Chapter 2: Money, Money Supply, and Interest

ADDITIONAL CRITICAL THINKING / GROUP DISCUSSION QUESTIONS:

1. **What are the three basic functions of money? Describe how high rates of inflation can impact money's ability to perform each of the three functions.**

   1. Medium of Exchange
   2. Unit of Account
   3. Store of Value

   Medium of Exchange: When the consumer price index or "cost of living" goes up, index goes up, the value of the dollar goes down, and vice versa. Higher prices lower the value of the dollar because more dollars are needed to buy a particular amount of goods, services, or resources.
   Unit of Account: Measuring the relative worth, money aids rational decision making by enabling buyers and sellers to easily compare the prices of various goods. If the price of goods go up, rational decisions may lead to "going without".
   Store of Value: Transfer purchasing power from the present to the future. Paper assets such as savings accounts decline in real value .

2. **Ask your students to make a list of the greatest inventions made in this century. You may get many of the following answers.**
   The light bulb, The Automobile, The Internet, Electricity, the computer, (IPADs) pretty much all the things that have helped us become industrialized. Go to the whiteboard, wherever you write your notes, list MONEY. Create a discussion on how money was invented. Think of how things were before money, ask your students how they would feel about using a bartering method of exchanging goods and services.

3. **Are checks legal tender? Should they be legal tender?**
   Each bill contains the statement "this note is legal tender for all debts, public and private". That means paper money is a valid and legal means of payment of any debt that was contracted in dollars. The government has never decreed checks to be legal tender, and yet they serve as such in many of the economy's exchanges of goods, services, and resources. FDIC insure individual deposits up to $250,000 at commercial banks and thrifts. That fact provides strong support in using checkable deposits as a medium of exchange.

Money, Banking, Financial Markets & Institutions
Michael W. Brandl

Chapter 2 -- Money, Money Supply, and Interest

NEW CONCEPTS INTRODUCED

- Money
- Dollarization
- Legal Tender
- Medium of Exchange
- Double coincidence of wants
- Unit of Account
- Store of Value
- Commodity money
- Fiat Money
- Monetary aggregates
- M1, Money Market Mutual Funds, and Disintermediation
- Time Value of Money
- Time Preference
- Compound interest
- Future Value

CHAPTER OUTLINE AND TEACHING HINTS

2-1 The Concept of Money
2-1a Money Defined

Stress these specific points:
a. Anything that performs the function of money is MONEY.
b. Money is something that people "generally accept" in exchange for goods and services.
c. Dollarization – where a country legally accepts another country's currency as their legal tender)
d. Legal Tender: Assets accepted for repayment of debt to the government as well as private transactions.

2-1b Functions of Money
- Medium of Exchange
    - Double coincidence of wants
- Unit of Account
- Store of Value

Stress these specific points:
a. For any asset to function as money it must perform three very important functions:
    - Medium of Exchange: usable for buying and selling goods and services. A pizza shop worker does not want to pay 100 pizzas per week. Nor does the pizza shop owner want to receive, say, ears of corn in exchange for pizza.

- Unit of Account: Society uses monetary units – dollars, as a yardstick for measuring the relative worth of a wide variety of goods, services, and resources.
- Store of Value: transferring purchasing power from the present to the future. People do not spend all of their incomes on the day they receive them. To buy things later, they store some of their wealth as money.

  - Double coincidence of wants: Without money, we would have to rely on bartering. Finding someone who has what they want and also wants what they have.

Section 2-1 Review Questions & Answers
Q1) What is the difference between money and currency? When are they the same? Why might they be different?
SUGGESTED ANSWER: Money is anything generally accepted in exchange for goods & services. Currency is issued by a bank or the government, but but currency is not necessarily money. They are the same when they are accepted in exchange for goods and services. Currencies can stop being money if people don't accept them in exchange for goods and services. If a group of people stop using currency to get goods and services but instead use bananas, then the bananas are the money.

Q2) How many prices must a barter economy have if the economy has four goods? What if it has 400 goods? Explain why having a money in the second case is beneficial.
SUGGESTED ANSWER: 4 goods = 6 prices; 400 goods = 79,800 prices. Money allows us to specialize and reduce our search cost. Money allows us to reduce the number of stated prices we need.

Q3) You read a news story about a country that is suffering from rapid, ongoing increases in the cost of living. Which characteristic of money is being directly negatively impacted in that economy?
a. Unit of account
b. Medium of exchange
c. Store of value
d. Double coincidence of wants
e.

