Teaching foreign exchange market issues in business education

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Abstract

This paper presents a classroom experiment that places students directly into the learning environment and allows them to make foreign exchange decisions in simulated market arena. The experiment offers students hands-on experience that assists them in understanding the workings of foreign exchange auction type markets in particular and of business operating in a market economy in general. After participating in the auction process, a short debriefing session is conducted to enhance the effectiveness of their learning experience. Students are also given an opportunity to interact with team players, to compete against other students, and to receive an appreciation of the pressures faced in the high speed market industry. The experiment described can be successfully adopted in the undergraduate finance education This classroom experiment is based on an original concept published by Zapalaski, Flanegin,and Rudd, enhanced to include portfolio rebalancing within stock auction markets by Flanegin, Zapalaski, Rudd.

Keywords : experimental learning, equal of your, equilibrium, business strategy, entrepreneurial motivation

Introduction

Higher education institutions have given much attention to the necessity of developing skills in such areas as communication, critical thinking, problem-solving, teamwork, and information technology. However, considerably less attention has been given to the development of good cooperative and active exercises that allow students to actively learn concepts that they are expected to understand (Becker, 1997).

Many business students find difficulty in the application of economic principles while studying business concepts. They also find economics perplexing because it combines the ambiguity of a social science with the mathematical rigor of physical science. The extensive use of theoretical graphical analysis adds an additional dimension of complexity (Becker, 1997).

One of the most exciting recent developments in the teaching of business issues is the increased use of classroom experiments that insert students directly into the business environments being studied (Zapalska and Brozik, 2000). Similarly, as economics has become more technical, even at the undergraduate level, the use of classroom experiments provides an important connection between theories and key features of the markets and institutions being studied in economics education (Hester, 1991).

This article focuses on the issue of how using experiments in teaching basic business and economics concepts can help business students in general and finance students in particular prepare for their professional careers. With this in mind, students are placed in an experiment that simulates a market place where they participate in buying and selling activities that demonstrate various market elements and business forces in the investment industry.

By actively participating in the experiment, students learn the role of market forces in determining equilibrium in a given market, as well as the value of and the role of information in market operations. Students learn that due to the possible presence of ever changing demand in a market, not all commodities can be in equilibrium and prices are forever fluctuating. Hence, they are also led to realize that securities are offered at the highest prices they can command. This is a technique of price discovery that most traders will never consider. Students are also exposed to the concept of wealth. Since there is no money in this market, students observe that wealth is measured by "possessions of certain stocks." In addition to economics concepts learned, players are also forced to recognize the need for accurate accounting, appropriate strategy, and decision-making.

A discussion that takes place during a debriefing session allows students to reinforce the concepts learned from their own experiences. The discussion is guided to generate comments about the different scenarios and roles found in team situations. It also seeks to relate these roles to real business situations that can occur in the equity investment market.

Literature review

The field of experimental learning has experienced substantial evolution during the last two decades (Zapalska and Brozik, 2000). As business material becomes more technical, even at the undergraduate level, classroom experiments provide an important

connection between theories and key features of the businesses and institutions being studied. Learning is apparently enhanced when the student relates new concepts and words to his present inventory of knowledge and experience (Davis and Holt, 1993; Becker, 1997). As experiments stimulate and encourage the acts of experiencing, reflecting, analyzing, and questioning, students formulate abstract concepts and come to understand business concepts (Becker and Watts, 1995).

Business education literature indicates that business experiments were introduced around the middle of the twentieth century (McMillan, 1992). Evolving from early studies of the theory of games of chance by the Swiss mathematician Daniel Bernoulli (1700-1782), the game theory was first formally applied to economics decision making through mathematical analysis by Morgenstern and von Neumann in 1944. Since that time, experiments have been widely used in economics classroom throughout the country (Chamberlin, 1995; Barlet and King, 1990).

Experiments not only enable one to test economic theories, they also create artificial market situations that can be used in the business classroom to examine alternative market structures and their effects on a business, as well as to analyze various other concepts that relate to the business (Becker and Watts, 1996). They provide the students with effective means of learning through experiences taken from actual business situations in a controlled environment (Hester, 1991). This method of instruction makes it possible to teach difficult business concepts in an interesting and effective manner (Smith, 1991).

