The Denison Model vs The Yale Model

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Since the financial crisis, a group of leading mid-size endowments have outperformed Harvard and Yale and defined what we see as the next evolution of the Yale Model. We call their approach the "Denison Model", describing an investment philosophy focusing on exceptional asset managers ("gems"), maintaining concentrated position sizes and embracing broadly scoped generalist managers. We at Partners Capital follow this approach with all of our individual and institutional clients who have a long-term investment horizon. In this newsletter, we explore the key success factors of the top performers and implications for institutional investment programs.

We start this paper with a word of caution: Investment "models" are dangerous. They imply that there is one best way to do something for investors who have different goals, time frames, risk profiles and constraints. With this note, we use the Denison Model in some ways to steer you away from any one model and to think about the needs of your own institution first. While any model that asserts a perfect combination of features is bound to be inappropriate for some, we do see significant value in the key features we discuss below for both the "Yale Model" and the "Denison Model."

The Foundation: The Yale Endowment Model

The success of the Yale University endowment under David Swensen and his influential book *Pioneering Portfolio Management* transformed the endowment management world. The so-called "Yale Model" is most closely associated with an investment strategy with large allocations to alternative asset classes such as private equity, real estate and hedge funds. Despite popular notions, Swensen's approach was about far more than simply including "alternatives" in a portfolio. Rather, it defined a clear investment strategy based on four core principles:

1) Multi-asset class diversification, resulting in an efficient portfolio with more potential sources of return;
2) High allocation to illiquid asset classes to harvest the illiquidity premium and exploit the greater potential for alpha in private markets;
3) Static risk level, avoiding market timing; and
4) Rigorous due diligence to identify and select the best asset managers, and access to the best.

Over the last 20 years, Yale has leveraged this approach into remarkable success, outperforming the median endowment by 5% annually.[1] Despite some of the challenges facing Yale and other large endowments in recent years, the core principles of the Yale Model are still valid and highly relevant to the current investment world. As many of our readers will know, we continue to believe strongly that portfolio construction for all long-term investors should start with these same principles.

Partners Capital has evolved its own investment model beyond the pure Yale Model, primarily on the back of crucial learning through the global financial crisis. The most notable modification is our unique approach to risk management which abandons volatility as a sufficient measure and focuses on market risk factors, looking through to the market exposures of all of the underlying asset managers in a portfolio. We described this philosophy in our Q2 2013 whitepaper ("Do Your Asset Managers Justify Their Fees?"), and will devote more time to this subject in future papers.

Some of the adaptations of our approach that take us beyond the Yale Model include the learning we have had following a handful of the smaller US endowments. One of these is Denison University. Our Chairman and my partner Paul Dimitruk has now sat on the Denison Board of Trustees and Investment Committee for nearly 14 years alongside some of the most respected investors, providing us with a unique lens into Denison's investment success.

[1] Source: Yale Endowment Annual Report FY 2012.

The "Denison Model"

Traditionally, the largest endowments, with their sophisticated investment offices, have outperformed their small and mid-size peers. During the 1990s and early 2000s, there was little question in any given year that Yale and Harvard would be at the top of the endowment league tables; the only question was which would be first and which second. But in recent years, the top performers are mid-size endowments: Denison, Bowdoin College, Middlebury College and Furman University have all outperformed Yale and Harvard by a significant margin.

As seen in Figure 1 below, eight of the top ten performing mid-size endowments have outperformed Harvard, Yale and Stanford over the last seven years. We focus here on seven-year returns as they approximate a full market cycle, including a full 18 months before the financial crisis. Bowdoin, Denison and Middlebury have been true standouts, comfortably outperforming the old guard as well as broader endowment averages.

Figure 1: 7-Year Annual Performance of Top 15 Mid-Size Endowments ($501 Million to $1.0 Billion)

Rank	Endowment	Assets ($M) at June 30, 2013	7-Year Annual Return July 2006 - June 2013
1	Bowdoin College	$1,039	7.7%
2	Denison University	$683	7.5%
3	Middlebury College	$970	7.4%
4	Cooper Union	$668	7.4%
5	Furman University	$593	7.3%
6	Claremont McKenna College	$599	7.2%
7	Carnegie Institution of Washington	$855	7.0%
8	Colorado College	$593	6.9%
9	Colby College	$650	6.2%
10	Mount Holyoke College	$639	6.2%
11	Colgate University	$814	6.2%
12	Brandeis University	$766	6.2%
13	University of Colorado	$885	6.1%
14	Vassar College	$869	6.1%
15	Baylor College of Medicine	$874	6.0%
	Yale University	$20,780	6.7%
	Stanford University	$18,689	6.4%
	Harvard University	$32,334	5.5%
	NACUBO All Institutions Average		4.6%
	60/40 Stock/Bond Index		5.1%

