Games on trading behavior under uncertainty

We would like to welcome you at the Institute of Empirical Economics. You will participate in games on trading behavior under uncertainty. Please read the following instructions carefully. There are five types of games: Type 0, type I, type II, type III and type IV[1]. You will play each game. The rules for the games are as follows:

Type 0 [Game O]
The game lasts 30 periods.
You have a coupon account and a payoff account.
Coupon account: At the beginning of the game the initial balance of the coupon account is G coupons (you will be informed about the amount G at the beginning of the game). The closing balance of the coupon account will be worthless at the end of the game.
Payoff account: At the beginning of the game the balance of the payoff account is zero. You will be paid the closing balance of this account.

Each period you can select exactly one of the following alternatives:
Alternative A: Increasing your coupon account by one coupon.
Alternative B: Increasing your payoff account. You will have to hand in one coupon.
        The amount w, by which you can increase your payoff account in a specific period is either 5 points or 10 points and is determined at the beginning of the period by flipping a fair coin.
Alternative C: Not doing anything.
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Stages of a period (between period 1 and 30):

1. Determination of the amount w by which you can increase your payoff account. This is done by flipping a fair coin (Head means w=5 points; Tail means w=10 points).

2. You choose
        Alternative A: Increasing your coupon account by one coupon
        or
        Alternative B: Increasing your payoff account by w and handing over one coupon
        or
        Alternative C: Not doing anything.

Changes of the accounts according to the alternative chosen

Changes to accounts	Payoff account	Coupon account
Alternative A	0	+1
Alternative B	+w	-1
Alternative C	0	0

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Your **accounts**	Initial balance	Closing balance
Payoff account	Zero	paid out to you
Coupon account	G	worthless

Important: If the balance of the coupon account is zero and there is no coupon that can be handed in, alternative B cannot be chosen.

Payoff: Closing balance of the payoff account: 10 points equal 5 Swiss centimes.

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[1] In the paper we refer to the games type I, II, III, IV as Game N, Game R, Game M.5 and Game M.2, respectively. The participants did not know this labelling since it may have given them some hints how we interpret the games. Type 0 is not commented on in the paper because it served the sole purpose of making participants familiar with the use of the computer terminal and the different roles of the two accounts.

Type I (modified type 0) [Game N]

As type 0. **Modification**: You will play at least 20 and at most 100 periods. At the end of each period (after the 20th and before the 100th period) it is determined whether there will be another period by rolling a dice. With a probability of 5 % the game will end.

The end of the game is determined by rolling two 10-sided dice:
   If both dice show a 1, 2, 3, 4 or 5 the **game ends**.
   For any other combination **the game continues**

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Period 1 to period 20 are as in the type 0 game.
Period 21 to 100:
Stages of a period (between 21 and 100):

1. Determination of the amount w by which you can increase payoff account. This is done by flipping a fair coin (Head means w=5 points; Tail means w=10 points).

2. You choose
   Alternative A: Increasing your coupon account by one coupon.
   or
   Alternative B: Increasing your payoff account by w and handing over one voucher.
   or
   Alternative C: Not doing anything.

Changes of the accounts according to the alternative chosen

Changes to accounts	Payoff account	Coupon account
Alternative A	0	+1
Alternative B	+w	-1
Alternative C	0	0

3. The end of the game is determined by rolling two 10-sided dice:
   If both dice show a 1, 2, 3, 4 or 5 the **game ends**.
   For any other combination **the game continues.**
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Accounts and payoff are as in the previous game of type 0.

Type II (modified type I) [Game R]

As type I. **Modification**: In each period your chosen alternative is carried out with a probability of 80 %. If your chosen alternative is not carried out, nothing happens. The stages of a period are as follows:

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Stages of any period:

1. Determination of the amount w by which you can increase payoff account. This is done by flipping a coin (Head means w=5 points; Tail means w=10 points).

2. You choose
      Alternative A: Increasing your coupon account by one coupon.
      or
      Alternative B: Increasing your payoff account by w and handing over one voucher.
      or
      Alternative C: Not doing anything.

3. Carrying out of the alternative:
      Rolling of a 10-sided dice.
      If 1, 2, 3, 4, 5, 6, 7 or 8 occurs then the following changes of the accounts result:

Changes to accounts	Payoff account	Coupon account
Alternative A	0	+1
Alternative B	+w	-1
Alternative C	0	0

      If 9 or 10 occur, then no changes to accounts.

