Teaching Options and Futures Trading Through Experiential Learning[1]

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Abstract

Experiential learning occurs in many forms, and economists tend to apply experiential learning techniques within a lab environment. Here, we describe an involved student experiential learning process in which the students invest in a commodity trading pool. Having a financial interest in the performance of the trading pool enhances students' investments in the learning process. The instructor's role is primarily observation and evaluation, allowing students to learn from their experiences. We share with others how to set up a similar course at their academic institutions.

Introduction

Many economics graduates find themselves as money fund managers, brokers, grain merchandisers, commodity traders, stock traders, revenue insurance product managers, financial officers, consultants, banking officers, or stock market analysts. While students interested in such careers are trained in analytical thinking, most students have not experienced stock or futures market trading. Since so many students enter careers where stock and futures market terminology is important, there's a need for formal educational training in the area of application. We have found that an experimental learning course in commodity trading is very beneficial for students learning futures and stock market terminology and the practice of trading. The experimental portion of this course is that students are required to invest their own money into a trading pool, from which the funds are then used to place student-managed trades (The concept for a trading pool to facilitate learning began as an Extension activity in the 1980s and transitioned into the classroom in the early 1990s.).

Why do students learn? Students learn because they are involved in the actual trading, develop and discuss proposals, challenge each other and have their own money on the table. It is a non-hypothetical experiential environment. For a history of experiential learning and its application to agricultural education in particular see Battisti et al. (2008). For a full review of outcomes from alternative experiential learning methods see Gosen and Washbush (2004). They find economic learning is enhanced from many types of experiential learning environments, but they do not have any observations of such involved experiential learning as discussed here.

Furthermore, the return on investment from the pool fund is based on the pool fund performance during the semester. If the fund makes money, the students obtain a higher payback than they pay in. If the fund loses money, then students obtain a lower payback than they pay in. Most importantly, the students are the teacher, so students learn by teaching. The student's ability to teach, impacts whether a trade recommendation passes or fails. We would like to explain to instructors the organization and operation of the experimental learning course in futures and options marketing. The objective of this article is to provide the framework and background for allowing instructors to create such a course on their home campus.

The concept of managing a simulated portfolio of stock is common practice in business schools. As is paper trading simulation games in the area of stocks, futures, and options. The old adage, "Tell me and I'll forget. Show me and I'll learn. Involve me and I'll understand" (Gentry, 1990, p. 9), applies appropriately to the situation of simulated portfolio or paper trading games. Students are learning, but students still lack the knowledge of what does it feel like to have a personal financial stake in the game's performance. Some business schools have received, or built, endowments to invest in a portfolio of stock, which is then managed by a particular class or club (e.g. University of Cincinnati, University of Wisconsin). While the endowment shrinks or grows based on the investment choice, on rare occasion does a student feel a financial bond with the investment portfolio. Only when students have a personal financial stake do they feel the pain of losses and elation of profits and thus, assume full ownership in the decisions, strategies, and costs of managing an investment portfolio.

We would like to make our case for why economics students, just not agricultural economics stu-

[1]Our heartfelt thanks to the University of Missouri for underwriting the risk of a student-invested commodity trading pool. We would be in remorse to not thank persons at Kansas State University – the only other institution in the country to offer such a course as we describe in this article. As a graduate student at KSU, the lead author took a similar course three times – because he enjoyed it – and taught the course one semester.

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dents, should become involved with trading commodity futures/options. First, and most importantly, the cost of trading commodity futures/options is affordable for even a modest pool fund. A key element of class success is having liquidity to trade, and the large initial margins associated with stock exchange futures/options contracts prohibits small fund pools. Second, fund managers are increasingly showing interest in commodity investments. Thus any opportunity for a non-agricultural student to learn about commodities and commodity trading is a gain to the student.

