



TD Economics

Special Report

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EVALUATING LONG-RUN RETURNS IN UNCERTAIN TIMES

The word ‘unprecedented’ has been used so often to describe recent economic and financial events that the adjective has lost its impact. Yet, the description is apt. The global financial system experienced the single greatest shock in 2008 since the 1930s, which produced remarkable volatility and huge swings in financial asset prices.

While markets are starting to show some preliminary signs of stabilizing, enormous uncertainty remains about the near-term outlook. The performance of financial markets will be deeply affected by the lingering economic fallout from the crisis and subsequent restoration of health to financial intermediaries. The problem is that the degree and timing of the fallout is unknown with any degree of certainty. This creates a serious challenge in predicting financial portfolio returns.

Cash products could provide a near zero return in 2009 and early 2010, and bond yields are expected to remain in the low single digits over this time span. Central banks will, however, eventually rebalance monetary policy when the economic and financial clouds finally lift. But, the timing and aggressiveness of those future interest rate hikes will depend greatly on the inflation outlook, which will be determined by how the economies respond to the fiscal and monetary stimulus being provided.

Bond yields will ultimately rebound in future years, as short-term rates rise, governments pay the fiscal costs for the recent and forthcoming stimulus packages, and inflation risks emerge once again.

The deep bear market in equities has also created some huge value investing opportunities for the years ahead. When equities do recover, there should be powerful gains. The problem is recognizing the turn in the market, which will likely only be clear in hindsight. TD Economics released a report entitled “Can Equities Recover?” available

HIGHLIGHTS

- **The near-term financial market outlook is uncertain, but investors still have to build long-term financial plans.**
- **Based on conservative economic assumptions, this paper assesses the expected long-run average annual return on the three major financial asset classes: cash, bonds and equities.**
- **Cash to return 4.00%**
- **Bonds to yield 5.25%**
- **Equities to return 8.00%**
- **Looking beyond the eventual recovery in financial markets, which could take several years, a conservative assumption would be for 6% to 8% average annual returns on well diversified portfolio.**

at www.td.com/economics, which outlines the case for a market recovery, but a return to the prior peak could take years.

Portfolios expected to return 6% to 8% over long haul

The high degree of uncertainty about the near-term profile of financial returns raises a fundamental question about what assumption investors should make in formulating their long-term financial plans. If one is looking at a 3-year horizon, the answer is extremely problematic. The crystal balls are simply too cloudy at the moment about the prospects over this timeframe. However, for investors with a significant time horizon and who will be in the market for at least a decade beyond the next 3 years, we believe that investors should assume a 6% to 8% per annum rate of return on a well diversified portfolio. To understand why,

we need to assess the prospects for the major financial asset classes: cash, bonds and equities.

Cash to return 4.00%

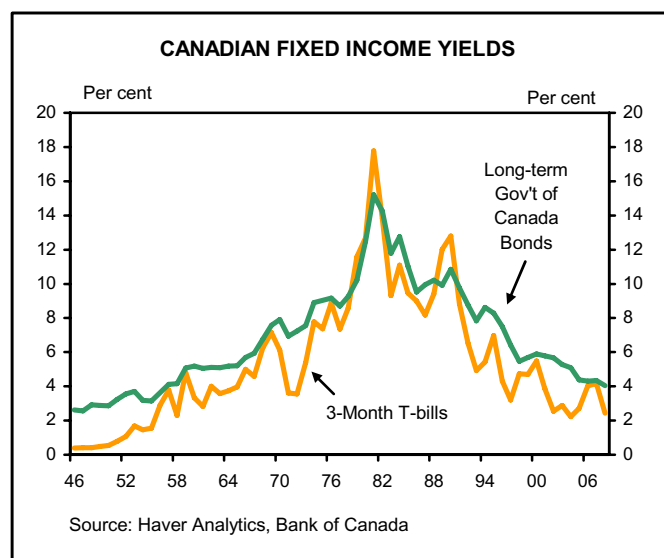
The traditional benchmark for the return on cash is the yield on 3-month T-bills, which is anchored by the level of short-term rates set by the Bank of Canada. The central bank has an explicit inflation target of 2%. Since adopting that target in December 1993, the average rate of inflation measured by the Consumer Price Index (CPI) has been 1.9% and the average yield on 3-month T-bills has been 4.02%. There is every reason to believe that the Bank will be successful at keeping inflation at an average of 2% over the long haul, and so the return on cash is likely to remain close to the average posted over the last 15 years.

