

SUPPLEMENTARY APPENDIX TO
COMPENSATED DISCOUNT FUNCTIONS:
AN EXPERIMENT ON THE INFLUENCE OF
EXPECTED INCOME ON TIME PREFERENCES
(NOT FOR PUBLICATION)

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Abstract

This Supplementary Appendix contains an extra table reporting additional empirical results not reported in the main text, the English translations of the experimental questionnaire, survey questions, and instructions that were used in our experimental sessions on June 9th and 10th of 2010. For the original Icelandic language documents, please contact the authors.

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Questionnaire

Name: _____

SSN: _____

Please turn to the relevant pages only when instructed to do so

SECTION I

Section I

Choice 1:

Consider the following payment:

“Later Payment”:

Amount	Recipient	When	Condition
20,000 kr.	You	In 1 year	none

Which of the following amounts, received now, do you prefer over receiving the “Later Payment”?
Please enter “-” if this amount now is worse for you than the “Later Payment”, or “+” if you prefer to
receive this amount now rather than the “Later Payment”.

(See next page)

“Earlier Payment”:

Amount now, without conditions	Choice	Amount now, without conditions	Choice	Amount now, without conditions	Choice
200		7.600		15.000	
400		7.800		15.200	
600		8.000		15.400	
800		8.200		15.600	
1.000		8.400		15.800	
1.200		8.600		16.000	
1.400		8.800		16.200	
1.600		9.000		16.400	
1.800		9.200		16.600	
2.000		9.400		16.800	
2.200		9.600		17.000	
2.400		9.800		17.200	
2.600		10.000		17.400	
2.800		10.200		17.600	
3.000		10.400		17.800	
3.200		10.600		18.000	
3.400		10.800		18.200	
3.600		11.000		18.400	
3.800		11.200		18.600	
4.000		11.400		18.800	
4.200		11.600		19.000	
4.400		11.800		19.200	
4.600		12.000		19.400	
4.800		12.200		19.600	
5.000		12.400		19.800	
5.200		12.600		20.000	
5.400		12.800		20.200	
5.600		13.000		20.400	
5.800		13.200		20.600	
6.000		13.400		20.800	
6.200		13.600		21.000	
6.400		13.800		21.200	
6.600		14.000		21.400	
6.800		14.200		21.600	
7.000		14.400		21.800	
7.200		14.600		22.000	
7.400		14.800			

Choice 2:

Consider the following payment:

”Later Payment”:

Amount	Recipient	When	Condition
20,000 kr.	You	In 2 years	none

Which of the following amounts, received now, do you prefer over receiving the “Later Payment”?
Please enter “-” if this amount now is worse for you than the “Later Payment”, or “+” if you prefer to
receive this amount now rather than the “Later Payment”.

(See next page)

"Earlier Payment":

Amount now, without conditions	Choice
200	
400	
600	
800	
1.000	
1.200	
1.400	
1.600	
1.800	
2.000	
2.200	
2.400	
2.600	
2.800	
3.000	
3.200	
3.400	
3.600	
3.800	
4.000	
4.200	
4.400	
4.600	
4.800	
5.000	
5.200	
5.400	
5.600	
5.800	
6.000	
6.200	
6.400	
6.600	
6.800	
7.000	
7.200	
7.400	

Amount now, without conditions	Choice
7.600	
7.800	
8.000	
8.200	
8.400	
8.600	
8.800	
9.000	
9.200	
9.400	
9.600	
9.800	
10.000	
10.200	
10.400	
10.600	
10.800	
11.000	
11.200	
11.400	
11.600	
11.800	
12.000	
12.200	
12.400	
12.600	
12.800	
13.000	
13.200	
13.400	
13.600	
13.800	
14.000	
14.200	
14.400	
14.600	
14.800	

Amount now, without conditions	Choice
15.000	
15.200	
15.400	
15.600	
15.800	
16.000	
16.200	
16.400	
16.600	
16.800	
17.000	
17.200	
17.400	
17.600	
17.800	
18.000	
18.200	
18.400	
18.600	
18.800	
19.000	
19.200	
19.400	
19.600	
19.800	
20.000	
20.200	
20.400	
20.600	
20.800	
21.000	
21.200	
21.400	
21.600	
21.800	
22.000	

Choice 3:

Consider the following payment:

“Later Payment”

Amount	Recipient	When	Conditions
20,000 kr.	You	In 1 year	Your income next year will be approximately the same as your current income

Which of the following amounts, received now, do you prefer over receiving the “Later Payment”?
Please enter “-” if this amount now is worse for you than the “Later Payment”, or “+” if you prefer to receive this amount now rather than the “Later Payment”.

(See next page)

“Earlier Payment”

Amount now, without conditions	Choice	Amount now, without conditions	Choice	Amount now, without conditions	Choice
200		7.600		15.000	
400		7.800		15.200	
600		8.000		15.400	
800		8.200		15.600	
1.000		8.400		15.800	
1.200		8.600		16.000	
1.400		8.800		16.200	
1.600		9.000		16.400	
1.800		9.200		16.600	
2.000		9.400		16.800	
2.200		9.600		17.000	
2.400		9.800		17.200	
2.600		10.000		17.400	
2.800		10.200		17.600	
3.000		10.400		17.800	
3.200		10.600		18.000	
3.400		10.800		18.200	
3.600		11.000		18.400	
3.800		11.200		18.600	
4.000		11.400		18.800	
4.200		11.600		19.000	
4.400		11.800		19.200	
4.600		12.000		19.400	
4.800		12.200		19.600	
5.000		12.400		19.800	
5.200		12.600		20.000	
5.400		12.800		20.200	
5.600		13.000		20.400	
5.800		13.200		20.600	
6.000		13.400		20.800	
6.200		13.600		21.000	
6.400		13.800		21.200	
6.600		14.000		21.400	
6.800		14.200		21.600	
7.000		14.400		21.800	
7.200		14.600		22.000	
7.400		14.800			

Choice 4:

Consider the following payment:

“Later Payment”

Amount	Recipient	When	Conditions
20,000 kr.	You	In 2 years	Your income in both of the next 2 years will be approximately the same as your current income

Which of the following amounts, received now, do you prefer over receiving the “Later Payment”?
Please enter “-” if this amount now is worse for you than the “Later Payment”, or “+” if you prefer to receive this amount now rather than the “Later Payment”.