Experiential learning is by no means a new learning style within higher education. Yet, experiential learning occurs within economic departments on a minor scale. Several authors note the use of classroom labs and experiments to elevate economic student learning (e.g. Bartlett and King, 1990; Carter and Irons, 1991; DeYoung and Wells, 1993; Spencer and Van Eynde, 1986; Wells, 1991). Economic students think critically, solve problems and inherent linkages between causality and economic phenomenon. While economics is a social science, our ability to use experiential learning to teach is challenging because of our capital (human and financial) limitations. Cantor (1995) summarized the need for experiential learning in higher education as due to the need for educated workers who can thrive in the new world economy, an understanding of theories, more learning styles for our new non-traditional style learners, the need for persons in the workplace to problem solve as part of a team, and the demand for higher education to interfere with business and community. Rogers (1969) early on pointed to the importance of experiential learning because all humans have a natural tendency to learn. The teacher is just the facilitator of student learning. Rogers (1969) finds student learning occurs best when (1) students are involved and have control over the need to learn, (2) students directly confront real-world problems, and (3) students are allowed to self evaluate. The essence of forming a class trading pool is to elevate student learning following Carter and Irons' (1991) and Rogers' (1969) principles. For a more thorough assessment of the role of the experiential learning through operating a class trading pool, see Schroeder et al. (1995), Tierney (1989).

This course allows students to be involved in the decision making process so that they can understand the learning objective. Students completing this course are expected to enter the job market with an advantage in understanding price risk strategies, decision making, and conveying clear objectives through orally presenting and defending recommendations to member-investors (i.e. peer students in the case of the class).

Instructor Role

The instructor, in general, acts as an observer of student involvement and participation, and the grade assigner. The instructor keeping quiet is key to a good student learning experience, unless a teachable moment presents itself, as we discuss later. A goal of experiential learning is little instructor input. Whereas paper trading or simulation assignments often require the instructor to declare a victor or provide totals, for this experiential trading course students learn by being financially impacted by their decisions. Thus, it is important to allow students to make mistakes and learn from their decisions. An instructor who continually provides input to the experiential learning class is doing injustice to the student learning environment. Initial instruction should occur but only during the first two or three weeks of the semester. An important aspect of the course is the instructor's overview of class operation and review of trading fundamentals during the initial class meetings (Table 1).

Table 1. Typical course outline for a 16 week semester

Week of semester	Topic
Week 1	Overview, Introduction and basics
Week 2	Assign teams, moderators and peer reviewers. Review payment due
Week 3	Review, example trade recommendation
Week 4	Trades
Week 5	Trades
Week 6	Trades
Week 7	Trades
Week 8	Trades
Week 9	Mid-semester reflection of lessons learned.
Week 10	Trades
Week 11	Trades
Week 12	Trades
Week 13	Trades
Week 14	Trades
Week 15	Exit existing, cancel open orders, request money from brokerage account
Week 16	Course evaluations and closing thoughts about semester.

Assigning recommendation dates, moderator dates, and peer review dates is a coordination role the instructor plays. While not necessary, instructors can reserve a class period or two between the first-and-second round of trade recommendations to moderate a class discussion of the strengths and weaknesses of the first-round of trade recommendations. As the instructor for the course, the lead author invests $300 – the maximum allowed by the Commodity Futures Trading Commission (CFTC) – each time the course is offered. Also, colleagues are invited to invest. This adds liquidity. All investors receive share return, or loss, in proportion to their investment. Only students, however, are voting contributors.

Grading

Assessment of trade recommendations is key, and instructors should assess each group's skill level at the beginning of the semester. Thereby, individuals and groups may be graded relative to their beginning skill levels instead of relative to other individuals or groups. Students build their knowledge base throughout the semester. Thus, a skilled group is expected to cover many relevant topics during their first trade proposals. A lesser-skilled student group may deliver a rough first trade proposal, but their second trade recommendation is expected to be much improved. Students in this course that have performed well in classes using written, or simulated trading, often freeze when delivering a recommendation to the trading club. There is something about peer review and justification in front of peers that changes personalities and attitudes.

The components of the grade are two recommendations, two peer-review assessments, class participation, and attendance. The two trading recommendation grades are based on the written, oral, and own-group self-review of the trade. The peer-review is a strengths and weaknesses peer assessment of a trade by another group. Class participation points are subjective. A higher score is given to students who contribute to class discussion and to students presenting impromptu trades. Class attendance points are deducted for any student missing more than three regularly scheduled classes.

Student Role

This course is a seminar in which the instructor primarily serves as a facilitator, an organizer, and an evaluator. Students learn components of decision making. In particular, students completing this course are expected to effectively: Write and verbally defend commodity futures trade recommendations; Critically evaluate trade recommendations of others; Understand how futures market operate including regulatory bodies governing exchange; Learn the language of commodity futures trading; Monitor financial status of open market positions; Understand price risk faced in speculative positions and distinguish between levels of potential return and price risk across different trades or commodities; Know of and how to use alternative means of limiting risk in commodity futures trading; Learn how to manage a commodity fund pool.

