

Web Appendix for “Present-Biased Preferences and Credit Card Borrowing” *

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This Web Appendix provides some additional material (tables and instructions) for the paper “**Present-Biased Preferences and Credit Card Borrowing**” by Stephan Meier and Charles Sprenger.

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A Appendix Tables

The Appendix includes the following additional tables:

- Separate summary statistics for the two years in which the study was undertaken in Table A1.
- OLS regressions for the paper's main table in Table A2.
- The association between present-biased preferences and credit card borrowing conditional on borrowing in Table A3.
- The association between present-biased preferences and credit card borrowing *in natural logarithm* conditional on borrowing in Table A4.
- The association between present-biased preferences and credit card borrowing separately for 2006 and 2007 in Table A5

Table A1: Summary Statistics for 2006 and 2007 Sample

	(1) 2006	(2) 2007
Panel A: Socio-demographic variables		
Age	32.2 (11.5)[123]	37.0 (13.8)[418]
Gender (Male=1)	0.34 (0.48)[123]	0.36 (0.48)[387]
Race (African-American=1)	0.81 (0.39)[107]	0.79 (0.40)[384]
College Experience (=1)	0.57 (0.50)[95]	0.50 (0.50)[370]
Disposable Income	18712 (12711)[123]	18459 (13983)[418]
# of Dependents	0.54 (0.82)[123]	0.51 (0.84)[418]
Panel B: Credit behavior		
Debt (=1)	0.46 (0.50)[123]	0.39 (0.49)[418]
Revolving Balance	1016 (2280)[123]	1071 (2455)[418]
Having a Revolving Account (=1)	0.57 (0.50)[123]	0.51 (0.50)[418]
Revolving Credit Limit	5462 (14036)[123]	4559 (11136)[418]
FICO Score	618 (83)[93]	607 (84)[297]
Panel C: Time preferences		
IDF	0.89 (0.13)[123]	0.81 (0.20)[418]
Present Bias (=1)	0.34 (0.48)[123]	0.36 (0.48)[418]
Future Bias (=1)	0.17 (0.38)[123]	0.06 (0.25)[418]

Notes: Summary statistics for participants who exhibited unique switching points in the choice experiments in 2006 and 2007 separately.

Table A2: Present-Biased Preferences and Credit Card Borrowing (OLS Regressions)

	(1)	(2)	(3)	(4)	(5)	(6)
IDF	194.4 (423.6)	275.0 (454.1)	-148.8 (456.7)	1055.3 (2021.5)	-333.5 (359.8)	-252.4 (440.2)
Present Bias (=1)	771.0*** (252.2)	902.3*** (260.0)	950.4*** (262.7)	1819.9** (784.9)	885.3*** (196.9)	1010.9*** (250.7)
Future Bias (=1)	-72.9 (343.1)	60.2 (345.7)	-107.1 (341.3)	-185.4 (647.1)	-119.4 (294.7)	-179.1 (325.8)
Constant & Year of Study	Yes	Yes	Yes	Yes	Yes	Yes
Exogenous Control Variables	No	Yes	Yes	Yes	Yes	Yes
Other Socio-Demographics	No	No	Yes	Yes	Yes	Yes
Credit Card Information	No	No	No	No	Yes	No
FICO Score Information	No	No	No	No	No	Yes
Mean of DV for Reference Group (Present Bias (=0) <i>and</i> Future Bias (=0)):	786.8	786.8	786.8	1053.6	786.8	786.8
R ²	0.025	0.063	0.097	0.163	0.446	0.193
N	541	541	541	122	541	541

Note: Dependent variable: Outstanding balance on revolving accounts. In column (4), the dependent variable is the outstanding balance on revolving accounts one year after the experiment for the 2006 sample. Coefficient of OLS regressions. Robust standard errors in parentheses. *Exogenous Control Variables:* age, gender, race, and dummies for missing values. *Other Socio-Demographics:* ln(disposable income), number of dependents, college experience, and a dummy for missing information for education. *Credit Card Information:* dummy for having a revolving account and ln(Credit Limit). *FICO Score Information:* FICO score and a dummy for missing score. *Level of significance:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A3: Present-Biased Preferences and Credit Card Borrowing (Conditional on Borrowing)

