



Instructions

Preamble

Welcome to this experiment. Thank you for coming. You are going to participate in an experiment. Please read carefully the instructions, they are to help you to understand what you will be asked to do. You are going to earn money for your participation in the experiment and you will be paid immediately after the completion of the experiment.

The Experiment

You will be presented with a sequence of 15 different problems. In each problem you start owning some asset which you have to dispose of during or at the end of the problem. It has a value. When you dispose of the asset, this value will earn interest until the end of the problem, and this will constitute part of your payment for that problem. In each problem there is a sequence of time periods and you can dispose of the asset in any of these. In each of the time periods, until you dispose of the asset you will also earn a cash flow (which could be positive or negative) and which will be added to (or subtracted from if it is negative) your payment from the disposal. The cash flow follows a random path, determined by Nature, jumping either up or down by a fixed specified amount each period with specified and fixed probabilities. The disposal decision can be taken in any one of the periods of the problem, though you will have to dispose of it in the final period if you have not disposed of it before then. More specifically, your task is to decide in each time period in each of the problems whether you want to continue holding the asset to the next period of the problem, or whether you want to stop and dispose of the asset in that period. You will be given the following information in each problem: the value of the asset on disposal, the initial cash flow, the size of the jump in the cash flow, the probability that the cash flow jumps up (and the residual probability that the cash flows move down), the number of periods in the problem at the end of which you have to dispose of it, and the rate of interest on the disposal value.

The Interface of the Experiment

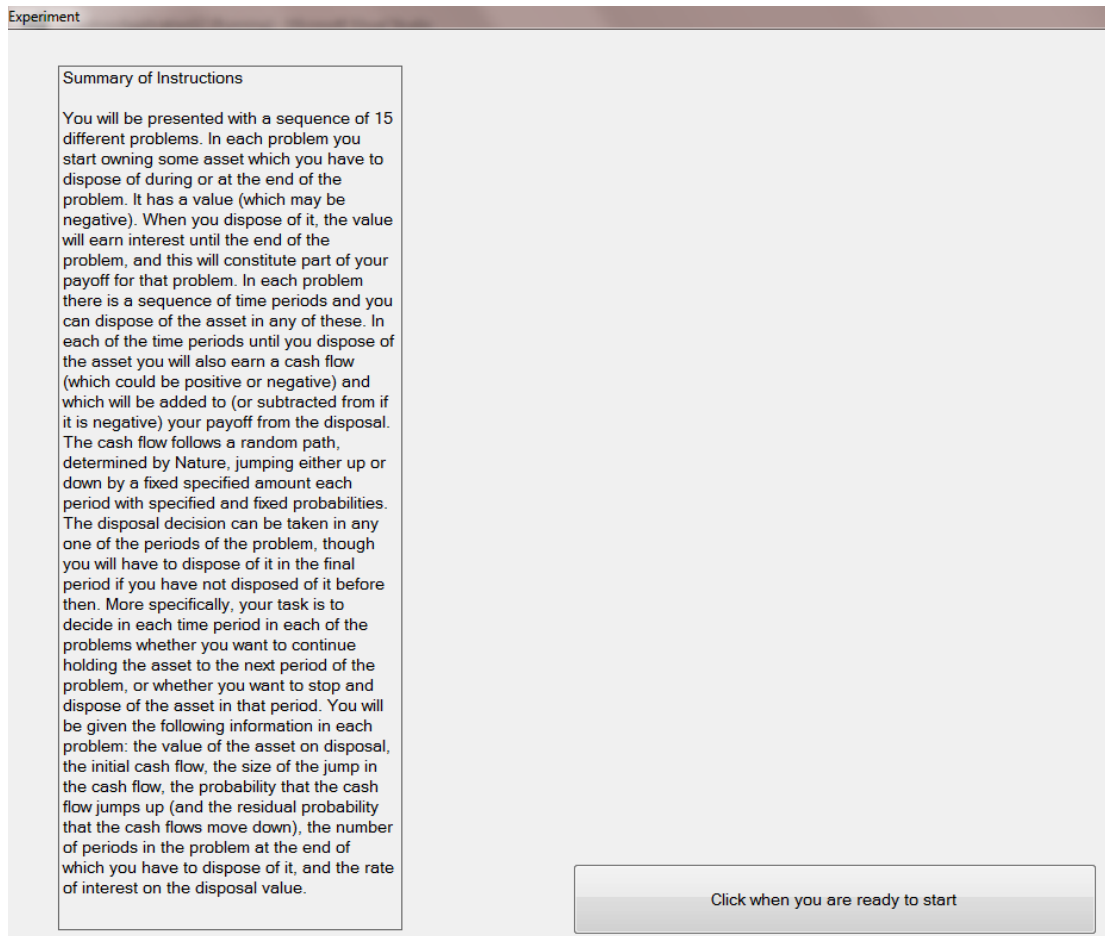


Figure 1

At the beginning of the experiment you will see the Introduction to these Instructions. After reading these and when you are ready to start, you should click on "Click when you are ready to start" (Figure 1).

