

ECON 612: MONEY AND BANKING  
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HOMEWORK 2\*  
SOLUTIONS AND EXPLANATIONS

COLOR LEGEND

- ⌘ HEADINGS
- ⌘ GIVEN/PREVIOUSLY FOUND INFORMATION
- ⌘ CONCEPTS YOU SHOULD ALREADY KNOW
- ⌘ ANSWER
- ⌘ ANNOTATIONS AND EXTRA EXPLANATIONS

\* A COPY OF THE PROBLEMS IS ATTACHED AT THE END OF THIS DOCUMENT. THERE MAY BE SOME DIFFERENCES BETWEEN THIS VERSION AND THE ONE AVAILABLE ON CANVAS.

1 SEE PROBLEMS AT THE END

2 a GIVEN INFORMATION

$$rr = 0.25$$

$$D(A) = \$2,500$$

FINDING  $E(A)$  THIS IS THE AMOUNT OF EXCESS RESERVES BANK A HAS.

$$E(A) = (1 - rr) D(A)$$
 SUBSTITUTE VALUES FROM GIVEN INFORMATION

$$= (1 - 0.25)(2500)$$

$$E(A) = \$1,875$$

b GIVEN INFORMATION

$$rr = 0.40$$

$$D(A) = \$2,500$$

$$D(B) = E(A)$$

FINDING  $E(A)$  THIS IS THE AMOUNT OF EXCESS RESERVES BANK A HAS.

$$E(A) = (1 - rr) D(A)$$
 SUBSTITUTE VALUES FROM GIVEN INFORMATION

$$= (1 - 0.40)(2500)$$

$$E(A) = \$1,500$$

FINDING  $E(B)$  THIS IS THE AMOUNT OF EXCESS RESERVES BANK B HAS.

$$E(B) = (1 - rr) D(B)$$
 SUBSTITUTE VALUES FROM GIVEN INFORMATION

$$= (1 - 0.40) E(A)$$
 SUBSTITUTE VALUE FROM ANSWER ABOVE

$$= 0.60(1500)$$

$$E(B) = \$900$$

c GIVEN INFORMATION

$$rr = 0.20$$

$$D(A) = \$2,500$$

$$D(B) = E(A)$$

$$D(C) = E(B)$$

FINDING  $E(A)$  THIS IS THE AMOUNT OF EXCESS RESERVES BANK A HAS.

$$E(A) = (1 - rr) D(A)$$
 SUBSTITUTE VALUES FROM GIVEN INFORMATION

$$= (1 - 0.20)(2500)$$

$$E(A) = \$2,000$$

FINDING  $E(B)$  THIS IS THE AMOUNT OF EXCESS RESERVES BANK B HAS.

$$E(B) = (1 - rr) D(B)$$
 SUBSTITUTE VALUES FROM GIVEN INFORMATION

$$= (1 - 0.20) E(A)$$
 SUBSTITUTE VALUE FROM ANSWER ABOVE

$$= 0.8(2000)$$

$$E(B) = \$1,600$$

FINDING  $E(C)$  THIS IS THE AMOUNT OF EXCESS RESERVES BANK C HAS.

$$E(C) = (1 - rr) D(C)$$
 SUBSTITUTE VALUES FROM GIVEN INFORMATION

$$= (1 - 0.20) E(B)$$

SUBSTITUTE VALUE  
FROM ANSWER ABOVE

$$= 0.8(1600)$$

$$E(C) = \$1,280$$

d FINDING MC(a) THIS IS THE AMOUNT OF MONEY CREATED IN PART a.

$$MC(a) = D(A) \cdot \frac{1}{rr}$$

SUBSTITUTE VALUES FROM GIVEN INFORMATION IN PART a.

$$= 2500 \left[ \frac{1}{0.25} \right]$$

$$MC(a) = \$10,000$$

FINDING MC(b) THIS IS THE AMOUNT OF MONEY CREATED IN PART b.

$$MC(b) = D(A) \cdot \frac{1}{rr}$$

SUBSTITUTE VALUES FROM GIVEN INFORMATION IN PART b.

$$= 2500 \left[ \frac{1}{0.40} \right]$$

$$MC(b) = \$6,250$$

THIS IS THE AMOUNT OF MONEY CREATED IN PART c.

