

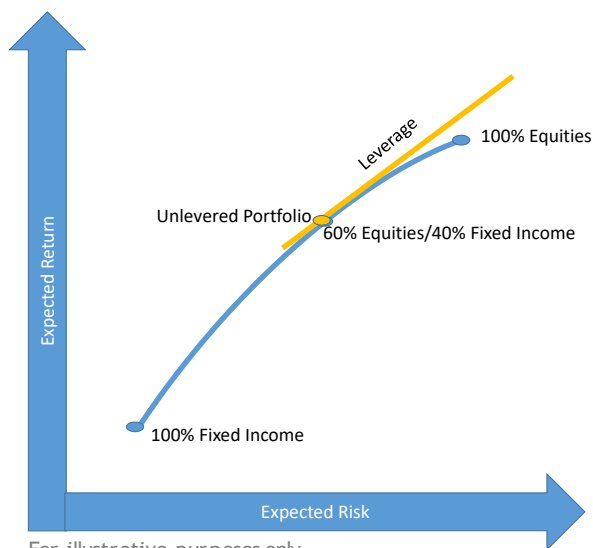
Understanding the risks and key considerations

Could leverage benefit your investment portfolio?

The pension giant CalPERS recently made a number of portfolio modifications in addition to adding 5% leverage across its allocation to support its expected return target rate of 6.8%. While almost everyone uses leverage in their daily lives as individuals (e.g., mortgages, credit cards, car loans, etc.), its prevalence within institutional investment portfolios is relatively muted outside of use within specific strategies. Using leverage to increase investment returns is a potential option for a diverse set of investors, but carries its own risks and should be done with careful considerations of the related trade-offs.

The role of leverage in the investment portfolio

Generally, there are two ways to seek to increase portfolio returns relative to a diversified investment allocation. The first is to reduce diversification and increase the concentrated positions in certain asset classes. This usually involves over-allocating to those assets that an investor believes have a higher expected return, often increasing allocation to some of the riskiest components of the portfolio. The second is to leverage the diversified “optimal” unlevered portfolio, in effect increasing portfolio market exposure by increasing its absolute size through borrowed funds. Of these two strategies, leverage likely makes more sense. Investors retain perhaps their most valuable investment tool - diversification - while avoiding making choices on which asset class to overweight. Investors can more efficiently move out the risk/return continuum than they would by increasing the allocation to riskier asset classes such as equities.



Portfolio Leverage Example: Potential Return Scenarios

	Unlevered 60% Global Equities/40% Core Fixed Income	Unlevered 75% Global Equities/25% Core Fixed Income	60% Global Equities/40% Core Fixed Income - 1.15x leverage
Portfolio Metrics			
Arithmetic Return	4.8%	5.5%	5.5%
Compound Return	4.0%	4.3%	4.4%
Risk	13.4%	16.1%	15.4%
Poor Scenario Return	-15.7%	-18.8%	-17.8%

Source: SEI Capital Market Assumptions. "Global Equities" modeled as MSCI ACWI Index (net) USD, "Core Fixed Income" modeled as Bloomberg Barclays US Aggregate Bond Index. Poor scenario return defined as 5th percentile potential outcome. Please see important disclosures at the end of this paper.

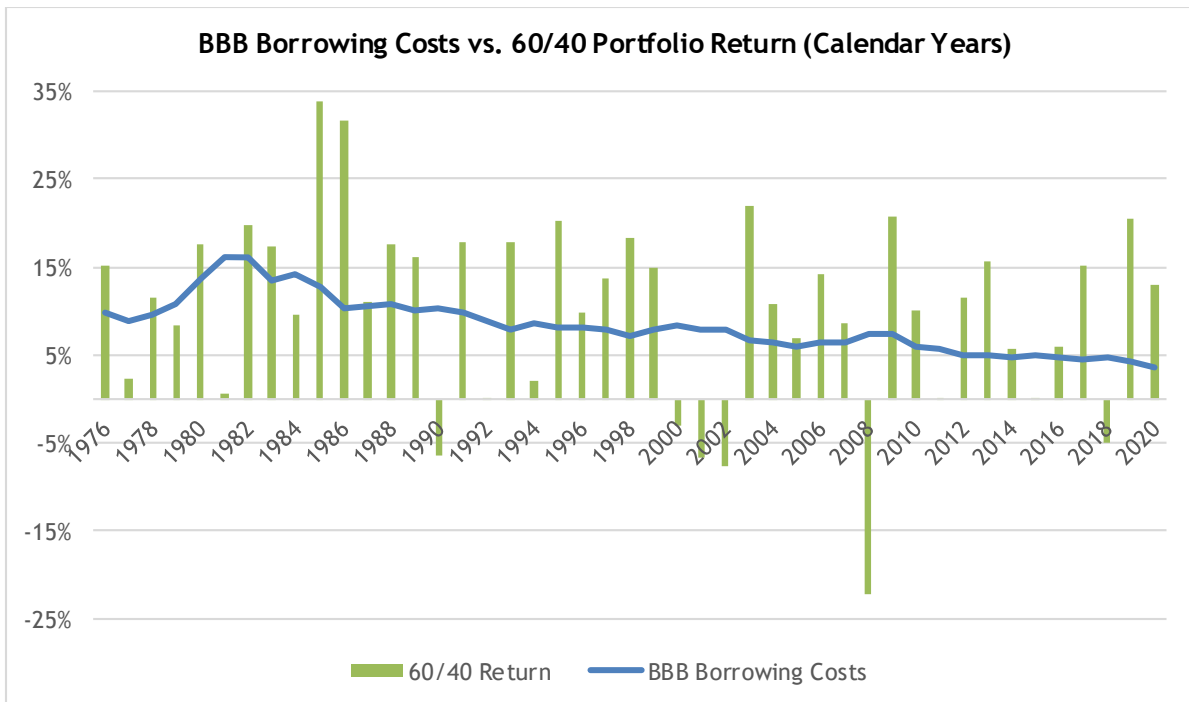
What do we mean by portfolio leverage?