(See next page)

“Earlier Payment”

Amount now, without conditions	Choice	Amount now, without conditions	Choice	Amount now, without conditions	Choice
200		7.600		15.000	
400		7.800		15.200	
600		8.000		15.400	
800		8.200		15.600	
1.000		8.400		15.800	
1.200		8.600		16.000	
1.400		8.800		16.200	
1.600		9.000		16.400	
1.800		9.200		16.600	
2.000		9.400		16.800	
2.200		9.600		17.000	
2.400		9.800		17.200	
2.600		10.000		17.400	
2.800		10.200		17.600	
3.000		10.400		17.800	
3.200		10.600		18.000	
3.400		10.800		18.200	
3.600		11.000		18.400	
3.800		11.200		18.600	
4.000		11.400		18.800	
4.200		11.600		19.000	
4.400		11.800		19.200	
4.600		12.000		19.400	
4.800		12.200		19.600	
5.000		12.400		19.800	
5.200		12.600		20.000	
5.400		12.800		20.200	
5.600		13.000		20.400	
5.800		13.200		20.600	
6.000		13.400		20.800	
6.200		13.600		21.000	
6.400		13.800		21.200	
6.600		14.000		21.400	
6.800		14.200		21.600	
7.000		14.400		21.800	
7.200		14.600		22.000	
7.400		14.800			

Section II

From the following list of six charities, please specify now the charity to which you want us to pay the money, in case your prize will be based on the next two questions, by marking the charity's name with an "x".

_____ **The Ring:** The Ring is a charity that collects money for ill children in Iceland. The charity's main goal has been the strengthening of a children's hospital.

_____ **ICE-SAR:** ICE-SAR is a national association of prevention and rescue teams. The operations of the charity aim to prevent accidents and save lives and valuables.

_____ **The Red Cross of Iceland:** The Icelandic Section of the International Committee of the Red Cross (ICRC), which is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of war and internal violence and to provide them with assistance.

_____ **UNICEF:** UNICEF is a sub-committee of the United Nations that emphasizes improving the lives of children throughout the world. UNICEF achieves its goal by offering free health clinics, basic education and care.

_____ **Mæðrastyrksnefnd Reykjavíkur:** Mæðrastyrksnefnd gives food and clothes to those in financial distress, especially single parents, senior citizens and the disabled.

_____ **Krabbameinsfélagið:** The aim of the charity is to support and further in every way the fight against cancer, especially by supporting knowledge and research about cancer and cancer prevention.

Your choice will be referred to as *your chosen charity*. Please indicate now whether in the past you personally contributed to your chosen charity:

☐ Yes

☐ No

Choice 5:

Consider the following payment:

”Conditional Payment”:

Amount	Recipient	When	Condition
20,000 kr	Your chosen charity	In 1 year	Your income next year will be approximately the same as your current income

Which of the following payments, which come with no conditions, but imply us making a charity contribution 1 year from now with a fixed probability, do you prefer over receiving the “Conditional Payment”? Please enter “-“ if the “Probabilistic Payment” with the given probability is worse for you than the “Conditional Payment”, or “+“ if you prefer the “Probabilistic Payment” with the given probability to the “Conditional Payment”.

(See next page)

"Probabilistic Payment":

Probability that we make a 20,000 ISK contribution 1 year from now to your chosen charity, with no conditions	Choice	Probability that we make a 20,000 ISK contribution 1 year from now to your chosen charity, with no conditions	Choice	Probability that we make a 20,000 ISK contribution 1 year from now to your chosen charity, with no conditions	Choice	Probability that we make a 20,000 ISK contribution 1 year from now to your chosen charity, with no conditions	Choice
1%		26%		51%		76%	
2%		27%		52%		77%	
3%		28%		53%		78%	
4%		29%		54%		79%	
5%		30%		55%		80%	
6%		31%		56%		81%	
7%		32%		57%		82%	
8%		33%		58%		83%	
9%		34%		59%		84%	
10%		35%		60%		85%	
11%		36%		61%		86%	
12%		37%		62%		87%	
13%		38%		63%		88%	
14%		39%		64%		89%	
15%		40%		65%		90%	
16%		41%		66%		91%	
17%		42%		67%		92%	
18%		43%		68%		93%	
19%		44%		69%		94%	
20%		45%		70%		95%	
21%		46%		71%		96%	
22%		47%		72%		97%	
23%		48%		73%		98%	
24%		49%		74%		99%	
25%		50%		75%		100%	

Choice 6:

Consider the following payment:

“Conditional Payment”:

Amount	Recipient	When	Condition
20,000 kr	Your chosen charity	In 2 years	Your income in both of the next 2 years will be approximately the same as your current income

Which of the following payments, which come with no conditions, but imply us making a charity contribution 2 years from now with a fixed probability, do you prefer over receiving the “Conditional Payment”? Please enter “-” if the “Probabilistic Payment” with the given probability is worse for you than the “Conditional Payment”, or “+” if you prefer the “Probabilistic Payment” with the given probability to the “Conditional Payment”.