2-2 Amount of Money and Money Through Time
2-2a The Amount of Money Matters

Stress these specific points:
The amount of money vs the functions as money. If the money supply increases too quickly you have too much money chasing too few goods. Thus, the general level of prices increases that is inflation occurs. If the money supply does not increase fast enough, there may not be enough money for transactions to take place. Fewer transactions, means output decreases and the economy contracts.

2-2b Money Through Time

- Cigarettes in Prison – function as money.
  - Standardized
  - Easily divisible
  - Portable
- Cigarettes in Prison - also commodity Money
  - Challenges with Commodity Money – getting the amounts just right
  - 2 of the most widely used types of commodity money
    - Gold
    - Silver

Stress these specific points:

- Commodity money is an asset that is used as money but also has another, or different, use. It must be easily standardized; it must be easily divisible; it must be easy to carry around. It must be physically durable. It must be in broad demand so one can exchange it for some other good. Cigarettes in Prison – functioned as commodity money in prisons. SEE, standardized, easily divisible, easy to carry around, physically durable.

Section 2-2 Review Questions & Answers

Q1) Bobby is confused. He states: "Since prisoners are not allowed to smoke in prisons any longer, Radford's examples of cigarettes in POW camps no longer applies." How would you explain to Bobby how Radford's story demonstrates the concepts of the criteria of money, as well as the importance of changes in the money supply?

SUGGESTED ANSWER: Any asset that is able to be standardized, divisible, durable and in demand could be currency, as long as it is a medium of exchange, is a unit of value and has store of value. Cigarettes were money.

Q2) Proponents of the Gold Standard, or using gold as money, often argue that it will keep inflation under control. How does the experience of Europe in the sixteenth century raise doubts about that claim?

SUGGESTED ANSWER: If people start to hoard gold or silver, there may not be enough money, an economy could slide into recession. If gold or silver increases too rapidly the economy could suffer inflation.

Q3) Ricardo and Friedman agree that if the money supply increases "too quickly" the following happens:

a. The rate of inflation decreases.
b. The rate of real economic growth increases.
c. The rate of inflation increases.
d. The level of employment decreases.

2-3 Money Supplies

2-3a Monetary Aggregates

- M-1
- M-2

Stress these specific points:

Monetary Aggregates: Money Definition M1; The narrowest definition of the U.S. money supply. It consists of two components: Currency (coins and paper money) All checkable deposits (all deposits in commercial banks and "thrift" or savings institutions on which checks can be drawn) M1 = Currency + checkable deposits - Money Definition M2; A second and broader definition of money includes M1 plus several near-monies. The M2 definition of money includes three categories of near-monies. Savings deposits, including money market deposit accounts. Small-denominated (less than $100,000) time deposits.

Section 2-3 Review Questions & Answers

Q1) A critic of money economics once stated, "if you cannot measure the money supply accurately, it is not worth discussing at all." How would you refute this statement?

SUGGESTED ANSWER: Due to changes in financial markets –financial innovation and changes in the way banks operate – that led to the decline in the usefulness of M2 as a monetary aggregate

Q2) Economists are searching for a "good" measurement of the money supply. What constitutes a good measurement of the money supply?

SUGGESTED ANSWER: M1 & M2 see page 15, For many decades M1 worked fairly well

Q3) Which of the following is the most broad or most inclusive measurement of the money supply?

a. M1
b. M2
c. M3
d. M0

2-4 The Price of Money: Interest Rates
2-4a Time Value of Money
2-4b Present Value

Stress these specific points:

The Price of Money: Interest Rates. Why do interest rates exist? Time Value of Money. People would prefer to consume today as opposed to in the future because life is uncertain. People don't like putting off consumption until tomorrow because they do not know what the future holds. Time preference, the preference to consume now as opposed to in the future. When I ask you to defer your consumption to the future (something you do not want to do), I have to compensate you. That is called interest. The higher your rate of time preference, the higher the rate of interest I must pay you to defer your consumption. Because people have a time preference, money and the ability to consume now has more value than money in the future.

Section 2-4 Review Questions & Answers

Q1) Each person might have a different time preference. Explain why an older person might have a higher or lower time preference than a young person.

SUGGESTED ANSWER: An older person might have a high time preference, consumer now vs. in the future. The older person while they have the ability to consume now has more value than money in the future.

