Market Simulation Games for Undergraduate Investments Courses: Simple or Complicated?

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ABSTRACT

In an effort to maximize the meaningfulness to the most students by using a market simulation game in the introductory investments course, for six years, varying levels of complexity were incorporated to determine the level at which most students were comfortable participating in the game. It was determined that as the complexity reduced, students had more interest (and participation) in the game. The goal of this experiment was to find the best experience for students to enjoy the game, but be rich enough for a significant learning experience. For the introductory investments course, currencies and derivatives seemed to be too complex, while other investments made the game more competitive and fun.

INTRODUCTION

At a liberal arts college (with no "business" major or department), a 12-week investment simulation game was integrated into the introductory investments course as a significant part of the course and grade. At the outset of their first investments course, students are armed with a variety of knowledge of financial markets. Some are already familiar with basic stocks, mutual funds, and trading, while others barely remember any finance learned in previous courses and have no direct knowledge of markets.

For a six-year period, the sophistication and complexity of the investments simulation and its requirements were altered in an attempt to find the best, overall experience for all students. For the more complex games, Stock-Trak was used due to its generally superior capabilities and richness. For the less complex games, Investopedia.com (Investopedia) was used because it was free, and it has the capability of investing in stocks as well as basic options. In 2012, a new game, StockLinkU, became available and was used. This newer game has the ability to be set up as a free game or at a cost for "premium" users. StockLinkU had all of the features of Investopedia plus the availability of mutual fund investing in the free portion of the game.

The primary goal was to seek out a level of complexity for the class to create a competitive and fun game without confusing many of the students by allowing them to trade assets that were too sophisticated for most of them. Each year, the level of sophistication was reduced until the fifth year when it was increased slightly.

Ultimately, students seemed to enjoy the Investopedia platform the most. However, it was concluded that, of the platforms and scenarios attempted, the best scenario occurred in the fifth year using StockLinkU. The reason for the discrepancy may be that StockLinkU offers more investment choices, but is relatively new and had many more software glitches. Also, StockLinkU platform was relatively slow compared to the other platforms. As there was yearly

adjustment, it is possible that further adjustment may create a scenario that is closer to "ideal." Although the author feels that the inclusion of bond trading would slightly enhance learning in the classroom, bond trading may only be accomplished with a premium (fee) service. Therefore, it was concluded that switching to a premium service solely to include the ability to trade bonds would not have enough of a benefit to be worth the cost of the service for the semester.

DETAILED DESCRIPTIONS OF GAMES

In the introductory investments course, it was determined that an investment simulation game would be beneficial to students as an aid to learn of financial markets and how they work. It was decided to start implementing the game in the 2008 fall semester. Since the introductory investments course is only offered in the fall semester, alterations in the game format and setup could only be made annually. Further, much of the learning is outside of class. Students must interact with the simulation platform and learn how to trade on their own. Class rankings and some specific trades are reviewed in class each week. But it was found that in class, students preferred to discuss how the markets reacted to the prior week's news and corporate-specific events such as IPOs and earnings reports.

The main objective of incorporating the game as part of the course was to enhance learning of investments and financial markets. However, there were also other objectives. First, it was expected to be a welcome diversion for the students from the normal classroom lectures. Second, students almost certainly will improve their ability to manage their own portfolios with their real-world investments with the knowledge gained by participating in this game.

The rules for the game were generally consistent each semester. Each student was required to trade a minimum of two trades per week for the duration of the 12 week game. Also, there were requirements to trade different types of investments, for example, stocks, ETFs, mutual funds, options, etc. This is called the "breadth" requirement. The breadth requirement has always been included as part of students' grades, although the specifications for this requirement have changed with the different online platforms due to their differing capabilities. For example, limit orders and short selling have always been available from each platform, but were not a part of the required trading until 2011. This was mostly because there were enough other types of trades in each game that *requiring* limits and short sales did not seem to be necessary. However, as the games were simplified, limits and short sales became more integral parts of the games, and these concepts were covered relatively early in the semester allowing students to understand them early enough to be able to trade with them. Even though some results may be affected by the differing platforms, all platforms give students an opportunity to trade in a reasonably realistic market scenario.

