

A Reality Check on Your Investments

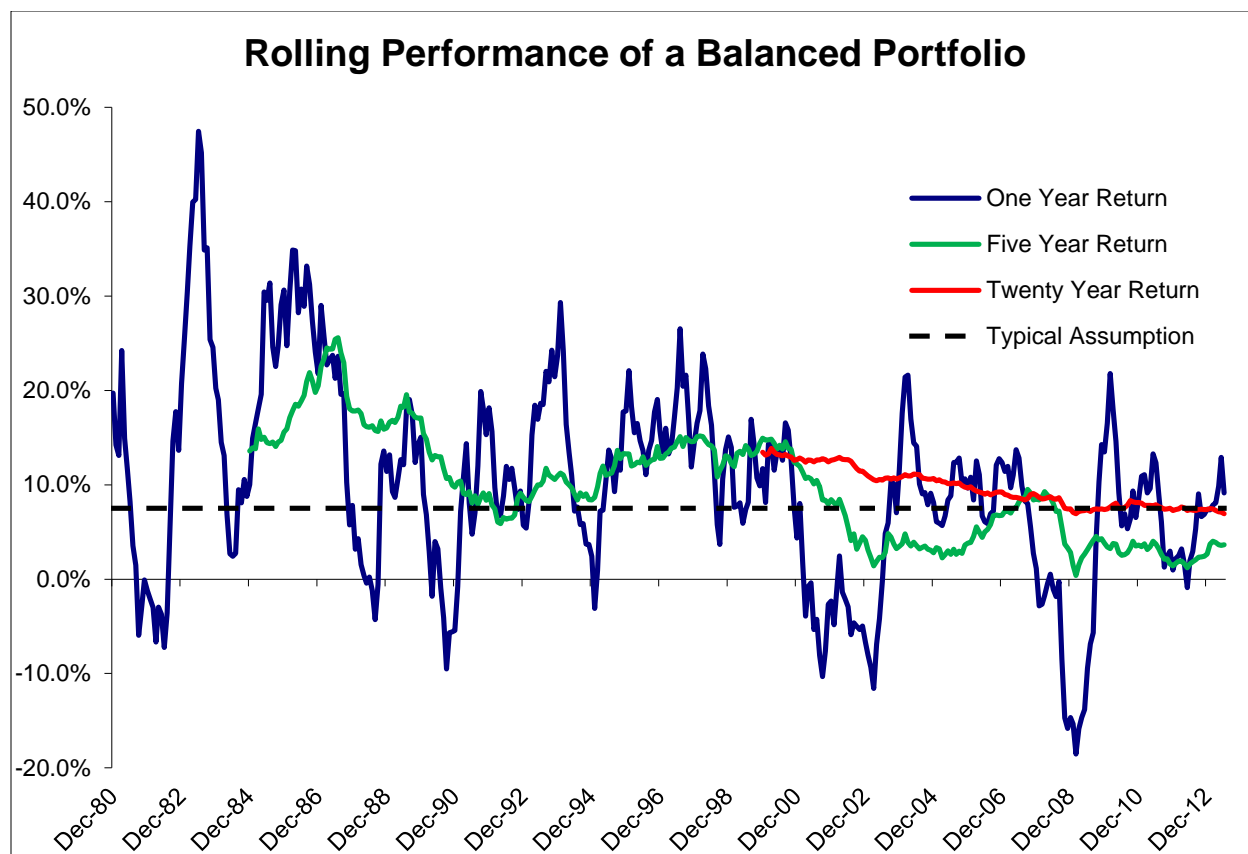
James Gauthier, CFA, MBA
Director, Investment Policy & Research
1832 Asset Management

Whether you are new to investing, a wealthy retiree, or an investment fiduciary, chances are, you have a keen interest on what your investments will earn over time. Ideally, your investments will be structured in a way that is designed to meet your investment objectives over your defined time horizon, and stay within your risk tolerance. Typically, the structure of your investments is determined at the beginning of the investment horizon and one of the most important elements of that structure is the long-term, or policy, asset allocation.

