IMF CENTER
a public center for economics education
720 19th Street, N.W. - Washington, DC 20431

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The IMF Center of the International Monetary Fund, in partnership with the U.S.'s National Council on Economic Education (NCEE), has launched an instructional program for secondary school students about the effects of globalization and the importance of understanding the dynamics of the global economy. *Thinking Globally: Effective Lessons for Teaching about the Interdependent World Economy* are eight classroom-tested lessons on globalization, comparative advantage, economic growth, exchange rates, and other international topics.

Lessons #1 and 2 focus on the IMF and its role in the global economy.

Lesson #1: Ten Basic Questions about Globalization focuses on the history, impact and future implications of living in a globalized economic system.

Lesson #2: What is the IMF and What Does it Do? Introduces the IMF and its role in fostering global economic stability through monetary and financial cooperation.

Lessons #3-8, on trade, international organizations, currencies and foreign exchange, are previously-released lesson plans produced by NCEE.

Lesson #3: Why People Trade Students participate in a trading simulation and use this experience to discover the benefits of free trade.

Lesson #4: Comparative Advantage and Trade in a Global Economy Students observe or participate in a role-play situation in which one person is better at both of two activities.

Lesson #5: "Hey, Hey! Ho, Ho! Why Do We Need the WTO?" Several activities are used to introduce students to six international institutions that play important economic roles, especially in the areas of international trade, finance and development.

Lesson #6: Why are Some Nations Wealthy? Students work in groups to examine data from several nations regarding size, natural resources and population.

Lesson #7: Foreign Currencies and Foreign Exchange Students participate in a simulated foreign exchange market. Provides an opportunity for students to use supply and demand analysis to explain how flexible exchange rates are established in currency markets.

Lesson #8: Exchange Rates: Money around the World Students participate in two auctions to demonstrate the determination of flexible exchange rates and the need for foreign currency to purchase goods from other countries.

See also:
Press Release: IMF Launches Lesson Plans for Secondary School Economics Teachers, September 21, 2005 (http://www.imf.org/external/np/sec/pr/2005/pr05211.htm)

Lesson plans #1-8 are available in PDF format here:
http://www.imf.org/external/np/exr/center/econed/index.htm#think

Unit 7 Lesson 42

Foreign Currencies and Foreign Exchange

INTRODUCTION

Economics Money has several functions. It serves as a medium of exchange, a store of value, and a measure of value. In world trade, money also functions as a medium of exchange used to carry out payments on international transactions. The value of a currency, when used in international exchanges, is frequently set in foreign exchange markets where the forces of supply and demand establish the price at which different currencies are exchanged. Foreign exchange rates set in such a market are called floating exchange rates. When currency values are not set by foreign exchange markets, they are set at fixed rates or between fixed limits by governments.

Reasoning Decisions to buy or sell foreign currency are influenced by the same economic principles that affect all economic choices. In this lesson, students will apply their reasoning skills to explain changes in the exchange rate between two currencies.

CONCEPTS

- Demand
- Exchange rate
- Foreign exchange markets
- Supply

OBJECTIVES

The students will:

1. Explain why citizens or businesses in one country might require the currency of another country.
2. Explain how foreign exchange values are influenced by supply and demand.
3. Explain how an increase (or decrease) in the availability of a currency may cause a decline (or rise) in that currency's foreign exchange value.

CONTENT STANDARD

- Voluntary exchange occurs only when all participating parties expect to gain. This is true for trade among individuals or organizations within a nation, and among individuals or organizations in different nations. (NCEE Content Standard 5)

LESSON DESCRIPTION

Students participate in a simulated foreign exchange market. The exercise provides an opportunity for students to use supply and demand analysis to explain how flexible exchange rates are established in currency markets.

Time Required: 45 minutes

MATERIALS:

- A transparency of Visual 1
- Mints, similar small candies, or other equally divisible goods such as unshelled almonds or peanuts. (A one-pound bag should be enough for three classes of 35 students.)
- Handout Material 1 and 2 (see pp. 278, 279)
- Activity 1

