

2. Suppose you buy \$1,000 par value of 7-year 0-coupon bonds from each of 300 different A-rated companies—all of which yield 5% on a continuously-compounded basis. Concurrently the 7-year Treasury STRIPS sells for 83.95.
- (a) **(10 points)** What is the market value of this 300 bond portfolio?
- (b) **(10 points)** Based on the information contained in these market prices, how many of your 300 bonds do you expect to default over the 7-year horizon?
- (c) **(10 points)** What is the expected return on this portfolio?
- (d) **(10 points)** Suppose that in fact, 7 years from now, the number of defaults was exactly equal to your expected number of defaults from the preceding question. What will your portfolio be worth at the time the bonds mature? And what will your continuously-compounded realized rate of return have been over the 7 year period?

- (e) **(10 points)** Suppose that in fact, 7 years from now, the number of defaults was twice the number of defaults that you expected. In this case, what will your continuously-compounded realized rate of return have been over the 7 year period?
- (f) **(10 points)** Suppose that in fact, 7 years from now, the number of defaults was 0. In this case, what will your continuously-compounded realized rate of return have been over the 7 year period?
- (g) **(10 points)** Discuss and explain your answers to questions 2(d), 2(e), and 2(f) in light of your expectation in 2(c) and the bonds' yields to maturity at the time you bought them.