity	Fixed Income and Cash	Alternatives
Average University Endowment	49%	23%	28%
Harvard's Endowment	33%	11%	56%
Yale's Endowment	17%	5%	78%
Princeton's Endowment	25%	5%	70%

uses common risk factors – independent risk premiums (true asset classes) that are the primary drivers of diversified portfolio returns.

EXHIBIT 3 – PERFORMANCE ATTRIBUTION OF THE AVERAGE UNIVERSITY ENDOWMENT

Fiscal 1992 to 2013	Alpha	Market Exposure	Momentum Exposure	Term Exposure	Credit Exposure
Attribution	0.39%	45%	12%	19%	29%
p-value	0.70	0.00	0.05	0.11	0.01

This data is for informational purposes only. Past performance is not indicative of future results. Data is obtained from sources believed to be reliable and is subject to change.

Our November 2013 investment commentary: "Engineered Beta – the Benefits of Diversified Factor Investing," introduced market, size, value and momentum factors as independent sources of return that largely explain and predict the risk and return of diversified equity portfolios. In addition to the market factor (the return of equities over cash), the size factor is the return of small stocks over large stocks. The value factor is the return of value stocks over growth stocks. And the momentum factor is the continued return of winning stocks over losing stocks for a time period. There are two fixed income factors. The term factor is the return of longer dated bonds over cash, and the credit factor is the return of low-quality bonds over high-quality bonds. These common risk factors are the primary sources of risk and return for diversified, multi-asset class portfolios.

Performance attribution tests show that four globally defined factors largely explain the returns of university endowments. These include global market, global momentum, global term and global credit factors.[4] Exhibit 3 displays the performance attribution for the average university endowment where: alpha is risk-adjusted excess return (return attributed to manager skill); betas are risk exposures; and p-values indicate statistical significance (whether a number is likely true or merely random). Although we have 22 years of returns we can test, university endowments report annually, which gives us a limited sample of 22 independent observations. For this reason we report p-values – which adjust statistical significance for the sample size – and use a 90% confidence level (p-values of 0.10 or less indicate significance).

The average university endowment captures economically meaningful and statistically significant exposures to global market, global momentum and global credit factors. The 19% exposure to global term is on the threshold of significance (89% confidence level). The market and term betas are consistent in magnitude with the target weights to public equity and fixed income in Exhibit 2. The annual alpha of 0.39% is small and statistically insignificant. These results are similar to Brinson's original work in that these four generic risk factors explain 88% of the return variation of the average university endowment with no additional return attributable to manager skill.

We note that although momentum and credit factors are systematic sources of return that are broadly available in capital markets at relatively low cost, the average university endowment almost certainly captured the majority of these two long-short return premiums through the hedge fund allocation. Momentum and credit are common hedge fund risk exposures, and allocations to equities and high-yield bonds were not large enough to generate these betas from those long-only allocations. These results strongly suggest that hedge funds

primarily contributed equity momentum and credit risk (and their associated returns) to endowment portfolios.

We find that asset allocation policy – or more precisely, the long-term exposures to common risk factors captured indirectly through the asset class mix – is the sole determinant of portfolio performance for the average university endowment.

When we run the same performance attribution test on the average Ivy League endowment, we find the four global factors explain nearly the same amount of return variation (87%). However, the annual alpha is economically large at 3.5% and statistically significant. Ivy endowments have earned additional return, above the returns explained by the four global factors.

We find that the source of this additional return is generic exposure to private markets, particularly private equity and private real estate. Exhibit 4 presents the performance attribution of the average Ivy League endowment when we add generic private equity and real estate risk premiums to the four global factors. The private equity premium is the return of the Cambridge U.S. Private Equity Index over cash and the private real estate premium is the return of the NCREIF Property Index over cash.

Ivy League endowments capture economically meaningful and statistically significant exposures to global market, global momentum, global credit, private equity and private real estate risk premiums. The annual alpha of 0.67% is economically small and the 0.61 p-value indicates it is statistically indistinguishable from zero (likely a random result). The four global factors and two private market risk premiums explain 92% of the return variation of the average Ivy endowment with no additional return attributable to manager skill.

The secret to the exceptional historic performance of elite university endowments seems to reside in their asset allocation policy. The heavy allocation to alternative assets enables these endowments to add diversifying sources of return to their portfolios that are not commonly available from conventional stocks or investment grade bonds. Specifically, these sources of return include long-short momentum and credit risk through the hedge fund allocation and illiquidity premiums through private assets. Perhaps surprising to some proponents of the endowment model, we found no evidence that skilled investment managers contributed additional return to the average Ivy League endowment. It is interesting to note that other diversifying risk premiums exist and there is some evidence of skill among select private equity and hedge fund managers, which suggests that Ivy League endowments may be able to improve their returns further.[5]

Brinson's original advice still holds, but with one important corollary. Focus on asset allocation policy as your primary determinant of portfolio performance, but consider expanding your investable universe to capture the unique and different risk premiums available from alternative assets – regardless of manager skill.

EXHIBIT 4 – PERFORMANCE ATTRIBUTION OF THE AVERAGE IVY LEAGUE ENDOWMENT

Fiscal 1992 to 2013	Alpha	Market Exposure	Momentum Exposure	Term Exposure	Credit Exposure	Private Equity Exposure	Private Real Estate Exposure
Attribution	0.67%	19%	13%	4%	20%	30%	17%
p-value	0.61	0.08	0.06	0.71	0.05	0.01	0.10

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Endnotes

1 Global equity is represented by the MSCI World Index. Return and standard deviation capture the endowment fiscal year, ending June. Sources are Morningstar for index returns, NACUBO for average endowment returns and allocations, Barber et al. (2013) and university websites for Ivy League returns and allocations.

2 Brinson, Hood and Beebower, "Determinants of Portfolio Performance," Financial Analysts Journal, 1986.

3 Barber and Wang, "Do (Some) University Endowments Earn Alpha?" Financial Analysts Journal, 2013.

4 We use Fama French global market and global momentum factors (source: Ken French data library). Global term and credit factors are constructed from Barclays Global Treasury and Global High Yield Indexes (source: Morningstar).

5 For example, see Kaplan and Schoar (2005) and Titman and Tiu (2011) for evidence of skill in private equity and hedge funds.

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