A number of tools, techniques or calculations may be used to determine what the optimal policy asset allocation should be, but ultimately, the result should be driven by some form of future liability. In order to perform the necessary calculations, a number of underlying assumptions must be made including the timing of future savings/contributions and withdrawals, and the expected rates of return of the underlying investments. The timing of cash flows can be very unique, but expected rates of return can be universally grouped into a finite number of asset classes where suitable investments are available, as long as investment horizons are not short-term in nature.

When considering the assumptions to use for expected rates of return, the most widespread problem that is still remarkably being implemented by many today is to use historical rates of return. Even using long-term historical data can be very dangerous as some trends in investing can last many years, yet may not be repeatable. Even if history were to repeat itself from an economic perspective, it is very unlikely that the markets will interpret it (and therefore price it) in the exact same way across all asset classes!

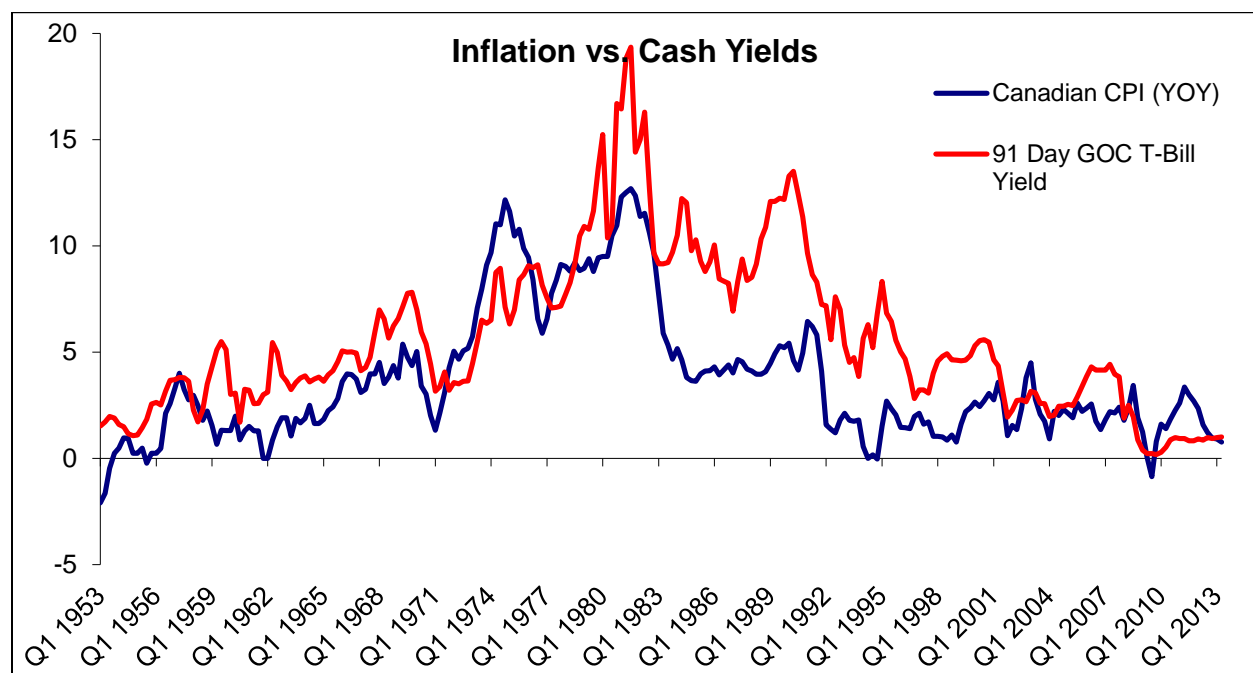
Before we address the issue of determining what may be appropriate for future expected rates of return, it would be instructive to look at the following data for what can be considered a “balanced” portfolio:



Managing a large pool of assets such as a charitable foundation can be a pretty complicated exercise and one that explicitly relies on assumptions about future expected rates of return as previously described. In order to plan for regulatory disbursements, inflation, expenses or other contingencies, a required rate of return may be in the neighborhood of 7.5%, and this might correspond to an assumed policy asset mix of 55% equity, 40% fixed income and 5% cash. The preceding chart demonstrates that over one-year periods, investment returns can vary dramatically from the 7.5% assumption. Increasing the measurement period to five years dampens the results somewhat, but considerable variances still exist from the basic assumption. It is only when the measurement gets extended to twenty years that the realized returns have a reasonable resemblance to the assumption. While there are many different points that can be made regarding this chart, it suffices to say that the longer the investment horizon, the lesser the variability in expected returns.