(See next page)

"Probabilistic Payment":

Probability that we make a 20,000 ISK contribution 2 years from now to your chosen charity, with no conditions	Choice	Probability that we make a 20,000 ISK contribution 2 years from now to your chosen charity, with no conditions	Choice	Probability that we make a 20,000 ISK contribution 2 years from now to your chosen charity, with no conditions	Choice	Probability that we make a 20,000 ISK contribution 2 years from now to your chosen charity, with no conditions	Choice
1%		26%		51%		76%	
2%		27%		52%		77%	
3%		28%		53%		78%	
4%		29%		54%		79%	
5%		30%		55%		80%	
6%		31%		56%		81%	
7%		32%		57%		82%	
8%		33%		58%		83%	
9%		34%		59%		84%	
10%		35%		60%		85%	
11%		36%		61%		86%	
12%		37%		62%		87%	
13%		38%		63%		88%	
14%		39%		64%		89%	
15%		40%		65%		90%	
16%		41%		66%		91%	
17%		42%		67%		92%	
18%		43%		68%		93%	
19%		44%		69%		94%	
20%		45%		70%		95%	
21%		46%		71%		96%	
22%		47%		72%		97%	
23%		48%		73%		98%	
24%		49%		74%		99%	
25%		50%		75%		100%	

Section III:
DEMOGRAPHICS AND FINANCIAL SITUATION

The purpose of the following questions is to give the researchers information regarding the social and economic background of the participants in this research.

Information needed for sending the prizes

Name: _____

Bank account number: _____

Social Security Number: _____

Email addresses where we can reach you: _____

Phone numbers where we can reach you: _____

We need your social security number for verifying the changes in your disposable income, in case the prize is conditional on income remaining roughly the same as before.

We need your email addresses and phone numbers in order to verify the bank account information, at the appropriate time. The information will be used for no other purpose.

We will destroy the above information once we sent the prize.

Demographic information

Gender: ☐ Male ☐ Female

Type of residence:

☐ Owned ☐ Rented ☐ Other (please specify): _____

Primary occupation in the last 12 months: _____

Do you currently get paid for your work? ☐ Yes ☐ No

Highest level of education:

- ☐ Primary school
☐ Secondary school ☐ Other secondary-school education
☐ Vocational education
☐ Started college ☐ Finished a bachelor's degree
☐ Started schooling beyond a bachelor's degree
☐ Finished schooling beyond a bachelor's degree

Marital status:

☐ Single ☐ Married ☐ Divorced ☐ Widowed

Co-habitation with spouse or significant other:

☐ Yes ☐ No

Number of children: _____

Age of all children: _____

Number of children living in the household: _____

Number of employed household members: _____

Spouse's occupation (if applicable): _____

Do you smoke? ☐ Yes ☐ No

If yes, how many cigarettes do you smoke a day: _____

Height: _____ Weight: _____

Expectations on future economic situation

In the questions below by “income” we mean price indexed after-tax income.

What do you think is the probability, in percent, of the events below? Note that the each of the probabilities that you specify has to lie between 0% and 100%.

(a) Your income 1 year from now will be approximately the same (within 4%) as your current income:

_____ (indicate probability between 0% - 100%)

(b) Your income 1 year from now is more likely to

☐ increase ☐ decrease

relative to your current income.

(c) Your income 2 years from now will be approximately the same (within 4%) as your current income:

_____ (indicate probability between 0% - 100%)

(d) Your income 2 years from now is more likely to

☐ increase ☐ decrease

relative to your current income.

(e) You lose your current job within the next year:

_____ (indicate probability between 0% - 100%)

(f) You lose your current job within the next 2 years:

_____ (indicate probability between 0% - 100%)

(g) You will enter a new job within the next year:

_____ (indicate probability between 0% - 100%)

(h) You will enter a new job within the next 2 years:

_____ (indicate probability between 0% - 100%)

Economic background

How high is the maximum overdraft allowed on your checking account(s) (if applicable; otherwise indicate N/A):

How high is the current overdraft on your checking account(s) (if applicable; otherwise indicate N/A):

Number of credit cards: _____

Did you have any unusually large expenses in the last 12 months (e.g. uninsured damage, wedding): ☐ Yes ☐ No

If yes, please describe these expenses (amount and reason): _____

Do you anticipate any unusually large expenses in the next 12 months? ☐ Yes ☐ No

If yes, please describe these expenses (amount and reason): _____

Do you anticipate significant changes in your co-habitant's income in the next 12 months (if applicable)?

☐ Yes ☐ No

Do you anticipate other significant changes in your financial situation in the next 12 months?

☐ Yes ☐ No

If yes, please
explain: _____

Instructions

[Distribute the consent forms upon entry to the room, the instructions and questionnaire later. At the beginning of the experiment, show the opening slide on the screen, with our names and affiliations.]

During the experiment, the following activities will not be forbidden, if participants start them: reading, drinking. The following will be forbidden by quietly talking to the participants individually: eating, calculator, use of any other electronic items.]

Welcome to this experiment! We will now collect the consent forms and distribute instructions.

[Collect the consent forms, distribute instructions and questionnaire containing Sections I and II.]

These instructions are only for your information. We also read them aloud to you. During the entire experiment, please do not communicate with anyone and do not look at other people's material. Also, please avoid loud talking of any kind. If you have any questions during the experiment, please raise your hand and a researcher will help you at your desk.

This experiment is part of a collaborative research that is funded and conducted by several universities and research agencies situated in different countries: University of Iceland, Boston University, Harvard University, University College London, German Institute for Economic Research and National Science Foundation (USA). We will ask you a series of questions on a printed questionnaire. Please read the questions carefully, think about your answers and consider all possible relevant factors before filling in your answer.

Please switch off your mobile phones for the duration of the experiment. If you need a pen to answer the questions, please raise your hand now.

[Give out pens if demanded.]

If you follow the instructions you could receive a money payment within a week's time, after 1 year or after 2 years. Alternatively, you will generate a payment to a charity of your choice. The payments can be worth up to ISK 33,000.

