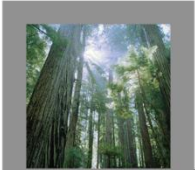


March 2013

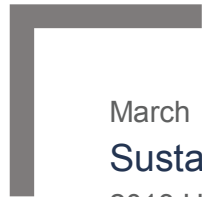
Sustainable Payout for Foundations

2013 Update Study



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Petra G. Bignami



CAMBRIDGE ASSOCIATES LLC

The Purpose of the 2013 Update

This paper serves as an update to the studies conducted in 2000 and 2004, which were commissioned by the Council of Michigan Foundations (CMF) at the request of its members. The purpose of this update study is to evaluate the sustainable real (inflation-adjusted) level of payout for private foundations in light of the actual experience of a sample of private foundations with diversified portfolios. Given the extreme market movements since our last update, we updated the sample foundations' data to test whether the passage of eight more years of data (2003 – 2010) challenged the conclusions of the original report.

In keeping with both the April 2000 study as well as the 2004 update, Part I of this paper will focus on the actual investment returns and payout histories of the Michigan sample group between 1973 and 2010, both in absolute terms and relative to the performance of a passive blend of stock and bond indices. The two passive portfolios modeled for comparison against the Michigan sample are as follows: one invested in 65% U.S. equities and 35% in U.S. bonds, and the other invested in 75% U.S. equities and 25% U.S. bonds. As noted in the 2000 study, a 65/35 hypothetical portfolio was chosen because it approximated the average asset allocation of the sample group. A 75/25 hypothetical portfolio is included in this 2013 update to examine the implications of a broader range of portfolio risk. In our experience, the majority of foundations' level of portfolio risk (in this study and more broadly across the U.S.) typically falls somewhere between these two hypothetical portfolios. Additionally, since Internal Revenue Service (IRS) aggregate data on U.S. private foundations has become widely available in the years since our original study, we also test the results from the Michigan sample and the hypothetical portfolios against a national sample.

Part II then examines the direct effects of various payout rates on real payout levels and market values of the two hypothetical portfolios noted above, and we report the expected multi-year returns of these two portfolios as indicated by our proprietary asset class return assumptions.

Conclusions

The inclusion of updated market data from 2003-2010 confirms the major points of both the original 2000 study as well as the study in 2004.

- The actual return experience of a sample of Michigan foundations does not support a spending rate higher than 5%. The average annualized return, adjusted for inflation, for the sample foundations for the period 1973-2010¹ is 5.11%, only slightly above the IRS mandated payout rate of 5%.

¹ In the 2004 update paper, CA found that, adjusted for inflation, the same sample group had an average annualized return of 5.08% for the period (1973-2002). In the original study, CA found that, adjusted for inflation, the same sample group had an average annualized return of 5.27% for the period (1973-1998).

- The return experience of a sample of Michigan foundations is consistent with that of aggregate private foundations nationwide. Additionally, the nationwide IRS data for private foundations indicates a persistently higher payout rate when compared to Michigan foundations for the period for which data is available (1985-2009). The data also suggest that foundations as a whole have been willing to spend in excess of the federally mandated 5% payout level during the time period, highlighting that many foundations may consider the 5% legal requirement payout rate as a minimum or ‘floor’ when establishing spending practices.
- Updated simulations using historical hypothetical portfolio data from 1969–2010 confirm that a 5% payout rate makes the goal of maintaining purchasing power in perpetuity somewhat challenging. The addition of eight years of return data from 2003-2010 confirms that the market value of a fund earning market returns and paying 5% annually during this 38-year period would end up below its 1973 value in real terms by 2010. This conclusion holds for both the 65/35 and 75/25 hypothetical portfolios. Additionally, our proprietary models would indicate that earning a return in excess of an inflation-adjusted 5% will be challenging.

The Purpose of the Original Study

At the request of several of its members, the Council of Michigan Foundations (CMF) retained CA in the late fall of 1998 to evaluate the private foundation payout rate required by the federal government, based on the real returns of a group of Michigan private foundations over a 25-year period. To that end, CA assembled and analyzed historical data from 48 Michigan foundations that had been in continuous operation since 1973, and included data up through the end of 1997 (a 25-year period).

For the purposes of the original study, three approaches were taken to answer the question of how much a fund can spend without depleting its real value over time²:

- Using historical index returns, analysis of hypothetical portfolios invested 65% in U.S. equities and 35% in U.S. bonds from 1969-1998 was reviewed to determine what would happen if a foundation’s annual spending was set at various payout rates.
- The actual returns earned by the sample group of Michigan foundations over the period 1973-1997 were analyzed to test whether the actual experience of these foundations tracked closely with index results over the same period.

² For the purposes of the actual historical *spending* analysis, data from all 48 foundations in the sample group were used. For the purposes of the actual historical *returns* analysis, returns data from 33 of the 48 foundations were used, excluding those 15 foundations with significant single-stock holdings. The results of the original study were published in April of 2000, and are available on the Council of Michigan Foundations website at www.cmif.org/documents/payout.pdf.

- In addition, the actual spending history of the sample foundations was analyzed over the same period to determine the foundations' ability to comply with the 5% spending rule given the market volatility of the preceding three decades.

