

Money and banking

[Finance](#)



20 points) Assume that the country of Alphania has one bank. Its monetary base is \$24, 000, 000, the reserve requirement is 10%, and the currency requirement is 40%. The bank lends out all of its excess reserves in parts (a) and (b). SHOW ALL WORK WHEN ANSWERING THE FOLLOW QUESTIONS: a. How many loans can the bank make? How many demand deposits can the bank create? What is the total money supply? How much of the money supply is cash? Ans: monetary base \$ 24, 000, 000 Reserve requirement 10% Currency requirement 40% Loans $(100\% - 10\% - 40\%)$ 50% Loans the bank can make (50% of \$24, 000, 000) \$ 12, 000, 000 As the currency requirement of the bank is 40%, so the bank can create demand deposits upto 40% of the monetary base. This is due to the reason that it will allow the bank to fulfill the money requirements of the owners of demand deposits when asked. Demand deposits (40% of \$ 24, 000, 000) \$ 9, 600, 000 Money supply as defined by Fed does not include bank reserves. It only includes such money that may be used for exchanging goods and services. On the other hand, demand deposits and all other cash which can be used for transactions are included in money supply. Demand deposits \$ 9, 600, 000 Loans \$ 12, 000, 000 Money supply \$ 21, 600, 000 The money supply in the form of loans is in the form of cash. so, money supply in cash is equal to the mount of loans. Money supply in cash \$ 12, 000, 000 b. What happens to the money supply, if the monetary base is \$24, 000, 000, the reserve requirement is 10%, and the currency requirement decreases to 20%? Calculate the new loans, demand deposits, money supply, and cash. Ans: monetary base \$ 24, 000, 000 Reserve requirement 10% Currency requirement 20% Loans $(100\% - 10\% - 20\%)$ 70% Loans the bank can make (70% of \$24, 000, 000) \$ 16, 800, 000 Demand deposits (20% of \$ 24, 000, 000) \$ 4, 800, 000 Money supply \$ 21, 600, 000

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000) \$ 4, 800, 000 Demand deposits \$ 4, 800, 000 Loans \$ 16, 800, 000
 Money supply \$ 21, 600, 000 Money supply in cash = loans given by bank \$
 12, 000, 000 c. What happens to the money supply if the monetary base is
 \$24, 000, 000, the reserve requirement is 10%, the currency requirement is
 20%, and the bank keeps excess reserves equal to 10% of its demand
 deposits? Calculate the new loans, demand deposits, money supply, and
 cash. Ans: monetary base \$ 24, 000, 000 Reserve requirement 10% Currency
 requirement 20% Excess reserves (10% of 20%) 2% Loans (100%-10%-20%-
 2%) 68% Loans the bank can make (68% of \$24, 000, 000) \$ 16, 320, 000
 Demand deposits (20% of \$ 24, 000, 000) \$ 4, 800, 000 Demand deposits \$
 4, 800, 000 Loans \$ 16, 320, 000 Money supply \$ 21, 120, 000 Money supply
 in cash = loans given by bank \$ 16, 320, 000 d. What happens to the money
 supply, if the monetary base is \$24, 000, 000, the reserve requirement is
 10%, the currency requirement is 20%, the excess reserve requirement is
 10%, and the bank gains \$1, 200, 000 in reserves due to positive foreign
 trade balances with the country of Betania? Calculate the new loans,
 demand deposits, money supply, and cash. Ans: As a result of increase in
 central reserves of the country due to positive foreign trade balances, the
 monetary base of the country will be increased by \$ 1, 200, 000. New
 Monetary base (\$ 24, 000, 000 + \$ 1, 200, 000) \$ 25, 200, 000 Reserve
 requirement 10% Currency requirement 20% Excess reserves (10% of 20%)
 2% Loans (100%-10%-20%-2%) 68% Loans the bank can make (68% of \$25,
 200, 000) \$ 17, 136, 000 Demand deposits (20% of \$ 25, 200, 000) \$ 5, 040,
 000 Demand deposits \$ 5, 040, 000 Loans \$ 17, 136, 000 Money supply \$
 22, 176, 000 Money supply in cash = loans given by bank \$ 17, 136, 000 2.

