Review I – Financial Institutions in Agriculture

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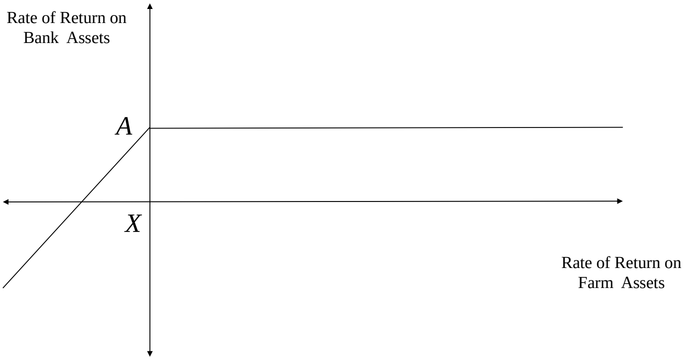
Question 1 - 3: Return on Bank Lending

- The first three questions are based on Figure 1



Question 1

1. The graph in Figure 1 presents
    a. The capital adequacy of a commercial bank.
    b. The effect of the reserve requirement on money supply.
    c. The payoff function for the commercial bank when lending.
    d. a and b.
2. A in Figure 1 represents
    a. The return on the borrowers investment.
    b. The stated interest rate on the loan made by the bank.
    c. The money multiplier equation for borrowing.
    d. None of the above.

Short Answer

3. In Figure 1 X represents the point of bankruptcy for the borrower. Assume that the firm's debt-to-asset position (δ) is 0.75 and that the interest rate (K) is 12.5 % – compute X (the rate of return on assets under which the borrower declares bankruptcy). Hint: The relationship between the rate of return on equity and the rate of return on assets, interest rate, and debt-to-asset position is

$$r_E = \frac{r_A - K\delta}{1-\delta}. \tag{1}$$

Questions 4 - 8 Returns Table

- Questions 4 - 8 Use Table 2

	Returns		Deviations		Cross Products		
Data	T-Bond	Corp Bond	ϵ_1	ϵ_2	$\epsilon_1\epsilon_1$	$\epsilon_1\epsilon_2$	$\epsilon_2\epsilon_2$
1/1/2008	3.67	5.45	0.010	-0.185	0.0001	-0.0019	0.0342
4/1/2008	3.88	5.60	0.220	-0.035	0.0484	-0.0077	0.0012
7/1/2008	3.86	5.64	0.200	0.005	0.0400	0.0010	0.0000
10/1/2008	3.23	5.85	-0.430	0.215	0.1849	-0.0925	0.0462
Average	3.66	5.635			0.0684	-0.0253	0.0204

4. The variance of the rate of return on corporate bonds is
    a. 0.0684
    b. -0.0253
    c. 0.0204
    d. None of the above
5. The covariance between the rate of return on T-Bills and Corporate Bonds is
    a. 0.0684
    b. -0.0253
    c. 0.0204
    d. None of the above
6. The correlation between the rate of return on T-Bills and Corporate Bonds is
    a. 1.00
    b. 0.75
    c. -0.68
    d. None of the above

7. What is the mean rate of return and the variance of that return for a portfolio which has 30 % T-Bills and 70 % Corporate Bonds?
8. Does the portfolio become (1) more profitable and (2) more or less risky if the portfolio is changed to 40 % T-Bills and 60 % Corporate Bonds?

Questions 9 - 11 Bank Balance Sheet

- Questions 9 - 11 Use the Bank Balance Sheet

Asset	Value	Equity	Value
Cash (C_1)	5,000	Deposits	250,000
Deposits (C_2)	25,000	Common Stock ($T1$)	15,000
Securities (C_3)	75,000	Preferred Stock ($T?$)	2,500
Home Mortgages (C_4)	195,000	Retained Earnings ($T1$)	32,500
Total Assets	300,000	Total Debt and Equity	400,000

9. The capital adequacy ratio for a bank is
   a. A measure of the bank's solvency - the ability to service its depositors in the long run.
   b. A measure of the bank's liquidity - the ability to meet its short-run cash needs.
   c. Computed by regulators to determine whether the bank is a stable part of the money supply.
   d. a and c
10. True of false: T_2 measures whether preferred stock provides ready equity to the bank?
11. Assuming multiples of 0.00 for C_1, 0.20 for C_2, 0.50 for C_3, 1.00 for C_4, 1.0 for T_1 and 0.75 for T_2 compute the bank's capital adequacy.

Agriculture's Source of Capital

12. The primary source of equity in U.S. Agriculture is
    a. Debt capital
    b. Sale of capital stock
    c. Retained earnings from operations
    d. None of the above
13. One source of equity capital in agriculture is a form of remittances from
    a. Off farm employment.
    b. Heirs of farmers who do not withdraw their equity from the sector
    c. Both a and b
    d. Neither a nor b

14. Households benefit from banks by
    a. Reducing the risk by aggregating individuals loans to a portfolio.
    b. Increases the liquidity of lending opportunities.
    c. Can lend to larger borrowers by the aggregating of accounts across individual savers.
    d. All of the above
15. Borrowers benefit from banks because
    a. Because the operations of the Federal Reserve System keeps interest rates low.
    b. Because banks can raise additional capital by selling preferred stocks.
    c. The benefits to savers (i.e., increased liquidity, reduced risk, and aggregation of funds) reduces the interest rate that savers are willing to take for money.
    d. a and b

16. The Farm Credit System is a
    a. A borrower cooperative that raises money by selling bonds on the Government Sponsored Enterprise market.
    b. Is a large commercial bank focusing on agriculture that raises capital by taking deposits.
    c. Is an integral part of the money supply.
    d. None of the above.
17. The largest lending in the farmland market in the United States is
    a. The Farm Credit System
    b. The Farm Services Agency
    c. Commercial Banks
    d. The Commodity Credit Corporation

Questions 18 - 20 Use Figure 2 – The Capital Market

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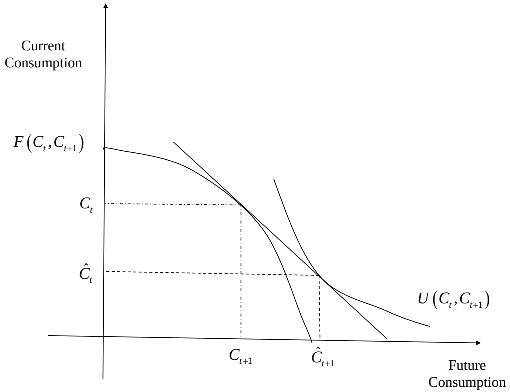

18. The individual in Figure 2 is
    a. A borrower
    b. A lender
    c. Impossible to determine
    d. Both a borrower and a lender
19. The market interest rate is
    a. C_{t+1}/C_t
    b. $\left(\hat{C}_t - C_t\right) / \left(\hat{C}_{t+1} - C_{t+1}\right)$
    c. $\left(\hat{C}_{t+1} - C_{t+1}\right) / \left(\hat{C}_t - C_t\right)$
    d. None of the above
20. Graph the autarkic solution with respect to Figure 2.