2004 Update

CA conducted an update to the original study to include 5 additional years of data (1998-2002). The update confirmed all of the major points of the original study: generally, a 5% spending rate is too high to provide confidence in the ability to maintain purchasing power in perpetuity, and the real returns of the sample 33 Michigan foundations did not support a spending rate of higher than 5%.

Part I. 2013 Update Study

Return Experience of the Response Pool

Prior to the original publication of our study in 2000, much of the analysis regarding the sustainable level of spending for private foundations was done by modeling passive index returns. Chart 1 below illustrates the extent to which actual returns of the Michigan sample group mirrored those of 75/25 and 65/35 hypothetical portfolios described above. For the sake of comparison, we have included both the 30-year time period included in the 2004 update study (1973-2002) as well as the 38-year period (1973-2010) for this update.

Michigan Foundations

HISTORICAL RATES OF RETURN – MICHIGAN FOUNDATIONS

Chart 1. Index Portfolio vs. Actual Michigan Foundation Historical Rate of Return

1973-2002 Returns (30 Years)			
	Index Portfolio Returns (65%/35%)	Index Portfolio Returns (75%/25%)	Actual Michigan Foundation Returns
Nominal	10.37%	10.41%	10.28%
Inflation-adjusted	5.17%	5.20%	5.08%
1973-2010 Returns (38 Years)			
	Index Portfolio Returns (65%/35%)	Index Portfolio Returns (75%/25%)	Actual Michigan Foundation Returns
Nominal	9.44%	9.57%	9.75%
Inflation-adjusted	4.82%	4.94%	5.11%

For the 30-year period between 1973 and 2002, real foundation returns for the Michigan group closely tracked the performance of the passive indexes. The real return for the sample foundations exceeded the current 5% rule by only 8 basis points, as seen in the top red box on Chart 1. The results for the 38-year period from 1973-2010 are also in line with the performance of the hypothetical portfolios. Real returns increased slightly from 5.08% for the 30-year period ending 2002 to 5.11% for the 38-year period ending in 2010, and the spread over the passive index blends widened, possibly as a result of broader diversification of foundation portfolios in more recent years.

National Foundations

Looking beyond the sample of foundations based in Michigan, we applied the same analysis using data from a national aggregate of private foundations obtained from the IRS. At the time of the writing of this study, only data from the period 1986-2009 was available for this particular analysis. Returns are IRS estimates for all domestic private foundations based on IRS methodology.

The results suggest that the return experience of the Michigan foundations closely reflects that of private foundations nationally, as seen on the highlighted red boxes on Chart 2 below. For the 24-year period from 1986-2009³, national foundations returned 6.49% real while Michigan foundations returned 6.64% real. Over this time period, the 65/35 and 75/25 hypothetical portfolios returned 6.18% and 6.35% real, respectively.

HISTORICAL RATES OF RETURN – NATIONAL FOUNDATIONS

Chart 2. Index Portfolio vs. National Foundation Historical Rate of Return

1986-2009 (24 Years)				
	Index Portfolio Returns (65%/35%)	Index Portfolio Returns (75%/25%)	Actual Michigan Foundation Returns	National Foundation Returns
Nominal	9.24%	9.41%	9.71%	9.56%
Inflation-adjusted	6.18%	6.35%	6.64%	6.49%

The difference between the nationwide data and the Michigan sample over this 24-year period is 15 basis points (0.15%). This modest difference suggests that the 48 Michigan foundations (33 for return data) used in our original report collectively are a strong proxy for the overall performance of foundations in the United States during these time periods. Additionally, the two hypothetical portfolios, particularly the 75/25, also closely track the national foundations' returns.

³ Data was gathered from over 30,000 U.S. foundations. Data is publically accessible at the following link: <http://www.irs.gov/uac/SOI-Tax-Stats-Domestic-Private-Foundation-and-Charitable-Trust-Statistics>.

Conclusion

The initial conclusions of the 2000 study and 2004 are confirmed by the addition of both eight more years of data and a robust national sample of foundations. In 2000, we noted that modeling based on passive indexes was likely to provide a reasonable approximation of actual foundation experience. We also concluded that, in order for foundations to be sustainable over long periods of time, a payout rate in excess of 5% is not likely to maintain the real portfolio market value over the long term. Furthermore, the return experience of Michigan foundations closely reflects that of a robust national private foundation sample, suggesting that the same conclusions likely apply on a national scale.

IRS Payout Requirements

While the return experience of the two hypothetical portfolios and the sample of Michigan and national foundations exhibited similar returns over long periods of time, payouts were more variable. Exhibit 1 plots the weighted average payout ratio for the Michigan foundation sample group from 1973 to 2010⁴. A horizontal line is drawn beginning in 1982 to indicate the period in which the 5% payout rule was in force. As noted in the original report, prior to 1983, actual payout rates averaged 6.6%, since payout requirements mandated that neither the higher of adjusted net income (including interest and dividends) or a “minimum investment return” ranging from 4.4% to 6% be spent. Average payout between 1983 and 1993 was actually *below* the 5% level for the following reasons:

- The IRS allowed carry-forward credits for over disbursements in years prior to 1982.
- Higher bond and equity valuations, coupled with a one-year grace period for payout requirements, resulted in effective annual disbursements of less than 5%. In the five years following 1993, payout rates hovered around the 5% mark with relatively little volatility.

