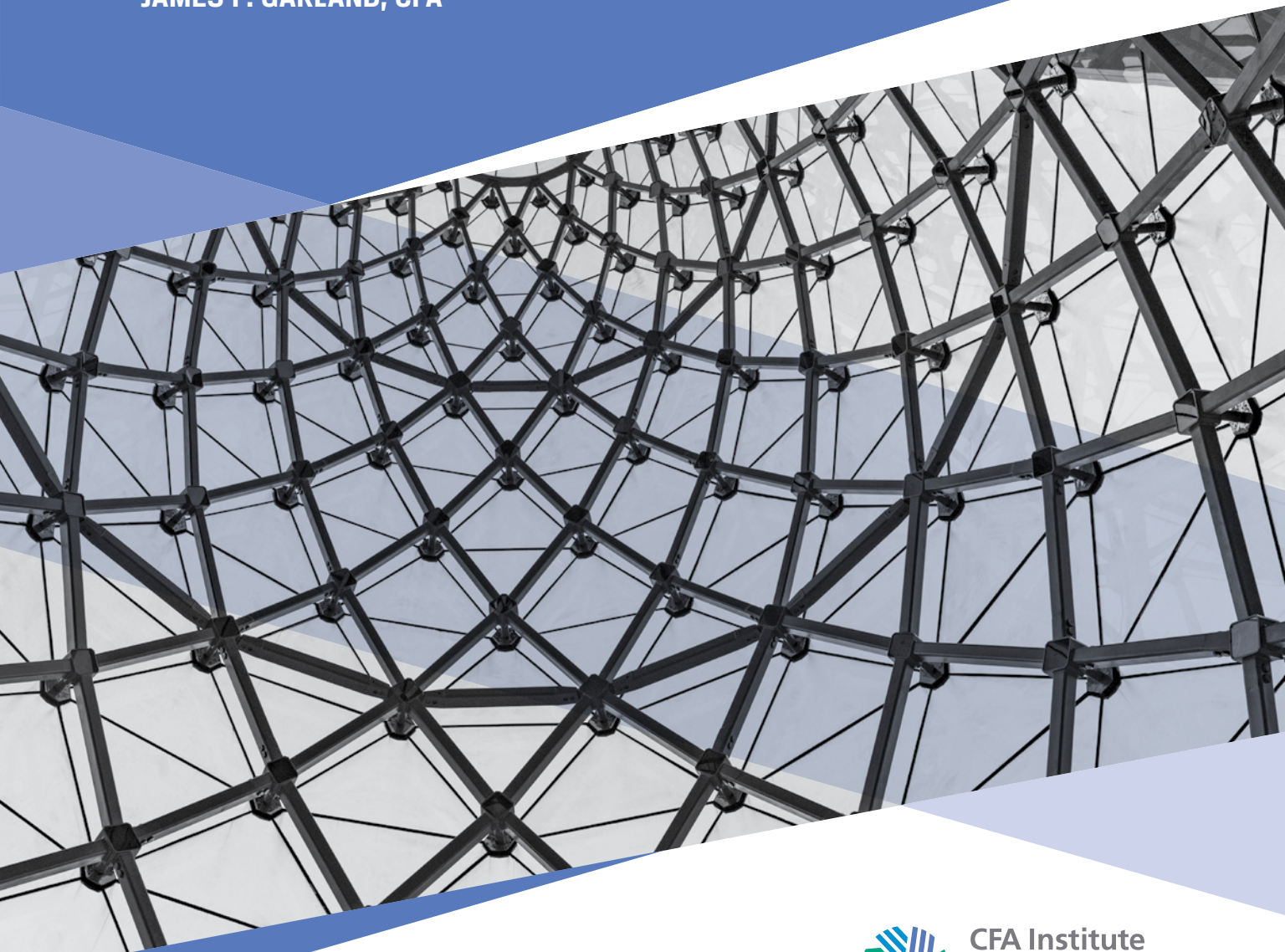


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A CASH-FLOW FOCUS FOR ENDOWMENTS AND TRUSTS

JAMES P. GARLAND, CFA



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FOREWORD

Should the Market Values of Endowment Assets Be Used to Determine Spending? A Maverick Industry Leader Says No

Laurence B. Siegel

How much should an endowed institution, an individual, or a family spend out of its accumulated investments each year? This question has been extensively discussed, yet no universally agreed-upon answer has emerged. Over the past half-century, a general but not universal consensus has formed about spending a fixed percentage of the investments' market value or of a "rolling" average of recent market values (the purpose of the rolling being to reduce the volatility of spending).

In this thoughtful essay, James Garland, retired chief investment officer of The Jeffrey Company and a longtime observer of and participant in the markets, questions this consensus. He makes the case that spending should be based on the assets' "fecundity," a term borrowed from biology that indicates how fertile or productive the assets are.

More precisely, fecundity is the number of "babies" or offspring an animal (or person) is expected to produce per unit of time. Rabbits: high; elephants: low. In the investment markets, fecundity is measured by variables such as the yield on a bond, earnings or dividends for a stock, and funds from operations for real estate. Garland offers variations on these measures in an effort to home in on a useful definition of

fecundity for the purpose of setting spending policy.

THE CONTRASTING RISKS OF MARKET VALUE-BASED VS. FUNDAMENTAL SPENDING RULES

Fecundity is thus a *fundamental* variable, not a market variable. Using fecundity to set spending policy ignores the market's assessment of the asset's value and focuses on the inherent properties of the asset itself. Using market values versus using fundamental values for setting spending exposes the portfolio to opposite risks. The risk of using market values is overspending when the market is high, and the risk of using fundamental values is overspending when the market is low. Which risk would you rather take?

The answer is not obvious. If the market is "high"—that is, if the ratio of market prices to fundamental values is high relative to historical norms—then spending a fixed percentage of market value is not overspending as long as the market remains high. It is just right. Markets fluctuate, however, and a market that is high can become low with alarming speed, as we saw in

1973–1974, 1987, 2000–2002, and especially 2007–2009.

Usually, the market bounces back, but a quick recovery is not guaranteed, and neither institutions nor individuals have infinite patience. They typically must continue spending in bad times as well as good to support the mission of the organization (or the lifestyle of the individual or family). If spending is set at a high dollar level during buoyant markets, the ability to cut spending to match the decline in market values in a severe bear market may be limited—which is where the risk of spending based on market values comes from. If institutions and families could cut spending exactly in proportion to a decline in market values, the risk would be greatly reduced—although they might not be happy with the spending level!

TALES OF THE FORD FOUNDATION

I found out the riskiness of a rigid spending rule by watching the Ford Foundation, my one-time employer, largely maintain its spending in dollars as market values plunged in four bear markets.¹ It simply could not adhere to a spending rule based on a fixed percentage of market value and continue to fulfill its substantive mission—giving money to charity and supporting social programs.

In the very worst instance, the Ford Foundation spent 14.4% of its shrunken capital base in 1974, which almost led to a decision by its trustees to spend the rest of the assets and close the foundation. Thankfully, our fearless leader, Franklin Thomas, who took office shortly after this

¹I was director of research (among other titles) in the investment division of the Ford Foundation from 1994 to 2009. Pre-1994 information was obtained through contact with older and wiser foundation executives.

debacle, imposed draconian spending cuts, and the foundation survived to fight another day. Enjoying the subsequent bull markets, it grew to the \$12.5 billion institution it is today.²

SOME HISTORY: BARKER AND BUNDY TELL ENDOWED INSTITUTIONS TO BUY EQUITIES

That this history happened to the Ford Foundation is ironic because the foundation led the drive to base spending on market values in the first place. In a report to the foundation called “Managing Educational Endowments,” investment manager and trustee Robert R. Barker (not Bob Barker, the game show host) responded to a call by then Ford Foundation president McGeorge Bundy (yes, the former US National Security Advisor and dean of Harvard College) to study ways of changing the investment policies of endowed institutions.³ In the landmark 1969 Barker Report, the foundation and endowment community was advised to invest for growth (in stocks) rather than for income (in bonds) and, secondarily, to base annual spending on market values (e.g., by spending a fixed percentage of a three-year rolling average of the portfolio’s market values).

Coming from what was then the world’s largest foundation, the Ford Foundation report

²Although the Ford Foundation was much larger (about \$30 billion in today’s money) at its mid-1960s peak, it has given away \$17 billion (again, inflation adjusted) between then and now, so the shrinkage over time is not necessarily a bad thing. The Ford family provided the money to be used for charitable purposes, not to be conserved forever.

³An excellent summary of this history is in Lawrence E. Kochard and Cathleen M. Rittereiser, *Foundation and Endowment Investing: Philosophies and Strategies of Top Investors and Institutions* (Hoboken, NJ: John Wiley & Sons, 2015). The relevant chapter is at <http://catalogimages.wiley.com/images/db/pdf/9780470122334.excerpt.pdf>.

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was considered authoritative, and the advice was taken seriously. Unfortunately, by the time the advice to invest in stocks was widely adopted, the market had reached its lofty 1972 high, from which it declined by 49% in a short period. The foundation's report was subsequently blamed for the losses. But it was unfairly blamed: a 50–50 or 60–40 portfolio of equities and bonds is a much better long-term investment than putting almost everything in bonds, as foundations had previously tended to do. Moreover, picking an asset mix and sticking to it is usually better than trying to time the market.

The bull markets of the 1980s, 1990s, and 2000s proved the advice largely correct—although it will not always be correct. The market sometimes goes down and stays down, as it did from 1929 to 1954, 1966 to 1991 (in real terms), and 2000 to 2013. (This comment applies to price-only indexes, such as the S&P 500 Index; if dividends are counted, the recoveries were quicker.) Twenty-five or even thirteen years is a long time to not make any money other than dividend income, however, and if you had to spend significantly out of the portfolio before the market recovered, you got hammered.

SPENDING BASED ON FUNDAMENTAL VALUES

So much for the risk of overspending when the market is high. We now assess the risk of overspending when the market is *low*, which we identified as the main risk of basing spending on fecundity.

The last time the US stock market was really, really low compared with fundamentals was not 2008–2009 but the summer of 1982, when the P/E of the S&P 500 fell below 8. (The all-time high P/E, excluding periods of near-zero or

negative earnings, was 34, in 1999.)⁴ In 1982, a spending rule based on earnings would have yielded spending equal to 1/12 of the portfolio (i.e., the E/P, the reciprocal of the P/E).

Such a high spending ratio would have been fine, considering that the market was rocketing off the 1982 bottom, but market participants had no guarantee that it would behave so. An earlier “generational” bottom occurred in 1974, when the P/E fell to 7.5. Despite rising thereafter, the P/E had fallen back to 8 by 1982, so spending would have been very heavy, relative to market values, over that whole miserable period.

Spending based on fundamental values has a counterpart to the risk mentioned earlier of not being able to cut spending easily in bad times. *It is the risk of not being able to increase spending easily in good times!* The bull markets after the 1982 low were caused mostly by P/E expansion, not by improvement in the fundamentals. Not until almost a decade later did earnings and other fundamentals begin to boom. Spending would have been frozen at roughly 1982 levels through the rising markets of the 1980s, surely a frustrating experience for those on whom the money was intended to be spent.

JAMES GARLAND'S CONTRIBUTION

Into this predicament steps James Garland, who managed assets for a family for decades and who is sensitive, perhaps more than most, to the problems posed by volatile spending and emotional reactions to declining financial fortunes. Small institutions with less sophisticated boards and investment staffs often face dilemmas

⁴These ratios are real, contemporaneous P/Es, not “CAPEs” (cyclically adjusted P/Es). The source is Robert Shiller's website: www.econ.yale.edu/~shiller/data.htm.

similar to those encountered by families. They cannot raise new funds easily (or perhaps at all), and unlike Harvard and Yale, they are unable to evaluate risky but potentially high-returning strategies.