Portfolio leverage is typically considered putting borrowed capital, i.e., not your own funds, directly into the investment portfolio. This conceptualization may be incomplete for a few reasons. While capital may be borrowed from a third party lender, those funds may be better considered as borrowing future funds from the institutional investor themselves. In effect, the borrower is getting its own money now versus later, and exposing those future funds to the market in advance of when they would have otherwise been realized.

The obvious implication is that this will be advantageous, should the funds achieve sufficient returns to justify that advancement; first by avoiding losing those advanced funds and, second, by exceeding the costs of their "advancement" through favorable market returns. Leveraged investing is often present in situations where borrowed proceeds are not directly borrowed to deposit into the investment portfolio. All situations of balance sheet borrowing, in cases where the borrower also carries an investment portfolio, involve implied portfolio leverage. Borrowed funds could otherwise be paid down through the investment portfolio, so some portion of the investment portfolio is, in effect, leveraged.

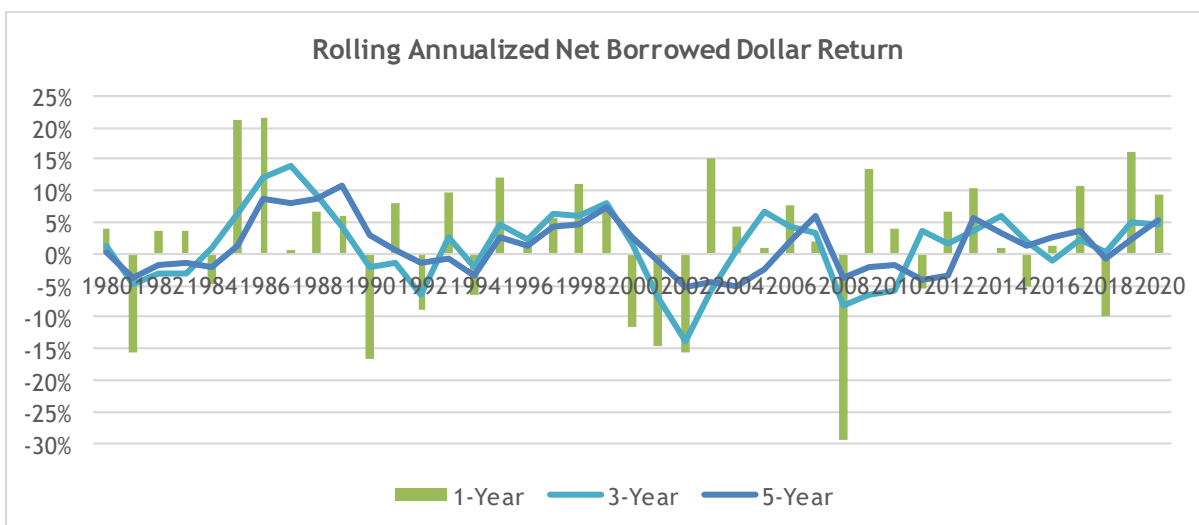
Benefits and risks of leverage

As long as the returns from investment are above the borrowing costs, the investor will benefit over time. However, while leverage can accelerate gains, it can also magnify losses. Debt payments are certain; unfortunately, investment returns are not. If an investor invests 50% and borrows 50% to pay for an asset, when the asset value goes up or down 10%, the investment value increases or loses 20% of its value, less the interest costs accrued in whatever market conditions are experienced. While borrowing costs have generally been below portfolio returns, there are periods where this is not true and there is considerable year-to-year variance between costs and investment returns. Over the past 25 years, the "spread" between a 60/40 portfolio and BBB borrowing costs would have been negative seven years, about 30% of the time, and have been as low as -30%.