There are variety of experiments ranging from business games to economics games, international relations games, and many others (Becker and Watts, 1995). Experiments varying from very simple to complex can be found in today's business and economics college education (Haupert, 1996). Whatever the topic, the planner of the game needs to specify the teaching objectives to be observed by the experiment and plan to highlight features that contribute to those objectives (Smith, 1991; Maier and Keenan, 1994).

Some experiments that seek to exercise a fundamental concept may be very simple in structure (Plott, 1991). In this case, multiple repetitions of a simple experiment must be conducted in order to illustrate the principle (Wells, 1991). Other experiments that seek to model complex operations, like the operation of a commercial bank, may have many aspects that must be mastered (Hester, 1991). Experiments like this can take multiple repetitions of a simple game to complete the learning process (Wells, 1991). While short and long experiments have their uses, for many instructors it is often desirable to have an experiment that takes a single class period and illustrates a specific concept (Maier and Keenan, 1994).

The single-period experiment has the advantage of being flexible in its application, as instructors can change plans according to the needs of the class and move the experiment to a different time without causing major disruptions in the class schedule (Smith, 1991). When a single-period experiment is properly designed, it can become a valuable tool that provides flexibility with educational content (Becker, 1997; Becker and Watts, 1996).

Greater employability, marketable skills, and improved work attitudes have encouraged more and more teachers in both business and economics to incorporate experiments in their teaching (Barlett and King, 1990). Although there are numerous

commercially prepared experiments available, many teachers prefer to develop their own experimental games and simulations in order to meet their students' specific needs. The teacher-prepared experiments are usually considerably more economical (Holt and Mcdaniel, 1998; De Young, 1993).

This paper presents a single-period experiment that can be used in an investment program as students develop skills that are applicable throughout the finance and investment business. It is only necessary for the instructor to understand the structure of the experiment and create scenarios appropriate for the material being taught. If used correctly the experiment can facilitate deep, effective, active, and experienced-based learning in any undergraduate finance program.

Structure of the experiment

The experiment is designed to help students learn by analyzing their own behavior and observing situations that resemble competitive forces present under different market conditions. In the experiment students represent foreign exchange traders operating within a multinational corporation with specific identified foreign exposures. As students are asked to rebalance and hedge foreign exchange currencies based on anticipates revenues they must gamble on the forward vs. spot rates. Students do not at the time of the exercise is completed the true foreign rates for the time period selected. These rates must be determined by the "marketplace" of students with there foreign currency needs. In addition to the spot rates a correlation matrix for all of the currencies is given. With this if it is not possible or desirable to hedge with a forward contract it may be possible to hedge with a highly correlated counterpart. Each foreign currency team develops a business strategy in order to trade the combinations of anticipated long and short positions in the different currencies. Students actively participate in barter activities as market transactions are accomplished with no use of money.

As students become active buyers and sellers, they observe how their strategic behavior affects the buying and selling activities of other players and how the strategic behavior of other players affect their trading activities. They also are expected to understand the role of market forces in determining the equilibrium in a given market. The experiment also provides a valuable basis for analyzing differences in market processes and structures and allows participants to learn the value and the role of information, accounting, marketing, management, and ethics in market operations. It also provides students with the experience of planning and implementing hedging strategies in a competitive environment created by portfolios that have different hedging requirements, utilizing both forward contracts and exposure netting through correlation coefficients. In sum, students explore a market that illustrates various concepts that might be present in the actual foreign exchange markets.

Though the game may at first seem complex, the process can flow quite smoothly and with little aggravation. Figure 1 provides a teaching timeline.

Insert Figure 1 in here

Conducting the experiment

The class is divided into six foreign currency trading groups who act both as sellers and buyers. Every student is randomly assigned to a trading agency. The names of traders are chosen so they don't convey any information concerning the relative initial wealth of each portfolio. As brokers, players are expected to barter the foreign currencies among each other to meet their portfolio's investments needs. It is recommended that before the experiment begins each group assign a group manager and a group accountant to take responsibility for accounting and management of the group.