Garland's advice is aimed at such organizations. He told me he was writing for the "Un-Q Group"—so, not the Q Group, a high-level discussion group for quantitative investment executives to which I belong, as did he at one time. He wrote to me, "Outside of my former day job at Jeffrey, my own experience has been as trustee or investment committee member for endowed institutions with \$10 million to \$300 million under management, and that's the audience I'm aiming for here."⁵ Garland is writing, then, for the common woman or man with investment responsibilities.

THE POTENTIAL IRRELEVANCE OF MARKET VALUES

In this CFA Institute Research Foundation brief, "A Cash-Flow Focus for Endowments and Trusts," Garland makes the unconventional case that market values are actually *irrelevant* to perpetual endowments:

In a world obsessed with market values, not following the crowd is difficult. For understandable reasons, many endowment investors have been caught up in this obsession. I will try to pull them back.

. . . for investors with perpetual time horizons, the market values of stocks and bonds do not have to matter at all. All that should matter is those assets' ability to generate spendable cash. (p. 2)

This assertion is contrary to standard finance, which says that the current market value of an asset is the market's assessment of the present value of all the cash the asset is ever expected to generate. By "the market," I mean all investors, including those who choose to not hold the asset, with the influence of each investor roughly proportional to the investor's asset size.

So, market value, according to standard finance, is a summary statistic capturing *everything* that is relevant about the asset: its expected future cash flows, the uncertainty surrounding that expectation (reflected in the discount rate), the surrender or liquidation value of the asset, and so forth. There is nothing irrelevant about it.

But Garland asserts that standard finance is the wrong tool for the investors he is seeking to persuade. His point of departure is, instead, behavioral. Both dividend and earnings policies are driven by human decision making. William Goetzmann, a professor at the Yale School of Management and a reviewer of Garland's manuscript, served as a board member of The Jeffrey Company during Garland's tenure as CEO, when Garland was refining and applying the principle of fecundity. Professor Goetzmann explains:

The dividend-based rule takes advantage of information that is potentially not impounded in the market price. The CEO of a company recommends a dividend that, under normal circumstances, he or she expects to be able to maintain and gradually exceed in nominal terms with a high probability. Hence, the CEO *first* solves a stochastic control problem and the endowment investor can free-ride on the manager's judgment.

⁵James Garland, email message to author (8 March 2018).

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Another advantage of the dividend-based rule is that the firm puts its money where its mouth is—it pays out rather than retains, so in that sense it is a costly and thus valuable signal. Dividends smoothed at the firm level aggregate up to a smooth dividend stream for the capitalization-weighted index.

The earnings-based rule is similar. Earnings are, to some extent, managed to minimize the chance of a negative surprise. They are closer to cheap talk than a dividend is, but the logic behind them is that they are better than raw cash flow as an economic measure of the activity of the firm over the reporting period.

Earnings are thus not intended to solve a stochastic control problem *per se* and thus will be much more volatile at the firm level than dividends. However, [Garland's] paper shows that aggregation across a portfolio of stocks lowers the risk [of spending volatility], at least in the sample period shown in the analysis. It is hard to know if this would be true over a longer time period and in different economies.

Both the [dividend and earnings] rules have the virtue that spending is not exposed to market-value fluctuations. On the other hand, they rely on the norms of dividend policy and earnings management. These obviously can change through time and also may change with the industrial composition of the index. Their drawback is

that they do not take advantage of the aggregate opinion of the market about the capitalized value of future cash streams. Behavioral finance says that a non-market-based policy that [deemphasizes] price fluctuations might be a good thing.⁶

CONCLUSION

The CFA Institute Research Foundation welcomes controversy and experimentation. Many of our authors and many of our readers will chafe at Garland's unconventional recommendations. Many others, sensing that there has always been something unrealistic and facile about the assumptions and conclusions of standard finance, will warmly welcome them. This essay is James Garland's personal view, not that of the Research Foundation or CFA Institute, but it is a valuable contribution to the literature on endowments and spending. We are extremely proud to present his work.

Laurence B. Siegel
Gary P. Brinson Director of Research
CFA Institute Research Foundation
January 2019

⁶William Goetzmann, email message to author (5 December 2015). Quoted with permission.

A CASH-FLOW FOCUS FOR ENDOWMENTS AND TRUSTS

James P. Garland, CFA
*Former president
The Jeffrey Company*

I. INTRODUCTION

This article challenges a mindset that is common among trustees of perpetual endowments and long-lived trusts. Those investors, like virtually all investors today, focus much of their attention on market values. However, for overseers of very-long-term investment funds, a focus instead on cash flows would be more productive.

This will not be an exhaustive examination of the subject. The story told here has been simplified and is based in part on my own experience in overseeing one very-long-lived trust fund. The primary goal of this article is to ask whether a better way of managing spending is available than basing spending on market values. The answer is yes.

The principal audience for this article is not American colleges and universities or other sophisticated endowed institutions (“sophisticated” here meaning ones with their own dedicated investment personnel), because these institutions have access to investment tools and asset classes that are not available to the public at large and they presumably understand how to use those specialized tools and assets. Instead, this article is addressed to the trustees

of smaller endowed institutions and trusts, ones with \$10 million, \$50 million, or \$100 million under management—entities typically overseen by volunteer “citizen soldier” trustees and entities for which traditional asset classes and traditional investment strategies are still the most appropriate options.

II. THE IRRELEVANCE OF MARKET VALUES

Market values do matter to most investors, those who are accumulating capital today with the expectation of consuming that capital in the future—for example, individuals who are saving for retirement. I will call these *spend-down investors*.

But market values should not matter to all investors. Some seek growing long-term streams of spendable cash from their capital and want to preserve that capital rather than consume it. This is true for overseers of endowment funds as well as for trustees of very-long-lived personal trust funds.

For brevity’s sake, I will refer to this small cadre of investors who are interested in long-term spendable cash flows as *endowment investors*.

I am grateful for helpful comments from Joel Dobris, Jeffrey Garland, David Levine, Donald Mykrantz, and especially Elroy Dimson, Will Goetzmann, and Larry Siegel. I also thank Mr. Levine for a spending rule described in Section III. Any errors remain my own.

In a world obsessed with market values, not following the crowd is difficult. For understandable reasons, many endowment investors have been caught up in this obsession. I will try to pull them back.

The Significance of the Word *Perpetual*

I will primarily address perpetual endowment funds, and the important word here is *perpetual*.

An important phase change takes place when investors' horizons become perpetual. For investors with limited time horizons, market values can matter very much. But for investors with perpetual time horizons, the market values of stocks and bonds do not have to matter at all. All that should matter is those assets' ability to generate spendable cash.

For endowment investors, the most useful asset classes are those that can throw off growing streams of cash, such as equities. For US endowment investors, the traditionally dominant asset class has been US equities, for which the S&P 500 Index will serve here as a proxy.⁷

The stock market's capacity to generate cash for its owners is driven by corporate profits and is made manifest through corporate dividends. A useful way to think of the S&P 500 is as a machine that dispenses cash on an annual basis. These dividend disbursements have been rather stable from one year to the next, and over time, they have tended to increase slightly faster than inflation, with the rise driven by real economic growth. **Figure 1** shows the S&P 500's annual

⁷The Standard & Poor's Stock Index has comprised 500 companies since March 1957. However, between 1926 and February 1957, that index consisted of only 90 companies. To keep things simple, I will use the term *S&P 500* here, even when referring to pre-1957 data.

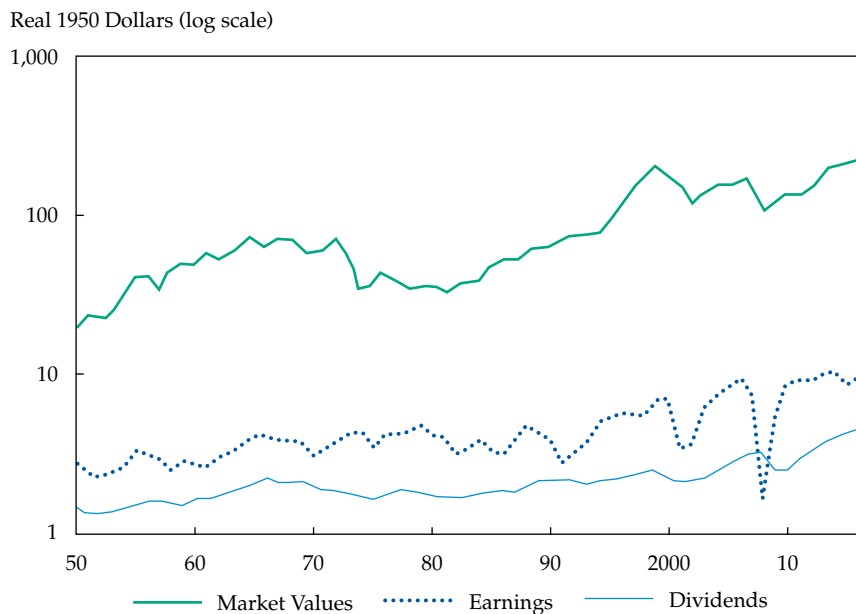
market values, earnings, and dividends since 1950, all in real dollars.

The most stable series has been dividends, and that stability is no fluke. Market values drift slowly upward and downward, like tides in the ocean. Earnings are buffeted by economic and political events, which are like waves. Dividends, on the other hand, are deliberately smoothed by the executives who set them. Dividend cuts are an embarrassment, whereas dividend increases are a source of pride. And because corporate executives are insiders, who presumably are knowledgeable about their businesses, dividends provide useful signals about the future.

At an elementary level, market values and dividends are linked; an endowment whose market value is $\$X$ will generate only half as many dividends as one whose value is $\$2X$. But beyond this point, the link falls apart. For example, at year-end 1980, the cost to purchase \$1 of S&P 500 annual dividends was only \$22, but by the end of 1999, that cost had risen to \$88.⁸

The many endowment investors who currently base spending on market values are missing an important point. They are assuming that rising market values will justify increased spending and that falling market values will call for a spending cut, but that is not the case. Rising or falling market values by themselves simply indicate that investors are paying higher or lower prices for what is often just the same cash flows. Market values do tend to revert toward their means, but reversion can be so slow and the drift away from those means so large that market values are not a useful guide to spending.

⁸The former is a 1980 year-end S&P 500 market value of \$135.76 divided by a calendar-year 1980 dividend payout of \$6.16, and the latter is a 1999 year-end market value of \$1,469.25 divided by a calendar-year payout of \$16.69. The trailing dividend yields on these two dates were 4.54% and 1.14%, respectively.

FIGURE 1. S&P 500 MARKET VALUES/EARNINGS/DIVIDENDS

Sources: Standard & Poor's; Bureau of Labor Statistics.

Perpetual endowment investors should view all potential assets primarily from a cash-flow perspective. What are those assets' current actual or potential cash flows? What are their future actual or potential cash flows? How reliable and predictable are those cash flows? And of course, what would purchasing those cash flows cost today? For this last point, market values do matter—but only for an instant. Once purchased, those assets' market values fade in significance, except on the infrequent occasions when investors could boost their current or future cash flows or improve the security or reliability of those cash flows by trading one asset for another.

In a similar vein, endowment investors who seek intergenerational equity—those who want to treat current and future beneficiaries the same—should pay less attention to market values and more attention to what really matters: the cash-generating capacity of their assets.

I suspect that a century ago, most endowment trustees based distributions on the actual cash flows from their investments—that is, on interest and dividend receipts. Although I am suggesting here that trustees should focus on cash flows, I do not mean that endowment payouts should be precisely tied to those cash flows. I am not proposing a return to the past. In some cases (e.g., with most equities in a growing economy), trustees may be able to distribute more than the actual cash flows their assets generate. In other cases (e.g., with fixed-rate bonds in an inflationary environment), they may need to distribute less. The link between potential cash distributions from stock and bond portfolios and the actual cash receipts from the stocks and bonds in those portfolios is simply tighter—and, therefore, more useful—than the link between potential cash distributions and market values.

