Investing Like the Harvard and Yale Endowment Funds

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The university endowment funds of Harvard and Yale have been leaders in diversified multi-asset class investing for over two decades. Through this approach to investing and their exposure to alternative asset classes they have consistently achieved high double-digit annual returns with low risk and only moderate draw-downs.

The rationale for investment across multiple asset classes is supported by Modern Portfolio Theory. This theory, which was developed by Nobel Prize winner Professor Harry Markowitz, shows how risk adjusted returns of a portfolio can be improved by diversification across assets with varied correlations. Modern Portfolio Theory is at the heart of the investment philosophy of the Super Endowment Funds and is the foundation upon which their portfolios are constructed.

The Endowment Funds are very well resourced and have access to the best institutional, private equity and hedge fund managers, and this adds to their investment success. However, in this note we show that by adopting asset allocation principles similar to the Super Endowments it is possible for high net worth investors to also obtain high levels of risk adjusted return; superior to traditional equity/bond portfolios and most balanced investment funds.

Overview of US Endowment Funds

US endowment funds are non-taxable vehicles established to contribute towards the future funding requirements of colleges and universities. Their funding comes from a combination of legacies, gifts and investment returns. In the US there are over 750 endowments with an average of $520 million in funds; the largest fund has over $34.9 billion.

Examining the strategies of the US endowment funds is of relevance to investors for a number of reasons. Firstly, US endowment funds have consistently achieved superior investment returns. This is especially the case for the largest endowment funds – those with assets greater than $10 billion comprising Harvard, Yale, Stanford, Texas System and Princeton. They have achieved an average 10 year annualized return of approximately 14.6%, roughly double the returns for traditional 50% equity and 50% bond portfolio while incurring a lower level of investment risk (see Table 1).[1]

[1] For the purpose of this note, traditional portfolios comprise 50 per cent equities and 50 per cent bonds.

Table 1 – 10yr Annualised Returns by Endowment Fund Size to June 2007

	US Equity/Bond Portfolio	Average endowment fund	Endowment funds with assets > $1bn	Endowment funds with assets > $10bn
10yr Annualized	6.6%	8.6%	11.1%	14.6%
Traditional Assets % of Total	100%	79.7%	55.4%	42.9%

Source: NACUBO (2007); various university annual reports; Bloomberg; Frontier Capital Management

Secondly, US endowment funds have innovative portfolios with exposure to multiple asset classes that provide additional diversification benefits. In this arena the largest endowment funds tend to be leaders. Those endowment funds with assets greater than $10bn hold roughly 57 per cent of their portfolio in alternative assets (see Table 1 & Chart 2). In contrast, the average US endowment fund (Chart 1) still holds a roughly 80 per cent in traditional assets. The additional diversification in large endowment portfolios is one of the reasons for their superior long-term investment performance.

Chart 1
Average US Endowment Funds (June 2007)

