Econ 156
Gary Smith
Fall 2021

Midterm (75 minutes)

No calculators allowed; if calculations are needed, write the explicit equation(s), identifying the variables. Do not write "Y = aX; solve for X." You can write "100 = 10X; solve for X." If you want extra time, you can buy time at a price of 1 point a minute; for example, if your test is handed in 10 minutes after the scheduled finish time, 10 points will be subtracted from your test score.

1. a. A Merrill Lynch vice president said that when a customer calls and asks "How's the market?," a standard reply is something like, "The Dow is up three dollars." What is misleading about that answer?

   b. Explain why this headline is confusing: "Dow drops 8.92 to 2,575.49 despite gains by blue chips."

   c. Explain why this headline is puzzling: "T-Bill Investors Bet on Lower Interest Rates."

2. Professor Smith recently wrote a *MarketWatch* column arguing that, from a value investor's standpoint, stocks are attractively priced relative to bonds. A friend and prominent Chapman College economics professor immediately sent Smith this e-mail:

   Good column from an overall aggregate perspective and the low-interest rate scenario, but remember that a black swan event (contagion from a financial disaster like Lehman Brothers; pandemic that shuts down the economy short-term; etc.) can result in stocks falling 30-50% in short order, even if stocks are a better deal than bonds, or are "fairly priced."

   Write a brief, logical response that Smith might have written.

3. What do you predict would happen to the yield spread between equally risky corporate and municipal bonds

   a. if the current progressive tax system were replaced with a flat 25% tax? (Municipals would still be tax-exempt.)

   b. if municipal bonds lost their tax-exempt status?

4. How would you answer this question?

   The dividend yield on the S&P is around 1.7% and the rate on the 10-year is a little over 1.82%. Do you still think stocks look relatively cheap?

5. It was recently reported that, "Almost half (47%) of homeowners who refinanced over the past year of ultra-low rates are now saving at least $300 a month." However, celebrity financial advisor Suze Orman issued a warning to homeowners thinking of refinancing their high-interest mortgages at rates below 3%: "It makes me so crazy how most homeowners make a huge mistake when they refinance."

   Consider a person who has been playing down a 30-year mortgage for 14 years at 6% and now refinances with a new 30-year mortgage at 2.75%. Orman writes: "This is so very wrong. Sure, the new mortgage is at a lower interest rate, but you just extended your mortgage payment on this home to 44 years! My rule of refinancing is that you are to never extend your total payback period past 30 years." The Yahoo Finance writer reporting this story noted that, "You'll pay tens of thousands less in interest over time" with a 15-year mortgage instead of a 30-year mortgage.

   If you were a financial advisor, what would you advise?

6. How would you answer this puzzle?:

   For a man who covets dividends so much, some are left scratching their heads when they find out that [Warren] Buffett's company, Berkshire Hathaway, does not pay a dividend for its shareholders.

7. Use these data to show how to calculate the real interest rate on 1-year zeros purchased on January 1, 2020. (Just set up the requisite calculations; do not do them.)

Date	Zero Rate %)	CPI
January 1, 2018	1.80	247.87
January 1, 2019	2.58	251.71
January 1, 2020	1.53	257.97
January 1, 2021	0.10	261.58

8. The Brooklyn Botanical Gardens once offered its members this choice: annual dues of \$10, beginning immediately, or \$120 for a lifetime membership. For what values of the required return is the lifetime membership more financially advantageous if the member expects to live 20 years and anticipates that the annual dues will increase by 5% a year?

9. ABC's annual dividends are expected to be \$1 a year from now and then grow by 15% a year for the next 10 years, after which they will grow by 5% a year forever. Estimate the intrinsic value of ABC stock if shareholders' required return is 10%.

10. Consider a \$100,000 4-year loan with amortized monthly payments and a 5% APR. For each of the following *ceteris paribus* changes, state whether the duration goes up, goes down, or is unchanged.
    a. The amount borrowed is increased to \$250,000.

    b. The length of the loan is changed to 8 years.

    c. The amortized payments are made quarterly instead of monthly.

    d. The APR is increased to 10%.

    e. Instead of amortized payments, it is a balloon loan with the amount borrowed and all accrued interest paid at the end of 4 years.