Economics 435
Fall 2016
University of Wisconsin-Madison

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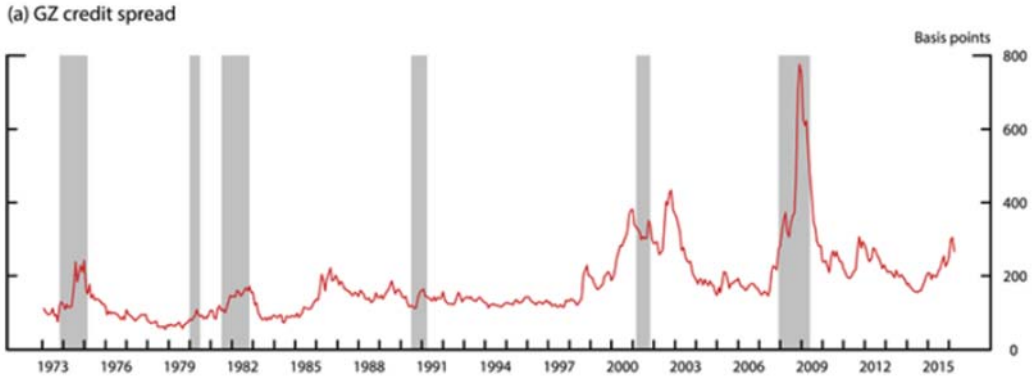
Social Sciences 7418

Problem Set 2

Due ***in lecture*** on Monday October 24. Be sure to put your name on your problem set. Put "boxes" around your answers to the algebraic questions.

1.1. Look up on the WSJ or Bloomberg the yield on (as close as possible to) a one year T-bill. Calculate the price as if the bond were to mature one year from now (specify the date you looked up the data). Show your calculations.
1.2 Once again, look up the one year and two year yields. Assuming the expectations hypothesis of the term structure holds, what is the expected interest one year interest rate, one year from today. Show your calculations.
1.3 Draw the yield curve, for 3 months to 30 years (at 3, 6, 12 months, 2, 5, 10, 30 years)
1.4 Assuming the expectations hypothesis of the term structure holds (i.e., there is no liquidity premium), do you expect the US economy to go into recession in the next year? Why or why not?

2. Consider the following picture of corporate bond spreads (as calculated by Gilchrist and Zakrajšek), corrected for maturity differences.



2.1 Explain why the spread exhibits the pattern it does, with respect to the business cycle.
2.2 Is the entire movement in the spread due to changes in probability of default over time?

3.1 Calculate the price of a share of stock, assuming dividends are expected to be constant at $D_0 = 1$ and $(rf + rp)$ is also expected to be constant at 0.10. Show your algebraic work.

3.2 Suppose that you revise your expectations regarding $(rf + rp)$ downward by 4 percentage points. What immediately happens to the price of the share of stock? Once again, show your work.

4. Suppose the price change of a stock is given by:

$$P_{t+1} - P_t = (E_t P_{t+1} - P_t) + \left[\frac{D_{t+2} - E_t D_{t+2}}{(1 + rp + rf)} + \frac{E_{t+1} P_{t+2} - E_t P_{t+2}}{(1 + rp + rf)} \right]$$

Assume no news regarding dividends is coming out between t and t+1.

4.1 Why how might changes in expectations from t to t+1 regarding events at t+4 have an impact on the price change from t to t+1? Be explicit about the channel.

4.2 Should the change in the stock price be a completely uncorrelated random error? Show why or why not.

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