



Derivatives-Based Trading Competitions: A Survey of Formats

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Abstract: This paper provides an overview of four alternative derivatives trading competition formats that provide students with an opportunity to learn about a topic that is widely recognized as being among the most conceptually challenging topics in business. Trading competitions afford students with an active, experiential learning opportunity that helps them to better understand the nature and mechanics of derivatives instruments and the markets in which these securities are traded. Trading competitions also offer a way for schools of business to leverage the use of the often significant investment in trading room facilities. Competitions also help to broaden awareness of investment and trading programs across campus and serve as one potential way to expand cross-campus collaborative research and learning opportunities. This review will be useful to any school currently considering adding a derivatives trading program to its menu of offerings in finance and investments.

Keywords: derivatives education, experiential learning, student competitions, risk management.

INTRODUCTION

As trading rooms become more common at business schools across university campuses, there is an increasing need for experiential teaching tools that more fully utilize the investment in these resources. One approach is to use trading competitions as a hands-on learning opportunity for students.

We focus on extended (two weeks or more) and active derivatives-based competitions as opposed to passive stock picking competitions or weekend seminar style competitions. Our focus on derivatives-based competitions is motivated by several factors. First, aside from two papers about student participation in futures trading by Hunsader, Mitchell, and Parker (2011) and Brown, Clements, Grieb, and West (2010), little has been written about the use of trading competitions as an approach to teaching business students about derivatives markets and products. In addition, given that the *Great Recession* was (arguably) caused in part by a lack of understanding of derivatives and derivatives markets, we believe that interest in derivatives trading programs at business schools is likely to increase in the future and that a review of alternative programs and formats would be helpful to schools to determine an approach that best fits their particular circumstances.

In this review, we profile four competitions that differ widely in terms of structure and participation: the CME¹ Challenge, the TMX Options Trading Simulation², the TD Ameritrade U thinkorswim Challenge³, and the Barker Trading Competition at the University of Idaho⁴. These competitions represent a mix of futures and options-based formats that require students to trade a portfolio of securities for an extended period of time (two weeks to eight weeks). Three of these competitions are facilitated and hosted by a major exchange and/or securities firm, while one competition is a school-sponsored program that is part of its trading room activities. All of the competitions are offered without fees for the participants or their schools, and all provide free trading software that can be downloaded by the students in the competition.

The purpose of this paper is two-fold. First, it describes the administrative formats for a variety of derivatives competitions to help schools that are considering introducing a derivatives trading competition to their program make a decision about a format that best meets their needs. Mallett, Belcher, and Boyd (2010) note that student-managed investment funds have become mainstream experiences for many business colleges, while trading rooms tend to be underused. One way to increase the usage of trading room facilities is through the introduction of competitions.

Second, this paper extends the existing literature on experiential learning in business. Seaton and Boyd (2008) argue that simulations have the ability to improve the depth and breadth of student learning outcomes. Bergstrom and Kwok (2005) show that repeated simulations move student outcomes towards those predicted by competitive theory. Wolmarans (2005) demonstrates that experience in a simulation environment leads to a more positive learning experience with greater impact on financial knowledge and decision-making skills.

Von Lubitz and Levine (2005) and Tichon (2007) highlight the importance of bringing environmental context into the learning sphere, and Zakay and Wooler (1984) show that experiencing the same stressful operating conditions as the work environment is a critical component in effective training. Levkin (2005) shows that simulations measure a different skill set than traditional curricula and that good trading skills generate superior results in simulations.

Hunsader, *et al.*(2011) and Brown, *et al.* (2010) demonstrate the effectiveness of experiential classroom approaches for teaching students about futures contracts. However, these papers do not focus on trading competitions. Likewise, McClatchey and Kuhlemeyer (2000), Jankowski and Shank (2010), and Seiver (2013) review simulators for trading in the classroom, but do not address derivative securities or experiences geared toward trading rooms.

This study provides an overview of derivative-based trading competitions and is also useful for schools in designing and improving their own trading competitions. These competitions are a source of competitive, real-world training for derivative markets and are a potentially valuable activity in any university trading room. We review various competition formats and discuss issues such as trading platforms, competition rules, trading parameters, and administrative issues. Appendix 1 summarizes the similarities and differences between these four competitions.

