ABSTRACT

Teaching an introductory course in investment could become more fun and stimulating if students were given an opportunity to practice what they learned in the classroom in real-world circumstances. This could be done in two ways. The first is investing real money in the real market and taking the risk of losing it all. The second way is to have access to a simulated stock broker with all the real-life details except for the pecuniary losses. This paper intends to describe how a stock market game could be developed on an electric spread-sheet and then be incorporated as part of the assignment in an introductory investment course.

DESCRIPTION OF THE GAME

In reality buying and selling stocks is done through stock brokers. Therefore, the first thing a potential investor has to do is to open an account with a broker. That means we could simulate the stock market as long as we could come up with a computer program that would simulate all the functions of a typical brokerage house. In other words, we need a program that could carry out buy and sell transactions at current prices, keep track of dividends and capital gains or losses, charge a commission cost, and generate a statement of the account on command.

The purpose of this paper is to show how an electric spread-sheet could be used to effortlessly generate and monitor a simulated investment environment with the highest level of conformity to realism. In the next section the structure of such a game will be carefully described. The final section will deal with the pedagogical aspects of the application of the game.
Table 1 presents a sample report on the status of a portfolio. To explain how different items are calculated consider BMC stock whose number of shares and purchase price are in cells B10 and C10 respectively. The beginning balance of $100,000 is in cell D1, while the commission cost of 2.5% is in cell D4. Given this information, the total value of BMC stock is computed as follows: D10: +B10*C10 or ($1,312.50 which is the product of 250 shares times $5.25 price per share). The total cost of purchasing BMC stock would be calculated by the following command: E10: +D10+D10*$D$4 which simply adds 2.5% commission cost to the total value of BMC stock. To obtain the current total value of BMC, or $1375, we have: G10: +F10*B10. Finally, unrealized gains/losses can be computed by: H10: +G10-E10.

Using the replicate command, the unrealized gains/losses for other stocks can also be obtained. Also, the sum of each desired column can be computed by using the command SUM. For example, the sum of the value of the stocks in Table 1 can be computed by using: @SUM(D10..D15) which results in $30,396.88 in cell D17. As to the account balance the following command should be used: D10: +D10*H10 which is the product of 250 shares times $5.25 price per share). The total cost of purchasing BMC stock would be calculated by the following command: E10: +D10+D10*$D$4 which simply adds 2.5% commission cost to the total value of BMC stock. To obtain the current total value of BMC, or $1375, we have: G10: +F10*B10. Finally, unrealized gains/losses can be computed by: H10: +G10-E10.

APPLICATION OF THE GAME

The primary objective of the game is to provide an artificial environment where students can pretend to be securities investors. The game is especially designed for use in an introductory investment course. No special background is needed to play the game. Students are supposed to develop an expertise as they play the game and see the results of their actions.

In order to provide the incentive to take the game seriously, it is necessary to make the game a part of the course assignments and devote perhaps 15% of the course grade to it. That way students are bound to avoid taking unnecessary risks and try, instead, to make financially sound decisions. In a sense, getting a good grade would be the equivalent of potential financial gains in the real market, whereas getting a "bad" grade would be a substitute for potential financial losses that may occur in reality.

It is also essential to explicitly set a time period for the game. For colleges on semester basis three months is a long enough period for the game. Of course the longer the time period, the better the chance to experience wide price fluctuations and other recurring market events. Since some time is needed to familiarize students with basic financial jargon it is wise not to set the start date of the game early in the course. Start and stop dates should definitely be specified. It is only between these two dates that students are allowed to make any transactions they want.

From the outset students should be required to submit weekly statements of their accounts. It is, however, final statements that should be used for grading. These statements should be ranked according to their cash value. The higher the figure, the higher the grade. The final statement could very well be accompanied by a short paper explaining why the 187 securities were bought, sold, or held during the game.