#### Web Appendix

#### A. Objective Knowledge Questions

Numbers in brackets represent the proportion of respondents giving that answer. Correct answers denoted with an \*.

### When a mortgage includes "discount points," how do the costs compare to a similar mortgage without discount points at the same lender?

- [3.2] The one with discount points is always cheaper overall
- [2.9] The one with discount points is always more expensive overall
- [35.4] Typically, the one with discount points has higher upfront costs, but the interest rate is lower\*
- [10.9] Typically, the one with discount points has lower upfront costs, but the interest rate is higher
- [47.6] I don't know

#### Which of the following benefits does "mortgage insurance" provide for the borrower?

- [10.1] Protection from foreclosure
- [3.0] Protection from bankruptcy
- [17.0] When a borrower can't pay their mortgage, lenders must renegotiate mortgage terms
- [36.8] None of the above\*
- [33.1] I don't know

#### Can monthly payments on a fixed-rate mortgage change?

- [34.1] No, the payments will always be the same
- [55.4] Yes, because property taxes and insurance can change\*
- [1.7] Yes, because mortgage companies can change payments if the borrower's credit changes
- [9.1] I don't know

### Typically, if a borrower pays extra toward their mortgage's principal balance each month, how does that affect the borrower's total mortgage costs over the life of the loan?

- [85.3] The total costs are lower\*
- [6.4] The total costs are the same
- [1.4] The total costs are higher
- [7.0] I don't know

#### Which of these is most likely to happen if a borrower cannot make a 20% down payment?

- [7.8] The borrower cannot get a mortgage
- [67.2] The borrower will have to pay for mortgage insurance\*
- [9.0] The borrower will have to get an adjustable-rate mortgage
- [16.0] I don't know

### With a typical fixed-rate mortgage, how much of the monthly payment will go to interest (versus principal)?

[64.8] The amount going to interest starts high and gets lower over time\*

- [12.6] The amount going to interest stays the same over time
- [2.9] The amount going to interest starts low and gets higher over time
- [3.3] The amount going to interest varies depending on financial markets
- [16.4] I don't know

### What would normally happen to a borrower who submitted multiple mortgage applications within the same week?

- [59.6] The borrower's credit score would get worse
- [0.8] The borrower's credit score would improve
- [14.8] The borrower's credit score would stay the same\*
- [5.1] Borrowers are not allowed to apply to more than one lender in such a short period of time
- [19.8] I don't know

### Typically, how does the interest rate on a mortgage loan compare with the loan's annual percentage rate (APR)?

- [8.9] The interest rate is higher than the APR
- [12.3] The interest rate is the same as the APR
- [28.2] The interest rate is lower than the APR\*
- [8.8] Mortgage loans don't have an APR
- [41.9] I don't know

### Typically, does negotiating a lower purchase price for a home change the amount of money a homebuyer's real estate agent makes?

- [1.5] Yes, the agent will make more money
- [73.9] Yes, the agent will make less money\*
- [9.0] No, the amount the agent makes is not affected
- [15.5] I don't know

#### (*The following three items were originally asked to determine financial literacy*).

### Imagine that the interest rate on your savings account is 1% per year and inflation is 2% per year. After one year, would you be able to buy...

- [7.5] More than today with the money in this account
- [7.2] Exactly the same as today with the money in this account
- [73.1] Less than today with the money in this account\*
- [12.2] I don't know

# Suppose you have \$100 in a savings account, the interest rate is 2% per year, and you never withdraw money or interest payments. After 5 years, how much would you have in this account in total?

- [57.5] More than \$110\*
- [30.2] Exactly \$110
- [6.7] Less than \$110
- [5.6] I don't know

#### True or false? Buying a company stock usually provides a safer return than a stock mutual

#### fund.

[6.8] True[61.7] False\*[31.5] I don't know

#### **B.** Subjective Knowledge Questions

Numbers in brackets represent the proportion of respondents giving that answer.