Source: Annual returns based on Partners Capital estimates using publicly available endowment reports, press releases and financial statements, and analysis from Charles A. Skorina & Co. and NACUBO-Commonfund Study of Endowments. Top 15 ranking is based on Partners Capital estimates and excludes institutions that have not reported Fiscal Year 2013 results as of this writing (e.g. Macalester College). The 60/40 Stock/Bond index is 60% MSCI AC World NR LC and 40% Barclays US Treasury 5-10 Year. Bowdoin College's endowment was less than $1.0 billion at the start of every year during the period. Past performance is not a reliable indicator and is no guarantee of future results. Investment returns will fluctuate with market conditions and every investment has the potential for loss as well as profit. The value of investments may fall as well as rise and investors may not get back the amount invested.

What is driving the outperformance of these leading mid-size endowments? The answer is what we call the "Denison Model." Just as the Yale Model represents not just Yale's approach but the approach that many of the larger endowments and many sophisticated foundations follow, we use the Denison Model to describe an approach followed by many of the smaller endowments. We could easily have called this the "Bowdoin Model" or the "Middlebury Model." We simply chose to name it after Denison due to our collaboration over the years and the better visibility we have into their approach.

The Denison Model begins with the core investment principles of the Yale Model discussed above:

- Diversified multi-asset class portfolio construction;
- High allocation to illiquid asset classes;
- Static risk levels, avoiding market timing; and
- Rigorous due diligence to identify and select the best asset managers, and access to the best.

The Denison Model deviates most from the Yale Model in three areas:

- Greater emphasis on the very most elite asset managers ("gems");
- Higher manager concentration; and
- More use of generalist (more broadly-scoped) managers.

The greatest difference between Yale and Denison is an obvious one: size. The top mid-size endowments have professional investment offices, sophisticated investment committees and access to the best managers – all without the challenge of size facing Yale and Harvard. In many ways, Yale cannot replicate the Denison Model simply due to the sheer size of their endowment at over $20 billion in assets. We estimate that Yale, Harvard, Columbia and others have over 40 liquid managers in their portfolios and many more illiquid managers. This is driven both by their appreciation of the ability of smaller managers to generate alpha and their managers' desire not to have one investor dominate their investor base. So size forces over-diversification, unless the endowment compromises on quality and tolerates larger managers who often struggle to deliver similar levels of alpha as small managers.

Below we elaborate on the key success factors of the top mid-size endowments, starting with the most novel aspects of the Denison Model. Then we recap some of the "classic" attributes of the Yale Model that the top mid-size endowments have continued to embrace. These insights are based on our analysis of top performing endowment portfolios and interviews with investment committee members and trustees at several mid-size institutions.

What is Different about the Denison Model

1) **True "Gem" Managers:** As we peered into the portfolios of these top performing endowments, the differences from those managers found in larger endowment and foundation portfolios were striking. These smaller endowments think about asset manager selection with a very different lens. The bar is set very high as they look for the manager who they envision could well be one of the best managers to own 10 or even 20 years from now. They rarely bring in the manager to exploit a specific cyclical opportunity. Rather they are looking for managers who themselves are true long-term investors and have performed best through full market cycles. These managers are not overly dependent on one man or woman, but rather on institutional processes that continue to evolve with markets and are robust enough to survive succession of the key individuals at the top of the firm. All of the other features of truly exceptional managers must also be firmly in place including demonstrated history of consistent alpha driven by a clear, defensible competitive edge, aligned incentives and appropriate terms. The difference is the time frame over which the manager is expected to outperform. Inside Partners Capital, we call these managers "gems" as they are truly one in a thousand. We define gems as evergreen alpha generators with a proven ability to generate excess returns over a long period of time (ideally 10 years or more). These are the top 1% of managers, not the top quartile.