Here I wish to differentiate between the amounts that endowment trustees can distribute to their

institutions, on the one hand, and the actual dividends and interest those institutions receive, on the other. Current investment lingo is no help. For example, *income* has too many meanings, and *distributable cash when in endowment mode* is awkward. Therefore, I have borrowed from agriculture the word *fecundity*. I define fecundity to mean, in an endowment context, the amount of cash that an endowment can distribute each year without threatening its capacity to make similar distributions, in inflation-adjusted dollars, in the future.⁹ Stated differently, *the fecundity of an endowment is the amount of spendable cash it can generate each year when the fund's trustees are attempting to act in an intergenerationally equitable matter*. I propose that the fecundity of perpetual endowment funds is closely, but not perfectly, linked to the actual and/or potential cash flows from those funds' investments.

Later sections of this article elaborate on the points made here. Section III discusses spending rules and makes the case that focusing on fecundity is more useful than focusing on market values. Section V discusses intergenerational equity and presents a similar conclusion.

III. SPENDING RULES

To simplify the discussion that follows, I will deal only with closed perpetual endowment funds—"closed" meaning that no new gifts are expected—and very-long-lived personal trust funds.

The primary objective of these funds is to distribute cash flows to their owners that keep pace with inflation over the very long term. A common

⁹That is, the amount that can be distributed *to all parties*, which includes investment managers, custodians, and (in the case of taxable trusts) the IRS for capital gains taxes. The endowed institution itself gets to spend only what is left.

secondary objective is to have those distributions be reasonably stable from one year to the next.

Earlier, I introduced the term *fecundity* to refer to the amount of cash endowment funds can distribute in the current year. The endowment community has already adopted the term *intergenerational equity* to refer to a desire to maintain those distributions in perpetuity. An intergenerationally equitable endowment fund is one that maintains its fecundity forever.

To provide growing cash distributions, endowments often emphasize assets that naturally provide growing cash payouts. The two most widely used asset classes are publicly traded equities and real estate. These days, large and sophisticated funds invest in alternative asset classes, many of which are just equities in fancy dress. Many funds that base their spending on market values also invest in return-dampening assets, such as bonds. But I will focus here on the dominant asset class in most American endowment funds—namely, publicly traded equities.

Why Use Spending Rules?

The dual objectives of most endowment funds are, first, to generate a stream of spendable cash that at least keeps pace with inflation and, second, to have that stream be stable from one year to the next. Achieving these objectives is quite difficult because, among other things, future returns are unknowable. Furthermore, balancing today's visible cash needs against tomorrow's invisible cash needs is a challenging task. To guide their institutions through this intertemporal financial haze—to serve as a compass in the fog—trustees use algorithms to determine current spending amounts. These algorithms are called spending rules.

Many different spending rules exist, but here I will focus on just five.

In the centuries before formal spending rules came into being, a common practice was to spend all income. This first spending rule is still in use.¹⁰ I will call this the *Default Spending Rule*.

A second rule, which seems to have become popular in the late 1960s, says to base spending on market values rather than on income. I will call this the *Market-Value Spending Rule*.

One flaw of the Market-Value Spending Rule is that market values are quite volatile, which makes distributions volatile as well. In reaction, some trustees adopted a rule that locked in the rate at which distributions would grow. I will call this third rule the *Anchor & Pointer Spending Rule*.

Finally, this article describes a pair of newer rules that combine some of the earlier rules' better features. These fourth and fifth rules are related, because they are both based on the cash-flow-generating capacity of the funds' underlying assets. I will refer to these collectively as *Cash-Flow Spending Rules*; one is the *Cash-Flow Dividends Rule*, and the other is the *Cash-Flow Earnings Rule*.

The Default Spending Rule

The Default Spending Rule is so simple that it can be described completely in just eight words: *Spend the cash that comes in the door*. (Here I mean recurring cash distributions, such as from property and securities—not cash from asset sales.) An assumption in this case is that the endowments' assets will generate rather steady cash flows via interest, dividends, rents, or other such sources.

¹⁰The most recent study of endowments by the National Association of College and University Business Officers and Commonfund Institute (2017) revealed that 3% of reporting American institutions still spent whatever income came in the door. I suspect that the percentage is higher among smaller and less sophisticated institutions.

In *Unconventional Success: A Fundamental Approach to Personal Investment* (2005), Yale University chief investment officer David Swensen recommended six “core asset classes” for American investors: US equities, non-US developed-market equities, emerging-market equities, US Treasury bonds, US inflation-indexed bonds (Treasury Inflation-Protected Securities, or TIPS), and securitized real estate (REITs).¹¹ All six provide natural cash flows, and five of the six tend to provide growing cash flows. Swensen's book was addressed to individual investors, presumably spend-down investors who were saving for retirement. If these six asset classes should be core assets for spend-down investors, then they should be even more attractive for endowment investors whose primary concern is cash flows.

Advantages

A fundamental precept in finance is that risk—meaning here the possibility of adverse outcomes—can be reduced by matching the characteristics of an institution's assets with those of its liabilities.

The liabilities of endowment funds are the spendable cash flows that their institutions need today, tomorrow, and forever. Given this constant need for cash, the lower-risk strategy for endowments is to invest in Swensen's core asset classes. Perhaps by custom and/or intuition rather than by design, endowment funds have traditionally adopted this lower-risk approach. Cash flows will not be perfectly stable, and the cash flows may not grow at the same pace as the institutions' needs grow, but at least investing in cash-generating assets reduces risk.

A further advantage of the Default Spending Rule—and of the asset allocation that underlies

¹¹See Swensen (2005), Chapter 2.

this rule—is that it has an extremely long track record. Among the oldest endowed institutions in the English-speaking world are the various colleges of Oxford and Cambridge Universities, some of which date back more than 800 years. As of 2002, the better-endowed colleges at Oxford and Cambridge had invested roughly 40% of their capital in property and roughly 40% in equities. These very old institutions still preferred assets that generated cash.¹²

The Market-Value Spending Rule

In the late 1960s, as a decades-long bull market was coming to an end, the Ford Foundation published a report titled “Managing Educational Endowments,”¹³ which noted several problems with the Default Spending Rule. One was the temptation to focus on high-yield equities and to overinvest in bonds, both of which boosted current income but reduced potential future returns and future income growth. The report suggested basing spending on market values rather than on income to get around these and other problems. Specifically, it recommended that endowments spend 5% of their portfolios’ market values averaged over the trailing three years. Although some institutions were already basing spending on market values, the Ford Foundation popularized this idea and, in effect, gave birth to what we now call the *Market-Value Spending Rule*.

Description

The Market-Value Spending Rule in its most common form says to spend X percent of the

¹²Acharya and Dimson (2007, p. 132). “Better-endowed colleges” were ones with endowments worth more than £45 million. However, the authors noted some movement among Oxbridge colleges toward the alternative asset classes favored by American Ivy League universities; see p. 7.

¹³See Advisory Committee on Endowment Management (1969).

market value of the portfolio averaged over the past P periods. X was originally 5% but can vary from institution to institution and from one period to the next. These days, in an era of high stock and bond prices, some institutions may spend 4.5% or even 4%, because high current prices suggest lower future returns.^{14,15} Standard practice has been to average market values over quarterly intervals, with 12 quarters perhaps being most common.

Advantages

A spending rule based on market values is indifferent to investment cash flows. This frees endowments to invest in anything—from near-traditional assets, such as venture capital and private equity, to exotic assets, such as postage stamps and violins.¹⁶ Any asset that might offer a reasonable return is fair game.

Furthermore, the Market-Value Spending Rule allows endowments to make tactical asset shifts without affecting the institutions’ spending. Under the Default Spending Rule, a shift from bonds to equities (or vice versa) would immediately affect an institution’s distributable cash. Under the Market-Value Spending Rule,

¹⁴Today, some institutions use higher spending rates than these, either because they are desperate for cash or because they have good reasons that justify the higher rates. Yale University, for example, used a 5.25% rate during its 2016 fiscal year. But Yale’s high rate is justifiable because of both the university’s proven investment skills and its fundraising prowess. For further justifications for high current spending rates, see Goetzmann and Oster (2015). For a discussion of the stickiness of the once-ubiquitous 5% spending rate, see Dobris (2005).

¹⁵In what may be a harbinger of an even further shift, the overseers of Norway’s huge sovereign wealth fund have proposed dropping that fund’s spending rate all the way to 3%. See Richard Milne, “Norway Plans Shake-Up of \$900bn Oil Fund,” *Financial Times* (16 February 2017): 1.

¹⁶These last two are mentioned here because they did generate positive real returns during the 20th century. See Dimson and Spaenjers (2014).

however, asset shifts can be made on the basis of criteria other than their effect on current yields.

Basing spending on market values also frees endowed institutions from being dependent on the actions of strangers—that is, from having their spending determined (at least in part) by the corporate directors who set dividend payouts.

Finally, basing spending on market values is simple, as long as an institution holds easily valued assets. All one needs is market values plus the institution’s particular percentage spending rate.

The Anchor & Pointer Spending Rule

Unfortunately, market values fluctuate so much that even three-year or 12-quarter smoothing fails to generate stable spending streams. As a result, some years ago, someone—the origin is uncertain—devised a rule that would prevent spending from being whipsawed by the markets.¹⁷ I call this the *Anchor & Pointer Spending Rule*.

Description

To apply this rule, trustees first set a current spending rate, usually in dollar, rather than percentage, terms. That rate is the *anchor*. Then the trustees set the percentage rate at which future spending will increase. That is the *pointer*. For example, one institution’s trustees might set this year’s spending at \$200,000 and declare that future spending will increase by 2.5% per year. An unwritten assumption is that the trustees will revisit both the anchor and the pointer from time to time.

¹⁷In recent years, Commonfund Institute has been promoting one particular version of this rule, but it is unclear whether it qualifies as the parent in the same sense that the Ford Foundation seems to qualify as the parent of the Market-Value Spending Rule.

Advantages

The obvious problem with basing spending on market values is that market values fluctuate too much to be smoothed by simple averaging. The Anchor & Pointer Spending Rule solves this problem. Under this rule, spending can be perfectly stable from one year to the next, or at least it can be stable until trustees choose to reset the anchor.

Some adopters of this rule add a further constraint that annual spending, measured as a percentage of market value, should not exceed certain upper and lower limits. The financial reason for such a constraint is not apparent, although the public-affairs reason is.

Suppose an institution adopts the Anchor & Pointer Spending Rule and sets its spending rate at a dollar rate that is equivalent to 4% of its endowment’s current value. Suppose further that the market value of that endowment soon falls by a third, which would cause the spending rate to become 6%. Or suppose instead that the value soon rises by 50%, which would lead to a 2.7% spending rate. Intuitively, 6% might sound too high to the trustees and lead to the perception that the institution is cannibalizing its capital. Likewise, 2.7% might sound too low and lead to the perception that the institution is hoarding its capital. To avoid these problems, the trustees in this situation might stipulate that, although the current anchor spending rate might be, say, 4%, future spending rates should not fall below, say, 3% or rise above, say, 5%.¹⁸

This cap-and-floor constraint does not change the pointer’s fundamental role. All versions of the Anchor & Pointer Spending Rule—that is, versions using a simple pointer or versions using a pointer

¹⁸Commonfund Institute refers to this as the *Banded Rule* or—when the Consumer Price Index is used as the pointer—the *Banded Inflation Rule*. See Sedlacek and Jarvis (2010).

plus a cap and floor—have the beneficial effect of smoothing spending, at least in the short term.

The Shortcomings of These Three Rules

No spending rule produces perfect results. No rule will generate a smooth flow of spendable cash that rises in lockstep with an institution's spending needs.

Shortcomings of the Default Spending Rule

The Default Spending Rule's primary flaw is that cash flows from such assets as real estate and equities are unstable and somewhat unpredictable. Furthermore, they do not always keep pace with inflation.

The naive approach of spending all the cash that comes in the door may be particularly ill-suited to real estate investments. Cash flows from rents are normally greater than the amounts one may spend because of a need to set aside funds for maintenance, among other things. And real estate investments are often financed with debt. The amount and cost of any debt must be factored into spending decisions.¹⁹

Corporate dividend cash flows are also unstable and may not keep pace with inflation. Although in some countries—the United States being a prime example—dividend disbursements have historically grown in real-dollar terms, that has not been the case worldwide. A study of global dividend payouts since 1900 found that dividends grew faster than inflation in 9 of 19 national markets but grew more slowly in the other 10.²⁰

¹⁹Elroy Dimson, private communication, 2014.

²⁰This fact comes from the Credit Suisse Research Institute (2011). The data were compiled by Elroy Dimson, Paul Marsh, and Mike Staunton.

A more serious problem is that endowed institutions using the Default Spending Rule are slaves to their income sources. They can spend only what they receive. Given trustees' natural inclination to worry more about their institutions' current needs than their future needs, trustees can easily fall into the trap of preferring assets that produce high current income at the cost of lower future returns and lower future spending.

In a similar vein, the Default Spending Rule allows little room for alternative asset classes—that is, for those that do not generate cash flows. Venture capital funds, undeveloped land, commodities, and hedge funds are not feasible investment choices.

Finally, at least in the United States, basing spending on investment cash flows is considered old-fashioned, a relic of the distant past. No trustee likes being considered a dinosaur by his or her peers.

Shortcomings of the Market-Value Spending Rule

The Market-Value Spending Rule has shortcomings as well. First, as Figure 1 showed, stock market values are far from stable. Market values have moved upward and downward in huge, slow swings. Real market values declined by more than 50% from 1968 to 1982 and again from 1999 to 2008. Twelve-quarter averaging smoothes market values slightly but does nothing whatsoever to dampen the market's long-term swings. Basing spending on market values would appear to produce less stable results than basing spending on earnings or dividends. Later, I will show that this indeed has been the case.

Endowment trustees try to compensate for the instability of market values by diversifying into nontraditional (non-core) assets. But because the returns from most financial assets

are positively correlated, broad diversification, although perhaps dampening market-value swings, is not likely to extinguish them.

In addition, the desire to smooth market values will lure investors into alternative asset classes, and alternative assets are sometimes higher risk and often much higher cost. Non-core assets can be useful in endowment portfolios—if their inclusion is done with forethought and only to a limited extent. But basing spending on market values encourages endowment investors to overdiversify and to invest in lower-return, volatility-dampening assets.

Finally, market values are only loosely—if at all—related to the cash-generating capacity of the underlying assets. Investors as a whole seem to believe that the cash-generating capacity of assets is a function of their market value. That belief is wrong.

Figure 2 shows the results of using the most common version of the Market-Value Spending Rule—that is, spending 5% of market values averaged over the previous 12 calendar quarters. Given that the near-universal practice is to hold some bonds to stabilize market values, the line shows the results since 1950 when using what may be today’s most common simple asset mix—70% equities and 30% bonds, rebalanced quarterly.²¹

The story told here is that, even with a traditional balanced portfolio, the Market-Value

Spending Rule does not work well. Spending in real dollars more than doubled from 1950 to 1965, then more than halved from 1965 to 1981, and then more than tripled from 1981 to 2000.

Does your institution want stable spending from one decade to the next? Market values will not provide it. Would greater diversification help? Probably—but only to a modest degree, because of the pernicious tendency of asset classes to move in the same direction. And furthermore, diversification for the sake of dampening market-value swings may diminish overall returns.

The Market-Value Spending Rule has major shortcomings. Nevertheless, because of its computational simplicity, the rule may be useful for smaller institutions where endowment spending represents only a small fraction of the institutions’ budgets. But other institutions should look elsewhere.

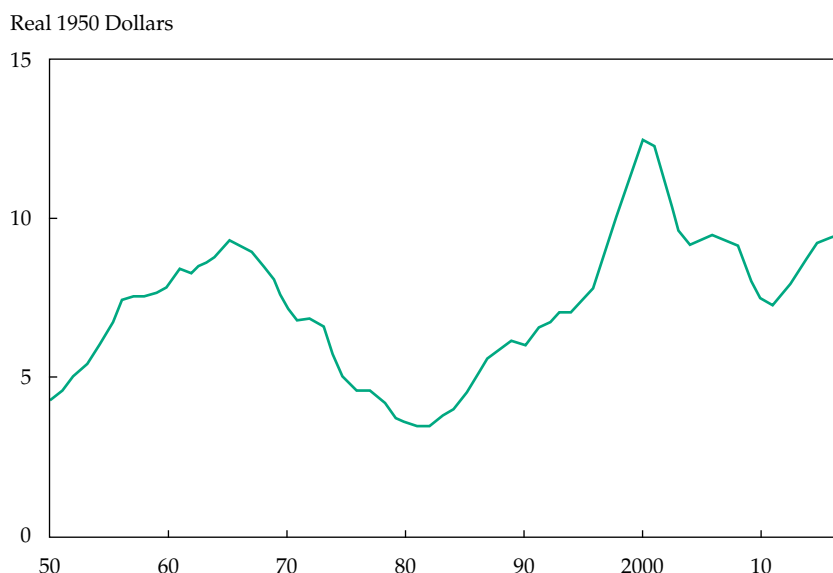
Shortcomings of the Anchor & Pointer Spending Rule

The primary challenge in using the Anchor & Pointer Spending Rule is to correctly set the all-important original spending rate—the anchor. Without a proper anchor (i.e., without one set at an intergenerationally equitable rate that is neither too high nor too low), the rule will fail. Yet the Anchor & Pointer Spending Rule is not as flawed as the previous sentence suggests. I will return to this rule later in this article.

In a similar vein, the pointer can also be problematic, because a pointer that rises too quickly can do nearly as much long-term damage as an anchor that is set too high. Setting the pointer to follow, say, the Consumer Price Index (CPI) is all for the good if the cash-generating capacity

²¹Here equities are represented by the S&P 500. Bonds are represented by the Ibbotson Associates Long-Term Government Bond Index through 1975 and by the Bloomberg Barclays US Aggregate Bond Index thereafter. The equity and bond weightings are rebalanced at the end of each calendar quarter. Annual spending equals 5% of the market value of the portfolio averaged over the 12 calendar quarters ending each 31 December. For example, spending for 1996 equals 5% of the average quarterly market values from March 1993 through December 1995.

FIGURE 2. SPENDING 5% OF AVERAGE MARKET VALUE
(70/30 MIX, STARTING MARKET VALUE = \$100)



of the institution's endowment grows at that same rate. But what if it does not?

So, an Anchor & Pointer Spending Rule approach can be reasonable if the anchor and pointer are set correctly. But what anchor, and what pointer? Because the rule itself does not provide the necessary answers, the rule as it has thus far been stated is incomplete. It needs some means for setting a reasonable anchor and for determining, after the rule has been in place for several years, whether spending has gone off track.

Cash-Flow Spending Rules

Each of these three spending rules is far from perfect. Is designing a better rule that is at least less imperfect possible? A better rule might combine the strengths of these three rules while avoiding or at least ameliorating their weaknesses. I will propose such a rule later in this section.

The best way to explain where this proposal is heading is to describe the route.

Professional investors, academics, private investors, those investors' advisers, and corporate executives have all largely succumbed to what one observer has called "the fetishization of market values."²² Market values of course matter to spend-down investors, who are buying stocks and bonds today and will sell those stocks and bonds several decades from now. Market values also matter to corporate executives whose bonuses are tied to the price of their companies' stock, and they matter especially to executives who are compensated with stock options, which are leveraged bets on stock prices. And market values matter to money managers, because those values are the basis for their fees.

²²I heard this wonderful phrase on National Public Radio in March 2014 but unfortunately cannot recall the speaker's name.

However, unlike their fellow investors, endowment investors do not have to worry about market values. All endowment investors really should worry about is the cash-generating capacity—the fecundity—of their assets.

The new spending rules I offer here focus on cash flows rather than market values. I offer two related rules, each based on the same underlying principle—namely, *base spending on the actual or potential cash-generating capacity of the endowment fund's assets, when those assets are being managed in an intergenerationally equitable manner* (i.e., in a manner that favors neither the present at the expense of the future nor the future at the expense of the present). I will refer to these collectively as *Cash-Flow Spending Rules*. One version I will call the *Cash-Flow Dividends Rule*, and the other, the *Cash-Flow Earnings Rule*.

The challenge in applying these Cash-Flow Spending Rules to an endowment is determining the cash-generating capacity—the fecundity—of each major asset class in the portfolio.

I will illustrate how to apply these rules by calculating the fecundity of equities and, in particular, US equities. This is a useful starting point because US equities are the predominant asset in most American endowment funds, particularly in smaller and medium-sized funds.

The future cash-flow-generating capacity of equities is equal to their future real returns. What is the fundamental source of equity returns? (Hint: It is *not* market values.)

Warren Buffett knows the answer: “Investors as a whole cannot get anything out of their businesses except what the businesses earn.”²³

²³Warren Buffett and Carol Loomis, “Mr. Buffett on the Stock Market,” *Fortune* (22 November 1999, p. 216).

In other words, the fundamental source of returns from equities is corporate profits.

Actually, Mr. Buffett was an optimist. In the past, the returns earned from owning shares of American publicly traded corporations have been less than those corporations’ profits.²⁴ To illustrate this point, assume an investor purchased shares of the S&P 500 at the end of 1949 and subsequently spent all the reported profits from those shares.²⁵ If that investor had withdrawn from the portfolio “what the businesses earned” (i.e., all of the reported profits), then in theory, his or her spending should have remained somewhat constant over time, in real dollars. But in reality, spending declined significantly; spending 100% of profits was spending too much. This result is shown by the solid line in **Figure 3**. Here we set the 1950 dividend payout at \$100.

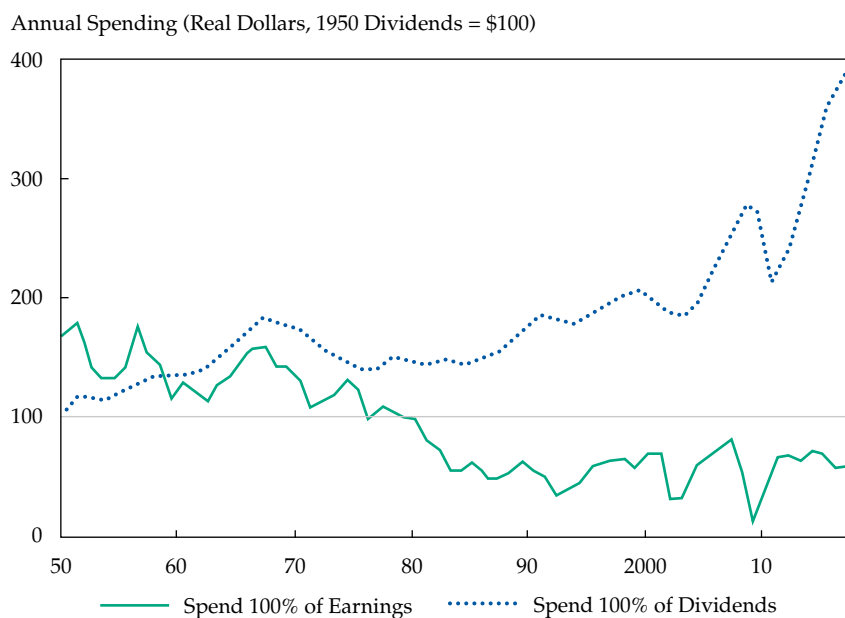
If this investor could not spend 100% of profits, how much could he or she spend? Figure 3 also shows the results of spending 100% of dividends (the dotted line), and here the results are just the opposite: Spending dividends meant spending too little. To paraphrase Mr. Buffett, investors were able to get out of their businesses something less than what the businesses earned but something more than just the dividends.

Figure 1 plots annual earnings and dividends for the S&P 500 since 1950. The most stable line in the graph is the dividends line. If the amount

²⁴See Arnott and Bernstein (2002, p. 71), who studied the period from 1802 to 2001 and found that “in the absence of changes in valuation levels, the earnings yield systematically overstates future real stock returns.”

²⁵In Figure 3, for the spend-all-earnings line, the investor spent all dividends and cashed in a portion of the shares that represented the retained earnings. Thus, the number of shares owned by this investor declined slowly over time. However, for the spend-all-dividends line, the investor kept all the shares he or she owned at the start.

FIGURE 3. SPEND EARNINGS VS. SPEND DIVIDENDS
(100% EQUITY PORTFOLIO)



Sources: Standard & Poor's; Bureau of Labor Statistics.

that investors will earn from equities lies somewhere between earnings and dividends, then because the dividend series is the more stable of the two, I will begin there.

A cash-flow formula based on dividends

As a first attempt at determining the spendable cash flows from US equities, I propose the following: Spend dividends plus something.

What should “something” be? The total amount that one can spend from an endowment portfolio invested in equities should, in theory, equal the future long-term real return of those equities. A widely used formula to estimate the long-term real return is “Current dividend yield

+ Expected annual real dividend growth rate.”²⁶ That simple formula, based on the classic dividend discount model of Williams (1938) and of Gordon and Shapiro (1956), was offered in the early 1970s as a spending rule by Nichols (1971, 1974) and Tobin (1974), although their idea seemed to have gained virtually no traction at the time. I shall resurrect their work here.

A spending formula of “current yield plus percentage growth” makes sense in theory but in practice is suboptimal because it still ties spending to market values and thereby to the market’s

²⁶See, for example, Fama and French (2002); Grinold, Kroner, and Siegel (2011); and Ilmanen (2012). These days, those who estimate future returns often include other factors, but their models usually begin with dividend yield plus dividend growth. These two factors will also be useful when setting an anchor for the Anchor & Pointer Spending Rule, as I will explain later.

wild swings.²⁷ The Nichols and Tobin spending rule of “yield plus dividend growth” is not quite what we seek.

A better way to define spending based on dividends—and to make spending independent of market values—would be to declare that spending should be dividends times some number greater than 1. Garland (1989) adopted that approach with the following rule: Spendable income each year, for the equity portion of an endowment portfolio, should equal 130% of the dividends generated by an equivalent investment in the S&P 500.²⁸

The average yield of US stocks during the 20th century was slightly over 4.5%.²⁹ An extra 30% more than dividends would have meant an extra 1.35%, which is close to the actual real dividend growth experienced since 1950 by the S&P 500.³⁰ Thus, this 130%-of-dividends spending rule echoes the original proposal of Nichols and Tobin, except that this newer rule is independent of market values.

The formula says to spend 130% of the dividends for the S&P 500, rather than the dividends from an endowment’s actual equities, to free trustees to invest in something other than the S&P 500 if they wish. The only reason for not investing in the S&P 500 (or in some other broad stock market index) would be to attempt to earn higher-than-market returns, and unlike the Default

Spending Rule, the Cash-Flow Dividends Rule will not penalize institutions that attempt to do so.

A cash-flow formula based on earnings

Because dividends have been somewhat stable over time, a “spend dividends plus something” formula should have worked rather well, and I will show in a moment that it has. But is there an even better approach? Using dividends as the basis for spending is not problem free. First, the dividend payout ratio of the S&P 500 has been trending downward. During the 1950s and 1960s, the payout averaged about 55% of earnings, but during the 1990s and 2000s, the payout averaged about 42% of earnings.³¹ Second, corporations have been aggressively buying back their shares recently, which has siphoned away cash that otherwise could have been used to pay dividends. For these reasons, a more useful approach might be to base estimates of future real returns on earnings rather than on dividends.³²

In the next attempt to apply the Cash-Flow Spending Rules to equities, I will take a different tack and propose the following: Spend earnings less something.

As with the dividend-based formula, I will examine a portfolio that is 100% invested in the S&P 500. Because earnings for this index have been quite volatile, particularly in recent years (as shown in Figure 1), the new formula will smooth those earnings. And because more years should produce a smoother series, the formula will average them over 15 years. In other

²⁷“Percentage growth” is the problem because in calculating fecundity, trustees would multiply that percentage by their endowments’ market value.

²⁸See Garland (1989, 2005). Actually, the 1989 paper proposed setting spending at 125% of dividends, but in the 2005 paper, I changed that to 130%.

²⁹Elroy Dimson, Paul Marsh, and Mike Staunton, private communication, 2015.

³⁰From 1950 through 2017, using a log-linear best-fit approach calculated with Microsoft Excel’s LOGEST function, the S&P 500’s trendline real dividend growth was 1.33% per year.

³¹These numbers are calculated as (Total dividends for the decade) ÷ (Total earnings for the decade).

³²See, for example, Fama and French (2002) and Ilmanen (2012).

words, spending in year Y will be based on average earnings for the years (Y – 15) through (Y – 1).³³

If 130% of dividends is a reasonably good specification for “dividends plus something,” then “earnings less something” should be based on numbers that fall in roughly the same ballpark. If we simplify history and declare that the payout ratio for the S&P 500 since 1950 has averaged around 50%, then 130% of that would be 65%. Therefore, I shall use 65% of earnings in this formula.

Using the average of 15 years of past earnings as a basis for current spending, with no further adjustments, would mean using an average that is stale by seven and a half years. This stale average can be brought up to date by normalizing the earnings in two ways. First, I will adjust past earnings for inflation by restating them in current dollars. Second, I will grow the past average earnings for seven and a half years at what has been very roughly the S&P 500’s long-term real earnings growth rate of 1.5% per year.

To adjust the earnings for inflation, I will first calculate the compound annual inflation rate over the past 15 years and call the result *i*. Then, I will inflate the 15-year average reported earnings by the inflation experienced over half of this period—that is, over seven and a half years. The inflation adjustment (INFL) will, therefore, be the following:

$$\text{INFL} = (1 + i)^{7.5}.$$

³³The spending formula that follows is the brainchild of David A. Levine. Mr. Levine is (among other things) the former chief economist at Sanford C. Bernstein & Co., and he first proposed a version of this formula to me many years ago. He has graciously provided me with this formula and with some of the data for Figures 4 and 5. See Levine (2011).

To adjust stale earnings for subsequent growth, using similar logic, I will again simplify the calculations by assuming 1.5% real annual growth over the 7.5-year period. The growth adjustment (GRTH) will be

$$\text{GRTH} = (1.015)^{7.5}.$$

Normalized current earnings per share (NCEPS) will, therefore, be the following:

$$\text{NCEPS} = (\text{Average of 15 years' past nominal EPS}) \times \text{INFL} \times \text{GRTH}.$$

I will make one additional small adjustment by dividing NCEPS by 105% to compensate for a computational issue.³⁴

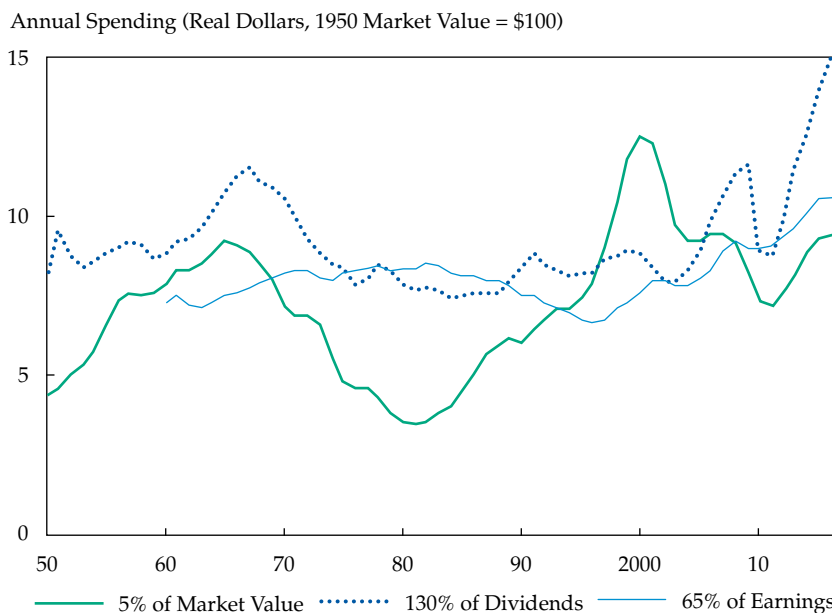
Now we have all the elements required to calculate the current year’s spending rate with an earnings-based formula. I will begin (as with the dividend-based formula) by determining how many shares of the S&P 500 are held in the portfolio.³⁵ On a per-share basis, spending in year Z will equal 65% of the average earnings of one S&P 500 share over the previous 15 years (Z – 15 through Z – 1), normalized to the present by growing the average by 1.5% per year for seven and a half years, adjusting for inflation, and finally dividing by the 105% “corrector.” Total dollar spending in year Z will, therefore, equal

³⁴The normalization process used here has the unfortunate consequence of overstating current earnings slightly because of compounding. The higher the past earnings growth rate, the greater the overstatement. Given the inflation that prevailed between 1945 and 2016 and given our presumption of 1.5% real EPS trend growth, the overstatement works out to roughly 5%, which is the reason for the 105% divisor.

The author of this earnings-based rule, David A. Levine, suspects that a 103% divisor might work better in the future, given today’s lower inflation. Private communication, April 2017.

³⁵As before, this formula will use S&P 500 numbers rather than numbers for an endowment’s actual equities.

FIGURE 4. THREE SPENDING RULES COMPARED



$$\begin{aligned} & (\text{Number of S\&P 500 shares}) \times (\text{NCEPS}) \\ & \times (65\%) \div (1.05). \end{aligned}$$

The results for the Cash-Flow Dividends Rule and the Cash-Flow Earnings Rule appear together in **Figure 4**. Because the Cash-Flow Earnings Rule uses 15-year average earnings whereas the Cash-Flow Dividends Rule uses single-year dividends, the Cash-Flow Earnings Rule spending begins later, in 1960, and the Cash-Flow Dividends Rule spending begins in 1950. For comparison, the graph shows once again the results for the Market-Value Spending Rule.³⁶ Both variants of the Cash-Flow Spending Rules—that is, the rule based on earnings and the rule based on dividends—use a 100% equity

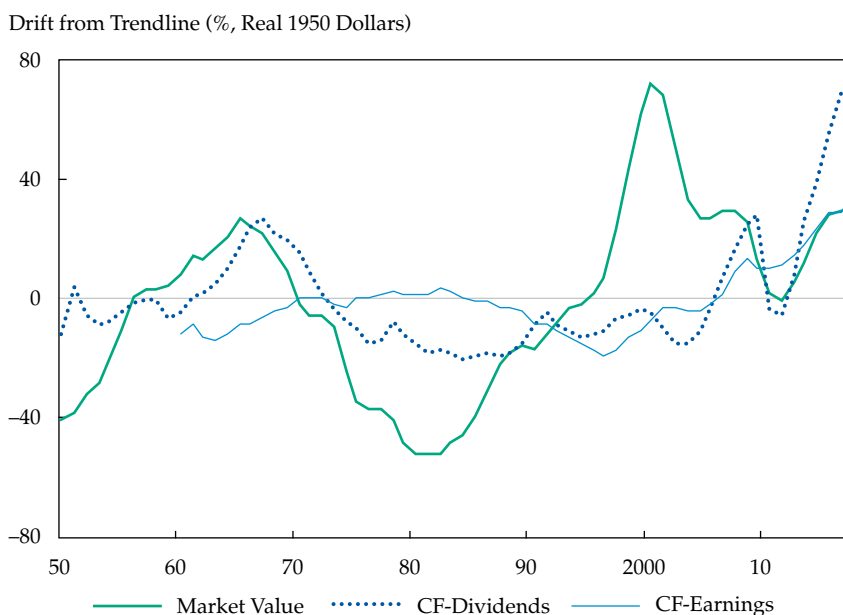
portfolio, whereas the Market-Value Spending Rule uses a 70% equity/30% bond portfolio, rebalanced quarterly.

The balanced portfolio used for the Market-Value Spending Rule might seem, at least by spend-down investor standards, to be less risky because of its 30% allocation to bonds, yet it generated for its owner a much more volatile stream of spendable cash. In contrast, the all-equity portfolio used for the two Cash-Flow Spending Rules generated more stable cash flows. What does the term *risk* mean in an endowment context? I contend that one definition of *risk* for endowments is the possibility of declining cash flows. The Cash-Flow Spending Rules generated less risky results than the Market-Value Spending Rule.

As illustrated here, spending rules based on the underlying cash-generating capacity of an endowment portfolio, rather than on its market value, produced more stable results.

³⁶Each portfolio's market value is set to \$100 at the end of 1950. For all three formulas, spendable amounts are calculated, as described in the text, as of 31 December of each year. The money is spent in the following year, but that spending is deflated by the increase in the CPI during that following year.

FIGURE 5. ANNUAL DRIFT FROM TRENDLINE FOR THREE SPENDING RULES



Note: CF-Dividends = Cash-Flow Dividends Rule; CF-Earnings = Cash-Flow Earnings Rule.

Furthermore, a 100% equity portfolio should theoretically generate in the future (and has generated in the past) greater returns than the 70%/30% mix.

Figure 5 further supports the claim that the rules based on dividends and earnings have produced more stable spending. Given that an ideal spending rule would generate a stream of spendable cash that perfectly follows inflation, this graph shows the degree to which these three spending rules—that is, spend 5% of market values with a 70%/30% asset mix, spend 130% of dividends with all equities, or spend 65% of earnings with all equities—drifted away from their perfect inflation-tracking trendlines. The clear loser is the Market-Value Spending Rule. The clear winner is the Cash-Flow Earnings Rule.

For readers who prefer numbers over graphs, the gaps between the annual cash flows generated by these spending rules and a perfect inflation-following trendline (the 0% line in Figure 5) are as follows.

	Average Annual Gap
Market-Value Spending Rule (70% equities/30% bonds)	24.5%
Cash-Flow Dividends Rule (100% equities)	13.5%
Cash-Flow Earnings Rule (100% equities)	7.9%

For institutions that value stable spending, basing spending on market values does not make sense.

Applying the Cash-Flow Spending Rules to other core asset classes

The same logic used to create spending formulas based on S&P 500 dividends and earnings could be applied to other cash-generating asset classes as well, although the devil is in the details. For example, the dividend-based formula says to spend 130% of the dividends paid by the S&P 500. What percentage should be applied to UK equities? Or to eurozone equities? What about the cash flows from American real estate investment trusts (REITs)? And so on. These are fertile grounds for future research.

I will venture an answer to perhaps the easiest question: What spending rate should an American endowment investor, whose endowment is predominantly invested in US equities, apply to non-US equities in the fund? A reasonable answer might be to apply the same spending formula to the non-US equities as to the US equities—that is, to be agnostic and assume that the long-term real total returns from the non-US portion of the endowment may be approximately the same as for the US portion.

Investing in non-core asset classes

To repeat a point made earlier, institutions using one of the Cash-Flow Spending Rules will normally focus on those asset classes that generate growing streams of cash. Following the lead of Swensen (2005), I have called these “core asset classes.”

Because diversification among individual securities is beneficial, diversification among sources of return should be beneficial as well. Thus, for endowments to diversify among core asset

classes by, say, owning both equities and real estate is rational.

These days, however, large and sophisticated endowment funds often invest in other, non-core asset classes. How can non-core assets be integrated into the new picture?

When endowment investors diversify beyond just the traditional core asset classes, they seem to have two reasons for doing so. The first reason is to minimize market value declines because when spending is based on market values, a drop in market values will cause a drop in spending. For this reason, investors seek assets whose returns are negatively or at least weakly correlated with core asset classes such as equities. However, if these investors were to adopt a spending rule that is indifferent to market values, then this reason for investing in non-core asset classes would disappear.

The second reason to diversify beyond core assets is to seek higher returns. Higher returns are always desirable, which is why they are seldom achievable. A few large universities have earned better-than-market returns for many years, in part through investing in non-core assets, and some university trustees believe that non-core asset classes may continue to provide superior returns.³⁷ Non-core assets make sense in endowment portfolios when the expected returns from these assets seem greater than the expected returns of the core asset classes that the non-core assets would replace. But non-core assets can be riskier than core assets and should, therefore, be used only to a limited extent and only when the risk seems worthwhile.

Endowed institutions may hold core assets, such as equities and real estate, for decades or even centuries, but these institutions’ incursions into

³⁷For more on this point, see Ang, Ayala, and Goetzmann (2014).

non-core asset classes are likely to be of limited duration.

What spending rate should one apply to non-core assets? One answer is to apply the same rate used for the asset class from which the capital came. This is appropriate if the source (core) and replacement (non-core) assets have roughly the same risk. If the non-core asset, over the time it is held, generates a higher total return than the core asset from which its capital came, then the endowed institution will have gained from this venture outside the core asset classes. If not, the institution will have fallen behind.

Further Issues

In this section, I discuss other important issues: what the anchor should be for the Anchor & Pointer Spending Rule, what can be done to stabilize spending distributions, and what spending rule to choose.

Setting an anchor for the Anchor & Pointer Spending Rule

When using the Anchor & Pointer Spending Rule, what should the beginning spending rate—the anchor—be? Here is where the Cash-Flow Spending Rules can help. The Cash-Flow Earnings Rule and the Cash-Flow Dividends Rule do a better job of indicating proper current spending levels than the Market-Value Spending Rule does. Earlier, I explained that the Anchor & Pointer Spending Rule was incomplete because it does not offer any guidance for setting an anchor. With assistance from the Cash-Flow Spending Rules, the Anchor & Pointer Spending Rule becomes complete.

The forced year-to-year stability that the Anchor & Pointer Spending Rule provides can cause an institution's spending to deviate over time from the underlying fecundity of that institution's

assets. After an institution has used the Anchor & Pointer Spending Rule for several years, that institution can lean on the Cash-Flow Spending Rules to determine how much actual spending has drifted away from its theoretically optimum level. When to reset the anchor—that is, when to ratchet spending downward or upward—will remain a judgment call. But the call will be easier to make if trustees understand the natural cash-generating capacity of their endowments' assets.

At institutions for which stable payouts are a top priority, use of the Anchor & Pointer Spending Rule would make sense. But the occasional application of one of the Cash-Flow Spending Rules would provide a useful reality check to ensure spending does not drift far out of line.

Smoothing distributions

While basing spending on market values can clearly lead to wild payout swings (as shown in Figure 2), the other rules described here are not perfect. They will lead to spending swings that should be less extreme than those caused by the Market-Value Spending Rule, but those swings may still be greater than most institutions can tolerate.

Although the Anchor & Pointer Spending Rule will stabilize distributions over the short term, it will not stabilize them in the long term, except when the fecundity of an institution's endowment happens to grow at the same pace as the pointer. In the more likely case in which this is not true, changes to distributions will presumably take place in a stepped manner. For example, an institution might determine that its distributions need to shrink by, say, 20% to better match its endowment's fecundity. Such a decline could be phased in over a few years rather than all at once.

Adopters of the Cash-Flow Earnings Rule should experience somewhat stable distributions from

one year to the next thanks to that formula's 15-year smoothing, whereas adopters of the Cash-Flow Dividends Rule will have a slightly bumpier ride. In both cases, however, occasional spending declines are possible and even likely. What can one do to smooth spending further?

One possibility would be to self-insure, by setting aside some capital that could be consumed to reduce or pave over any potential spending declines. This approach is described in Section V.

Endowment investors may be able to shelter themselves from life's minor squalls but not from its major storms. Smooth spending will not always be achievable.

Which rule should you use?

Because of their links to asset cash flows and because of their greater stability, either of the Cash-Flow Spending Rules offered here—the Cash-Flow Dividends Rule or the Cash-Flow Earnings Rule—would seem to be a good choice to guide spending decisions. And because these rules can also help set an anchor for the Anchor & Pointer Spending Rule, this latter rule seems useful as well. Given these three options, which would seem to be the best? The Cash-Flow Earnings Rule may produce the most stable spending; the Cash-Flow Dividends Rule is slightly simpler to use; the Anchor & Pointer Spending Rule is perhaps the simplest one of all, but trustees using it will have to look back at one of the Cash-Flow Spending Rules from time to time. It is a judgment call.

IV. CHANGE THE SPENDING RATES?

Now that the Cash-Flow Dividends Rule and the Cash-Flow Earnings Rule have been described

and 130% of dividends and 65% of earnings have been used as spending rates in the calculations, the question becomes whether those particular rates are out of date.

“The investor who says, ‘This time is different,’ when in fact it’s virtually a repeat of an earlier situation, has uttered among the four most costly words in the annals of investing.” So wrote John Templeton more than 25 years ago.³⁸ Yet the world occasionally does change.

The 125%-of-dividends spending rate first proposed by Garland in 1989 (and subsequently revised to 130% in 2005) was based on a back-test from 1951 through 1987. Real-time results in the 30 years since 1987 have been good, as has been shown here.

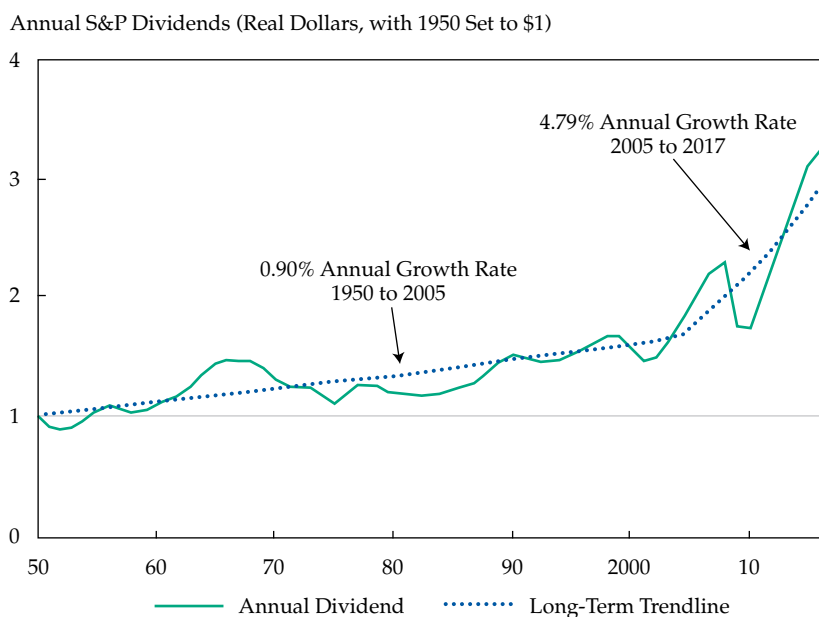
These 125% and 130% spending rates were based on dividend growth that had been rather constant since 1950. Recently, however, dividend growth has accelerated. The year 2005 seems to be the inflection point for this change.³⁹ Over the long run, from 1950 through 2005, real dividends per share grew by 0.90% per year.⁴⁰ But from 2005 through 2017, real dividends grew by 4.79% per year. This abrupt change in the dividend growth rate is apparent in **Figure 6**.

³⁸Sir John Templeton, “16 Rules for Investment Success,” *World Monitor: The Christian Science Monitor Monthly* (1993). A reprint of the original article can be found at www.franklintempleton.com/forms-literature/download/TL-R16. Sir John Templeton was a very successful mutual fund manager who died in 2008.

³⁹The S&P 500 divisor is a rough measure of that index's total shares outstanding. If aggregate S&P 500 dividends remain unchanged during a particular period but the divisor shrinks, then per-share dividends grow. The divisor peaked during the third quarter of 2004 and has been slowly shrinking ever since. Thus, 2005 seems to be the inflection point for the acceleration in per-share dividend growth described here.

⁴⁰This and the following number are least-square best fits, calculated using Microsoft Excel's LOGEST function.

FIGURE 6. S&P 500 REAL DIVIDEND GROWTH, 1950–2005 AND 2005–2017



Per-share earnings growth has also accelerated since 2005. Why these changes?

One cause is a surge in corporate profitability. During the great American bull market of the 1980s and 1990s, for example, corporate profits averaged only 8.1% of GDP. In contrast, from 2010 through 2017, profits averaged 11.8% of GDP—almost 50% higher.⁴¹

Another cause of the surge in per-share dividends and earnings has been a shrinkage in shares outstanding due to buybacks. The dollar volume of buybacks has been enormous. During the past several years, dollars devoted to buybacks among S&P 500 companies have exceeded the amounts paid out as dividends. And during the four most recent years (2014–2017),

⁴¹These data come from US Bureau of Economic Analysis Tables 1.17.5 and 1.12.

dividends plus buybacks have exceeded those companies' total profits.^{42,43}

Given the recent faster per-share dividend and earnings growth, are the 130%-of-dividends and 65%-of-earnings spending rates too low today? To try to answer that question, I will first examine stock buybacks and then consider the surge in profits.

To determine how much future spending rates should be increased based only on buybacks, we need to consider two difficult questions. First, how much benefit have buybacks provided to endowment investors, as opposed to spend-down investors with their finite time horizons?

⁴²The numbers for 2014 through 2017, in trillions, are as follows: dividends, \$1.55; buybacks, \$2.18; dividends plus buybacks, \$3.73; "as reported" earnings, \$3.43. Source: Standard & Poor's.

⁴³For a recent paper on buybacks, see Straehl and Ibbotson (2017).

Second, will buybacks persist, or are they just a passing fad?

Regarding the first question—how much benefit?—a simple answer is not as much as the dollar volume would suggest. Common sense says that a corporation spending \$1 million to buy back shares when those shares are cheap is benefiting its remaining shareholders by more than \$1 million. And common sense also says that when a corporation spends that amount to buy back expensive shares, it is benefiting remaining shareholders by less than \$1 million. Share buybacks are more extensive in high markets (because that is when corporations are flush with cash) than in low markets. Thus, buybacks as a whole are less valuable on a per-dollar basis than dividends. How much less valuable is still unknown. Determining when a given share of stock is cheap rather than expensive is difficult.

The second question—will buybacks persist?—is tougher to answer yet probably more important. If mean reversion causes today's high corporate profit margins to shrink, buybacks are likely to shrink faster than dividends. Dividend payouts are quasi-contractual in nature because corporations are loath to cut them. But buybacks are episodic: They come and go without harm to a company's reputation. Dividends are sticky; buybacks are not.

Buybacks are likely to continue to some degree, as long as executive compensation is based on the price of company shares and on per-share earnings and, in particular, as long as executives are compensated with stock options. Options are leveraged bets on stock prices. Executives holding options can be insensitive to the prices their companies pay for shares because their personal incentives conflict with what is best for other shareholders. If they received options yesterday at already high prices, they have an incentive to use corporate cash to drive prices

even higher tomorrow. And this problem feeds into the problem that buybacks are more prevalent in high markets than in low ones.

And then we have the matter of the recent bulge in corporate profits. The late Peter Bernstein was fond of saying that reversion to the mean does happen—but the mean is constantly changing.⁴⁴ The last great bulge in US corporate profits happened during the mid-1960s and led to the bulge in dividend payouts that is shown in Figure 6. As is apparent there,⁴⁵ the subsequent decline in profit margins led to a decline in real dividends. If today's high profits revert to their mean—whatever that happens to be—dividends may stop growing or even decline.

Is the recent dividend and buyback behavior sustainable? I doubt it. Will the future be different? That is likely. I have failed to answer here the first buyback question (how much benefit?), and the second question (will buybacks persist?) is unanswerable. In addition, the profit margin question (will margins revert and to what level?) is also unanswerable. Yet some attempt to answer is necessary if—as seems likely—the future is destined to be at least slightly different from the past.

The greater danger is a decline in profit margins—that is, of reversion to the historical mean, which is lower than the current level. A decline in profits could have a twofold effect: Dividends (or at least dividend growth) might decline, and buybacks might decline at an even faster pace than dividends. The faster dividend and earnings growth rates experienced since 2005 suggest that higher spending rates might be reasonable today. But applying higher percentage spending rates to what are already sharply higher dividends and earnings would

⁴⁴Personal communication.

⁴⁵This will become even more apparent in Figure 8.

be double counting. For now, 130% of dividends and 65% of earnings still seem to be the best lodestars for endowment investors.

V. INTERGENERATIONAL EQUITY

Perpetual endowment funds should be managed in a way that favors neither the present at the expense of the future nor the future at the expense of the present. Yale University economist James Tobin (1974, p. 427) expressed this idea succinctly:

The trustees of an endowment institution are the guardians of the future against the claims of the present. Their task is to preserve equity among generations.

This balancing act is called *intergenerational equity*. Achieving intergenerational equity is a daunting task.

How does one tell if it has been achieved? The nearly universal technique for evaluating intergenerational equity has been to look at real market values. For example, if the market value of an American endowment fund in 1976 was, say, \$10 million and if its value in 1987—by which time the cost of living had doubled—was \$20 million, then its trustees presumably had been intergenerationally equitable. And if its value in 1987 was significantly more or less than \$20 million, they presumably had not.

This method of evaluating intergenerational equity is meaningless and a waste of time.

Suppose that the market value of an endowment today is T . Suppose that at the close of business tomorrow, the market value is 99% of T . Have the endowment's trustees failed to be equitable? Suppose that two months later, its value is only 90% of T . Again, have they failed? What about looking out six months instead of just two?

Good answers to the previous questions, in the same order, would be “That is a silly question,” “That is another silly question,” and “Six months is still irrelevant.” But at what point does a comparison of real market values become relevant? One year? Five years? Ten years? The correct answer is never.

Trustees might understandably believe that maintaining market values matters. They have an obligation to preserve their endowments' capital for the very long term, and the common way to think about capital these days is in terms of its market value.

But this viewpoint is yet another manifestation of what I earlier called the fetishization of market values. The overriding objective of many endowment funds is to generate spendable cash flows in perpetuity. A proper evaluation of intergenerational equity must consider how well endowments have maintained their ability to generate spendable cash.

Earlier I introduced the term *fecundity*, which I defined, in an endowment context, as the amount of cash that a fund can distribute each year without threatening its capacity to make similar distributions, in inflation-adjusted dollars, in the future. The true measure of intergenerational equity is whether an endowment has maintained its capacity to generate spendable cash—its fecundity—over time.

Spending rules provide estimates of endowment fund fecundity. The best method to evaluate fecundity is to apply one of the Cash-Flow Spending Rules, looking either at dividends or earnings. Although the two rules produce roughly similar results, because the Cash-Flow Dividends Rule is simpler, I will apply it here to look at the fecundity of one trust fund over an extended period.

I discussed asset fecundity earlier, but as a refresher, here is a brief summary.

According to the Cash-Flow Dividends Rule, the fecundity of a portfolio of American common stocks has been approximately equal to 130% of the trailing dividend yield of the S&P 500.

The fecundity of non-US common stocks is a question for which I am hoping future research may provide an answer. In the meantime, at least for American investors, who presumably have only a fraction of their equity capital invested overseas, 130% of S&P 500 dividends will serve as a reasonable stand-in.

The fecundity of traditional (fixed interest rate) bonds is their real interest. Ideally, this would mean today's average yield for the bond portfolio less tomorrow's inflation. In practice, a good proxy for tomorrow's inflation is past annualized inflation averaged over the previous three years. Alternatively, the real interest rate can be read off the TIPS yield curve.

A Real-Life Example

Using market values to evaluate intergenerational equity can provide wildly misleading results, particularly during prolonged bull or bear markets. I will illustrate this point with the history of a real-life fund during the great American bull market of the 1980s and 1990s and during the years that followed.

The example is a trust fund with which I am personally familiar.⁴⁶ This is a very-long-lived taxable trust for the benefit of a large family. The trust has been managed like an endowment fund. Its primary objective has been to provide stable distributions for the family as a whole that keep pace with inflation over the very long

⁴⁶Full disclosure: I managed this trust's assets from 1995 to 2011.

term, and thus, the trust has sought to be intergenerationally equitable.

I will call this the Smith Family Trust. It has been managed with the same objectives, the same strategy, and essentially the same asset mix since 1980. The analysis will begin at the end of that year and follow the trust's progress for 35 years through the end of 2015.⁴⁷

The trust had 80%–90% of its principal invested in equities throughout this period.⁴⁸ At the beginning, in 1980, the trust's equities were almost solely US equities. Over time, REITs and non-US equities seeped into the portfolio, and by 2015, they constituted roughly 30% of the total. I will assume that the fecundity of the entire equity portfolio equaled that of an equivalent dollar amount invested in the S&P 500. For the calculations, I will use the simple 130%-of-dividends formula mentioned earlier. Therefore, for the trust's equities, the fecundity at the end of each year, in nominal dollars, equaled

$$\begin{aligned} & \text{(Year-end equity market value} \\ & \quad \div \text{Year-end S\&P 500 market value)} \\ & \quad \times \text{(S\&P 500 four-quarter trailing dividend)} \\ & \quad \times 130\%. \end{aligned}$$

The remaining 10%–20% of the trust portfolio was invested in very high-quality municipal bonds. I will assume that the fecundity of the municipal bonds equaled their real yields—that is, their nominal yields less inflation. (The trust used tax-exempt municipal bonds because it is taxable; tax-exempt endowments typically use

⁴⁷Most graphs in this article run through 2017. I stopped the Smith Family Trust's history at the end of 2015 because the trust went through some restructuring in 2016.

⁴⁸Investment policy for this trust called for a fixed dollar amount to be invested in bonds, rather than a fixed percentage amount. The percentage allocation to equities was, therefore, allowed to swing up and down with the market.

Treasury or corporate bonds for the same purpose, but the principle is the same.)

The municipal bond portfolio was very highly diversified; at year-end 1980, for example, it held several dozen issues. I will simplify matters by using the then-current yield of the Bloomberg Barclays Municipal Index (BBMI) as a proxy.

I will declare that the real yield of the trust's bond portfolio was the year-end BBMI yield minus inflation. A common practice in this situation is to use recent past inflation as a stand-in for future inflation. And because inflation can be volatile, multiyear averaging is useful; I used three-year averages. I define the fecundity (in nominal dollars) of the trust's municipal bonds at each year-end to be

$$\begin{aligned} &(\text{Year-end BBMI yield}) - (\text{Annualized} \\ &\text{CPI change over previous three years}) \\ &\times (\text{Market value of the bond portfolio}). \end{aligned}$$

By applying these simple formulas and converting the nominal-dollar results to real dollars by dividing by the CPI, I have plotted in **Figure 7** the annual fecundity of the Smith Family Trust from 1980 through 2015. The calculations are shown in Appendix A, available as online supplemental material at <https://www.cfainstitute.org/en/research/foundation/2019/cash-flow-focus-endowments-trusts>.⁴⁹ I have set the average fecundity over this interval to 100. What matters here is not one particular year's results but, rather, the trend. If fecundity had drifted downward over this 35-year period, then presumably, the trustee had distributed too much, and if it had drifted upward, presumably too little. I have also plotted on the graph the real market value of the trust, with the 1980 starting value set to 100. Here are the results.