2003-2010 Update

A vertical line is drawn at 2002 in Exhibit 1 to indicate the period for which data was added since the 2004 update was published. Since 2002, foundation payout rates have steadily risen, reaching levels witnessed before the mandated 5% payout rate was instituted⁵.

We also included the payout rates of all national private foundations based on estimates from the IRS for the years 1985-2009. At the time of the writing of this study, data from only this period was available from the IRS. Returns are IRS estimates for all domestic private foundations based on IRS methodology. We find that the payout rates for private foundations in the United States as a whole are

⁴ Exhibit 1 serves to update Exhibit 1 from the 2004 update.

⁵ However, this graph is dollar-weighted, giving the few largest foundations disproportionate weight. According to the 2004 study, volatility was around the 5% mark between 1999 and 2002. If the single largest foundation were removed from the 2004 analysis, volatility around the 5% mark actually increases between 1999 and 2002. The 2004 study suggested that this may be more reflective of the typical foundation’s experience during this period. As equity markets surged in the late 1990s, effective payout rates dropped below 5%, and as markets slumped after 2000, payouts spiked significantly.

higher than those of the Michigan foundations, and have also steadily risen since 2002. The payout rate for national foundations is consistently 1% to 2% higher than the Michigan foundations' weighted payout rate, which has significant implications. Our analysis suggests that the 5% payout rule currently mandated by law may serve as a 'floor', rather than a 'ceiling', for many foundations' spending practices. To that end, this suggests that while many Foundations may manage to this rate, many have historically paid out levels far in excess of the currently federal mandate of 5%. As such, the combination of a lower real return than the Michigan foundation sample (15 basis points) and consistently higher payout rates suggests that on average, national foundations' funds will gradually lose their real wealth over time.

Part II. 2013 Update Study

The Effect of Various Spending Rates on Real Payout Levels and Fund Market Values

Since the analysis in the previous section demonstrated that hypothetical portfolios approximates the return history for both the Michigan and national samples, we can use the same hypothetical portfolios (65/35 and 75/25) to illustrate the effect of market cycles on foundation assets and payout over long periods of time. This is shown in Exhibits 2A and 2B, in which we model the 65/35 and 75/25 hypothetical portfolios, respectively.

Findings from 1969 – 2010

- The period shown here begins towards the end of the great bull market of the 1950s and 1960s. By 1968, the diversified Michigan foundations we surveyed had over 50% of their assets allocated to equities, virtually all invested in U.S. stocks. In the decade of the 1970s that followed, stocks posted anemic nominal returns and negative *real* returns. The bull market between 1998 and 2000 resulted in a brief recovery of real spending rates and fund market values, bringing all funds except the one spending 7% above their 1969 payout levels for the first time in 30 years. This holds for both the 65/35 and 75/25 hypothetical portfolios. Following the tech bubble crash, the early 2000s brought all funds, except for the 4% spending fund, back down to sub-1969 market value levels for both the hypothetical portfolios. In other words, only the funds with 4% spending rate recovered from the periods of pronounced market volatility to fully preserve purchasing power.
- Markets rebounded between 2002 and 2007, but the financial crisis of 2008 again brought a decline in real fund values.
- By the end of 2010, real inflation adjusted spending for each of these funds remained *below* the 1969 level of 5%, with the sole exception of a hypothetical fund spending 4% for *both* the 65/35 and 75/25 indexed portfolios.

- As of 2010, only the 4% fund had preserved its real wealth since 1969 after enduring periods of protracted market volatility. For the 65/35 portfolio that spent at the 5% mandated level, this implies a 13% decline in real market value from 1969. For the more aggressively invested 75/25 portfolio, this implies a 9% drop in real market value.
- Since the 2004 update (2003 - 2010), there was a 18% decline in real market value for the 65/35 portfolio spending at the 5% mandated level and a 13% decline for the 75/25 portfolio spending at the 5% mandated level.
- If we assume foundations can achieve a moderate increase in portfolio return without an attending increase in portfolio risk through access to top quality investment managers and alternative asset classes, the 5% spending rate may be *just* low enough to preserve purchasing power over the long term. If, however, the legally required spending rate increased to 5.5% or 6%, our analysis suggests foundations may not be able to preserve their real wealth over time. If foundations are not able to preserve their wealth over time, their ability to execute on their stated missions falls commensurately.
- As the data and graph suggest, a high payout rate will initially provide higher levels of spending, but will over time erode the value of both the fund and the absolute level of dollars being paid out from the fund. Conversely, a lower payout rate will enable the fund to accumulate value and will result in higher absolute levels of real spending in the future.