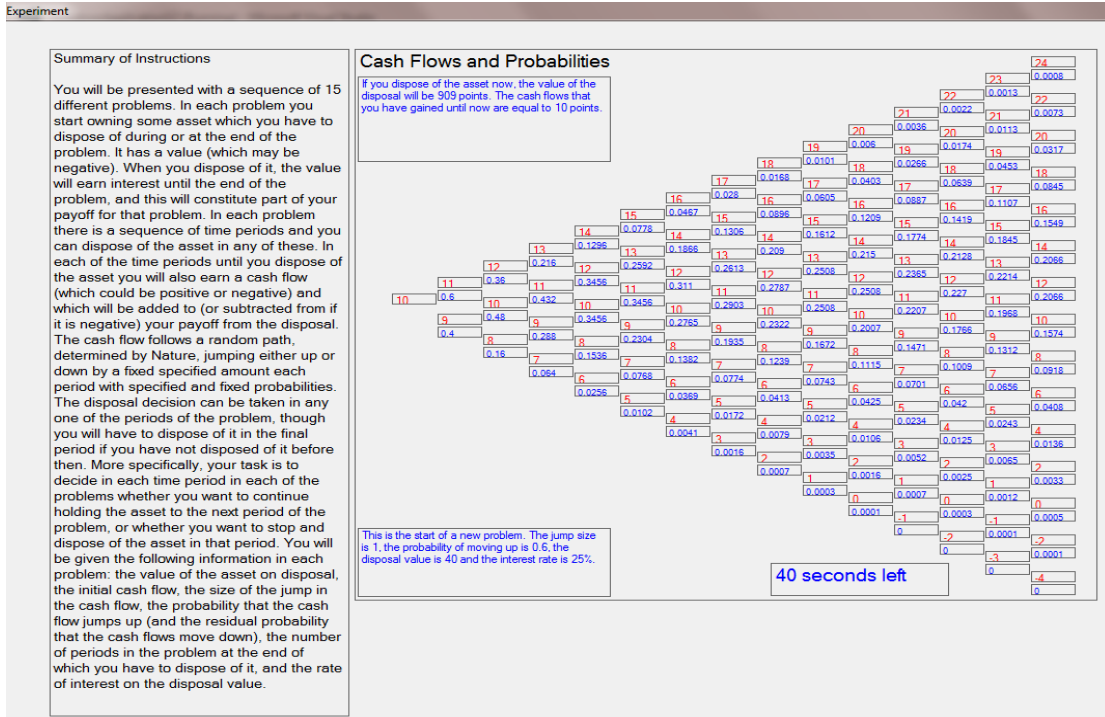


Figure 2

When you click to start the experiment, a picture like the Figure 2 appears. On the left of the screen is a summary of the instructions, while on the right appears the decision tree. The red numbers on the decision tree are the possible cash flows in the disposal problem in each of the periods of the problem, and the blue numbers are the corresponding probabilities. At the bottom under the tree are two boxes. If you are in the first period of a problem the first box tells you the jump in the cash flows, the probability of jumping up (the probability of moving down is the residual from 1) in that problem, the disposal value of the asset and the rate of interest on this value. In subsequent periods, this box shows the number of the current period, the decision by Nature as to whether the cash flow has jumped up, and the implied cash flow in this period. The second box shows the time that you have left to take the decision in that particular period. At the top left above the tree is a box. This box tells you the disposal value plus interest if you decide to dispose of it in this period, as well as the total cash flows you have accumulated up to this period. For example, in Figure 2, you can see that the change in the cash flows in the next period is equal to +1 or -1 with probabilities 0.6 and 0.4 respectively.

