



The Equity Risk Premium for Canada

by Rajiv Silgado

The equity risk premium (ERP), or extra return investors can earn from taking on the higher risk of investing in stocks versus 10-year Government of Canada bonds, averaged about 3.25% from 1926 to the turn of the century, and close to 2% for the last half of the century. Our estimate for the ERP for Canadian equities over the next 10 years is higher than for both those periods — 3.5%.

Although it is not common to read about equity risk premiums in the future that are higher than past premiums, we believe there are sound reasons for this:

- Canada's past ERP suffered from much higher real bond yields and from relatively poor equity performance, in part due to a concentration on commodity-based companies.
- Canada's economic and financial environment is supportive of productivity growth and attractive valuations
- The projected equity risk premium is lower than that actually realized in the U.S. in the past

In the following paragraphs we describe how we came to each of our estimates.

Inflation: Our base case is that inflation will average 2.5% per annum over the next 10 years. This forecast derives mostly from the Bank of Canada's targets for the core rate of CPI. The band that the BOC has set itself for future core CPI is 2-3%. It is unlikely that the BOC will miss the inflation range in either direction. Thus, 2.5% as a central forecast for future inflation seems a good bet. The current spread between longer-term nominal GOC bonds and real return GOC bonds also supports this number. That spread is hovering around 2.2%. In effect, the fixed income markets expect inflation to average

between 2 and 3% over the remaining term of these bonds. Further support for this level of inflation is provided by the general outlook for growth in the Canadian economy and in other developed economies.

Chart 1 in the Appendix shows Canada's long-term trend in inflation.

Income: As of the end of July 2002 the dividend yield on the S&P/TSX composite index was 1.9%. The payout ratio at this time was very close to its long run average of 51% of earnings. As a result we don't expect much movement in the dividend yield over the forecast period unless market multiples and/or inflation changes significantly. So we leave that as is.

We do know, however, that in addition to paying dividends companies have been buying back their shares — another, more tax efficient way of rewarding investors. Unfortunately there isn't good historical or current data available on net buyback activity aggregated at the index level. What we do know is that the banking sector, which comprises approximately 20% of the index, is buying stock at the rate of 3-5% per annum. If we estimate gross purchases by these companies to be 5%, then this industry group alone would contribute 1% at the overall index level. To that we can add at least another 0.25% in gross buybacks by other companies in the other more mature segments of the market to make this number 1.25%. However, we believe that we do need to subtract about 0.50% in new stock issuance from this total. This 0.50% comes from the issuance of small amounts of stock for a variety of reasons, including employee stock options related issuance. The effect of all of this is that net share buybacks should add 0.75% to the dividend yield, for an all in income return from equities of 2.65%.

Real earnings growth: We estimate that corporate earnings will grow at a 3.5% real rate over the next 10 years. Two main factors support this estimate – expected real economic growth and the expected earnings growth of the current constituents of the S&P/TSX Composite Index.

1. Real economic growth is determined by three factors:
 - growth in labor supply
 - growth in capital supply
 - productivity growth

We have assumed that capital and labor will be used in the same proportions that they are currently, and thus we need only forecast growth in the labor supply. The rate of population growth in Canada averaged 1.6% per annum over the last 50 years. It is expected to grow at a somewhat slower rate in the decades ahead. Allowing for demographic change (declining fertility rates and an aging population), we can expect 1.0% growth over the next 10 years, assuming no material change to immigration policy. Further assuming no change to the participation rate, the labor force will grow at the same rate as population growth.

Total factor productivity growth (i.e., economy-wide productivity) in Canada has been shown to grow at approximately the same rate as US productivity since 1960 (Cerisola and Chan-Lau, *Tales from Two Neighbors: Productivity Growth in Canada and the US*, IMF Working Paper WP/00/169, October 2000). Average productivity growth in the US over 1960-2001 was 1.9% per annum (source: OECD). By comparison, the rate of productivity growth in Canada over the same period was 2.0% per annum (source: Cansim). For the US ERP work we forecasted 2.0% per annum, so a similar rate should apply to Canada as well.

