THE SECOND LEVER

Managing Distribution Policy to Help Minimize Operating Volatility

EXECUTIVE SUMMARY

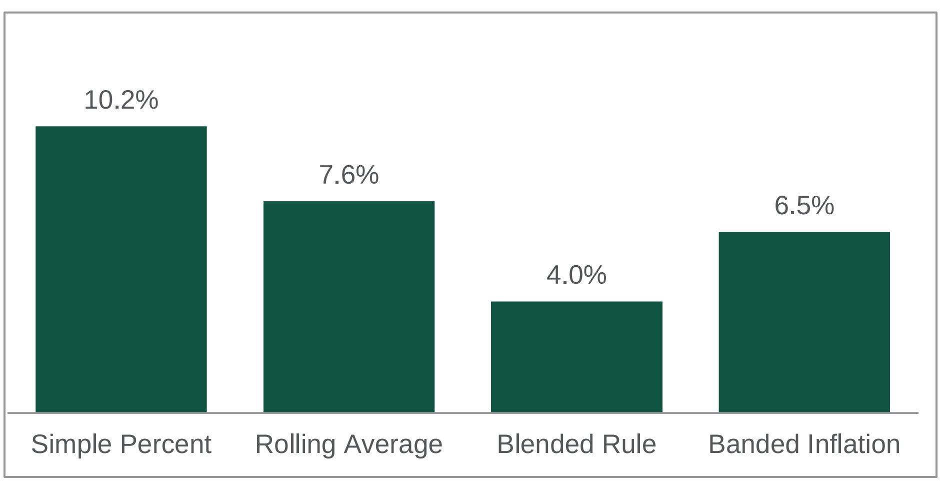
Endowments have dual objectives - support steady distributions and protect purchasing power net of distributions.

The variability of capital markets can make the support of steady distributions a challenge when those distributions are based on a percentage of market value.

Investment Policy is the first lever an investor can pull to manage portfolio and therefore distribution volatility. Nuanced management of Distribution Policy represents an important second lever.

Our analyses[1] (see assumptions in Appendix) show that different distribution policies can greatly affect the volatility (or standard deviation) of distributions. These policies can reduce a key measure of the volatility of distributions by as much as 61% for endowments.

EXHIBIT 1: STANDARD DEVIATION OF ANNUAL PERCENTAGE CHANGE IN DISTRIBUTIONS



When a distribution policy is based on a simple percentage of market value, the investment policy lever shoulders the responsibility for managing portfolio and distribution volatility. However, by taking a more thoughtful approach to distribution policy, an endowment has a powerful second lever to help manage distribution volatility. This can alleviate pressure from the investment policy to manage portfolio volatility and may even support greater portfolio and distribution growth over time.

Clients often turn to us to identify strategies that can help them better manage distribution variability and protect their purchasing power. To do this, we use our proprietary modeling tool to analyze the various distribution policy approaches endowments commonly adopt.

OVERVIEW OF ANALYSIS

Managing investment and distribution policies for an endowment with a perpetual investment time horizon is a complex and dynamic process. To isolate the potential impact various distribution policies could have on a portfolio, we use a simple asset allocation. This lets us compile a broader sample of historic market data than otherwise possible with a more modern and highly diverse asset allocation. Importantly, the volatility of returns for this historic dataset is comparable to projected volatility for a more contemporary endowment allocation. This adds to the relevance of any indicated change in distribution volatility relative to return volatility as a guide for forward looking policy.

Endowment Analysis

In our simulations for endowments, we focus on four distribution policy options. (Appendix includes summary data for the options.)

1. **Simple Percentage –** applies a simple percentage of 4.5% to an average of the past 12 months' market values.
2. **Rolling Average –** applies a simple percentage of 4.5% to an average of the last 36 months' market values.
3. **Banded Inflation –** starts distributions at $4.50 on $100 and then bases changes in distributions on inflation. Also distribution caps are applied: 6.5% (i.e. distributions cannot exceed 6.5% of market value in down markets) and a floor of 2.5% (i.e. distributions are no less than 2.5% of market value during up markets).
4. **Blended Rule[3] –** an approach that bases distributions on 80% of the prior year's spending, adjusted for inflation; the balance is based on 4.5% of market value.

Foundations

Managing the volatility of total distributions for US private foundations can be more difficult given the required minimum distribution[2] associated with these funds. However, by taking a slightly different approach, such as splitting distributions into core and complementary subsets, a foundation can focus on managing the volatility of the core subset of distributions.