ALTERNATIVE TRADING COMPETITION PROFILES

CME Trading Challenge

The CME Trading Challenge (CME-TC), which is hosted by the CME Group, has been offered every spring and has expanded rapidly since its beginning in 2004.⁵ CQG Inc. is the technology sponsor and provides the trading platform.⁶ Dow Jones & Company is the news sponsor and provides a live news feed to participating teams.⁷ The goal of the competition is to provide students with an educational experience based on trading CME products using professional trading software with live data. The competition is open to any undergraduate or graduate student currently enrolled at any accredited college or university. The competition began with teams from ten different schools and expanded rapidly to include colleges and universities around the world. The 2014 competition hosted 389 teams from 207 different schools in 31 different countries. Most of the competitors (247 teams) originate in the U.S. Other countries with significant participation included India (23 teams), Canada (18 teams), Colombia (19 teams), and the U.K. (12 teams).

The CME-TC consists of two-rounds of trading in select futures contracts. Each round represents two weeks of trading. While all teams participate in the first round, only the top 10% of teams advance to the second round. Students must compete in teams of three to five members, and each school is limited to two graduate and two undergraduate teams. Teams must consist of students from the same school, and teams may not combine

graduate and undergraduate students. Faculty advisors are strongly recommended for each participating school and advisors are given early access to registration, starting about two months before the competition, followed by general student registration. After the close of registration, a one-week practice round precedes the actual competition. Extensive training webinars and videos are provided online by CQG, as well as a toll-free support line for questions during the competition.⁸

During the first round teams are provided with a \$100,000 simulated account, and during the second round teams are provided with a \$250,000 account. Prize money is awarded to the top four teams based on total return during the second round: \$1,000 per member for first place; \$700 per member for second place; \$500 per member for third place; and \$300 per member for fourth place. Top performing teams are also invited to Chicago for the CME's "Day of Market Education".

Trading is restricted to the front month futures contract on nine different products across six asset classes including agricultural commodities, energy, metals, equities, interest rates, and foreign exchange. Teams use the CQG Integrated Client trading platform for the competition. The platform is a simulated version of CQG's primary retail platform and provides real-time quotes, charting and analytic features, and a range of order placing features. Trades can be executed as market or limit (day or good-until-canceled, aka GTC), as well a range of stop order types. Bracketed orders such as one-cancels-other and first-triggers-all are also available.⁹ Account and position balances are shown in real time so the teams can monitor their account status.

Several trading parameters are required. First, teams may only trade the allowed futures contracts as stated above (including both the specified underlying and the contract month). In addition, teams must execute a minimum of five round trip trades per day. Positions can be held for longer than a day, but those are in addition to the day trading requirement. Commissions of \$2.50 per contract are charged each way for the trades. Pattern trading based on technical indicators is allowed, but algorithm trading is

prohibited.¹⁰ Position limits are determined by available funds and margin requirements for the account's open positions. If the account's available balance drops below the required margin level the account is restricted to closing trades until available capital is restored to the account.

Trades executed in any security beyond the nine allowed contracts (including both the specified underlying and contract month) result in a penalty of \$10,000 per day of trading, and any profit or loss for those trades is removed from the account. In addition, there is a \$1,000 penalty for not completing the minimum five trades per day, as well as a \$1,000 per contract penalty for not liquidating positions at the conclusion of each round. CQG reports the daily account values (DAV) so teams know their position in the overall standings. However, the DAV only reflects closed trades – any unrealized profit or loss on open trades are not calculated until the end of the round. Compliance with the competition rules is monitored by CQG. An external back office software package has been created that allows for electronic monitoring of trading parameters, penalty assessment, and daily reporting of account DAV's.

The CME-TC has a broad, international reach and involves student competitors from a large number of schools from around the world. While the competition is open to students of all levels, it is geared toward students with some pre-existing knowledge of futures contracts and trading strategies. The structure of the competition is designed to encourage frequent trading which requires the participants to follow the markets closely and monitor their positions and strategies on a daily basis. In addition, participants get hands-on access to widely-used professional trading software, which contributes to the experiential learning component of the game. One weakness of this competition is that it is difficult for teams to get a true sense of their standings because the DAV's are not marked-to-market until the end of the round, which may make it difficult for teams to determine the appropriate risk strategy in the final days of each round. However, the

extensive support provided by CQG is a critical component in managing the large administrative burden for a competition of this size.

TMX Options Trading Simulation

The TMX Options Trading Simulation (TMX-OS) is hosted by the Montreal Exchange, which is part of the TMX Group and is Canada's primary derivatives exchange.¹¹ The competition originated in fall 2012 and is offered in the fall and spring each year. The competition has grown quickly from under 187 teams at seven universities in the initial competition to over 1,787 teams at 36 Canadian universities during the fall 2014 competition. The goal of the TMX-OS is to promote financial literacy and to provide students with an opportunity to learn first-hand about options and options trading strategies.