At the beginning of the experiment, instructions are distributed to each group in the form of supply/demand sheets. An example of six individual trading sheets is shown in Table 1. According to Table 1, each Business, called "Traders 1-6," is given a list of items available to trade and items that are needed. Long in some currencies and short in others.

Market Lessons learned

During the experiment students should be able to observe that all transactions tend to move quickly toward the theoretical equilibrium. Almost all transactions are at or very near the market equilibrium by the time the trading period is over. At the end of the experiment, each trading family's transactions and the overall market's transactions are presented. This allows the traders to observe how their behavior and the structure of the market led to a specific equilibrium. Table 2 presents the existing market structure that traders are expected to experience. The selection of currencies represents the major trading partners of the United States. While 2004 proved to be a bad year for the value of the dollar vs. all major currencies, the dollar did fare better against some currencies than others. The selected currencies are listed in decesending order with the currency having highest percentage gain against the US dollar listed as number one. The top four currencies relative to the dollar are in the shortest supply with the middle four performing currencies in equal supply.

Insert Table 2 in here

Within this make believe market a status of shortage has been give to the four worst performing currencies relative to the dollar. While the initial and ending currencies needs varied for all of the firms currency portfolios the percentage change in value varied very little with four firms currency portfolios changing by +20% and two currency portfolios changing by +19% The initial value of each currency portfolio was not revealed until all trading activity ceased and hence the traders had to determine through the astute observation of the supply and demand of individual securities which securities should be increasing in value and which securities should be decreasing in value.

One of the most important lessons learned is that not all commodities/currencies could be in equilibrium, since a market can include both shortages and surpluses (Table

2). Traders are also led to realize that market goods are offered at prices they command. This is a technique of price discovery that most traders would have never considered.

Students learn the role of market forces in determining a given market's equilibrium, the value of prices, and the role of information in market operations. They learn the value and the role of market information, and assess how information-control techniques are vital to market success.

Students are also exposed to the concept of wealth. Since there is no money in this market, students observe that wealth is measured by the ability of each group to hedge their company's foreign exchange position and hence reduce the risk faced. Determination of the success or failure of each trader can occur at two levels. First, traders could be identified as winners or losers by determining whether or not they were able to meet their needs. Traders collecting all the correctly hedging all long and short positions, win over traders who cannot meet their basic needs.

Individual success can also be analyzed by considering the initial wealth position of each firm. However firms that start out with more wealth should logically end with more wealth, and vice versa. A second measure of the success of each trading group is the percentage gain in the overall currency portfolio value. If the market structure makes it difficult for traders to function, or if the final wealth distribution is unreasonable, the market structure might fail. In this way, the experiment can be used to test and demonstrate various market structures.

Insert Table 1 in here

For example, Firm #1 has a current currency portfolio made up of the Won, Swiss Franc, Canadian Dollar, Indian Rupee, Australian Dollar, and Mexican Peso. However the sales arm of MNC (multinational Corporation) has recommended the their currency portfolio be rebalanced utilizing the currencies listed in the need column, Brazilian Real, the Euro, British Pound, Russian Ruble, Japanese Yen , and the Chinese Yuan. Trader #1 does not know the relative value of any of these stocks in the overall market. If Won is in shortage and Ruble is in surplus, it may be possible to trade one Won for five or more Rubles. If the Yuan is in surplus, and real is rare, it may be impossible to trade all the Yuan's for even one Real. The supply and demand characteristics of the market set the price of goods, not relative size or preconceived notions.

While the goal of ordinary currency trading at the corporate level is for hedging purposes trading currencies provides a good example of the overall market. The goal in the foreign exchange market for the vast majority of companies is to reduce risk. However in the larger picture the reduction in risk will lead to wealth maximization. For example, Mutual Fund #1 may want 360 Reels, but it would be better for this firm to have 400 or 500 of Reels (Table 1). The more overall currency that firm #1 can get, the wealthier the firm will be. One thing that the firms do not want to do is to finish the trading period with the same mix of stocks as they started with. A unique situation in this game is that can be explored after the fact is that if the currencies in the surplus condition are "beaten up" enough it may be possible to maximize performance by buying these "undervalued currencies".