#### How easy or hard is it to find reliable information for making mortgage decisions?

(Responses reclassified as very/somewhat easy, neither easy or hard, somewhat/very hard)

- [10.8] Very easy
- [30.6] Somewhat easy
- [24.6] Neither easy nor hard
- [28.0] Somewhat hard
- [6.0] Very hard

### Do you think that you know the right questions to ask when looking for mortgage information?

- [25.6] No, not at all
- [61.7] Yes, somewhat
- [12.7] Yes, completely

### How well do you think you can tell the difference between trustworthy and untrustworthy sources of mortgage information?

- [28.9] Not at all well
- [56.3] Somewhat well
- [16.9] Very well

#### How confident are you that you can tell when a mortgage offer is a bad deal?

- [24.0] Not at all confident
- [54.2] Somewhat confident
- [21.8] Very confident

#### How confident do you feel when talking to lenders?

- [21.3] Not at all confident
- [55.9] Somewhat confident
- [22.8] Very confident

#### How often do you find some mortgage terms confusing?

(Responses reclassified as never/rarely, sometimes, always)

- [3.3] Never
- [19.2] Rarely
- [63.0] Sometimes
- [14.5] Always

#### **C. Full Regression Results**

(corresponds to table 7)			
	(1)	(2)	(3)
	Take-up within	Take-up within	Take-up within
	first two weeks	twelve weeks	first two weeks
	(clickstream data)	(clickstream data)	(survey data)
	OR (s.e.)	OR (s.e.)	OR (s.e.)
Objective knowledge	$1.290^{***}$	$1.277^{***}$	$1.475^{***}$
	(0.0488)	(0.0467)	(0.134)
Subjective knowledge	$0.670^{***}$	$0.681^{***}$	$0.830^{*}$
	(0.0213)	(0.00209)	(0.0617)
Age (vs 18-29)			
30-39	$1.370^{***}$	$1.421^{***}$	1.025
	(0.122)	(0.121)	(0.192)
40-49	$1.505^{***}$	$1.685^{***}$	0.988
	(0.155)	(0.167)	(0.235)
50 and older	$2.090^{***}$	$2.283^{***}$	0.954
	(0.222)	(0.235)	(0.241)
Race (vs. non-Hispanic White)			
Black	1.311**	1.361**	0.999
	(0.134)	(0.135)	(0.260)
Hispanic of any race	1.120	1.109	1.059
	(0.108)	(0.104)	(0.258)
Asian	1.529***	$1.418^{**}$	1.102
	(0.183)	(0.170)	(0.284)
Other	1.002	1.081	1.139
	(0.123)	(0.127)	(0.335)
Education (vs. < high school)			
High school graduate or GED	0.739	0.737	0.416
	(0.269)	(0.261)	(0.453)
Some college	0.711	0.804	0.593
C	(0.254)	(0.280)	(0.627)
College graduate	0.739	0.834	0.701
	(0.265)	(0.292)	(0.741)
Postgraduate studies	0.729	0.819	0.961
	(0.263)	(0.288)	(1.017)
Employment Status (vs. full-time)			× ,
Employed part-time	0.909	0.873	0.729
- • •	(0.106)	(0.0978)	(0.237)
Not employed	0.947	0.963	0.793
	(0.0758)	(0.0743)	(0.168)
Self-employed	0.960	1.007	0.699
	(0.0927)	(0.0939)	(0.185)

