

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

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HighVista Strategies

HighVista Strategies was founded in 2004 by an experienced team with diverse backgrounds in endowment management, hedge fund and principal investing, wealth management and academia.

We focus singularly on achieving attractive risk-adjusted portfolio returns through investing across public and private markets. We utilize the time-tested principles of endowment investing and a forward-thinking application of risk management to manage globally diversified investment strategies and solutions tailored for our clients' varying needs. The priority placed on capital preservation and avoiding major drawdowns fosters the patient and rigorous pursuit of excess returns, and is itself a critical driver of long-term performance.

Executive Summary

U.S. real interest rates are negative today, which means that fixed income investments—which historically have earned almost 3% per annum over inflation—now subtract from return. Short of unusually strong equity market returns, a traditional portfolio such as 60/40 equities/bonds will not be able to support the 5% per annum spending rate typical of endowments and foundations.

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

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

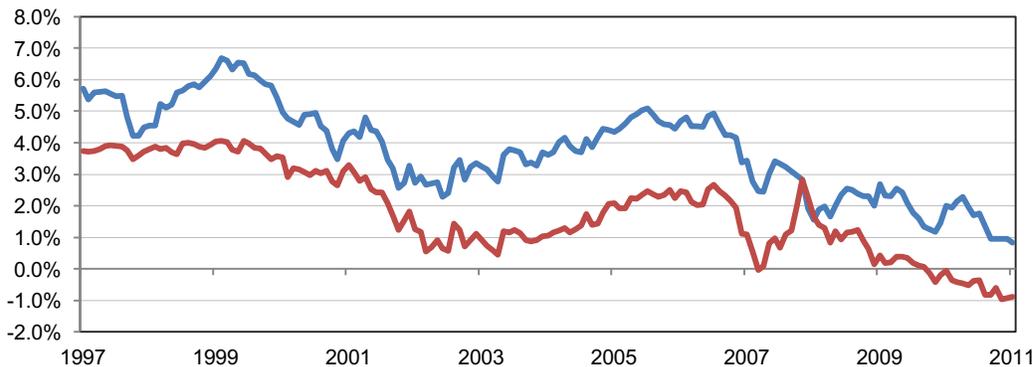
Negative Real Interest Rate: the Conundrum for Investment and Spending Policies

In the United States today, and in some other parts of the world, real interest rates are negative. Negative real yield environments are not unprecedented (they have 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 policy.

Institutions typically spend around 5% of endowment assets annually, which means that they need to earn 5% after inflation if they wish to maintain current spending levels. The question is whether one can reasonably expect to earn a 5% real return with acceptable risk in today's economic environment.

Real yields have declined significantly over the last 15 years, and U.S. five-year real yields in particular have declined from 4% to -0.9% per annum today (Figure 1). Real yields equal nominal yields less expected inflation, so real interest rates are negative when expected inflation is higher than nominal Treasury bond yields. Today's five-year real yield of -0.9% per annum, for example, reflects a five-year nominal yield of 0.8% and expected inflation of 1.7% (Table 1). Only at much longer-dated maturities are real yields positive today, although even those yields are still well below historical levels.

Figure 1: U.S. Treasury Real and Nominal Yields (Five-Year Maturity)



Source: Bloomberg

Table 1: U.S. Nominal and Real Yields as of December 31, 2011

Maturity (Years)	Nominal Yields (U.S. Treasurys)	Real Yields (U.S. TIPS)	Expected Inflation (Breakeven)
1	0.1%	-0.9%	1.0%
5	0.8%	-0.9%	1.7%
10	1.9%	-0.1%	2.0%
30	2.9%	0.8%	2.1%

Source: Bloomberg

A negative real yield means that investors are willing to see safe investments decline in purchasing power. For example, a real yield of -0.9% per annum over five years means that buyers of inflation protected bonds are knowingly paying \$100 of purchase power today only to receive, with certainty, \$96 of purchase power over the next five years. Investors today, in other words, are comfortable to receive 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 5% per annum real return to match typical spending rates can be achieved only by taking significant risk. The magnitude of the problem is evident in **Table 2** below.

Table 2: Historical and Required Real Returns¹

	Average Annual Real Return (1928-2011)	Today's Required Future Five-Year Real Return to Meet a 5% Spending Requirement with a 60/40 Equities/Bonds Portfolio	Five-Year Average Real Return After Negative Real Yield ² (1928-2011)
Global Equities	7.0%	8.9%	5.8%
U.S. Treasury Bonds	2.9%	-0.9%	-0.7%
Equity Risk Premium	4.1%	9.8%	6.5%
60/40 Equities/Bonds	5.4%	5.0%	3.2%

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

The issue is that these historical equity and bond returns are averages of equity and bond market returns in higher as well as lower interest-rate environments. Given that real yields currently are negative, equity market returns will have to be considerably higher than the historical average of 7.0% if a 60/40 portfolio is to return 5%. A straightforward calculation shows that equities will need to return 8.9% per annum if a 60/40 portfolio is to return 5% in today's environment (shown in the second column of the table; $40\% \times (-0.9\%) + 60\% \times 8.9\% = 5.0\%$). This implies that the risk premium of equities over bonds would have to be 9.8% per annum, far greater than the historical average of 4.1% across all yield environments.