(15 points) Bozo Bozo may be the greatest clown that ever lived, but he

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knows nothing about bonds or bond pricing. A friend of his has suggested that he buy a 7.0%-coupon bond with a face value equal to your birth date, e. g. \$ymm, mdd. 00, and six (6) years to maturity. SHOW ALL WORK WHEN ANSWERING THE FOLLOW QUESTIONS. (You may use a spreadsheet, but it must establish how you solved the problem.) How much should Bozo pay for the bond, a. if the average 6-year market rate of interest is 7.0%? b. if the average 6-year market rate of interest is 9.0%? c. if the average 6-year market rate of interest is 5.0%? Ans: Face Value \$880,521 INTEREST

RATE 7% INTEREST RATE 9% INTEREST RATE 5% INTEREST VALUE AT YEAR

END INTEREST VALUE AT YEAR END INTEREST VALUE AT YEAR END YEAR 0

\$880,521.00 \$880,521.00 \$880,521.00 YEAR 1 \$61,636.47 \$942,

157.47 \$79,246.89 \$959,767.89 \$44,026.05 \$924,547.05 YEAR 2 \$65,

951.02 \$1,008,108.49 \$86,379.11 \$1,046,147.0 \$46,227.35 \$970,

774.40 YEAR 3 \$70,567.59 \$1,078,676.09 \$94,153.23 \$1,140,300.23

\$48,538.72 \$1,019,313.12 YEAR 4 \$75,507.33 \$1,154,183.41 \$102,

627.02 \$1,242,927.25 \$50,965.66 \$1,070,278.78 YEAR 5 \$80,792.84

\$1,234,976.25 \$111,863.45 \$1,354,790.70 \$53,513.94 \$1,123,792.

72 YEAR 6 \$86,448.34 \$1,321,424.59 \$121,931.16 \$1,476,721.87 \$56,

189.64 \$1,179,982.35 TOTAL INTEREST \$440,903.59 \$596,200.87

\$299,461.35 TOTAL AMOUNT TO BE PAID \$1,321,424.59 \$1,476,721.

87 \$1,179,982.35 If the relevant market interest rate drops to 5.0%

immediately after Bozo's purchase and stays at 5.0% for the remaining life of the bond, how much will a buyer pay Bozo for the bond... d. after one

year? e. after two years? f. after three years? g. after four years? h. after five

years? Ans: Face Value \$880,521 INTEREST RATE 5% VALUE OF BOND AT

YEAR END YEAR 0 \$880,521.00 YEAR 1 \$44,026.05 \$924,547.05 YEAR

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2 \$ 46, 227. 35 \$ 970, 774. 40 YEAR 3 \$ 48, 538. 72 \$ 1, 019, 313. 12 YEAR 4 \$ 50, 965. 66 \$ 1, 070, 278. 78 YEAR 5 \$ 53, 513. 94 \$ 1, 123, 792. 72 So, the buyer will pay according to the value of bond at the year end. 3. (15

points) What do you mean if you say that the United States has a "strong dollar" or a "weak dollar"? How does interest rate policy influence the "strength" or "weakness" of the dollar's value? Research the "Broad Index" dollar exchange rate for the past two years (go to Federal Reserve for the data). Is the dollar "strengthening" or "weakening"? How does this strength or weakness impact consumers, businesses, and the economy as a whole?

Ans: **STRONG DOLLAR:** strong dollar happens when U. S. dollar increases to a level with respect to any other currency which has high rate of exchange for other currency which is relative to dollar. **WEAK DOLLAR:** Weak dollar occurs when U. S. dollar falls to a level with respect to another currency that possesses high exchange rates for other currency that is relative to dollar.