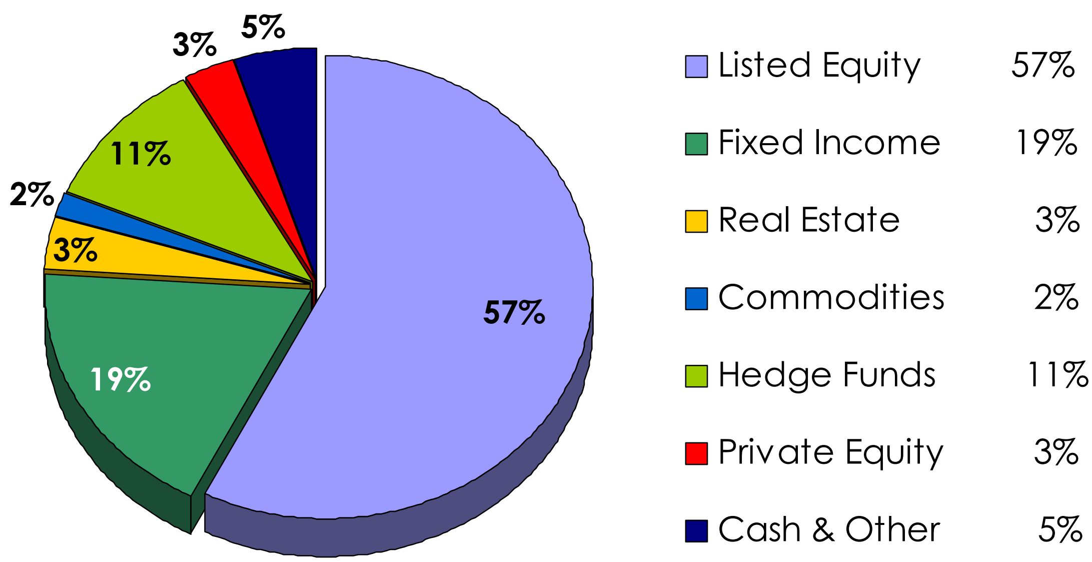
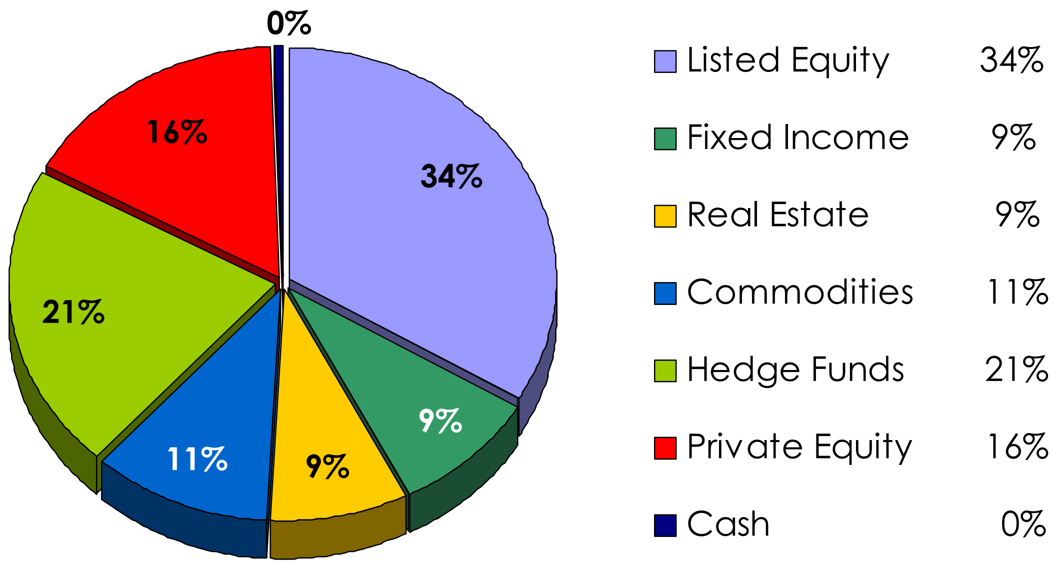


Chart 2
US Endowment Funds With Assets Greater than $10bn (June 2007)



Finally, endowment funds typically have long-term investment horizons and stable asset allocations over time; allocations that rely less on market timing for generating returns and have lower trading costs.

The Super Endowments of Harvard and Yale

Of the US endowment funds, Frontier places significant emphasis on the asset allocation methodology of the 'Super Endowments' of Harvard and Yale. These endowment funds have been two of the best performing with annual returns consistently placing them in the top 10 of all US endowments. For the 10 years ending June 2007, the annualised returns for Harvard and Yale are 15.0 and 17.8 per cent respectively (see Table 2), greater than the returns of their peers and those of traditional portfolios. The Harvard endowment fund is also the largest in the US at $34.9 billion and the Yale Endowment fund is the second largest at $22.5 billion.

Table 2 – Summary of the Super Endowment Funds as at June 2007					
	Size ($bn)	Annual Return 2006/07	10yr Annualised Returns	Manager	Investment Style
Harvard	34.9	23.0%	15.0%	J. Mendillo	Diversified multi-asset
Yale	22.5	28.0%	17.8%	D. Swensen	Diversified multi-asset

Source: Annual reports (various)

The Super Endowment funds have been pioneers in multi-asset investing. Currently 45 per cent of their portfolios are in traditional assets (see Chart 3), much less than the 80 per cent for the average endowment. Of their alternative assets, the majority is allocated to hedge funds. However, the Super Endowments' holdings of commodities and private equity are much greater than the average endowment.