The TMX-OS is open to any full-time undergraduate in finance or a related field at a Canadian university. Students register online to compete as a team of 1-5 students, and there is no limit to the number of teams per university. An MX Ambassador is selected by the TMX for each university to act as a liaison between the TMX Group, students, and faculty. The MX Ambassador has several roles relating to the promotion of financial literacy, including facilitation of student participation in the TMX-OS.

The competition runs for eight weeks each fall and spring semester (October-November in the fall, February-March in the spring). Trading is allowed in options and option spreads on the 50 securities on the Toronto Stock Exchange (TSX) – 45 stocks and five ETFs – and teams are also allowed to take long/short positions on the underlying security for those options.¹²

Registration for the competition ends ten days before the start of the competition, and is followed by a recommended live training session. The training session is hosted by the MX Ambassador at each university to introduce the trading platform and to review the mandatory components, trading parameters, and several option trading strategies. A

webcast Q&A session with TMX-OS staff and additional online tutorials are also provided.

Teams begin with \$100,000 in simulated accounts, and the object is to maximize the value of the account over the eight week period. A total of \$17,500 in prize money is distributed across the top three performing teams; \$10,000 for first place, \$5,000 for second place, and \$2,500 for third place, with the money distributed among the team members.¹³

A number of trading parameters are imposed on teams for the duration of the competition. First, teams must trade a minimum of five different options classes during the competition.¹⁴ Second, teams must trade a number of mandatory option positions at least once. The required trades change each time around although there are usually four or five mandatory positions representing a mix of bull and bear strategies, as well as naked and spread strategies. In addition, a surprise strategy is published during the second week of the competition, and all teams are required to execute that strategy for an option of their choice. No minimum holding period is required, although positions can be held to maturity and traders can take delivery on in-the-money long positions, or alternatively, must cover in-the-money short positions. Early exercise is not an enabled feature for the competition.

The platform for the contest is the TMX Trading Simulator, which is a key component of the TMX Capital Markets Learning Center. The simulator was launched in September 2012 and originally allowed options trading on TSX listed equities, ETF's and currencies. Futures contracts for indexes, money market, and fixed income securities were added to the simulator in 2013, although these contracts are not part of the TMX-OS.¹⁵ Real-time quotes are provided during open market hours (no extended or after-market trading), and trades can be executed via market or limit orders (day or GTC). Stop orders are also available on underlying securities. Spread trades can be submitted as a single order and multi-leg positions must be bundled into a single bid or ask quote for

simultaneous execution. Market orders are filled at the existing bid or ask and stops are triggered based on the “current market price” (defined as the last trade price in real time). Orders for spreads and multi-leg positions are filled at the aggregate last price for the bundle (defined as the bid for the short leg and ask for the long leg). A flat-rate commission of \$9.95 per trade is charged, and position limits are driven by available cash and margin requirements.¹⁶

The highly-controlled structure of the TMX Trading Simulator eliminates many of the trading problems that characterize other trading simulator platforms (such as the CME platform), and therefore eliminates the need for trading penalties. For example, security selection is restricted so illegal security trades are not an issue. In addition, since trading happens only during open market hours there are no concerns with scalping (i.e., using wide after-market spreads to imitate a dealer by buying at the bid price and selling at the ask price) or other low-liquidity gaming strategies. Traders can see their own account balances, but overall standings are only reported once at the conclusion of the competition. The top three teams are published weekly via Facebook, although their current P&L is not reported. As a result, the only auditing requirement is to ensure that the winning accounts are in compliance with mandatory trade requirements.

The TMX-OS offers a powerful tool for experiential learning of options trading, and it is widely used by undergraduate finance students across Canada. A particularly attractive feature of the competition is the series of mandatory trades, which counter-balance the inherent risk-taking incentives for players in trading competitions. Such mandatory strategies may or may not contribute to the ultimate winning strategy, but they add an element of risk management to the competition and also build additional educational value into the experience. The absence of a periodic standings report prevents any benchmarking strategies, which removes an important behavioral component from the learning experience. However, the use of the TMX Trading Simulator, which has design features specifically geared to the TMX-OS, enables a long

time horizon for the competition and accommodates a very large number of competing teams.