INTEREST RATE POLICY AND DOLLAR STRENGTH: The interest rate policy affects the strength and weakness of the dollar to a great extent. An increase in interest rate will increase the demand of the dollar so that more investments can be made in U. S. assets. Thus the value of dollar will also increase. Increase in value means strong dollar. Thus, the dollar will get stronger with higher interest rates. On the other hand, the lower the interest rates, the weaker will be the dollar due to the same reason. **DOLLAR**

EXCHANGE RATE: If we analyze the exchange rate of Dollar with respect to major countries Broad Index, we see that in January 2009, the dollar exchange rate was 89. 5039 which reduced to 80. 3001 by the end of September 2011. The decrease was gradual and consistent. However, the exchange rate rises initially till March 2009 after which it started falling. It

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was 77.83 by the end of July, 2011. However, it rises in August and September and reaches to 80.3001 in September 2011. EFFECT OF DOLLAR STRENGTH/ WEAKNESS ON CONSUMERS, BUSINESS AND ECONOMY: The exchange rate analysis of dollar for the past two years reveals that the dollar is continually weakening. This weakness will affect all the consumers and businesses and will also have impacts on the economy of the country. The economists are of the view that weak dollar will affect every aspect of economy. The prices of consumers clothing, electronic, the rates of mortgages and job markets will all be affected by the dollar value. The weakness in dollar value also asserts increase in oil prices. This increase will definitely affect the producers. Their production costs will rise. Consequently, the producers will increase the prices of consumer goods. This will affect consumers and thus, the whole economy would be affected. the weakness of dollar will also affect some other currencies. This is due to the reason that as the dollar got weaker and weaker; the investors will tend to search for some other currencies to which are relatively stable as compared to Dollar. This will increase the demand of other currencies and decrease in the demand of dollar. Consequently, the interest rate will tend to decrease. This will affect the deposits of individuals and businesses in the banks. Finally, this will again has an impact on the whole economy.

4. (15 points) Bozo has been giving clown lessons on the side. His lessons were so popular that he opened the Bozo Bozo School of Greatest Clowns. The school has grown and he now owns a 40,000 sq. ft. building and employs 15 teachers, but the demand for clown lessons is outstripping his ability to provide lessons. He needs to expand, but, because he's a Real Bozo, he knows nothing about how or where to get additional financing. One of his friends suggested that he " take

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the school public." You, having taken a money and banking course, are an expert on business financing. Bozo comes to you for some advice. What is the most important information that you can give Bozo about financing and expansion? How would you advise Bozo on the issue of "going public"? Ans: Financing is considered a major source for the expansion of business. As Bozo needs to expand his school, he needs to obtain financing. The financing obtained by any person may be classified in two broad categories: equity and debt financing. In debt financing, the finance is obtained in the form of debt/loans which are required to be repaid within some limited time along with interest. On the other hand, in equity financing, money is obtained from investors and in exchange, they are given share in business. Thus, these investors then take active role in the management of the business operations and are also entitled to share profits if any. Going public means the registering of securities and shares for offering them to public for sale. Thus, the opportunities of increasing finance and expansion of business will be increased for Bozo if he issues and registers securities in the name of his school. Moreover, unlike debt financing, going public do not require any type of mortgages and interest payments agreements for obtaining finance. However, there are number of reasons for which it is better for Bozo not to go public. First of all, going public option is very expensive and the costs of 1 million may be required to opt such option. Moreover, if this option is not gone through properly, that money may be completely lost. The Bozo school will require to retain proper registers in compliance with the reporting requirements of the State. This may require additional experts to be hired, thus increasing the overall costs of the Bozo school. This may also disrupt the proper functioning of the School. The school will also be open to the

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whole public for any civil liability. Under all the above-mentioned, it is advised that Bozo should not opt “ Going Public” option. 5. (10 points)

Identify and define the types of risk inherent in all interest rates (interest yields). Analyze the yields for each of the bonds listed below Using the different measures of risk, explain why the interest yields are different for each bond.