Q2) What is the future value of $500 in two years if the interest rate is 4%? How would you explain this to someone who has no training in economics?
SUGGESTED ANSWER: $500(1.04)^2$ = $540.80

Q3) If the annual interest rate is 2%, what is the quarterly interest rate?

a. 0.0204
b. 0.0166
c. 0.005
d. 0.001

2-5 Conclusion
In the News: Europe's Banks are too Feeble to Spur Growth

Chapter 2 - Money, Money Supply, and Interest

2-1 The Concept of Money

- Just what is money?
- Money does, in fact, make the world go around. How?
- Why do interest rates exist?
- The Value of Money – Value today we will receive in the future vs. the value in the future vs that we have today.

2-1a Money Defined

- “Generally accepted” in exchange for goods and services
- Russian Ruble Crisis of 1999: people stopped using the official ruble in exchange for goods and services.
- Are currencies are considered money all the time? NO

2-1a Money Defined (continued)

- Currency substitution – Use of another country's currency in private transactions.
- The local currency remains legal tender and continues to circulate
- Legal Tender – Paper money is a valid and legal means of payment of any debt that was contracted in dollars
- "Official semi-dollarization" – another country's currency is legal tender, but the country also issues its own currency.

2-1b Functions of Money

- Medium of Exchange – usable for buying and selling goods and services.
- Money allows society to escape the complications of barter.
- Money enables society to gain the advantages of geographic and human specialization

Unit of Account

- Society uses monetary units – As a yardstick for measuring the relative worth of a wide variety of goods, services and resources.
- We gauge the value of goods in dollars
- Money aids rational decision making by enabling buyers and sellers to easily compare the prices of various goods, services and resources.

Store of Value

- Enables people to transfer purchasing power from the present to the future.
- People do not spend all of their income on the day they receive it.
- To buy things later, they store some of their wealth as money.
- Money does lose its store of value. Inflation reduces the “purchasing power” of money.

2-2a The Amount of Money Matters

- Inflation occurs due to the money supply grows too quickly.
- When the money supply increases too quickly, there is too much money chasing too few goods.
- If the money supply does not grow fast enough, there is not enough money for transactions to take place.
- Economy could slide into a recession or even worse a depression.

2-2b Money Through Time

- For any asset to function as money, the following must be met:
  - Easily standardized so prices of two units can be compared
  - Divisible
  - Portable
  - Physically durable
  - Broadly demanded

What has functioned as money over time?

- Cigarettes:
  - Standardized – contained the same amount of quality of tobacco
  - Easily divisible – 20 in a pack, “making change” was straightforward
  - Portable – easy to carry around
  - Long self life, as long as kept dry
  - Always in demand
  - POW camps: cigarettes were money

Other Commodity Money

- Russian Ruble Crisis of 1999 - people used different forms of commodity money, turned away from using the ruble.
- In 1998, 50% to 75% of “exchange in industry” – some type of commodity money, including Russian Vodka
- Currency issued by a country’s government has a direct relationship with that country’s function of money.

Challenges with Commodity Money

- Two widely used types through time:
  - Gold
  - Silver
- Enough in circulation meets the transaction needs of the people
- NOT enough in circulation could slide a country into recession or an economic depression
- If the supply increases too rapidly, it triggers inflation (too much money chases too few goods)

Money Definition M1 and money supply M2

- M1 – The narrowest definition of the money supply is M1
- It consists of two components:
  - Currency (coins and paper money) in the hands of the public
  - All checkable deposits: all deposits in commercial banks and " thrift" or savings institutions on which check of any size can be drawn
- Money, M1 = currency + checkable deposits

Money Definition M2

- M1 + savings deposits, including money market deposit accounts + small – denominated (less than $100,000) time deposits + money market mutual fund held by individuals

2-4a Time Value of Money

- Greatly prefer current consumption to future consumption; you have “high time preference”
- If you are indifferent between consuming now or in the future, you have a “low time preference”.
- Deferring your consumption to the future (something you don’t want to do), I have to compensate you.
- The compensation is called interest. The higher your rate of time preference, the higher rate I must pay you to defer your consumption.

2-4b Present Value

- Someone lends you $1000.00 for one year. You are asking that person to defer their consumption for one year, so this person will want to be compensated.
- $100.00 of interest on the loan, or 10%
- Payback at the end of the year = $1,100

2-4b Future Value

- Nominal value of an asset, at some point in time in the future.
- The concept of time value of money from a saver’s perspective
- See example in this section of the book: at the end of 15 years you would have
  - $22, 203.66