Corporate profits as a share of GNP have been 9.9% per annum on average since 1960 (source: CanSim). Profits are currently 10.4% of GNP. Since this is close to the long-term average, we would not anticipate corporate profit growth to differ significantly from the rate of general economic growth.

In summary:

- Labor force growth = 1.0% per annum
- Productivity growth = 2.0% per annum
- Real Economic growth = 2.0+1.0 = 3.0% per annum

Over the last 40 years the TSX's nominal operating earnings have grown at a slightly faster pace than GDP growth: 8.6% versus 8.2%. We expect this outperformance to continue, particularly since the TSX remains somewhat more growthy than the overall economy. Thus, if the real economy is expected to grow at 3.0% we believe that a 3.5% estimate for real growth in TSX earnings is justified.

2. The current composition of the S&P/TSX Composite index also lends credence to our estimated growth in real earnings. The table below shows the current weights of the major industry groups in the index. It also shows the historical growth of earnings of each of these groups, as well as the projected contribution to the future growth of earnings for the index as a whole.

Current Composition of S&P/TSX Composite

Sector	Current Weight	Historical growth in earnings	Historical growth x current weights
Metals	4.83	3.50%	0.20%
Gold	4.91	11.60%	0.60%
Oil & Gas	14.6	11.50%	1.70%
Paper & Forest	2.14	5.00%	0.10%
Consumer	4.43	5.50%	0.20%
Industrial	13.4	9.50%	1.30%
Real Estate	0.64	13.00%	0.10%
Transportation	4.17	6.10%	0.30%
Pipelines	2.98	10.30%	0.30%
Utilities	6.11	9.00%	0.60%
Communications	4.24	11.30%	0.50%
Merchandising	5.41	9.80%	0.50%
Financials	29.8	11.60%	3.50%
Conglomerates	2.33	11.60%	0.30%
S&P/TSX Composite	100	8.90%	9.97%

Chart 2 in the Appendix represents the S&P/TSX Composite sector weights over time.

If future earnings growth in each sector approximates its historical level then we would expect nominal earnings at the overall index level to grow almost 10% per annum going forward. However, this is not likely to be true, for two main reasons: the sector weights will not remain static over the next 10 years, and earnings growth will exhibit some level of volatility. Both of these will introduce noise into our “historically based” expectation. Moreover, given that nominal GDP growth is expected to be in the range of 5-6%, we would expect nominal earnings growth to be closer to 6 - 6.5% than to 10% (the past earnings growth rate was earned during a period when nominal GDP growth was regularly 7% or more, due to higher inflation). After subtracting our inflation forecast (2.5%) from these estimates we once again get close to 3.5% real growth in earnings.

Re-pricing: Conservatively we estimate that the market level as of July 2002 month end would support no change in the P/E multiple being accorded to Canadian equities. We come to this conclusion from the following:

1. At the end of July 2002 the trailing P/E on an operating income basis was 23.4, while the forward looking P/E based on consensus estimates was close to 18.0. This compares with a long run average P/E of 17.4 (See Chart 3 in the Appendix). The standard deviation around that mean estimate has been 6.75. Thus, while the trailing P/E at 23.4 was higher than its historical mean, it was still comfortably inside the one standard deviation threshold. Arguments that support a higher P/E level include: future earnings that are less volatile and growing at a higher real rate than in the past, reasonably stable and low inflation and interest rates, continued financial innovation, and lower taxes.
2. Another way of estimating potential re-pricing is to calculate an equilibrium P/E ratio, using the dividend growth model.

$$P = \frac{\kappa E}{r - g}$$

$$\frac{P}{E} = \frac{\kappa}{r - g}$$

Where r is the discount rate, g is the growth in earnings per share, and κ is the payout ratio for dividends. Our forecasts for $r=8.7%$, and $g=6.75%$. The payout ratio is 50%. Putting these together we end up with an equilibrium P/E of 25.6. This would certainly be much higher than the historical average. We do not expect the P/E ratio to be this high on an ongoing basis, but this equilibrium number, along with the prior analysis, does support our view that future re-pricing will be centred around an expectation of zero.