As an added incentive to participate and do well in the game, the winner of each game and several runners up were awarded bonus points on the final exam based upon their portfolios' total returns. Throughout the six years, the stock trading game participants included a total of 228 students. Of the different platforms used, 67 students used Stock-Trak ® (29%), 70 students used Investopedia Stock Simulator (31%), and 91 students used StockLinkU (40%).

2008

For the first class that had the opportunity to use the stock simulation game, the richest, most comprehensive simulation was chosen to allow students to fully explore as many types of markets and trades as possible. This turned out to be fortunate for some students and unfortunate for others. With more complexity and ability to trade various assets comes more opportunity to take risk, even if the student is not fully aware of the amount of risk he or she is taking.

Stock-Trak was used for this first attempt, and all available assets were allowed to be traded. This included such assets as US and foreign equities, options, futures, bonds, and foreign currency trading. Stock-Trak is a fee-based service that has pricing levels depending upon the number of weeks in the game. Since semesters are approximately 15 – 16 weeks, a 12-week game was chosen (the next level up was 18 weeks). With a coupon from the required textbook in this course, a student could sign up for the Stock-Trak game for approximately $22 for 12 weeks. There was also a limit on the maximum number of trades in the game. Students were allowed a maximum of 200 trades during the 12 weeks (additional trades could be purchased from Stock-Trak). While 200 trades is more than most students needed in a 12-week game, it was a limitation for some students, especially for those who were more familiar with markets and who preferred to take on more risk and trade more often. While no student chose to trade more than 200 times while using Stock-Trak, there were two students who traded more often than that in future games.

One notable situation occurred that made it clear that the level of trading allowed in this game was set too liberally in 2008. As may be recalled by many market observers, fall 2008 was a very down market. The stock market bottomed out in March 2009 from the records/highs in October 2007. Since students tend to understand buying and selling stocks fairly well, many will stick to buying/selling stocks at the beginning of the game. However, for the adventurous, options and futures seem tempting to explore. One student had a rudimentary idea of what it meant to short gold futures and did just that during the first week of the game. A few days later, an ounce of gold increased in value by about $90/share. This student was so highly leveraged, he lost more than the $1,000,000 he started with at the beginning of the game, and was not allowed to trade since his account was negative. This was a problem since he was required to trade at least twice per week for his grade. Ultimately, he had to purchase another account at full value in order to maintain his grade in the investment trading game project. Essentially the same scenario, using other assets also occurred with another student a few weeks later. The lesson learned was that either the derivatives should not be allowed until much later in the semester, since we did not cover derivatives in any detail until the very end of the semester, or they should be eliminated as a tradable asset altogether.

Another aspect of the game that was a bit of a challenge was to make it competitive throughout the 12-week simulation period. In this initial year, 38 students participated in the investment trading game. The winner had increased his wealth by >100%; second place was up by >40%; and third place barely made 8% on his initial $1,000,000. Thus, the winner was so far ahead that not many students were interested in the rankings by the end of the game. Recall that 2008 was a very down market in the fall. So, due to the ability to have a large amount of leverage with derivatives, there were three student accounts that had less than $0 in the accounts and two others had lost more than half of their initial wealth. The average growth for the class was very

negative (–21.7%), which was actually better than the S&P 500, which was down almost 28.6% during the same 12-week period.

Comments during the game from students and on student evaluations at the end of the semester were generally positive about the game. However, there were a few students who did not like the game at all, complaining that they did not know what to do or where to start or that there was not enough direction in the game from the instructor or from the online help. These comments suggested that these students were not comfortable with the game or with trading. In fact, approximately 20% of students traded less than 24 times throughout the game. This implies less interest (less fun), less confidence, and less motivation to learn about markets and how they work in the world.