Bonds to deliver 5.25%

In 2008, TD Economics released a study entitled “Canadian Long-term Real Interest Rates” available at http://www.td.com/economics/special/freedman_nontech.pdf. The report made the case that, under the assumption of 2% inflation, the long-run equilibrium yield on Government of Canada (GoC) 10-year bonds should average 4.75%.

From the projection on 3-month T-bills and 10-year federal bond yields, a yield curve can be constructed that plots the interest rates on federal fixed income products, with maturities between 3-months and 30-years. This creates the basis upon which one can forecast the return on the DEX Universe Bond Index, which is the benchmark for returns on Canadian bonds.

In addition to federal bonds, the DEX includes holdings of provincial, municipal and corporate bonds, which carry



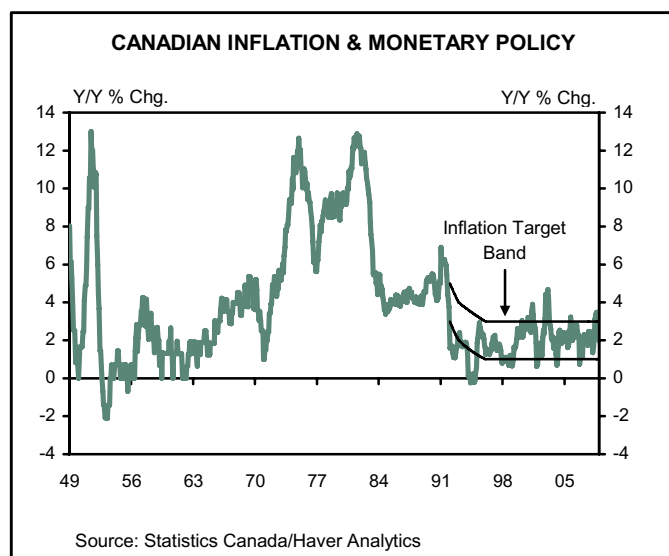
a yield premium over federal bonds, because of the greater financial risks associated with these instruments. Based on historical data from the Bank of Canada, the average medium-term corporate bond premium over comparable federal bonds has been 107 basis points since 1980 – and this seems a reasonable assumption going forward. The premium on provincial bonds has declined since the mid-90s because of improvements in provincial fiscal balances. A reasonable expectation is for long-term provincial bonds to average roughly 42 basis points above their federal counterparts, which is the average spread since 1996.

Applying these assumptions, the outlook is for the DEX Universe Bond Index to average an annual yield of 5.25%. This projection is based purely on the expected level of yields. It does not take into account capital gains or losses on the instruments, which are expected to largely net out.

Equities to deliver roughly 8%

For most financial plans, equities are divided into three categories: Canadian equities that use the S&P/TSX Index as a benchmark, U.S. equities represented by the S&P 500 Index, and international equities in the developed world overseas represented by the MSCI Europe, Australasia & Far East Index (EAFE) Index.

Two approaches are taken in estimating the long-term return. The first is a relative financial returns approach that takes the projected level of national interest rates and adds an appropriate equity risk premium (ERP). This premium reflects the greater uncertainty in the financial returns on stocks and the inherent volatility in equity markets. The second approach is based on economic fundamentals, which relates the return on equities to projections



of corporate profits and dividend yields.

Risk premium points to 8.50% equity return

Most of the academic analysis on equity risk premiums has been done for the U.S. market. The table to the right shows a variety of estimates for long historical periods. Based on these assessments, the historical average ERP was approximately 5.6%. A weighted average of the ERP for the stock markets in the EAFE over the period of 1900 to 2000 was 5.7%. Canada had a lower risk premium of 4.6% over the last century, but it is not clear why.

Over this decade, however, there has been a significant decline in the U.S. estimates of the ERP, with the central tendency dropping to around 3.3%. This may reflect the fact that on an after-inflation and after-tax basis bond and cash investments were not providing adequate returns for wealth accumulation. The result has been to force investors to take greater exposure to equities, and this in turn lowered the risk return premium required to attract investment in stocks.

The long-term outlook is for interest rates to remain modest, with cash at 4.00% and bonds at 5.25% in Canada. Yields will be slightly higher in the U.S., corresponding to the weak fiscal outlook, while yields in overseas industrialized markets will vary around the Canadian level. Overall, this implies somewhat higher average yields than existed prior to the credit crunch, but not dramatically so. Consequently, the U.S. ERP could be higher than 3.3%, but not as high as the century average of 5.6%. If we take the mid-point as a guide, the implication is a U.S. ERP of 4.4% and there is little reason to expect a significant variation in other markets.