BBB Borrowing Costs: Moody's Baa Corporate Bond Yield, annual average; 60/40 Portfolio Return: 60% MSCI World Index / 40% Bloomberg Barclays US Aggregate Bond Index, calendar year returns. Source: SEI, Moody's, Moody's Seasoned Baa Corporate Bond Yield [BAA], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/BAA>

The benefits to borrowing are potentially large, but the strategy requires a considerable length of time and consistent application to achieve a positive return, and it can be a pretty wild ride. Rolling 5-year annualized calendar-year returns to borrowing at prevailing BBB costs have been negative approximately 45% of the time over the past 40 years.



Net Borrowed Dollar Return: 60% MSCI World Index USD / 40% Bloomberg Barclays US Aggregate Bond Index, (calendar year returns) minus Moody's Baa Corporate Bond Yield (annual average). Source: SEI, Moody's, Moody's Seasoned Baa Corporate Bond Yield [BAA], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/BAA>

Important Considerations

An institutional investor considering its options in applying portfolio leverage should consider a number of issues when considering or engaging in leveraged investing:

- › **Timing:** Leverage often becomes more popular following a strong bull market, encouraging investors to pursue a more aggressive investment strategy at just the time valuations are most elevated, and expected returns have declined accordingly.

	Rolling Annualized Net Borrowed Dollar Return					
	1976 - 2020			2009 - 2020		
	1-Year	3-Year	5-Year	1-Year	3-Year	5-Year
Maximum	21%	14%	11%	16%	6%	6%
Median	4%	2%	1%	4%	3%	3%
Minimum	-30%	-14%	-5%	-10%	-1%	-1%

See previous exhibit detailing methodology. Source: SEI, Moody's.

- › **Borrowing Costs:** Investors are most interested in leveraged investing when interest rates are low. However, expected returns are based on risk premia above the risk-free rate, resulting in a fairly consistent risk compensation above the cost of borrowing, regardless of the nominal prevailing interest rates. Ultra-low interest rates can create an unhealthy condition, inducing investors to increase the level of leveraged investments despite expectations of a relatively static risk premium at the total portfolio level.
- › **Leveraged Beta:** Investors who have established risk parameters based on market exposure are increasing that exposure with leverage, increasing their unlevered portfolio beta by the level of risk. A 60/40 unlevered portfolio with a beta of 0.6 on a balance sheet that has a 20% debt/equity ratio has a roughly 0.72 levered portfolio beta (0.6 multiplied by 1.20), a significant departure from targeted levels of market exposure, and will experience portfolio volatility at that higher level over time.
- › **Tenor/Costs/Covenants:** Given that the leveraged portfolio strategy needs to be stable and consistent over fairly long time periods to have a reasonably favorable likelihood of success, the terms and conditions of borrowing are important. Borrowing costs need to be reasonably relatively attractive, tenor needs to be long and stable with limited callability, or covenants, and amortization needs to be deferred or a back-end bullet.
- › **Intra-portfolio Leverage:** There are a myriad of financial instruments employing implicit and explicit leverage that seek to provide various market exposures (e.g., swaps, futures, options, leveraged ETFs, etc.), without necessarily owning securities outright. A combination of these can be used to increase portfolio exposures in excess of assets without “borrowing” money in the traditional sense. Likewise, these can be used in isolation to increase/gain exposure to a particular market rather than leveraging a diversified portfolio for those investors who have more targeted goals. Such instruments routinely require collateral to be held for margin calls and have their own benefits and risks relative to traditional borrowing.
- › **Investment Committee Education and Governance:** Given the additional risks associated with portfolio leverage and the impact of different market scenarios on projected portfolio values, investors need considerable education concerning the related trade-offs. The Investment Policy Statement should explicitly include language outlining the role and sizing of portfolio leverage, as well as potential triggers for its re-evaluation within the portfolio. The use of leverage should be subject to the same oversight and due diligence as any other portfolio investment.

Summary

Portfolio leverage should be considered neither good nor bad, but rather as an investment alternative to reduced diversification and increased investment concentration to increase portfolio returns. Leverage amplifies the good and bad effects of the income and return generation impact of the investment portfolio. This approach needs to be long-term and consistent, whatever the current nominal borrowing costs are, or what recent market performance might suggest, as success over short time frames is highly uncertain and potentially significantly negative.

Like all strategic portfolio decisions, success or failure should be judged over longer time periods and revisited at least annually to re-confirm the appropriateness of the strategy for the organization's goals and objectives. Given the inherent risks and associated market uncertainties, it should probably be constrained to a modest portion of the portfolio value and not used for shorter-term tactical trades, particularly for institutions with limited financial flexibility to withstand portfolio volatility or otherwise repay debt outside the investment portfolio itself.

Have questions?

If you want to learn more, or have questions about evaluating the use or leverage in your portfolio, please reach out to Tom or Justin.



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The asset class assumptions are aggregated into a diversified portfolio, so that each portfolio can then be simulated through time using a monte-carlo simulation approach. This approach enables us to develop scenarios across a wide variety of market environments so that we can educate our clients with regard to the potential impact of market variability over time. Ultimately, the value of these assumptions is

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