180.266 Financial Markets and Institutions
Midterm: Answers
Spring 2010

Question 1 (Graded by Weifeng)

(a) Approx. $15 trillion
(b) Approx. $10 trillion
(c) Approx. $2 trillion
(d) Approx. 17% (15%-20%)

Question 2 (Graded by Weifeng)

(a) Systematic risk is the asset return variability that is related to the return on the market portfolio. It is not diversifiable and so it is the only form of risk for which asset holders are compensated for (through the risk premium).
(b) .0625
(c) .000263
(d) 10.8%
(e) Disagree. It is true that the investor should like high expected returns and low risk, but our portfolio theory says that there is a risk return tradeoff. Portfolios like the one discussed should not exist and if someone tells you they do, you should suspect that it is some sort of scam. This is the only question we view as a bit of a "trick" question on the exam. Faust intends to put some version of this on every exam every year. Why? Because the real world will present this same trick question to you quite regularly. We would rather you miss it here at Hopkins, rather than out there when your life savings are at stake.

Question 3 (Graded by Weifeng)

(a) The current spot rate on a 9-yr bond is approx. 1.375%.
(b) No. The (Treasury) yield curve is currently upward sloping (as it most often is), whereas this yield curve is downward sloping (inverted).
(c) 1.1262%
(d) Fall.
(e) Rise. It happens to be an empirical fact that interest rates generally move in the opposite direction as the expectations theory would predict from the yield curve.

Question 4 (Graded by Chris)

(a) A stop order is an order to buy or sell a stock when it reaches a specified price (the stop price), at which time the stop order becomes a market order.
(b) A NASDAQ market maker simply posts quotes for bid and ask prices, whereas an NYSE specialist serves as an auctioneer to buyers and sellers of a stock, can buy/sell from his own account, and (importantly) is charged with ensuring an orderly market. There is also only one NYSE specialist, while there may be many NASDAQ market makers, for a single stock. The important part, though, is that the specialist serves to ensure an orderly market, which is not a very big deal in normal times, but sometimes is significant.
(c) The bid-ask spread may be larger on XYZ stock than on MMO stock because XYZ stock is "less liquid" than MMO stock. The spread can be considered a measure of the liquidity of the asset.
(d) If people perceive prices as being below some "fundamental value," they can correct the price deviation by purchasing the stock until its price is at a level they consider "correct." If they perceive the price as being too high, they could only sell any stock they own, in the absence of

short selling. So, the balancing force in the market is asymmetric and would allow prices to persist above the fundamental value, which is essentially a bubble. Short selling corrects this asymmetry by allowing people who don't own the stock to take advantage of the perceived mispricing by selling the stock until its price is returned to the fundamental value.

Question 5 (Graded by Chris)

(a) Deposits.

(b) Agree. It is very costly for people to research firms/people to which they might want to borrow. As a result, they will either not make as many loans or not make any because it is too costly for them to research the potential borrowers (which they want to do because of the asymmetric information problem, which is that the borrower knows more about the project for which they are borrowing and could potentially lie to the lender). Additionally, once the loan is made, it is costly for the lender to make sure that the borrower is using the funds according to the contract or in a sensible manner (a case of moral hazard). Thus, the asymmetric information will lead to fewer loans being made and lenders being more exposed to the idiosyncratic risk of borrowers (since diversification is expensive). Commercial banks at least partially overcome this problem by specializing in learning about and monitoring borrowers. Potential creditors/depositors to the bank, in theory, only have to research the bank and not all the customers it will lend to. Thus, reducing the costs of the asymmetric information problem. This increases the number of loans and profitable projects funded as well as allows for greater diversification.

(c) Net worth is $11 million.

(d) The correct answer is that both deposits and home mortgages increase by $100 million (to 120 and 115, respectively), leaving net worth unchanged at $11 million. If the students increase reserves in a sensible manner (especially to maintain the 30% reserve ratio) and home mortgages are increased by the correspondingly correct amount, they will get partial credit.

(e) Intuitively, the 30 year mortgages have longer duration that the deposits, meaning that the bank's assets now have a longer duration than liabilities, which means that the value of the bank's assets is more sensitive to changes in interest rates than the value of its liabilities. So the bank faces greater risk of insolvency from variation in interest rates. More technically, the duration gap is a measure of the difference in the duration of the bank's assets and liabilities. [Formula not needed here.]