Gems are further characterized by a culture that prioritizes performance over asset growth. As a result they usually have explicit controls in place to limit growth. Most are closed to new investors, taking new capital only to replace redemptions or exploit a major market opportunity. Gems also do not hesitate to return capital to investors when their asset base exceeds the size of their highest conviction investment ideas. We could dedicate an entire whitepaper to the

topic of defining a gem manager, but this description will have to suffice as capturing the essence of what we are looking for.

Clearly, access is a critical barrier to investing with gems. We find that the top performing endowments are either led or supported by a highly engaged investment committee, usually comprising a group of investment industry veterans covering a wide range of asset classes. The top performers leverage the network of their committee members and trustees to build long-term relationships with leading asset managers. Once access is achieved, the top performers stick with their gems for the long run. They seek to add capital during rare openings, which may occur after a short period of underperformance when their strategy is out of favor.

2) **Concentrated Manager Lineup:** Partly as a result of having very high conviction in their core managers as explained above, the portfolios of the top mid-size endowments' are generally concentrated in 10-20 core liquid asset managers, with average position sizes of 4-6%. Illiquid allocations tend to be more diversified to spread out vintage year exposure. Concentrated portfolios have greater potential for outperformance, and concentration leverages the committee and the investment office staff, who can focus more intently on a small number of managers, surfacing both problems and opportunities more efficiently. To cite some specific examples, one leading mid-size prep school endowment has over 60% of its portfolio concentrated in the top 10 manager allocations, with the top 20 managers comprising almost 85% of the portfolio (with a tail of smaller allocations in Private Equity and Real Assets managers). Another top performing mid-size university endowment has 55% in the top 10 with 80% in the top 20.

Size is a major advantage for the mid-size endowments. They can build more meaningful positions in managers that are difficult to access and have limited capacity. A $15 million allocation to a closed gem manager may be meaningful to Denison but trivial to Yale.

3) **Use of Broadly Scoped Generalist Managers:** The largest allocations are most often made to generalist managers with a broad scope and opportunity set. This may be counterintuitive, as specialization is often associated with competitive edge. However, we find that generalists can avoid macro threats affecting narrow sectors and allocate capital more nimbly to exploit opportunities. Also, to the extent that the use of generalists enables higher levels of manager concentration, lower levels of look-through fees can be achieved. In broadly based managers, incentive fees are effectively "netted" across strategies at the fund level. In other words, fewer funds translate to lower manager fees. Baupost is perhaps the archetype of the great broadly scoped asset manager, investing opportunistically across asset classes as markets evolve. In equities, common allocations in the portfolios of top performers are Lone Pine, Steve Mandel's fundamental equity strategy that invests both long and short globally, and Silchester, Stephen Butt's value-oriented long-only equity fund that invests outside of North America.[2] Both strategies are driven by bottom-up research but avoid country and industry concentration. This broad focus has contributed to exceptionally consistent alpha, the hallmark of gem managers.

The insight here is that we are not looking for the manager who is ideally suited to exploit a single opportunity in the market such as technology stocks or residential mortgage backed securities. We are looking for investment "athletes" who can spot the opportunity in the market today from a fairly broad universe, exploit it, and evolve their platform to exploit others over time.

What should become obvious here is the interdependency of these three features of the Denison Model. One does not really work without the others. More specifically, high manager concentration can only be achieved with very high conviction "gem" managers, many of whom will be broadly based so as to avoid long periods of manager underperformance due to unintentional skews to narrow market sectors

Enduring Attributes of the Yale Model

While the Denison Model builds on the core principles of the Yale Model, those principles are the foundation. Below we elaborate on the enduring attributes of the Yale Model discussed above.

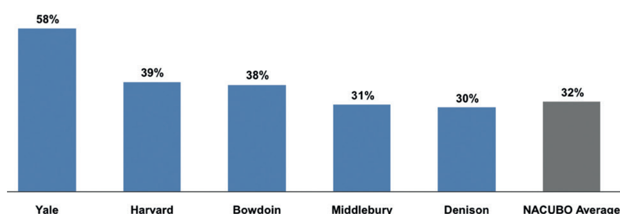
[2] Source: Partners Capital research.

1) **Diversified Multi-Asset Class Portfolio Construction:** Our readers are deeply familiar with this well-documented subject, so we will not wax on about it. Multi-asset class diversification is the foundation of modern portfolio theory and Yale's portfolio construction. Just like Yale, the top mid-size endowments hold diversified, multi-asset class, equity-oriented portfolios.
2) **High Allocation to Illiquid Assets:** Yale's long-standing emphasis on illiquid asset classes is core to the Denison Model. Top performers exploit their long time horizon with high allocations to Private Equity, Real Estate and Illiquid Credit, harvesting the illiquidity premium and greater alpha potential in more inefficient asset classes.

