



C A M B R I D G E A S S O C I A T E S L L C

# THE SOBER FUTURE OF ENDOWMENT SPENDING

2010

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# The Sober Future of Endowment Spending

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*“The fundamental purpose of a rational spending policy is to mediate between the competing demands of present and future generations by enabling an endowed institution to spend as much today as is compatible with the preservation of purchasing power for tomorrow. If institutions with such policies simply ditch them in panic when faced with the prospect of spending cuts, what is the point of creating them in the first place?”*

—Cambridge Associates LLC, *Endowment Spending in a Bear Market*, 2002

When we published our most recent report on endowment spending in late 2002, it appeared institutional investors would need to make some hard choices due to the bear market that had savaged market values. However, as if on cue, markets picked up in early 2003—just in time to boost values for investors with a June 30 fiscal year-end—and continued to rise through late 2007. Not surprisingly, many institutions chose to forgo wrenching policy changes. However, the recent resumption of the bear market<sup>1</sup> has pushed such issues to the forefront once again, even taking into account the recovery in asset values since the March 2009 trough. Unfortunately, given the uncertain economic outlook and the fact that equities, while not particularly expensive on a historical basis, are also not cheap, returns may continue to lag historical averages for some time, which could force many institutions to make “Scylla and Charybdis”—type choices—i.e., either cut spending dramatically at the risk of damaging the quality of the institution, or continue to spend at elevated levels and risk permanent impairment of the endowment.

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<sup>1</sup> We believe the bear market began in March 2000, and that the 2003–07 rally was a cyclical rally within a secular bear. For more details, please see our series of papers on Asset Allocation in the Current Environment, most recently our August 2009 and April 2008 papers *Now What?!* and *The Eye of the Storm*, respectively.

## We’ve Come a Long Way— Or Have We?

While endowment spending rates<sup>2</sup> have fluctuated widely over the last four decades (Exhibit 1), they have been relatively stable at around 5% over the past ten years (Exhibit 2), although there are, of course, wide ranges within the data. For example, in fiscal year 2009, spending rates ranged from 0% to 7.7%; in fiscal year 2008, 1.2% to 12.0%; and in fiscal year 2007, 1.3% to 10.5%. However, from our perspective, the more pertinent question is whether a 5% spending rate is reasonable given expected returns for asset markets. Said a different way, many institutions have been able to support 5% spending rates over the past few decades due mainly to one of the greatest (arguably the greatest) financial asset bull markets in history. Thus, what was appropriate and achievable during this period may be far different than what is reasonable given the current reality.

Indeed, while 5% has become something of a default spending rule for endowments (private foundations, of course, are required by law to spend 5% to keep their tax-free status), a few points are worth noting:

- Achieving a 5% real return has always been a tough bogey. To illustrate, consider that a portfolio worth \$100 million in 1910 that had

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<sup>2</sup> We calculate the annual spending rate as the dollar value of spending for the year divided by the market value at the beginning of the year (June 30 for most endowments). Thus, changes in market value can have a big impact on spending rates from year to year, and trends may be more reflective of movements in endowment values than institutions making changes to “target” rates in their spending policy. Data represent the average spending rate of our total endowment universe for Exhibit 1, and the average rate of a constant universe of 123 institutions for Exhibit 2.

since grown at a consistent 5% would today be worth \$13 billion (in real terms); if it continued to grow at this rate, it would be worth \$1.7 *trillion* in another 100 years.

- Given the fragility of the economy and current uncertainties, combined with valuations on the high side, we believe returns are likely to skew to the bottom half of the expected distribution from today's starting point.
- Inclusion of certain low-yielding developed markets sovereign bonds and/or cash to protect against deflation and/or meet liquidity needs—which seems prudent for many investors given the prevailing environment—makes the 5% target even more difficult. Likewise, the emerging trend to maintain derivatives-based tail risk programs, typically budgeted at 1.0% to 1.5% of portfolio assets per year, likewise eats into prospective returns.

The real world difficulties of maintaining a 5% spending rate are illustrated in Exhibits 3 and 4, which model spending and real asset growth of a simple portfolio with a 70% allocation to U.S. equities and a 30% allocation to bonds (based on index returns). While in reality most institutions had more sophisticated portfolios, the broad trends using actual data would look similar. In short, institutions were able to spend 5% with ease during the 1980s and 1990s (see Exhibit 3, which has a 1980 start date), but this was emphatically not the case during the prior two decades (see Exhibit 4, which begins in 1960). Thus, we should perhaps consider the experience of the 1980s and 1990s—when 5% real was an eminently achievable bogey—the outlier rather than the norm. Alternatively, one could posit that since long-term historical returns are made up of secular bull markets—during which markets overshoot long-term expected averages significantly—and secular bear markets—during which the reverse happens—investors should

prepare for the likely prospect that below-average performance may continue for some time.

Unfortunately, on a prospective basis,<sup>3</sup> investors (defined as those with an asset allocation equal to the average of our current endowment clients that spend 5% a year) have a reasonably high probability of cutting into their corpus—perhaps significantly—over the next couple of decades. Further, the use of spending caps and/or floors is likely to play a role in ending market values. For example, if after 20 years market values—after returns and spending—come in at the 75th percentile<sup>4</sup> of the distribution, not an unreasonable assumption given starting conditions, portfolios would be worth somewhere between 64% and 79% of their starting value (depending on the use of caps and floors—Exhibit 6). Even if returns come in at the midpoint of the distribution (and we would consider this an optimistic view), an institution with a spending floor would end up with a real portfolio value 2% below its starting point, compared to gains of 6% for a rule with no floor/cap, and 9% for one with a cap. Another way of looking at this is to estimate the probability that an endowment will maintain purchasing power over various time frames, assuming a 5% spending rate; as shown in Exhibit 7, such institutions have only a slightly better-than-even chance of maintaining real value, regardless of time frame.

A slightly different, but related topic is the issue of spending volatility (Exhibit 8). For institutions that use some sort of market value-based rule, hewing to a 5% spend rate can cause significant

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<sup>3</sup> Based on the average asset allocation of our current endowment clients, our current equilibrium return assumptions (i.e., long-term, valuation-neutral return expectations for asset classes) are for long-term real returns of 5.9%, with a standard deviation of 10.5%, and a compound return of 5.4% (Exhibit 5).

<sup>4</sup> Percentile rankings are based upon a scale of 0 to 100, where 0 represents the best performing and 100 the worst.

ups and downs, even when such levels are smoothed by moving averages. While constant growth formulas (i.e., spend at a constantly growing rate, say last year's spending plus CPI) are one "solution" to this problem, these rules expose investors to a different problem. Namely, that dictated spending will stay high after asset markets decline, thus threatening permanent impairment of funds, and will stay low after markets appreciate, encouraging criticism from stakeholders seeking to maximize current spending and prevent what they often perceive as hoarding.

Also, we once again find ourselves in the role of urging institutions to develop spending contingency plans now, to prepare for the day when their spending policy may dictate cuts, as opposed to being forced to make such decisions hastily, under crisis conditions.

## To Cut (Spending) or Not to Cut

An institution with a rule that dictates a cut in spending has three options:<sup>5</sup>

1. Follow the rule and reduce spending.
2. Don't cut spending, but institute a floor of the prior year's nominal spending amount. Institutions choosing this option might also consider adopting a spending *cap* to rein in spending when market values increase at high rates.
3. Continue to increase nominal spending, but perhaps at a slower rate than in recent years.

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<sup>5</sup> Institutions with sufficient operating reserves (or stabilization reserves) and/or capacity for taxable debt issuance can avoid *any* spending from endowment for 6, 12, 18, or 24 months—depending upon their risk/return trade-off between liquidity and investment performance. However, this does not address the implications of potentially lowered long-term real returns.

In practice, most investors generally choose the second or third option, as cutting nominal spending is extremely difficult given the high percentage of fixed costs at many institutions and, perhaps more importantly, the fact that market downturns almost always coincide with periods of economic stress that depress donations and other revenues.

