OBSERVATION

TD Economics

November 13, 2012

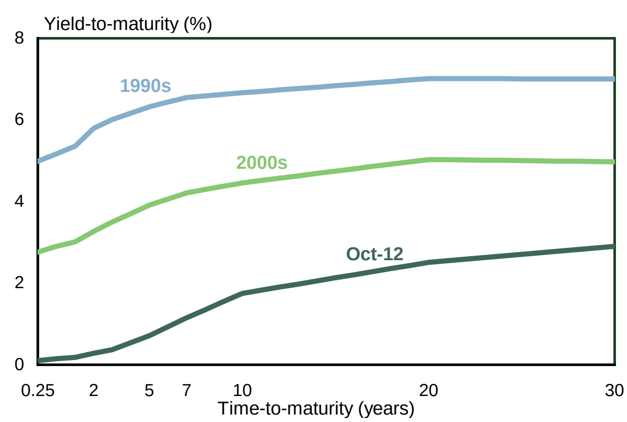
AN ECONOMIC PERSPECTIVE ON U.S. LONG-TERM FINANCIAL ASSET RETURNS

Highlights

- Our assessment of U.S. long-term financial returns, based on economic fundamentals, suggests that a diversified portfolio should deliver an average annual return of between 4.5% and 6.5% over the next decade.
- Cash is expected to provide an average annual return of 2.25%. Bonds will likely suffer capital losses, as interest rates rise from their current lows, but should return 2.5% for Treasuries, 5.5% for corporate bonds, and 4.5% for municipal bonds. A balanced fixed-income portfolio is expected to return 3.75%, on an average annual basis.
- Equity markets across the U.S. and other developed economies will likely return, on average, about 7.0%. Some exposure to emerging markets could boost equity returns, but the additional return would come at a price of an increased risk profile.

Financial asset returns have been highly volatile over the last five years. What began as a crisis in one asset class – backed by subprime mortgages – spread to become a global financial crisis, inadvertently causing the Great Recession. This led central banks around the world to lower interest rates, often to their effective lower bounds. Rates in the U.S. and many other jurisdictions remain near their record lows (see Figure 1), with the domestic economic recovery hampered by dysfunctional housing and credit markets, as well as the onset of the European sovereign-debt crisis. Legacies of the financial crisis, in combination with global uncertainty and domestic fiscal risks, continue to impede economic growth. This has led the Federal Reserve to, effectively, conditionally commit to keeping rates low for an extended period of time. In this report, we attempt to look beyond the near-term recovery period anduse economic fundamentals to anchor financial asset returns over the next ten years. On that basis, we expect a portfolio consisting of cash, bonds, and equities to return, on average, between 4.5% and 6.5% over the coming decade.

FIGURE 1: CURRENT YIELD CURVE DEPRESSED



Note: The 1990s and 2000s curves illustrate average yield-to-maturity during respective decade. October 2012 is as of end-of-month. Based on par yields.
Source: Federal Reserve Board, TD Economics

Cash to return 2.25%

As a benchmark for cash we use 3-month Treasury bills. Yields on the T-bills are in turn anchored to the federal funds rate, whose target is set by the Federal Open Market Committee (FOMC) eight times per year. Four years ago, following the onset of the Great Recession, the FOMC lowered the target for the federal funds rate to a record low of between 0 and ¼%. Amidst a slow economic recovery, the target has remained at this effective lower bound range. Furthermore, given the existing economic slack

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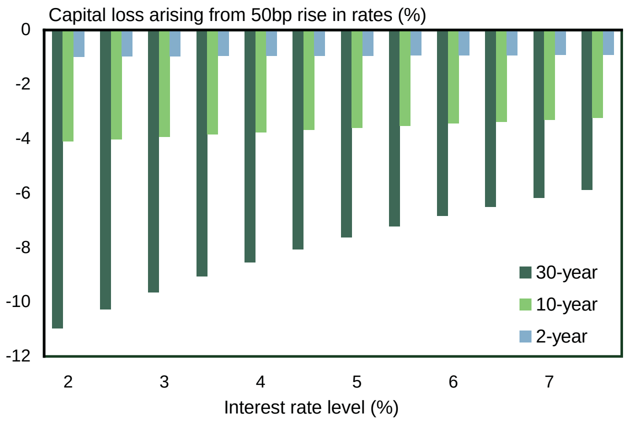
FIGURE 2: CAPITAL LOSSES HIGHEST AT LOW RATES AND LONGER TERM-TO-MATURITY