FINDING MC(c)

$$MC(c) = D(A) \cdot \frac{1}{rr}$$

SUBSTITUTE VALUES FROM GIVEN INFORMATION IN PART c.

$$= 2500 \left[ \frac{1}{0.20} \right]$$

$$MC(c) = \$12,500$$

3 SEE PROBLEMS AT THE END

4 a CONCLUSION

COMMERCIAL BANKS ACQUIRE LIQUID ASSETS (E.G., DEPOSITS) AND MAKE ILLIQUID LOANS (E.G., MORTGAGES). THEY PROVIDE BOTH BROKERAGE AND Q.A.T. SERVICES. THEY ARE ALL-SHAREHOLDER OWNED.

b CONCLUSION

FINANCE COMPANIES PROVIDE CONSUMERS AND BUSINESSES WITH LOANS SPECIFICALLY DESIGNED TO MEET SPECIFIC NEEDS AND RAISE FUNDING IN CAPITAL MARKETS. THUS, THEY PROVIDE BOTH BROKERAGE AND Q.A.T. SERVICES.

c CONCLUSION

VENTURE CAPITALISTS SPECIALIZE IN PROVIDING "SEED MONEY" TO START-UPS. THEY PROVIDE BOTH BROKERAGE AND Q.A.T. SERVICES. THEY PROVIDE BOTH EXPERTISE AND CAPITAL.

d CONCLUSION

HEDGE FUNDS ACTIVELY INVEST IN COMPANIES AND PURSUE NONTRADITIONAL INVESTMENT STRATEGIES. THEY PROVIDE BOTH BROKERAGE AND Q.A.T. SERVICES. THEY PULL FROM A PRIVATE INVESTMENT POOL

AND ARE RISK-TAKERS.

## e CONCLUSION

INVESTMENT BANKS SPECIALIZE IN FINANCIAL SECURITIES AND HELP COMPANIES SEEKING FINANCING TO USE THESE SECURITIES TO RAISE FUNDS FROM INVESTORS IN A BROKERAGE ROLE. THERE ONLY A FEW LEFT.

## Homework 2

(1) Put the number on the right that matches best with the list on the left. There is only one match for each line.

**A**

- 1 Venture Capitalists
- 2 Angel Financing
- 3 Pawnbrokers
- 4 Investment Banks
- 5 Hedge Fund
- 6 Credit Rating Agencies

**B**

- 1. Provides both expertise and capital
- 2. Lend to early-stage investors
- 3. Asset-backed (secured) lending
- 4. Only a few stand-alone left
- 5. Private investment pool
- 6. Standard & Poor's and Moody's

(2) Suppose that the banking industry is competitive, and it has zero equity. Assume there are three banks: Bank A, Bank B, and Bank C.

- (a) Suppose the effective legal reserve requirement is 25%. Bank A initially receives \$2,500 in deposits. Find the amount of excess reserves of Bank A.
- (b) Suppose that the effective legal reserve requirement is now 40%. Bank A loans out its excess reserves, which are deposited in Bank B. Find the amount of excess reserves of Bank B.
- (c) Suppose that the legal reserve requirement has now changed to 20%. Bank A receives an initial deposit of \$2,500. Bank A has excess reserves that will be deposited in Bank B, which, in turn, has excess reserves which will be deposited in Bank C. Find the amount Bank C will have in excess reserves.
- (d) Find the total money created in (a), (b), and (c).

(3) Put the number on the right that matches best with the list on the left. There is only one match for each line.

**A**

- 1 Thrifts
- 2 Commercial Banks
- 3 Glass-Steagall Act
- 4 Investment Banks
- 5 Finance Companies
- 6 Mutual Funds
- 7 Payday lending

**B**

- 1. Mostly mutual
- 2. All shareholders-owned
- 3. Separate investment and commercial banks
- 4. Only a few stand-alone left
- 5. Raise money through commercial paper
- 6. Passive investment
- 7. Unsecured short-term loans to consumers

**(4)** Briefly explain what the following do and compare and contrast their differences:

- (a)** Commercial Banks
- (b)** Finance Companies
- (c)** Venture Capitalists
- (d)** Hedge Funds
- (e)** Investment Banks