About the choices that you will make

Together with these instructions, you have received a questionnaire. The questions in Section I of the questionnaire ask you to make comparisons between monetary amounts that will be paid either now or in 1 year, or between monetary amounts that will be paid either now or in 2 years. The questions in Section II of the Questionnaire ask you to compare different payments from us to a charity of your choice, either 1 or 2 years from now. There are 6 such comparisons in total, and a real payment will be carried out based on 1 of these 6 choices. After making the 6 comparisons, we ask you a few further questions.

We will make the selection of the choice that is paid out for real by having you throw a 6-sided dice at the end of the experiment. Once all participants have finished the experiment, you will come to our desk individually, and will throw the dice. That is, for each participant in the room there is a separate throw of the dice. The number shown by the dice indicates the choice on which your payment is based.

Money received by you “now” means that we transfer money to your bank account within one week of the experiment. Money received by you “in 1 year” means that we transfer money to your bank account during the week that starts 1 year from now. Likewise, money received by you “in 2 years” means that we transfer money to your bank account during the week that starts 2 years from now.

Note that all payments in 1 or 2 years will be “price indexed”. This means that they are adjusted for inflation, using the official consumer price index data published by Statistics Iceland, so that you do not have to consider the possible effect of inflation when making your decisions.

Some of the questions will involve payments not to you, but to a charity. For these payments, too, we will use money transfers, to be made during the corresponding time periods.

For all payments that we promise, you can be certain that the money will actually be paid. The funds for this come from a grant from the National Science Foundation (USA), with grant number SES-0822927. The details of the payment procedure are specified in a contract between the involved research institutions and the Icelandic tax authority, IRS. We will make sure that every promised payment reaches its recipient, even if the recipient’s address or bank information changes in the meantime.

We also guarantee you that all information that you give us will be used in a 100% confidential manner. No personally identifiable information of the participants will be connected to their answers to other questions, except to make sure that they will receive their payment, if eligible. All personally identifiable information will be deleted as soon as the appropriate money transfer has been made. Your other answers will only be used for scientific research, in an anonymous way.

This research has all appropriate approvals and will be carried out according to Legal Article #77/2000 – Data Protection and Handling of Identifiable Information. (Notification Number S4052/2008 to the Icelandic Data Protection Authority, and Approval #F15269-101 by Harvard University’s Human Subjects Committee.)

If you have any question that comes up at any time in the future, feel free to email us at <ta@hi.is>.

Next we will provide instructions for each of the 6 choices in Sections I and II, one question at a time. Please do not start answering a question before you finished reading the instructions for the question.

Description of choice 1

For choice 1, please consider the following payment of IKS20,000 in 1 year:

[Show table on the screen. Leave 10-20 seconds to look at it. (Also for subsequent tables). Also read aloud the contents of the table: "Later Payment. Amount: IKS20,000. Recipient: You. When: In 1 year. Condition: None". For later tables of the "Earlier Payment", only read the column headings.]

"Later Payment":

Amount	Recipient	When	Condition
ISK 20,000	You	In 1 year	None

In choice 1 you indicate your willingness to wait for this payment. You can either receive the "Later Payment" (ISK 20,000 in one year) or receive a different payment now. We will show you a list of possible amounts, and for each amount on this list you are asked to indicate with a "+" if you would rather receive this amount now than receiving IKS20,000 in one year, or with "-" if you would rather receive IKS20,000 in one year than the given amount now.

If your throw of the 6-sided dice shows a 1 at the end of the experiment, then question 1 is paid out for real. In this case, one of the amounts on the list will be chosen randomly by a computer, and your indicated choice between this amount (received now) and the "Later Payment" (IKS30,00 in one year) will be paid out for real. This procedure makes sure that it is in your best interest to think carefully for each amount whether you prefer to receive it now, or whether you prefer receiving IKS20,000 in 1 year.

As a shortcut for your answer, you do not need to make entries in all rows. If you prefer, you can fill in only part of the table. You would then have to fill in only the four consecutive boxes where you change your decision from the "Later Payment" to the amount now, that is two "-" signs and two "+" signs. We would then interpret your answers as saying that for any lower amount you answered "-" (meaning you prefer the "Later Payment" to all lower amounts) and for any higher amount you answered "+" (meaning you prefer all higher amounts to the "Later Payment").

For example, to indicate that you would rather get the "Later Payment" than any amount lower than ISK15,000 now, and that you would rather get any amount equal to or larger than ISK15,000 now, than the "Later Payment", you would fill out the table in the following way:

[Show table on the screen. Values to be filled for translated version. Two more lines to be added, so that the maximum is at 33000]

"Earlier Payment" :

Amount now	Choice	Amount now	Choice	Amount now	Choice
300					

200					
400					
...			...		
			9400		
			9600	-	
			9800	-	
			10000	+	
			10200	+	
			10400		
			10600		
			10800		
			...		
					...
					22000

Please note that this example is just an arbitrary example serving as an illustration, not meant to indicate how anyone might make their decisions in this experiment. There are no “right” or “wrong” answers in this experiment.

If you use the above shortcut, instead of filling all boxes of the table, make sure that you indicate it to us clearly where your preferences switch from preferring the “Later payment” to preferring the “Earlier Payment”. In particular, please do not leave unfilled boxes in between the “-”s and “+”s, as in the following example.

If you do leave empty cells between the “-” and “+” signs, or if you otherwise fail to provide a clear choice for the amount that is selected to be paid out for real, then we will simply flip a coin to determine your payment. With such a incomplete answer, you would therefore run the risk to receive a payment that you like less than another available payment.

Amount now	Choice	Amount now	Choice	Amount now	Choice
200					
400					
...		...			
		9400			
		9600	-		
		9800	-		

[illegible]

Remember that one of the amounts on the list will be selected by the computer if this choice is paid out for real – i.e. if the 6-sided dice shows a 1. Each amount in the table is equally likely to be drawn by the computer, and you will observe the random choice that the computer makes for you, immediately after your roll of the dice. If for this choice your answer is “-”, you receive the “Later Payment”, while if for this choice your answer is “+”, you receive the amount featured in the choice now. In short, you will get the payment that you indicated you would prefer.