TD Ameritrade U thinkorswim Challenge

The TD Ameritrade U thinkorswim Challenge (TOS Challenge) was offered for the first time in the fall of 2014. The competition is sponsored by TD Ameritrade Services Company and uses the paperMoney version of the thinkorswim software.¹⁷ Participation was very strong for a first-time offering with 243 teams competing from 89 different schools in 32 states.

The thinkorswim software, which originated in 1999, is a highly rated platform¹⁸ that covers a wide range of asset categories and is very well suited to options and futures trading. Initially, thinkorswim focused on client-side trading technology that enabled traders to analyze and trade options. The platform expanded continually until it was acquired by TD Ameritrade in 2009. Since then thinkorswim has continued development on the trading and analytics elements of the software while leveraging the research and portfolio management tools provided by TD Ameritrade to provide a sophisticated and robust trading platform.¹⁹

TD Ameritrade U (TDAU) has been established to provide a portal for professors and students to gain access to the paperMoney version of the thinkorswim software and user support. Professors can also use this portal to create trading drills and other exercises for students. As part of their ongoing support for higher education, TDAU has created the TOS Challenge. The goal of the competition is to promote trading education.²⁰

The TOS Challenge is open to legal residents of the U.S. who are enrolled in a U.S. post-secondary educational institution. Students compete in teams of three to five, with all members attending the same school. Each student is allowed on only one team. The competition is limited to 2,000 teams overall with no limit to the number of teams per school. The competition runs for four weeks during October and November. Each team is provided with a paperMoney account funded with \$500,000 in simulated funds and

the winners are based on percentage returns (P&L percent) for each week and for the overall contest. The P&L percent is based on the Net Liquidating Value (NLV) of the account, which includes cash and the current market value of all positions.

The TOS Challenge offers prize money to both students and their schools. The winning team for each of the four weeks receives \$500 per team member. The first place team for the overall competition receives \$3,000 per student and a \$30,000 donation for their school. The second place team receives \$2,000 per student with a \$20,000 school donation, and the third place team receives \$1,000 per student and a \$10,000 school donation.²¹

Teams register online and designate a Team Captain who serves as the contact person. Each team provides a team bio and picture, as well as individual bios and pictures for the team members, which are posted to their account at the TDAU website. The TDAU website monitors all the team accounts and reports continually updated results for all teams.

Support for the competition is provided by the thinkorswim Learning Center which has a large number of tutorial videos that cover nearly every aspect of the software, including tutorials on how to navigate the software as well as how to place trades, stop orders, and an abundance of bracketed execution strategies.²² Tutorials are also provided on creating charts, technical analysis, analytical tools for options trades, and searching for trade opportunities. A large amount of fundamental data including firm level data and event dates, economic calendars, and market news events is also provided.

The trading parameters are built around “Qualifying Trades” which are based on the security traded, the size of the trade, and the time of the trade. Teams are allowed to take long or short positions in any stock in the S&P500, Dow Jones Industrial Average, or Nadsaq 100 indices, plus three broad-market ETF’s (SPY, DIA, and QQQ), as well as options with any of the above securities as the underlying. Positions may not be initiated for any security with a stock value below \$5.00. There are no restrictions on the number

of trades or holding periods. Accounts are subject to concentration limits which are imposed by blocking the execution of trades which will result in a stock or its related options accounting for more than 10% of the account's NLV.²³ All trades must be executed during the Trading Week which is defined as Monday 8:00am ET to Friday 8:00pm ET for equities and Monday 9:30am ET to Friday 4:00pm ET for options.

Because the software blocks trades that do not meet the Qualifying Trade standards, and because the accounts are restricted from overnight or weekend trading, specific penalties for illegal trades are not required. Winning teams are audited for compliance and to make sure that results are not due to a trade filled on "out trade" data creating an unrealistic opportunity in the simulated environment. But otherwise the structure of the TDAU portal controls for most auditing issues.

Algorithm trading and collusion between teams is prohibited. However, students are encouraged to use the wide range of trading tools available in paperMoney, including advanced order placing strategies and research features like Stock Hacker, Option Hacker, and thinkScript.

The TOS Challenge is a well-designed college level options trading competition, and it is strong tool for learning about derivatives markets. The software is a sophisticated platform that provides a wide range of tools to student traders. Teams are able to monitor their positions on the leaderboard in real-time, and they have a very broad range of equities and options to trade, although the competition is limited to equities as an asset class. The video training is a strong component, and the support provided by TDAU is a great resource. The competition is best suited to students with prior knowledge of the markets and options in particular, but can be a good learning tool for students with a broad range of knowledge levels. The format of the TOS Challenge offers several key improvements over other competitions, particularly in the strength of the trading platform, the breadth of securities available for trading, and the ability for teams to monitor their position on the leaderboard in real-time.