We modeled the experience of the past decade, which included several periods when spending floors and ceilings were hit, in Exhibit 9.<sup>6</sup> Clearly, the decision of whether to cut spending affected ending market values, as spending rules with a floor ended with a market value about 4% lower than those without, and 5% lower than those with a ceiling. However, it is worth noting that the extreme drop in market values was devastating for endowments regardless of rule—at the first quarter 2009 market nadir, endowments with a spending floor had lost 40% of their real value since 2000, compared to 38% for those with no floor or ceiling, and 37% for those with a ceiling.

## The Trouble With Baselines

As noted above, it seems likely that investors as a whole will struggle to maintain purchasing power after spending. Compounding the problem is the fact that many institutions have dramatically increased their expense base in recent years, based largely on inflated asset values that turned out to be ephemeral. In other words, some institutions essentially allowed spending to rise along with valuations—with at least part of the increase then built into projects and programs requiring funding on an ongoing basis—thus leaving them exposed if and when valuations revert to the mean.

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<sup>6</sup> We used the average asset allocation for our 424 endowment clients as of June 30, 2010, and index returns for the various asset classes.

This may sound familiar, as in our last report we worried aloud that institutions might find it difficult to cut spending given the strong growth in asset values—and thus spending rates—during the late 1990s. As we then noted:

“many endowed institutions find it virtually impossible to cut nominal dollar spending, and seek to maintain at least the nominal level of distributions, even at the expense of their funds’ purchasing power. This was conspicuously true in the last secular bear market, in the early 1970s, when most institutions were unwilling to reduce the nominal value of their spending and overrode their own spending rules, severely impairing endowment market values that had already been hammered by the bear market.”

Today’s situation is similar, as spending has soared in the past few years—from 2005 to 2009, total nominal spending for a constant universe of 63 clients rose 40%, or at an average annual rate of 8.8%. While there was a wide range within the universe—from a 132% rise to a 44% drop—the average increase was 43%, and the median, 42%.

Much of this, of course, is common sense. What concerns us is that by pushing off difficult decisions, some institutions may be unable to act if and when conditions worsen, or could be in a disadvantaged competitive position when conditions improve. At the very least, such an environment would mean that many endowments would not be able to pull as much spending weight as in recent years (or would shoulder the load at the expense of permanent impairment of funds). For historical perspective, consider that the average endowment lost about half its value in real terms during the 1970s—it was only the generational bull market in the 1980s and 1990s that allowed investors to recover their wealth. It is also worth noting that periods of significant negative returns have historically tended to “cluster”; while past need not be prologue,

investors should think carefully about the implications of another 2008-like downturn.

Finally, it is worth considering the heroic assumptions necessary for institutions to justify increasing spending at anywhere close to the level of recent years. As noted, spending has risen just under 9% a year since 2005; if an institution continued to increase spending at this rate over the next ten years, assuming its ending market value came in at the midpoint of the distribution (adjusting for both expected returns and spending), it would result in a 21% loss in portfolio value in real terms (Exhibit 10). Indeed, if we assume ending values will come in at the midpoint of the distribution—and to reiterate, we believe returns are more likely to be lower than historical averages given not-cheap valuations, government debt troubles, and economic uncertainties—an institution would see its real portfolio value fall unless it held spending increases to less than 3% a year.<sup>7</sup> Said a different way, institutions that increase spending at more than 3% a year are relying on above-average returns simply to maintain real portfolio value, even as macroeconomic factors have, in our view, skewed risks to the downside.

## Stabilization Reserves

Investors should thus take steps, as discussed above, to prepare themselves for the possibility that future returns lag historical averages, and/or that we endure another crisis that savages asset values and dries up liquidity. In addition to thinking about ways to cut costs, several institutions have recently implemented funds called “stabilization reserves,” or reserves with similar names—in essence, cash or other very liquid and stable securities held below the line,

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<sup>7</sup> In theory, an institution could also meet higher spending targets by making shrewd investments with managers that add a great deal of alpha, but this is certainly not something on which we can *rely*.

and thus not included in investment calculations. Such ideas are nothing new, of course—the “rainy day fund” has been around for quite some time.<sup>8</sup> However, stabilization reserves are intended to impose discipline (by segregating assets to be used for near-term spending needs) without dragging down performance expectations of the long-term-oriented endowment. By moving such assets below the line, and thus excluding such assets from return calculations and benchmark comparisons, institutions should be more likely to provision appropriately for the needs of the institution, free from concern about the drag on endowment returns. Of course, in the end it is the total performance and financial equilibrium of the institution that matters, and the decision to add to reserves should be considered in that context.

There are several things to consider with stabilization reserves:

- Such reserves may be more urgent for decentralized institutions with large endowments than for centralized ones, given the competing factions and lack of top-down planning capacity at the former. While a stabilization reserve inside or outside the endowment (or sufficient other operating reserves) is appropriate for *all* institutions, centralized institutions can more easily anticipate and plan for such crises given that said factions are not able to make their own spending decisions.
- While the 2008–09 crisis triggered unprecedented pressure on operating liquidity (as well as portfolio liquidity), it is worth noting that some institutions were able to meet short-term spending needs with then-plentiful operating reserves and/or taxable debt issuance. In

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<sup>8</sup> As the *Encyclopedia of Public Administration and Public Policy* drily notes: “The concept and practice of countercyclical reserves date back to Biblical times: Joseph saved Egypt from a great famine by storing up food in years of harvest.”

other words, while stabilization reserves are useful tools to manage liquidity needs, some institutions may have sufficient operating liquidity in place.

- Having a stabilization reserve helps avoid problems caused by friction between long-term investment targets and the need for operating liquidity, by *explicitly* carrying a liquid component of the portfolio for operating purposes.
- While such reserves are by design kept out of the main investment pool, cash may not necessarily be the best vehicle in which to hold them; there are a growing number of “cash management” strategies designed to boost returns without sacrificing safety/liquidity. The most common strategies are detailed in the Appendix.
- Alternatively, investors may choose to hire a cash manager in order to boost returns from reserves. Given the broad range of such strategies (including, but not limited to, managers that add value through sector and issue selection, as well as quantitative analysis and duration management), clients interested in going this route should first think carefully about how much money they wish to segregate and what the underlying objective might be, and then choose a program that best fits those needs.

## Conclusion

Eight years ago, we worried that institutional investors would have difficulty cutting spending after the heady growth rates of the late 1990s. As it happened, the 2003–07 rally in financial assets managed to forestall some of these decisions, but the 2008–09 decline has revived the issue, notwithstanding the strong market recovery as of late

2010. Still, investors today face a different set of circumstances. Most notably, the prospects of future investment returns have become more clouded due to the 2008 crisis and the unprecedented government response, as well as the historically unprecedented actions taken by global central banks. This, coupled with the fact that valuations across asset classes are not particularly cheap, argues for the non-negligible possibility that future returns will be lower, and volatility higher, than historical norms.

As we noted in 2002, “for many endowed institutions there is no ‘right’ answer, only a choice between competing evils: cut spending at the expense of current programs, or maintain spending at the expense of future purchasing power.” This remains true today, with the added complexity that the economic downturn has increased demands on endowment funds even as endowments’ ability to meet such needs has shrunk.

Stabilization reserves, meanwhile, may be a more “intellectually honest” way of structuring a portfolio, as they enable institutions to separate long-term investment assets from those reserved for short-term spending needs; however, such reserves are no magic bullet. Ultimately, funds must come from somewhere to pay expenses. While stabilization reserves can serve as a check on operational volatility, as well as a way to avoid the tendency to minimize such allocations (and, of course, to avoid the need to sell other assets into a down market), they cannot compensate for long-term returns that fall short of those needed to fund spending goals. ■



While most Treasury money market mutual funds currently offer near-zero yields, a variety of FDIC-insured bank deposit products offer more tempting yields for U.S. investors, although capacity is limited and administrative complexity may dim their appeal. Some products parcel out investor funds to a variety of banks to ensure FDIC insurance limits are not breached, while investors with the time and patience to put together and manage a potpourri of small-balance individual bank deposit accounts will be rewarded with substantially higher yields. Since some of the highest yields are offered by troubled banks, it is incumbent upon investors to remain within FDIC insurance thresholds (generally \$250,000 per tax I.D. at each bank).