The expected return for the balanced portfolio in the example above can be dissected into a number of underlying asset classes, each of which have their own expected return and assigned weights as a percentage of the portfolio. Using the weights in the previous paragraph, if the expected returns for equity, fixed income and cash are 9%, 6%, and 3% respectively, the resulting expectation for the balanced portfolio would be 7.5%. Taking the process further, equity could be subdivided by region, market capitalization, investment style, etc. In order to come up with a reasonable expectation for a portfolio return, it may be required to come up with expected returns for 10-20 distinct asset classes.

When it comes time to begin determining what reasonable expectations should be for returns going forward, it is usually easiest to start with an assumption about cash as an asset class. Cash is usually a very small weight in a policy asset allocation as it can be considered the lowest risk/lowest return asset class. In order to determine an expectation for cash returns, one must first have a reasonable expectation for future inflation, as this represents the minimum hurdle rate for purchasing power to be maintained. Comparing Canadian CPI to the yield of Government of Canada 91-Day Treasury Bills (as a proxy for cash returns) going back to 1953 shows the relationship between the two variables:

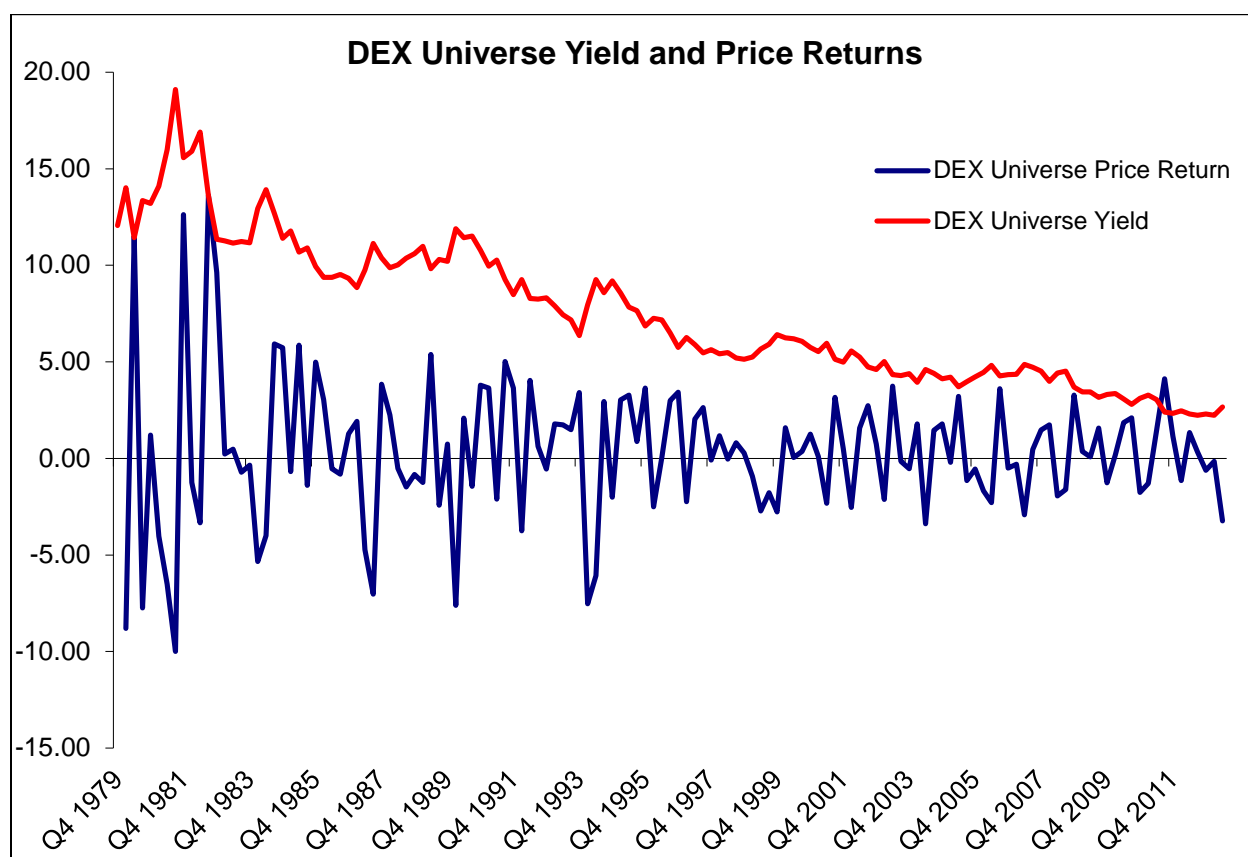


Source: Datastream

If we are focused on a twenty-year horizon, we can note that the average yield over the past twenty years has been 3.2%. If we look at the current yield, however, we are much closer to about 1%. So which is the correct number to use? The answer may be neither. The Bank of Canada has communicated that it has a preferred target for inflation of two percent. Given the success of the Bank over the past few decades at maintaining a level in that proximity, this target appears to be credible. Further to an inflation assumption, it also seems realistic to assume that in a relatively low inflation environment, cash yields tend to be slightly ahead of inflation rates, so that a more accurate assumption for the expected return on cash going forward might be closer to 2.5%. Over the course of the next year, this assumption is most likely not going to be accurate, but it is absolutely critical to remember that these are **long-term forecasts** and what happens in the short run will only have a minor impact on long-term performance. Do not lose sight of the forest for the trees!

