

# **TIMEPREF: Dataset on the Economic Behavior Experiment on Time Preferences in the 2006 SOEP Survey**

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## **Introduction**

Following on the behavioral experiment on trust and trustworthiness carried out in the 2003, 2004, and 2005 SOEP surveys, the experiment “time preferences” was run in 2006. In this experiment on economic behavior, respondents were asked to decide how they would want to receive €200 in prize money: if they would want to receive it immediately by check, or if they would want to wait and receive a larger amount later—that is, with interest. By splitting the sample into random subsamples (splits), it was possible to vary both the time horizon and the implied interest rate to test possible incentive effects on the choice between a low payoff in the short term and a high payoff in the long term. The scientific director of the project was Prof. Dr. Armin Falk, CENs, University of Bonn.

The 2005 SOEP pretest was used to test how the behavioral experiment could be modified for use in the interview context of a representative large-scale panel survey. The results obtained in the 2005 SOEP pretest were positive overall.

## **Behavioral experiment on time preferences**

Annex 1 gives an overview of the three variants of the experiment used in the 2006 SOEP survey. All of the variants have one thing in common: Subjects were given two lists of choices between an earlier amount of money (alternative A), which was the same for all options, and a higher delayed amount of money (alternative B). In the first row, the early amount was equal to the delayed amount. Delayed amounts increased from row to row at a specific rate. The three variants of the experiment differed both in terms of the time horizon of payment and also in the implied interest rate. In variant 1 (Annex 1, list Z1 and list Z2), the time horizon for the first list was twelve months and the implied interest rate was 2.5%, that is, the amount paid out increased by 2.5% from one line to the next. The time horizon for the second list was six months and the implied interest rate was 1.25%. In variant 2 (Annex 1, list Z3 and list Z4), the time horizon for the first list was twelve months and the implied interest rate was 2.5%. The time horizon for the second list was one month and the implied interest rate was 0.2%. In variant 3 (Annex 1, list Z5 and list Z6) the time horizon for the first list was one month and the implied interest rate was 0.4%. In the second list for variant 3, both payments were delayed. The participants could decide between €200 in 12 months (alternative A) and a higher payment in 13 months. The implied interest rate was again 0.4%, as with the first list in variant 3. The switching point from early to delayed payment tells us about a subject’s time preferences. Subjects who switch later discount the future amount by more (i.e., are less patient) than subjects who switch earlier. After the experiment, participants were asked to answer some additional questions. Table 2 provides an overview of these questions.

### **The subsample of the 2006 SOEP survey for the experiment on time preferences**

Our objective for the behavioral experiment on time preferences was to obtain 1,500 analyzable tests. Another three equal-sized splits with slightly varied decision alternatives (see Annex 1) were also planned. Since it would have been too complicated to conduct the experiment without computer support, the group of potential participants was limited to fewer than one-fourth of all SOEP respondents—that is, those who regularly complete the annual interviews in the CAPI mode. It should be kept in mind that before the SOEP survey goes into the field, there is no reliable information on which survey mode will actually be used in which household and by which respondent. The survey mode may vary between two waves, and is only decided by the respondent and interviewer at the time of the actual interview.

Based on these framework conditions, the following procedure was used to select the sample for the experiment. The total population sampled consisted of all 21,103 participants in the 2005 SOEP study. Building on the relevant figures from the 2005 SOEP survey (willingness to participate, CAPI rate in SOEP samples A–G) and from the 2005 SOEP pretest (rate of participation in the experiment), a gross sample size of around 7,700 persons was planned. A two-stage selection process was conducted in which, first, every third person was selected out of the total sample population (7,034 persons). In a second step, every twentieth person (703) was selected from the remaining cases in the total sample population. In a third step, for those 22 households in which three persons had been already selected, one person was removed, leaving 7,715 persons in the sample.

This sample size proved to be adequate for the planned net case number of 1,500 persons: a total of 1,548 persons were asked whether they would take part in the experiment and 1,503 agreed to do so. The percentage of refusals was therefore relatively low, as was the case in the 2005 SOEP pretest (2.9%).

### **The payment of prize money to the participants**

One incentive to participate in the experiment was the real chance of winning money. Whether a participant actually received prize money, and how much the winnings actually amounted to, was determined in a multi-stage process. After the end of the actual experiment, the participants were first asked to state their personal lucky number between 1 and 9. Then they were asked to touch one of nine cells on the laptop screen, each of which concealed a randomly ordered number between 1 and 9. After the respondent made the selection, the number was displayed on the screen. The respondent was designated to receive prize money when the lucky number was the same as the random number. 164 (10.9%) of the respondents had matching numbers.

The amount of prize money was then determined based on the respondent's decisions in the experiment. The participants were then asked to select one of two cells displayed on the screen, each representing one of the two lists used in the experiment (see also Annex 1). Then, one line of the selected list was randomly selected. The amount was determined based on whether the respondent had decided on payment of €200 (alternative A) in this line or on a higher payment at a later date (alternative B). In

all three splits, the majority of respondents (56.1%) received the base amount of €200. The average amounts paid in the three subsamples are shown in Table 1.

Table 1. Average amounts paid in the three subsamples

	Subsample 1	Subsample 2	Subsample 3
Immediate payment of €200	57.1%	57.1%	53.8%
Later payment (with interest)	258.43 €	256.93 €	205.25 €

### **2012 data release**

As of the year 2012, the data on the behavioral experiment on time preferences will be provided to SOEP users in the *timepref* dataset as part of the regular data release. An overview of the variables in the dataset is given in Table 2.

Table 2. Variable names and variables in the *timepref* dataset

<b>Variable</b>	<b>Label</b>
hhnr	Original household number
hhnrakt	Current household number
svyyear	Survey year
persnr	Unchanging personal number
split	Subsample / Split
exper	Experiment
teber1	Start with experiment?
teber2	Definitely does not want to take part in experiment
zwl1	Line change in list 1
zwl2	Line change in list 2
gzahl	Lucky number
zzahl	Random number
liste	Random selection from list
zeile	Random selection from line
gewinn	Prize money
monate	Payment in ... months
pnot1	How would you get around €1,000 within two weeks?
pnot2	... from my own bank account
pnot3	... borrowing from another member of the household
pnot4	... borrowing from relatives / friends
pnot5	... bank loan
pnot6	... other (please state):
pnotso	... other
pelz01	I always try to have some money set aside for unexpected expenses
pelz02	Doing without today to be able to afford more tomorrow
pelz03	In general, you can trust other people
pelz04	Nowadays you can't trust anybody anymore
pelz05	When dealing with strangers, it's better to be cautious at first and not trust them right away
pelz06	Have fun today, don't think about tomorrow
pelz07	My monthly expenses are often higher than I can actually afford.
pelz08	I'm someone who often has good intentions
z04	When you made your decisions in the experiment, were you thinking about current interest or returns?
z05	What interest rate were you thinking of?
z05ka	What interest rate were you thinking of?
z06	Did you compare this interest rate with the interest rate in the tables to the experiment?
z07	If you received €200 from the experiment today, what will you do with the money in the next few weeks?

Sie erhalten ...

**heute**

*Der Scheck ist sofort  
einlösbar*

**A**

▼

200 €

**oder**

Sie erhalten ...

**in 12 Monaten**

*Der Scheck ist in 12 Monaten  
einlösbar*

**B**

▼

205,00 €

1	200 €		205,00 €
2	200 €		210,10 €
3	200 €		215,20 €
4	200 €		220,40 €
5	200 €		225,60 €
6	200 €		230,90 €
7	200 €		236,30 €
8	200 €		241,70 €
9	200 €		247,20 €
10	200 €		252,80 €
11	200 €		258,40 €
12	200 €		264,10 €
13	200 €		269,80 €
14	200 €		275,60 €
15	200 €		281,50 €
16	200 €		287,40 €
17	200 €		293,40 €
18	200 €		299,40 €
19	200 €		305,60 €
20	200 €		311,70 €

Liste **Z1**

Sie erhalten ...

