Spending Policy 2.0:

Understanding the Historical Impact of Spending Calculation Rules on Endowments (From 1970 to 2020)

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pfm asset management

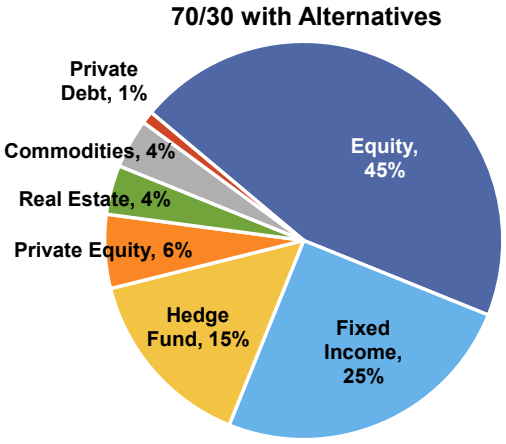
Decision-makers overseeing endowment or foundation funds must adopt an appropriate spending calculation method. It is critical in the development of an optimal spending policy, but is also a common challenge facing most endowment governing boards. Making the wrong decision may lead to strategic challenges, including:

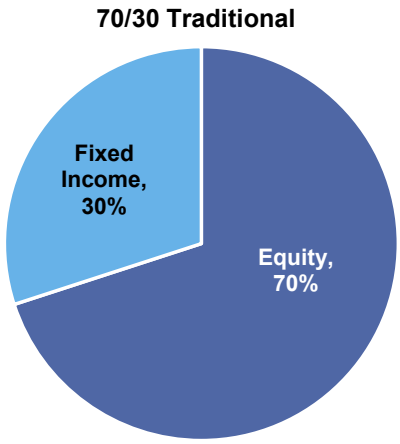
- Disappointing donors
- Erosion of endowment corpus
- Falling short of mission
- Budgeting instability
- Failing to treat all beneficiary classes equally

For private foundations, a lot of the thinking is removed by an IRS-mandated 5% spending rule. For other types of institutions, however, a board must consider factors, including: How much is needed annually to satisfy its mission? Are there donor restrictions? Is the endowment asset mix capable of producing the required return to cover mission support net of inflation and investment expenses? Are there cash flow or liquidity needs that should be considered?

The Analysis

To help decision-makers develop an optimal spending policy, we examine how different spending calculation methods would have historically fared over the past 50 years. We assumed a portfolio of $100 million in investment assets as of July 1, 1970, and a 4.5% endowment spend rate. For asset allocation, we analyzed two versions of a hypothetical 70% equity and 30% fixed income (70/30) portfolio: one includes alternative investments (alternatives), such as private equity, private real estate, hedge funds and commodities; and the other a "traditional" portfolio without alternatives. We analyzed different spending methods using historical returns for this portfolio for the half-century from July 1, 1970 to June 30, 2020, using various index return assumptions and consumer price index (CPI) for inflation.[1, 2]





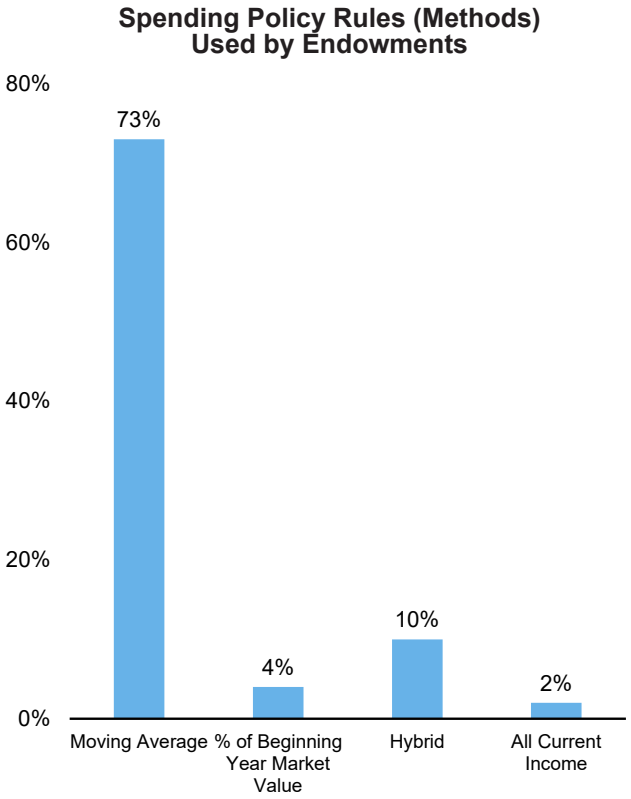
1 Assumed asset allocation (with alts): 45% equity (MSCI ACWI (Net) proxies Global Equity from 1990-Present, MSCI World (Net) data proxies Global Equity Data from 1970-1989); 25% fixed income (Bloomberg-Barclays Aggregate, Ibbotson Associates SBBI LT Corp & SSBI U.S. Government are used as proxy returns prior to 3/31/1976); 15% hedge funds (HFRI Fund of Funds Index used to proxy Hedge Fund returns since 3/31/1990); 6% private equity (Cambridge Associates U.S. Private Equity Index used to proxy Private Equity returns since 3/31/1995, data on quarterly lag); 4% real estate (NCREIF Fund Index - Open End Diversified Core Index (NFIODCE) is used to proxy Real Estate returns since 3/31/1978); 4% commodities (Bloomberg Commodities Total Return Index used to proxy Commodity exposure since 3/31/1970); 1% private debt (Cliffwater Direct Lending Index (CDLI) as proxy for Private Debt since 12/31/2004). Traditional 70/30 allocation: 70% MSCI ACWI, 30% BB Aggregate).