	Central Expectation
Inflation	2.50
Dividend yield	1.90
Net Buybacks	0.75
Real earnings growth	3.50
P/E multiple change	0.00
Expected Equity Return	8.65
10 Yr GOC Bond Yield	5.20
Equity Risk Premium	3.45

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Chart 1
Trailing 10 Year Inflation

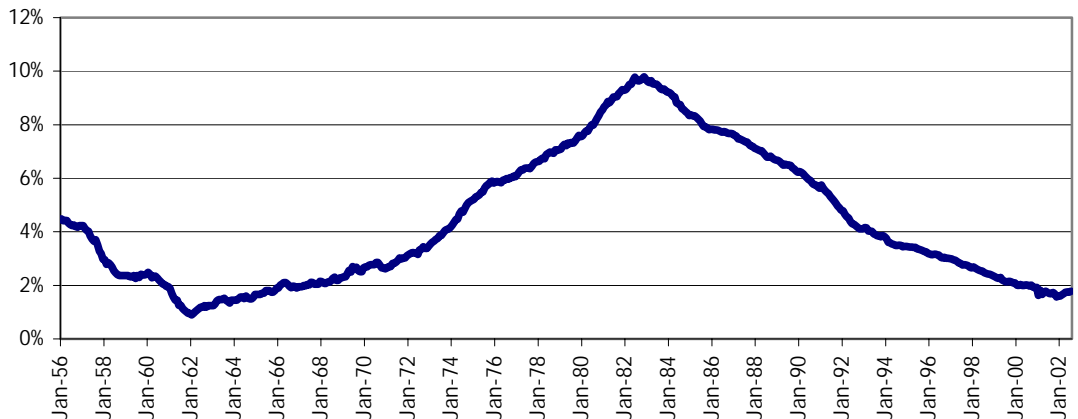


Chart 2
S&P/TSX Composite - Sector Weights

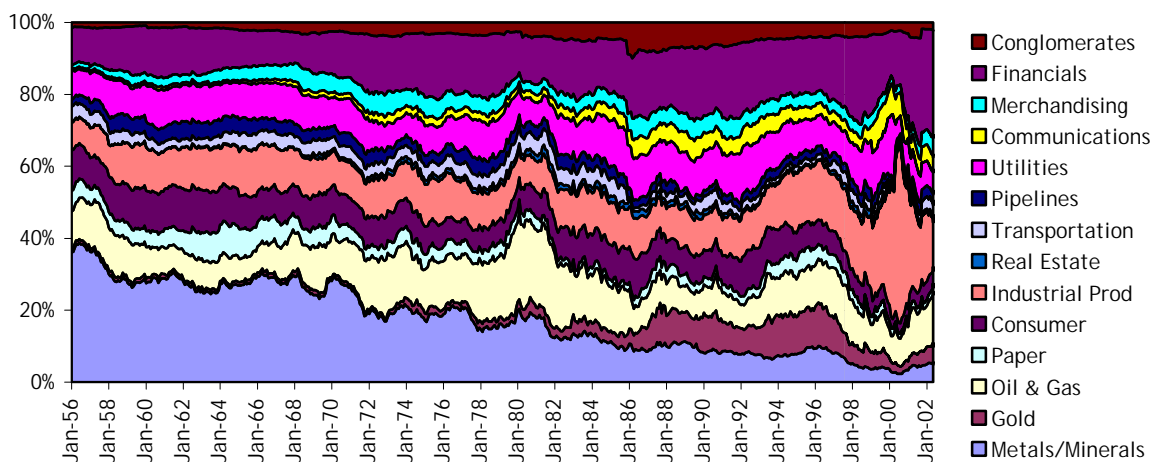


Chart 3
S&P/TSX Composite P/E Ratios