Do you have any questions on how to fill in these kinds of answers? If so, please raise your hand and we will come to your desk.

[Give the participants a brief pause (15 secs if no-one answers) to consider the tables again. If participants have questions, make sure that they ask them not aloud, but go to their table and talk to them quietly.]

If there are no further questions, the please make decision 1 in the questionnaire. Please make your choices carefully.

[Do not read aloud the description on the next page. Leave the participants 2-3 minutes to make their entries. When about two thirds of them are ready, say "If you need more time, please raise your hand." If one or more raise their hand, say "Take your time." Repeat the procedure after one minute.]

Description of choice 2

For Choice 2, please consider the following payment of IKS20,000 in 2 years:

[Show table on screen.]

"Later Payment":

Amount	Recipient	When	Condition
ISK20,000	You	In 2 years	None

You can either receive this payment, a payment of IKS20,000 in 2 years, or an amount of money now. Once again, you would indicate your choices on the same list of amounts that you saw earlier. For each amount on this list you are asked to indicate with a "+" if you would rather receive this amount now than receiving the "Later Payment", or with "-" if you would rather receive the "Later Payment" than the given amount now.

Again, If you prefer, you can fill in only part of the table. You would then have to fill in only the four consecutive boxes where you change your decision from the "Later Payment" to the amount now, that is two "-" signs and two "+" signs. Please make sure not to leave any empty cells between the two "-" signs and the two "+" signs.

As before, this choice may be relevant for your actual payment, depending on your throw of the 6-sided dice. If the throw of the dice shows a 2, then choice 2 is paid out for real. In this case, the computer would randomly select a number from the relevant list of amounts, and we would carry out your payment according to your choice. Again, each amount in the table is equally likely to be drawn by the computer, and you will observe the random selection that the computer makes for you, immediately after your roll of the dice. If for this choice your answer is "-", you receive the "Later Payment", while if for this choice your answer is "+", you receive the amount featured in the choice now. In short, you will get the payment that you indicated you would prefer.

Are there questions about choice 2 at this point? If so, please raise your hand.

[Brief pause.]

If there are no further questions, then please make choice 2 in the questionnaire. As always, please make your choices carefully.

Description of choice 3

Choice 3 is like choice 1, asking how willing you are to wait for a payment of IKS20,000 in 1 year. But an important difference is that the payment in 1 year will not be made for sure. It will be made only if your income stays roughly the same – otherwise you will get no payment.

In choice 3, we will ask you to consider the following payment:

[Show table on the screen.]

"Later Payment":

Amount	Recipient	When	Condition
ISK20,000	You	In 1 year	Your income next year remains approximately the same as your current income

You will be asked to consider amounts to be received now, with no conditions, and compare them to the "Later Payment".

We now explain in detail the condition that the amount in the "Later Payment" of this question (ISK 20,000) is to be paid only if "your income next year remains approximately the same as your current income". This condition means that both your annual income and your monthly income have to be within 4% of their current level. More precisely, the condition is satisfied if

(a) your price indexed disposable (after-tax) annual income in the 12 months of May 2010-April 2011 is within 4% of your disposable income in the preceding 12-months period, May 2009-April 2010, and

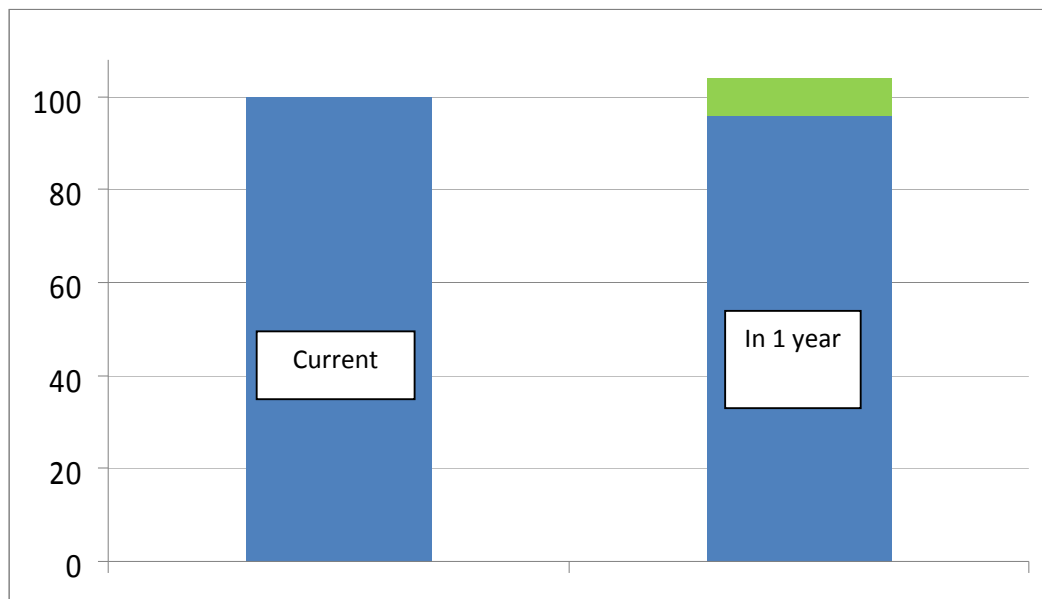
(b) your price indexed disposable (after-tax) monthly income in April 2011 is within 4% of your disposable monthly income in April 2010.

We will obtain the information about whether or not your income satisfies this condition from the IRS, as follows. An automated system of the tax authorities will provide us with the percentage changes in your income, according to your income taxes. We will not be given access to information regarding your actual income, only to information regarding percentage changes in your income. Again, you can be assured that this information is used in a 100% confidential way.