2009

Since the assets in first class in 2008 seemed to be set too liberally, the instructor reduced the allowable assets that may be traded for this year's class. Essentially, the class was set up the same as in the previous year, except that students were not allowed to trade currencies or futures, which seemed to be the most highly volatile and least understood assets from the previous year's game.

Another, seemingly innocuous event that occurred for this game was that Stock-Trak updated its platform to a newer version. So, some games were in progress using the old version, while some were using the newer version. This course was set up with the new platform. Unfortunately, it was the upgraded platform that was the primary problem for this year's game.

Two of the students found a glitch in the game's software which they exploited. The loophole was eventually fixed by Stock-Trak, but too late to make the game competitive. These two students won the game by a very large margin. As it was reported by the two students, Stock-Trak used a 15-minute delay to report some asset values. But, the assets were traded at the price seen on the screen by the student. So, if the student could find out what the real-time price of the assets were, he could trade with the certain knowledge of what the price would be 15 minutes in the game's future (which was the current, real-time price). So, these two students were making arbitrage profits that were not truly available to real traders. However, finding all the trades and backing them out by the time it was discovered was not feasible, and the students had not technically broken any of the game's rules. So, their trades were allowed to stand. The winner of the game ended with >$3.2 million, while second place finished with approximately $2.3 million (everyone started with $1.0 million). The range for the rest of the 31 participants this year was between $540,000 and $1,430,000, which was still a very wide spread between the high end of the class and the low end.

Because of the artificially outstanding performance of these students and the fact that one of these students had two accounts[1] and used the same strategy with both, the class average at the end of the game was $1,160,000 compared with the S&P 500's gain to $1,063,000. So, at first glance, the class did considerably better than the market, but when the anomalous accounts are removed (including the professor's), the class averaged $1,028,000, a more normal result for an introductory investments class, who tend to choose conservative portfolios.

Comments from students this year were similar to 2008. This year, though, there were fewer students who did not meet the minimum requirement for total trades. Only two students out of 31 had less than 24 trades during the 12 weeks that the game was in progress. A couple of students did not like the fact that derivatives (options) were trade requirements even though we did not significantly cover options in class until late in the semester. Recall that other derivatives were no longer allowed this year. However, options were retained as a tradable asset in 2009.

2010

For the third year of the game, the instructor looked around at other possible venues that might work for the class rather than Stock-Trak. Although Stock-Trak was the most popular and commonly cited game, given the experiences of the prior two years, Stock-Trak had many features that were found to be unnecessary. At the time, Investopedia had a good, free simulator, but had somewhat limited depth. The only trades available were stocks, ETFs, and options. Currency trading, futures, mutual funds, and bonds were unavailable. However, it seemed like this format might be useful without being too complex for introductory level students to understand and also seemed promising to provide for a more competitive game than in the previous two years, and therefore encourage more participation. So, it was decided to use this platform for 2010. In the Investopedia game, there was also the ability to trade Canadian stocks, but for this year, they were omitted as an option to see how the game played out using only the US market. Students were required to trade stocks, options, and ETFs. Other basic requirements in the game remained similar to previous years.

The competitiveness of the simulation did not improve much this year. Although the basics of options trading are covered near the beginning of the course, options are not covered in depth until near the end of the course. Strategies are not discussed for options in class until the final week of the game, which may have inhibited some students from exploring their skills with an investment that was not fully covered in class. This year, students who understood options, tended to use them; while those that did not understand options or were uncomfortable with the risk inherent in using derivatives, did not use them more than the minimum requirement. The result, which may be expected, was that there was a wide dispersion from the top performers in class and the bottom performers in class. The winner finished with $2.10 million, while last place had fallen to approximately $510,000.