In addition to those stages, in period 21 to period 100 the following stage is carried out:
4. The end of the game is determined by rolling two 10-sided dice:
      If both dice show a 1, 2, 3, 4 or 5 the **game ends**.
      For any other combination **the game continues.**
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Accounts and payoffs are as in the previous game of type 0.

Type III (modified type I) [Game M.5]

As type I. **Modification**: You are in a market with 5 other participants. Each of these participants has a coupon and a payoff account as well. In every period every participant is provided with an individual amount w_P. He/she can increase his/her payoff account by this amount which is known only to this participant.

Important:
Increasing the payoff account:
The payoff account can only be increased if a contract between two participants exists. One of the participants increases her payoff account and hands over a coupon to the other person. At the beginning of each period, you determine which of the following three possible contract positions you would like:

        Alternative A: Increasing your coupon account by one coupon
                       (no increase of your payoff account).
        Alternative B: Increasing your payoff account by w_P and
                       handing over one coupon.
        Alternative C: No contract.

You can only apply for one contract. Whether you get a contract depends on the decisions of the other participants. If there are as many participants choosing alternative A as choosing alternative B, each of them gets the contract desired. The participants with contract who chose alternative B then increase their payoff account and give a coupon to the contracting party who chose alternative A. If there are less participants choosing alternative A than choosing alternative B, the contracts are determined by chance. (The precise procedure is described in the stages of a period).

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Stages in a period:

1. The following applies to each participant: Determination of the amount w_P by which can increase his/her payoff account. This is done by flipping a fair coin (Head means $w_P=5$ points; Tail means $w_P=10$ points). Only the participant is informed of his/her number.

2. You choose
        Alternative A: Increasing your coupon account by one coupon
        or
        Alternative B: Increasing your payoff account by w and handing over one coupon
        or
        Alternative C: Not doing anything

3. Determination of the contracts:

Case 1: As many participants choose alternative A as alternative B:
      Each participant gets the contract desired.

Case 2: More participants choose alternative A than alternative B:
      All participants who chose B get their desired contract.
      Their contracting parties are randomly determined from the participants who chose A.
      (The matching is done randomly by the computer).

Case 3: More participants choose alternative B than alternative A:
      All participants who chose A get their desired contract.
      Their contracting parties are randomly determined from the participants who chose B.
      (The matching is done randomly by the computer).

For all participants with contracts the accounts change according to the alternative chosen

Changes to accounts	Payoff account	Coupon account
Alternative A	0	+1
Alternative B	$+w_P$	-1
Alternative C	0	0

For all participants without contract: No changes

4. Move to the next period.

From Period 21 to period 100 the last step is replaced by:

4. The end of the game is determined by rolling two 10-sided dice:
   If both dice show a 1, 2, 3, 4 or 5 then the **game ends**.
   For any other combination **the game continues.**

Accounts and payoff as in the previous game of type I.

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Type IV (modified type III) [Game M.2]

As type III. **Modification**: The amount w_P by which you can increase your payoff account in a specific period is
   5 points with a probability of 80 %
   10 points with a probability of 20 %.

In this game you have to indicate your choices in each game of type I, II, III and IV for all periods in advance. Please determine your choice of an alternative depending on the balance of the coupon account and the value w. Your choice can also depend on the initial balance on the coupon account and/or on the period. This is how you determine your decision for a further game which is automatically carried out according to your strategy.

Of both types, type III **and** type IV one game is carried out and paid. Also, of type I **or** type II one game is carried out and paid. 10 points correspond to 50 Swiss centimes (**previous payoff times 10**).

In the corresponding field, please fill in which alternative you choose: A, B or C

Type: I[2]

Valid for periods: Valid for initial balance of the coupon account of
                                       (please circle)   **1   3   8**

Balance of coupon account	Value w	
	5	10
G=0		
G=1		
G=2		
G=3		
G=4		
G=5		
G=6		
G=7		
G=8		
G=9		
G=10		
G=11		
G=12		
G=13		
G=14		
G=15		
G=16		
G=17		
G=18		
G=19		
G=20		
G=21		
G=22		
G=23		
G=24		
G=25		
G=26		
G=27		
G=28		
G=29		
G=30		
G=31		
G=32		
G=33		
G=34		
G=35		
G=36		

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[2] Each subject received several forms as well as blank sheets of paper. Identical forms were supplied for all games of type II, III, IV.

G=37		