Online Appendix for "Selection on Welfare Gains: Experimental Evidence from Electricity Plan Choice"

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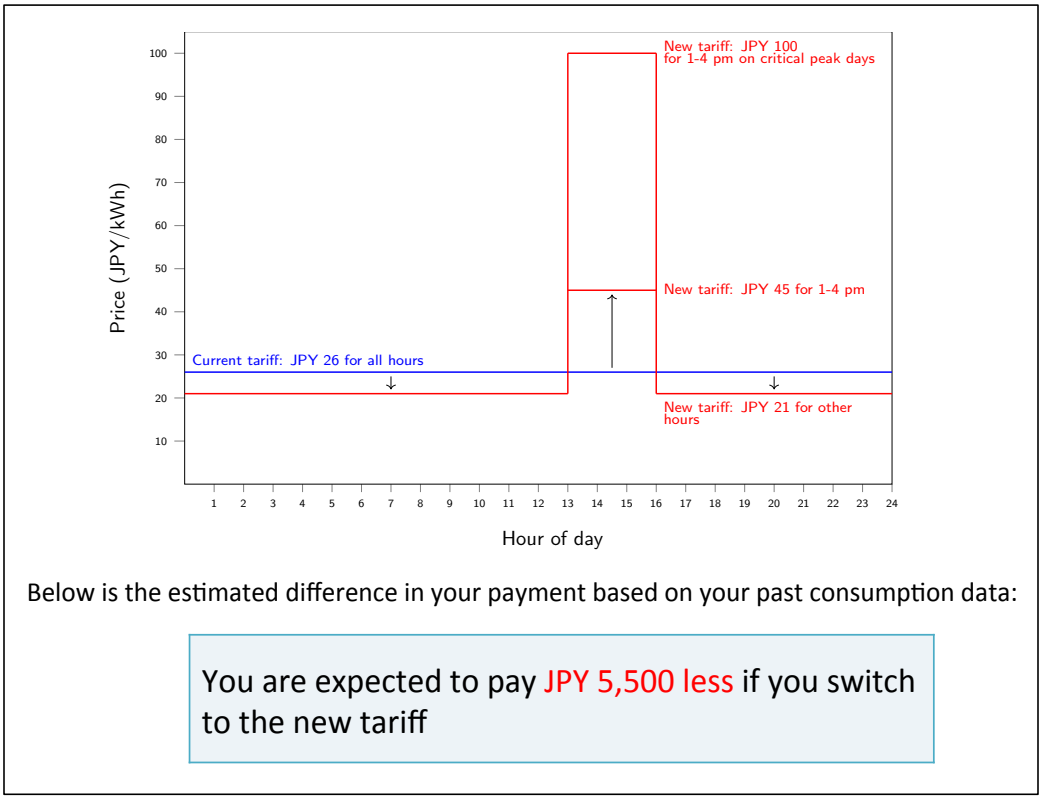
Figure A.1: Information Provided to All Consumers



Note: This figure shows the information that provided to all consumers in our experiment. Customers were notified about the dynamic pricing structure and their expected savings.

Table A.1: Elicitation of Risk Preference

Panel A: First set of questions to obtain q

q	Option A	Option B
0.1	\$100	10% chance of \$300, 90% chance of \$0
0.2	\$100	20% chance of \$300, 80% chance of \$0
0.3	\$100	30% chance of \$300, 70% chance of \$0
0.4	\$100	40% chance of \$300, 60% chance of \$0
0.5	\$100	50% chance of \$300, 50% chance of \$0
0.6	\$100	60% chance of \$300, 40% chance of \$0
0.7	\$100	70% chance of \$300, 30% chance of \$0
0.8	\$100	80% chance of \$300, 20% chance of \$0
0.9	\$100	90% chance of \$300, 10% chance of \$0
1	\$100	100% chance of \$300, 0% chance of \$0

Panel B: Second set of questions to obtain q'

q'	Option A	Option B
0.1	50% chance of \$300, 50% chance of \$0	10% chance of \$300, 90% chance of \$0
0.2	50% chance of \$300, 50% chance of \$0	20% chance of \$300, 80% chance of \$0
0.3	50% chance of \$300, 50% chance of \$0	30% chance of \$300, 70% chance of \$0
0.4	50% chance of \$300, 50% chance of \$0	40% chance of \$300, 60% chance of \$0
0.5	50% chance of \$300, 50% chance of \$0	50% chance of \$300, 50% chance of \$0
0.6	50% chance of \$300, 50% chance of \$0	60% chance of \$300, 40% chance of \$0
0.7	50% chance of \$300, 50% chance of \$0	70% chance of \$300, 30% chance of \$0
0.8	50% chance of \$300, 50% chance of \$0	80% chance of \$300, 20% chance of \$0
0.9	50% chance of \$300, 50% chance of \$0	90% chance of \$300, 10% chance of \$0
1	50% chance of \$300, 50% chance of \$0	100% chance of \$300, 0% chance of \$0

Notes: We asked customers to choose option A or B for each question. A customer's q and q' were obtained at which the choice between A and B was altered.