Moving out on the risk continuum, we can gauge the outlook for fixed income. Keeping things simple, we can evaluate the broad domestic bond market using the DEX Universe Bond Index as our proxy. By taking on the additional risk factors of longer term to maturity and credit (among others), we can expect to be paid a premium relative to cash returns, so that the expected return of fixed income will be 2.5% + premium. Furthermore, we can break down the total return of any bond into two components: an income return and a price return. The former can be thought of as the realized yield on the portfolio, while the latter is a function of realized gains or losses due to the movement of interest rates (and thus prices) over time.

Firstly, looking at the yield component, if we ignore “unusual” historical circumstances, it would seem reasonable to expect that the yield spread between the DEX Universe and cash should be somewhere around 1.5%. Again, this number will vary from year to year, but over the course of the next twenty years, we expect this would be near the average. Turning to the second component, we must evaluate the impact of price returns on the overall total return. The following chart illustrates the level of yields and price returns since 1980:



Source: Datastream

At first glance, the pattern of the historical quarterly price returns seems to oscillate symmetrically around zero, but the actual data shows that the returns have been positive nearly 55% of the time. This makes sense, and may actually seem low, given that rates have generally declined over the entire period. Some further analysis indicates that price returns have contributed on average just over 1% to the total return each year! Thinking about price

returns going forward, we concluded on the previous page that an expectation for yields going forward should be in the 4% range, which is above the present yield. Therefore, depending on the time it takes to achieve that level, the overall realized yield over the next twenty years will likely be slightly below 4%. Additionally, by assuming that interest rates will be going up in the future, instead of a handsome positive price return which investors have become accustomed to enjoying, a negative impact should be expected. Given the magnitude of the expected increase, however, the impact will be quite modest when “distributed” over the next 20 years. Overall, an annual expected return of 3.75% would seem reasonable going forward, and this is well below the 9.4% annual return that has been generated since 1980.