PROCEDURE

1. Prepare for this lesson by making enough duplicates of Handout Material 1 (Japanese yen) to provide about 12 bills with varying denominations of yen for each student. Cut the currency out of the page so you can distribute the bills separately. Make a few extra yen to be sure you will not run out. You should make about 25 U.S. dollars out of Handout Material 2. The teacher keeps the dollars.
2. Announce that today the class will look at money and the process by which it is exchanged and valued by people in two or more countries. Have the students read Activity 1. (Don't have them answer the questions now; they will answer the questions later, in the Closure activity.)
3. Announce that you are setting up a foreign currency market so that the class can play The Foreign Currency and Exchange Game. Tell them you will sell one candy mint for one U.S. dollar.
4. Tell the students they will act as citizens of Japan. Distribute four or five Japanese yen notes, of various denominations, to each student. Give them the different amounts in random fashion.
5. Announce that the only way they can buy U.S. candy is with one of the U.S. dollars you hold. Also announce that you can sell only five pieces of candy during one session of the currency market. Students will therefore be required to trade their yen for your U.S. dollars before they can buy any of the five candies.
6. Appoint a student to serve as the banker. Pay the banker one piece of candy for the work done during each round. Give the banker the remaining yen and five dollars. Set up the bank at the front of the room.

7. Appoint another student as tally keeper. You will also pay this student one piece of candy per round. Use Visual 1 to record the number of transactions. (Do not add the columns for Rounds 2 and 3 to the tally table until you are ready to begin those rounds. This procedure prevents the students from anticipating how many rounds there will be in the activity.) The tally keeper will make a mark in the appropriate space for each price at which you sell an American dollar in each round.

8. ***Round 1.*** Announce that the bidding for U.S. dollars will begin. The only acceptable payment is with Japanese yen. To simplify the chart, the minimum price will be 50 yen. Let students bid. Decide at what prices you will sell the U.S. dollars. At first, you will get low bids. Accept a few. Then the bids should start to increase. As each bid is accepted, the bidder should go to the bank and exchange the yen for U.S. dollars. The tally keeper should make a mark on the chart at the appropriate price, in yen, as each bid is accepted. Continue until the banker announces that you have sold the five U.S. dollars available for this round. Stop the bidding. Allow the owners of U.S. dollars to exchange the dollars for the candy.

9. ***Round 2.*** Increase the supply of Japanese yen by distributing another four or five yen to each student. Announce the beginning of Round 2. Have available another set of five U.S. dollars and five pieces of candy. The banker and the tally keeper will perform the same jobs as in the previous round. Repeat the bidding process. When the five U.S. dollars are sold, stop the bidding and allow the owners of the dollars to get their candy.

10. ***Round 3.*** Increase the supply of Japanese yen by distributing more yen to each student. Announce the beginning of Round 3. Have available another set of five U.S. dollars and five pieces of candy. The banker and the tally keeper will perform the same jobs as in the previous round. Repeat the bidding process. When the five American dollars are sold, stop the bidding and allow the owners of the dollars to get their candy.

11. Ask the students to focus on Visual 1.

    A. How many total yen were paid for the five U.S. dollars in Round 1? In Round 2? In Round 3? In other words, what was the price of a U.S. dollar in terms of yen in each round?

    B. How wide were the price variations of yen per dollar in each round?

    C. Did the successive rounds establish a price pattern?

    D. What determined the exchange rate of yen and dollars?

    (You should steer students toward a supply and demand explanation if it does not occur naturally.)

    E. How does the pattern of exchange rates illustrate the interaction of supply and demand.

    (The exchange rate for dollars in terms of yen rose when the increased supply of yen resulted in a higher yen price for each U.S. dollar.)

    F. In general, how is the foreign exchange value of a currency set in terms of other currencies?

    (By the interaction of supply and demand.)

    G. What factors might cause the exchange rate between two countries to change?

    (Changes in the supply of or the demand for the currencies.)

CLOSURE

Refer again to Activity 1. Ask the students to answer the questions:

- What are the three functions of money?

  (Medium of exchange, store of value, measure of value.)

- What determines the value of any currency?

  (Supply and demand.)

- What do we call a decrease in value of a currency? An increase?

  (In a decrease, the currency depreciates; in an increase, it appreciates.)

- What do we call the places or means of communication by which currencies are traded and the value of one country's currency is established in terms of other currencies?

  (Foreign exchange markets.)

- Assume the United States produces new products that citizens of other countries buy in large quantities. All other things being equal, what will happen to the value of the U.S. dollar in terms of foreign currencies?

  (It would increase.)

- Assume the number of U.S. citizens traveling to foreign countries greatly increases. All other things being equal, what will happen to the value of the U.S. dollar in terms of foreign currencies?

  (It would decrease.)