⁴⁹To protect the Smith family's privacy, the numbers in the appendix have been scaled downward slightly.

Given the great bull market of the 1980s and 1990s, that the real market value of the Smith Family Trust grew so much should be no surprise. At the end, in 2015, it was almost three times what it had been at the beginning. Thus, using the traditional measure of intergenerational equity—looking at changes in real market values—suggests that the trustee favored later generations by a huge margin.

However, the graph shows that according to the measure that really matters—the fund's distributable cash flows—the trust fund's fecundity was essentially unchanged during the entire period. The overseers of this endowment-like trust fund were intergenerationally equitable.

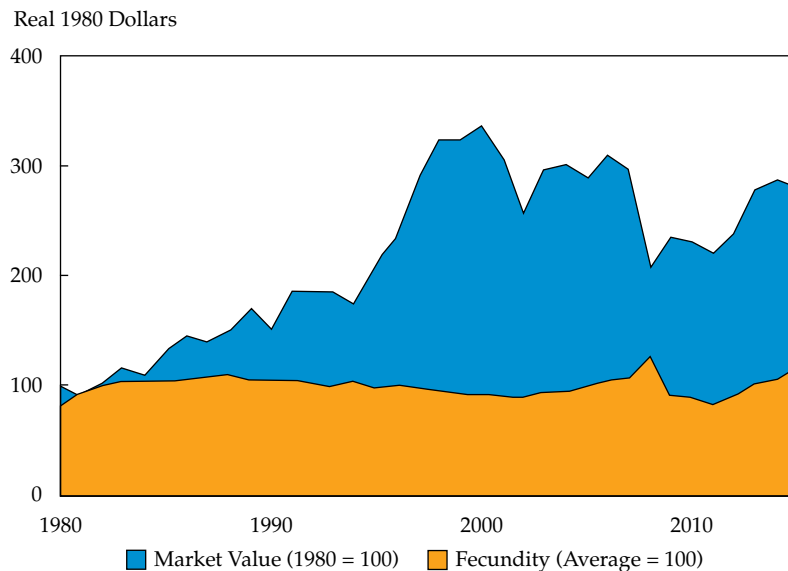
Dividends and real bond yields are not perfect measures of fecundity—they are simply much better measures than market values. Here, the calculated fecundity represented only an informed estimate of the Smith Family Trust's true fecundity, but informed estimates are as good as one can get. As yardsticks for evaluating intergenerational equity, real market values provide numbers that are precise but irrelevant, whereas these fecundity calculations provide numbers that are approximately right and quite relevant.

Evaluating intergenerational equity by looking at asset fecundity, rather than asset market values, results in much more meaningful answers.

Insuring the Distributions

Most investors diversify their holdings, following the popular adage to not put all your eggs in one basket.

Part of the value of diversification comes from lessening the probability and magnitude of adverse outcomes. Both spend-down investors and endowment investors own bonds for this

FIGURE 7. SMITH FAMILY TRUST: MARKET VALUE AND FECUNDITY

reason. Bonds provide insurance against equity bear markets. As with any insurance, buying bonds has an opportunity cost—in this case, lower expected total returns—but bonds can provide a payoff when other investments do not.

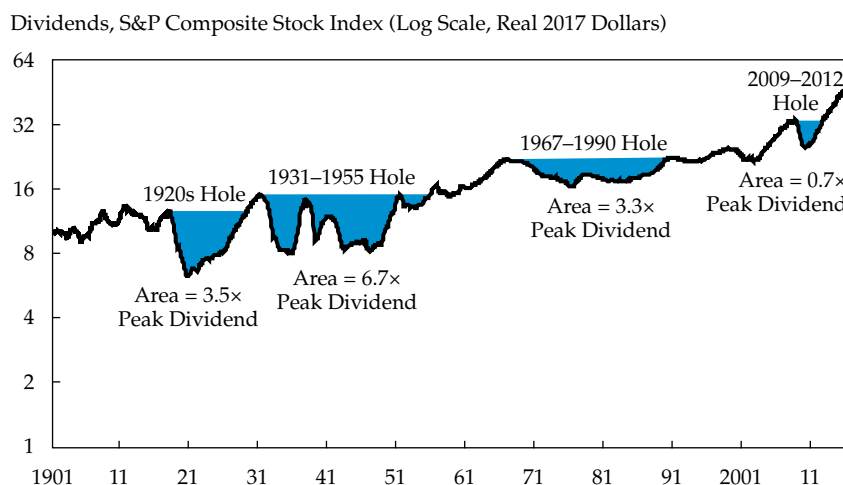
I have proposed here that endowment investors focus more on cash flows than on market values. For beneficiaries of the Smith Family Trust, the safety and stability of the trust's distributions mattered more than the market value of the trust's assets. The trustee invested almost all of the trust's capital in dividend-paying equities to provide growing distributions for the trust's beneficiaries. Then, the trustee chose to insure those payouts, at least to some degree, by investing the remaining capital in high-quality municipal bonds. The bond portfolio was intended to insure the trust's payout stream. If the trust's dividend intake were to decline by any significant degree (e.g., during a severe recession), then the trustee could liquidate some bonds and

distribute the proceeds to the trust beneficiaries to compensate, in part or in whole, for the dividend shortfall.⁵⁰

I mentioned earlier that although dividends are more stable than market values and earnings, they are nevertheless not perfectly stable. **Figure 8** provides a rough answer to the question that matters here—namely, How large and how long might dividend declines be in the future?—by showing how severe they have been in the past. I refer to these dividend shortfalls as *potholes*, and Figure 8 shows how deep and wide the potholes have been. The largest potholes of the past century came during the Great Depression and World War II. Dividends peaked in 1930 and did not surpass that peak, in real dollars, until 1956. If the trust had paid out \$100 in distributions during the peak dividend

⁵⁰Municipal bonds made sense here because the trust was taxable. For tax-exempt endowments, taxable bonds would be better and US Treasury securities might be best.

FIGURE 8. FOUR "DIVIDEND POTHoles": MAJOR DECLINES IN REAL DIVIDENDS



Sources: Robert Shiller's website; Bureau of Labor Statistics.

year of 1930, then the trustee would have had to liquidate bonds worth approximately 6.7 times that amount, or \$670, to fill the pothole that followed.

Investors actually faced two serious dividend potholes during the early 20th century, the larger being the one just mentioned and the smaller being the result of recessions in 1918–1919 and 1920–1921. Filling both of these back-to-back potholes would have required setting aside \$1,020 for every \$100 of peak dividends. That much insurance would have been quite expensive. Partly because of the expense and partly in hopes that better oversight of the US economy these days might make future downturns less severe than in the distant past, the Smith Family Trust's overseers decided to only partially insure the fund's payout. They set aside in a bond portfolio an amount equal to seven and a half times the then-current distributions to the trust's beneficiaries. Each year, if the trust increased its distributions, the overseers would

have to purchase a few more bonds to keep the "insurance" fully funded.

Because this self-insurance fund was established in 1980, the only significant pothole the trust has experienced is the deep but brief one during the financial crisis of 2008–2009. To fill that pothole, the trustee sold 4.3% of the trust's municipal bonds, representing 0.8% of the trust's total capital, and added that cash to the diminished amounts that were coming in via dividends. As a result, during and immediately after the crisis, the trust was able to maintain its beneficiary distributions in nominal (but not real) dollars. However, filling the pothole meant the trust exited that period with 99.2% of the capital it had had at the start. This insurance was not free. In contrast, endowed institutions that base spending on market values often buy indirect insurance to protect their market values, by investing in return-dampening assets, such as market-neutral funds and hedge funds, and the cost of this indirect insurance—in the form of lower returns—is not free, either.

Intergenerational Equity Is Not Guaranteed

In 1830, a Massachusetts court gave birth to what was known in the United States as the Prudent Man Rule. (Today, its direct descendent is the Prudent Investor Rule.) In that court's legal opinion, Justice Samuel Putnam wrote, "Do what you will, the capital is at hazard."⁵¹

The overseers of the Smith Family Trust did several things right during the years from 1980 through 2015. But the success of that trust was the result of many factors, of which only a few were under the overseers' control.

The most important uncontrollable factor was economic growth. The American and global economies grew during this period, and recessions for the most part were brief and mild. In addition, the rule of law and good corporate governance survived in most developed nations and even spread into a few other nations. And finally, as always, luck played some part.

A vital premise underlying the strategy of the Smith Family Trust was that the global economy would survive, and survive it did. But the trust's success was the result of the aforementioned factors plus the efforts of millions of workers, from Seattle to Stockholm to Shanghai, whose hard work created the profits that created the dividends that led to the trust distributions on which the Smith family has fed. Setting appropriate objectives, choosing an appropriate strategy, and managing spending reasonably well were not guarantors of success. The capital will always be at hazard.

⁵¹Harvard College v. Amory (1830) 26 Mass (9 Pick) 446. This reference comes courtesy of Wikipedia.

VI. CONCLUSION

The overriding objective of most very-long-lived endowment funds is to provide, over the long term, stable amounts of spendable cash that keep pace with inflation. Given this need to produce spendable cash, endowments have historically gravitated toward assets that themselves generate cash—toward what I have called core assets.

The spendable-cash-generating capacity of these core assets—their fecundity—is a function of profits (in the case of corporate equities), net rents (in the case of real estate), or the net-of-expenses revenues from other asset classes, such as farmland and timberland. Market values matter when these assets are purchased and sold, but otherwise, market values matter very little, if at all.

Basing spending on market values is less useful than basing spending on the fecundity of the underlying assets. Using large-capitalization US equities as an example, I have shown how to apply two related spending rules that are closely linked to asset fecundity. The rules I have offered—the Cash-Flow Spending Rules—provide the following advantages.

First, they combine the strengths of two current spending rules. The Cash-Flow Spending Rules encourage a focus on cash-generating core asset classes, such as equities and real estate—as does the Default Spending Rule. In addition, the Cash-Flow Spending Rules free spending from being rigidly bound to cash flows and allow trustees to invest in non-core asset classes without a spending penalty—both positive features of the Market-Value Spending Rule.

Second, the Cash-Flow Spending Rules free trustees from fretting about market values and allow them to focus instead on a much more important issue—the current and future

fecundity of their assets. *Risk* no longer means volatility of returns but, rather, means threats to current and future cash flows.

The simpler of the new rules—the Cash-Flow Dividends Rule—is useful for quickly evaluating the reasonableness of an institution’s current spending rate. It is also useful for evaluating intergenerational equity, a task for which market value comparisons fail to work.

The more complex rule—the Cash-Flow Earnings Rule—is the better one for answering the fundamental endowment question, which is how much an institution can spend.

Although the Anchor & Pointer Spending Rule is attractive because of its self-imposed stable spending, it is incomplete without markers to indicate an appropriate current spending rate and to indicate when actual spending has strayed from its proper rate. Here, the Cash-Flow Spending Rules can help.

These two cash-flow rules provide an additional ancillary benefit. Investors who are saving for retirement have no choice: They must worry about market values because of the time-limited nature of the game. In contrast, perpetual endowment investors should worry much more about the fundamental drivers of their portfolios’ returns, meaning (in the case of equities) corporate profits over the very long term—not just over the next year or 2 or 10 or 20. Endowment investors should worry about the political health and economic prosperity of the nations in which they invest. Endowment investors should hope for good governments, strong property rights, good laws and regulations, and high levels of social capital. For all these reasons, endowment investors need to be engaged citizens.⁵²

⁵²For more on this important subject, see Falk (2016).

Finally, although determining an appropriate current spending rate is a challenge, the longer-term challenge for many endowments is treating future and current beneficiaries the same—to achieve what is known as intergenerational equity. Endowment investors who seek intergenerational equity should ignore market values and focus instead on what really matters—the cash-generating capacity of their assets.

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