Source: TD Economics

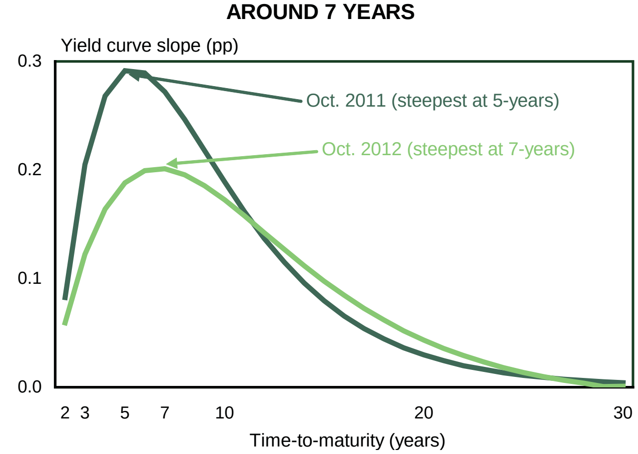
and the headwinds facing the U.S. economy, the FOMC currently anticipates that "exceptionally low levels for the federal funds rate are likely to be warranted at least through mid-2015." Our base case forecast takes the FOMC at their word, with only minor upticks in the 3-month T-bill rate by mid-2015. However, the subsequent quarters should see the committee begin to rebalance monetary policy as improved economic momentum is sustained. We expect the pace of rebalancing to fall in the 100-200 basis point per annum range, returning the fed funds rate near its neutral policy stance – estimated at around 3.5% – by the end of 2017. Of course, this scenario is not without uncertainty, and risks remain. The pace of housing and credit market recoveries, policy on future deficit- and debt-reduction, European sovereign-debt crisis resolution, and succession at the Federal Reserve will impact the monetary policy outlook. We believe that, on balance, the risks are tilted slightly to the upside, potentially implying an earlier start to the tightening cycle, and therefore slightly higher returns over the analysis horizon. However, we would still recommend our base case as a more prudent assumption from a viewpoint of financial planning, and as such, assume a return of 2.25% for this asset class over the coming decade.

Bonds to return 3.75%

The bond asset class is made up of investment grade federal government, corporate, and municipal bonds. The federal government sub-class consists of U.S. Treasury notes and bonds, with maturity composition reflecting total marketable outstanding Treasury debt.[1] Corporates are benchmarked to Moody's Seasoned Aaa and Baa yields, consisting of corporate bonds with remaining maturities of at least 20 years. Lastly, municipal bond yields are benchmarked to the Bond Buyer State & Local Government Bond Index, consisting of mixed quality general obligation bonds with average rating of Aa2, and approximately 20 years to maturity. Over the next decade, Treasury notes and bonds are expected to return between 1.5% and 3.0% per annum, depending on maturity. Returns will be lower than average yield to maturity across much of the yield curve due to the projected capital losses. Bond prices are inversely related to interest rates, and as the latter begin to rise from their current lows, bond prices will decline resulting in capital losses. The losses will be amplified the further out the bonds are on the yield curve (see Figure 2).

One way active investors can shield their bond portfolio is through underweighting long-term bonds in favor of shorter-term maturities as interest rates begin to rise, and subsequently rebalance for higher yield as rates stabilize. Another way to protect against capital losses and gain additional investment income – assuming an upwardly sloping yield curve – is by rolling down the yield-curve. This roll-down return is manifested in a price increase of a bond whose term to maturity, and consequently required yield, is decreasing. Benefits are maximized when the portfolio is near the steepest part of the curve, which will change with time but is currently around the 7-year maturity (see Figure 3). In a rising rate environment, the roll-down can mitigate capital losses, or altogether shelter them if the short-end of the curve is steep enough. However, to apply a conservative approach in financial planning, we disregard the potential impacts of active portfolio management and expect Treasury