Multiple-Choice Questions

(correct answers shown in bold)

1. Which of the following actions will increase the supply of U.S. dollars on the foreign exchange market?

   A. U.S. citizens buy fewer imported products.

   B. U.S. citizens increase their purchases of imported products.

   C. U.S. citizens reduce the number of trips taken to other countries.

   D. German businesses increase their purchases of U.S.-manufactured robots for use in German factories.

2. Recently a TV commentator reported that the U.S. dollar declined in value against the European currency (the euro). Which of the following statements is consistent with that report?

   A. One hundred U.S. dollars buy fewer euros today than those dollars could purchase on the previous day.

   B. One hundred U.S. dollars buy more euros today than those dollars could purchase on the previous day.

   C. A Gallup poll found that more people worldwide preferred euros to U.S. dollars.

   D. The U.S. dollar is backed by fewer gold reserves today than it was on the previous day.

3. Which currencies serve as a store of value, a medium of exchange, and a measure of value?

   A. The U.S. dollar

   B. The New Zealand dollar

   C. The Japanese yen

   D. All three currencies serve all three functions.

Essay Question

Imagine a situation in which there is an increase of thousands of U.S. citizens (tourists, business representatives, and government officials) who choose to visit Japan. All of these visitors, arriving in the Tokyo airport, buy thousands of Japanese yen to use during their stay in Japan. Assuming that no other changes are taking place with the yen, explain what effect these visitors' actions will have on the supply of and demand for the U.S. dollar in the U.S.-Japan foreign exchange market, on the supply of and demand for the yen, and on the price of each currency.

(The supply of U.S. dollars increased when U.S. citizens paid dollars to buy yen. The demand for the U.S. dollar did not change. The demand for the U.S. dollar in this example would change only if Japanese citizens were attempting to buy U.S. dollars in greater numbers than before. The demand for yen increased when the U.S. citizens attempted to purchase yen with U.S. dollars. The supply of yen did not change. The exchange value of the yen [the price in U.S. dollars] would rise. The U.S. dollar would decline in value relative to the yen.)

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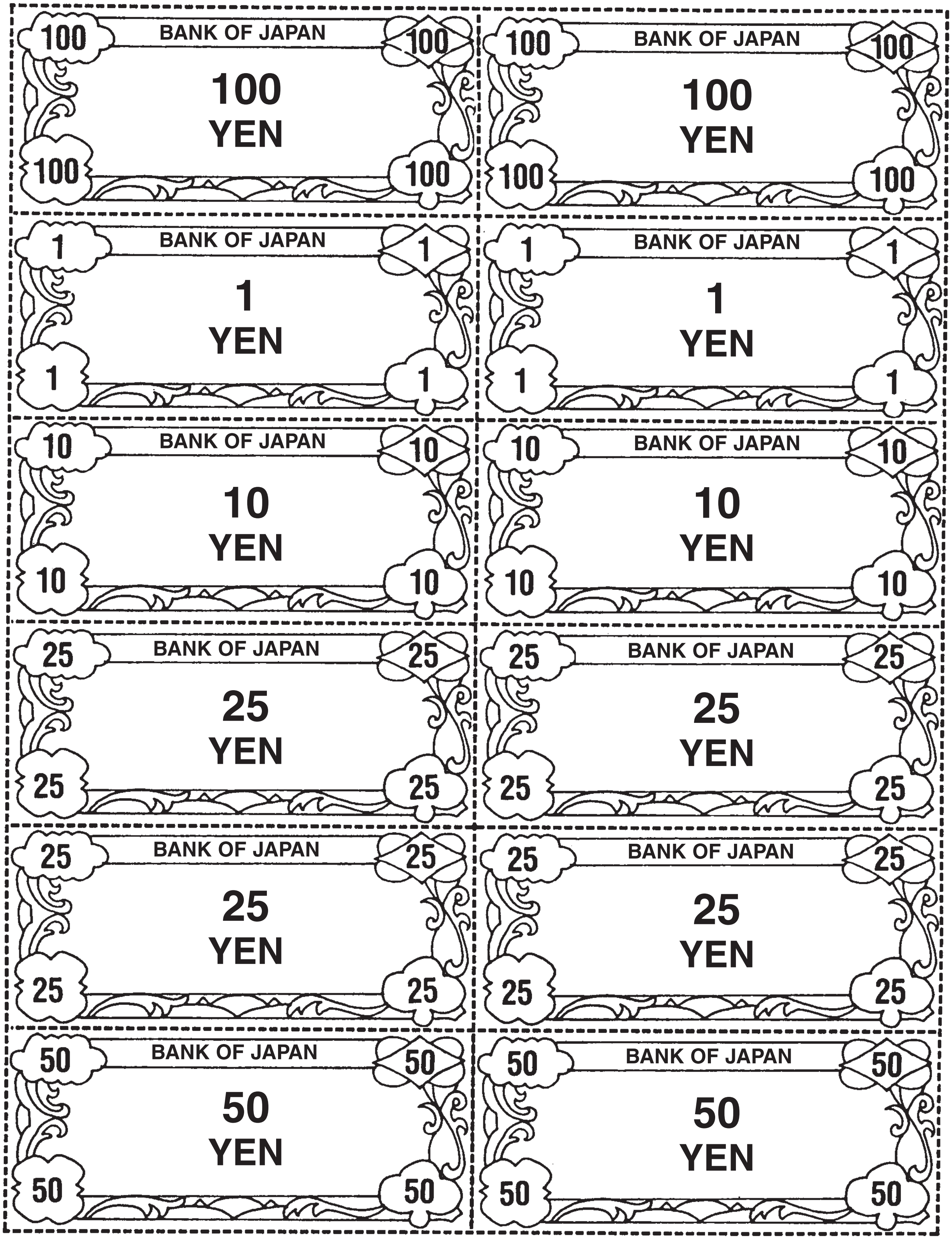
Handout Material 1