**heute**

*Der Scheck ist sofort  
einlösbar*

**A**

▼

200 €

**oder**

Sie erhalten ...

**in 6 Monaten**

*Der Scheck ist in 6 Monaten  
einlösbar*

**B**

▼

202,50 €

1	200 €		202,50 €
2	200 €		205,00 €
3	200 €		207,50 €
4	200 €		209,90 €
5	200 €		212,40 €
6	200 €		214,90 €
7	200 €		217,40 €
8	200 €		219,90 €
9	200 €		222,40 €
10	200 €		224,80 €
11	200 €		227,30 €
12	200 €		229,80 €
13	200 €		232,30 €
14	200 €		234,80 €
15	200 €		237,30 €
16	200 €		239,80 €
17	200 €		242,20 €
18	200 €		244,70 €
19	200 €		247,20 €
20	200 €		249,70 €

Liste **Z2**

Sie erhalten ...

**heute**

*Der Scheck ist sofort  
einlösbar*

**A**

▼  
200 €

**oder**

Sie erhalten ...

**in 12 Monaten**

*Der Scheck ist in 12 Monaten  
einlösbar*

**B**

▼  
205,00 €

1	200 €	205,00 €
2	200 €	210,10 €
3	200 €	215,20 €
4	200 €	220,40 €
5	200 €	225,60 €
6	200 €	230,90 €
7	200 €	236,30 €
8	200 €	241,70 €
9	200 €	247,20 €
10	200 €	252,80 €
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14	200 €	275,60 €
15	200 €	281,50 €
16	200 €	287,40 €
17	200 €	293,40 €
18	200 €	299,40 €
19	200 €	305,60 €
20	200 €	311,70 €

Sie erhalten ...

**heute**

*Der Scheck ist sofort  
einlösbar*

**A**

▼  
200 €

**oder**

Sie erhalten ...

**in 1 Monat**

*Der Scheck ist in 1 Monat  
einlösbar*

**B**

▼  
200,40 €

1	200 €	200,40 €
2	200 €	200,80 €
3	200 €	201,20 €
4	200 €	201,60 €
5	200 €	202,00 €
6	200 €	202,40 €
7	200 €	202,80 €
8	200 €	203,20 €
9	200 €	203,60 €
10	200 €	203,90 €
11	200 €	204,30 €
12	200 €	204,70 €
13	200 €	205,10 €
14	200 €	205,40 €
15	200 €	205,80 €
16	200 €	206,10 €
17	200 €	206,50 €
18	200 €	206,80 €
19	200 €	207,20 €
20	200 €	207,50 €

Sie erhalten ...

**heute**

*Der Scheck ist sofort  
einlösbar*

**A**

200 €

**oder**

Sie erhalten ...

**in 1 Monat**

*Der Scheck ist in 1 Monat  
einlösbar*

**B**

200,80 €

1	200 €		200,80 €
2	200 €		201,60 €
3	200 €		202,40 €
4	200 €		203,20 €
5	200 €		203,90 €
6	200 €		204,70 €
7	200 €		205,40 €
8	200 €		206,10 €
9	200 €		206,80 €
10	200 €		207,50 €
11	200 €		208,20 €
12	200 €		208,90 €
13	200 €		209,60 €
14	200 €		210,20 €
15	200 €		210,80 €
16	200 €		211,50 €
17	200 €		212,10 €
18	200 €		212,70 €
19	200 €		213,30 €
20	200 €		213,90 €

Sie erhalten ...

**in 12 Monaten**

*Der Scheck ist in 12 Monaten  
einlösbar*

**A**

200 €

**oder**

Sie erhalten ...

**in 13 Monaten**

*Der Scheck ist in 13 Monaten  
einlösbar*

**B**

200,80 €

1	200 €		200,80 €
2	200 €		201,60 €
3	200 €		202,40 €
4	200 €		203,20 €
5	200 €		203,90 €
6	200 €		204,70 €
7	200 €		205,40 €
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