An oddity that showed up this year was that there was a day-trader in class. This was the only occurrence of a true day-trader in the six year sample. In the 12-week game, he traded a total of 1,217 times, which when averaged over the life of the game, comes to just over 100 trades per week (or 20+ trades per business day). In the other years, there was no single student who traded more than 327 times. With the increased trading, came significantly more volatility in his portfolio.[2] In the Stock-Trak game, trading frequently was dissuaded since the student would have to pay for the privilege of trading more than 200 times during the game. In the Investopedia game, the number of trades was unlimited. After reviewing this year's results, it was felt that the unlimited number of trades was beneficial and continuing with Investopedia would be best for the next year. Clearly the enjoyment and learning was enhanced by talking

about this student's trades in class and understanding the difference between position traders and day traders. This opportunity would not have been available under the Stock-Trak platform.

One other thing to note is that the top two places in the game this year achieved their positions simply by correctly guessing on the direction of one or two stocks using call options and betting as much as they could on the positions. Had they guessed incorrectly, they almost certainly would have ended the game in the bottom quarter of the class. The ultimate winner of the game was generally hovering near the middle of the pack for most of the semester until three weeks from the end of the game when he miraculously jumped into first place. After achieving the lead by a few hundred thousand dollars, he traded minimally through the end of the game. He mentioned in his reflection paper later that he did not want to lose his position, so he played it safe until the end of the game. It is believed that the omission of options will likely resolve the competitive nature of the game. So, for future years, no derivatives will be allowed in the game.

Again, this semester, students liked the game in general, but mentioned that the game could have been more fun if the competition was closer. The lowest total number of trades this semester was 25. So, even the least engaged student traded enough to theoretically meet the two-trade-per-week requirement. The main disappointment with Investopedia, aside from the wide dispersion of results, and thus, a lack of competition at the end of the game, was that bonds and mutual funds were not available to be traded in this platform.

2011

For the fourth year of this case study, the platform remained with Investopedia. However, to reduce volatility and encourage more competition, especially at the end of the game, and to avoid allowing trading on assets that are barely covered until very late in the course, trading in options was disallowed this year. However, in an effort to compensate for not allowing options, trading in Canadian stocks was incorporated. However, trading in Canadian stocks was not instituted as requirement of the game. So, not trading in Canadian stocks did not affect students' grades. Also, this year was the first year that limit and short trades were required as part of the overall breadth requirement. Otherwise, the rules and available assets were similar to those in 2010.

The first thing that should be noted about the game this year is that Investopedia maintained separate rankings for US stocks and Canadian stocks and included separate $1,000,000 portfolios for each market. This was a clear miscalculation on the instructor's part. Students traded very few Canadian stocks throughout the game. In fact, only nine of the 34 participants traded a Canadian asset even once. Therefore, the Canadian stocks were not used in the calculation of the winner of the game or the bonuses allocated at the end of the game. Students were made aware of this rule alteration/clarification in the fourth week of the game. Trades still counted toward the 2-trade minimum, so the experience was worthwhile for those who traded the Canadian assets, and they were not wasting their time researching stocks that would not help them complete the requirements of the game.

With the lack of ability to trade any derivatives or currencies, as one might expect, this game was much more competitive throughout its duration. The winner finished the game with

approximately $1.25 million, while the last placed student finished with approximately $850,000. In fact, the top five finishers were within $50,000 of the winner, making several students watch the market performance right up until the last day.

This year, the game seemed to work well. However, it was felt that the available assets may be too limited in the Investopedia game. Comments from evaluations tended to be on the side of asking for more variety in investment choices. Also, students did not like the Canadian stock setup. The lowest number of trades this semester was, again, 25. So, students were generally participating above the absolute minimum level. There were no complaints this year about the game not being close at the end. It may be that the competition helped to stimulate interest throughout the semester.

While the game was very competitive this year, it was determined that a simulation would be richer and a better learning experience if mutual funds and/or bonds were available to be traded. These assets are relatively simple to understand and critical in most investment portfolios. With Investopedia, the only way to invest in bonds was via a bond ETF, and there was no way to invest in mutual funds.