The students receive no preliminary information on what the market conditions experiment is supposed to demonstrate, since additional information could influence the traders' actions. Such information could affect trading behavior and adversely affect the education value of the experiment. At the beginning of the experiment, a short period is allowed to answer general questions and to review the instructions before trading begins. After the all traders have a chance to insure they understand the instructions, the experiment is started.

When the market opens, traders start to make deals with other traders to complete transactions consistent with each trader's supply of currencies and specified needs. Everyone is free to circulate and make trades at any time. Trading continues until the instructor announces the close of the market. At the end of the trading session, each firm reports what the final currency positions and compares that with their forecasted requirements

Debriefing session

After the game is concluded a debriefing session can be held to find a winner and to review the lessons learned from the game. This is the last and the most important part of the experiment. This is where the traders' experiences are transformed into education. Merely participating in a classroom experiment is not sufficient, and there must be a review that reinforces the experiment's goals. This is also the most difficult aspect of any experiment because it is quite possible that things occurring during the experiment were not anticipated. The instructor must be aware of everything that is happening during the game, even the unplanned events, and be able to translate all the activity into an appropriate set of lessons learned.

Before the debriefing session begins, each trading team is asked to review its initial plan and identify any changes that may have been made to that plan. In order to demonstrate the strategic planning aspect of the game, students can be expected to provide answers to the various questions that are provided in Figure 1.

To provide answers to those questions, students work within their groups. Some other topics could be raised. Which topics are raised should be based on the instructor's observation of the market played.

The follow-up discussion should stimulate intellectual discussion and provide a well-developed background for the analysis of market behavior, the importance of communications, the lack and presence of market power, and the availability of information. It should demonstrate how well students understand the structure and forces of the market that was demonstrated. The students should discuss the process of negotiation and improve their understanding of market processes. The debriefing session might focus on students' strategies and the results of their strategies, and the discussion about how the players gathered and processed information during the experiment.

Debriefing might also indicate: (1) the basic characteristics of an experiment; (2) multiple aspects of the complexity of the market simulated; (3) how the dynamic nature of the market affected and possibly changed the firms initial strategic business plans; (4) how the experiment helped students learn to acquire information through listening and observation, and allowed them to practice informational, organizational, and evaluation

skills; and (5) how foreign exchange markets function and the role of the market elements setting prices within the brokerage industry.

The players might also be expected to recognize the need for accurate accounting, the value and role of market information, and to assess how information control techniques are vital to market processes.

Players are also forced to recognize the need for accurate accounting. As the participants' accounting and bookkeeping procedures are often shown to be inadequate, this can stimulate discussion about the role of these activities in markets. The review of accounting and bookkeeping during the debriefing shows that these activities, which are usually disdained by students, have practical applications in the wider markets. Figure 2 presents an example of an accounting sheet that can be passed on to all traders.

According to Figure 2, all traders are expected to prepare their transaction history by reporting all trading partners, items traded, and items received during each transaction. Depending on a lesson that must be achieved, an accounting sheet can be passed on to traders before or after a trading session is completed. If the instructor wants the traders to develop their own accounting technique, it is recommended that an accounting sheet be passed on to the traders during the debriefing session when the accounting technique is discussed. The issues of ethics in accounting and business in general can also be raised during the debriefing session.

Insert Figure 2 in here

The experiment can also be used to simulate more complex scenarios. By changing the information that enters the market and managing its flow, we can achieve different market modifications. For example, by modifying the supply and demand of market goods, the experiment can enable traders to see how different factors affect the market and change their perceptions, experiences, and their patterns for conducting transactions. It is also possible to demonstrate markets with money, markets with money and inflation/hyperinflation. An addition to this experiment currently under consideration is to have half the participants become speculators and the other half hedgers and review the interaction between the two.