	(1)	(2)	(3)	(4)	(5)
IDF	-827.7 (937.2)	-360.4 (958.6)	-412.6 (963.3)	-191.7 (884.0)	-615.3 (1024.9)
Present Bias (=1)	1496.8*** (483.6)	1716.1*** (498.7)	1649.0*** (506.0)	1712.6*** (433.3)	1688.8*** (511.6)
Future Bias (=1)	-39.7 (791.5)	88.3 (683.7)	-180.0 (676.7)	-144.4 (660.3)	-195.1 (681.5)
Constant & Year of Study	Yes	Yes	Yes	Yes	Yes
Exogenous Control Variables	No	Yes	Yes	Yes	Yes
Other Socio-Demographics	No	No	Yes	Yes	Yes
Credit Card Information	No	No	No	Yes	No
FICO Score Information	No	No	No	No	Yes
Mean of DV for Reference Group (Present Bias (=0) and Future Bias (=0)):	2028.1	2028.1	2028.1	2028.1	2028.1
R ²	0.058	0.126	0.1547	0.366	0.168
N	221	221	221	221	221

Note: Dependent variable: Outstanding balance on revolving accounts. Coefficient of OLS regressions. Robust standard errors in parentheses. *Exogenous Control Variables:* age, gender, race, and dummies for missing values. *Other Socio-Demographics:* ln(disposable income), number of dependents, college experience, and a dummy for missing information for education. *Credit Card Information:* dummy for having a revolving account and ln(Credit Limit). *FICO Score Information:* FICO score and a dummy for missing score.

Level of significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A4: Present-Biased Preferences and Ln(Credit Card Borrowing)
(Conditional on Borrowing)

	(1)	(2)	(3)	(4)	(5)
IDF	-0.5 (0.5)	-0.3 (0.6)	-0.4 (0.5)	-0.2 (0.5)	-0.2 (0.6)
Present Bias (=1)	0.4* (0.2)	0.5** (0.2)	0.5** (0.2)	0.5*** (0.2)	0.5** (0.2)
Future Bias(=1)	-0.2 (0.4)	-0.2 (0.3)	-0.3 (0.4)	-0.3 (0.4)	-0.3 (0.4)
Constant & Year of Study	Yes	Yes	Yes	Yes	Yes
Exogenous Control Variables	No	Yes	Yes	Yes	Yes
Other Socio-Demographics	No	No	Yes	Yes	Yes
Credit Card Information	No	No	No	Yes	No
FICO Score Information	No	No	No	No	Yes
R ²	0.028	0.091	0.127	0.300	0.136
N	221	221	221	221	221

Note: Dependent variable: Ln(Outstanding balance on revolving accounts). Coefficient of OLS regressions. Robust standard errors in parentheses. *Exogenous Control Variables:* age, gender, race, and dummies for missing values. *Other Socio-Demographics:* ln(disposable income), number of dependents, college experience, and a dummy for missing information for education. *Credit Card Information:* dummy for having a revolving account and ln(Credit Limit). *FICO Score Information:* FICO score and a dummy for missing score.
Level of significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A5: Present-Biased Preferences and Credit Card Borrowing

	(1)	(2)	(3)	(4)	(5)
Panel A: 2006 Sample					
IDF	605.3 (2937.5)	760.1 (2994.4)	119.9 (2976.8)	-1349.6 (2024.3)	-283.4 (2930.8)
Present Bias (=1)	1638.0 (997.4)	1649.1* (983.7)	2371.6** (1044.5)	2074.6** (831.8)	2527.5*** (923.5)
Future Bias (=1)	-1128.5 (1029.7)	-974.2 (1063.9)	-1103.1 (1125.3)	-1186.3 (870.1)	-1154.4 (986.4)
N	123	123	123	123	123
Panel B: 2007 Sample					
IDF	1836.7 (1304.3)	1880.5 (1315.3)	681.6 (1319.7)	590.5 (930.3)	897.1 (1216.3)
Present Bias (=1)	1146.4* (601.3)	1521.7** (614.0)	1618.0*** (619.3)	1823.2*** (490.3)	1952.0*** (592.3)
Future Bias(=1)	386.9 (1141.5)	614.1 (1109.2)	182.0 (1079.0)	89.9 (867.3)	54.9 (1009.4)
N	418	418	418	418	418
Constant & Year of Study	Yes	Yes	Yes	Yes	Yes
Exogenous Control Variables	No	Yes	Yes	Yes	Yes
Other Socio-Demographics	No	No	Yes	Yes	Yes
Credit Card Information	No	No	No	Yes	No
FICO Score Information	No	No	No	No	Yes