Adding the ERP to the expected level of short-term interest rates (the risk free rate of return) implies that Canadian and European equities should deliver a return of 8.40% and U.S. equities should deliver a return of 8.65%, with the latter reflecting slightly higher U.S. interest rates.

Earnings plus dividends suggests equity return of 7.50% to 8.00%

A second approach is to assume that the return on equities is based on future corporate earnings growth plus dividends. In other words, assuming no trend increase in price-to-earnings ratios over the long haul, stock prices will rise at an average annual pace equal to the growth in corporate profits, on top of which investors receive dividends.

The forecast for corporate profits is largely determined

Estimates of U.S. Equity Risk Premium (ERP)		
Long-term historical estimates	Years	ERP
Ibbotson*	1926-2001	5.24%
Welch	1870-2002	5.50%
Dimson, March & Staunton	1900-2000	5.60%
Fama & French	1872-2000	5.60%
Mehra & Prescott	1890-1979	6.00%
Siegel	1926-1990	6.10%
Estimates are geometric mean less short-term gov't debt except * which is less long-term gov't debt		
Recent estimates	Year	ERP
Arnott & Bernstein	2000	2.40%
Warren Buffet	2001	3.00%
Frank Russell	2002	3.00%
Goldman Sachs	2002	3.00%
Shoven	2001	3.25%
CFO survey by Graham and Harvey	2005	3.66%
Ibbotson & Chen	2003	3.97%
Alliance Bernstein	2002	4.50%
Source: Survey of academic papers by TD Economics; see bibliography		

by long-run projections for productivity, population and other structural economic factors. The assumption is that economies can only grow so fast without causing inflation to emerge, and should price pressures arise the central banks will take action to weaken economic growth. As a result, there is a non-inflationary, or potential, pace of growth that can be sustained over the long haul. That growth rate will influence how fast profits can rise on a sustained basis over periods of time.

Profits will tend to rise faster than the overall economy during expansions, but they will also fall more during economic slowdowns or downturns. As a result, over the long-term, the share of corporate profits to national income (i.e. nominal GDP) should be relatively stable. This implies that the forecast for profits should match the forecast for nominal GDP, the latter of which is real GDP plus inflation.

We assume that the central banks will be successful at keeping inflation relatively stable. However, structural changes in the economy, largely arising from weaker labour force growth due to an aging population, will lead to a slower trend of real GDP growth. In Canada, the trend rate of economic growth is expected to moderate to an average rate of 2.5% in the coming decade, resulting in nominal GDP growth of 4.5%. U.S. and EAFE countries will also see a reduced trend rate of growth.

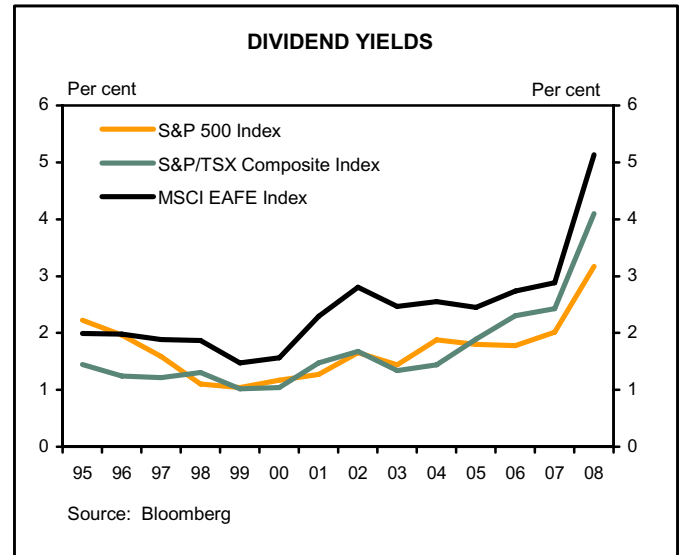
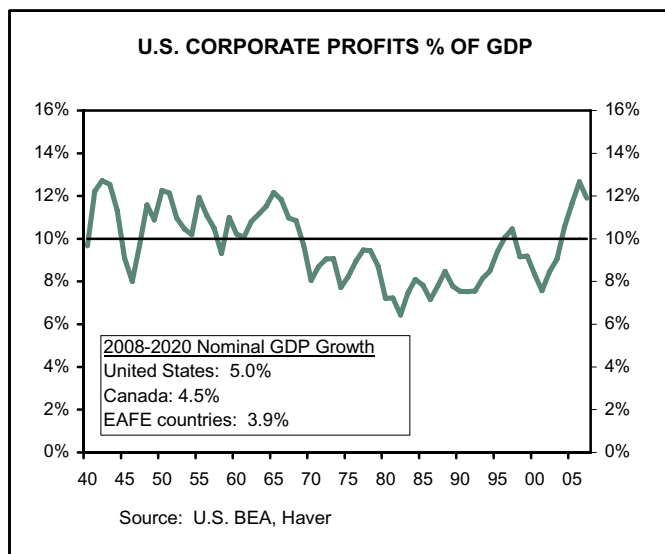
Economic and demographic projections are consistent with Canadian corporate profits rising at about a 4.5%, while profits in the U.S. rise at 5.0% and EAFE advance