Groups of no more than four students prepare written trade recommendations and orally propose recommendations. All students evaluate recommendations through in-class discussion, amend the trade if so desired, vote on the presented recommendations, and implement trades if so approved by the majority. Approved trades are placed through a local full-service broker and full commissions are paid (On-line account management has been considered, however, we prefer to allow students the full experience of transaction costs. Also, the local full-service broker takes student inquiries regarding strategy, market sentiment, and news.). The proposing group monitors the status of the trades. Individuals or groups are encouraged to present impromptu trades at any time during the semester. Most impromptu trades are spontaneous, technically based, and generate great class discussion.

The written recommendation is limited in length to require students to generate clear and concise arguments while still effectively communicating the trade recommendation. In the job place, these students may not have the luxury of a two-page proposal as required for this class. The written proposal serves to enable students to organize their thoughts for the oral presentation, which is limited to twelve minutes. More information about class operation is provided later in this article. Students are required to submit peer and own trade evaluations through e-mail.

Preparing and presenting trade recommendations foster student understanding of spreadsheets, statistical packages, and presentation software. Students access information via the Internet directly from the classroom during the class. Students are required to use classroom technology in delivery of their oral group presentation and monitoring of the trade, if passed.

Organization of Trading Pool

Students are contributing members of an educational marketing club. All trades must be approved by a majority of students attending each session (absentee votes are not considered). Students apply principles of price forecasting using technical and fundamental analysis and study a variety of trading strategies. Hedging, as a risk management tool, is discussed; however, all trades executed by the class are speculative.

Each student may purchase a maximum of three voting shares at a cost of $100 per share ($300 maximum). A $100 minimum is required. That is, a student may purchase one, two, or three voting shares. Depending on class size and investment per student, the trading pool varies in total dollars invested. Courses taught by the lead author have had pools ranging from $2,100 to $6,300. Due to liquidity needs, the class requires an enrollment of at least 18 students to operate well. To accommodate large classes it may be necessary to fit in two trade recommendations per class period.

Student money is paid into a university account, which is then deposited with a local brokerage service. The brokerage account owner is a University Foundation. This is done to mitigate risk (of loss) to students and to cover the instructor. The pool's operations comply with terms and conditions imposed by the Commodity Futures Trading Commission (CFTC) as per letter from the CFTC. The CFTC authorization letter allows for the pooling of individuals money under one account name. This

letter also lists the conditions for which trading will occur for the trading club. A copy of this letter is available from the author by request.

Class Operation

As this course emphasizes student involvement, it should not be surprising that the students oversee the operation of class-time activities, during scheduled trading recommendation (Table 2).

Table 2. Typical class operation schedule for a 50 minute class meeting twice per week

5:00 – 5:05[x]	Financial status of account reviewed
5:05 – 5:15	Review of outstanding (placed open, delayed, or tabled) trades
5:15 – 5:27	New trade recommendation
5:27 – 5:42	Class discussion, amendments, and vote
5:42 – 5:50	Impromptu trade recommendations
5:50 – 6:00	Used only when needed and class always ends prior to 6:00 p.m.

[x] Assume class begins at 5:00 pm.

For each trading recommendation, two other students in the course are assigned as moderators. Moderators have five tasks. First, moderators provide a financial report, which is available through the brokerage house firm website. Second, moderators request old business to be discussed. Old business refers to reports on outstanding futures/options positions and updates on prior trade recommendations that were tabled by the presenting group or delayed action by a vote of student investors. Third, moderators facilitate and moderate the scheduled trade recommendation and follow-up discussion questions between presenters and student-investors. Fourth, the moderators oversee the administration and counting of ballots. Last, moderators facilitate impromptu trade recommendations, which are allowed by anyone in the class if time remaining is sufficient. The class ends between 50 minutes and one hour after the scheduled start time (Sometimes 40 minutes of class time is needed when no old business exists and a times 60 minutes is needed when there is much old business, a lively class discussion of the trade recommendation, a second scheduled trade recommendation, or an impromptu trade. The class is never allowed to exceed 60 minutes.).