2 2020 NACUBO-TIAA Study of Endowments.

Refresher on Spending Calculation Methods[3]

Several methods are commonly used to calculate endowment spending each year, and they can be categorized four ways:

1. **Income-Based:** Spend only from income (interest and dividends). This method is not popular due to its total reliance on the level of interest rates and dividend yields.
2. **Market Average (Rolling or Smoothing):** Spend a percentage of asset market value from a prior period. This is the most common method used by over 70% of endowments, as shown by the chart on the right. The rolling period typically ranges from 12-quarters (3-years) to 20-quarters (5-years).
3. **Constant Growth (Inflation-Based):** Increase spending annually at the rate of inflation. The "Banded Inflation" variant of this rule adds upper and lower bands (ceiling and floor) on the percentage of market value spent in a year (e.g., 3% to 6%). Very few institutions use this method.
4. **Hybrid (Yale Rule):** A combination of the rolling average and banded inflation rules. This method attaches a 20% weight on the spend rate using a 3-year rolling market average and an 80% weight on matching what was spent last year (adjusted for inflation). There are also variants of this rule that assign customized weights. For example, the weights for the "Stanford Rule" may be 60/40 instead of 80/20.



Source: 2020 NACUBO-TIAA Study of Endowments.

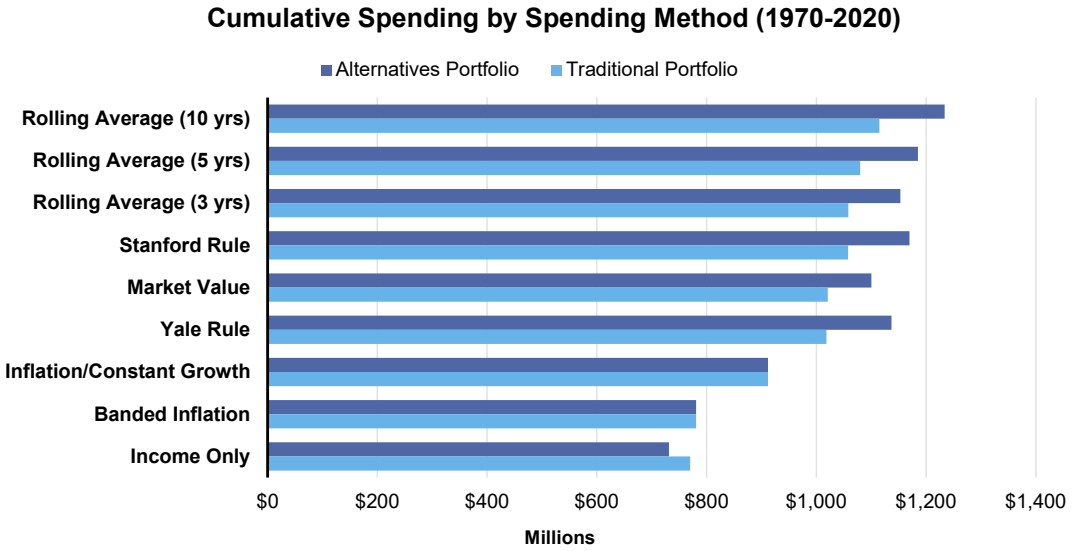
Key Findings

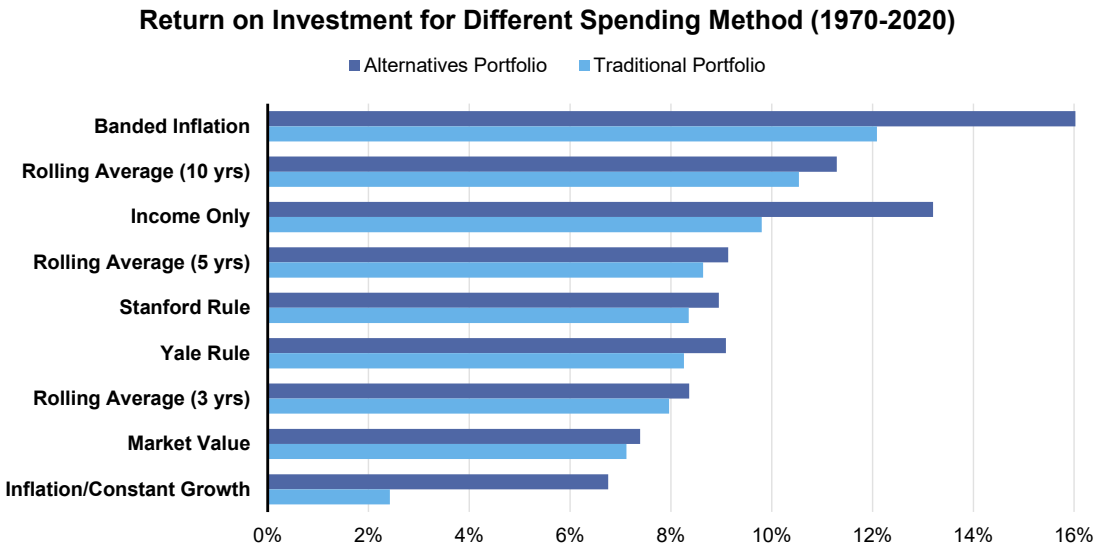
- Longer market value smoothing periods (10-years) resulted in the most favorable balanced outcomes in terms of providing the highest overall spending (mission impact), one of the highest overall endowment growth rates and relatively low spending volatility year-over-year.
- The hybrid (Yale and Stanford) methods were very effective and fell closely behind the 10- and 5-year (20-quarter) smoothing methods overall.
- Although the inflation- and income-based approaches resulted in the highest asset growth, they provided the least mission impact (cumulative spending) and hence poor intergenerational equity (favoring future beneficiaries over current).
- Overall, the portfolio exposed to alternative investments produced better results than the traditional portfolio, with higher cumulative spending and greater endowment growth. Interestingly, the opposite was true over the two most recent decades.

3 For an introductory explanation of the different spending calculation methods such as income only, rolling average, inflation-based or hybrid methods, please refer to our InvestEd, "Spending Policy Goals for Endowments & Foundations" published in July 2018.

Cumulative Spending and Endowment Growth

The illustrations below rank each spending method based on total cumulative spending and return on investment over the 50-year time period (ranked based on the Traditional portfolio outcomes):





