

UNDERSTANDING CURRENCY EXCHANGE RATES: A THREE-PART EXERCISE

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ABSTRACT

Students enrolled in business programs today are required to understand and appreciate the interdependence of nations in our global economy. This paper describes an exercise that can be used in any business course to teach the topic of currency exchange rates. Using information from the Wall Street Journal and play money from three countries, students are placed in scenarios that require them to complete several transactions using different currencies.

INTRODUCTION

Currency exchange rates are usually presented in one of the last chapters of the principles of finance texts (Gallagher & Andrews, 1997; Moyer, McGuigan & Kretlow, 1998; Ross, Westerfield & Jaffe, 1999) or not at all in some ‘condensed’ versions (Brigham & Houston, 1996). There are at least two disadvantages to covering this material near the end of a course. First, the professor is usually pressed for time. Second, many students will have great difficulty grasping the basic concept of converting dollars to a foreign currency or vice versa in a short time frame. These conditions limit the discussions on cross rates, purchasing power parity, interest rate parity, and managing exchange rate risk. Given the increased calls from academics (Hitt, 1998), accrediting associations (AACSB-The International Association for Management Education, 1994; ACBSP News, 1997) and practitioners (Baker & Armstrong, 1996; Lublin, 1992; U.S. News & World Report, 1991) for educational initiatives which prepare students for the global workplace, business programs should expose

students, at a minimum, to the topic of exchange rates.

The exercise described in this article is intended to aid students in becoming proficient and comfortable with converting currencies using both exchange rates and cross rates. It is a three-part exercise intended for use over several weeks of a term. Each part requires 20-25 minutes to complete. By presenting this material in small doses during a course, by the time the international chapter is covered near the end of the term students should be prepared for the more challenging topics in the chapter. If the international chapter is not covered, students still have learned important material for use in a future course or on a trip to a foreign country.

THE EXERCISE

Objectives

The objectives of this exercise are to have students: (1) learn how exchange rates are quoted; and (2) convert the currencies of three countries using a series of scenarios involving a traveler to two foreign countries.

Participants

For classes of up to twenty students divide the class in half. One half will be assigned the role of the ‘Traveler’. The other half will play the role of the ‘Banker/Retailer’. Each group should designate one of its members as its spokesperson. For larger classes, divide the class into an even number of groups then pair the groups off with one group designated the ‘Traveler’ and the other as the ‘Banker/Retailer’.

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Materials

A calculator and play money from the United States and two other countries are needed. The amount in each currency should be roughly equal to U.S. \$100. Bills in several denominations and coins should be included in order for the transactions to be completed accurately. Place the currency of each country in a separate billfold/envelope. For the exercise described here the two foreign currencies are British pounds and French francs. Mark the outside of the billfold with the U.S. currency 'Traveler', that with the British currency 'Banker/Retailer - England' and that with the French currency 'Banker/Retailer - France'.

Time

Approximately 20-25 minutes for each part.

Procedure - Part 1

Distribute to each student a copy of a recent Currency Trading section of the Wall Street Journal including both exchange rates and cross rates along with the handout labeled 'Currency Exercise - Part I' (See Appendix I). Focus first on the Exchange Rates section of the newspaper, and then explain the various columns as well as the difference between spot and future rates. Spend roughly 10 minutes answering the four questions under 'Exchange Rates'. Two of these questions pertain to the currencies that the students will be working with--pounds and francs. In the last 10 minutes of this session, explain how cross rates are used to convert one currency to another. Then, answer the three questions under 'Cross Rates'.

Procedure - Part 2

Distribute to each student a copy of a recent Currency Trading section of the Wall Street Journal (including both exchange rates and cross rates) along with the handout labeled

'Currency Exercise - Part 2' (See Appendix II). Give the billfold labeled 'Traveler' to the spokesperson for that group and the other two billfolds to the spokesperson for the 'Banker/Retailer' group. Have all students answer section 'I' of the handout. It should take roughly 10 minutes to translate these currency amounts.

After this, have students read section 'II' of the handout describing a scenario in a foreign country. Each group should focus on those questions pertaining to its role as either the traveler or banker/retailer. Allow roughly 5-7 minutes for the discussion within groups then ask the spokespeople to conduct the first transaction using the play money (U.S. dollars and British pounds). If there is disagreement as to the amount to be paid, review briefly the exchange rate tables until there is agreement between the two parties. After this exchange, the traveler pays the banker/retailer for the tube pass. Upon completion of the second transaction collect the three billfolds of money (without changing their contents) for safekeeping until Part 3 of the exercise.

Procedure - Part 3

Distribute to each student a copy of a recent Currency Trading section of the Wall Street Journal (including both exchange rates and cross rates) along with the handout labeled 'Currency Exercise - Part 3' (See Appendix III). Give the billfold labeled 'Traveler' to the spokesperson for that group and the other two billfolds to the spokesperson for the 'Banker/Retailer' group. Have all students answer section 'I' of the handout. This should take 5-10 minutes.

After completing section 'I' have students read section 'II', The Scenario in London. As before, each group should focus on those questions pertaining to its role (traveler or banker/retailer). Allow 2-3 minutes for

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discussion then ask each spokesperson to conduct the first transaction using the play money (U.S. dollars and British pounds). If there is disagreement as to the amount to be paid, review briefly the exchange rate tables until there is agreement between the two parties. Once this exchange takes place, move on to section 'III'.

Allow 2-3 minutes just for students to read through 'The Scenario in Paris', including their particular questions. Focus on the first question for 2-3 minutes reminding students to use the cross rates information to arrive at an answer. Completing questions 2 and 3 will take an additional 5-7 minutes.

Variations to the Exercise

Here are some additional guidelines and suggestions for the use of this exercise:

1. This exercise can be used in any business course--not just principles of finance. In fact, starting in September 1998 it was used in our introductory business course, International Business. This early exposure to currency exchange rates is important to our population since fully 60% of our freshmen will spend their Spring Break in London as part of our London Preview Program. By the time these students are juniors and taking the principles of finance course, they should be comfortable using exchange rate tables to convert currencies.
2. Using the three parts of this exercise over several weeks allows students to appreciate the changes in rates over time. Point out whether a currency has gone up or down in value relative to the U.S. dollar by comparing rates from one time to another.
3. If time allows, this exercise can be expanded to include a visit to a third country.
4. The instructor should do all calculations ahead of time to know both the correct answer to each question plus how much

money should be held in each billfold after each transaction.

5. The two foreign currencies used here were chosen because of access to play money from those countries. Any two countries can be substituted and if there is no foreign currency available continue to use three billfolds/envelopes but simply write the amounts of money that each would contain after the transactions occur.

CONCLUSION

The exercise described here provides students an opportunity to learn a concept that may be applied to their own lives in the immediate or near future. Students today are enjoying the benefits of world travel at an earlier age and for many part-time students, they have already been exposed to currency exchange rates as either vacationers or business travelers. Presenting this topic formally provides a broader understanding of currency valuation and illustrates how to use the published currency tables.

APPENDIX I

Currency Exercise - Part 1

I. From the Currency Trading section of the WSJ

Exchange Rates

1. How many U.S. dollars does it take to buy 1 British pound?
2. How many U.S. dollars does it take to buy 1 French franc?
3. How many Japanese yen does it take to buy 1 U.S. dollar?
4. How many Mexican pesos does it take to buy 1 U.S. dollar?

Cross Rates

1. One British pound is equivalent to how many French francs?

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2. One Canadian dollar is equivalent to how many Japanese yen?
3. One Japanese yen is equivalent to how many British pounds?

APPENDIX II

Currency Exercise - Part 2

I. From the Currency Trading section of the WSJ

Exchange Rates

1. How many U.S. dollars does it take to buy 1 British pound?
2. How many U.S. dollars does it take to buy 10 French francs?
3. How many Spanish pesetas does it take to buy U.S. \$20.00?

Cross Rates

1. One Mexican peso is equivalent to how many British pounds?
2. One thousand Italian lira are equivalent to how many French francs?
3. Five British pounds are equivalent to how many Japanese yen?

II. The Scenario

A traveler arrives in London for a one-week business trip. At the airport she has only U.S. currency but wants to purchase transportation for the next several days. A one-week pass on the 'tube' will cost 16 British pounds.

Traveler - Using the exchange rate table provided, answer the following questions.

1. You give the bank teller U.S. \$60.00 to be exchanged for British pounds. How many pounds do you expect to receive?
2. Pay the retailer the correct number of pounds for the weekly tube pass. In U.S. dollars, what is the price of the pass?

Banker/Retailer - Using the exchange rate table provided, answer the following questions.

1. You are to exchange U.S. \$60.00 for British pounds. Give the correct number of pounds to the customer.
2. Collect the correct number of pounds for the weekly tube pass. In U.S. dollars, what is the price of the pass?

APPENDIX III

Currency Exercise - Part 3

I. From the Currency Trading section of the WSJ

Exchange Rates

1. How many U.S. dollars will it take to buy 70 French francs?
2. How many Japanese yen will it take to buy U.S. \$50.00?

Cross Rates

1. 50,000 ECUs are equivalent to how many German marks?
2. 80 Canadian dollars are equivalent to how many French francs?

II. The Scenario in London

The traveler in London wants to exchange her last U.S. \$40.00.

Traveler - Using the exchange rate table provided, answer the following question.

You give the bank teller U.S. \$40.00 to be exchanged for British pounds. How many pounds do you expect to receive?

Banker/Retailer - Using the exchange rate table provided, answer the following question.

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You are to exchange U.S. \$40.00 for British pounds. Give the correct number of pounds to the customer.

III. The Scenario in Paris

After the traveler exchanges the last of her American currency and returns to the hotel an urgent message is received asking her to travel to Paris for the weekend--all expenses paid. Jumping at the chance, she departs London and arrives in Paris within a few hours. Once there she has no need for currency but as she is about to leave Paris she decides to exchange all her pounds for francs in order to buy some souvenirs.

Traveler - Using the exchange rate table provided, answer the following questions.

1. You give the bank teller all of your British pounds. How many pounds do you have? How many francs do you expect to receive?
2. You do not want to return to London with any pounds so spend as many francs as you can by selecting from the following items. (Purchase no more than one of any item).

Stuffed Animal - 152 francs

Bottle of Wine - 96 francs

Ceramic Mug - 55 francs

Bottle of Men's Cologne - 230 francs

Pay the banker/retailer for the items.

3. You decide you want to exchange the remaining francs for pounds. How many francs do you have remaining after making your purchases? How many pounds do you expect to receive for the francs you are exchanging?

Banker/Retailer - Using the exchange rate table provided, answer the following questions.

1. You are to exchange the British pounds you receive for French francs. How many pounds do you receive? Give the correct number of francs to the customer.
2. As the retailer you will be receiving francs from the traveler for the purchase of several items. Make sure the total received is correct.
3. As the banker you will be asked to exchange the remaining francs for pounds. How many francs will be exchanged? Give the correct number of pounds to the customer.

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