Experiment

Summary of Instructions

You will be presented with a sequence of 15 different problems. In each problem you start owning some asset which you have to dispose of during or at the end of the problem. It has a value (which may be negative). When you dispose of it, the value will earn interest until the end of the problem, and this will constitute part of your payoff for that problem. In each problem there is a sequence of time periods and you can dispose of the asset in any of these. In each of the time periods until you dispose of the asset you will also earn a cash flow (which could be positive or negative) and which will be added to (or subtracted from if it is negative) your payoff from the disposal. The cash flow follows a random path, determined by Nature, jumping either up or down by a fixed specified amount each period with specified and fixed probabilities. The disposal decision can be taken in any one of the periods of the problem, though you will have to dispose of it in the final period if you have not disposed of it before then. More specifically, your task is to decide in each time period in each of the problems whether you want to continue holding the asset to the next period of the problem, or whether you want to stop and dispose of the asset in that period. You will be given the following information in each problem: the value of the asset on disposal, the initial cash flow, the size of the jump in the cash flow, the probability that the cash flow jumps up (and the residual probability that the cash flows move down), the number of periods in the problem at the end of which you have to dispose of it, and the rate of interest on the disposal value.

Cash Flows and Probabilities

If you dispose of the asset now, the value of the disposal will be 909 points. The cash flows that you have gained until now are equal to 10 points.

This is the start of a new problem. The jump size is 1, the probability of moving up is 0.6, the disposal value is 40 and the interest rate is 25%.

20 seconds left

Continue Stop

Figure 3

In each period you cannot take a decision until at least 20 seconds have elapsed; after these 20 seconds the “Continue” and “Stop” buttons appears (Figure 3). You will have a maximum time of 40 seconds in each period.

Experiment

Summary of Instructions

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Cash Flows and Probabilities

If you dispose of the asset now, the value of the disposal will be 728 points. The cash flows that you have gained until now are equal to 19 points.

Nature has chosen to move DOWN. The cash flow in this period is 9. This is period 2.

19 seconds left

Continue Stop

Click to confirm

Figure 4

When you have taken your decision you should click on “Continue” or “Stop” as appropriate, and then, when you are sure about your decision, you should click on “Click to confirm” as shown in Figure 4. You can change your mind about whether to stop or continue as many times as you want, as long as you have not clicked “Click to confirm” and you still have time. Notice that if you continue until the final period the disposal decision is then compulsory.

The screenshot shows an experiment interface with the following components:

- Summary of Instructions:** A text box explaining the task: "You will be presented with a sequence of 15 different problems. In each problem you start owning some asset which you have to dispose of during or at the end of the problem. It has a value (which may be negative). When you dispose of it, the value will earn interest until the end of the problem, and this will constitute part of your payoff for that problem. In each problem there is a sequence of time periods and you can dispose of the asset in any of these. In each of the time periods until you dispose of the asset you will also earn a cash flow (which could be positive or negative) and which will be added to (or subtracted from if it is negative) your payoff from the disposal. The cash flow follows a random path, determined by Nature, jumping either up or down by a fixed specified amount each period with specified and fixed probabilities. The disposal decision can be taken in any one of the periods of the problem, though you will have to dispose of it in the final period if you have not disposed of it before then. More specifically, your task is to decide in each time period in each of the problems whether you want to continue holding the asset to the next period of the problem, or whether you want to stop and dispose of the asset in that period. You will be given the following information in each problem: the value of the asset on disposal, the initial cash flow, the size of the jump in the cash flow, the probability that the cash flow jumps up (and the residual probability that the cash flows move down), the number of periods in the problem at the end of which you have to dispose of it, and the rate of interest on the disposal value."
- Cash Flows and Probabilities:** A binomial tree diagram showing asset values and cash flows at each node. A text box above the tree states: "If you dispose of the asset now, the value of the disposal will be 728 points. The cash flows that you have gained until now are equal to 13 points." A text box below the tree states: "Nature has chosen to move DOWN. The cash flow in this period is 9. This is period 2." A timer at the bottom right shows "0 seconds left".
- Buttons:** "Continue", "Stop", and "Click to confirm".
- Message Box:** A "Care" dialog box with the text "Time is up" and an "OK" button.

Figure

Be careful!

You should answer before 40 seconds have elapsed. In the case that you run out of time a message box appears (like in Figure 5) that the time is up. In this case, the program assumes that you continue to the next period of the problem.