Barker Trading Competition – University of Idaho

The Barker Trading Competition (BTC) is sponsored by the Barker Capital Management and Trading Program (the Barker Program) at the University of Idaho. The competition originated in 2007 and has been offered every spring semester since. It is targeted to any student interested in learning about trading derivatives, no matter their major or college, and is open to any undergraduate or graduate student at the University of Idaho. In 2014, the BTC hosted 82 traders ranging from freshman to graduate students from five different colleges and 15 different majors.

The primary goal of the competition is to provide students with an experiential learning opportunity that introduces them to trading, trading platforms, futures contracts and exchange traded funds (ETF's). It is also used by the Barker Program for branding and recruiting purposes. It is the primary tool used by the Barker Program to advertise itself across the campus and to recruit applicants for the classes and seminars offered by the program.²⁴

The BTC runs for two weeks in April and the objective is to maximize return on a \$100,000 simulated portfolio. Students participating in the BTC are provided with thinkorswim paperMoney accounts.²⁵ Each student must trade his or her own account and there are no team entries allowed. Prize money is awarded to the top five traders: \$500 for first place, \$300 for second place, \$100 for third place, \$75 for fourth place, and \$25 for fifth place. The competition is administered by the Director of the Barker Program with help from a graduate teaching assistant and a team of accounting students who provide support for account oversight and reporting.

The competition is advertised around campus via the Barker Program website, flyers, electronic bulletin board postings, and targeted classroom visits by current Barker Program students. Students register by email and are provided with a paperMoney account as well as a copy of the rules and instructions for the BTC. Students are required to attend a two-hour training session that provides an overview of the competition and

an introduction to ETF's, futures contracts, and the software. The training session is offered twice to accommodate scheduling conflicts for the students. Students have several days to practice trading in a preliminary round before the actual start of the competition. Support is provided on the thinkorswim Learning Center webpage.²⁶ Support with trades, trade management, and other issues is provided by the Barker Program via email support and by lab monitors in the College of Business and Economics' U.S. Bank Trading Floor.

Trading is restricted to ETF's and the front month for a series of nine different futures contracts listed on the CME Group exchanges. Asset classes include equities, agricultural commodities, fixed income, gold, and crude oil.²⁷ Traders are required to make a minimum of ten round trip trades and they must make at least one ETF and one futures trade. Beyond that, students are allowed to trade in the product or product mix they think will be the most profitable. There is no minimum or maximum holding period for any trade, although strategies that "game" the simulator platform (such as scalping or strategies that take advantage of artificially wide spreads during after-hours trading) are subject to disqualification at the discretion of the BTC official judge. Traders must liquidate all positions before market close on the last day of the competition.

The paperMoney platform provides real-time data and continuously updated information on student positions, including outstanding profit/loss values by trade and margin positions. The platform also reports Net Liquidating Value (NLV) on a continuous basis which indicates the portfolio value including cash, booked profits and losses, outstanding profits and losses, and commission charges. Traders are encouraged to use all of the resources and functionality provided by the software. Position limits are set by margin requirements and available cash, and accounts with negative available cash positions are restricted to exit-only trades until margin availability is restored. Commissions are charged each way against the trades at a rate of \$2.00 per futures contract and \$9.99 for an ETF trade of any size.

Trading in stocks or other non-ETF equities is prohibited. There are several reasons for this. First, it is explained to students that this is a trading competition, not a stock picking competition. Even if a student has strong stock picking skills, this is not likely to result in a winning strategy over a two-week time horizon, mostly due to the limited ability to leverage outright long/short positions in stocks. Rather, the winning strategy is one that is able to seek out volatility, take levered positions that put them on the right side of that volatility, and manage the risk inherent in those positions from entry to exit. Second, excluding stocks solves any difficulties with penny stock or OTCBB trading. The difficulty with penny stocks and OTCBB trading is liquidity – once into those positions it is common for traders to get stuck and not be able to execute a closing trade for liquidation. In addition, the educational goals for the competition revolve around futures and ETF's, not discerning the difference between listed and OTCBB securities.

The administrative component offers the opportunity for an additional experiential learning opportunity for students. A graduate student in accounting is awarded a teaching assistantship to help with administrative duties and to serve as the Lead Reviewer for a group of accounting students who volunteer as “auditors” for the BTC. A group of 10-12 accounting students are chosen to serve as the Barker Review Group. They are given the task of reviewing the accounts for compliance with the trading parameters and assessing penalties, which are submitted to the BTC official judge for final approval. These reviews are conducted every other day. The Lead Reviewer coordinates this data and issues a report to all traders with an updated leaderboard and complete standings based on market-close NLV's.