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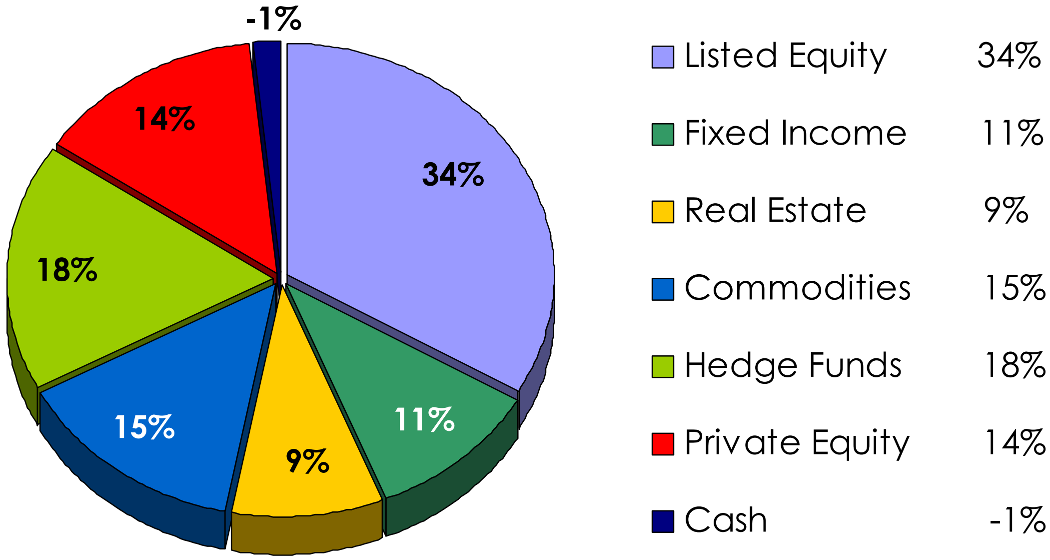
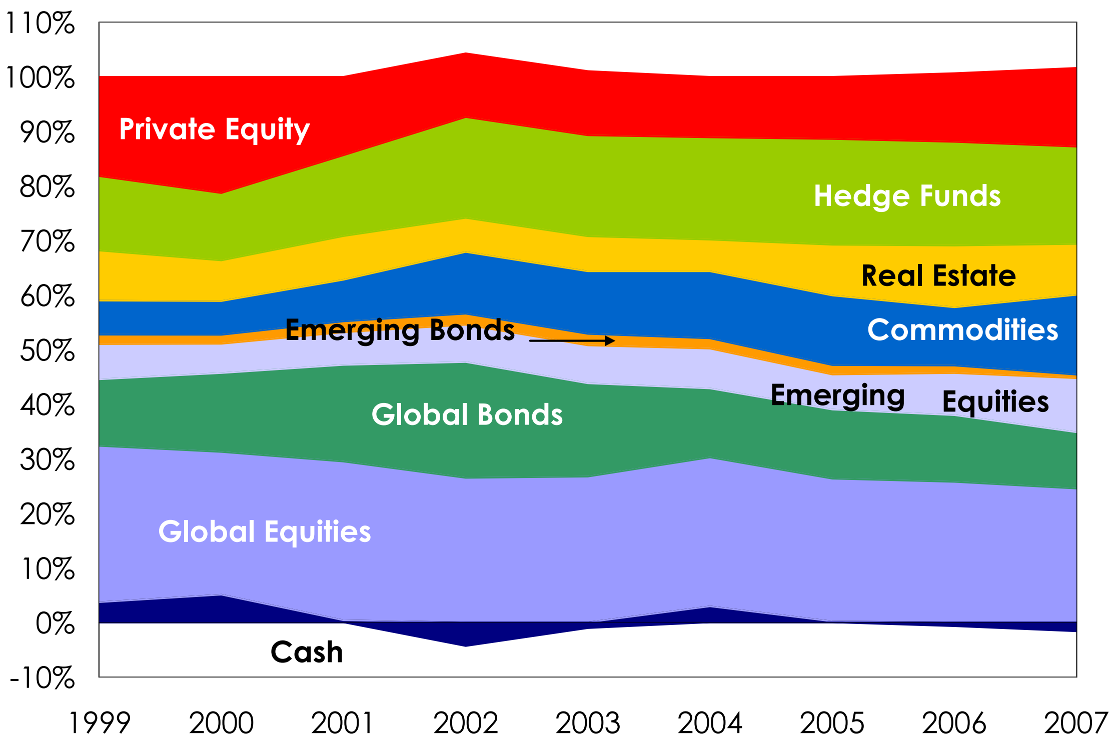
Chart 3
Super Endowment Asset Allocation (June 2007)



Like endowment funds in general, the asset allocations of the Super Endowment funds have been very stable over-time. Since the 1999, the Super Endowment funds have only reallocated an average of approximately 8 per cent of their portfolio annually (see Chart 4). The stable allocations reflect their long term investment horizons and willingness to invest through economic cycles.