# Table 1. Logistic regression results predicting financial education take-up, all variables (corresponds to table 7)

Employment not reported	0.910	0.808	N/A
Income ( $y_{0} < \$25,000$ )	(0.587)	(0.507)	
(vs. < \$33,000) $(vs. < $40,000$	1 125	1 2/2	1 464
\$55,000 to \$49,999	(0.143)	(0.152)	(0.516)
\$50,000 to \$74,000	(0.143)	(0.132)	(0.310)
\$30,000 to \$74,999	1.074	(0.122)	1.277
\$75,000 to \$00,000	(0.127) 1 112	(0.122) 1 142	(0.434)
\$75,000 10 \$99,999	1.113	1.143	1.4/0
¢100,000 + - ¢174,000	(0.138)	(0.157)	(0.510)
\$100,000 to \$174,999	0.917	0.899	1.397
¢175.000	(0.115)	(0.109)	(0.487)
\$1/5,000 or higher	0.872	0.938	1.502
<b>T 1</b>	(0.129)	(0.134)	(0.581)
Income not reported	0.777	0.769	1.136
	(0.110)	(0.104)	(0.452)
Self-Reported Credit Score (vs. Subprime)			0.000
Prime	1.101	1.142	0.993
	(0.0874)	(0.0880)	(0.195)
Superprime	1.150	1.240**	0.936
	(0.0932)	(0.0974)	(0.184)
DK/Refused	0.885	0.949	0.853
	(0.109)	(0.111)	(0.282)
Married=0	$0.865^*$	$0.847^*$	1.106
	(0.0625)	(0.0592)	(0.186)
Kids at home=1	$0.878^{*}$	$0.818^{***}$	0.844
	(0.0551)	(0.0496)	(0.128)
Sole financial decision maker=1	1.055	1.025	1.146
	(0.0761)	(0.0716)	(0.191)
Used real estate agent=1	$1.118^{*}$	1.113	1.095
-	(0.0633)	(0.0609)	(0.144)
Risk preferences (vs. most risk averse)			
(prefer \$15 to 50% of \$35)	1.086	1.107	$0.693^{*}$
<b>`</b>	(0.0744)	(0.0736)	(0.115)
(prefer \$17.50 to 50% of \$35)	0.974	1.014	1.010
	(0.101)	(0.102)	(0.219)
(prefer 50% of \$35 to \$17.50)	1.077	1.157 <sup>*</sup>	0.883
	(0.0766)	(0.0795)	(0.150)
External locus of control	0.949*	0.948*	0.926
	(0.0223)	(0.0216)	(0.0508)
Subjective numeracy	1.054*	1.039	1.028
	(0.0253)	(0.0240)	(0.0619)
Time preferences (vs. least patient)	(0.0200)	(0.0210)	(0.001))
(prefer \$20 today to \$30 in 4 wks)	$1.334^{*}$	1.313*	1.232
(I-2000 + 20 100 m 1 10 400 m 1 10 mb)	(0.151)	(0.140)	(0.400)
(prefer \$20 today to \$25 in 4 wks)	1.553***	1.468***	1 326
	(0.162)	(0.145)	(0.387)
	(0.10=)	(0.1.10)	(0.007)

(prefer \$25 in 4 wks to \$20 today)	$1.552^{***}$	$1.554^{***}$	1.492
	(0.145)	(0.137)	(0.401)
Most recent home purchase (vs. none)			
Before 1999	$0.739^{**}$	$0.675^{***}$	$0.557^{*}$
	(0.0787)	(0.0705)	(0.158)
2000-2004	0.631***	$0.625^{***}$	$0.538^{*}$
	(0.0656)	(0.0628)	(0.142)
2005-2007	$0.684^{***}$	$0.691^{***}$	$0.627^{*}$
	(0.0687)	(0.0672)	(0.148)
2008 or later	0.513***	$0.552^{***}$	$0.415^{***}$
	(0.0446)	(0.0457)	(0.0865)
Observations	6175	6175	4501
Pseudo $R^2$	0.050	0.050	0.053
AIC	7800.6	8197.2	1997.4

Odds Ratios; standard errors in parentheses \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

(corresponds to table o)		
	(1)	(2)
	Duration within	Duration within
	first two weeks	twelve weeks
	(clickstream)	(clickstream)
	B (s.e.)	B (s.e.)
Objective knowledge	49.03	151.9**
	(34.06)	(55.65)
Subjective knowledge	-105.1***	-147.4**
	(28.61)	(46.67)
Age (vs. 18-29)		
30-39	-48.96	25.43
	(79.69)	(131.4)
40-49	-164.3	-126.2
	(93.49)	(152.3)
50 and older	-329.9***	$-328.0^{*}$
	(94.09)	(155.2)
Race (vs. non-Hispanic White)		
Black	-0.172	-3.818
	(87.88)	(145.3)
Hispanic of any race	-68.33	-49.73
	(84.39)	(140.0)
Asian	-40.42	-104.8
	(98.58)	(167.0)
Other	-230.9*	-223.0
	(110.1)	(178.0)
Education (vs. < high school)		
High school graduate or GED	-223.7	-543.3
	(319.5)	(539.7)
Some college	-192.8	-320.3
	(312.9)	(528.6)
College graduate	-52.18	-281.8
	(314.9)	(532.3)
Postgraduate studies	-151.0	-380.2
	(315.9)	(534.3)
Employment (vs. full-time)		
Part-time	-123.7	-199.6
	(106.3)	(175.6)
Not employed	46.68	-48.36
	(71.95)	(116.8)
Self-employed	-107.8	103.7
	(86.03)	(139.3)
Employment not reported	-308.7	642.7
	(575.6)	(959.0)
Annual household income (vs. < \$35,000)	,	