"Price indexed" means that we will adjust for inflation, using official data on the consumer price index published by the Statistics Iceland, so that the differences in income cannot arise because they only follow the movement in consumer prices.

The graph shown on the next page illustrates the condition about income. The graph is also shown on the screen.

[Show graph with two columns on the screen, where the range of admissible income changes is indicated green. The two columns should not specify whether it relates to monthly or annual income.]



For a given current income, the graph shows that the income one year from now can be slightly higher or lower than the current income, in order to satisfy the condition. But it can only be higher by up to 4% of the current income, or lower by up to 4% of the current income.

Note that the income condition of the “Later Payment” has two important implications. The first is that you know in advance that if you receive the amount one year from now, then your income situation will be roughly the same as now. The second is that you only receive the amount if your income next year satisfies the condition. If you choose the “Later Payment” and the condition is not satisfied, you will not receive any money. This is different from the “Later Payment” in choice 1, where you receive the same amount of money for sure. With the added condition, you are therefore less likely to receive the payment.

In choice 3, you will compare this future payment of IKS20,000 (under the above condition) to a list of payments that you would receive now, with no condition. That is, if you decide that you prefer the “Earlier Payment”, then you will get the amount for sure. For each amount on this list you are asked to indicate with a “+” if you would rather receive this amount now than receiving the “Later Payment”, or with “-” if you would rather receive the “Later Payment” than the given amount now.

If you prefer, you can again fill in only part of the table. You would then have to fill in only the four consecutive boxes where you change your decision from the “Later Payment” to the amount now, that is two “-” signs and two “+” signs.

As before, this choice may be relevant for your actual payment, depending on your throw of the 6-sided dice. If the throw of the dice shows a 3, then choice 3 is paid out for real. In this case, the computer would randomly choose a number from the relevant list of amounts, and we would carry out your payment in accordance with your preferences. If your answer is “-”, you receive the “Later

Payment”, while if for this choice your answer is “+”, you receive the amount featured in the choice now. As always, you will get the payment that you indicated you prefer.

Do you have questions about choice 3?

[Brief pause.]

If there are no further questions, please make decision 3 in the Questionnaire. As always, please make your choices carefully.

Description of question 4

Choice 4 is like choice 2, asking how willing you are to wait for 2 years. But here, again, the “Later Payment” is conditional on your income staying approximately the same until the payment is scheduled.

You will consider the following payment:

[Show table on the screen.]

“Later Payment”:

Amount	Recipient	When	Condition
ISK20,000	You	In 2 years	Your income in both of the next 2 years will be approximately the same as your current income

You will be asked to consider amounts to be received now, with no conditions, and compare them to the “Later Payment”.

Notice that the amount in the “Later Payment” of this question (ISK 20,000) is to be paid only if “your income in both of the next 2 years will be approximately the same as your current income “. This condition means that both your annual income and your monthly income have to be within 4% of their current level, both 1 year from now and 2 years from now. More precisely, the condition is satisfied if

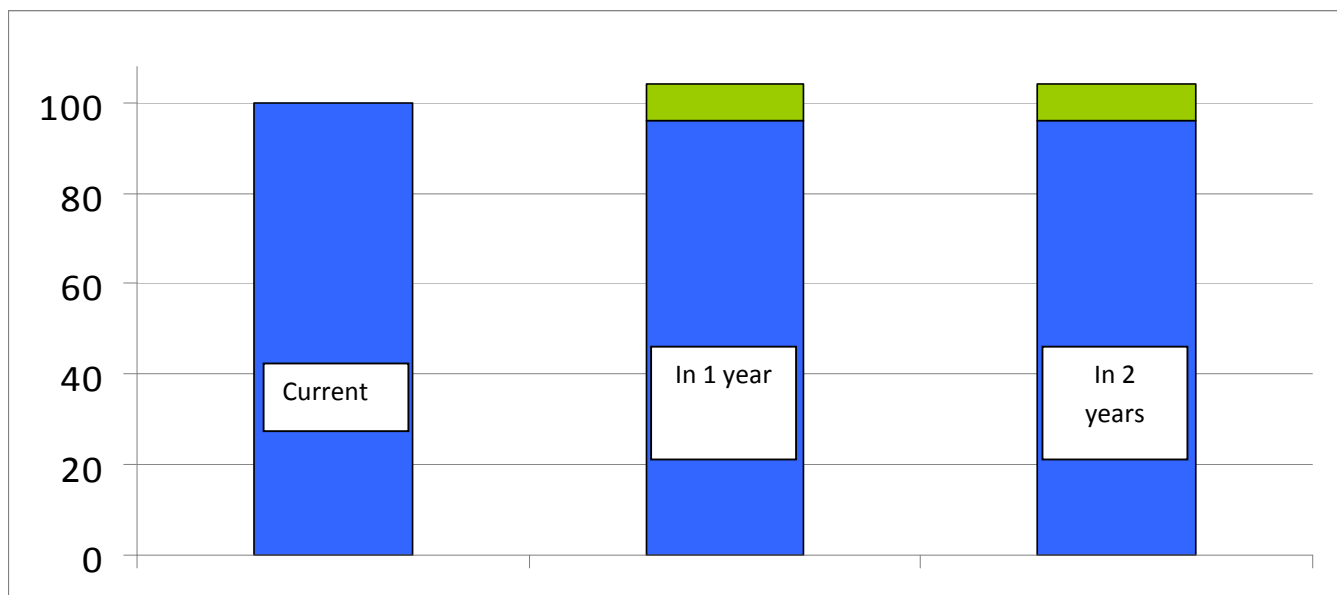
(a) your price indexed disposable (after-tax) annual income in the 12 months of May 2010-April 2011 is within 4% of your disposable income in the preceding 12-months period, May 2009-April 2010, and your price indexed disposable (after-tax) annual income in the 12 months of May 2011-April 2012 is also within 4% of your disposable income in the preceding 12-months period, May 2009-April 2010;

and

(b) your price indexed disposable (after-tax) monthly income in April 2011 is within 4% of your disposable monthly income in April 2010, and your price indexed disposable (after-tax) monthly income in April 2012 is also within 4% of your disposable monthly income in April.