The BTC offers an easily accessible, hands-on opportunity for students with little background in financial markets to learn about futures contracts, ETF's, and trading platforms. It also serves as a branding and recruiting tool for the Barker Program on the University of Idaho campus. The use of the thinkorswim paperMoney platform allows for real-time quotes and account NAV's that report all relevant data for each account. The

administrative component requires a commitment from a faculty member and support from the college, but it also offers an opportunity to expand the learning opportunity to include a teaching assistant and accounting students.

CREATING AND DELIVERING A TRADING COMPETITION

Based on our review of the alternative derivatives competitions, we have identified an administrative framework that schools might incorporate into their decision-making when creating and administering a trading competition. First, determine the goals of the competition. The goals should identify the desired learning outcomes as well as the intended benefits to the trading room, trading program, and/or college. Keep in mind that a training session (or sessions) will likely be needed to adequately prepare for the competition and to best accomplish the desired learning outcomes and other goals of the competition.

Second, determine a marketing strategy for the competition. For competitions that are based at a single school or between a small group of schools, this can be fairly simple. There will be students from almost every college in a university that have some interest. If there is a reasonable monetary prize attached to the competition, then simply getting the word out by university communication channels can be effective.

Third, determine the reach of the competition. More specifically, determine who will be eligible to play and the general profile – or range of profiles – for the competing students. A competition that is geared towards senior finance or graduate students with prior exposure to trading and derivatives will necessarily require a different structure than one that is meant for general students across different majors and educational backgrounds. This decision will mostly be driven by the goals of the competition.

Fourth, select an appropriate platform. It is important to pick a platform that can provide real-time quotes in a simulated environment, and to provide a professional trading platform for students to explore. Support from the platform provider can be a key consideration. For example, access to news and analytics is important, as is the ability

to monitor the participant's accounts from a master account. Partnering with the platform provider can help to address these issues.

Fifth, determine the rules and trading parameters. The competition needs to be long enough and have rules that give the students incentives to trade. It is important to structure the competition to avoid someone winning based on one lucky trade. In addition, it is important to structure the rules in such a way as to address gaming of the simulation system. Generally this requires trading highly liquid contracts or limiting after hour and weekend trading. The trading parameters should be consistent with the goals of the competition and the profile of students participating.

Sixth, determine the mechanism for rules enforcement and reporting results. It is important to note that frequent reports of standings are very helpful to students and contribute to game strategies that are consistent with risk management and other important learning goals. Also note that administration during the competition will take some time and require support. External support can be helpful, but it is not feasible to simply turn over account monitoring, penalty enforcement, and results reporting to an external entity. On the other hand, internal administration provides additional dimension of experiential learning opportunity by involving accounting students as "auditors". The more clearly the rules and penalties are spelled out, the easier enforcement becomes. However, with simulations it always important to consider that players may be tempted to use strategies that take unfair advantage of the simulated nature of the trading platforms. You have to be prepared to audit for those violations, and enforce the penalties if discovered.

SUMMARY AND CONCLUSION

This paper provides an overview of four alternative derivatives trading competitions that provide students with an opportunity to learn about a topic that is widely recognized as being among the most conceptually challenging topics in business. We find that different formats allow the competitions to focus on alternative types of

derivatives (futures vs. options), asset classes, and student level. We also explore issues to consider when a school is considering participating or creating a trading competition. These issues include determining the goals of the competition, developing a marketing strategy, determining the targeted profile of competing students, selecting an appropriate platform, determining rules and trading parameters, and determining the mechanism for rules enforcement and reporting results. This review will be useful to programs considering adding a derivatives trading program to their menu of offerings in finance and investments.

ENDNOTES

¹ CME is an acronym for the Chicago Mercantile Exchange. The CME Group Inc. is one of the largest options and futures exchanges in the world and owns and operates derivatives exchanges in Chicago and New York as well as online trading platforms. For more information, see the CME Group website at <http://www.cmegroup.com/>.

² The TMX Group is a Canadian firm that owns and operates stock exchanges including the Toronto Stock Exchange, the Montreal Exchange, and the Boston Options Exchange. For more information, see the TMX Group website at <http://www.tmx.com/en/index.html>.

