Q: Reference: Schedule 8 and Pages 37 and 38, Lines 29-2

How does the Ibbotson Associates' "Canadian Risk Premium over Time Report" used by Dr. Cannon define the equity risk premium?

A: The equity risk premium is calculated by subtracting the long-term arithmetic average of the yield on the riskless asset from the long-term arithmetic average stock market total return (measured over the same period as the riskless asset). Then the arithmetic mean (simple average) annual return for the two components is calculated. Once these averages are computed, the average for the riskless asset is subtracted from the average stock market return to form the estimate of the equity risk premium. For example, if Canada had an average stock market return of 12.50 percent and an average yield on its riskless asset was 8.00 percent, the equity risk premium would be 4.5 percent (12.50 - 8.00).

Riskless Asset

From 1936-1957, the yield on the Canadian long-term government bond from the Canadian Institute of Actuaries was used to represent the riskless asset. Generally the income return is used to represent the riskless asset since it is the completely riskless portion of a bond's return (Treasury securities are subject to price risk). Unexpected changes in yields will cause capital losses or gains in the fixed-income securities. Historical income returns are unbiased estimators of the returns that investors expected. During the 1936-1957 period, all the necessary data was unavailable to calculate the income return. Therefore, the year-end yield was used to approximate the riskless return for the following year, as it was the unbiased estimate of expected return at that point in time.

From 1957 to present, the income return is calculated from yields provided by the International Monetary Fund International Financial Statistics. The Canadian Long-term Government bond income return is used. Long-term series refers to issues with original maturity of 10 years or more. Returns are calculated assuming a single bond is bought at par (i.e., the coupon equals the market yield) at the beginning of each period. The bond is "held" over the period and "sold" at the end of the period at the then-prevailing market yield. The end-of-period price is calculated as a function of the coupon, yield, and maturity remaining at period-end. The return in excess of yield (capital appreciation) is then derived as the change in price over the period, divided by the beginning-of-period price (i.e., divided by par). The yield is converted to an income return by lagging it (dividing it by 12) one period.

Market Returns

The Canadian market is represented by the TSE 300 and, since 2002, by the S&P/TSX Composite Index. From 1957 to present, the Toronto Stock Exchange has provided market returns for the TSE 300 and the S&P/TSX Composite Index. Before 1957, the Canadian Institute of Actuaries provided market returns. The TSE 300 Index is a market-float-weighted index of 300 of the largest capitalized, Canadian-incorporated securities traded on the Toronto Stock Exchange (1936-2001). The market value of the outstanding index of the shares is adjusted in order to subtract significant controlling blocks, resulting in the adjusted market float value. Since 1977, dividends have been reinvested at the index level on a daily basis.