Variable Versus Constant Spending Rates in Bull and Bear Markets

Exhibit 3A examines a hypothetical 65/35 portfolio of \$100 million in 1969 and the subsequent real market value through 2010 after employing two different spending rules. Rule A spends a constant 5% of a trailing four quarter average beginning market value each year. Rule B, however, increases spending in response to rising portfolio value (bull market), and correspondingly lowers it in response to falling portfolio value (bear market). The exhibit shows the corrosive effect variable spending has on a portfolio's real wealth over time. Note that over this 38-year period, the constant payout rate (Rule A) nearly preserves the portfolio's purchasing power (down 3.9% from 1969), the variable payout rate (Rule B) does not (down 26.8% from 1969).

- Through 2010, cumulative spending from both funds over the period was quite similar (Fund A had cumulative spending of \$165.19 per \$100 of original value and Fund B had \$166.02).
- Despite the negligible differences in cumulative spending between the two funds over the period, Fund B is more than 30% less valuable than Fund A in real terms at the end of the period. This is due to the increased payout during the bull markets of the 1990s and period leading up to the more recent financial crisis.

- By 2010, the spending level of Fund B drops almost 40% from its initial 1969 level in real dollar terms for both the 65/35 portfolio and the 75/25 portfolio (see Exhibit 3B). In contrast, Fund A's spending level drops only 20% for both portfolios.
- The higher absolute spending achieved by the constant payout rate (Fund A) by the end of the period means that if the two funds follow identical spending rules, in the long run Fund A exhibits higher cumulative spending. This is exacerbated if Fund B continues to vary its spending heading into a bear market.
- The results from the analysis of the constant payout rate (Fund A) and variable payout rate (Fund B) are very close for both the 65/35 and 75/25 hypothetical portfolios. This illustrates that spending patterns have a similar impact on the value and absolute spending of a fund regardless of the actual investment composition (simple stocks and bonds) of the portfolio. The real value of a foundation's portfolio is highly sensitive to annual spending rates, and will diminish over time if a variable payout rate is administered.

Future Return Expectations

Finally, using CA's proprietary asset class return assumptions⁶, we calculate the real expected compound returns for hypothetical 65/35 and 75/25 portfolios, and find that they are 4.9% and 5.2%, respectively, over the long term. The main objective of our asset class assumption is to present a base case of equilibrium returns. In particular, equilibrium assumptions are independent of current valuations, targeted toward a generic 25+ year time horizon and with a risk premium between global bonds and global stocks that is reasonable and represents our long-term expectation. Given these return expectations going forward, our models suggest that the probability of maintaining purchasing power at a payout rate of 5% is about 50% over the next 5 to 25 year time frames, as summarized in Chart 3 below.

Chart 3. Probability of Maintaining Purchasing Power

Index Portfolio	5 Years	10 Years	15 Years	20 Years	25 Years
65%/35%	49%	48%	48%	47%	47%
75%/25%	50%	51%	51%	51%	51%

⁶ The inputs used in this modeling exercise represent our current estimates of long-term (25-year) equilibrium real rates of return. This includes a real arithmetic average return of 7.00%, 3.00% and 1.00% for U.S. Equity, U.S. Fixed Income, and U.S. Cash, respectively, as well as an inflation rate of 3.00%. The original report included modestly higher equilibrium real arithmetic average returns of 7.75%, 3.75%, and 1.00% for U.S. Equity, U.S. Fixed Income, and U.S. Cash, respectively, as well as an inflation rate of 3.00%.

Implications

This study provides quantitative analysis on the investment portfolio performance and payout rates for both a sample of 48 Michigan foundations through 2010 and a larger sample of over 30,000 national foundations through 2009. Our extension of the time period to include the most recent financial crisis corroborates the conclusions reached in our previous research in 2000 as well as in 2004. While nominal returns of foundations have been near 10%, the data suggests that the combination of inflation and mandated annual payouts may erode foundations' real wealth over time.