3.9%. The higher trend rate in the U.S. reflects modestly higher inflation and better productivity. The lower profit growth overseas is a reflection of the relatively high weight of Japan and a few slow growth European countries in the EAFE index.

However, these profit projections likely understate the future earnings for the large cap stocks in the S&P/TSX, the S&P 500 and the MSCI EAFE index. The reason is that between 40% and 50% of the earnings of the companies in the S&P/TSX and the S&P 500 come from sales abroad and are therefore driven by global profit growth. We do not have an estimate of the share of foreign earnings in the EAFE, but it probably is not very different from the Canadian and U.S. figures.

Based on projections for long-term global economic growth, a case can be made that the profit growth projection for the equity indices could be understated by as much as 1 percentage point. This leads to the assessment that the profits in Canada will rise at roughly 5.5%, U.S. profits by 6.0% and EAFE profits by 4.9%.

To this we must add dividends. Over the past 15 years, the average dividend yield was 1.5% for Canada, 1.8% for the U.S. and 2.2% for EAFE. However, there has been a clear rising trend over the decade and a half. At the end of 2007, the dividend yield was 2.4%, 2.0% and 2.9%, respectively. Dividend yields then soared in 2008, due to the correction in stock prices that were not met by a comparable decline in dividend payments, but this is a temporary event. For the purposes of the forecast, we will assume a dividend yield of 2% in Canada and the U.S. and 2.5% in the EAFE. This implies an average annual return on the S&P/TSX of 7.5%, the S&P 500 of 8.0%



and the EAFE of 7.5%.

Portfolios to return 6% to 8%

We can now assess the implications for financial portfolios.

Cash returns will be quite low, with T-bills yielding an average of 4%, while term deposits and short-term GIC rates with a term of 1-year or less will be lower. The conclusion is that cash is purely for capital preservation, since the return will only offset inflation and income taxes – and for some products it might not even do that.

Bonds will do a bit better, with the benchmark universe of Canadian bonds yielding 5.25%, well above GIC rates of similar term. However, on an after-tax, after-inflation basis, the return on fixed income will be quite meagre. The return can be heightened with greater exposure to corporate bonds, but this carries more risk.

The low yield on fixed income products means that investors will likely have to have a greater weighting of equities in their portfolios than in the past in order to produce significant wealth accumulation. But, this also implies more risk tolerance. Absolute returns will be higher on equities than on cash or fixed income, and equities receive a superior tax treatment that boosts the after-tax return as well. However, hopes for sustained high single-digit or double-digit equity returns will likely be disappointed.

Based on an equity risk premium approach, equities should provide 8.50%. A forecast of profits plus dividends points to a return of 7.50%. For planning purposes, we will average the two and assume an equity return of 8.00% before fees, inflation or taxes over the long haul.

TD Waterhouse has provided a list of recommended portfolio asset mixes, with higher exposure to equities for those that have greater tolerance for volatility in their portfolios or longer investment horizons. Applying the projected returns for cash, bonds and equities to the asset weights leads to the conclusion that investors may wish to build their financial plans on the assumption of returns between 6% and 8%.

Conclusions

Financial markets are vulnerable to significant volatility in the current uncertain environment. Equities should post a powerful rally when the storm clouds have past, but the timing is unclear. Cash and bond yields will be very low in 2009 and 2010, but should eventually rise when economic conditions are on the mend. However, investors should not base their long-term plans on near-term gyrations in the financial markets.