Generally speaking, mid-size endowments have lower illiquid allocations than the largest endowments for two reasons. First, unexpected one-time capital needs could represent a larger percentage of the endowment, warranting a higher level of liquidity. Second, mid-size endowments cannot access the public debt markets as readily as large institutions, which can borrow to meet short-term liquidity needs during a funding squeeze. However, the top mid-size endowments have higher illiquid allocations than the mid-size category average and are often more in line with large endowments. Illiquid allocations of 30-40% are common among the top performers, as shown in Figure 2.

3) **Static Risk Level:** Endowments have a virtually infinite time horizon and most can accept a high level of risk and volatility to achieve high excess returns. The top endowments monitor their overall risk level rigorously and exploit market movements to rebalance to the target risk level, paring asset classes that have rallied and buying those that are out of favor. Followers of both the Yale and Denison Models embrace this concept.

Figure 2: Target Allocation to Illiquid Asset Classes for Top Performing Endowments



Source: Publicly available endowment reports, financial statements and Investment Policy Statements. Illiquid asset classes include Private Equity, Real Estate and other Illiquid Real Assets (e.g., oil & gas partnerships). Where available, the current target allocation to illiquid asset classes was used.

The top performers maintained their high risk level through the market downturn in 2008-2009, reaping the benefits as equity and credit markets recovered. Notably, the University of Chicago has emerged as a leader among larger endowments in adopting a rigorous approach to look-through risk management and formally target a total equivalent equity beta of 0.75 for their endowment.[3] We find that most top performing endowments manage to equity equivalent risk targets of 0.70 to 0.80. The upper end of this range has generally increased in recent years as zero risk-free rates have induced endowments to increase risk to meet return requirements.

4) **Rigorous Asset Manager Due Diligence:** As mentioned above, Yale has outperformed the median endowment by a remarkable 5% annually over the last 20 years. They attribute most of their strong historical performance to manager selection. Based on their own analysis, 80% of this outperformance was driven by manager selection and only 20% from asset allocation.[4] The leading mid-size endowments have replicated Yale's analytical rigor and network-based access to identify and access the best asset managers. Consistent with our theme throughout this piece, the mid-size endowments have leveraged their astute manager selection by concentrating more of their capital in their top managers.

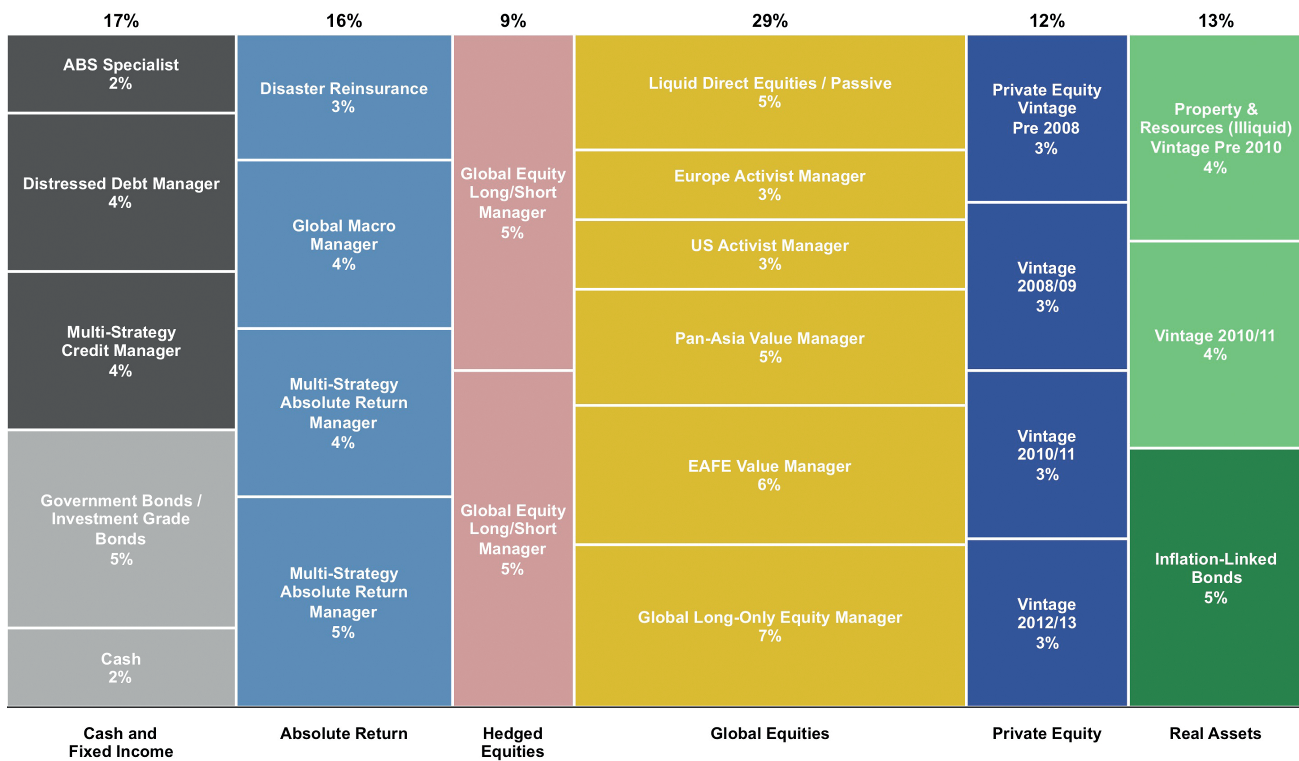
Investment Management Implications for Small Endowments