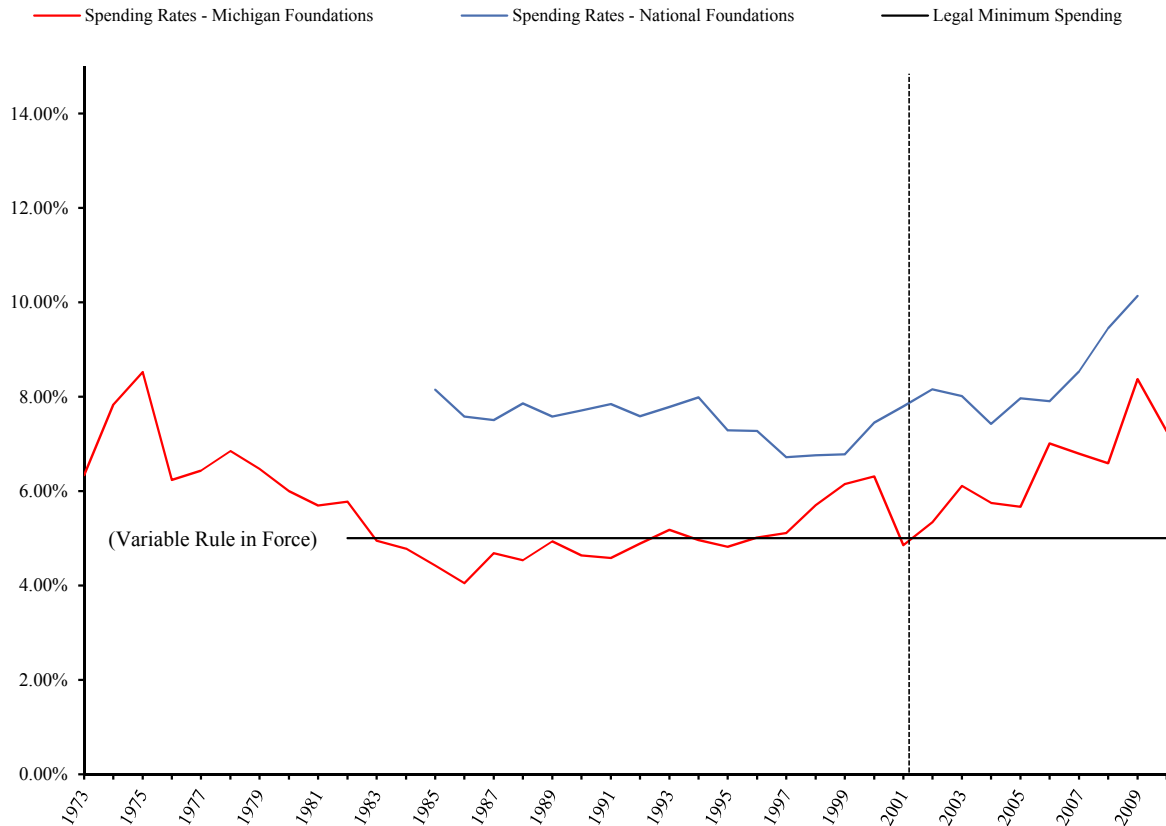
Because foundations generally exist to serve a stated social good or purpose in perpetuity, their real wealth over the long term is often central to their mission. Put simply, foundations' real wealth is a function of three variables: nominal investment returns, inflation, and payout rates. While the first two are unpredictable in the short run, one may reasonably assume that over longer periods they may interact to produce an annual real return between 5% and 7%. Our analysis supports this not only theoretically but also empirically. Payout rates are the only element of relative certainty of these three variables and as the evidence suggests, unsustainable rates may permanently impair foundations' portfolios.

While some foundations admittedly are set up to liquidate over time, most donors create foundations with the goal of pursuing their missions in perpetuity. For foundations to maintain intergenerational equity, spending rates should not exceed the expected real return. Boosting returns to a level sufficient to justify increases in spending would likely require taking on considerable risk in a foundation's portfolio, which many may not be positioned to implement or monitor effectively. As such, our analysis, as it did in 2000 and in 2004, again confirms that a payout rate higher than 5% may compromise foundations' ability to sustain the grant-making capacity of their endowments over the long term.

Exhibit 1

RESPONSE POOL PAYOUT RATES

Foundation Real Weighted Returns & Spending Rates



Sources: Response pool comprised of all 48 Michigan foundations who responded to the survey.

National foundations data comprised estimates for all domestic foundations provided by the IRS (1985-2009).

Note: Prior to 1982 a higher of adjusted net income or variable percentage rule was in force.

From 1982 on a constant 5% rule was mandated.

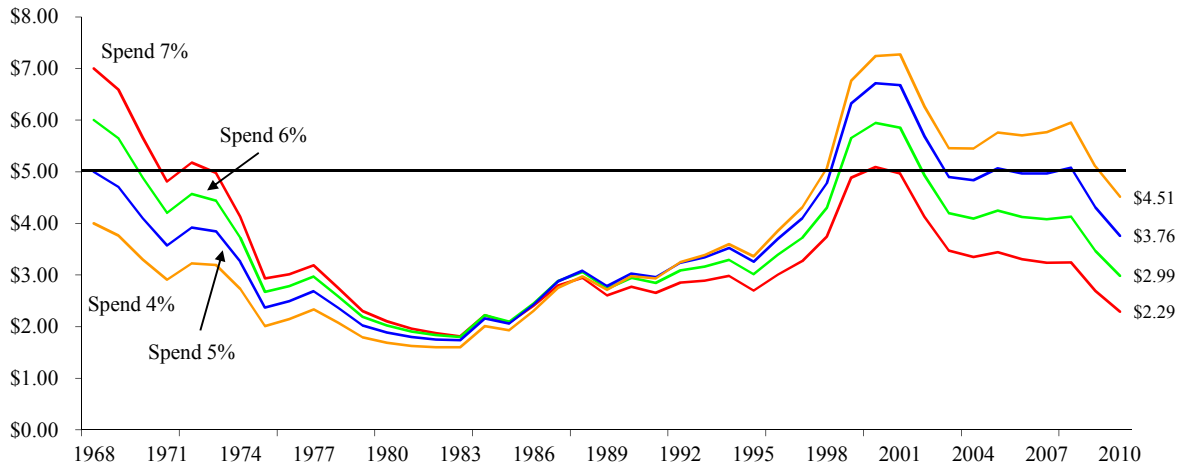
The actual sample size for each individual year may vary due to data availability constraints.