Web-based information exchange provides considerable efficiency in students knowing exact account balances and profit-loss of current trades. During class, the account web page can be accessed, so that the moderator can explain the account balance and trade positions.

Groups of three or four students present the trade recommendations. The oral trade recommendation is limited to twelve minutes. The written recommendation is distributed to the class, and the written information is used as supporting documentation to the oral presentation. Each group member is expected to contribute to the oral presentation. Because the written recommendation is developed prior to the oral presentation, the recommendation group often provides real-time updates using the Internet (The course has been offered after trading hours (after 1:30 pm CST), prior to trading hours (before 9:30 am CST), and at mid-day (noon). During trading hours is preferable, because students can assess the market real-time.).

Student led class discussion is the best part of the class. While less student class discussion occurs early in the semester, there is nothing like a 15-20% loss to stimulate peer critiquing of new trade recommendations. Similarly, a profit stimulates class critiquing as some in the class – those risk averse – want to guard it, while others – those risk seeking – look to build wealth. At this point, the instructor will find it very difficult to keep quiet.

One example of where the lead author remained a quiet instructor is when the students voted to take a long live cattle position. The initial margin requirements were greater than the open account balance. Upon the live cattle position being filled, the furthest outstanding fill position – soybeans – was off-set to cover the live cattle position initial margin requirements. They missed out on soybean profits and also lost on live cattle. This was a good learning experience. An example of when to speak up is when a student group proposed to long nearby KCBOT wheat. As being long the month prior to contract expiration obligates a long position holder to possibly take delivery, the instructor obviously squelched the thought of the University accepting delivery of 5,000 bushels of wheat. Again, this is a good learning experience for all.

Prior to the class vote on the trade, the moderators facilitate amendments to the trade by hand vote. The trade recommendation, including amendments, is restated in writing on the blackboard. Students not present for class are not allowed to vote, nor provide a proxy vote.

Majority rules for casting of votes. Each student present submits a vote ballot selecting "yes" or "no," the number of votes they have, and sign the ballot. Moderators tally votes, report the vote tally, and keep individual votes confidential. All vote ballots are kept on file throughout the semester. This ensures evidence in case a vote is later called into question. An important operational point is that the recommending group is allowed to decide not to vote as part of the recommendation. While this occurs rarely, changing market conditions at times point toward a "no confidence" situation. This shows insightfulness of the students.

Impromptu trades generally originate from one or two individuals. Either a "hot tip" has been obtained or a technical signal has been observed. Most impromptu trades last three to five minutes, a recommendation is given, and a ballot vote is taken.

Please note, students learn quickly there is no such thing as a "hot tip" that is not known by several thousand other traders. Impromptu trades contribute to class participation points.

So, What Has Been Traded?

Trade recommendations vary in terms of strategies, and we have observed trade recommendations for every commodity and precious metal – except platinum – and many exchange rates and funds rates. Table 3 lists, as an example, the trades placed during the winter 2006 semester, and Table 4 defines some commodity futures trading terms used here. While the winter 2006 semester provided for a diverse array of trades, the quantity of trades reflects the limiting initial investment of $2600.

Table 4. Selected definitions of commodity futures trading terms

Term	Definition
Futures Contract:	A contract that obligates the holder to buy or sell and asset at a predetermined delivery price during a specified future time period.
Long Position:	A position involving the purchase of an asset.
Short Position:	A position involving the sale of an asset.
Call Option:	An option to buy an asset for a certain price by a certain date.
Put Option:	An option to sell an asset for a certain price by a certain date.
Writing an Option:	Selling an option.
Commission Brokers:	Individuals who execute trades for other people and charge a commission for doing so.
Strike Price:	The price at which the asset may be bought or sold in an option contract. (Also called the exercise price.)
Straddle:	A long position in a call and a put with the same strike price.
Strangle:	A long position in a call and a put with different strike prices.
Bull Spread:	A long position in a call with strike price X_1 combined with a short position in a call with strike price X_2, where $X_2 > X_1$. (A bull spread can also be created with put options.)

Note: All definitions are taken verbatim from Hull (2002).