Yen (Approximately one page per student)



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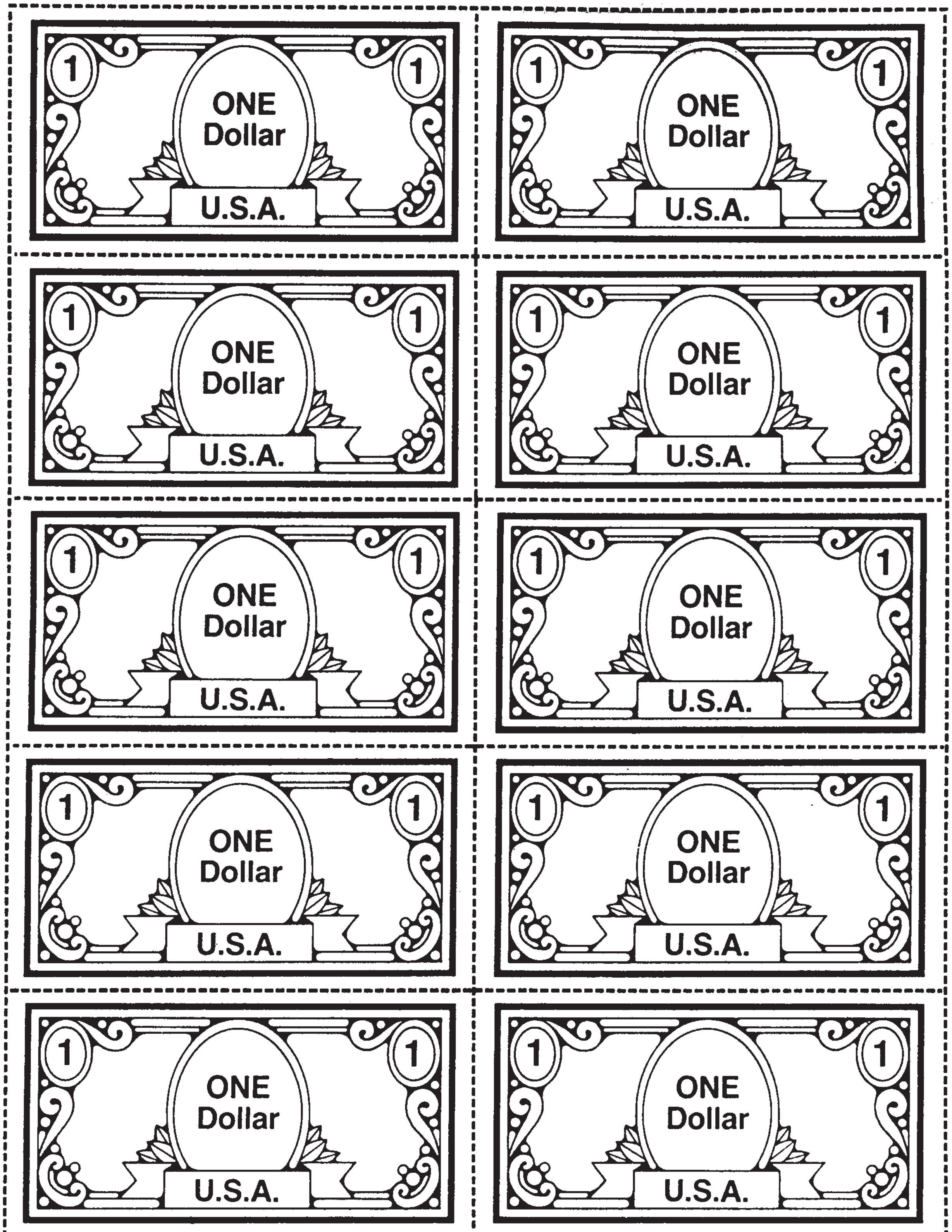
Handout Material 2