The key to any successful experiment is identifying the characteristics of the controlled business environment to be tested, and designing its information set so that it achieves its learning objectives. An experiment must be constructed so that the success or failure of individual traders opens the discussion about how traders gathered and processed information, and how their business strategies under certain business environment can lead to success or failure. Traders are led to realize that markets' goods and services command prices that are determined by supply and demand. The determination of these prices requires the traders to engage in price discovery. Traders would also realize that their trading and bargaining strategies change when market structures change. By the use of various market modifications, traders learn that their success or failure is determined by several factors that they may or may not be able to control.

Most of the students who lack practice in thinking, reasoning, and problem solving can develop them during experiment.

Skills and competencies developed

The experiment involves a winner - a team that successfully hedges its' firms expected foreign exchange exposure - who has learned enough content and possesses the necessary skills and is able to use those skills to win the game. The experiment requires that participants make financial/foreign exchange decisions. It permits multiple iterations on the part of learners that result in a more detailed understanding of the variables that impact outcomes. It also offers varied multitasking on the part of learners and provides the best support for active experimentation and the development of affective entrepreneurial skills. Applying the paradigm of human environment interaction to the study of entrepreneurship provides insights into the personal characteristics of entrepreneurs.

The experiment provides a competitive setting for practicing and developing decision making skills. While playing the game, students learn that no one makes the correct decisions all of the time, however making no decisions is even more crippling to business. Many of the skills or personal qualities explored in this activity include: internal locus of control, risk bearing, innovation and initiative, ability to solve problems, desire for responsibility and independence, need for achievement and control, ambition, self-confidence, power, and aggression. They observe how these skills play an important role in students' success as traders and as business persons.

An introduction of the open outcry market where buyers and sellers use hand gestures to signal what and how they wanted to buy or sell represents one of the best examples of an innovative trading techniques that can be developed and successfully used. Innovative and aggressive entrepreneurs discover hand signals to rapidly convey information and thus increase market's efficiency.

Discovery and adoption of new technology also add to the efficiency of a market. Inventions such as accounting forms and receipts allow for information to be recorded and saved. By recording information, it can be used later to develop market strategies. These technological advances greatly enhanced trading. Precise records of transactions are kept, thus reducing chances or an error. Trades can be reviewed for later use. This technology can greatly increase the efficiency of a market and lead to a successful completion of trades.

Risk taking plays an important role when entrepreneurs deal with trades in markets. For example, once the player in the barter game is involved in negotiation for an item, he is unable to deal for other items being offered at the same time. This kind of risk bearing situation involves losing a better trade offer.

Entrepreneurial motivation and need for achievement are also important while doing a business. Students know that if they do well there are rewards – a good grade in class. Need for achievement becomes a driving incentive force during students' entrepreneurial market discovery. Students as entrepreneurs have to be competitive, aggressive and determined with their trading strategies to become winners.

The simulation is constructed in such a way that the success of individual funds opens the discussion about how information was gathered and processed. Students

become aware of the difficulties associated with information flow and the necessity for making decisions based on incomplete information. This is a crucial entrepreneurial skill, and students are able to ascertain the effectiveness and efficiency of their information gathering skills. Students can be asked to define the strategy they used and what personal traits and attributes were necessary to become a successful entrepreneur. They learn that internal locus of control, risk bearing, innovation, solving problem, desire for responsibility, independence, need for achievement and control, ambition, self-confidence, growth-orientation, power and aggression are very important factors that led to their success.

Conclusion

The paper provides some useful tips on how to design an effective and inexpensive experiment for learning how market forces change the supply and demand for the barter experiment offers students hands-on experience that assists them in understanding not only the foreign exchange market but the functioning of markets in all aspects of business. Students are also given an opportunity to interact with team-players, to compete against other students and to receive an appreciation of the pressures faced by managers in general.

The experiment presented changes the face of traditional educational techniques and presents students with a dynamic learning vehicle. Students playing the experiment became active buyers and sellers. They are able to observe how their behavior affects and might be affected by the forces of supply and demand. The experiment can easily be adapted to teaching basic business and economics concepts in many businesses, not just in the securities realm. It is only necessary for the instructor to understand the structure of the experiment and create scenarios appropriate for the material being taught.