This is illustrated in the following graph.

[Show graph]



The condition is fully analogous to the condition described above, in choice 3. The only difference is that here, your income in *both* of the next 2 years has to be within 4% of your current income, not only your income in the next year. Just as above, this has to be true for your annual income as well as your monthly income. Notice that the condition here is a stronger condition than the condition that your income stays approximately the same only for 1 year. That is, it is less likely that the condition given in choice 4 will be satisfied.

In choice 4, you will compare this future payment of IKS20,000 (under the above condition) to a list of payments that you would receive now, with no condition. For each amount on this list you are asked to indicate with a “+” if you would rather receive this amount now than receiving the “Later Payment”, or with “-” if you would rather receive the “Later Payment” than the given amount now. As in the earlier choices, if you prefer, you can fill in only part of the table by only indicating two “-” signs and two “+” signs.

As before, this choice may be relevant for your actual payment, depending on your throw of the 6-sided dice. If the throw of the dice shows a 4, then choice 4 is paid out for real. In this case, the computer would randomly choose a number from the relevant list of amounts, and we would carry out your payment according to your choice 4.

Do you have any questions about this kind of decision problem? If so, please raise your hand.

[Give a brief pause.]

If there are no further questions, please make choice 4 in the questionnaire. As always, please make your choices carefully.

Section II

In Choice 5 and choice 6 you to compare payments that specify that under some conditions we give IKS20,000 to a charity of your choice. These choices are paid out for real if your throw of the dice shows a 5 or a 6, respectively.

First we ask you to choose a charity from a list, which you want us to contribute to, in case your throw of the dice is 5 or 6. Please also indicate whether in the past you contributed to the charity you chose from the list. Please make your choice at the beginning of Section II in the Questionnaire.

[Give a pause, during which the subjects read through the description of the charities, and make their choice. Do not read the charity description to them. When most are ready, as "If you need more time..." etc.]

Description of choice 5

In choice 5, we ask you to consider a payment that specifies that we pay IKS20,000 to your chosen charity in 1 year, under the above-described condition that your income stays approximately the same for the next year.

[Show table on the screen.]

"Conditional Payment":

Amount	Recipient	When	Condition
20,000kr.	Your chosen charity	In 1 year	Your income next year remains approximately the same as your current income

Please note that if you choose the "Conditional Payment" and if your income does not stay approximately constant in the next year, then the charity will not receive a payment.

You will indicate to us whether or not you prefer certain payments to your chosen charity rather than the "Conditional Payment". But here, the different possible scenarios specify different *probabilities* with which the charity will receive the IKS20,000. That is, you will indicate whether you prefer that we pay the charity with a certain probability or whether you prefer that we rather pay out the "Conditional Payment", i.e. pay the charity if your income stays approximately the same for 1 year.

The different probabilistic payments will be as follows, with different probabilities entered in the last box.

[Show table on the screen.]

"Probabilistic Payment"

Amount	Recipient	When	Condition	Probability
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20,000kr	Your chosen charity	In 1 year	None	_____ %
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In choice 5, you will compare the “Conditional Payment” above to a list of “Probabilistic Payments” with different probabilities. For each probability on the list you are asked to indicate with a “+” if you would rather receive this “Probabilistic Payment” than the “Conditional Payment”, or with “-” if you would rather receive the “Conditional Payment” than this “Probabilistic Payment”.

Notice that under the “Probabilistic Payment” the condition that your income remains constant does not apply. If you choose the “Probabilistic Payment”, the payment will therefore be made irrespective of whether the income condition is satisfied. Instead, the payment is made only with a certain probability. This means that we will have a separate random draw done by a computer, and whether or not the charity will get the payment will be determined by this random draw. The random draw will be made in 1 year, on the basis of the correct probabilities, as indicated in the list.

Remember that we ask you to compare the “Probabilistic Payment” to the “Conditional Payment”. This question can be interpreted as a rather simple question: what do you think is the probability that the condition about your income is satisfied? It is natural to argue that at this probability, you should be just indifferent between the two payments. That is, a good way to make this choice is to ask yourself how likely it is that your income will remain constant over the next year, and simply indicate a “+” for this probability and all higher probabilities on the list. This way of answering would maximize the chances of the charity receiving the payment of IKS20,000.

You will make a comparison for every possible whole-numbered probability between 1% and 100%. Again, if you prefer, you can fill in only part of the table. You would then have to fill in only the four consecutive boxes where you change your decision from the “Conditional Payment” to the “Probabilistic Payment”, that is two “-” signs and two “+” signs. We would then interpret your answers as saying that for any lower probability you answered “-” (meaning you prefer the “Conditional Payment”) and for any higher probability you answered “+” (meaning you prefer the “Probabilistic Payment”). If you use the above shortcut, please make sure, as always, to not leave empty cells between the “-” signs and the “+” signs.

As before, this choice may be relevant for your actual payment, depending on your throw of the 6-sided dice. If the throw of the dice shows a 5, then choice 5 is paid out for real. In this case, the computer would randomly choose a number from the relevant list of probabilities, and we would carry out your payment according to choice 5. Each probability in the table is equally likely to be drawn by the computer. If for this choice your answer is “-”, you receive the “Conditional Payment”, while if for this choice your answer is “+”, you receive the “Probabilistic Payment”.

Do you have any questions about choice 5? If so, please raise your hand.

[Give a brief pause.]