Chart 4
Super Endowment Asset Allocation Over Time



Index Investing Using the Asset Allocations of the Super Endowments

The superior returns, long-term investment horizons, and stable asset allocations of the Super Endowment funds make benchmarking to their asset allocations attractive. However, most individuals are not able to actively invest like the super endowments, particularly in asset classes such as private equity. Nevertheless, significant value can still be created by following the multi-asset investing approach of the Super Endowment Funds within an index tracking portfolio.

We have constructed an index tracking portfolio by using the annual asset allocation weights of the Super Endowment Funds, utilizing seven global asset class indices.[2] Portfolio returns are estimated from January 1999 to May 2008; it is difficult to aggregate earlier Super Endowment Fund data prior to 1999. Private equity was excluded, as this asset classes is not suitable for an index tracking portfolio (it has been pro rated half into listed equity and half into other alternative asset classes). Cash was

[2] See the Appendix for a list of benchmark indices used in this analysis. Listed Equities and Fixed Income are broken down further into "Global" and "Emerging" components based on in depth analysis of the asset allocation exposures of Harvard and Yale.

also excluded (pro rated into fixed income) so the portfolio could be directly comparable to traditional portfolios of equities and bonds. Estimated portfolio returns were calculated in USD based on yearly rebalancing every 31st of December.

The resulting 'adjusted' Super Endowment Fund asset allocation currently places just 50 per cent of funds in alternative assets (Chart 5). This is slightly less than the Super Endowment Fund's actual exposure to alternative assets (when private equity and cash are included).

Chart 5
Super Endowments Asset Allocation (Adjusted)

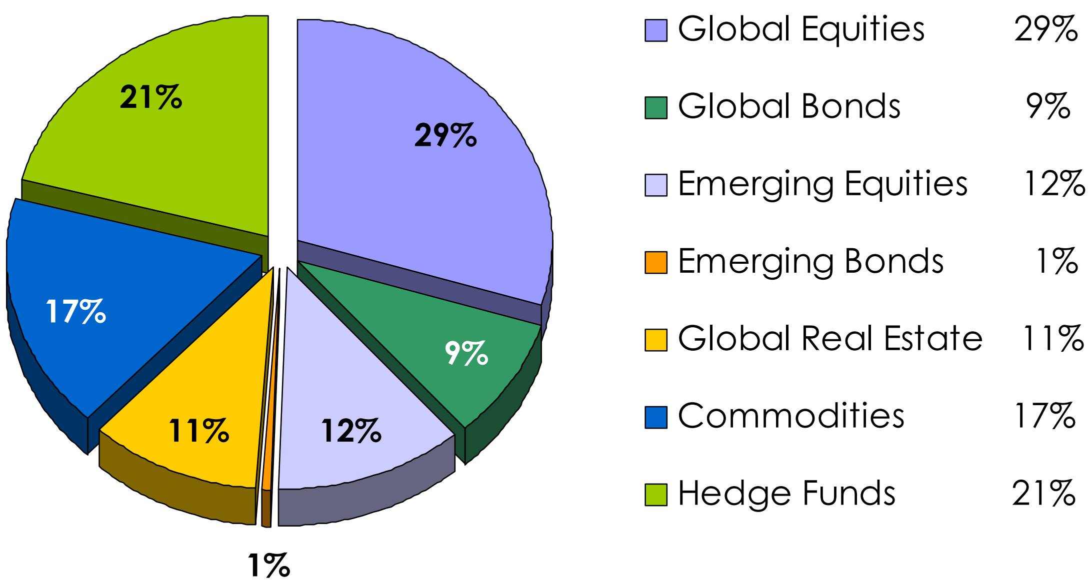
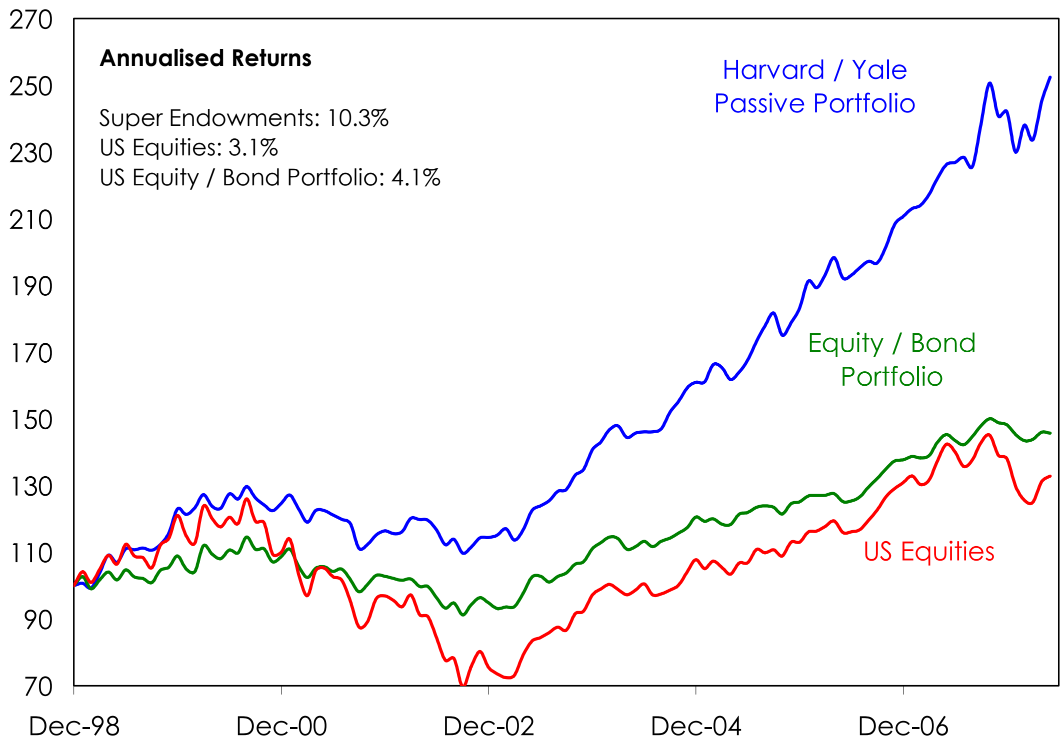