OBSERVATIONS

Exhibit 1 illustrated that more complex policies help reduce the variability in distributions, with the median standard deviation of annual percentage change in distributions reduced by 26% for a rolling average policy, by 37% for a Banded Inflation policy and by 61% for a Blended Rule policy.

Also, as Exhibits 2 and 3 show, the more-complex spending policies tended to reduce average distributions and increase average ending values.

EXHIBIT 2: AVERAGE ANNUAL DISTRIBUTIONS – PERCENTAGE OF AVERAGE ASSETS

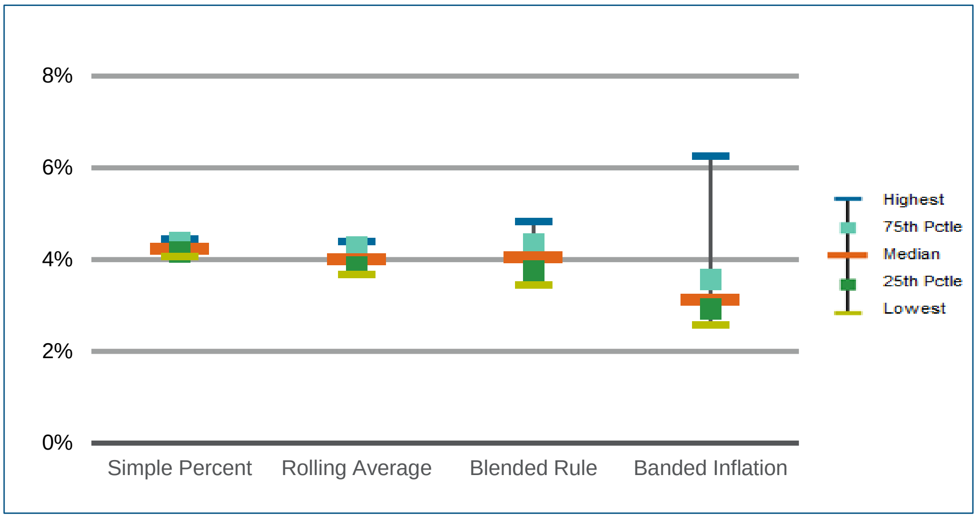
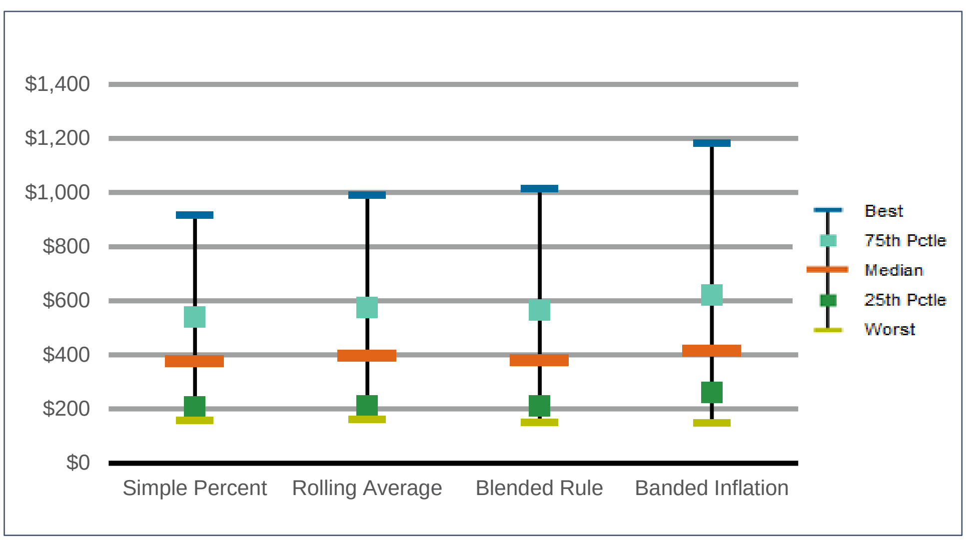


EXHIBIT 3: ENDING ASSETS – NOMINAL



We have found these directional shifts to be particularly important in forward looking Monte Carlo analyses incorporating current expected returns which are lower than historical returns.