2012

Due to the disappointment with the Investopedia platform's available assets, in 2012, there was a search for another platform in which mutual funds and bonds may be traded. As it happened, a new platform was just starting up called StockLinkU. It purported to be designed specifically for university classroom simulations, whereas Investopedia is open to the public and is not tailored to a classroom setting. StockLinkU had two levels of subscription, basic and premium, which the instructor could set at the beginning of the course. The basic level was free while the premium level incurred a cost to the student, similar to Stock-Trak, but a bit cheaper since it was newer, and it was not yet as functional as Stock-Trak. For the purposes of introductory investments course, the basic level of StockLinkU already had all the features of Investopedia, and it had the ability to trade mutual funds. However, bonds were still unavailable to either basic or premium users during 2012.[3] Since it seemed promising, StockLinkU was chosen as the simulation platform for this year.

Requirements for 2012 were similar to other years, but mutual funds were required trades this year, and ETFs were dropped as a required trade since ETFs trade similarly to stocks while mutual funds have several dissimilar characteristics. Requiring mutual fund trades re-instituted a rule from Stock-Trak that was not possible during the "Investopedia era."

The results for this year were not quite as close as the prior year, but that may be simply due to the market characteristics and one or two students who were riskier this year than students in 2011. Of the 42 participants, the 2012 winner finished the game with about $1.13 million, while only two other students were above $1.05 million. Last place had about $510,000 at the end of the game, but second-to-last had almost $750,000.

The 2012 was characterized by glitches in the system. While that is to be expected with brand new platforms, there was a particular incident that caused more problems than most. A few

stocks prices were apparently reported incorrectly to StockLinkU. The prices were very low or very high causing limit orders to execute for buys and sells. Also, a particular student that happened to be watching his portfolio at the time bought Google (one of the affected stocks) at the incorrect (very low) price of $27.50 per share. When the glitch was found and corrected, Google's price reverted to its correct price of approximately $690 per share, leaving his account at approximately $27 million (the prior week, his portfolio was at $974,000). The student then proceeded to make several more trades with his newly acquired wealth rather than notify the instructor or StockLinkU that he suspected a problem. It was about a week before all of the trades were reversed and the problem corrected.

Other incidents were relatively frequent, but generally minor. The one that was most cumbersome is that the platform was designed for Google Chrome, but the school campus in this study only carries Microsoft Internet Explorer on the campus machines, which was not supported by StockLinkU. So, the interface was often a problem for students.

As usual, comments about the investment game were generally good. The negative few focused on the glitches in the game rather than the game itself. In fact, there were no negative comments this year about the rules of the game or the assets available to be traded. The lowest number of trades this year was 24, similar to the prior two years, suggesting students mostly fulfilled the minimum required trades.

2013

For a truly parallel sample of 2 attempts at each platform, StockLinkU was chosen again for the final year of the study. The platform had some upgrades from the previous year, especially in terms of stability and accessibility from Internet Explorer.

For the first time in the six year experiment, the requirements for the 2013 game were unchanged from the prior year. The hope was that the experience would be better this year with the improvements in the relatively new platform.

The results of the 2013 competition were very competitive. The leader changed nearly each week. The spread between the top three students and the rest of the class widened during the final week of the competition, but it was very close until then. With 50 students participating this year, the winner finished with about $1.21 million, and while 13 other students were within approximately $100,000 of the winner, only two were within $65,000 ($20,000 and $25,000 behind). Also, this year, more statistics were discussed each week. Portfolios were regularly compared to the S&P 500, a domestic bond portfolio (Vanguard Bond Total Market – ticker: BND), and cash. So, students were able to see how they were performing relative to various financial markets. Nine students' portfolios performed worse than cash, and the lowest was approximately $871,000.

Unfortunately, in 2013, StockLinkU had nearly as many problems (with my students) as it had in 2012. The main problem, which seemed to be recurring, was that students had difficulty logging into the program or had excessive wait times while attempting to trade, often encountering a "timed out" error. To StockLinkU's credit, the founder worked with each student

as problems arose. But, it was a significant distraction and may have affected some grades since one of the requirements is to trade twice per week.

