

Midterm Answers

1. $72/10 = 7\%$.
2. Treasury bills mature in a year or less, so “locking in” means a guaranteed return for a year at most. When the T-bills mature, Tony will have to reinvest, and his advisor has already told him that rates have dropped—which means that he will earn a lower rate of return when he reinvests.
3.
 - a. With an amortized loan, the average amount borrowed is much less than the initial loan amount, here about half the amount.
 - b. The total interest on a 4-year loan is more than on a 1-year loan because the money is borrowed for a longer period of time.
 - c. \$4,000, because the present value of the payments discounted by the loan rate is the amount borrowed.
 - d. “The shorter the loan, the better” is not true if it is a favorable loan rate (lower than your required return, based on what you can earn on your investments).
4.
 - a. the 15-year zero
 - b. equal
 - c. the 10-year zero
 - d. The 10-year zero
5. A stock price decline will increase the dividend yield, D/P.
6. Shareholders receive dividends, not earnings. It would be double-counting to count today’s earnings plus the future earnings generated by reinvested earnings.
7. The discount rate should be an investor’s required return, which takes into account the returns available on alternative investments (most importantly, Treasury bonds), risk, and anything else that matters to investors. When Treasury bonds pay double-digits, I may require 20% on stocks. When Treasuries pay 3%, I may settle for 7% on stocks. Even though I may have earned an average of 10% on stocks in the past, I’m not going to discount the prospective cash flow from stocks by 10% if Treasuries are only paying 2%.
8. For horizons longer than the duration of the assets, a decline in interest rates reduces the future value of a portfolio, because the long-run decline in reinvestment income more than offsets the short-run increase in market value. Life insurance companies and pension funds have long horizons. [Richard W. McEnally, “Rethinking our Thinking about Interest Rates,” *Financial Analysts Journal*, March/April 1985, p. 65.]
9. We can expect Disney stock to have a higher return than Disney bonds if the dividends increase by more than 2% a year. [Marc Basto, *InvestorPlace* Assistant Editor, “100-Year Bonds: Retirement Winners for Us Tortoises,” *InvestorPlace*, Feb 15, 2013.]
10. If the firm’s profit rate is larger than the shareholders’ required return, Tobin’s q will be above 1.