Table 2: OLS regression results predicting	g web usage (seconds), all variables
(corresponds to table 8)	

\$35,000 to \$49,999	-7.083	-54.37
	(111.3)	(183.6)
\$50,000 to \$74,999	114.1	-37.27
	(105.1)	(173.8)
\$75,000 to \$99,999	43.27	74.34
	(109.7)	(181.4)
\$100,000 to \$174,999	-32.86	-138.7
	(112.5)	(186.4)
\$175,000 or higher	96.95	16.14
-	(132.5)	(216.8)
Income not reported	209.8	47.92
_	(129.4)	(211.5)
Self-Reported Credit Score (vs. Subprime)	45.99	166.8
	(113.0)	(186.9)
Prime	57.57	216.1
	(69.68)	(115.3)
Superprime	9.298	157.9
	(71.01)	(117.2)
DK/Refused	118.5	143.5
	(112.3)	(182.2)
Married=0	-26.49	-116.9
	(62.91)	(103.4)
Kids at home=1	27.57	17.38
	(54.78)	(90.45)
Sole financial decision maker=1	-18.45	-60.31
	(62.96)	(103.8)
Used real estate agent=1	$120.9^{*}$	89.49
	(49.99)	(82.10)
Risk preferences (vs. most risk averse)	-84.33	-31.46
	(60.35)	(99.73)
(prefer \$15 to 50% of \$35)	0.961	79.84
	(92.79)	(152.5)
(prefer \$17.50 to 50% of \$35)	-120.2	-182.7
	(63.32)	(103.6)
(prefer 50% of \$35 to \$17.50)	-13.11	-31.35
	(21.10)	(34.34)
External locus of control	18.02	27.80
	(21.25)	(35.03)
Subjective numeracy	$119.2^{*}$	90.66
	(50.13)	(82.38)
Time preferences (vs. least patient)		
(prefer \$20 today to \$30 in 4 wks)	134.6	87.37
	(105.0)	(169.9)
(prefer \$20 today to \$25 in 4 wks)	$236.5^{*}$	220.8
	(95.87)	(155.6)
(prefer \$25 in 4 wks to \$20 today)	$175.0^{*}$	215.5

	(87.41)	(140.2)
Most recent home purchase (vs. none)		
Before 1999	13.38	-129.1
	(91.81)	(153.1)
2000-2004	-103.8	-308.6*
	(91.36)	(150.7)
2005-2007	-91.91	-260.3
	(88.78)	(145.8)
2008 or later	-117.7	$-400.7^{**}$
	(78.17)	(126.5)
Constant	$700.8^*$	$1303.3^{*}$
	(345.1)	(581.5)
Observations	2269	2913
$R^2$	0.046	0.030
AIC	38430.7	52959.7

Standard errors in parentheses \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

## Table 3: Knowledge Interactions: Regressions results predicting financial education take-up and extent of use, first two weeks, all variables