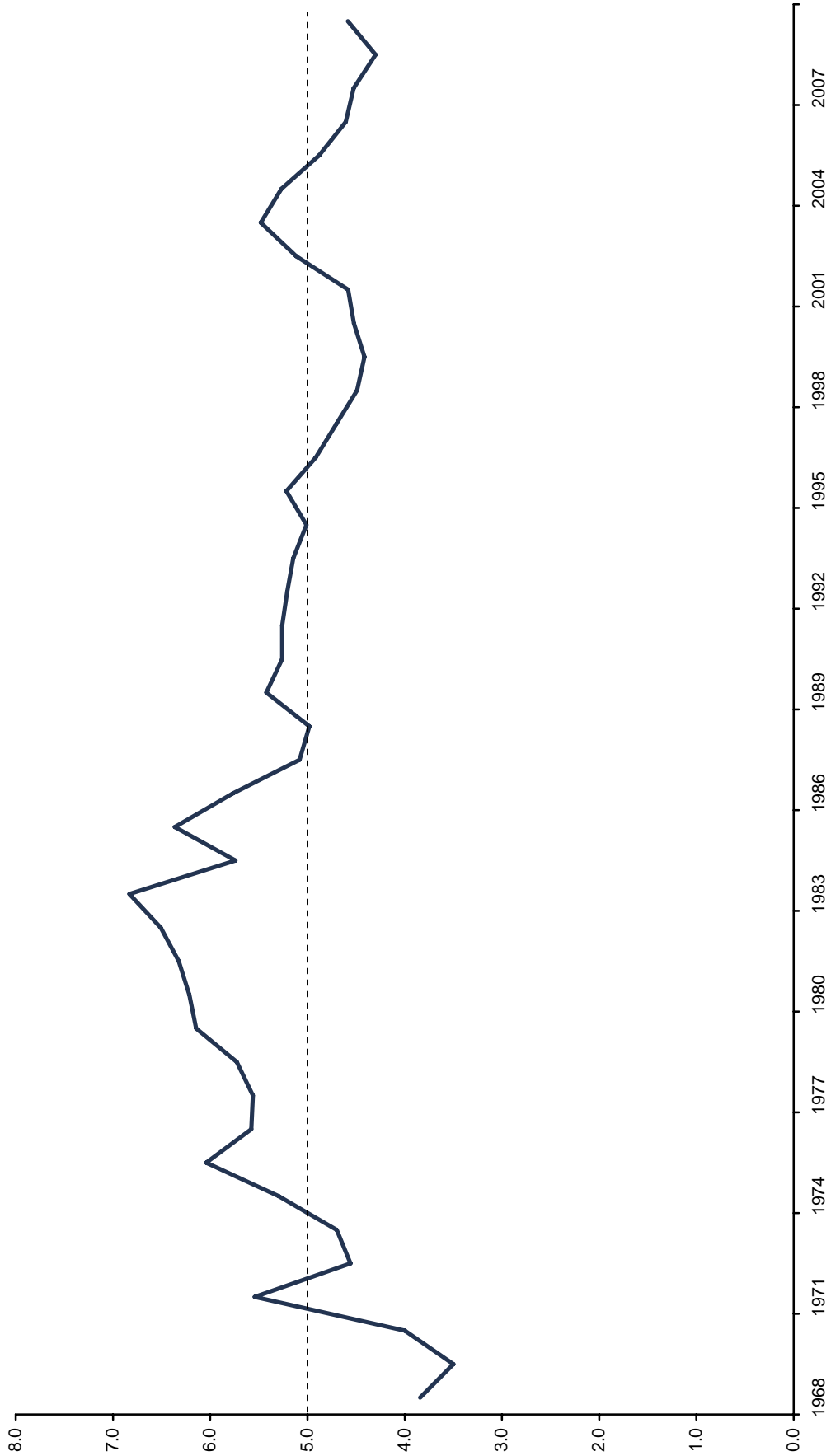
For investors that do not have the resources to manage a number of small-balance bank deposit accounts, a variety of relatively new institutional products slice large cash deposits into several sub-\$250,000 portions that are parceled out to a number of participating banks and invested in liquid deposit accounts. The investor avoids the administrative complexity of opening and managing the multiple accounts. We are aware of several similar products, each of which has an alphabet-soup name (PDCA, FICA, ICSA, etc.).

The differences between the products generally relate to (a) capacity, (b) yield, and (c) liquidity. PDCA can accommodate accounts only up to \$1.49 million, but offers same-day liquidity and a yield of about 50 basis points (bps) (as of early November). FICA, on the other hand, can handle accounts of \$20 million and offers weekly liquidity, with a slightly lower yield (about 40 bps), while ICSA can take accounts of \$7.5 million, has next-day liquidity, and yields about 35 bps. Notably, the most well-known product, CDARS, is currently

the least attractive option, with very low yields and large penalties for early withdrawal.

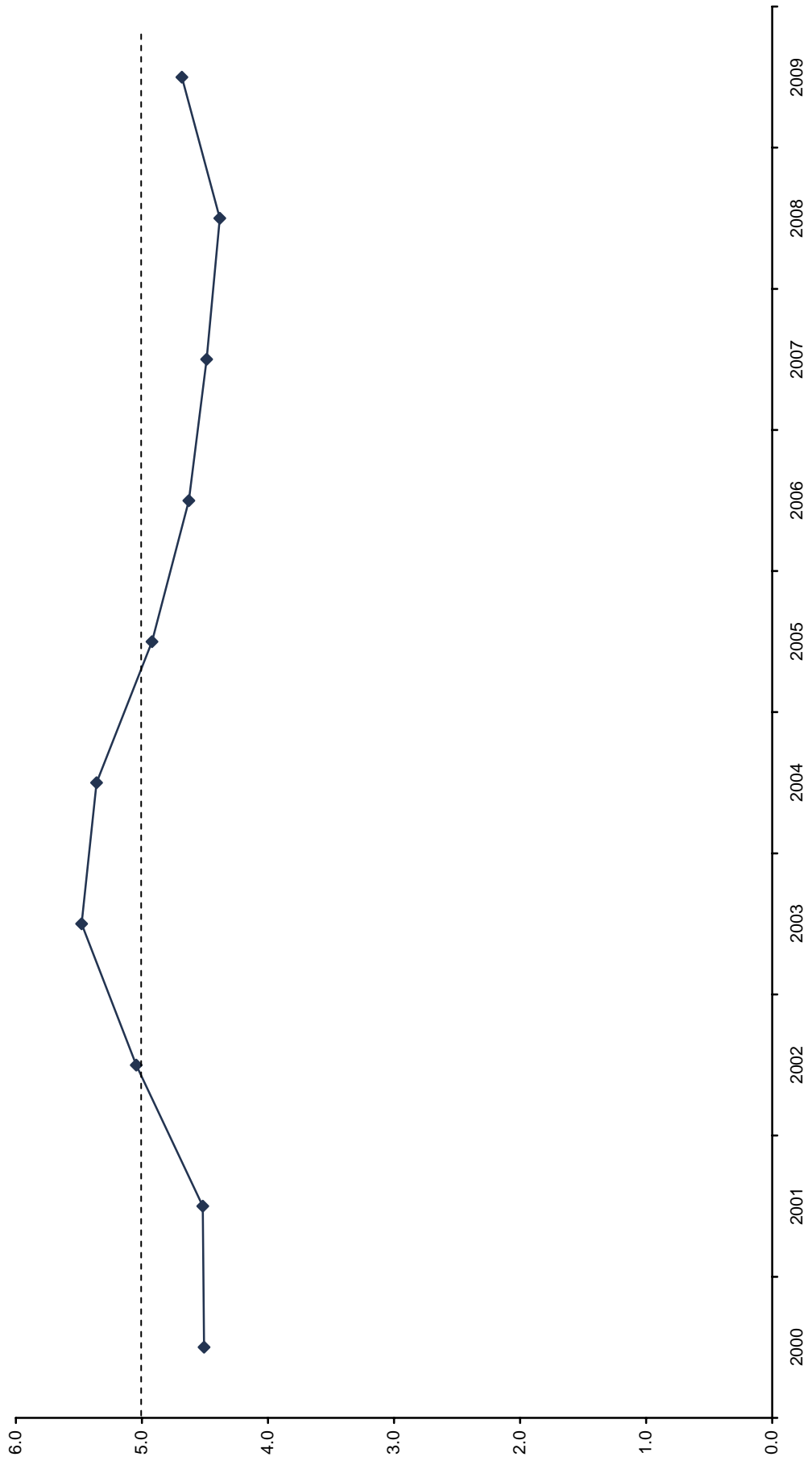
Those few investors with the patience and resources to open up sub-\$250,000 accounts with various banks will benefit from the ability to cherry-pick the most lucrative yields, though the scale of this approach is quite limited. Several banks offer daily liquidity money market saving accounts with yields currently similar to those of five-year Treasuries. Another option is multi-year FDIC-insured bank CDs. A number of banks offer five-year CDs with yields comparable to ten-year Treasuries, and investors can withdraw funds at any time (typically at par plus interest minus a penalty equal to two to six months' interest). So effectively, the investor receives a government-guaranteed yield similar to that available from a ten-year Treasury, but with no interest rate duration, aside from the impact of the early-withdrawal penalty. ■