Note: Dependent variable: Outstanding balance on revolving accounts. Coefficient of tobit regressions. Robust standard errors in parentheses. *Exogenous Control Variables:* age, gender, race, and dummies for missing values. *Other Socio-Demographics:* ln(disposable income), number of dependents, college experience, and a dummy for missing information for education. *Credit Card Information:* dummy for having a revolving account and ln(Credit Limit). *FICO Score Information:* FICO score and a dummy for missing score.

Level of significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

B Instructions of Study 1 (2006)

Please indicate for each of the following 19 decisions, whether you would prefer the smaller payment in the near future or the bigger payment later. The number of your raffle ticket (none or 1 to 19), will indicate which decision you will be paid, if at all.

[Block 1; $t = 0, \tau = 1$]: Option A (**TODAY**) or Option B (**IN A MONTH**)

Decision (1): \$ 75 guaranteed **today** - \$ 80 guaranteed **in a month**

Decision (2): \$ 70 guaranteed **today** - \$ 80 guaranteed **in a month**

Decision (3): \$ 65 guaranteed **today** - \$ 80 guaranteed **in a month**

Decision (4): \$ 60 guaranteed **today** - \$ 80 guaranteed **in a month**

Decision (5): \$ 50 guaranteed **today** - \$ 80 guaranteed **in a month**

Decision (6): \$ 40 guaranteed **today** - \$ 80 guaranteed **in a month**

[Block 2; $t = 0, \tau = 6$]: Option A (**TODAY**) or Option B (**IN 6 MONTHS**)

Decision (7): \$ 75 guaranteed **today** - \$ 80 guaranteed **in 6 months**

Decision (8): \$ 70 guaranteed **today** - \$ 80 guaranteed **in 6 months**

Decision (9): \$ 65 guaranteed **today** - \$ 80 guaranteed **in 6 months**

Decision (10): \$ 60 guaranteed **today** - \$ 80 guaranteed **in 6 months**

Decision (11): \$ 50 guaranteed **today** - \$ 80 guaranteed **in 6 months**

Decision (12): \$ 40 guaranteed **today** - \$ 80 guaranteed **in 6 months**

Decision (13): \$ 30 guaranteed **today** - \$ 80 guaranteed **in 6 months**

[Block 3; $t = 6, \tau = 7$]: Option A (**IN 6 MONTHS**) or Option B (**IN 7 MONTHS**)

Decision (14): \$ 75 guaranteed **in 6 months** - \$ 80 guaranteed **in 7 months**

Decision (15): \$ 70 guaranteed **in 6 months** - \$ 80 guaranteed **in 7 months**

Decision (16): \$ 65 guaranteed **in 6 months** - \$ 80 guaranteed **in 7 months**

Decision (17): \$ 60 guaranteed **in 6 months** - \$ 80 guaranteed **in 7 months**

Decision (18): \$ 50 guaranteed **in 6 months** - \$ 80 guaranteed **in 7 months**

Decision (19): \$ 40 guaranteed **in 6 months** - \$ 80 guaranteed **in 7 months**

C Instructions of Study 2 (2007)

As a tax filer at this Volunteer Income Tax Assistance site you are automatically entered in a raffle in which you could win up to \$50. Just follow the directions below:

How It Works: In the boxes below you are asked to choose between smaller payments closer to today and larger payments further in the future. For each row, choose one payment: either the smaller, sooner payment or the later, larger payment. When you return this completed form, you will receive a raffle ticket. If you are a winner, the raffle ticket will have a number on it from 1 to 22. These numbers correspond to the numbered choices below. You will be paid your chosen payment. The choices you make could mean a difference in payment of more than \$35, so **CHOOSE CAREFULLY!!!**
RED BLOCK (Numbers 1 through 7): Decide between payment **today** and payment in **one month**
BLACK BLOCK (Numbers 8 through 15): Decide between payment **today** and payment in **six months**