Comments about the investment game were generally good, but there seemed to be a few more negative comments this time. Again, the focus of many of these comments was on the difficulties in performing the actual trades due to the problems with the platform. As was the case in 2012, there were no negative comments this year about the rules of the game or the assets available to be traded. There were many more disinterested students this year, though. Nine students (18% of the class) traded less than the required minimum of 24 times this year, which was similar to the first year of the study in 2008.

Overall, of the platforms tested, the StockLinkU platform seems to have the best mix of free components, but in practice it still has some kinks to work out. However, it was decided that the platform would be used again in 2014 since the basic subscription is free and has superior capabilities to Investopedia. If the platform is as frustrating as it has been during its first two years, the platform may need to be reevaluated for 2015 to either find a new platform or return to Investopedia for simplicity and more fun. After all, the more engaged the students are, the more they will likely learn from the exercise.

ANALYSIS

A novel "interest index" was created to assess whether students interacted with the simulation games. The interest index was then used to compare student engagement across platforms and years.

Using the number of trades throughout the simulation as a proxy for interest, the total number of trades by each student was tallied and assigned a number from zero to nine with zero implying essentially no interest in the simulation game (trading less than the minimum required according to the rules of the game) and nine implying a very high amount of interest in the game. The breakdown is as follows:

# Trades	Index Level	Interpretation
<24	0	No Interest
24-29	1	Minimal Interest
30-39	2	Minimal Interest
40-49	3	Minimal Interest
50-59	4	Moderate Interest
60-69	5	Moderate Interest
70-79	6	Moderate Interest
80-89	7	High Interest
90-99	8	High Interest
>=100	9	High Interest

For each year, the number of students at a given index level was multiplied by the index value and then added across all index levels. The total was then divided by the number of students for that year to get the Interest Index for that year. For example, in 2012:

$$\text{Interest Index}_{2012} = (0*0 + 1*8 + 2*8 + 3*11 + 4*6 + 5*3 + 6*1 + 7*2 + 8*1 + 9*1)/50 = 133/41 = 3.24$$

Essentially, this is telling us that the average student in 2012 had between 40 and 49 trades and displayed between minimal and moderate interest in the simulation game. This calculation was performed for all six years with the following results:

Year Platform	Interest Index
2008 – Stock-Trak	2.36
2009 – Stock-Trak	2.84
2010 – Investopedia	5.56
2011 – Investopedia	5.55
2012 – StockLinkU	3.24
2013 – StockLinkU	2.58

The results of this index indicate that the Investopedia platform was clearly the favorite of the three platforms. However, there are some obvious caveats to this index, and thus, any conclusions drawn from it. First, the assigned numbers are arbitrary. In reality, interest may be more correctly proxied with different breaks in the number of trades. For example, what if interest is truly maximized when a student demonstrates that he or she has traded 63 times during the 12-week period? Or 115 times? A second caveat is that the sample size is very small (six years with only two attempts at each platform). Third, the number of trades in the game may not be a good proxy for interest. And a fourth caveat is that rules varied slightly with each game. There is a possibility that the rules, and not the platform, played a role in the Interest Index values.

SUMMARY AND CONCLUSIONS

In an introductory investments course, a stock market simulation game was introduced as a significant part of the course in order to add a hands-on learning experience of the stock market for students. Three platforms were used over six years and varying levels of complexity were experimented with to find an "optimal" level of complexity to foster the most learning while making the simulation game competitive and interesting to as many students as possible throughout the semester.

All students had experience, both in coursework and in the game, with each of the available assets that were allowed to be traded. The only asset that was unavailable, but may add to the experience was bonds. Bonds were, in fact, available in both Stock-Trak and StockLinkU (in 2013), but due to the cost of handling these transactions, bond trading was only be available to premium users in StockLinkU, and no other simulation has been discovered that includes bond trading at no cost.

