

Q. McShane Evidence - Equity Market Risk Premium, page 63-71

- a. Please indicate whether Ms. McShane judges equity markets to be affected by interest rate changes.**
- b. Please confirm that any interest rate changes are included in the return from equities, but not in the bond “income” returns.**
- c. Please provide the market risk premium estimates in Table 10 where the bond income return is subtracted from the equity income return, so that the risk premium estimates are consistently estimated.**
- d. Please provide any academic references in published journal articles or books that would estimate the equity market risk premium by only looking at part of the return from holding bonds but all of the return from holding equities. In this sense academic means published by a professor at a university in an academic journal not a consulting report.**
- e. Please indicate the first testimony filed by Ms. McShane that estimated the market risk premium using bond income returns, rather than actual returns.**
- f. Please confirm (page 84) that when inflation was high required equity returns were high, that is positively related, but the higher discount rate caused equity prices to be lower than they otherwise would have been resulting in a negative ex post (after the fact) relationship between inflation and equity returns. As a result, there was a positive relationship between expected inflation and expected equity returns. If Ms. McShane disagrees please explain why this orthodox explanation is invalid.**
- g. Please explain why Ms. McShane makes no use of current survey evidence of the market risk premium.**

- A.
 - a. Yes. All other things equal, rising interest rates are negative for equities and vice versa.
 - b. The equity returns would include the effects of changes in interest rates. The bond income returns do not. The bond income returns are intended to be a proxy for the risk-free rate. To be a measure of the risk-free rate, the proxy should not be affected by changes in interest rates.
 - c. Ms. McShane does not have the data to do the requested calculations. Nevertheless, Ms. McShane disagrees with the premise of the question. The bond income return is measuring the risk-free rate.
 - d. Please see Ms. McShane’s testimony, Appendix A, footnote 7, which provides a citation from the Ibbotson SBBI 2012 *Valuation Yearbook* explaining why the bond income return should be used. The Ibbotson referenced in the title is a professor of finance at Yale University. The textbook, *Principles of Utility Corporate Finance*, by Drs. Leonardo Giacchino and Jonathan Lesser, Public Utilities Reports, 2011, page 234, states: “The most common historic risk-free rate used to estimate the historic market risk premium, i.e., $E(R_m) - r_f$, is the

income return on U.S. Treasury bonds.” They state that of the three components of the bond return, the income return, or coupon payment, reinvestment return and capital appreciation return, only the historic income return is the only truly “risk-free” component.

- e. Ms. McShane does not know precisely, but her testimony in the 2010 GRA explained why income returns should be used. In her filed testimony for the 2010 GRA, she stated at pages 47-48:

The application of the CAPM requires the estimation of the market return in relation to the risk-free rate. While government bonds are considered default-free, they are not risk-free; they are subject to interest rate risk. The total bond returns experienced include capital gains and losses resulting from changes in interest rates over time. The bond income return, in contrast, reflects only the bond coupon payment portion of the total bond return; it represents the riskless component of the bond return. In principle, using the bond income return more accurately measures the historic equity risk premium above the risk-free rate.

- f. Ms. McShane does not disagree with the principle expressed in the question, i.e., that there should be a higher expected return at higher rates of inflation. Her testimony states: "Theoretically, the expected return on equity should be equal to the sum of the real risk-free cost of capital, the expected rate of inflation and an equity risk premium." (lines 1667-1668). Ms. McShane's analysis was assessing whether or not the expected nominal equity market returns would be lower than nominal equity returns have been historically given that the rate of inflation expected in the future is lower than the historical (actual) rate of inflation has been. Her analysis showed that, generally, at lower rates of inflation, real equity returns have been higher than they were at higher rates of inflation and, therefore, no adjustment to the nominal historical equity market returns for lower future inflation was warranted.

The observation that real rates of return have been higher at lower rates of inflation is consistent with the documented negative effect on real economic activity and corporate profitability of high rates of inflation. Eugene F. Fama, “Stock Returns, Real Activity, Inflation, and Money”, *The American Economic Review*, September, vol. 71(4), 1981, documents the negative relationship between high rates of inflation and future real economic growth rates. Steven A Sharpe, “Stock Prices, Expected Returns, and Inflation”, *Finance and Economics Discussion Series 1999-02*, 1999, argued that expectations of real earnings growth are negatively related to expected inflation due to declines in productivity which, in turn, impact corporate profitability.

From Ms. McShane's Table 12 at page 68 of her testimony, it can be concluded that the experienced real equity returns have generally been higher at lower rates

1 of inflation. This is consistent with the conclusions in a study on U.S. markets
2 that historically, inflation has not been good for real equity returns. The study
3 found that, over a 200 year period, equities performed best during periods of
4 deflation, returned an average real return of 8% when inflation was in the range of
5 0-5% over the entire period and 10% since 1971, and that while equities have
6 more than kept pace with inflation over the long-term, “the asset class generally
7 does not do well in high inflation years.” (John J. Mullin and Leila Heckman,
8 “Outlook for U.S. Inflation: Lessons from Two Centuries of Financial History”,
9 *Mesirow Financial International Equity*, September 2009.)

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11 Again, these conclusions support the use of historical nominal equity returns
12 without adjustment for lower future inflation for purposes of estimating the
13 market equity risk premium.
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- 15 g. Surveys of market risk premiums are problematic for several reasons. First, there
16 appears to be a significant amount of circularity in the results. Pablo Fernandez,
17 along with Javier Aguirreamalloa and Luis Corres, publishes an annual survey of
18 market risk premiums. Of the 1650+ responses to the 2102 Fernandez survey
19 (“Market Risk Premium used in 82 countries in 2012: a survey with 7,192
20 answers”) that provided the source of their estimates, close to 85% of the
21 respondents appear to use other published sources, rather than their own estimates
22 (page 10). Second, it is not clear with what risk-free rate the survey market risk
23 premium estimates are intended to be applicable. The survey does not specify
24 whether, when they use their reported estimates of the equity market risk
25 premium, respondents use them in conjunction with a long-run average risk-free
26 rate or whether they make adjustments to the estimated market risk premium to
27 account for differences between the long-run average and prevailing risk-free
28 rates. Third, the survey does not specify what other adjustments respondents
29 might make if they are using their estimate of the market risk premium to derive a
30 cost of equity for a particular company. For example, analysts frequently make
31 adjustments to the market equity risk premium for the size of the company, as the
32 “market” is dominated by large capitalization stocks and empirical studies that
33 have documented higher returns for smaller companies than predicted by the
34 CAPM. To provide some perspective, using the U.S. equity market as an
35 illustration, such adjustments for size could range from approximately one
36 percentage point for a mid-cap equity to over six percentage points for micro-
37 capitalization equities (Ibbotson, *SBBI 2012 Valuation Yearbook Market Results*
38 *for Stocks, Bonds, Bills, and Inflation 1926-2011*, pages 89-95).