FIGURE 3: CURRENT YIELD CURVE STEEPEST AROUND 7 YEARS



Sources: Federal Reserve Board, TD Economics

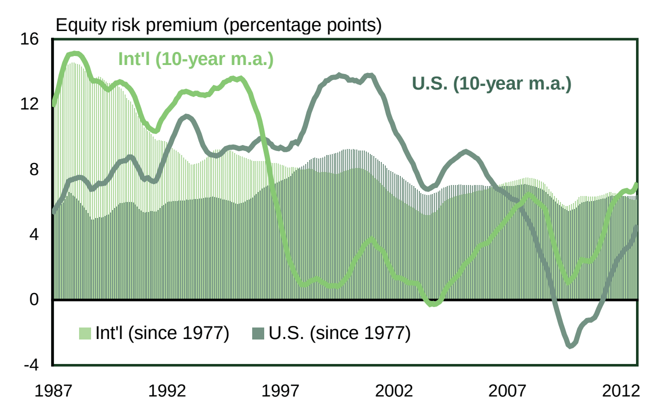
TABLE 1: EXPECTED RETURNS BY ASSET CLASS	
Asset Class	**Avg. Annual Return (%)**
Cash (3-month T-bills)	**2.25**
Bonds	**3.75**
Treasuries (total outstanding)	2.5
Corporates (Moody's Seasoned Aaa/Baa)	5.5
Munis (Bond Buyers State & Local Gov't)	4.5
Equities	**7.0**
U.S. (S&P500)	7.0
Other Developed (MSCI EAFA + Canada)	7.0

Note: Returns are expressed as geometric annual averages over the next ten years.
Source : TD Economics

returns to average around 2.5%.

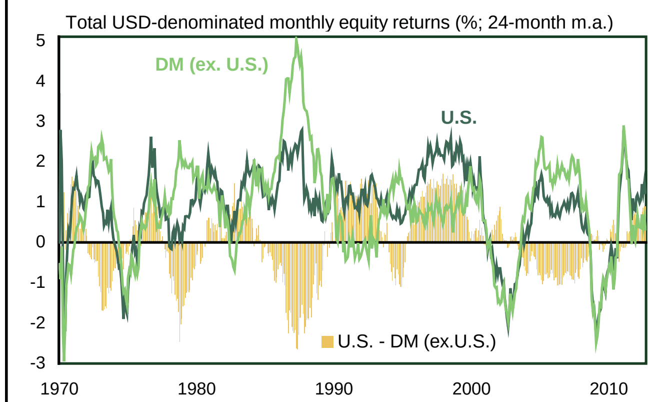
Additionally, bond portfolio returns can be enhanced through the inclusion of corporate and municipal bonds. Depending on credit quality and maturity, these assets should see average returns of between 4% and 6% over the next decade. Due to their generally longer duration, they too will suffer from capital losses, but these should be, on average, lower than similar-maturity Treasuries for three reasons. Firstly, as spread products to Treasuries, these bonds offer a higher coupon return, although at a price of higher risk. Secondly, the higher the yield, the less sensitive bond prices are to an equal magnitude interest rate shock, so the additional spread effectively cushions potential capital losses. Lastly, the spread itself is expected to compress as the economic recovery gains momentum. Many municipal bonds offer an additional benefit of being tax-exempt, which can help the net, or after-tax, bond portfolio returns. In summary, a balanced fixed income portfolio of 50% Treasuries, 35% corporates, and 15% municipals can expect an average return of about 3.75% over the next ten years.

FIGURE 4: LONG-TERM EQUITY RISK PREMIA CONVERGE



Note: Based on total gross USD-denominated returns of the S&P500 and the MSCI EAFA + Canada indexes over the FFR and USD-LIBOR, respectively.
Sources: Standard & Poor's, MSCI, TD Economics