**Exhibit 1**  
**Historical Endowment Spending Rates**  
 1968–2009



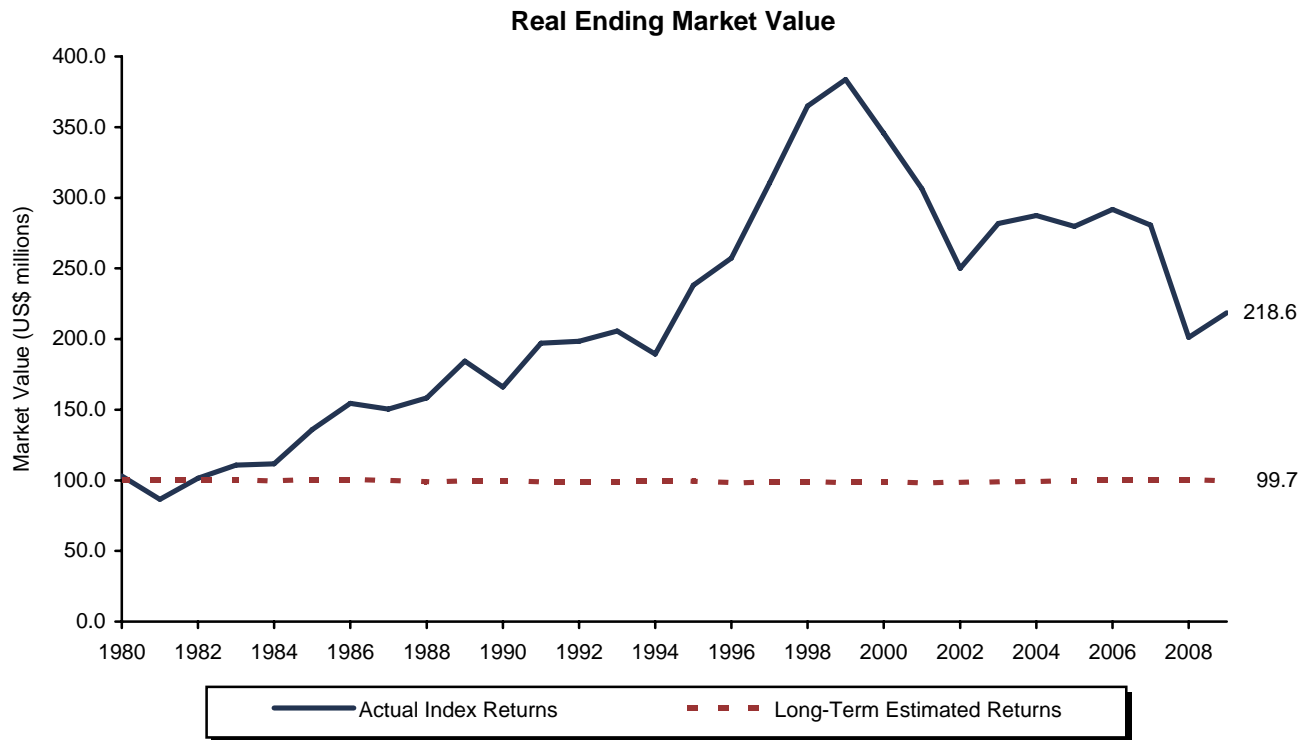
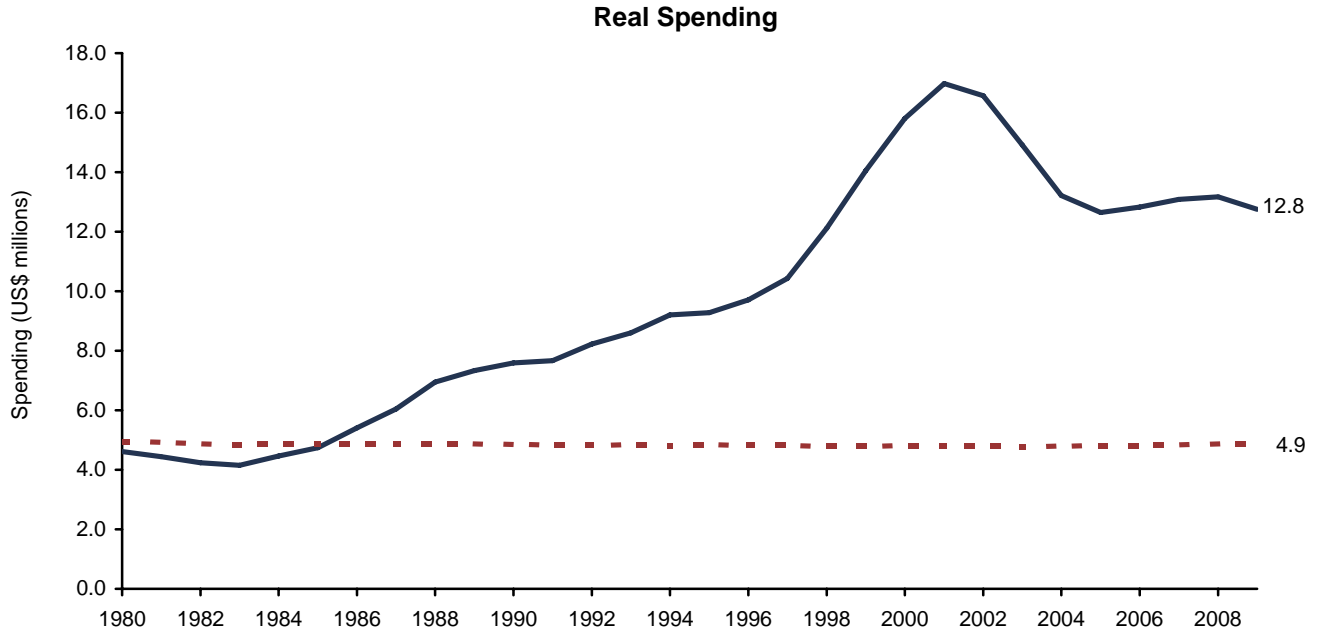
Source: Cambridge Associates LLC.  
 Note: Data represent the average spending rate of our total endowment universe.