Since equity markets have generally trended higher over time, a 10-year smoothing period means that much of the spending is based on lower market values from prior years and allows the assets to grow more steadily. This calculation method also eliminates years with very low spending that may result from quick, but large, market downturns. Even if we experience multiple years of declining markets, we would expect 10-year smoothing to remain effective. On the other hand, shorter smoothing periods, including the 12-quarter smoothing method used by most endowments, lead to more volatile annual spending and would also be expected to struggle should there be a long enough period of market declines. In that scenario, spending would be based on older, higher market values, potentially leading to overspending when assets are severely undervalued.

Spending Budget Volatility

In terms of volatility of spending year-over-year, we generally found the longer the smoothing period, the lower the spending budget volatility tends to be. The hybrid methods were also very effective in this regard, with the Yale Rule being slightly superior to 10-year smoothing. Given their emphasis on steadily growing spending by the inflation rate, the inflation-based methods resulted in the least spending volatility. The table below ranks each method by average deviation of year-over-year spending.

Average Deviation by Spending Method		
Spending Calculation Rule	**Portfolio with Alternatives**	**Traditional Portfolio**
Banded Inflation	1.0%	1.0%
Inflation/Constant Growth	2.1%	2.1%
Yale Rule	3.0%	3.3%
Rolling Average (10 yrs)	3.5%	3.9%
Stanford Rule	3.6%	4.1%
Rolling Average (5 yrs)	3.8%	4.3%
Rolling Average (3 yrs)	4.2%	4.9%
Market Value	6.4%	7.5%
Income Only	10.0%	9.0%

Average deviation measures the average of the absolute deviations of data points from their mean.

Considerations for the Future

While these findings are interesting, they are not necessarily a recommendation of one method over another, as every institution is different and has its own unique set of circumstances. In addition, while economic environments tend to run in cycles, there are dynamics within each cycle that may impact policy decisions for the short or intermediate terms. For example:

- What happens if interest rates or inflation continue to rise significantly going forward?
- What is the correct measure of inflation for your institution (e.g., healthcare, higher education, etc.)?
- A 4.5% or 5% spend rate may have worked in the past, but is this rate sustainable in the future without a more aggressive asset allocation?
- How should institutions rethink their spending rate and/or strategic asset allocation?
- Are illiquid alternative investments appropriate to help fill asset allocation gaps, and if so, how much illiquidity can your institution handle?

Conclusion

Overall, we find that smoothing over as long of a period as possible, ideally 10 years, should be very effective and relatively simple to calculate. We also like the customizability of the hybrid approach, but that approach also has more variables to both consider and explain to stakeholders. Regardless of which method is selected, an institution may use a calculation date that gives it enough lead time if the fiscal year-end isn't convenient (e.g., 12/31, 3/30, etc.).

Each institution should consult its independent investment advisor to perform the required modeling, evaluate all available options and help arrive at the optimal spending and investment policy guidelines that are harmonized with the organization's mission.

For more information, please email PFM Asset Management's Endowments & Foundations National Practice at EFNP@pfmam.com.

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