Instructions [Task 1]

Welcome! You are participating in a decision-making experiment in which you can earn points which may be converted to real money. Participants completing the three tasks will be randomly chosen to get the real money payout until the budget of this experiment is exhausted. Apart from that, they will receive two bonus points in the total score of the two MCQ's of the course (if there is room for it).

In order to ensure the validity of the results of this experiment, cooperation is not allowed. Use the chat to post any questions you may have. If you fail to follow these rules you may be asked to leave the experiment without any compensation for your participation. We expect and appreciate your cooperation today.

THE EXPERIMENT

The experiment is divided into four parts: three choice tasks and a questionnaire. In each of the four parts, you will make choices which determine the number of points that you earn during the experiment. At the end of the experiment, the screen will display how many points you have earned. Lastly, you will be asked to complete a brief demographic survey.

A **practice round** is played **without rewards**, before playing a task for points. After the practice rounds, a short quiz is used to test your understanding of the task.

TASK 1

You are asked to form a step by step investment. At each time step for one given scenario, you have to divide your budget (**Money**) into (i) an amount **$S** which is invested in a stock whose price can either increase or decrease with a known probability, and (ii) an amount **$C** in risk-free cash. You start with a budget of **Money**=100, but the budget can increase or decrease depending on your decision and the random price changes. But the sum of the amount in stocks and the amount in cash always equals the total budget: **$S** + **$C** = **Money**.

Your investment plan will look similar to the ones in Figure 1.1 and in Figure 1.2. Please note that the numbers and randomly chosen scenarios in Figure 1.1 and in Figure 1.2 are hypothetical and are not necessarily representative of the ones you will see during the actual task.

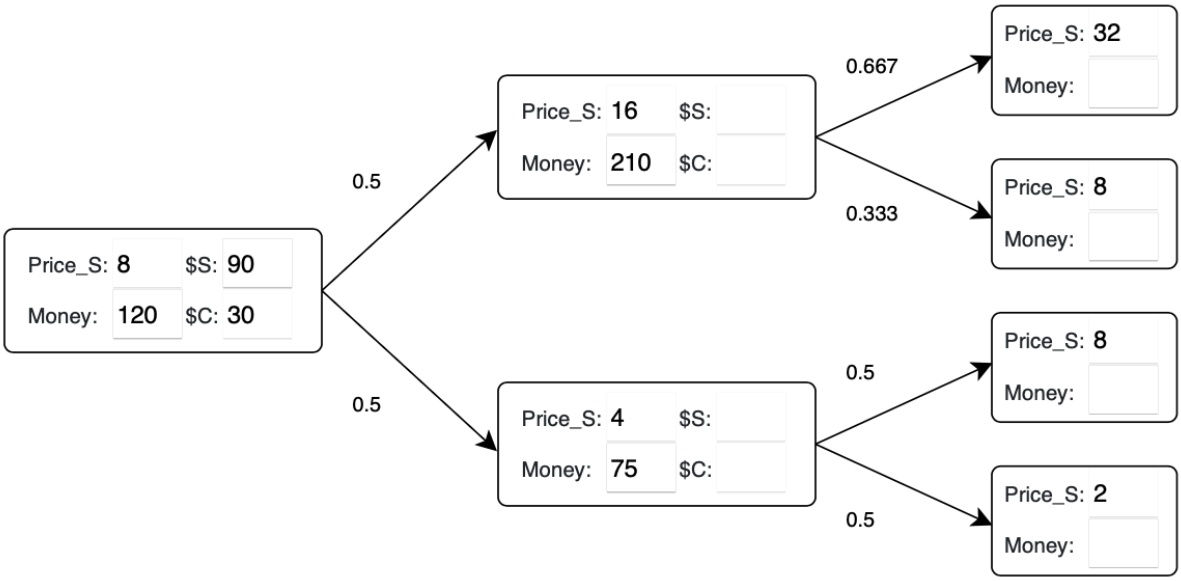

FIGURE 1.1

Figure 1.1 illustrates a first step of simplified version of the game. The task in the figure has only two step and three decision boxes and leads to only 4 possible outcomes at the end of the task. In the first box, on the left side, you will make your first decision about how to divide your initial budget of **Money = 120** between **$S** and **$C**. Should you choose to allocate all your money to **$C**, it would be equivalent to keeping your initial wealth constant, as there is no risk of loss and no possibility of gain.