³ The TD Ameritrade U thinkorswim Challenge is facilitated by TD Ameritrade, an online broker/trading platform based in Omaha, Nebraska that facilitates trading in all varieties of securities. For additional information, see the TD Ameritrade website at <http://www.amtd.com/>.

⁴ The University of Idaho's College of Business and Economics is home to the Barker Capital Management and Trading Program. For additional information see the Barker Program website at: <https://www.uidaho.edu/barker-program>.

⁵ Information for this section was obtained from the competition website, located at www.cmegroup.com/education/trading_challenge/, and from an interview with Stan Yarbrough, Product Specialist at CQG and primary support for the CME Trading Challenge.

⁶ CQG Inc. offers real-time and historical data integrated with graphics and technical analysis tools. For additional information, see the CQG Inc. website at: <http://www.cqg.com>.

⁷ Dow Jones & Company is an American publishing and financial information firm that is best known for the publication of the Dow Jones Industrial Average and related market statistics, Dow Jones Newswire

and a number of financial publications. For additional information, see the Dow Jones & Company website at: <http://dowjones.com>.

⁸ A complete list of the rules, including registration, allowed contract specifications, and trading parameters can be accessed at www.cmegroup.com/education/trading_challenge/files/2014-trading-challenge-rules.pdf. The CQG support page can be accessed at <http://www.cqg.com/support>.

⁹ More details on the CQG Integrated Platform can be accessed at <http://www.cqg.com/products/cqg-integrated-client>. It should be noted that the CQG software only runs on PC's, and firewall port 2823 must be opened for access by the trading software.

¹⁰ CQG has a Formula Toolbox feature that can be used to program conditions for entry and exit orders. Within the CME-TC this function can be used to set alerts and for creating charts, but is not allowed for trade execution.

¹¹ Information in this section was obtained from the competition website, located at www.m-x.ca/uni_simulation_options_en.php, and from an interview with Stéphanie Berthiaume, Manager, Marketing and Communications at TMX Group.

¹² A list of the allowed securities is available at https://www.m-x.ca/f_publications_en/sim_classes_options_en.pdf.

¹³ The top 50 teams receive a certificate of participation.

¹⁴ An option class is defined as the contracts of the same type for any strike or maturity on a given underlying. So each underlying will have two classes; a call class and a put class.

¹⁵ The TMX Trading Simulator and other online investor education resources can be accessed at www.tmx-edu.com.

¹⁶ The TMX Simulator provides quotes on a 15-minute delay, but accounts for the TMX-OS are upgraded to real-time status. A guide to the simulator can be found at www.m-x.ca/f_publications_en/sim_guide_en.pdf.

¹⁷ paperMoney is the real-time, simulated, version of thinkorswim. All accounts supported by TDAU, including the TOS Challenge, are supported by paperMoney. No live trading is supported in this format.

¹⁸ TOS was rated #1 overall broker by Barron's in 2006, 2007, 2009, and 2010. In 2014 TD Ameritrade tied for the #1 ranking in Best Options Traders by Barron's and TOS was also ranked #1 Online Trading Platform by StockBrokers.com Sources: <https://www.thinkorswim.com/tos/displayPage.tos?webpage=aboutUs>, and <http://www.stockbrokers.com/reviews/tradeplatforms>.

¹⁹ Source: <https://www.thinkorswim.com/tos/displayPage.tos?webpage=aboutUs>.

²⁰ Information in this section is based on the TOS Challenge Official Rules, available at www.thinkorswimchallenge.com, and from an interview with Mary Ryan, Senior Specialist at TD Ameritrade and coordinator for the TOS Challenge.

²¹ Student prizes are deposited in a TD Ameritrade account. Students may then trade that account or withdraw the cash at their discretion. Other non-monetary prizes are also included. A complete list of prizes is listed on the competition website.

²² Other support is provided via emails, phone, chat and social media outlets.

²³ For options and option spreads this will be measured by the net margin effect of the position on the account's available dollars (i.e., funds available for investing).

²⁴ The Barker Program from the U.S. Bank Trading Floor located within the College of Business and Economics and manages a private endowment provided by the Barker-Dangerfield Wealth Management LLC. Students can qualify for both group managed and individually traded accounts that focus on a range of asset classes as well as options and futures contracts. More information on the Barker Program can be accessed at www.uidaho.edu/cbe/barker-program.

²⁵ TD Ameritrade is not a sponsor for the Barker Trading Competition.

²⁶ The thinkorswim Learning Center can be accessed at tlc.thinkorswim.com/center/tutorial.html.