**Exhibit 2**  
**Endowment Spending Rates: Constant Universe**  
 2000-09



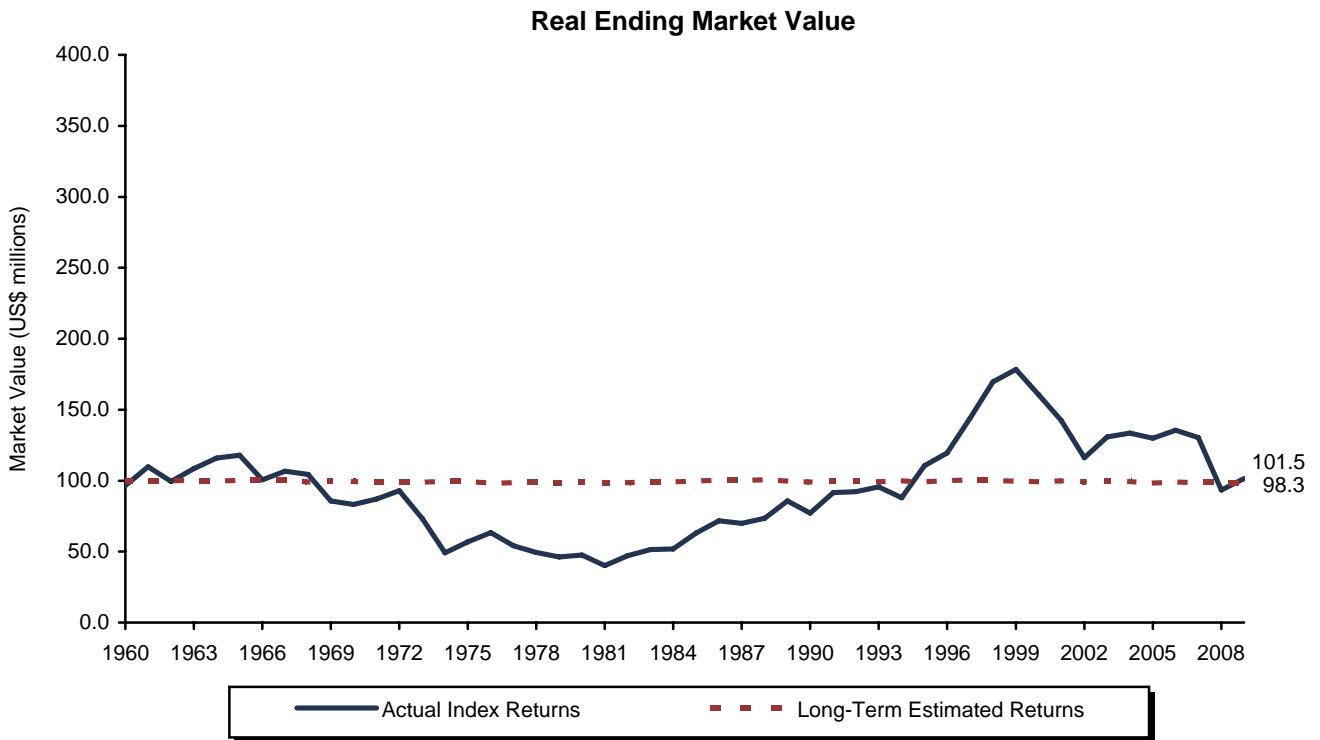
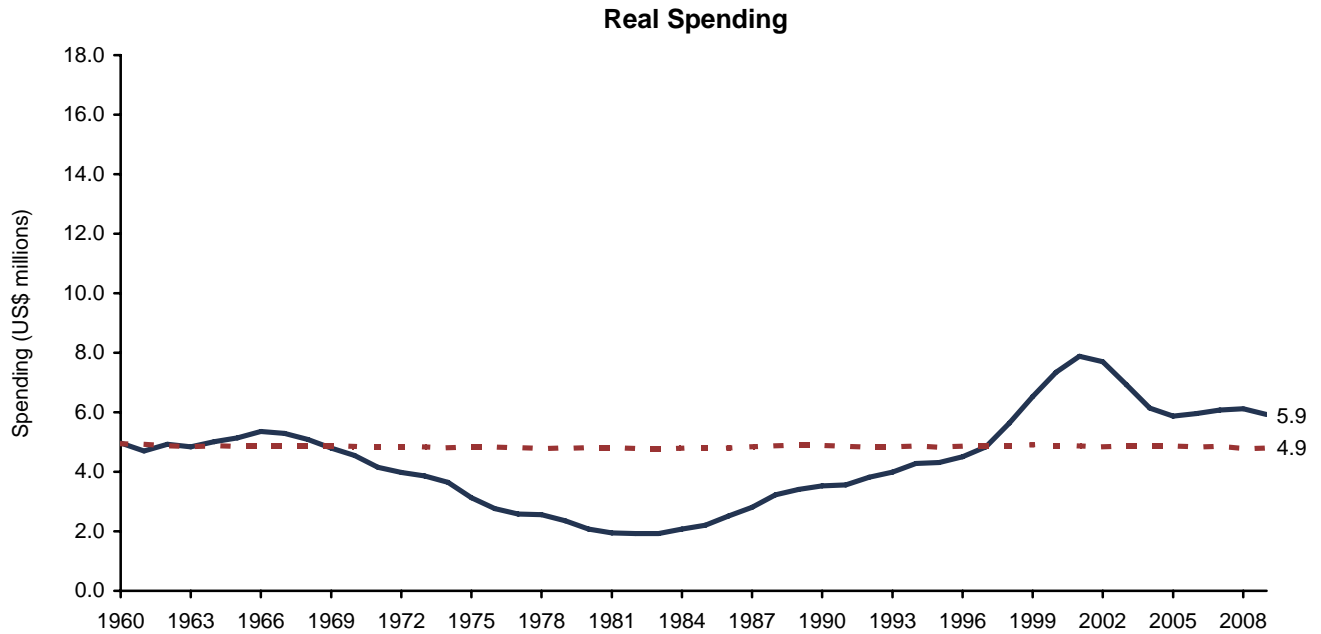
Source: Cambridge Associates LLC.  
 Note: Data represent the average spending rate of a constant universe of 123 institutions.

**Exhibit 3**  
**Spending 5% Is Easy!**  
 1980–2009



Sources: Standard & Poor's, Thomson Datastream, and U.S. Department of Labor - Bureau of Labor Statistics.  
 Notes: Actual index returns represent S&P 500 and Barclays Capital Aggregate Bond Index performance data. Long-term estimated returns are Cambridge Associates LLC's estimated returns used in asset allocation modeling. This analysis assumes a beginning market value of \$100 million on January 1, 1980, and applies a policy allocation of 70% U.S. equity and 30% U.S. bonds, rebalanced quarterly. Spending is equal to 5% of the 12-quarter moving average endowment market value.