FIGURE 5: U.S. EQUITIES OUTPERFORM OTHER DEVELOPED MARKETS ONLY IN THE NINETIES



Sources: Standard & Poor's, MSCI, TD Economics

Equities to return 7.0%

The equity portfolio is assumed to be made up of two sub-classes of equities: U.S. equities benchmarked to the S&P500 index, as well as International equities benchmarked to the MSCI EAFE + Canada index of 23 developed markets (DM) in Canada, Europe, Australasia, and the Far East.[2] Our assessment of U.S. long-run equity returns is based on two perspectives. The first uses history to determine the long-term equity risk premium (ERP), while the second method utilizes Gordon's growth model. Both methods require the use of simplifying assumptions. The ERP method depends on the idea that history is a good guide of future returns and that the premium is stable, at least over a longer horizon (see Figure 4). The Gordon model, on the other hand, requires us to assume a constant dividend rate of growth, which we equate to nominal output growth. Both the GDP deflator and the CPI are assumed to increase at an average rate slightly above 2% over the next ten years, inline with current 10-year breakeven rates. Estimates from these two methodologies peg the U.S. equity returns over the coming decade at between 6% and 8%, with the midpoint of 7% used as our long-term assumption.

Non-U.S. developed market equities have outperformed their U.S. counterparts in three of the last four decades with the DM equity risk premium estimated to be slightly higher than the U.S. ERP. But, the exceptional performance of U.S. equities during the nineties (see Figure 5) – when they trounced their DM-equivalents – has resulted in marginally

TABLE 2: PROJECTED PORTFOLIO RETURNS

Portfolio	Share of Asset Class in Portfolio (%)				Avg. Annual Return (%)
	Cash	Bonds	Equities U.S.	Equities DM (ex. U.S.)	
Income	10	60	15	15	4.6
Balanced	5	45	25	25	5.3
Growth	5	15	40	40	6.3

Note: Returns are expressed as geometric annual averages over the next ten years.
Source : TD Economics

higher return since 1970. Moreover, developed market equities have recently struggled at the face of the European sovereign-debt crisis which has hampered economic activity in the region. We expect the crisis to continue weighting on European equities over the near- to medium-term, and as such, need to discount the otherwise expected slightly higher return. All told, non-U.S. developed market equities are expected to return approximately 7% over the long-term, matching their U.S. counterparts.

However, it is important to note that investing abroad comes at a price of additional risk, which may include: currency, economic, credit, and geopolitical risks. Exchange rates typically move with economic fundamentals and appetite for risk, but can also be subject to deliberate central bank action. For instance, the Bank of Japan continues to expand its balance sheet in order to stem the yen's advance, while the risk-off induced rise of the Swiss franc was cut short late last year as the Swiss National Bank established a peg at SFr1.2 to the euro. The European sovereign-debt crisis – effectively in its third year – has continued to hamper growth across the continent, with a solution slow to materialize as deep divisions remain. Additional returns could be achieved by investing in Emerging Market (EM) equities, with yields expected to approach low double-digits, but the potential set of risks outlined above are all the more applicable across EMs. Lastly, it is important to keep in mind that estimates presented above are over the long-term horizon, with fluctuations in equity markets possible, and in fact, expected.

Portfolios to return 4.5% to 6.5%

At this point we construct a set of theoretical portfolios and estimate their expected long-term returns by employing estimates for each asset class. Table 2 outlines three theoretical portfolios: an income portfolio weighted towards cash and bonds, a growth portfolio weighted towards equities, and a balanced portfolio which allocates capital more evenly. Returns on these portfolios are expected to range between 4.5% and 6.5%, on average, over the next ten years, but will likely oscillate substantially from year to year. While these expected returns may disappoint some investors, it is important to note that a higher yield may be possible by actively managing the portfolio. In particular, underweighting long-term bonds as rates begin to rise, taking advantage of roll-down, or moving into international equities as geopolitical risks subside, may be some of the strategies to consider. However, active management may require substituting additional expected return for a higher degree of risk, which can be unwelcome when planning for retirement. Moreover, exceeding a prudent financial plan will result in a welcome windfall come retirement, but consequences of underperforming an overly ambitious one could have dire implications for one's standard of living.

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END NOTES

1. Based on: James D. Hamilton and Jing Cynthia Wu, "The Effectiveness of Alternative Monetary Policy Tools in a Zero Lower Bound Environment," Journal of Money, Credit, and Banking, 44, no. 1 (Supplement, February 2012), pp. 3-46.

2. Developed markets, as defined by MSCI, are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom.