

Developments In Business Simulation & Experiential Exercises, Volume 17, 1990

International Currency Fluctuations: Money\$im, A Simulation

B. Curtis Hamm, Oklahoma State University
Roy F. Cabaniss, Cameron University
Marion E. Deaton, Oklahoma State University

ABSTRACT

Money\$im is a computer game which simulates negotiating during international currency fluctuations. The game teaches the importance of planning before trading in a foreign country. Six actual countries with different types of currencies are represented for maximum understanding of currency types. Students are divided into buyer and seller groups and negotiate over five periods. There is an evaluation procedure and teaching notes for the instructor.

SIMULATION

The internationalization of the business curriculum gave rise to a need for text and supportive instructional materials. Some of the topics necessitate some form of experiential exercises to understand the magnitude of concepts such as culture, negotiation, and currency fluctuations. This paper concerns itself with one of the concepts- currency fluctuations and the necessity of understanding how to negotiate and accept payments in the host country's currency. Cavusgil noted that:

"Exchange rates can be one of the more volatile variables in international business, especially in developing countries." (Cavusgil 1988, P. 60).

A basic understanding of foreign exchange is therefore critical to the success of an international business person. This simulation attempts to provide a first step in understanding exchange rates. A major goal is to illustrate the impact of different types of currencies upon business negotiations. A secondary goal is to demonstrate the impact the type of exchange rate determination has upon the international business situation (Cabaniss and Deaton 1989). Two problems arise when foreign exchange occurs. First, every country has its own unique banking system to handle its financial transactions. One should have a good understanding of the procedures and constraints within the system to complete a foreign exchange transaction (Jam 1987).

The second problem arises due to fluctuations in the exchange rates between currencies. Governmental policies and the supply and demand of currencies cause these fluctuations. Under the present system these fluctuations occur daily (Jam 1987). This simulation ignores the problem of different banking systems and concentrates on the impact of currency types and exchange rates. It is recognized there are methods to hedge exchange rate risks. However, one must first have an understanding of the basic exchange rate risks and rewards before one can have an appreciation of the benefits of such hedges (Cabaniss and Deaton 1989).

When considering the movement of exchange rates the different mechanisms a government uses must come into consideration. There are essentially seven forms of exchange rate determination, but only six forms are included in this

simulation. Table 1 shows a synopsis of these.

TABLE 1

Free Floating	A hard currency which is easily convertible into other currencies; one that is freely deposited and borrowed outside of its home country; market factors are the sole determination of its value (Melvin 1985).
Pegged	A pegged currency's value is defined by the value of some other currency. For example, the exchange rate of country A (Pegged) is a ratio of the currency of country B (Melvin 1985).
Pegged Basket	A Pegged Basket currency is a combination of a pure pegged currency and a pure basket currency. The Pegged-Basket currency value is based on pegged values instead of free-floating values. The exchange rate of country A is equal to some combination of the currencies for countries B, C, D, E, in a fixed ratio (Melvin 1985).
Non-Convertible	A Non-convertible currency cannot be converted into other currencies except for minimal amounts within the country. The currency of country A cannot be taken out of their country (Melvin 1985).
Managed Float	A managed float currency floats within a range, which is subject to intervention by their central bank. Market factors are the sole determinant of the exchange rates as long as it stays within certain parameters (Melvin 1985).
Crawling	The exchange rate of country A is a Peg certain ratio to the currency of country B or to certain economic indicators of country B (Melvin 1985).
Basket	A basket of currencies is a unit of account. The value of a basket of currency is an algebraic formula of several free-floating, currencies' exchange values. The exchange rate of country A is equal to some, usually unknown, combination of the currencies for countries B, C, D, E and other (Melvin 1985).

Money\$im creates a hands-on, competitive experience while demonstrating the impact of currency types on business transactions. During the simulation, participants learn the influence of different currency types and fluctuating exchange rates on

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Materials Required

1. IBM PC (Either: AT, XT, 0S2 or compatible with 640K memory with one, 5 1/2" disk drive). The simulation is designed to be used with an overhead-projecting computer, but *this* is not essential.
2. Computer program LOTUS 1-2-3. Version 2.01 or later.
3. Printer
4. Pocket calculator for each seller and each buyer
5. One formatted, 5 1/4 floppy disk
6. Kodak Datavue Display Screen (Optional but desirable)

Director's Role

1. Before the simulation
 - 1.1 Review all instructor materials and set up equipment.
 - 1.2 Make decisions regarding the order of currency fluctuations and the magnitude of the changes. Generate computer output.
 - 1.3 Prepare a short lecture on types of currencies and the importance of foreign exchange. The types of currencies are defined in the briefing sheets.
 - 1.4 Prepare to lead a group discussion after the simulation
2. Day of the simulation
 - 2.1 Deliver short lecture on foreign exchange.
 - 2.2 Explain the simulation In general terms.
 - 2.3 Divide the participants into groups of buyers and sellers. Assign each buyer to a specific country. Multiple groups may be formed if there are more than twelve participants. The program can accept up to twenty-four buyers and twenty-four sellers without modification. Each universe is composed of a maximum of six buyers and six sellers, however, fewer buyers or fewer sellers are possible in a universe.
 - 2.4 Provide a briefing sheet to each buyer and seller. Give a short explanation and answer any questions. Buyers will have information regarding currency changes, which the sellers will not. Sellers are given Information about the cost of motors while buyers do not have this knowledge.
 - 2.5 Announce the beginning and end of each trading period.
 - 2.6 Tabulate the results of each participant. It is faster to enter data during trading period time.
 - 2.7 Compare the results of the participants.

- 2.8 Lead a group discussion after the simulation. During this discussion it is imperative to emphasize that the simulation includes imposed time limits which may not be representative of the real world and that success in international marketing requires patience during negotiations and knowledge of cultural differences.

Actual Simulation

The simulation starts with each seller selecting a country with whom to negotiate. Following normal business procedure, negotiations will commence with the seller offering a price and delivery time for a contract of 100 motors. If the contract is successfully negotiated, price per motor and delivery date is recorded on the transaction card and initialed by both parties.

Table II
Currency Exchange Determination,
Country Represented and Country Game Name

<u>Type</u> <u>Exchange</u> <u>Determination</u>	<u>Country</u> <u>Representative</u>	<u>Game</u> <u>Name</u>
Free Floating	Australia	Antis
Pegged	Tonga	Merid
Non-Convertible	Kampuchea	Drach
Managed Float	South Korea	Kalon
Crawling Peg	Madagascar	Atlan
Pegged Basket	New Guinea	Trippit

The director announces approximately one minute before the end of the period that the business day is about to conclude. One minute later, he/she announces that it is the close of business. Sellers then exit the countries.

The director announces the next currency fluctuation when all sellers have departed from their negotiating countries. A Datavue machine helps the participants to see the new exchange rates immediately. Sellers then select a country with whom to negotiate during the next period and the director announces the start of the new trading period. The simulation continues until the end of the fifth trading period ends.

On completion of the last trading period, each seller's transactions are entered into the computer program to summarize the results of each participant. This can be done while participants are negotiating. Results are compared in general and the director leads the concluding group discussion.

General Comments

Foreign exchange presents several problems for global marketers. This simulation focuses on the difficulties associated with differing currencies and fluctuating exchange rates. One major problem is how to negotiate with different countries who have unique ways of determining exchange rates. A second problem is how to convert currency or goods

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profits. Participants obtain an understanding of why different currency types (Pegged, Pegged Basket, etc.) react differently to changes in the foreign exchange environment. These changes point out the need for careful study of host country's currency before doing business. Finally, the simulation provides the participant a useful experience in price-competitive selling, and an appreciation of the added difficulties of dealing in foreign currency.

The Computer Program as a Teaching Tool

The microcomputer is becoming one of the major tools in the world of business and in the teaching profession. The effects of the computer in education have been positive. One of the ways to use computers in education is through computer aided instruction (CAI). CAI has demonstrated a measurable impact upon students (Yawkey 1986). CAI does not represent the ultimate technique in computer teaching. Clements and Gullio (1984) showed that self imposed analysis is more effective than C.A.I. even more importantly, a computer can demonstrate a complex mathematical or conceptual model in a greatly abbreviated span of time. Note that the accuracy of the model may or may not have any correlation with the usefulness of the model itself as a teaching tool.

Lap-top computers and projector view screens create new possibilities for computer simulation. This technology allows an instructor defined spreadsheet to be the driving force of a simulation. In Money\$im, the instructor modifies the spreadsheet to accommodate various global changes as teaching points.

Money\$im Came

Money\$im simulates international currency fluctuations in a trading environment. It permits the students to recognize the importance of currency fluctuations in a fast paced situation when negotiating time is limited. Actual countries with different types of exchange rate determinations are used with disguised names.

Participants are informed of the purpose of the simulation and divided into two groups: Buyers (country representatives) and sellers (company representatives). The instructor introduces the concept of foreign exchange rates and the impact that these rates can have on profits. The simulation director predetermines the exchange rates and the fluctuations that will occur doing the simulation. Instructions are provided with the game and the materials necessary to play including the computer program.

After the instructor has the computer equipment ready to play the game, the participants are separated into the two groups. Individuals in each group are then given the necessary instructions and materials to play the game. The game consists of five periods where buyers and sellers meet to negotiate the purchase of electric motors.

Sellers' Role

Sellers are competing motor manufacturers who are trying to open new markets for their companies in the various countries. The primary means of competition is price. Sellers are given information regarding cost of their motors, selling price range and the type of currency that each country represents. Each seller has one lot of 100 motors to sell for each of the five periods and one additional lot, which can be sold for delivery in any period.

Price and delivery are a part of the negotiations.

Buyers' Role

The buyer is a representative of one country who is responsible for the purchase of electric motors. In addition to obtaining the best price and delivery, buyers are required to develop as many sources of motors as possible. Buyers have the option of purchasing more than one lot of motors during any trading period.

During Play

Buyers and sellers attempt to make at least one transaction each trading period. They have the option of making more than one transaction if they have the time. Announcements of changes in currencies are made between trading periods with all transactions being made in the currency of the buyer. A sale to a country, which has non-convertible currency, will require the seller to accept products in lieu of currency for counter-trade. The goal of both buyer and seller is to maximize long-term profits.

Ending Play

The game ends when all five negotiating periods are completed and two winners are announced. The winner among the sellers is the participant who complete one transaction with each buyer and whose sales result in the most profit in dollars. The winner among the buyers is the participant who completes one transaction with each seller and whose total purchases are at the lowest price.

Time

The simulation is designed for a minimum of one fifty-minute class. Four minutes are allowed for each of the five trading periods. One minute is allowed between each trading period to record transactions and announce the next currency fluctuation. This allows ten minutes for the introduction and fifteen minutes for the conclusion. This is a fast and hectic pace. It is possible to play the game over six class periods for shorter times or to use two full class periods. Extending the game over more than one period seems desirable so that the participants can develop their strategy and to permit them to react to currency changes that have taken place.

Materials Supplied

The game consists of sufficient materials for twelve participants. The materials may be duplicated for larger classes. The materials consist of:

1. Color coded transaction cards for a total of forty-eight cards.
2. Six country symbols representing each of the currency types.
3. Thirty-six motor cards. Each seller needs one card for each period and one card for delivery in any period. These cards are receipts to be given the buyer when the transaction is completed.
4. Computer program disk. The disk includes the computer program and copies, in ASCII of the buyers and sellers briefing sheets.

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into dollars so that the final transaction can be completed. A third problem is understanding that fluctuations in currency values will change and the effect these fluctuations in currency values will have on final profits.

The following statements are valid regarding the simulation. Regardless of specific changes made by the simulation director.

1. A change in the relative value of the floating currencies has a ripple effect throughout the world currency markets. If the U.S. dollar were to devalue against the Australian dollar, the change would be felt in the countries which trade with these parties. The important point to note is that this change is not necessarily of the same magnitude or the same direction as the primary change. The currency change depends on the trading relationships of the various countries concerned.
2. A country chooses how to peg their currency. Quite often a country will peg their currency to a more important trading partner. In this simulation, one currency is tied to the Australian dollar.
3. The knowledge that a currency is a pegged basket type does not provide much assistance in predicting the fluctuation of the currency. Normally, the composition of the "basket" is a closely held secret.
4. Countries, such as South Korea, who let their currency float, within limits, often have a lagged effect built into their corrections. This lagged effect surfaces as they continue to keep their currency within stated "bound's. In some cases this develops into a positive feedback situation which forces their currency to be drastically re-evaluated against the goals of that government.
5. If a currency is non-convertible, such as those of many planned economies, the official exchange rate is not as important as the goods that they have to exchange. This simulation demonstrates more of a barter situation rather than counter trade, but both situations exist in the world market.
6. The country with a crawling peg currency is, in effect, attempting to counteract the economic forces of their trading partners. This causes a multiplier effect on the trade relations of the two parties.

Conclusion

The goal of this simulation is to create a hands-on, competitive experience. During play, the participants learn the impact of differing currency types and fluctuating exchange rates on profits. Participants should gain an appreciation of the concept that differing currency types (pegged, basket and others) react very differently to changes in the foreign exchange environment. This further points out the need for careful study of a host country's currency before doing business. Finally, it is hoped that this simulation has provided the participant a useful experience in price-competitive selling, and an appreciation of the added difficulties of dealing in foreign currency.

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