²⁷ A complete list of authorized contracts, as well as the rules and instructions for the BTC, can be accessed at <https://www.uidaho.edu/cbe/hands-on-learning-opportunities/barker-trading-program/trading-competition>.

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APPENDIX 1: Alternative Derivative Trading Competition Metrics

| | | | | |
|-----------------------|--|--|--|---|
| Competition Name | CME Challenge | TMX Options Simulation | Univ. of Idaho Barker Trading Competition | thinkorswim Challenge |
| Inception Date | 2004 | 2012 | 2007 | 2014 |
| Length of Competition | 1 st round 2 weeks 2 nd round 2 weeks (Feb-Mar) | 8 weeks (Feb-Mar) | 2 weeks (April) | 4 weeks (Oct-Nov) |
| Team Format | Teams of 3-5 students. Limit 4 per school (2 grad + 2 undergrad) | Teams of 1-4 students. No limit per school. | Individual Students | Teams of 3-5 students. 2,000 team contest-wide cap. |
| Initial Funding | \$100K 1 st round \$250K 2 nd round | \$100,000 | \$100,000 | \$500K |
| Platform | CQG | TMX Trading Simulator | thinkorswim paperMoney | thinkorswim paperMoney |
| Contracts Allowed | March Corn March Soybeans April Live Cattle April Crude Oil April Gold March e-mini S&P March 10-yr TNote March EUR/USD | Options on 30 most active securities on TSX. | Any ETF June E-mini S&P June E-Mini NASDAQ June E-mini Dow (\$5) May Wheat May Soybeans May Corn June 10-year T-Note June Crude Oil June Gold | Any S&P500, DJIA, or Nasdaq 100 stock, plus SPY, DIA, or QQQ, plus any option with one of the above securities as the underlying. |

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|---|--|--|--|---|
| Trading Parameters | Allowed contracts only. No algos. Minimum 5 round trips per day. | Portfolio of at least 5 option classes, plus 4 mandatory strategies, plus 1 "surprise" strategy. | Minimum 10 round trips and at least one futures and one ETF trade. | Allowed stocks and options only. No algos. Stock trades M-F 8am-8pm. Option trades M-F 9:30am-4pm (ET). |
| Rules Enforcement | \$10,000 penalty for illegal trades, plus P&L. \$1,000 per day of insufficient trading | Simulator prevents illegal trades. Portfolio and mandatory trade requirements monitored by TMX. | Series of "Audits" by accounting students (Barker Review Group). | Audits of weekly winning teams and overall winning team. Other audits at TDA discretion. Disqualification as penalty. |
| Student Eligibility | Any college or university. 2 grad and 2 undergrad teams per school | Full-time undergrad in Finance or related field at Canadian university | Any student at University of Idaho | Any legal resident of U.S. registered at a U.S. school. |
| Faculty Involvement | Faculty advisor supervision of teams highly recommended | MX Student Ambassador at each participating school to coordinate | Barker Program Director serves as Official Judge and coordinator | none |
| Number of Participants (latest competition) | 389 teams at 207 schools from 31 countries | Approximately 1,787 teams at 36 Canadian schools | 82 students | 243 teams at 89 U.S. schools |
| Training and Support | CQG online training videos plus CQG support team. | Evening training session, webcast Q&A, plus online videos | Evening training session plus BTC support team. | thinkorswim Learning Center, online videos, plus live support. |

| | | | | |
|-------------------|--|---|--|---|
| Prize Money | 1 st \$1,000/student 2 nd \$700/student 3 rd \$500/student 4 th \$300/student | 1 st \$10,000/team 2 nd \$5,000/team 3 rd \$2,500/team | 1 st \$500 2 nd \$300 3 rd \$100 4 th \$75 5 th \$25 | \$500/student/week Overall: 1 st \$3K/student and \$30K for school 2 nd \$2K/student and \$20K for school 3 rd \$1K/student and \$10K for school |
| Sponsors | CME Group and CQG (technology) Dow Jones (news) | TMX Group and Capital Markets Center (TMX Simulator) | Barker Capital Management and Trading Program | TD Ameritrade Services Co. and thinkorswim |
| Other Information | Daily account value reflects only closed trades (open P&L not reflected). Top teams invited to Chicago for CME's "Day of Market Education" conference. | Results reported at end of competition. Data for competition is real-time (note: general trade simulator is delayed 15 minutes). | Individual account values and full P&L reported in real time. Complete standings, values, and P&L's reported every other day. | Individual account values and full P&L reported in real time. Top teams and corresponding account values and full P&L's reported daily. |