Symbol	Name	Display	Yield
BAC 16	BANK OF AMERICA CORP	8 1/2%	NTS 01/15/2016 Domestic
5. 87%	BCB 18	BARCLAYS BANK PLC	7. 40% NTS 12/15/2018 Foreign
7. 46%	BYD 16	BOYD GAMING CORP	9. 50% SR SUB NTS 07/15/2016 Domestic
9. 47%	Ans: TYPES OF INTEREST RATE RISKS: 1.		

BASIS RISK: Basis risk arises when the bases on which the liabilities cost and yields on assets are based is different. **2. YIELD CURVE RISK:** Yield curve risk arises due to differences between the long-term and short-term rates of interest. **3. REPRICING RISK:** The risk that arises due to repricing of assets and liabilities at different rates and times is called repricing risk. **4. OPTION RISK:** Option risk is the risk that arises due to optionalities set in the assets and the liabilities. **5. MODEL RISK:** Some risks arise as a result of the pricing of assets and liabilities by using some mathematical models. However, these models are not quoted directly on the market. That is why, use of these models may cause risk in interest rates.

ANALYSIS OF YIELD RATE: Three types of bonds are given relating to three banks. Apparently, BYD 16 bonds seem to generate maximum yield @ 9. 47%. BCB 18 bonds generate yield @ 7. 46% while BAC 16 bonds are generating minimum yield. However, if we analyze these bonds deeply, we see that the maturity date of BCB 18 bonds is December 2018 while that of BYD 16 is July, 2016. Thus, subject to the interest rates, BCB 18 can presently generate more income for the bondholder until the bonds are actually redeemed.

INTEREST YIELDS FOR EACH BOND: The interest yields may be different for different bonds. A number of factors affect the yield rate of the bonds. The most common is the market interest rate. These rates may change drastically due to the inherent risks associated with such rates. Normally, the price of bonds goes inversely with the market interest rate. This change in price causes change in the interest yield of the bond. On the other hand, inflation is also a major risk causing variation in the interest yield of the bonds. Due to inflation, the money worth increases more in present. Thus, this affects the bond prices, and consequently yields rates, which are to be redeemed at some future date. Another major factor affecting yield rate is the credit-rating of the issuer. The worse the credit-rating, the higher the interest rates will be required by the investors as a compensation for the higher risk. In the case mentioned above, it may be clearly viewed that the credit-rating of foreign Barclays Bank is far better than that of Bank of America Corp and Boyd Gaming Corp. That is why, BCB 18 offers lowest interest rate of 7.40% as compared to interest rates of 8.5% and 9.5% offered by BAC 16 and BYD 16 respectively.

6. (10 points) What explanations can you give for the peculiar shape of the current Australian yield curve?

Ans: the Australian Yield curve shows a very abnormal relationship between redemption period and yield to maturity. The yield to maturity falls significantly for the bonds having redemption period between 1-2 years. However, with increase in the maturity period from 3 years to onwards, the interest yield rates starts increasing. The interest yield rate is 3.6% for 3 years maturity bonds and increased to 4.25% for 11 years maturity bond. This is due to the reason that the investors expect that the long-term bonds are more unsecure than the bonds having shorter redemption period.

Investors require high yield rates as compensation. The slope of the Australian yield curve is also steady. This may be due to the reason that the investors do not expect any rapid or quick growth in the economy. Rather, investors expect a downfall in the economy in coming years. That is why the yield interest rate is higher for bonds of 1 year maturity than that of 2 years maturity. However, it may also be seen that the yields are dropping continuously. Many economists suggest that overseas events are responsible for this drop of the yields. The uncertainty in Australian market is high. 7. (10 points) Critically analyze this statement: " Diversification makes that which is less liquid more liquid and that which is more risky less risky."

Ans:

Diversification is a concept frequently applied in economics. It states that the investments made by any person should be spread across different investment options. This will protect investments from any downfall. This is due to the reason that it is not possible that all the industries move in one direction. Thus, the risk of complete loss of investments is reduced.

However, this does not mean that diversification classify between the industries with respect to their exposure to risk. In an economy, all industries are exposed to risk due to some unavoidable circumstances and events.

