Wilshire Funds Management Develops Income-Oriented Retirement Portfolios

HIGHLIGHTS:

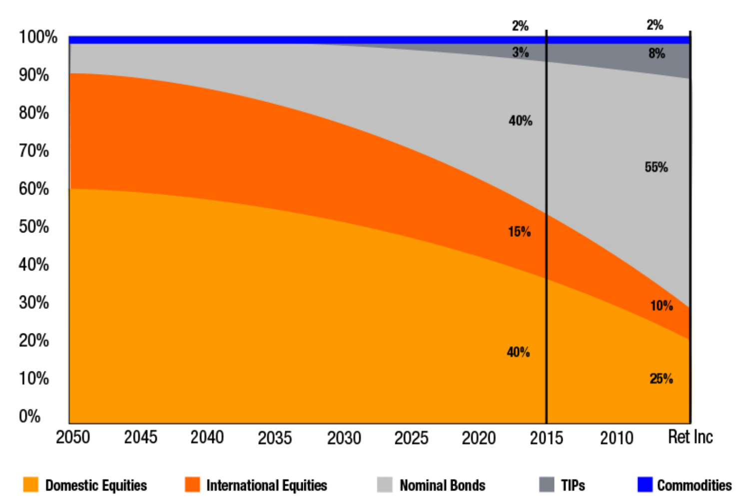
- Income optimized portfolios generated nearly 40% more income, holding risk constant with a small reduction in total return.
- Listed REITs play an important role in income optimized portfolios.

INTRODUCTION

As defined contribution plans, such as 401(k) plans, have become increasingly popular, plan participants are faced with the challenge of managing their own assets before and during retirement. One of the key challenges for individuals in retirement is generating sufficient income while minimizing the risk of depleting their assets.

The global financial crisis underscored the reality that global market turbulence can have lasting effects on an individual's retirement plans. The aftermath of the financial crisis, which ushered in a period of slow economic growth and historically low bond yields, has increased the challenge of generating income while in retirement and, at the same time, limiting portfolio risk to preserve asset value.

Figure 1: Typical Target Date Glide Path



Source: S&P Indices, Benchmarking Target Date Funds, March 2012.

THE CHALLENGE OF GENERATING INCOME

Traditional investment strategies, including target-date funds, aim to reduce risk as retirement approaches by reducing allocations to stocks and increasing allocations to bonds. Figure 1 illustrates this using the S&P Consensus Target Date Glide Path. As the figure shows, the consensus equity allocation declines from 90 percent for an individual with a 2050 retirement date, to 55 percent at retirement in 2015 and 35 percent for 10 years+ in retirement. The consensus of estimated volatilities of these portfolios falls from nearly 15 percent to just over 9 percent for the 2015 retirement date, to 6.5 percent ten years into retirement.

While this investment strategy has reduced perceived risk, it has fallen short in generating income during retirement. A typical retirement

HIGHLIGHTS:

- Income optimized portfolios extend the traditional portfolio optimization approach.
- Income optimized portfolios address the needs of investors seeking income to help finance living expenses, while also identifying the optimum asset allocation.

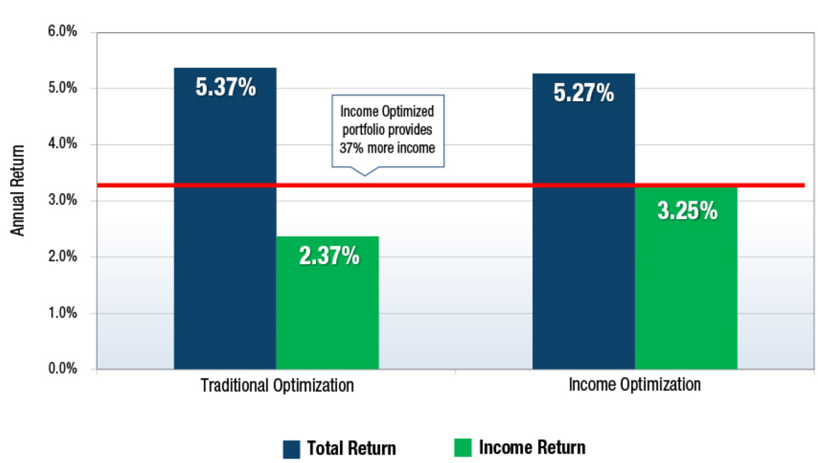
portfolio associated with a target-date strategy has an estimated income return of just around 2 percent per year.

An investment strategy that generates income may be critical for retirees. Portfolios that generate less income may require retirees to dig deeper into their savings to fund their expenses. Withdrawals taken in market downturns when asset values are low may amount to a larger percentage of total assets, making it more difficult to recover lost asset value through future investment returns and more likely that a retiree will deplete their assets while still living.

A NEW APPROACH

New research from Wilshire Funds Management sponsored by NAREIT evaluated how adding a range of income-generating asset types would have helped meet the twin challenges of producing income and preserving assets. The research aimed to develop optimal portfolios that maximized returns, provided a target level of annual income, and maintained risk levels typical of at-retirement and in-retirement portfolios.

Figure 2: Comparison of Total Return and Income Return: Income Optimized Portfolio and Traditional Optimization



Source: NAREIT analysis using Wilshire Funds Management, Income Oriented Retirement Portfolios: Challenges and Solutions, October 2016.

Wilshire's research considered the roles of broad classes of assets, including stock exchange-listed REITs, as components of income- generating retirement portfolios. One of the key findings was that the addition of stock exchange-listed REITs to retirement portfolios would have allowed a higher level of stable income for any given level of risk tolerance.

METHODOLOGY

The most widely-used analytic method for constructing optimal investment portfolios is Mean-Variance Optimization (MVO). For a specific opportunity set of investment choices, MVO identifies the asset allocation across the opportunity set that maximizes expected portfolio return for a target level of portfolio volatility.

