1 **Q.** **Evidence of Ms. McShane Page 51**

2

3 **(a)** **Please provide all evidentiary support for the proposition that relative risk**
4 **can be measured by the ratio of the standard deviations of two undiversified**
5 **portfolios.**

6

7 **(b)** **On page 52 Ms. McShane notes the low R Squared of her regressions, please**
8 **indicate why 32% is low and what the benchmark is for assessing explained**
9 **variance in stock market returns.**

10

11 **(c)** **Please explain in full why she chose the time period 1970-2008 rather than**
12 **the full period for which data is available?**

13

14 **(d)** **Please provide a graph of the actual and fitted values for the two regression**
15 **equations on page 52.**

16

17 **(e)** **Please indicate whether or not the 2.25% on page 53 reflects the intercept of**
18 **the two equations on page 52; if so provide the calculations in full as to how**
19 **she obtained them from the intercept values on page 52. If not please explain.**

20

21 **(f)** **Please explain why the PUB should place any reliance on an unexplained**
22 **factor on the assumption that whatever it is it will repeat itself?**

23

24 **(g)** **With reference to f) above would Ms. McShane agree that one reason for the**
25 **higher returns could be the improved regulatory environment as represented**
26 **by the adoption of forward test years, the removal of the commodity**
27 **function, fuel pass throughs, the increased use of deferral accounts, the**
28 **adoption of ROE formulae etc. If not please explain how these risk reduction**
29 **changes would show up in her regression model when she uses fixed**
30 **coefficients, that is, the risk factors (betas) are constant throughout the time**
31 **period.**

32

33 **(h)** **Please provide citations to any and all Canadian regulatory decisions that**
34 **have approved the use of adjusted betas by "squashing" them with 1.0 as**
35 **indicated on page 54.**

36

37 (a) The relative standard deviation model is one of the models described in Ibbotson,
38 *2008 Valuation Yearbook*, for estimating the international cost of capital.
39 Relative standard deviations are also used in the Goldman modified beta approach
40 for the same purpose.

41

42 (b) The 32% is low because it means that almost 70% of the utility returns are
43 unexplained by equity market returns. The conclusion that the R^2 is low was not
44 based on a specific benchmark but on the observation that over two-thirds of the
45 variance was not explained.

1   (c)   The period 1970-2008 represents the full period for which Ms. McShane had
2   monthly total return data.
3

4   (d)   Attachment A provides the requested graphs.
5

6   (e)   It represents the intercept of the second equation, which is a monthly return,
7   annualized. Specifically, it represents $(1+.00185)^{12}-1 = .0225=2.25\%$.
8

9   (f)   The objective of using a relative risk adjustment is to estimate the expected or
10   required return. Calculated Canadian utility betas have persistently
11   underestimated utility returns; that persistent underestimation needs to be
12   recognized. The explicit recognition of the value of the intercept demonstrates the
13   utility risk premium is approximately .70 of the market risk premium, much closer
14   to the adjusted than to the raw betas.
15

16   (g)   While Ms. McShane acknowledges that the referenced regression analysis covers
17   an extended time frame (i.e., it is not time varying), the conclusion that utility
18   stocks earn higher returns than the single variable CAPM predict is an empirical
19   observation that is not solely related to utility stocks, but to low beta stocks
20   generally (with the converse observed for high beta stocks). As applied
21   specifically to utilities, it is not an empirical observation limited to Canadian
22   utilities, but has been identified as an issue for U.S. utilities as well. Nor is it
23   simply a recent phenomenon. Studies which have identified and attempted to
24   account for the underestimation date back to the late 1970s and early 1980s. If the
25   issue were simply that the failure of the model to explain returns was due to the
26   factors suggested in the question, it is unlikely that academics would have
27   devoted considerable time and effort to attempting to specify models which more
28   closely captured the risk/return relationship. Indeed, various factors have been
29   identified which may account for the empirically observed relationships,
30   including the preferential tax treatment of dividends versus capital gains, the
31   misspecification of the market portfolio (which should in theory include all
32   investable assets), and skewness or asymmetry in returns potential (upside more
33   constrained than downside).
34

35   (h)   Ms. McShane is not aware of any Canadian decisions which have specifically
36   relied on the adjustment methodology. It is widely accepted by U. S. regulators.
37   As she indicated in her testimony, the methodology is a standard method for
38   adjusting betas; it is consistent with the empirical evidence which shows that low
39   (high) beta stocks have achieved higher (lower) returns than the simple CAPM
40   model posits.

Graphs of Actual and Predicted Returns for
Monthly TSX Utilities Index Return