RECOMMENDATION

While the appropriate policy will vary by endowment, we believe the Banded Inflation approach has significant appeal because of its potential to generate the highest average ending values and a lower effective distribution rate – important considerations in a lower expected return environment – while meaningfully reducing distribution variability.

The tug and pull of providing steady distributions for the near term, while protecting purchasing power for the long term, is a constant challenge for endowments.

The Banded Inflation approach may also appeal to endowments because:

- Expected changes in distributions are linked to inflation. Inflation typically has lower variability than capital markets returns, and inflation is commonly used in budgeting and planning.
- It can drive slower growth of distributions given inflation increases are smaller than market value increases in a favorable return environment.
- It maintains and potentially grows distributions (at least initially), when market values fall; This is a key point because the Banded Inflation approach may lead to lower distribution expectations for many years, but it will support higher distributions in challenging economic and market environments.
- The cap and the floor maintain a reasonable connection to portfolio market value. For example, if the portfolio net of distributions grows faster than the rate of inflation, the floor provides that distributions remain above x% of market value. Conversely, if the portfolio falls, the cap provides that distributions do not exceed y% of market value.

The lower standard deviation of percentage change in distributions also indicates more stability in using the Banded Inflation approach, but interestingly not as much as the Rolling Average or the Blended Rule. This is due to a "weakness" in the Banded Inflation policy as applied in the model that in strongly trending markets means the cap or floor can kick in for many years and the volatility of distributions will devolve back in line with moves in market values. This may suggest that an entity applying the Banded Inflation approach consider a "reset" if either the cap or floor level applies for a certain number of consecutive years. This weakness of the Banded Inflation policy is seen most acutely in periods with poor early returns and high inflation, making it hard for the portfolio to catch up to inflation-based levels.

BALANCING CHANGING MANDATES

Endowments must balance a challenging dual mandate: support steady ongoing distributions while preserving portfolio purchasing power over the long term. Thoughtful application of distribution policy can provide a "second lever" to help manage the variability of ongoing distributions by taking some pressure off the investment policy and providing an effective complement. For endowments, a Banded Inflation policy may have particularly compelling characteristics.

FOR MORE INFORMATION

Using proprietary modeling tools, our team will work with you to understand your unique circumstances and goals to identify a strategy to help meet or complement your needs. Northern Trust Asset Management's Endowment and Foundation team collaborates with investment staff, committees, and boards to enhance investment portfolios through both broad and targeted multi-manager mandates.

For more information about this process, please visit northerntrust.com/ocio or contact Dan Kutliroff at DK205@ntrs.com or 312.557.1657.

APPENDIX

ASSUMPTIONS USED

Starting Assets	$100
Portfolio's Asset Allocation	75% / 25%*
Time Period	January 1973 - May 2017
Rolling Period	20 Years
Number of Periods	294
Average Return	11.2%
Average Standard Deviation	11.5%
Minimum Annualized Return	7.0%
Average Inflation	3.5%

*Given available data, the analysis uses a portfolio of 75% S&P 500 and 25% Barclays Government/Credit Intermediate bonds

ENDNOTES

1 The analysis is created using a proprietary tool to analyze historical returns and distributions from a hypothetical portfolio. Returns used are index returns for representative purposes; it is not possible to invest directly in an index. This portfolio has not commenced and has no actual performance history. The hypothetical performance results assume asset allocations remain fixed and are rebalanced monthly during entire 20-year periods for all the rolling 20 year periods starting each month from 01.01.1973 to 05.01.1997 and ending 05.31.2017. Past performance is not indicative of or a guarantee of future results.

2 Each year U.S. private foundations file a form 990, which includes a calculation of their required distribution. Market values of the foundation's Net Investment Assets as of month end for the preceding 12 months are recorded. The Payout Requirement equals the product of 5% of the average of these values. This Payout Requirement can be met with qualifying distributions including amounts distributed for charitable purposes, direct charitable activities, Program-Related Investments (PRIs) and reasonable and necessary administrative costs related to a foundation's charitable activities. Investment expenses are not qualifying distributions. IRC 4292 and the applicable regulations contain an extensive set of rules governing required distributions by private foundations, including requirements that private foundations distribute the calculated distributable amount of each taxable year by the end of the succeeding taxable year. Please consult tax advisors for further detail.

3 This blended approach is known to some industry participants as a "Tobin Rule" named for the Nobel Prize-winning economist James Tobin relating to his work on endowment management principles and intergenerational equity.

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