The insights from the Denison Model translate directly to endowment management for small institutions. The most successful endowments we have seen embrace the principles of concentrating in exceptional asset managers, setting and maintaining a static risk level and harvesting the illiquidity premium.

In Figure 3 below, we provide an example of an illustrative portfolio for a mid-size endowment illustrating the core attributes of the Denison Model at work. This portfolio was designed to meet a high target risk level (70% equity equivalent risk) and expected return. The portfolio has a significant allocation to "gems" across all asset classes. Clearly, the right strategy for your institution will depend on the risk tolerance of the institution, liquidity needs and exposure to other "legacy" assets outside of the endowment.

[3] Source: University of Chicago Endowment Annual Report FY 2013.
[4] Source: Yale Endowment Annual Report FY 2012.

Figure 3: Example Portfolio for Small Endowment



Note: This Example Portfolio is illustrative and does not constitute an investment recommendation. Investors should consult an investment advisor and tax advisor before selecting an investment strategy.

As you will notice from the amount of space we dedicate to "gem" managers in this paper, the core of the investment approach that we are describing is "raising the bar" for active managers through a rigorous emphasis on allocating to the very best of the best. There is an obvious challenge here. Gems are largely defined by their inaccessibility to new investors. This obviously points one to seek out the next generation of truly exceptional asset managers. These managers are not born exceptional; rather, they are naturally talented people who have generally been trained by the best. Many of the new generation of gems have spun out from the old generation of gems. In many cases, such new gems are "closed before they open," and it is not always obvious that they will recreate the capability of their alma maters without watching them for several years. We have found that being close to the "old gems" is the best strategy for accessing the new. When we decide to invest, we generally take a small "toehold" stake and get to know the manager over many years. Our initial investment usually comes with an option to increase the size of our stake at a later stage.

One of the primary motivations of all of us at Partners Capital is to debunk the many myths and the general mystery surrounding investing and pass that learning on to our clients and others. To that end we hope this newsletter has given you a better understanding of what makes for sound and successful long-term investing. The Denison Model describes the core of the investment philosophy that we follow with all of our individual and institutional clients who have a long-term investment horizon.

In saying this, I should also note that Denison and the other endowments mentioned here are not seeking publicity for their investment style or their strong performance. However, we are happy to tell their story to our select audience of clients and friends in the spirit of sharing our own learning.

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The firm was founded in 2001 by investment professionals seeking an independent and conflict free adviser to provide portfolio construction advice and rigorous analysis of investment opportunities. From its initial focus as the “money managers to the money managers” with a base of 70 clients, Partners Capital has grown to become an adviser to endowments and foundations as well as prominent family offices and successful entrepreneurs across the U.S., U.K., Europe and Asia. Endowments have become a large proportion of the institutional client base, which now includes Oxford and Cambridge Colleges, and many of the most highly respected museums and charitable foundations located around the world.

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