**Exhibit 4**  
**Spending 5% Is Hard . . .**  
 1960–2009



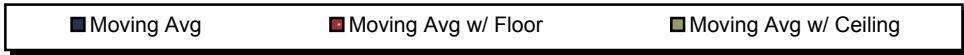
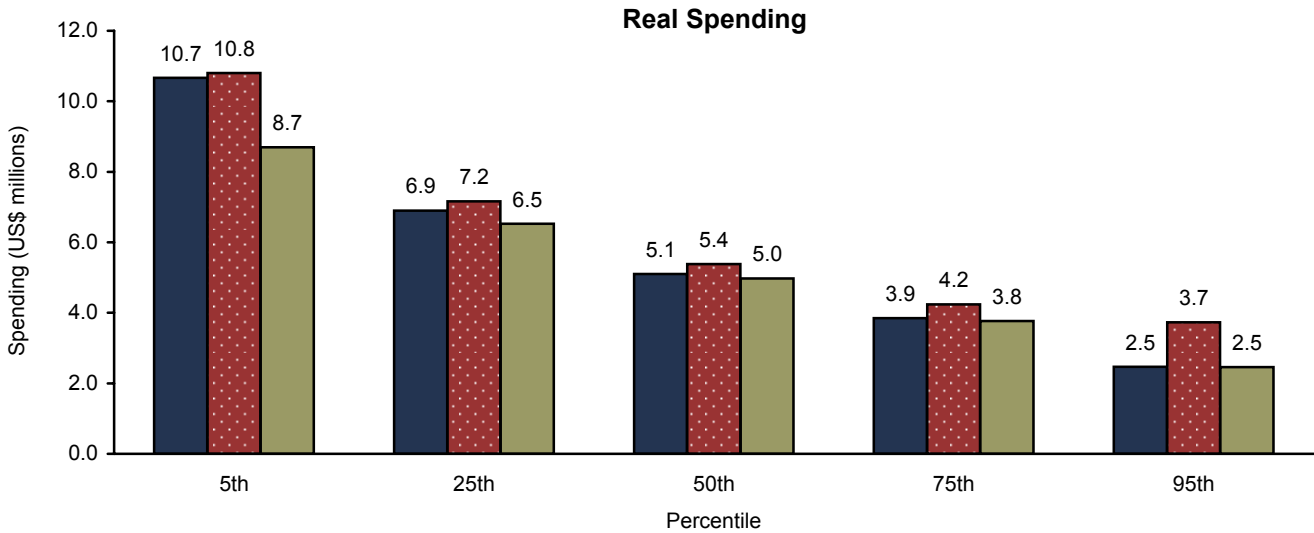
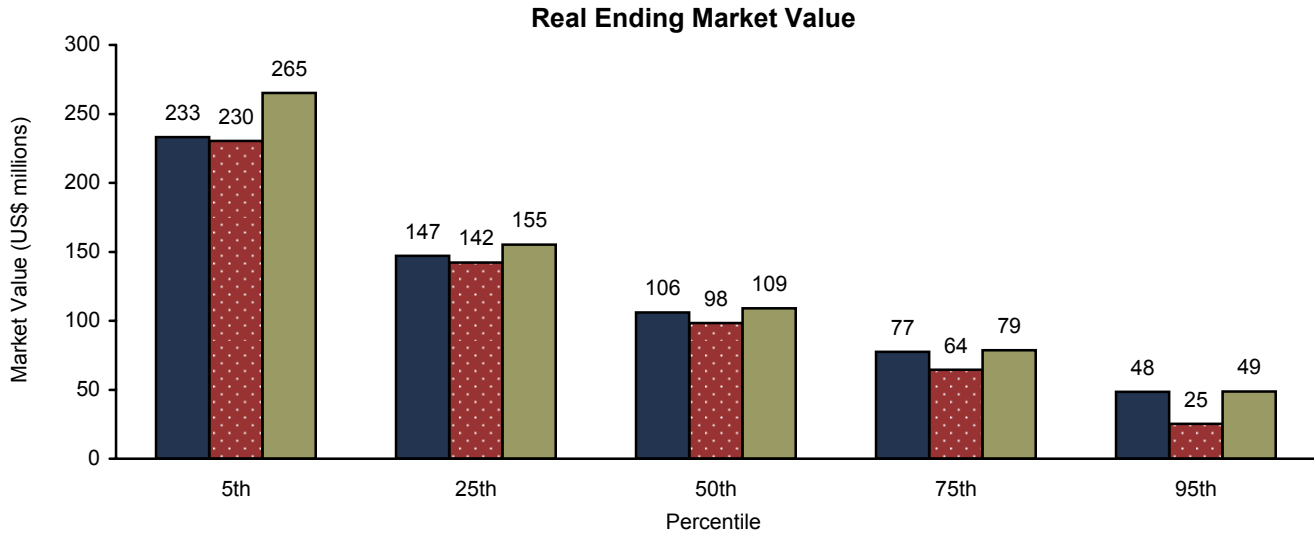
Sources: Standard & Poor's, Thomson Datastream, and U.S. Department of Labor - Bureau of Labor Statistics.  
 Notes: Actual index returns represent S&P 500 and Barclays Capital Aggregate Bond Index performance data. Long-term estimated returns are Cambridge Associates LLC's estimated returns used in asset allocation modeling. This analysis assumes a beginning market value of \$100 million on January 1, 1960, and applies a policy allocation of 70% U.S. equity and 30% U.S. bonds, rebalanced quarterly. Spending is equal to 5% of the 12-quarter moving average endowment market value.

**Exhibit 5**  
**Long-Term Assumptions for Asset Classes and the "Average" Endowment Portfolio**  
As of June 30, 2010

	June 30, 2010 Endowment Mean <u>Allocation</u>	Real <u>Arithmetic Return</u>	Implied Real <u>Compound Return</u>	Standard <u>Deviation</u>
U.S. Equity	19.1	7.0	5.7	17.0
Global ex U.S. Equity	13.7	7.0	5.3	19.5
Emerging Market Equity	5.0	10.0	6.9	26.9
Absolute Return	10.6	4.0	3.5	10.0
Equity Hedge Funds	12.5	6.0	5.2	13.4
Venture Capital	2.3	12.0	8.1	30.5
Private Equity	4.4	10.0	7.5	23.7
Commodities	1.6	5.0	3.3	19.0
Natural Resource Equity	2.6	6.5	5.0	17.9
Real Estate Securities	0.8	6.5	5.0	17.9
Real Estate	2.1	7.0	5.2	19.9
Oil & Gas	1.5	7.5	5.3	22.0
Timber	0.3	5.5	4.0	18.0
U.S. Fixed Income	14.9	3.0	2.8	7.0
U.S. TIPS	1.8	2.5	2.3	6.0
Global Government Bonds	2.0	3.0	2.6	9.3
High Yield Bonds	0.5	5.0	4.1	13.5
Cash	4.2	1.0	1.0	2.0
<b>"Average" Endowment Portfolio</b>		5.9	5.4	10.5

Source: Cambridge Associates LLC.  
Note: Asset allocation is equal to the average allocation of the 424 endowed institutions surveyed as of June 30, 2010.

**Exhibit 6**  
**Market Value and Spending After 20 Years Under Various**  
**Moving Average Spending Rules**



	Median	Median w/ Floor	Median w/ Ceiling
Real Ending Market Value	\$105.9	\$98.3	\$109.0
Real Spending	\$5.1	\$5.4	\$5.0

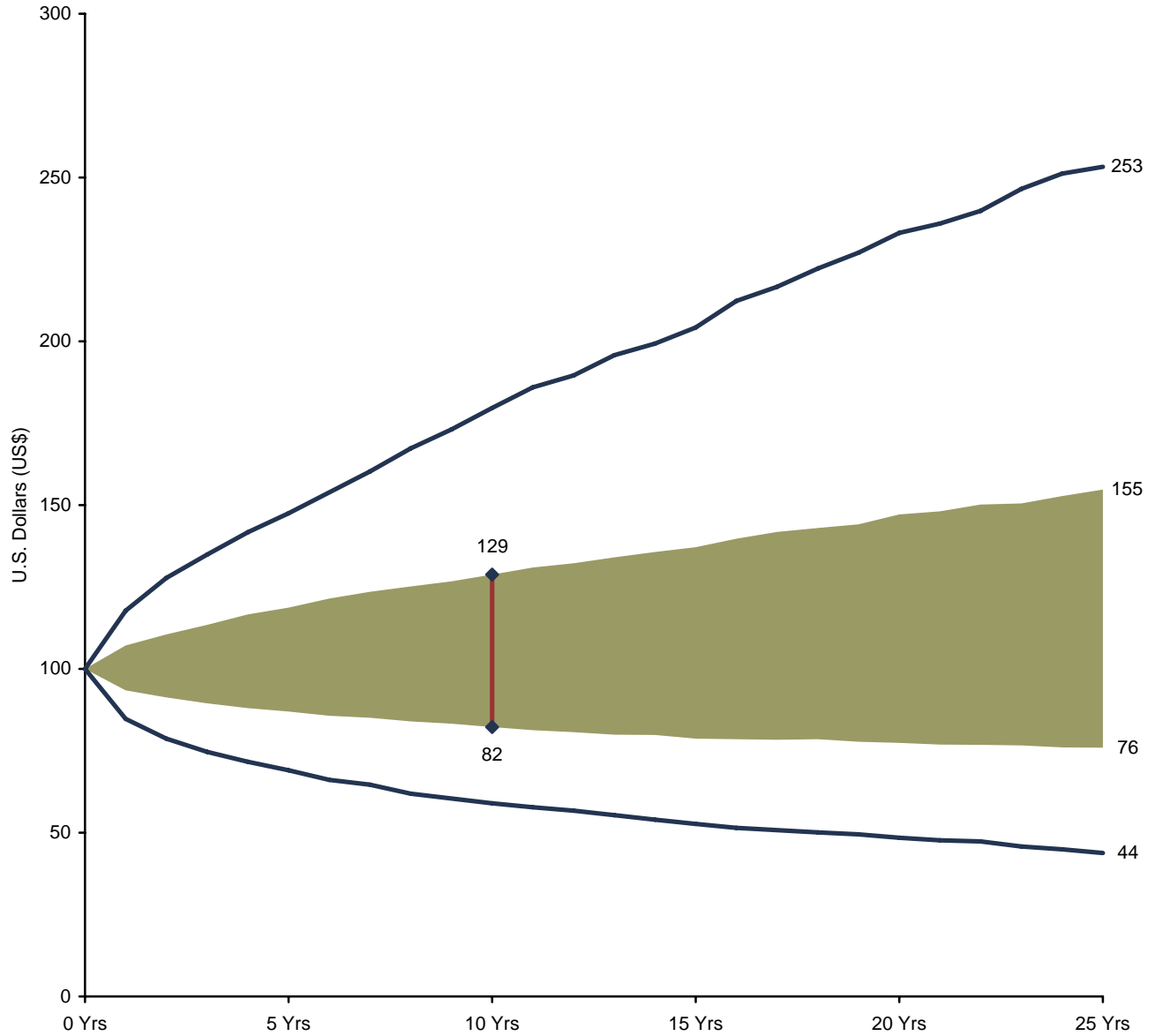
Source: Cambridge Associates LLC.

