End of Chapter Exercises: Chapter 7 Riskless Rate and Risk Premiums

2. Explain why a six-month Treasury bill rate is **not** an appropriate riskless rate in discounting a five-year cash flow.

   Answer:

   Because it **exposes you to reinvestment risk** – the rate will be different in 6 months. A more appropriate rate would be a 5-year treasury (preferable a zero coupon).

7. When you use a **historical risk premium** as your expected future risk premium, what are the **assumptions that you are making** about investors and markets? Under what conditions would a historical risk premium give you **too high a number** (to use as an expected premium)?

   Answer:

   You are assuming that

   a. The **risk preferences of investors have not changed** systematically over time.

   b. The **average risk investment over time has remained constant**

   c. There is **no selection bias** associated with the period of history that you are looking at.

   If **investors have become less risk averse**, the average risk investment has less risk or if there is a **"survivor market" bias**, the historical risk premium will be too high an estimate of the future expected risk premium.

10. The S&P 500 is at 1,400. The expected dividends and cash flows next year on the stocks in the index are expected to be 5% of the index. If the expected growth rate in dividends and cash flows over the long term is expected to be 6% and the riskless rate is 5.5%, estimate the implied equity risk premium.

    Answer: 5.5%

End of Chapter Exercises: Chapter 8 Estimating Risk Parameters and Cost of Financing

In the problems following, use an equity risk premium of 5.5 percent if none is specified and a tax rate of 40 percent where no tax rate is provided.

3. Biogen Inc., a biotechnology firm, had a beta of 1.70 in 1995. It had no debt outstanding at the end of that year.

   a. Estimate the cost of equity for Biogen if the Treasury bond rate is 6.4%. Answer: 15.75%

   b. What effect will an increase in long-term bond rates to 7.5% have on Bio-gen's cost of equity? Answer: Increase to 16.85%

   c. How much of Biogen's risk can be attributed to business risk?

   Answer: Since Biogen had no debt, **all of its risk is due to business risk.**