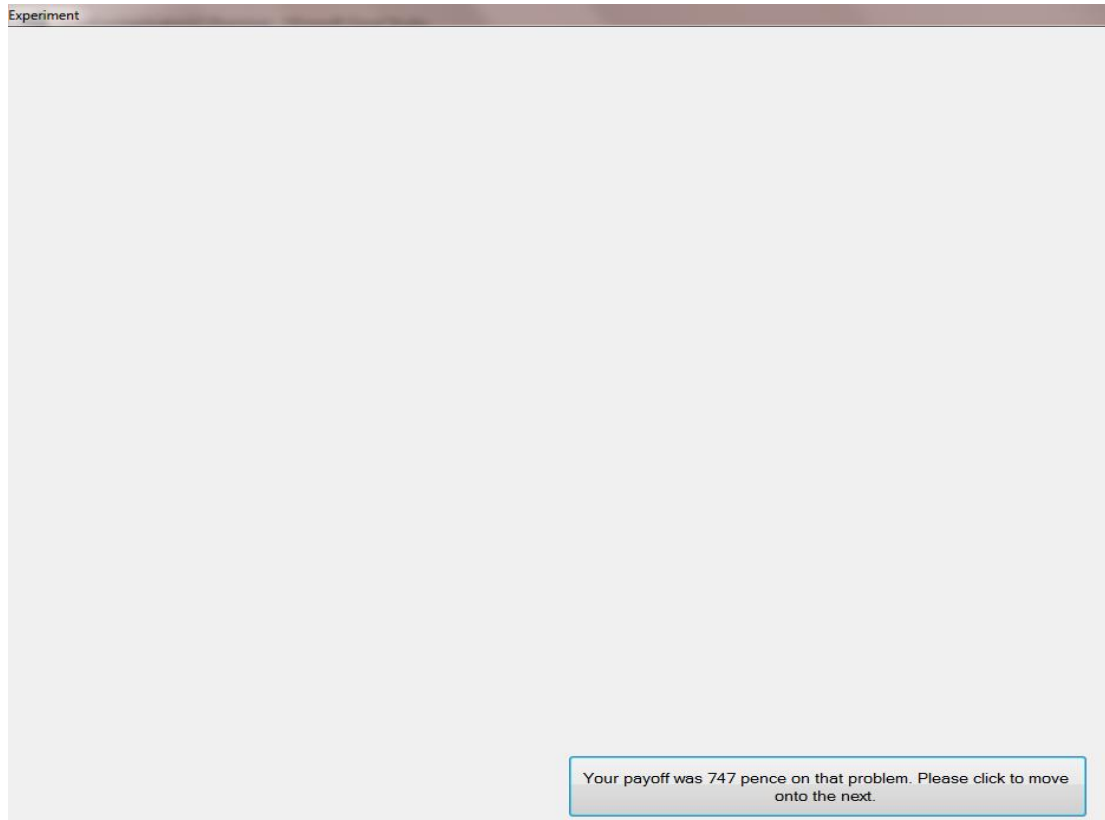


Figure 6

When you take the decision to dispose of the asset, by clicking on “Stop” and then on “Click to confirm”, a box like that in Figure 6 appears informing you about the total payment in that liquidation problem.

At the end of the experiment a message will appear asking you to call over the experimenter. Please click on this message to let us know that you have finished the experiment.

Example

By following the numbers in the Figures we are going to present an example. By looking at Figure 2, we know that the initial cash flow is equal to 10, the probability the cash flow of moving up in the next period, that is + 1, is equal to 0.6 while the probability of moving down, that is -1, is equal to 0.4. The disposal value is equal to 40 and the interest rate on it is equal to 25%. You can also notice that the disposal value with the interest rate is equal to 909 (be careful, this value changes during the periods) and the accumulated cash flows are equal to 10, i.e. the cash flow of the first period. After the passage of the first 20 seconds, you can decide to continue or stop (Figure 3). Let us assume that you decide to continue in the next period. You just click “Continue” and “Click to confirm”. Let us also assume that Nature decided the cash flow to go down in period two. Therefore, the cash flow earned in the second period is equal to 9 (Figure 4), while your accumulated cash flows are equal

to 19 (= 10 + 9) and the disposal value with the interest rate is equal to 728. If you decide to Stop in the second period, your payoff is going to be equal to 747 (= 19 + 728).

How long the experiment will last

We expect you to be in the laboratory no more than one and a half hours.

Payment

Your payment from the experiment will be your payment in one randomly-chosen problem of the experiment; you will randomly choose one numbered disk from a bag containing 15 disks numbered from 1 to 15, and the number on the disk chosen will determine the problem on which you will be paid. In the experiment payments are denominated in *tokens*. These tokens will be converted into real money using the exchange rate: 100 tokens = £1. If the payment in the randomly chosen problem is negative, this will be negative.

The show up fee is £2.50 and this will be added to your payment from the experiment, described above. In no circumstances will your payment be negative.

If you have any questions, please raise your hand and an experimenter will come to you.

John Hey
Konstantina Mari