Notes: The moving average rule sets spending at 5% of a 12-quarter moving average. The moving average with floor rule imposes a spending minimum equal to the previous year's nominal spending. The moving average with ceiling rule imposes a maximum on real spending of 5% over the previous year's real spending. Asset allocation is equal to the average allocation of the 424 endowed institutions surveyed as of June 30, 2010. Analysis reflects the long-term estimated returns of Cambridge Associates LLC used in asset allocation modeling. Percentile rankings are based upon a scale of 0 to 100, where 0 represents the best performing and 100 the worst.

**Exhibit 7  
Probability of Maintaining Purchasing Power Over Various Time Frames**

Moving Average	<u>5 Years</u> 53%	<u>10 Years</u> 54%	<u>15 Years</u> 55%	<u>20 Years</u> 56%	<u>25 Years</u> 56%
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**Expected Range of Real Market Values\***



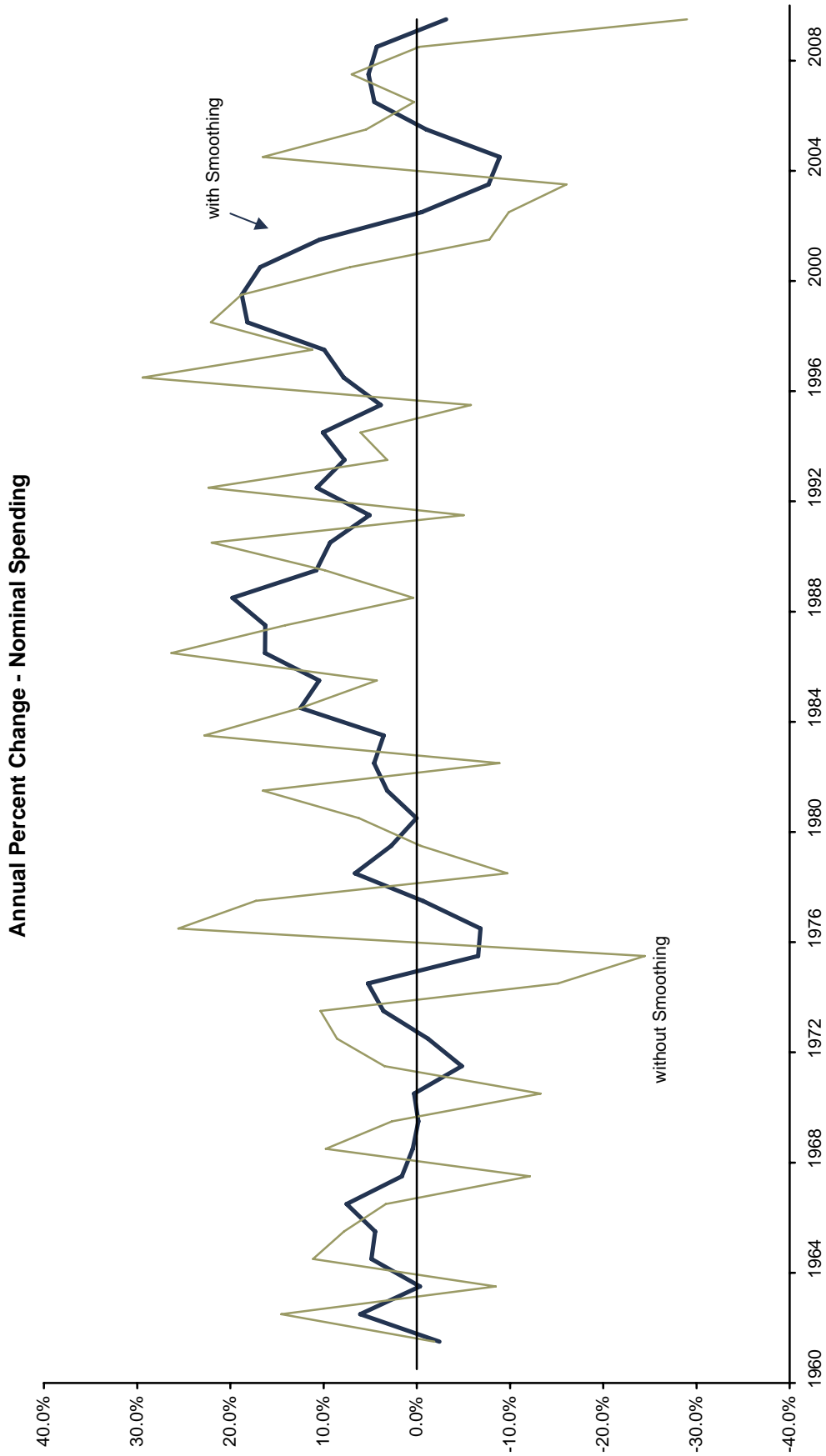
Moving Average	<u>5 Years</u> \$87 to \$119	<u>10 Years</u> \$82 to \$129	<u>15 Years</u> \$79 to \$137	<u>20 Years</u> \$77 to \$147	<u>25 Years</u> \$76 to \$155
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\* Range includes 50% of the distribution (25th to 75th percentile).