Chart 6
Indexed Performance of Super Endowments



The estimated super endowment index tracking portfolio generated annualised returns of 10.3 per cent since 1999, relative to just 3.1 per cent for US Equities and 4.1 per cent for a US Equity/Bond portfolio. Moreover, the super endowment index tracking portfolio had a much lower drawdown during the 2000-2002 equity bear market and has out-performed so far during the current sub-prime crisis (See Chart 6).

Most of the indices used in the above analysis are investable through index tracking funds although in some cases (such as Global Bonds or Global Real Estate) a combination of index funds may be required to achieve a similar exposure. Index investing for Hedge Funds has historically not been possible, although recently there have been a number of innovations on this front.

Nevertheless, in the scenario of an investor accessing the Hedge Fund component through a diversified range of fund of funds – and assuming these underperformed the HFR Fund of Hedge Funds index by 2 per cent per year – the passive portfolio in the example above would have generated annualised returns of 9.9 per cent, outperforming traditional portfolios.

The above portfolio estimates have not been adjusted for the fees charged by index tracking funds or other issues that may cause tracking error to the asset class indices.

Summary

The Super Endowment funds of Harvard and Yale have consistently achieved high investment returns and low volatility due to their multi-asset approach to investing and exposure to alternative asset classes. While most investors cannot invest like the Super Endowment funds, this research note shows that by applying their multi-asset principles to an index based portfolio returns have historically been superior to those of traditional portfolios.

Appendix A – Benchmark Indices Used

All indices are total return.

- Global Equities: MSCI World Equities Index
- Global Bonds: JPMorgan Global Bond Index
- Emerging Equities: MSCI Emerging Market Equities Index
- Emerging Bonds: JP Morgan Emerging Market Bonds Index
- Real Estate: DJ Wilshire Global Real Estate Securities Index
- Commodities: Goldman Sachs Commodity Index
- Hedge Funds: HFR fund of funds Index

This research note was prepared by Richard Brazenor (CAIA), Senior Research Analyst at Frontier Capital Management LLP. Frontier offers investors a range of globally diversified, multi-asset funds, including traditional and alternative asset classes and accessed through ultra low cost index investing. Should you wish to obtain any further information on index investing or to learn about the range of Frontier's products please email info@FrontierCM.com or visit our website at www.FrontierCM.com