	(1)	(2)	(3)	(4)
	Take-up within	Duration within first	Take-up within	Duration within
	first two weeks	two weeks	first two weeks	first two weeks
	(clickstream)	(secs, clickstream)	(clickstream)	(secs, clickstream)
	OR (s.e.)	B (s.e.)	OR (s.e.)	B (s.e.)
Subjective knowledge	$0.877^{***}$	-170.9***	$0.670^{***}$	-101.8***
	(0.0292)	(43.12)	(0.0213)	(28.78)
Objective knowledge	$1.112^{***}$	55.73	$1.278^{***}$	42.14
	(0.0352)	(48.83)	(0.0485)	(34.75)
Experience=1	1.084	-46.15	$0.601^{***}$	-86.26
-	(0.325)	(66.87)	(0.0435)	(62.98)
Subjective knowledge x Objective	1.001	-36.97	0.997	-21.34
knowledge	(0.00535)	(41.92)	(0.0282)	(25.93)
Experience=1 x Subjective knowledge	0.953	134.1*	-	-
	(0.0497)	(59.47)		
Experience=1 x Objective knowledge	0.924	-34.21	-	-
	(0.0422)	(61.74)		
Experience=1 x Subjective knowledge x	1.005	-10.57	-	-
Objective knowledge	(0.00729)	(57.56)		
Age (vs. 18-29)				
30-39	$1.378^{***}$	-56.32	$1.377^{***}$	-51.82
	(0.122)	(79.56)	(0.122)	(79.56)
40-49	$1.597^{***}$	-161.6	$1.581^{***}$	-154.1
	(0.163)	(92.80)	(0.161)	(92.77)
50 and older	$2.318^{***}$	-309.5***	$2.288^{***}$	-299.9**
	(0.239)	(91.91)	(0.235)	(91.83)
Race (vs. non-Hispanic White)				
Black	$1.325^{**}$	-0.856	1.314**	-2.724
	(0.135)	(88.05)	(0.134)	(87.90)

Hispanic of any race	1.136	-64.11	1.128	-64.44
	(0.110)	(84.33)	(0.109)	(84.37)
Asian	1.496***	-45.12	1.493***	-43.43
	(0.179)	(98.88)	(0.179)	(98.90)
Other	1.017	-225.7*	1.014	-224.7*
	(0.125)	(110.0)	(0.124)	(109.9)
Education (vs. < high school)			· · · ·	× /
High school graduate or GED	0.748	-227.1	0.769	-219.0
	(0.273)	(319.3)	(0.280)	(319.4)
Some college	0.717	-193.3	0.742	-192.1
C	(0.257)	(312.8)	(0.265)	(312.9)
College graduate	0.740	-59.25	0.767	-52.28
	(0.267)	(314.9)	(0.275)	(314.9)
Postgraduate studies	0.733	-158.8	0.757	-152.7
0	(0.266)	(315.8)	(0.273)	(315.9)
Employment (vs. full-time)				
Part-time	0.907	-122.6	0.904	-116.0
	(0.106)	(106.7)	(0.106)	(106.7)
Not employed	0.944	48.38	0.942	51.39
	(0.0754)	(71.80)	(0.0752)	(71.80)
Self-employed	0.960	-106.0	0.958	-106.8
	(0.0927)	(85.99)	(0.0924)	(86.02)
Employment not reported	0.877	-338.8	0.889	-339.4
	(0.570)	(575.1)	(0.578)	(575.4)
Annual household income (vs. <				
\$35,000)				
\$35,000 to \$49,999	1.141	-3.533	1.147	-5.423
	(0.144)	(111.2)	(0.144)	(111.3)
\$50,000 to \$74,999	1.070	116.1	1.079	117.3
	(0.126)	(105.1)	(0.127)	(105.2)
\$75,000 to \$99,999	1.108	41.64	1.117	39.71
	(0.137)	(109.8)	(0.138)	(109.8)
\$100,000 to \$174,999	0.911	-36.43	0.918	-33.70