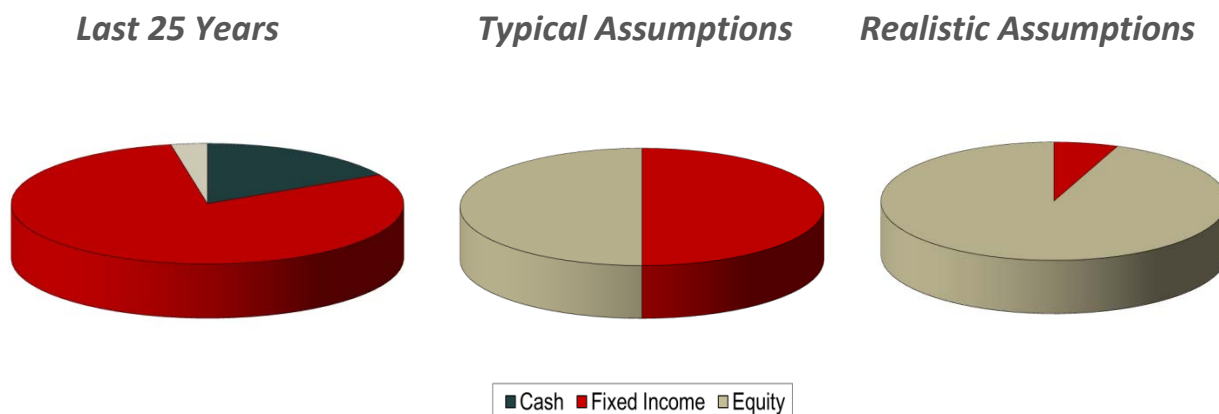
Lastly, we can evaluate the prospects for return in the equity asset class. Analogous to the “higher risk, higher return” comparison between bonds and cash, we apply the same logic when comparing equities to bonds. From just about any perspective, equity securities represent higher risk compared to bonds (assuming the same issuer). It is therefore logical to expect compensation in the form of higher return on an equity investment. In practice, there are many theories about how best to determine an equity risk premium, but for simplicity, we can use the information contained in the 2013 Ibbotson S&P Risk Premia Over Time Report (1926 – 2012) to conclude that a risk premium of around 4% would seem reasonable going forward. Assuming that equity markets are currently fairly valued, this would imply a long-term total return estimate of 7.75% for equities which is, similar to cash and fixed income, below historical longer-term rates of return.

Putting our expected returns together now with the balanced portfolio referenced above generates an expected portfolio return of 5.9%, well below the typical assumption of 7.5%. The ramifications of this should be obvious: those investors in accumulation mode will have to save more or save for longer to compensate for lower expected returns; and those investors that are dependent on the returns generated by their assets will have to make do with less or make adjustments to the policy asset allocation (increase risk) to compensate for lower returns.

As an illustration of the danger of assuming rates of return that are more optimistic than will be realized, we can revisit the example of a charitable foundation referenced earlier. Assume that the fund initially has a principal amount of \$1 million dollars, will have no future contributions, and that instead of earning the required 7.5% rate of return annually the fund actually realizes 5.9%. Each fiscal year, the fund will have to make up for the shortfall in realized returns by paying out funds from principal. This in turn reduces the base from which to earn assets in the subsequent year thus reducing the absolute value of future investment gains. This process compounds until all funds are depleted in just over 26 years!

If lowering the required rate of future returns is not an option, and neither is adding to the principal asset base, then the remaining option to achieve the financial objective is to change the policy asset allocation. This would be referred to as “moving up the risk curve” as you are taking on greater risk to achieve greater return. The three pie charts below show the least risky (as measured by standard deviation of returns) portfolios that could be constructed to generate a return of 7.5% in 3 different scenarios: based on the last 25 years of historical returns; based

on the 9%, 6% and 3% assumptions referenced on page 2; and the more “realistic” assumptions derived in the article.



Source: Morningstar Encorr

Each of the charts above have an expected return of 7.5% (in the case of the last 25 years example, it is actual, not expected). Clearly, however, the nature of the portfolios is radically different ranging from just 3% equity content to 94% equity content. And since equity is the primary driver of portfolio volatility, we can conclude that going forward, you will have to be able to tolerate significantly more risk in your portfolio if you want to continue to generate returns comparable with historical returns. The consequence of taking on greater risk of course is that the potential for greater **negative** returns increases, and acutely more so over shorter time periods.

Conclusion

In the beginning of this article, we emphasized the importance of planning and structuring your investments in accordance with the investment objectives. A large part of the process of determining the structure of your investments is dependent upon assumptions for the return that your investments will generate in the future. The reality of today’s investment environment leads us to believe that rates of return in the future will be materially below historic rates of return and that many investors and/or their advisors are being too optimistic with their current assumptions. The sooner that more realistic assumptions are put in place, the greater the likelihood that a negative financial surprise in the future can be avoided.

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