



## GUEST EDITORIAL

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### Negative Real Interest Rates: The Conundrum for Investment and Spending Policies

In the United States and other parts of the world today, real interest rates are negative. Negative real yield environments are not unprecedented (they existed in the 1930s, 1940s, 1970s, and early 2000s—overall, about a third of the time since 1927), but they pose important challenges for spending and investment policies. Institutions typically spend around 5 percent of endowment assets annually, which means that they need to earn 5 percent after inflation if they wish to maintain current spending levels. The question is whether one can reasonably expect to earn a 5 percent real return with acceptable risk in today's economic environment.

Real yields have declined significantly over the last 15 years; in particular, U.S. five-year real yields have declined from 4 percent to -1.3 percent a year. Real yields are negative when expected inflation (measured as break-even inflation) is higher than nominal Treasury bond yields.<sup>1</sup> Today's five-year real yield of -1.3 percent a year, for example, reflects a five-year nominal yield of 0.7 percent and expected inflation of 2.0 percent (Table 1). Only at much longer maturities are real yields positive today, although even those yields are still well below historical levels.

**Table 1. U.S. Nominal and Real Yields as of 31 January 2012**

Maturity (years)	Nominal Yields (U.S. Treasuries)	Real Yields (U.S. TIPS)	Expected Inflation (break-even)
1	0.1%	-1.6%	1.7%
5	0.7	-1.3	2.0
10	1.8	-0.3	2.1
30	2.9	0.6	2.3

Source: Bloomberg.

*Editor's Note:* The author has a commercial interest in the strategies discussed in this article.

A negative real yield means that investors are willing to see safe investments decline in purchasing power. For example, a real yield of -1.3 percent a year over five years means that buyers of inflation-protected bonds are knowingly paying \$100 of purchasing power today to receive, *with certainty*, only about \$94 of purchasing power over the next five years. In other words, investors today are comfortable receiving not even a return *of* capital in real terms, let alone a real return *on* capital.

### The Conundrum

The conundrum of negative real yields is that one can achieve a positive real return only by taking risk. And targeting a real return of 5 percent a year to match typical spending rates can be achieved only by taking significant risk. We can see the magnitude of the problem in Table 2.

As shown in the table (first column), over 1928–2011, global equities and U.S. Treasury bonds had average annual real returns of 7.0 percent and 2.9 percent, respectively. With Treasury bonds returning 2.9 percent, the additional 4.1 percent return on equities (risk premium over bonds) was sufficient to meet the 5 percent spending goal ( $40\% \times 2.9\% + 60\% \times 7.0\% = 5.4\%$ ).

The problem is that these historical equity and bond returns are averages of equity and bond market returns in both higher- and lower-interest-rate environments. Given that real yields are currently negative, equity market returns would have to be considerably higher than the historical average of 7.0 percent for a 60/40 portfolio to return 5 percent. A straightforward calculation shows that equities would need to return 9.2 percent a year for a 60/40 portfolio to return 5 percent in today's environment (second column of Table 2;  $40\% \times -1.3\% + 60\% \times 9.2\% = 5.0\%$ ). This calculation implies that the risk premium of equities over bonds would have to be 10.5 percent a year, far greater than the historical average of 4.1 percent across all yield environments.

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**Table 2. Historical and Required Real Returns**

	Average Annual Real Return (1928–2011)	Today's Required Future 5-Year Real Return to Meet a 5% Spending Requirement with a 60/40 Equities/Bonds Portfolio	5-Year Average Real Return after Negative Real Yield <sup>a</sup> (1928–2011)
Global equities	7.0%	9.2%	5.8%
U.S. Treasury bonds	2.9	-1.3	-0.7
Equity risk premium	4.1	10.5	6.5
60/40 equities/bonds	5.4	5.0	3.2

<sup>a</sup>For these calculations, a “negative real yield environment” is defined as a calendar year-end where the one-year Treasury bill yield was less than trailing realized one-year inflation. Five-year average equity and bond real returns are then calculated from that point onward. Trailing inflation is used as a proxy for expected future inflation. Inflation-indexed bonds were introduced in the late 1990s, and priced measures of *ex ante* inflation are unavailable for most of the sample period.

Sources: MSCI ACWI; Bloomberg; André F. Perold and Joshua N. Musher, “The World Market Portfolio,” Harvard Business School study (2004).

Historically, low-real-yield environments have presented a challenge too great for equities to overcome. After being in a negative real yield environment, the average real returns on equities and bonds over the subsequent five years were only 5.8 percent and -0.7 percent a year (third column of Table 2). And the 60/40 portfolio had a future five-year real return of only 3.2 percent a year—well short of the desired 5 percent spending rate. Although I recognize that these historical estimates are based on a reduced sample size and overlapping data, the point is that real rates are incontrovertibly negative—and the evidence is not on the side of equities saving the day at such times by providing higher-than-normal returns.

### The Choices for Investment and Spending Policies

Although there is no easy solution for institutions given these circumstances, their choices include the following:

1. Maintain both a traditional portfolio (e.g., a static mix of 60/40 equities and bonds) and the current spending level and accept the likely diminution of the future purchasing power of the corpus.
2. Maintain a traditional portfolio but reduce current spending and/or find additional resources to try to maintain future purchasing power—a tough choice since spending reductions are difficult at best, and they are not an option for those foundations that are required by regulation to spend at least 5 percent annually.
3. Increase exposures to risky assets—for example, by avoiding bonds and holding something like 100 percent in equities—an approach likely to generate an acceptable real return *on average* but which would also entail bearing the far greater likelihood of large drawdowns.