In sum, experiments provide an opportunity for students to apply and integrate their knowledge in problem-solving situations, and allow students to learn that alternative strategies may be simultaneously successful. Experiments also provide an ideal vehicle for using active learning and for placing students in real world situations. Since the experiment offers a real educational experience, it can make basic business concepts more meaningful to the students.

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Table 1.
Individual Trading Sheets

Corporation A				Corporation B			
				Start		End	
Current Holdings	000's	Anticipated Needs	000's	Current Holdings	000's	Anticipated Needs	000's
WON	80	REAL	36	WON	50	REAL	84
SFRANC	36	EURO	125	EURO	70	EURO	310
CAN $	140	POUND	150	POUND	250	CAN $	160
RUPPEE	15	RUBLE	60	RUPPEE	15	RUBLE	60
AUS $	180	YEN	150	AUS $	180	YEN	100
PESO	90	Yuan	125	YUAN	375	PESO	150

Mutual Fund C				Mutual Fund D			
Current Holdings	000's	Anticipated Needs	000's	Current Holdings	000's	Anticipated Needs	000's
WON	60	REAL	80	REAL	40	WON	90
SFRANC	24	EURO	300	EURO	80	SFRANC	24
CAN $	140	POUND	100	POUND	150	CAN $	120
RUBLE	100	RUPPEE	50	RUPPEE	10	RUBLE	80
YEN	500	AUS $	200	YEN	200	AUS $	200
YUAN	225	PESO	25	PESO	120	YUAN	200

Mutual Fund E				Mutual Fund F			
Current Holdings	000's	Anticipated Needs	000's	Current Holdings	000's	Anticipated Needs	000's
REAL	30	WON	140	REAL	30	WON	130
EURO	160	SFRANC	80	EURO	120	SFRANC	36
CAN $	120	POUND	250	POUND	100	CAN $	120
RUBLE	100	EURO	50	RUPPEE	10	EURO	75
AUS $	120	AUS $	100	AUS $	120	YEN	250
PESO	60	YUAN	240	YUAN	150	PESO	75

Table 2

Master Currency Matrix

	28-3-2005	3/12/2003	3/12/2004	Change %
Won	1014.20	1192.00	1035.10	13.16%
Brazilian Real	2.74	2.90	2.66	8.29%
Swiss Franc	1.20	1.24	1.14	7.82%
Euro	1.30	1.26	1.35	7.47%
British Pound	1.87	1.78	1.92	7.39%
Canadian Dollar	1.22	1.29	1.20	6.88%
Russian Rumble	27.90	29.50	27.60	6.44%
Indian Ruppee	43.62	45.55	43.27	5.01%
Japanese Yen	106.32	107.13	102.68	4.15%
Australian Dollar	0.77	0.75	0.78	3.79%
Mexican Peso	11.27	11.24	11.15	0.80%
Chinese Renmimbi	8.28	8.28	8.28	0.00%