Table A.2: Experimental Sample and a Random Sample of Population in the Experimental Area

	Baseline group	Incentivized group	Random sample of population
Household income (JPY10,000)	742.31	749.80	731.49
	(296.29)	(311.25)	(435.46)
Square meters	99.82	100.91	110.73
	(33.20)	(33.43)	(45.95)
Age of building	12.71	11.63	16.44
	(12.29)	(11.15)	(9.08)
Number of room AC	3.18	3.13	3.33
	(1.25)	(1.25)	(1.48)
Electricity usage (kWh/day)	13.17	13.18	12.28
	(5.82)	(6.13)	(6.31)

Notes: This table shows summary statistics for the two groups in the experiment: the baseline group ($N = 468$), the incentivized group ($N = 502$), and a random sample of population in the experimental area ($N = 3000$). Standard deviations are in parentheses.

Table A.3: Robustness Check of Selection Equation

Marginal effects on $\Pr[D_i = 1(\text{household } i \text{ selected into dynamic pricing})]$

	(1)	(2)	(3)	(4)
Take-up incentive (USD)	0.0029	0.0030	0.0031	0.0032
	(0.0005)	(0.0005)	(0.0006)	(0.0006)
Expected savings (USD)	0.0019	0.0020	0.0026	
	(0.0005)	(0.0005)	(0.0005)	
Risk aversion		-0.2060	-0.2361	-0.2536
		(0.0800)	(0.0842)	(0.0849)
Certainty premium		-0.3116	-0.3261	-0.3322
		(0.0952)	(0.0990)	(0.1002)
Years of schooling		0.0205	0.0152	0.0110
		(0.0073)	(0.0077)	(0.0078)
Employed		-0.1292	-0.0535	-0.0849
		(0.0486)	(0.0624)	(0.0628)
Income (100,000 USD)		0.0525	0.0516	0.0660
		(0.0581)	(0.0626)	(0.0629)
Covariates interacted with each other	No	No	Yes	Yes
Non-parametric controls for expected savings	No	No	No	Yes
Log likelihood	-628.6	-613.1	-592.6	-579.7

Notes: This table shows the estimation results of the selection equation. Table 3 in the paper uses logit, and this table shows results with probit. We show the marginal effects at the means of the covariates. The sample size is 970. We use the delta method to obtain standard errors and report them in parentheses. The results are nearly identical to the logit results in Table 3 in the paper. We also find that a semi-parametric method developed by Gallant and Nychka (1987) produces a nearly identical result to the probit result in our data. With the set of flexible controls included in our estimation, the p-value for the likelihood ratio test of probit model against the semi-parametric method is 0.62, and the two models produce nearly identical results.

Table A.4: Testing for the Validity of the Separability Assumption

	Summer		Winter	
	$e_{1,t}$	$e_{0,t}$	$e_{1,t}$	$e_{0,t}$
	(1)	(2)	(3)	(4)
$\hat{p}$ × Risk aversion	0.31	0.19	0.45	-0.09
	(0.25)	(0.18)	(0.35)	(0.34)
$\hat{p}$ × Certainty premium	0.50	0.12	1.04	-0.07
	(0.29)	(0.22)	(0.39)	(0.36)
$\hat{p}$ × Employed	0.13	0.04	0.05	0.10
	(0.16)	(0.10)	(0.23)	(0.18)
$\hat{p}$ × Years of schooling	-0.07	0.01	-0.08	-0.03
	(0.02)	(0.02)	(0.03)	(0.03)
$\hat{p}$ × Expected saving	0.00	-0.00	0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
$\hat{p}$ × Income	0.18	0.01	0.42	-0.12
	(0.19)	(0.14)	(0.27)	(0.25)

Notes: This table shows the estimation results described in Section 4.3.3. The dependent variable ($e_{j,t}$) is the residuals from the local quadratic regression for $m_{j,t}$ presented in Section 4.3.3. We compute bootstrapped standard errors clustered at the customer level by bootstrapping the entire estimation process, including the propensity score estimation and MTE estimation. This table tests the validity of the separability assumption with our data.