4. Try to overcome the return shortfall through active management: Seek an array of managers who can outperform through superior security selection, exploitation of market inefficiencies, and even astute market timing. Despite its obvious appeal, active management is a game that only a minority can win.

The best course of action will differ from institution to institution. But it boils down to how much risk an institution prudently can and should bear and how it should optimally invest within that risk constraint so as to maximize return.

### Risk Bearing and Return Maximization

Decisions concerning risk bearing and return maximization usually involve a number of key trade-offs, including the following.

**Preserve Capital.** Endowments need to take a defined amount of risk and preserve capital, even if that means a near-term diminution of endowment purchasing power. There is little reason to think that the scenario will be different this time and that equities are likely to fare better in the next few years than over their long-run history.

Moreover, given today's heightened macro-uncertainty, the range of outcomes associated with equities is that much wider: There is greater upside but also more downside. In particular, equities are normally about 50 percent more volatile than a 60/40 portfolio and have an even higher level of volatility in an environment like that of 2011. Thus, for a conservatively positioned endowment to dramatically increase its equity market exposure in hopes of gaining the requisite returns to meet spending requirements would force it to stretch far beyond the institution's historical risk tolerance.

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**Diversify.** Endowment investments should be diversified to take advantage of as many sources of return as possible and to gain downside protection. Increasingly, one hears arguments that broad diversification is not worth the effort in the context of today's high correlations among risky assets. I strongly disagree. As I have written elsewhere, diversification does not prevent a decline in portfolio value. Rather, it protects a portfolio from being overinvested after the fact in the worst-performing asset class and against suffering a loss from which recovery might be difficult.<sup>2</sup> A 50 percent decline requires doubling one's money to fully recover, whereas a 10 percent decline requires only an 11 percent reversal. It becomes nonlinearly worse the larger the loss. To try to overcome negative real yields by holding a concentrated portfolio is not advisable.

**Use Active Management If You Have an Edge in Doing So.** Active management could narrow the return shortfall. Few institutions, however, have demonstrated much success in adding value through allocations to active managers—and not surprisingly. Most investors who pursue active management are playing what Charley Ellis has called a “loser's game.”<sup>3</sup> There is a buyer for every seller—and between them and after fees and frictional costs, the sum is necessarily negative. Therefore, that the average actively managed portfolio will underperform is a foregone conclusion.

That is not to say that managers who can repeatedly outperform (after fees and expenses) do not exist, merely that they are hard to come by and utilize in a portfolio context. It takes structural, operational, and networking edges to identify and gain access to such managers, and it requires special oversight and governance to invest successfully with active managers over the long term. Unfortunately, most institutions possess neither the resources nor the appropriate governance structure to avoid ending up on the wrong side of the loser's game. Only a few can reasonably expect to ameliorate the return shortfall from negative real yields through reliance on active management.

**Maintain Stability across Changing Risk Environments.** We live in a world where the risk environment changes dynamically. Under such circumstances, a static portfolio—one with fixed allocations, such as 60/40 stocks/bonds—will experience a commensurately changing level of risk. An alternative to a static asset allocation is to seek to maintain the same level of portfolio risk at all times. Such an approach would hold lower

exposures to equities and other risky assets in more volatile times and higher exposures in calmer environments. A stable risk policy is less prone to fat tails—it reduces the risk of large losses in volatile times and, in so doing, results in greater stability of capital. A stable risk policy also allows an institution to hold higher average equity exposures for the same risk as a static portfolio. Historically, stable risk portfolios have had higher risk-adjusted returns than static policy portfolios.<sup>4</sup>

## Conclusion

U.S. real interest rates are currently negative, which means that fixed-income investments—which have historically earned almost 3 percent a year over inflation—now *subtract from returns*. Short of unusually strong equity market returns, a traditional portfolio, such as 60/40 equities/bonds, will be unable to support the 5 percent annual spending rate typical of endowments and foundations.

In this environment, the only way to achieve a 5 percent expected real return is by taking greater risk—through higher allocations to equities and equity-like asset classes and/or by pursuing excess returns through active management. For many institutions, neither option is attractive or even viable. Taking more risk might lead to higher returns but with an obviously increased chance of incurring significant losses. Although active management could be a less risky way to ameliorate the return shortfall, trying to outperform the market is a loser's game and most who seek to do so will underperform.

In this environment, performance pressures are not a reason to abandon sound investment principles. The tenets of preserving capital, maintaining diversification, using active management only when in possession of an edge, and adopting a stable risk policy all help maximize returns while remaining within a given risk tolerance. Institutions could do a lot worse than to heed these principles within their resource and governance limitations.

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## Notes

1. Break-even inflation is a noisy proxy for expected future inflation for reasons that include financing differences in Treasury Inflation-Protected Securities (TIPS) versus Treasury bonds.
2. See André F. Perold, "The Endowment Model of Investing—Still Worth Pursuing?" HighVista Strategies white paper (January 2012):5.
3. Charles D. Ellis, "The Loser's Game," *Financial Analysts Journal*, vol. 31, no. 4 (July/August 1975):19–26.
4. Such an approach necessitates a governance structure that, through delegation or otherwise, can respond to changing risk environments. For a theoretical characterization of stable risk policies, see André F. Perold, "Risk Stabilization and Asset Allocation," HighVista Strategies LLC and Harvard Business School working paper (January 2012).

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