TABLE 3
VALUATIONS BEGINNING AND ENDING

	Portfolio A						Portfolio B						Portfolio C					
	Start			Need			Start			Need			Start			Need		
Curr	Shares	Value	Curr	Shares	Value	Curr	Shares	Value	Curr	Shares	Value	Curr	Shares	Value	Curr	Shares	Value	Curr
WON	80	$1,842	REAL	36	$894	WON	50	$1,152	REAL	84	$2,086	WON	60	$1,382	REAL	80	$1,986	
SFRANC	36	$577	EURO	125	$10,378	EURO	70	$3,217	EURO	310	$25,736	SFRANC	24	$384	EURO	300	$24,906	
CAN $	140	$7,595	POUND	150	$7,958	POUND	250	$12,663	CAN $	160	$8,266	CAN $	140	$7,595	POUND	100	$5,305	
RUPPEE	15	$662	RUBLE	60	$2,753	RUPPEE	15	$662	RUBLE	60	$2,753	RUBLE	100	$4,445	RUPPEE	50	$2,538	
AUS $	180	$10,364	YEN	150	$3,851	AUS $	180	$10,364	YEN	100	$2,567	YEN	500	$17,645	AUS $	200	$9,240	
PESO	90	$2,511	T	125	$2,538	T	375	$10,031	PESO	150	$3,911	T	225	$6,019	PESO	25	$652	
	TOTAL	$23,552			$28,370			$38,088			$45,318			$37,470			$44,627	
	Portfolio D						Portfolio E						Portfolio F					
	Start			Need			Start			Need			Start			Need		
Curr	Shares	Value	Curr	Shares	Value	Curr	Shares	Value	Curr	Shares	Value	Curr	Shares	Value	Curr	Shares	Value	Curr
REAL	40	$647	WON	90	$3,420	REAL	30	$485	WON	140	$5,320	REAL	30	$485	WON	130	$4,940	
EURO	80	$3,676	SFRANC	24	$769	EURO	160	$7,352	SFRANC	80	$2,564	EURO	120	$5,514	SFRANC	36	$1,154	
POUND	150	$7,598	CAN $	120	$6,199	CAN $	120	$6,510	POUND	250	$13,263	POUND	100	$5,065	CAN $	120	$6,199	
RUPPEE	10	$442	RUBLE	80	$3,671	RUBLE	100	$4,445	EURO	50	$4,151	RUPPEE	10	$442	EURO	75	$6,227	
YEN	200	$7,058	AUS $	200	$9,240	AUS $	120	$6,910	AUS $	100	$2,567	AUS $	120	$6,910	YEN	250	$6,418	
PESO	120	$3,348	T	200	$4,060	PESO	60	$1,674	T	240	$4,872	T	150	$4,013	PESO	75	$1,955	
		$22,768			$27,360			$27,376			$32,737			$22,428			$26,892	

Figure 1.
Timeline of the Market Game

1. Divide class into teams. There should be six teams with 2-3 members each.
2. Distribute an individual trading sheet. Table 1 presents all six individual trading sheets.
3. After distribution of a trading sheet to each trading team (Table 2), instruct teams to prepare the accounting system and the forms to keep track of their sales and purchases and the amounts paid for those transactions.
4. Ask each team to determine and assign the various roles of the team members and the strategy the team will use in the trading session.
5. Begin the Market game.
6. On completion of the game, each team must determine their meals inventories and the budgets.
7. Conduct the debriefing session to discuss items like market behavior, market strategy, price discovery, and budget control. Some of the questions that you can ask students may include:
    - Did you get everything you needed?
    - How did you get everything you needed?
    - What was the main obstacle in obtaining all you needed?
    - What strategy or strategies did you take?
    - Did you observe any differences in results obtained when you changed your strategies?
    - Based on the experience you gained, did you develop a different strategy?
    - How did you gather information you obtained?
    - What information was needed to accomplish your task successfully?
    - Did you observe any market clearing processes?
    - Did you observe any market dynamics taking place while completing your tasks?
    - Did you notice any differences in strategies taken by the other players in response to the change in your strategy?
8. Discuss the usability of the accounting forms each team had prepared. Discussion can be provided prior to the auction if students have no accounting background.
9. Ask each team to determine if and in what way the following entrepreneurial attributes contributed to their trading success: internal locus of control risk bearing, innovation, solving problem, desire for responsibility, independence, need for achievement and control, ambition, self-confidence, growth-orientation, power and aggression.
10. The debriefing session can also be used to focus on those aspects of the market that the instructor wishes to highlight.

Figure 2.
Currency Transaction Sheet Trading

Name of Trading Family: _____

Team Members: (alphabetical by last name):

1. _____
2. _____
3. _____
4. _____
5. _____

Transaction History:

Trading Partner	Currency Traded	Currency Received
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____
11. _____	_____	_____
12. _____	_____	_____
13. _____	_____	_____
14. _____	_____	_____
15. _____	_____	_____

Number of Needs Satisfied: _____