If there are no further questions, then please make choice 5 in the questionnaire. As always, please make your choices carefully.

Description of choice 6

Choice 6 is like choice 5 and involves payments to your chosen charity, but the payments are scheduled to take place in 2 years, rather than in 1 year.

You will consider the following “Conditional Payment”:

“Conditional Payment”:

Amount	Recipient	When	Condition
20,000 kr	Your chosen charity	In 2 years	Your income in both of the next 2 years will be approximately the same as your current income

Note that the difference to the “Conditional Payment” in choice 5 is not only that it is made at a later point in time (in 2 years rather than 1 year) but also that the payment takes place only under the condition that your income stays approximately constant in *both* of the next two years. This is the same condition that you already saw in choice 4, and it is a stronger condition than the condition that your income stays approximately the same only for 1 year. That is, it is less likely that this condition will be satisfied than the condition in the “Conditional Payment” of choice 5.

As before, you will compare this “Conditional Payment” to a “Probabilistic Payment”. The latter specifies that we make the payment of IKS20,000 without the condition on your income, but with a certain probability, to be specified in the last box:

“Probabilistic Payment”

Amount	Recipient	When	Condition	Probability
20,000kr	Your chosen charity	In 2 years	None	_____ %

You will make a comparison for every possible whole-numbered probability between 1% and 100%. Again, if you prefer, you can fill in only part of the table, using two “–” signs and two “+” signs.

As before, this question may be relevant for your actual payment, depending on your throw of the 6-sided dice. If the throw of the dice shows a 6, then choice 6 is paid out for real. In this case, the computer would randomly select a number from the relevant list of probabilities, and we would carry out your choice 6. If your answer is “–”, you receive the “Conditional Payment”, and if your answer is “+”, you receive the “Probabilistic Payment”.

Do you have any questions about choice 6? If so, please raise your hand.

[Give a brief pause.]

If there are no further questions, then please make choice 6 in the questionnaire.

As soon as all participants are done with making their choices, we will distribute a further questionnaire, entitled "Section III". There, we will ask you to provide information that we need to verify your income changes and to be able to send you your payment. As explained earlier, this information will not be used for any other purpose. The questionnaire also contains questions about your social and economic background. The answers to these questions will be used anonymously for research purposes.

Until we distribute the additional questionnaire, you may want to go over your answers to choices 1-6 again, just in case you want to modify them. Take your time.

Appendix Table 1: Robustness to Selection on Observables and Unobservables

	Stable income after 2010 ^y	Stable income before and after 2010 ^{yy}	New job less likely than 20% ^{yyy}	Expectation of stable income>50% ^{yyyy}	Income rises, then plateaus ^{yyyyy}
W/o controls	Difference in Time Preference Variables (with Robust SEs)				
$D_u(1,2)-D_u(0,1)^*$	-0.13 (0.05)	-0.11 (0.07)	-0.07 (0.05)	-0.02 (0.07)	0.10 (0.10)
β_u^{**}	0.11 (0.05)	0.09 (0.07)	0.06 (0.05)	0.05 (0.07)	-0.11 (0.10)
δ_u^{***}	0.00 (0.03)	0.00 (0.04)	-0.03 (0.03)	0.00 (0.04)	-0.03 (0.06)
W/ controls	Difference in Time Preference Variables (with Robust SEs)				
$D_u(1,2)-D_u(0,1)^*$	-0.12 (0.05)	-0.09 (0.07)	-0.08 (0.06)	-0.03 (0.08)	0.12 (0.09)
β_u^{**}	0.10 (0.05)	0.07 (0.07)	0.07 (0.06)	0.05 (0.08)	-0.12 (0.10)
δ_u^{***}	0.00 (0.03)	0.00 (0.04)	-0.04 (0.03)	0.00 (0.05)	-0.04 (0.06)
Bound and $R^2_{\max}$	Oster (2014) Bounds (and Maximal R^2 s)				
$D_u(1,2)-D_u(0,1)^*$	0.03 (0.80)	0.24 (0.32)	-0.23 (0.44)	-0.11 (0.28)	0.38 (0.36)
β_u^{**}	-0.09 (0.55)	-0.34 (0.22)	0.24 (0.32)	-0.03 (0.61)	-0.25 (0.82)
δ_u^{***}	0.04 (0.08)	0.14 (0.02)	-0.35 (0.08)	-0.02 (0.04)	-0.27 (0.13)
N	31	10	32	24	11

Note: The table reports contrasts of time-preference variables between subsamples and their complements. These are implemented as OLS regressions of the respective measure on the group identifier, with White-Huber robust standard robust errors in parentheses. Uncontrolled, univariate regressions in the top pane can be compared with how the coefficient of interest changes in models with controls for the demographic variables listed in Table 1 in the middle pane. The bottom pane reports the bound on the contrast from Oster (2014), with the minimal R^2 with unobservables necessary to make the true contrast zero (but the naive contrast confounded by selection on unobservables). See the main text for more explanation (also for why Oster calls this $R^2_{\max}$, not a minimum). The controls include the covariates with missing values replaced with zeros, but add a separate indicators for each covariate's originally missing observations. * Reports the average difference between each subject's revealed uncompensated discount factor over the second year and the one over the first year. ** Reports the average ratio of discount factors over the second year and over the first year. *** Reports the average ratio of the two-year discount factor and the one-year discount factor. ^y Only including those whose realized annual income remained within 10% of their 2010 income both in 2011 and 2012. ^{yy} Only including those whose annual incomes in 2008 and 2009 as well. ^{yyy} Includes those whose self-report the probability of getting a new job in either year after the experiment to be less than 20%. ^{yyyy} Including those whose answers in Section II of the Questionnaire reveal a probability of the condition being satisfied to be at least 50% in both years. ^{yyyyy} Includes those whose realized annual income rose more than 10% in 2011 but less than 10% on top of that in 2012.