Exhibit 2A

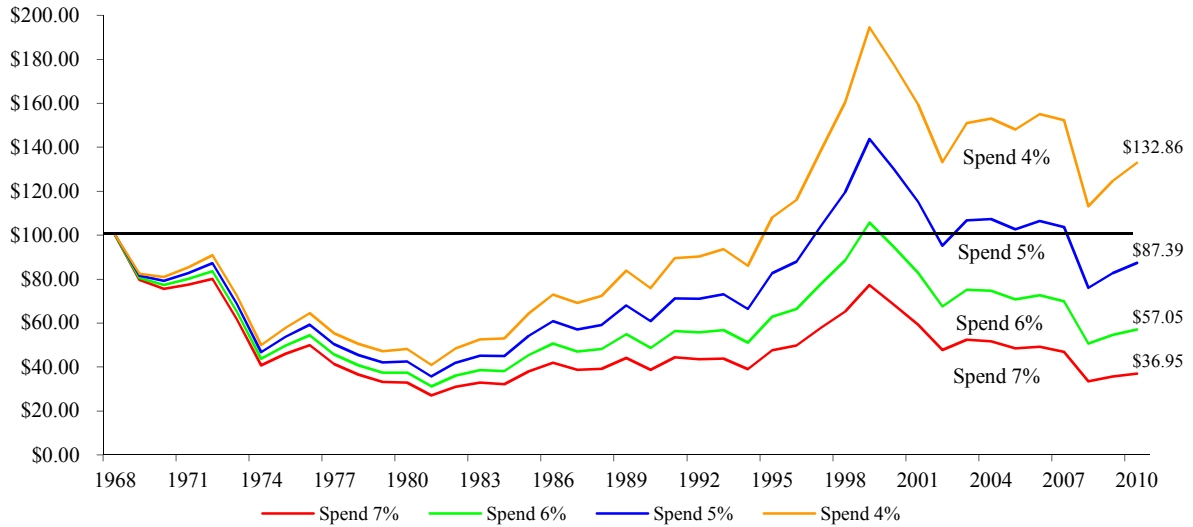
**REAL SPENDING SIMULATION
65% U.S. EQUITY / 35% U.S. FIXED INCOME**

**SPEND VARIOUS %'S OF A FOUR-QUARTER AVERAGE BEGINNING MARKET VALUE
(Calendar Years 1969-2010)**

Real Spending



Real Fund Market Values After Spending



Assumptions:

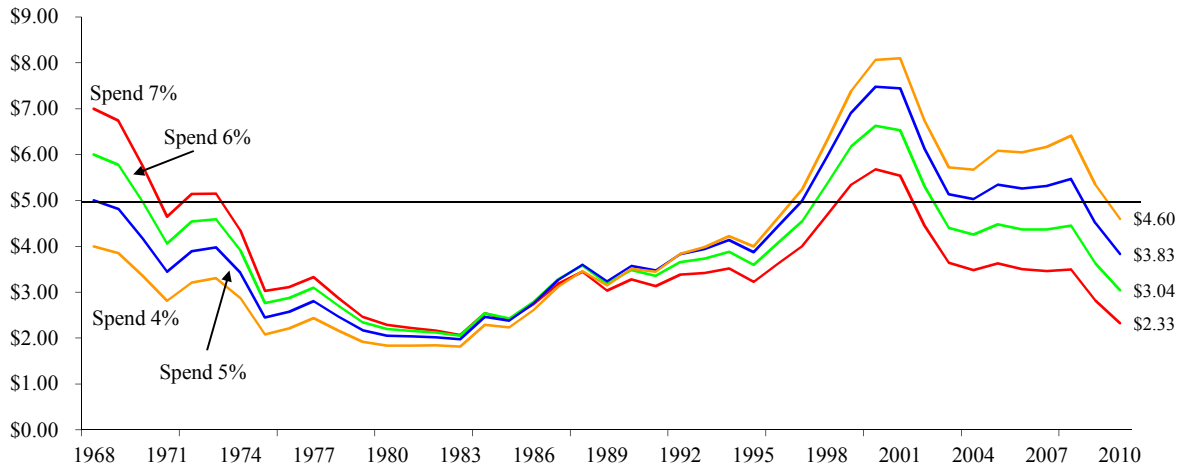
- Begin with \$100 million on January 1, 1969.
- Constant asset allocation of 65% U.S. stocks and 35% U.S. fixed income rebalanced to target policy each year.
- Performance is based on annual market index data.