BLUE BLOCK (Numbers 16 through 22): Decide between payment in **six months** and payment in **seven months**

Rules and Eligibility: For each possible number below, state whether you would like the earlier, smaller payment or the later, larger payment. Only completed raffle forms are eligible for the raffle. All prizes will be sent to you by normal mail and will be paid by money order. One out of ten raffle tickets will be a winner. You can obtain your raffle ticket as soon as your tax filing is complete. You may not participate in the raffle if you are associated with the EITC campaign (volunteer, business associate, etc.) or an employee (or relative of an employee) of the Federal Reserve Bank of Boston or the Federal Reserve System.

[Red Block; $t = 0, \tau = 1$]

TODAY VS. ONE MONTH FROM TODAY WHAT WILL YOU DO IF YOU GET A NUMBER BETWEEN 1 AND 7? Decide for **each** possible number if you would like the smaller payment for sure **today** or the larger payment for sure in **one month**? Please answer for each possible number (1) through (7) by filling in one box for each possible number.

Example: If you prefer \$49 today in Question 1 mark as follows: ✓ \$49 today or \$50 in one month

If you prefer \$50 in one month in Question 1, mark as follows: \$49 today or ✓ \$50 in one month

If you get number (1): Would you like to receive \$49 **today** or \$50 in **one month**

If you get number (2): Would you like to receive \$47 **today** or \$50 in **one month**

If you get number (3): Would you like to receive \$44 **today** or \$50 in **one month**

If you get number (4): Would you like to receive \$40 **today** or \$50 in **one month**

If you get number (5): Would you like to receive \$35 **today** or \$50 in **one month**

If you get number (6): Would you like to receive \$29 **today** or \$50 in **one month**

If you get number (7): Would you like to receive \$22 **today** or \$50 in **one month**

[Black Block; $t = 0, \tau = 6$]

TODAY VS. SIX MONTHS FROM TODAY WHAT WILL YOU DO IF YOU GET A NUMBER BETWEEN 8 AND 15? Now, decide for **each** possible number if you would like the smaller payment for sure **today** or the larger payment for sure in **six months**? Please answer each possible number (8) through (15) by filling in one box for each possible number.

If you get number (8): Would you like to receive \$49 **today** or \$50 in **six months**

If you get number (9): Would you like to receive \$47 **today** or \$50 in **six months**

If you get number (10): Would you like to receive \$44 **today** or \$50 in **six months**

If you get number (11): Would you like to receive \$40 **today** or \$50 in **six months**

If you get number (12): Would you like to receive \$35 **today** or \$50 in **six months**

If you get number (13): Would you like to receive \$29 **today** or \$50 in **six months**

If you get number (14): Would you like to receive \$22 **today** or \$50 in **six months**

If you get number (15): Would you like to receive \$14 **today** or \$50 in **six months**

[Blue Block; $t = 6$, $\tau = 7$]

SIX MONTHS FROM TODAY VS. SEVEN MONTHS FROM TODAY WHAT WILL YOU DO IF YOU GET A NUMBER BETWEEN 16 AND 22? Decide for **each** possible number if you would like the smaller payment for sure in **six months** or the larger payment for sure in **seven months**? Please answer for each possible number (16) through (22) by filling in one box for each possible number.

If you get number (16): Would you like to receive \$49 in **six months** or \$50 in **seven months**

If you get number (17): Would you like to receive \$47 in **six months** or \$50 in **seven months**

If you get number (18): Would you like to receive \$44 in **six months** or \$50 in **seven months**

If you get number (19): Would you like to receive \$40 in **six months** or \$50 in **seven months**

If you get number (20): Would you like to receive \$35 in **six months** or \$50 in **seven months**

If you get number (21): Would you like to receive \$29 in **six months** or \$50 in **seven months**

If you get number (22): Would you like to receive \$22 in **six months** or \$50 in **seven months**