Table 3. Summary of trades placed during winter 2006 semester (initial investment $2600)

Date Order Traded	Date Position Closed	Commodity	Type of Trade	Stopped Out[x]	Month[y]	Contract Size	Unit	Price Placed	Strike Price	Exit Price	Broker Commission	NFA Fee[z]	Net Profit
2/15/2006	2/15/2006	Treasury-Bonds	Sell	Yes	March 2006	100,000	$	$112.06		$112.28	$65.00	$1.32	-$285.07
Straddle													
2/23/2006	3/8/2006	Corn	Call		May 2006	5,000	Bu	$0.10	$2.30	$0.07	$75.00	$4.42	-$254.42
2/23/2006	3/22/2006	Corn	Put		May 2006	5,000	Bu	$0.08	$2.30	$0.10	$75.00	$4.42	$8.08
Bull Call Spread													
2/28/2006	3/15/2006	CBOT Wheat	Buy Call		July 2006	5,000	Bu	$0.29	$3.90	$0.17	$75.00	$4.42	-$704.42
2/28/2006	4/17/2006	CBOT Wheat	Write Call		July 2006	5,000	Bu	$0.19	$4.20	$0.04	$75.00	$4.42	$645.58
3/7/2006	3/13/2006	CME Cattle	Put		April 2006	400	Cwt	$0.60	$84.00	$1.40	$75.00	$5.36	$239.64
4/12/2006		Mini Silver	Long		July 2006	1,000	Oz	$12.79		$14.61	$65.00	$2.22	$1,752.78
										Semester Totals	$505.00	$26.58	$1,402.17

[x] A stop loss order instructing the broker to sell if price reached a specified level went into effect.
[y] Month in which the futures contract matures or the option expires.
[z] National Futures Association (NFA) is a self-regulatory organization for the United States of America futures industry that develops rules, programs, and services to safeguard market integrity and is financed through fees assessed to users of the futures markets.

Thoughts for Expanded Learning

Students entering the job place are often uncomfortable making decisions that impact the business. Thus, new employees directly out of college often require mentoring and supervision. An academic learning environment seldom offers students the opportunity to make decisions that impact anyone but the individual. Experiential learning in the classroom is a tool used in academia to integrate student learning with actual decision making. However, experiential learning experiences are typically limited to "funny money" as in the case of incorporating financial decision making or computer based trading games into the classroom, or student decision making for which the primary performance incentive is the grade.

The purpose of the commodity futures/options trading course at the University of Missouri is to provide students, from multiple disciplines, the experience of integrating academic learning with job-like decision making. This is accomplished by students having an intrinsic stake in the outcome of the decision through actively trading commodity futures/options contracts with their own money.

This course is structured toward developing students who can step directly into industry and excel both individually and professionally. Making decisions about choices with uncertain outcomes can "paralyze" those who have never had to make important business decisions. Graduates of this course will likely require less mentoring on the job because of decision making experiences in the classroom. Also, the course will foster student understanding of group decision making when the participants have a monetary stake in the outcome.

Economic Concepts and Areas for Advancement

But, what about the place for economic concepts in a futures/options trading class? A commodity futures market is no different from the typical market place. While supply-demand to most students is two intersecting lines of opposite slope, students of an experiential course apply supply-demand shifters and the price-quantity relationship to understand where prices will be tomorrow, next week, and next month. Exchange rates and dollar valuation must be understood to understand commodity export trends. Transaction costs; i.e. the cost of trading, is easily explained. Opportunity cost assessment comes with having a set limit of funds and managing between a

portfolio of investments. The time value of money principal is applied in analyzing options premiums. Risk premium comes into play in factoring in volatility into options. Students observe the economies of size and scope concepts by appreciating the "service" one obtains by managing a portfolio of tens of millions compared to a few thousand (e.g., lower commissions, better fills, more information, investment diversity, larger stop losses). Diminishing marginal productivity often is observed as students over-analyze their trade recommendation.

The course format presented here is flexible. The format presented is for a class meeting two one-hour periods per week. The course could be expanded to three times per week to better track trades and allow for larger class size. Potentially, donations (from firms) could be requested to add liquidity to the account. If the account makes money, then students receive the extra returns in addition to their share of returns based on their initial investment. This concept may more closely simulate real world job experience.

Summary

This study describes the design and delivery of a commodity trading course built upon the principles of experiential learning. By investing in a trading pool, students become more actively involved in the learning process. The intent of this article is to encourage other institutions to offer similar courses and to assist in their development.

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