Moreover, if diversification makes any assessment about the risk associated with some industries, it will not be preferable for any person to invest in such companies. The volatility and liquidity of assets is also restricted by diversification. This is also due to the same reason that it is not possible for all assets, classes of assets and industries to move in the same direction at the same rate and at the same time. Thus diversification provides an opportunity for consistent performance of investments despite of varying economic conditions. 8. (5 points) Explain and evaluate ONE (1) the following

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statements: a. The invention of money is one of the great achievements of humankind, for without it the enrichment that comes from broadening trade would have been impossible. Ans: Money is definitely a great invention of the humankind. Usually, money is not classified as an invention. But the benefits associated with the use of money are so much that it must be classified as a great invention. The money was the primary invention which became the cause of many other inventions. Initially, the mankind used barter trade system. The things were exchanged for the things. There was no concept of money at that time. The necessities of life were considered as a primary source of exchange for services being given. However, this system was of limited scope as it was nearly impossible to carry huge amount of stocks with oneself all the time. Moreover, there was no consideration price fixed for any product. The consideration solely depended on the demand and supply of the product and the product available for exchange. However, with the passage of time, the need for some monetary unit aroused. The gold aroused as a medium for exchange of consideration. Initially gold coins were used by masons. Later, with the establishment of different kingdoms, the gold coins were issued by the Emperors or Kings and only those coins were considered valid. With the passage, the use of gold coins as exchange consideration also appeared to be a handy task as it required to carry gold with oneself.. Then, the use of paper money as an exchange consideration came up. Paper money were issued by different states, however, to control inflation and devaluation of money, different policies were framed. These monetary policies required that the paper money issued by any country must be backed up fully by an adequate amount of gold. Paper money brought a number of benefits to the nations and all the countries adopted this system.

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First of all, it made it easy to carry high value of money with oneself. This has begun a new era in the trade customs of the whole world. The international trade has become simpler than before. There is no need to carry huge amount of stock with oneself for trading purposes. The goods may be traded easily with the use of paper money. However, in the present day world, only the paper money of well-managed economies is used for trade purposes. This is due to the reason that the stable economies currencies are more reliable. Thus, the invention of money has brought remarkable achievements in the field of commerce & trade for the mankind. It has opened doors for new inventions of this era. That is why money is considered as one of the greatest invention of human kind and the broadening of international trade without it would have been impossible.

BONUS: (5 points) Explain and evaluate the following statement: " All money is debt." Ans: the term " All money is debt" seems to be a very confusing statement but in reality, it is not so. If we evaluate this statement, we will see that this statement is perfectly true and in accordance with the laws governing the creation and flow of money in a country. It is quite obvious that every state has some authority that is responsible for the creation of money. In U. S., the major sources of money are bankers including Federal Reserve Bank. In other countries also the bank is the only source of money creation. However, whatever the source is, it is quite obvious that this money results in debt creation. Either the government is indebted to the bank after taking more money from the bank as a loan or this money is forwarded to individual citizens in the form of loans. Thus, whosoever obtains money is indebted to the bank for such amount. Money is also considered as a source of exchange of consideration. Thus, anyone who gets money take up a

responsibility to give any product or service to the person from whom money is taken. Thus, in most of the cases money becomes a debt rather than an asset. Looking the case in another way is that any person who has money is entitled to take product/service in exchange of this money. Thus, this money has made the whole society indebted to such person for the amount of money he owns. References: 1. Riley, Gary. “ The Important Point of Business Financing.” Tabosh: Latest Financing News. 12 October. 2011. 26 October 2011.< <http://tabosh.com/the-important-points-of-business-financing/>>. 2. L & K. “ The Advantages and Disadvantages of Going Public.” Lewis & Kappes. 26 October 2011. 3. “ Australian Government Bond Yield Curve.” Fureyous: Archive for the Economy Category. 7 October 2011. 26 October 2011.< <http://michaeljfurey.com/category/economy/>>