And in fact, low real yield environments have historically presented a challenge too great for equities to overcome. As shown in the third column in **Table 2**, the average real returns on equities and bonds over the subsequent five years after being in a negative real yield environment were only 5.8% and -0.7% per annum, respectively. And the 60/40 portfolio had a future five-year real return of only 3.2% per annum—well short of the 5% desired spending rate. We recognize that these historical estimates are based on a reduced sample size and overlapping data—the point is just 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

Given these circumstances, there is no easy solution for institutions, but the choices include:

1. Maintain a traditional portfolio (such as a static mix of 60/40 equities and bonds) and also the current spending level, and accept the likely diminution of future purchasing power of the corpus.

¹ Sources: MSCI ACWI, and “The World Market Portfolio,” André F. Perold and Joshua N. Musher, Harvard Business School study, 2004.

² For these calculations, we define a “negative real yield environment” as a calendar year-end where the then one-year Treasury bill yield was less than trailing realized one-year inflation. We then calculate five-year average equity and bond real returns from that point onwards.

2. Maintain a traditional portfolio but reduce current spending and/or find additional resources to try to maintain future purchasing power—a difficult choice since spending reductions are at best difficult, and they are not an option for many foundations which are required by regulation to spend at least 5% per annum.
3. Increase exposures to risky assets, for example by avoiding bonds and holding something like 100% 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—by seeking an array of managers who can outperform through superior security selection, exploitation of market inefficiencies, and conceivably even astute market timing. Despite the obvious appeal, active management is not a game that can be won by all.

The best course of action will generally differ from institution to institution. But in one way or another, it boils down to how much risk an institution prudently can and should bear, and how the institution should optimally invest within that risk constraint so as to maximize return. There are some key considerations that should go into making these choices, as we next discuss.

Risk Bearing and Return Maximization

Decisions relating to risk bearing and return maximization usually involve a number of tradeoffs. Some of the key considerations are the following:

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

In addition, in the presence of 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% more volatile than a 60/40 portfolio, and have an even greater level of volatility in an environment like 2011. To invest 100% in equities today would be to take about double the risk normally associated with a 60/40 portfolio. For a normally conservatively positioned endowment to dramatically increase its equity market exposure in the hope of gaining the requisite returns to meet spending requirements would therefore be to stretch far outside of the historical risk tolerance of the institution.

Diversify. Endowments should be invested in a diversified way to take advantage of as many sources of return as possible, as well as to gain downside protection. It is increasingly being argued that broad diversification is not worth the effort in the context of today's high correlations among risky assets, but we strongly disagree. In turbulent times, any one asset class could experience a significant decline from which it is difficult to recover.³ As we have written elsewhere, diversification does not prevent a decline in portfolio value. Rather, it protects one from being overinvested after-the-fact in the worst performing asset class and against suffering a loss from which it may be very difficult to recover. Down 50% requires doubling one's money to fully recover, while down 10% requires only an 11% reversal. It becomes nonlinearly worse the larger the loss. To try to overcome negative real yields by holding a concentrated portfolio is not advisable.

³ See the HighVista paper, "The Endowment Model of Investing—Still Worth Pursuing?" January, 2011.

Utilize active management—if you have an edge in doing so. Active management could potentially narrow the return shortfall. Few institutions, however, have demonstrated much success in adding value through allocations to active managers. And not unsurprisingly. In the words of noted author and HighVista advisory board member, Charley Ellis, most investors pursuing active management are playing a “loser’s game.”⁴ There is a buyer for every seller, and between them and after fees and frictional costs, it is necessarily negative sum. It is therefore hardwired that the average actively managed portfolio will underperform.

That is not to say that managers who can repeatedly outperform after fees and expenses do not exist, just 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 successfully invest with active managers over the long term. Most institutions unfortunately 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. This makes a static allocation suboptimal: it leads to underinvestment in equities in calmer times, and excessive risk taking in very uncertain times. In the former, an institution will be shortchanging its return prospects since it could take on more equity exposure and still remain within its risk tolerance; in the latter, an institution holding the same exposures as under more normal circumstances would now end up holding a portfolio lying outside of its stated risk tolerance.

An improvement over a static asset allocation would be to adopt a policy that seeks 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 will enhance portfolio returns as it would allow an institution to hold larger average equity exposures for the same risk as a static portfolio; and such a policy also will reduce the risk of large losses in very volatile times and in so doing will result in greater stability of capital.⁵

Main Conclusions and Summary

U.S. real interest rates are negative today, which means that fixed income investments—which historically have earned almost 3% per annum over inflation—now *subtract from return*. Short of unusually strong equity market returns, a traditional portfolio such as 60/40 equities/bonds will not be able to support the 5% per annum spending rate typical of endowments and foundations.

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

⁴ The Financial Analysts Journal, Vol. 31, No. 4, July/August 1975, 19-26. New York: Financial Analysts Federation.

⁵ Such an approach necessitates a governance structure that, through delegation or otherwise, can respond to changing risk environments.

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

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