From the experience with these platforms, it seems that bonds, currencies, futures and futures options trading are unavailable with a free simulator. So, the question arises as to whether a particular platform is worth its cost if one can get the other assets for free on another platform. For an introductory investments course, there is likely enough richness in the free platforms that the fee-based platforms are not worth the cost.

Students who participated in the simulations in this course overwhelmingly enjoyed the simulation and often believed it was the most beneficial part of the course. Complaints not mentioned above were focused in two general areas: students forgetting to make their two trades per week and technical problems with a particular game. One student wished that options and futures were available so that he could take more risks, but also suggested that the game was more competitive and better for the class without the ability to use derivatives.

A recommendation by this author to fee-based platforms is that more pricing options may be warranted. Simply trading stocks and mutual funds may be free, but add-on fees on an a-la-carte basis may be ideal for some situations. If a wider market develops for simulation games and, thus, more competition for customers, an a-la-carte format may become the norm.

The general results that may be taken from this case study are that the best simulation games for the introductory investments course may be the simpler games, given the lack of prior contact with these investments by the students in the class. Also, it may be advised to limit students to trading assets that are discussed in some depth early enough in the semester to be a meaningful factor in the game. Otherwise, students with prior knowledge of more esoteric investments will clearly have the advantage.

While the results of this case study do not directly apply to more advanced courses, instructors may want to use the results of this study in conjunction with a higher level investments course. For example, in a derivatives course, students should already be familiar with stocks, bonds, mutual funds, ETFs, and basic derivatives. So, a more complex scenario may yield a rich, yet still competitive and fun game for the students of such a course. It will, of course, depend on the prior knowledge and experience of the students in the class. For this derivatives course scenario, Investopedia would not be the best choice of platforms since futures, mutual funds, foreign stocks (except Canadian) and currencies are unavailable as tradable assets in the Investopedia game. Stock-Trak or StockLinkU would be a better choice, depending upon the needs of the course and sophistication level desired.

Although, one of the primary goals of this study was to disseminate ideas about how complex the level of sophistication should be for a stock market simulation game in an introductory investments course, it is recognized that each course is unique in both the student

body as well as the instructor. The two primary motivations for this course were to maximize 1) learning about how the market actually works and 2) interest/enjoyment in the game. Instructors who have differing objectives may also wish to adjust their perspectives on which games might be most suitable for their courses.

POST SCRIPT (SEPTEMBER 3, 2014)

StockLinkU upgraded all accounts to premium in August 2014 after I had signed up to use it again. So, bond trading will be available to my students in 2014. Although bonds will be available, I decided to maintain the same rules as in the previous year with no concrete requirement for bond trading. This decision was mainly due to the lateness of the announcement that the bond trading would be available. The syllabus and game rules had already been disseminated to the class by the time the announcement was made. Another reason is that at this time, all research on bonds must be done on other websites rather than through StockLinkU. Finally, it may be useful to allow a semester (or year) for others to test the bond trading capabilities before "going live" in my class in 2015, assuming StockLinkU is the platform used next year.

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Investopedia Stock Simulator, accessed January 6, 2014, http://www.investopedia.com/simulator/portfolio/

StockLinkU, accessed January 6, 2014, http://www.stocklinku.com/

Stock Trak Global Portfolio Simulations, accessed January 6, 2014, http://www.stocktrak.com/

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[1] This student had two accounts because he initially lost all of his $1,000,000 initial investment and was unable to trade anything for two or three weeks. Therefore, he had to purchase another account in order to satisfy the two-trade-per-week trading requirement imposed by his instructor.

[2] This student ended the competition in third place after having been in the lead for several weeks and at the bottom of the class for two weeks.

[3] The founder of StockLinkU, Jordan Allen, communicated to the author that bonds would be available in 2013, but due to the cost of handling these transactions, bond trading will only be available to premium users, which is (obviously) not free.