It should also be stressed that the recent financial crisis could impact the long-run trend rate of returns, but it is difficult to assess the full extent of the impact at the moment. For example, will fiscal stimulus efforts to combat the fallout from the credit crunch lead to large sustained deficits for decades to come that will create sustained upward pressure on bond yields? It is hard to say the impact on yields without knowing how big the deficits will ultimately be. Another example is the question of whether the deep equity contraction of 2008 will raise the equity risk premium demanded by investors over the long-run? In this paper, an effort was taken to factor in some of the long standing effects of the credit crunch, but we will know

LONG-RUN FINANCIAL PROJECTIONS	
Financial Instrument	Average Annual Percent Return
Cash (3-Month T-bills)	4.00%
Bonds (Dex Universe Bond Index)	5.25%
Equities	
Canadian (S&P/TSX Composite)	8.00%
U.S. (S&P 500 Composite)	8.00%
International (MSCI EAFE)	8.00%
Source: TD Economics	

much more when the recovery has taken hold. And, when more information is available, the analysis will be revisited.

In the meantime, investors still have to build long-term financial plans and they need to include an assumption about the long-run return on their portfolios. Looking beyond the immediate uncertainty and the eventual market recovery, the long-term outlook based on economic and financial fundamentals suggests that a well diversified portfolio of cash, bonds and equities should deliver an average annual return of 6% to 8% — before inflation, taxes, fees or the impact of foreign exchange movements. There will be individual years with much stronger and weaker returns than the average, but we feel that the projected range is a conservative and prudent basis upon which to build long-term financial plans.

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PROJECTED AVERAGE ANNUAL RETURN ON REPRESENTATIVE PORTFOLIOS OVER NEXT DECADE						
Portfolio	Asset % Share of Portfolio					%
	Cash	Bonds	Cdn Equity	U.S. Equity	Int'l Equity	Rate of Return
Income	20	50	7	12	11	5.8
Income & Moderate Growth	10	45	11	17	17	6.4
Balanced Growth	5	35	15	23	22	6.8
Aggressive Growth	0	20	20	30	30	7.5
Maximum Equity Growth	0	0	25	38	37	8.0
Source: TD Economics, TD Asset Management Inc.						

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Bibliography on Equity Risk Premium Estimates

1. Arnott, Robert D. 2002. What Risk Premium is "Normal"? *Financial Analysts Journal*, vol. 58(2): 4-85.
2. DeLong, J. Bradford & Magin, Konstantin. 2008. The U.S. Equity Return Premium: Past, Present and Future. *Working Paper*.
3. Derrig, Richard A. & Orr, Elisha D. 2003. Equity Risk Premium: Expectations Great and Small. *North American Actuarial Journal*, vol. 8(1): 45-126.
4. Devaney, Michael. 2008. Will Future Equity Risk Premium Decline? *Journal of Financial Planning*, April 2008 Issue: Article 5.
5. Graham, John R. & Harvey, Campbell R. 2005. The Long-Run Equity Risk Premium. *Finance Research Letters*, vol. 2(4): 185-194.
6. Harper, David. 2002. Price of Risk (Equity Risk Premium) – Reader Question. *Bionic Turtle*. http://www.bionicturtle.com/learn/article/price_of_risk_equity_risk_premium_reader_question/
7. Harper, David. 2004. Calculating the Equity Risk Premium. *Investopedia*. <http://www.investopedia.com/printable.asp?a=articles/04/020404.asp>
8. Ibbotson, Roger G. & Chen, Peng. 2003. Long-Run Stock Returns: Participating in the Real Economy. *Financial Analysts Journal*, vol. 59(1): 88-98.
9. Shoven, John B. 2001. What are Reasonable Long-Run Rates of Return to Expect on Equities. *Stanford University, Paper presented to the Social Security Advisory Board.*
10. Siegel, Jeremy J. 2002. Stocks for the Long Run. *Mcgraw-Hill Professional*.
11. Siegel, Jeremy J. 2006. Stocks: The Asset of Choice for the Long Run. *Yahoo Finance*. <http://finance.yahoo.com/print/expert/article/futureinvest/2881>.
12. Townsend, Henry. 2003. The Expected Rate of Return for Equities: a Ten-Year and a Thirty-Year Forecast. *Business Economics Articles*. http://findarticles.com/p/articles/mi_m1094/is_4_38/ai_111856309/print.
13. Welch, Ivo. 2000. Views of Financial Economists on the Equity Premium and on Professional Controversies. *Journal of Business*, vol. 73(4):501-537.