U.S. Dollars (You will need to provide 25 U.S. dollars per student)



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Visual 1

Tally Table

Price (in Yen)	Round 1	Round 2	Round 3
220			
210			
190			
180			
170			
160			
150			
140			
130			
120			
110			
100			
90			
80			
70			
60			
50			

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Activity 1

Foreign Currencies and Foreign Exchange

Simone, a 21-year-old veteran vagabond, peered into her wallet. Next to her passport and train tickets was her money. She pulled out her collection of pounds, rubles, kroner, yen, pesos, and euros. Simone looked up, confused. She tried to remember how she came to possess these currencies.

Simone is not alone. The world of foreign currencies often seems confusing. Not only are many of the names unfamiliar, but some travelers also want to know what each is worth in terms of U.S. dollars.

Because all of these currencies are money, they all serve the same functions. Money is a medium of exchange, a store of value, and a measure of value. As a medium of exchange, money can be used to purchase goods and services. As a store of value, money can be saved to use in the future. As a measure of value, money allows us to express the price of things. We can say a car costs so many dollars while a DVD player costs many fewer dollars.

Now to a basic question. How do we know what a foreign exchange rate is? How much is any currency worth in terms of other currencies? The simple answer is that a currency is worth whatever people are willing to pay for it. This is a case of supply and demand interacting in a market to establish a price for currency. If there is little quantity demanded for the country's currency, or a great quantity available for foreigners to buy, the money will be worth less on the foreign exchange market. If there is a high quantity demanded or only a small quantity supplied, then it will be worth more on the foreign exchange market.

For example, when Americans increase their purchases of imports, more U.S. dollars are sent abroad or are exchanged for foreign currencies in order to pay for the imported goods. As the supply of dollars to foreigners increases, the dollar tends to be worth less in terms of other currencies. Under such conditions we say the dollar *depreciates*. The same general analysis holds true for the currencies of other nations. If a currency increases its worth in terms of other currencies, we say it *appreciates*.

Currency values are established (and exchanges of currencies occur) in foreign exchange markets. These markets exist at banks, at the offices of foreign exchange dealers, and other places where one country's currency or checks can be exchanged for those of another country. But the greatest amount of foreign exchange activity takes place by telephone, electronically, or by other rapid means of communication used by commercial banks, businesses, and others who deal in large amounts of foreign exchange.

Foreign exchange values can change every day — most days by small amounts; some days by enough to make a difference to the people or businesses that are *converting* (exchanging) one currency into another. In the longer run, changes of great magnitude can occur. In the 1990s the value of foreign currencies, in general, fell a great deal against the U.S. dollar. Looking at the situation the other way, the dollar rose a great deal against foreign currencies.

In the 21st century, it will be interesting to see if the U.S. dollar remains "strong" relative the other currencies. When the euro was introduced in January 1999, one U.S. dollar could only buy .90 of a euro. By 2002, the U.S. dollar could buy 1.10 euros. Yet, by 2003, the U.S. dollar could only buy .98 euro. Values have continued to change since then. As the euro becomes more popular as a currency, it may reverse this trend and become a currency demanded by more people and businesses. If that happens, we should expect to see the euro's value trend back to its original value against the U.S. dollar.

Questions for Discussion

A. What are the three functions of money?

1. ____
2. ____
3. ____

B. The value of any currency is determined by the ________________ of it and the __________for it.

C. When a currency decreases in value, we say it____________.

When a currency increases in value, we say it ______________.

D. What do we call the places or means of communication by which currencies are traded and the value of one country's currency is established in terms of other currencies?_______________

E. Assume the United States produces new products that citizens of other countries buy in large quantities. All other things being equal, what will happen to the value of the U.S. dollar in terms of foreign currencies?____________

F. Assume the number of U.S. citizens traveling to foreign countries greatly increases. All other things being equal, what will happen to the value of the U.S. dollar in terms of foreign currencies?________