Traditional MVO can be modified to address the needs of investors seeking a targeted amount of income from their portfolios to help finance living expenses while also identifying the optimum asset allocation across the opportunity set. To accomplish this objective, Wilshire developed Income-Oriented Mean-Variance Optimization (IOMVO), which incorporates an additional constraint requiring a specified income yield on the portfolio. Wilshire used both MVO and IOMVO strategies based on 40 years of investment return data (from 1975 through 2015) in this study to produce its findings.

KEY RESULTS

Figure 2 compares total and income returns for an income oriented portfolio and a traditional portfolio based on MVO design. As the figure shows, the income oriented portfolio with listed REITs provided nearly 40 percent more income with total returns that were comparable to the returns provided by the traditional portfolio.

HIGHLIGHTS:

- The income optimized portfolio de-emphasizes equities and increases allocations to high yield bonds, preferred stocks, non-U.S. equities and listed REITs.
- The addition of REITs increases the returns of the income optimized portfolio versus an income optimized portfolio without REITs.

Table 1 highlights a number of the key results derived using the IOMVO methodology. The table compares the optimal portfolio derived using the traditional methodology (Column (1)) with the Income Oriented methodology excluding and including listed REITs (Columns (2) – (4)).

Comparing the allocations between standard and income oriented portfolios:

- Equity allocations are reduced from 35 percent of the standard portfolio to between 3 percent and 15 percent of the IOMVO portfolio.
- High Yield Bonds and Preferred Stocks become key parts of the portfolio. The share of these assets increases from 9 percent of the portfolio to between 22.7 percent and 25 percent.
- Non-US developed stock allocations rise from 4 percent to between 9 percent and 23.5 percent.
- Listed REIT allocations rise to approximately 8 percent. REITs have been an important component of the income oriented portfolio because they have provided strong total returns, consistent income, and diversification benefits.

THE ROLE OF LISTED REITS

The impact of REITs in improving the performance of the income oriented portfolio was dramatic. Holding risk and income constant, the addition of Equity listed REITs would have increased the average annual total return by 9 basis points. Adding both listed Equity and Mortgage REITs would have increased the average annual total return by 15 basis points. To put this in perspective, over a 30 year retirement horizon, increasing average annual total return by 15 basis points would increase the ending portfolio balance by 4.4 percent.

Figure 3 compares the allocation to Equity and Mortgage REITs across income targets and risk tolerances. The top panel of Figure 3 considers the case with only Equity REITs in the opportunity set while the bottom panel considers cases with both Equity REITs and Mortgage REITs in the opportunity set. Allocations to REITs would have increased as more income was needed and when risk tolerance rose.

Table 1: Portfolio Allocations

		Income Oriented Portfolio Optimization		
Asset Class	Standard Optimization	Excluding Listed REITs	Including Listed Equity REITs	Including Listed Equity and Mortgage REITs
T-Bill	0.00%	0.00%	0.00%	0.00%
TIPS	6.07%	0.00%	0.00%	0.00%
Investment-Qual Bonds	32.24%	35.39%	36.21%	35.36%
Large Value Stocks	16.78%	2.64%	7.96%	14.57%
Large Growth Stocks	12.05%	0.00%	0.00%	0.53%
Small Value Stocks	6.05%	0.00%	0.00%	0.00%
Small Growth Stocks	0.59%	0.00%	0.00%	0.00%
High Yield Bonds	7.98%	12.50%	12.50%	12.50%
Global Bonds	7.47%	12.50%	8.91%	6.06%
Developed Stocks	4.11%	23.47%	12.41%	9.23%
Emerging Stocks	4.91%	1.01%	1.87%	3.24%
Preferred Stocks	1.15%	12.50%	12.50%	10.23%
Commodities	0.61%	0.00%	0.00%	0.00%
Equity REITs	0.00%	0.00%	7.63%	3.27%
Mortgage REITs	0.00%	0.00%	0.00%	5.00%
Risk	8.00%	8.00%	8.00%	8.00%
Total Return	5.37%	5.12%	5.21%	5.27%
Income Return	2.37%	3.25%	3.25%	3.25%

Source: Wilshire Funds Management, Income Oriented Retirement Portfolios: Challenges and Solutions, October 2016.

Source: NAREIT analysis using Wilshire Funds Management, Income Oriented Retirement Portfolios: Challenges and Solutions, October 2016.

HIGHLIGHTS:

- Listed REIT allocations increase in the income optimized portfolio as either or both the risk tolerance or the income requirement rise.
- REITs account for up to 16% of the income optimized

IMPACT OF INCOME REQUIREMENTS ON ASSET ALLOCATIONS

As income requirements rose, allocations to income-generating assets such as listed REITs would have increased. At the 8 percent risk tolerance level, the Equity REIT allocation would have risen from 4.3 percent to 12.4 percent between the 3 percent and 3.5 percent income requirement levels when only Equity REITs were in the opportunity set. When Equity and Mortgage REITs were in the opportunity set, total REIT allocation would have increased from 7.8 percent to 12.7 percent between the 3 percent and 3.5 percent income requirement levels.

IMPACT OF RISK TOLERANCE ON ASSET ALLOCATIONS

As risk tolerance rose, allocations to listed REITs would have increased as a share of the total portfolio. Focusing on the 3.25 percent income target, when only Equity REITs were in the opportunity set, the Equity REIT allocation would have increased from 4.2 percent to 9.1 percent between the 6 percent and 10 percent risk tolerance levels. When Equity and Mortgage REITs were in the opportunity set, the total REIT allocation would have increased from 5 percent to 11.3 percent between the 6 percent and 10 percent risk tolerance levels.