Exhibit 2B

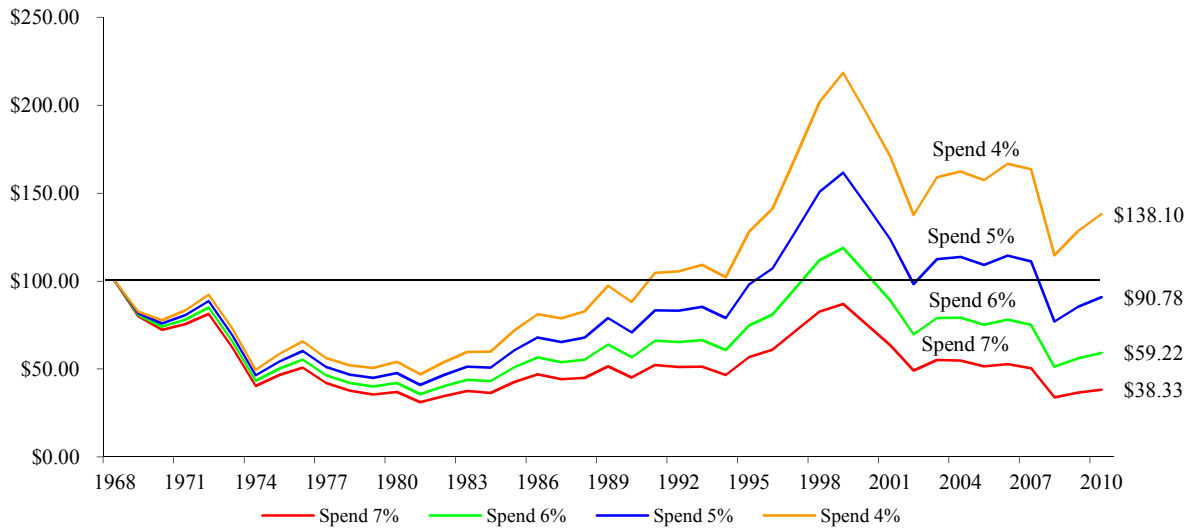
**REAL SPENDING SIMULATION
75% U.S. EQUITY / 25% U.S. FIXED INCOME**

**SPEND VARIOUS %'S OF A FOUR-QUARTER AVERAGE BEGINNING MARKET VALUE
(Calendar Years 1969-2010)**

Real Spending



Real Fund Market Values After Spending



Assumptions:

- Begin with \$100 million on January 1, 1969.
- Constant asset allocation of 75% U.S. stocks and 25% U.S. fixed income rebalanced to target policy each year.
- Performance is based on annual market index data.

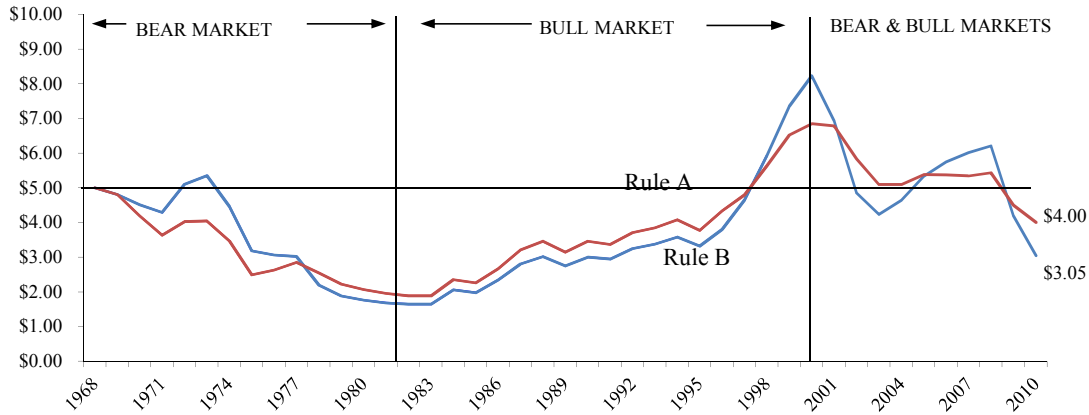
Exhibit 3A

**REAL SPENDING SIMULATION
65% U.S. STOCK / 35% U.S. FIXED INCOME**

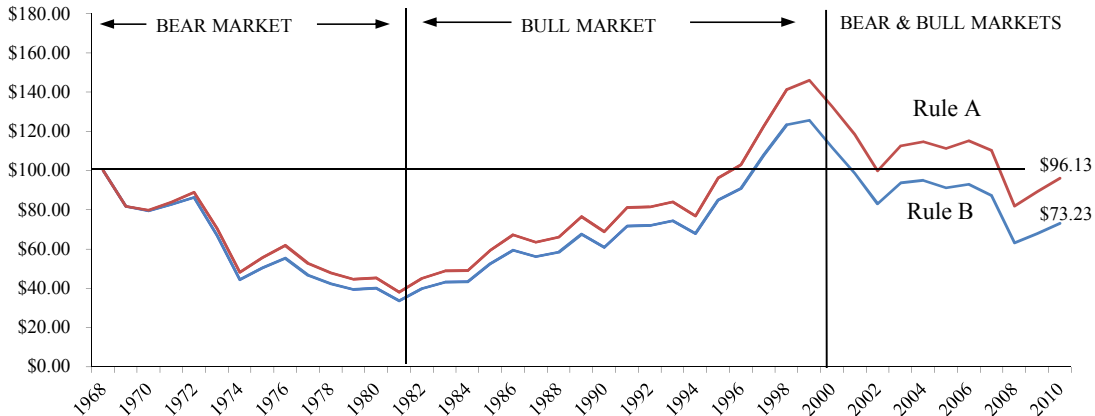
VARIABLE VERSUS CONSTANT SPENDING RATES IN BEAR MARKETS

(Calendar Years 1969-2010)

Real Spending



Real Fund Market Values After Spending



Assumptions:

- Rule A: Spend 5% of a 4 quarter average beginning market value each year.
 - Rule B: Spend 5% in 1969, 5.5% in 1970, 6% in 1971, 6.5% in 1972, 7% from 1973 through 1975, 6.5% in 1976, 6% in 1977, 5% from 1978 to 1996, 5.5% in 1997, 6% in 1998, 6.5% in 1999, 7% in 2000, 6% in 2001, 5% in 2002 and 2003, 5.5% in 2004, 6% in 2005, 6.5% in 2006, 7% in 2007 and 2008, 6% in 2009, and 5% in 2010. All annual spending is of a 4 quarter average beginning market value.
 - Begin with \$100 million on January 1, 1969.
 - Constant asset allocation of 65% U.S. stocks and 35% U.S. fixed income rebalanced to target policy each year.
- Performance is based on annual market index data.

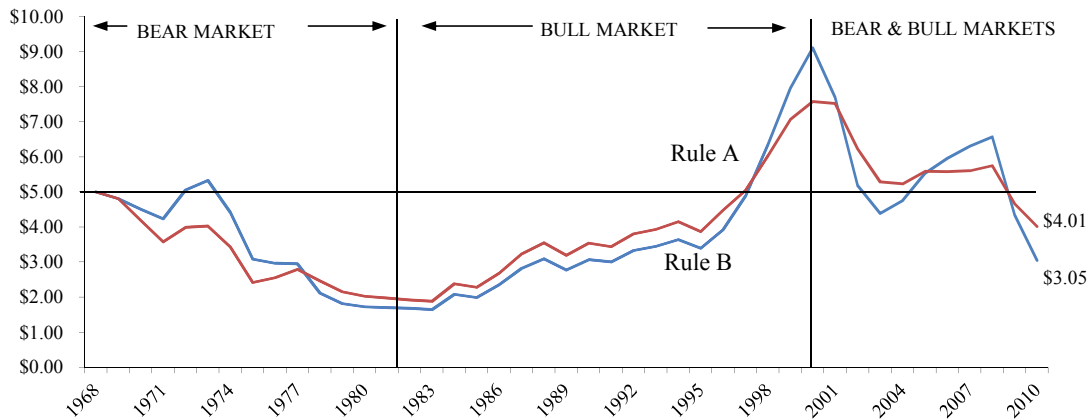
Exhibit 3B

**REAL SPENDING SIMULATION
75% U.S. STOCK / 25% U.S. FIXED INCOME**

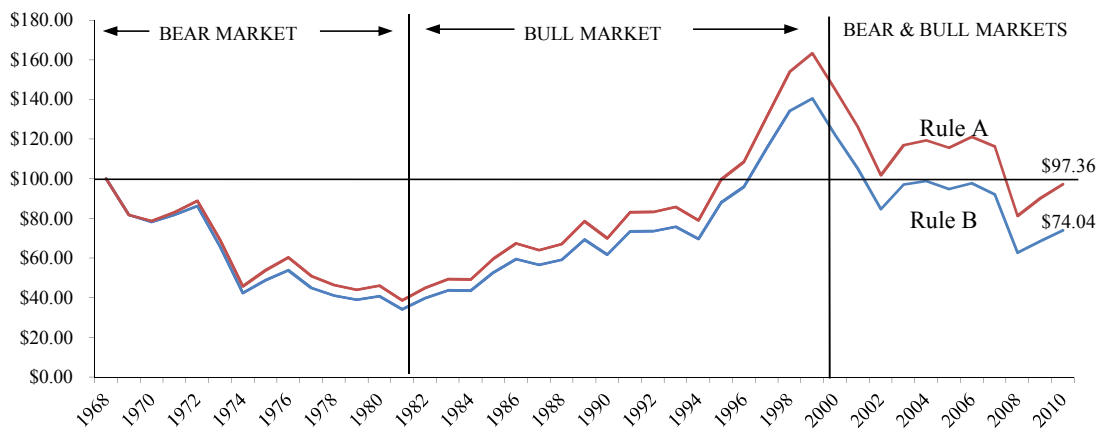
VARIABLE VERSUS CONSTANT SPENDING RATES IN BEAR MARKET

(Calendar Years 1969-2010)

Real Spending



Real Fund Market Values After Spending



Assumptions:

- Rule A: Spend 5% of a 4 quarter average beginning market value each year.
- Rule B: Spend 5% in 1969, 5.5% in 1970, 6% in 1971, 6.5% in 1972, 7% from 1973 through 1975, 6.5% in 1976, 6% in 1977, 5% from 1978 to 1996, 5.5% in 1997, 6% in 1998, 6.5% in 1999, 7% in 2000, 6% in 2001, 5% in 2002 and 2003, 5.5% in 2004, 6% in 2005, 6.5% in 2006, 7% in 2007 and 2008, 6% in 2009, and 5% in 2010. All annual spending is of a 4 quarter average beginning market value.

- Begin with \$100 million on January 1, 1969.
- Constant asset allocation of 75% U.S. stocks and 25% U.S. fixed income rebalanced to target policy each year.
- Performance is based on annual market index data.

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