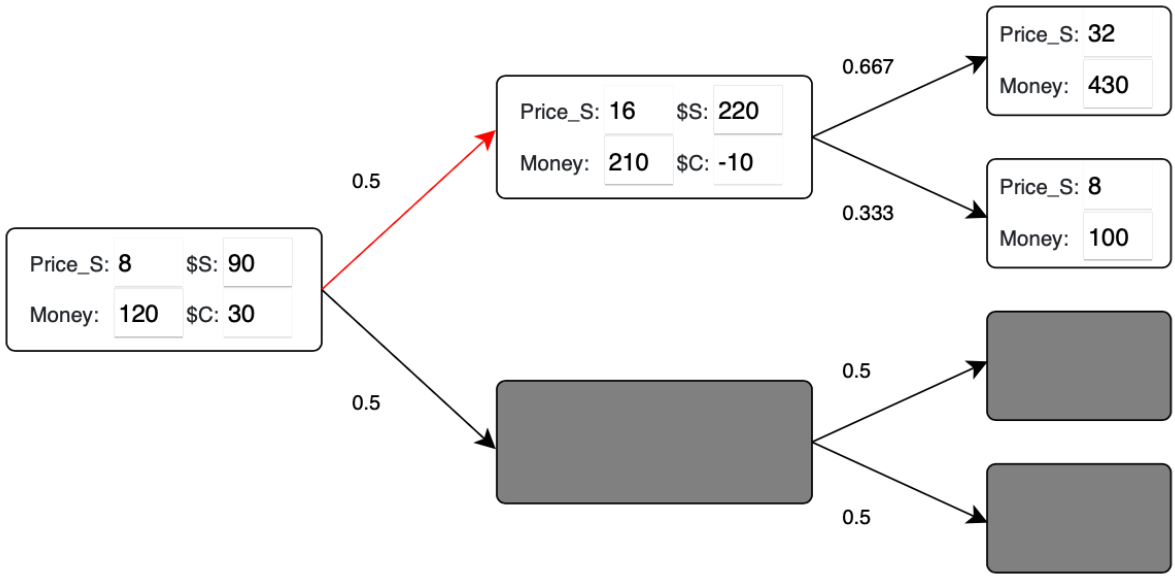

FIGURE 1.2

Figure 1.2 shows a second step of the iterative dynamic task, where computer randomly chose that price of stock increased.

In the **actual task**, you will play an extended versions with three steps, seven decision boxes and eight possible outcomes (instead of four). The rules are however exactly the same as in Figures 1.1 and 1.2.

Each decision box will display information about: 1) the stock price **Price_S**, 2) your current money amount **Money**, 3) the money amount in stocks, **$S** and 4) the amount of cash, **$C**. The four terminal boxes show the final price **Price_S,** and your final position **Money** in a given scenario. Each box is connected by arrows with the possible decision box for the next step. The decimal numbers above or below the arrows are probabilities of the stock price going up or down (for example, 0.333 means a probability of 33.3 percent or an unfair coin flip). Each of the scenarios will be randomly selected by the computer according to indicated probabilities.

The initial price **Price_S** is 8, which can either double or decrease by half with 50 percent probability. If the price increases, then you move to the upper box where the price is 16 and the money that you allocated stocks (**$S**) doubles. If the price decreases, then you move to the lower box where the price is 4 and the money you allocated to stocks (**$S**) is halved.

In either scenario, the cash amount **$C** will remain the same. For example, if you chose **$C**=80, then your cash money amount will still be 80 at the next box (unless you decide to change it yourself, of course), regardless of whether you moved up (because **Price_S** went up) or down (because **Price_S** went down).

Once you decide how much money to invest in stocks (**$S**), the computer will automatically compute the cash amount as

$$\mathbf{\$C = Money - \$S}$$

The cash amount can become negative (**$C**<0) if you enter an amount that is larger that your budget (**$S**>**Money**). This means that you *borrow* a money amount of **$C** and invest it in stocks. You can also enter a negative value for **$S**, which means that you borrow an amount of stocks and invest it in cash. Professional investors call this *short selling*.

You can choose negative money amounts as long as your next-period money amount does not go below zero in any scenario. If this condition is violated, then the computer will not allow you to submit such plan and an error message will pop up on your screen.

Consider the following examples:

1. If your budget is 80, and you invest **$S**=40 in stocks and **$C**=40 in cash, then in the next period (i) if the price **Price_S** goes up, you will own **$S**=80 in stocks and **$C**=40 in cash, a total of amount of 80+40=120, or (ii) if the price **Price_S** goes down, you will own **$S**=20 and **$C**=40, a total of 20+40=60.

2. If your budget is 80, and you invest **$S**=120 in stocks and **$C**=-40 in cash, then in the next period (i) if the price **Price_S** goes up, you will own **$S**=240 in stocks and **$C**=-40 in cash, a total of amount of 240-40=200, or (ii) if the price **Price_S** goes down, you will own **$S**=60 and **$C**=-40, a total of 60-40=20.

3. If your budget is 80, and you invest **$S**=-40 in stocks and **$C**=120 in cash, then in the next period (i) if the price **Price_S** goes up, you will own **$S**=-80 in stocks and **$C**=120 in cash, a total of amount of -80+120=40, or (ii) if the price **Price_S** goes down, you will own **$S**=-20 and **$C**=120, a total of -20+120=100.

4. If your budget is 80, and you chose **$S**=200 in stocks and **$C**=-120 in cash, then an error message will appear, because if the price **Price_S** goes down in the next period, you will own **$S**=100 and **$C**=-120, giving a *negative* total of 100-120=-20, which is not allowed.

Once decision for the first box is made, you can submit it by clicking on the “Next” button on your screen. The computer will generate a “fair coin flip” for the first box to determine whether the price of **Price_S** increases or decreases. After random price change of **Price_S**, our software will automatically eliminate those boxes located in the alternative path of the tree, thus leaving you only one decision box at each period (see Figure 1.2). For each subsequent period you will need to again make an investment decision and submit it by clicking on the “Next” button. The random sequence of “fair or unfair coin flips” generated by the computer will determine your final outcome. Your final money amount, which is the amount of points you earn in this task, will be added to the points earned in the other tasks and it will thus contribute to the total amount of money you might take home.