**Exhibit 8**

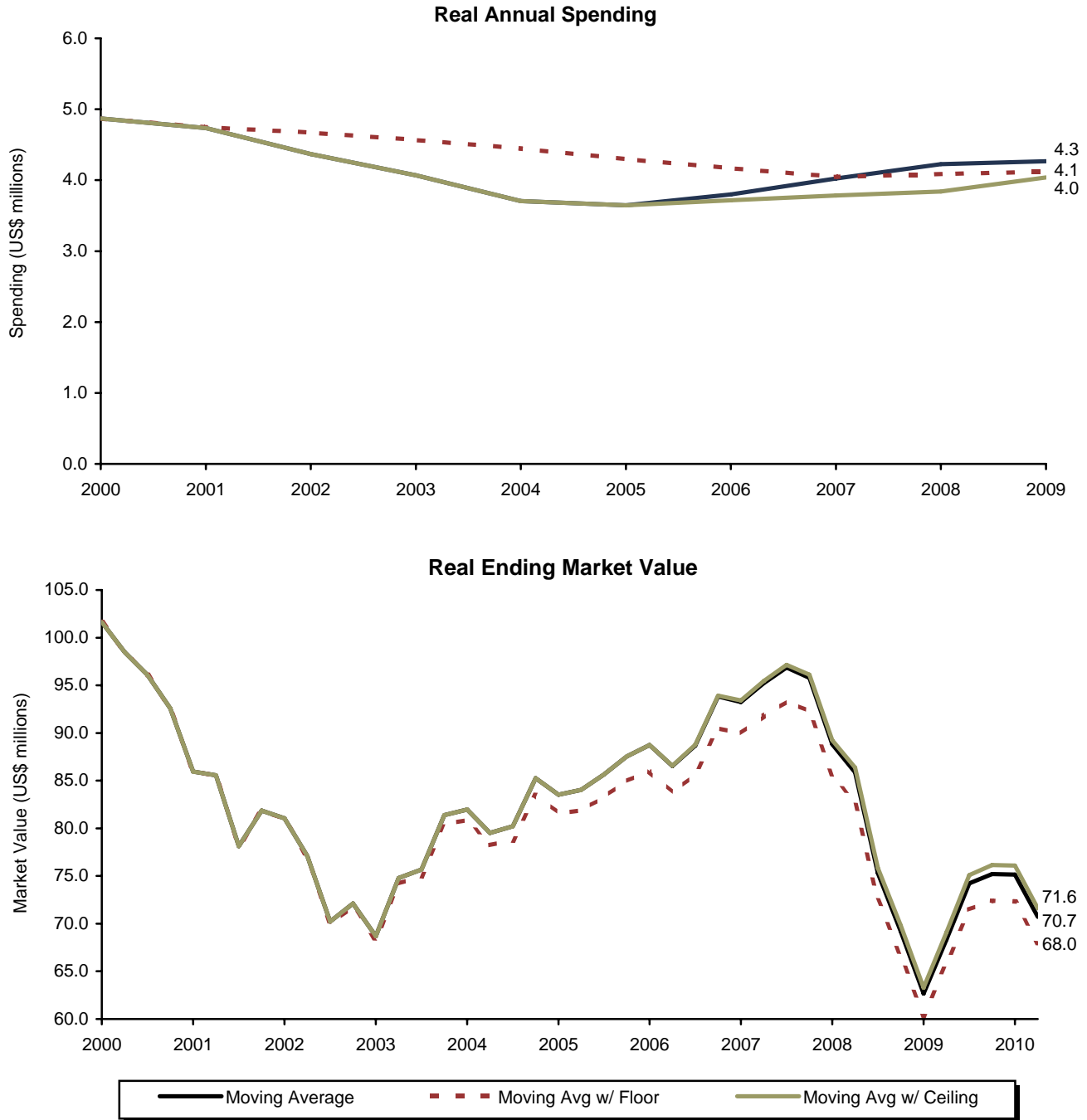
**The Ups and Downs of a 5% Spending Rule**  
5% of Current Market Value vs 5% of a Trailing 12-Quarter Average



Source: Cambridge Associates LLC proprietary spending models, November 2010.

Note: This analysis assumes a beginning market value of \$100 million on January 1, 1960, and applies a policy allocation of 70% U.S. equity and 30% U.S. bonds, rebalanced quarterly.

**Exhibit 9**  
**Comparison of Various Moving Average Rules**  
 January 1, 2000 – June 30, 2010

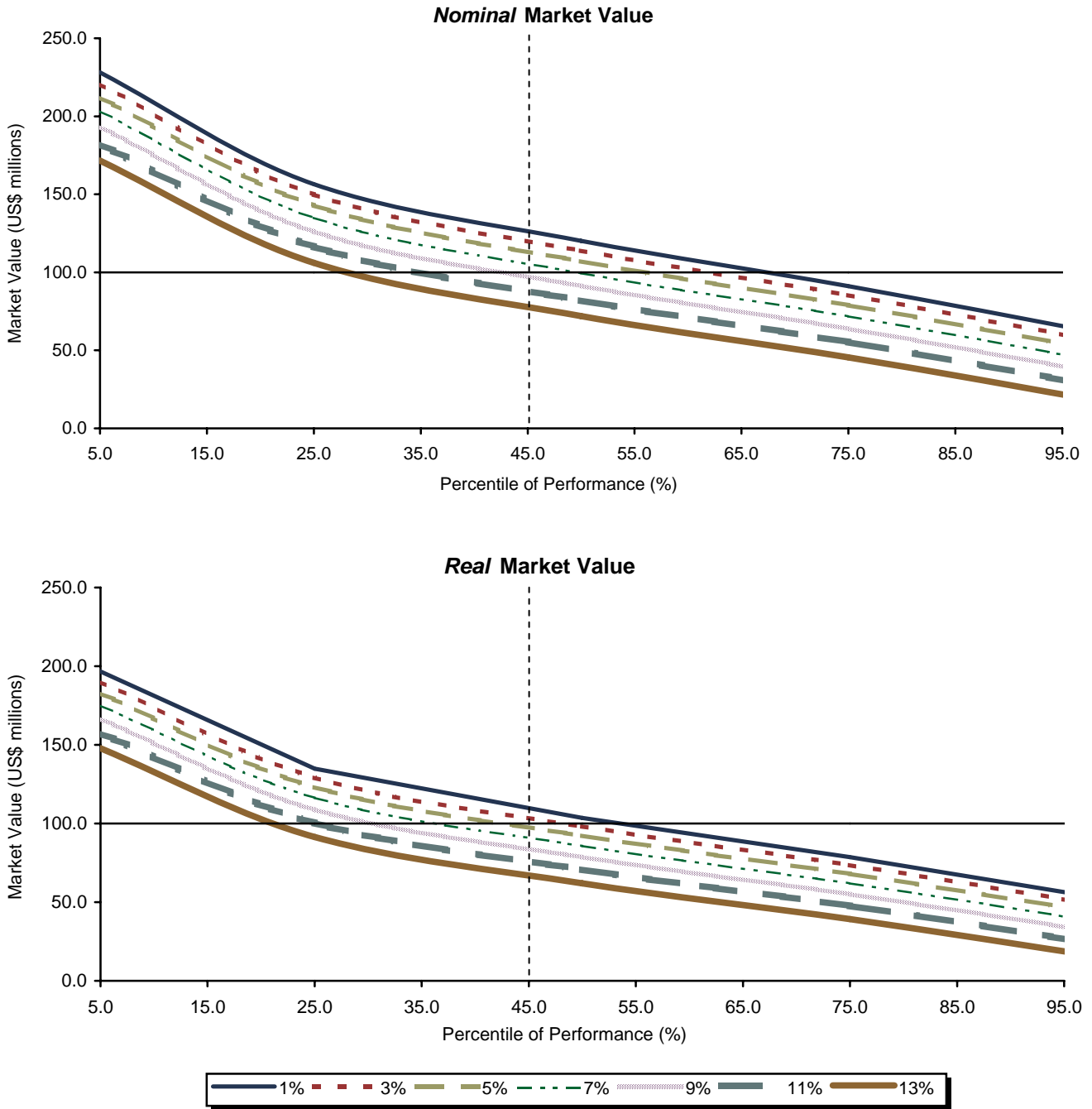


Source: Cambridge Associates LLC.

Notes: The moving average rule sets spending at 5% of a 12-quarter moving average. The moving average with floor rule imposes a spending minimum equal to the previous year's nominal spending. The moving average with ceiling rule imposes a maximum on real spending of 5% over the previous year's real spending. Asset allocation is equal to the asset allocation of the 424 endowed institutions surveyed as of June 30, 2010. Analysis reflects the long-term estimated returns of Cambridge Associates LLC used in asset allocation modeling. Performance of private oil & gas represents the Dow Jones Oil & Gas Index for second quarter 2010.

**Exhibit 10**  
**Trade-Offs Between Incremental Spending Increases and**  
**Estimated Ending Market Value**

2020 Ending Market Value: Nominal Versus Real



Source: Cambridge Associates LLC.

Notes: The ending market value for 2010 is assumed to be \$100 million. Nominal spending increased annually at specified percentages (1, 3, 5, 7, 9, 11, and 13). Percentile of performance is calculated over a ten-year horizon (2010–20) based on Cambridge Associates LLC's estimated returns used in asset allocation modeling.