	(0.115)	(112.5)	(0.115)	(112.6)
\$175,000 or higher	0.869	100.6	0.870	96.30
-	(0.129)	(132.4)	(0.129)	(132.4)
Income not reported	0.778	206.8	0.782	206.6
	(0.110)	(129.4)	(0.111)	(129.4)
Credit Score (vs. Subprime)				
Prime	1.106	45.90	1.103	54.07
	(0.0880)	(69.80)	(0.0877)	(69.69)
Superprime	1.140	2.267	1.136	8.157
	(0.0923)	(70.91)	(0.0919)	(70.88)
DK/Refused	0.877	112.9	0.881	115.8
	(0.108)	(112.2)	(0.108)	(112.3)
Married=0	$0.866^{*}$	-29.66	$0.867^{*}$	-30.08
	(0.0626)	(62.96)	(0.0626)	(62.96)
Kids at home=1	$0.884^*$	23.33	$0.878^{*}$	23.24
	(0.0554)	(54.84)	(0.0549)	(54.72)
Sole financial decision maker=1	1.045	-12.16	1.052	-17.51
	(0.0755)	(63.03)	(0.0758)	(62.98)
Used real estate agent=1	1.106	119.4*	1.111	$117.7^{*}$
-	(0.0626)	(49.99)	(0.0628)	(49.98)
Risk preferences (vs. most risk averse)				
(prefer \$15 to 50% of \$35)	1.082	-84.01	1.083	-83.09
-	(0.0741)	(60.35)	(0.0741)	(60.34)
(prefer \$17.50 to 50% of \$35)	0.960	1.722	0.965	-0.242
	(0.100)	(92.85)	(0.100)	(92.80)
(prefer 50% of \$35 to \$17.50)	1.080	-120.1	1.080	-121.3
-	(0.0768)	(63.28)	(0.0767)	(63.30)
External locus of control	$0.947^{*}$	-11.79	$0.949^{*}$	-12.75
	(0.0223)	(21.09)	(0.0223)	(21.09)
Subjective numeracy	$1.056^{*}$	18.88	$1.055^{*}$	19.04
	(0.0253)	(21.24)	(0.0253)	(21.24)
Time preferences (vs. least patient)				. ,
(prefer \$20 today to \$30 in 4 wks)	1.351**	125.5	$1.349^{**}$	135.7

	(0.153)	(105.3)	(0.153)	(105.2)
(prefer \$20 today to \$25 in 4 wks)	$1.555^{***}$	$232.0^{*}$	$1.561^{***}$	$239.7^{*}$
	(0.162)	(95.99)	(0.163)	(95.95)
(prefer \$25 in 4 wks to \$20 today)	$1.567^{***}$	$174.5^{*}$	$1.571^{***}$	$181.3^{*}$
-	(0.147)	(87.73)	(0.147)	(87.70)
Observations	6169	2269	6169	2269
$R^2$	0.049	0.044	0.048	0.045
AIC	7801.6	38412.8	7803.6	38412.0

Standard errors in parentheses \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

	(1)	(2)	(3)	(4)
	Age: Take-up	Age: Duration	Credit: Take-up	Credit: Duration
	OR (s.e.)	B (s.e.)	OR (s.e.)	B (s.e.)
Objective knowledge	$1.348^{***}$	81.79	$1.259^{***}$	18.93
	(0.0650)	(45.38)	(0.0820)	(58.60)
Subjective knowledge	$0.658^{***}$	-163.3***	$0.719^{***}$	-149.2**
	(0.0299)	(42.34)	(0.0459)	(56.24)
Objective x Subjective	1.013	-21.16	0.935	-13.84
	(0.0411)	(38.54)	(0.0538)	(52.07)
Age (binary)	$1.504^{***}$	$-158.2^{*}$		
	(0.104)	(63.95)		
Age x Objective	0.924	-85.23		
	(0.0576)	(57.87)		
Age x Subjective	1.047	112.0*		
	(0.0651)	(56.54)		
Age x Objective x Subjective	0.974	-5.332		
	(0.0552)	(52.53)		
Credit (binary)			1.016	108.3
• • •			(0.0864)	(74.45)
Credit x Objective			1.008	60.81
5			(0.0747)	(67.61)
Credit x Subjective			0.855*	68.44
5			(0.0646)	(66.36)
Credit x Objective x Subjective			1.149*	-41.08
5 5			(0.0794)	(61.70)
Controls	Yes	Yes	Yes	Yes
N	6169	2268	5728	2132
Pseudo $R^2$	0.045	0.045	0.051	0.049
Akaike information criterion	7836.2	38413.7	7259.4	36033.7

#### Table 4. Interactions of age or self-reported credit scores with prior knowledge, select coefficients

*Note.* Age (binary) is coded so that participants over age 40 = 1 and 0 otherwise. Credit (binary) is coded where prime or superprime scores are coded 1 and subprime scores are coded 0. Observations with "I don't know" credit scores were omitted.