Understanding Consumption Behavior: Evidence from Consumers' Reaction to Shopping Vouchers

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Appendix A—**Survey and Questionnaire** Our survey used a multistage sampling scheme, where a subsample was selected from each region (a county or a municipality) in the first stage. There were in total 23 counties and municipalities. The number of individuals drawn from a region was proportional to its population size. Random subsamples for each region were drawn from the 2004–2005 Telephone Directory of the Chunghwa Telecom Inc., which is the sole provider of land phone services in Taiwan. Because some numbers were not listed and new numbers were not covered by this version of the telephone directory, to improve the representativeness of the set of telephone numbers drawn, for each number drawn from the electronic telephone directory, we substituted the last two digits with a random number. The second stage involved within-household sampling - that is, from all the individuals above 18 in a household we randomly selected one individual as an interviewee. For this purpose, we prepared a set of tables, and conditional on the number of male and female qualified individuals in a household, each table specified which individual was to be selected as an interviewee. The selection of which table was to be used for the within-household sampling was based on the last two digits of a household's telephone number. This is similar to the way that the Survey of Consumers selects a member in a household as respondent.

Survey Questionnaire
Selected Questions from the Survey Questionnaire

Q4. Did anyone in your household give you his/her shopping vouchers to you or use his/her vouchers jointly with yours?

    (1) Yes (Go to Q4_1)
    (2) No (Go to Q5)
    (8) Refuse to answer (Go to Q5)

Q5. Was there anyone who does not live with you giving you his/her shopping vouchers to you or using his/her vouchers jointly with you?

    (1) Yes, _____persons
    (2) No

(8) Refuse to answer

Q6. Did you use the shopping vouchers by yourself or you gave to other people?

(1) All at my own disposal
(2) Gave all to other people
(3) Kept some for own disposal and gave some to other people
(4) Kept some for own disposal and some for other uses
(5) Put them to other uses

Q7. What was the total value of the shopping vouchers that were at your disposal?

(01) $0 (go to Q18)	(02) $1–500	(03) $501–1000
(04) $1001–1500	(05) $1501–2000	(06) $2001–2500
(07) $2501–3000	(08) $3001–3500	(09) $3501–4000
(10) $4001–4500	(11) $4501–5000	(12) $5001–5500
(13) $5501–6000	(14) $6001–6500	(15) $6501–7000
(16) $7001–7500	(17) $7501–8000	(18) $8001–8500
(19) $8501–9000	(20) $9001–9500	(21) $9501–10000
(22) $10001–12000	(23) $12001–13000	(24) $13001–14000
(25) $14001–15000	(26) $15001–16000	(27) $16001–17000
(28) $17001–18000	(29) $18001–19000	(30) $19001–20000
(31) 20001 and Over	(97) Don't know	(98) Refuse to answer

Q8. Did you use any of the shopping vouchers that were at your disposal?

(1) Yes, I used all of them (Please go to Q10)
(2) Yes, I used some of them
(3) No, I did not use any of them (Please go to Q18)
(7) Don't know
(8) Refuse to answer

Q9. How much was the amount of the shopping vouchers that you used?

(01) $1-500	(02) $501-1000	(03) $1001-1500
(04) $1501-2000	(05) $2001-2500	(06) $2501-3000
(07) $3001-3500	(08) $3501-4000	(09) $4001-4500
(10) $4501-5000	(11) $5001-5500	(12) $5501-6000
(13) $6001-6500	(14) $6501-7000	(15) $7001-7500
(16) $7501-8000	(17) $8001-8500	(18) $8501-9000
(19) $9001-9500	(20) $9501-10000	(21) $10001-12000
(22) $12001-13000	(23) $13001-14000	(24) $14001-15000
(25) $15001-16000	(26) $16001-17000	(27) $17001-18000
(28) $18001-19000	(29) $19001-20000	(30) $20001 or more
(97) Don't know	(98) Refuse to answer	

Q10. What kinds of goods did you use shopping vouchers to pay for?

(01) Food and drinks (i.e., groceries, alcohol and tobacco) (Answer Q12)

(02) Household necessities (e.g., personal care products, kitchen supplies and utensils) (Answer Q12)

(03) Consumer durables (e.g., consumer electronics, furniture, electric appliances, cookware, automobiles, bicycles) (Answer Q13)

(04) Apparel and accessories, jewelry, home decor (Answer Q13)

(05) Toys, books, stationery, magazines, CDs, and DVDs (Answer Q13)

(06) Services (meals at restaurants, barber shops, beauty salons, leisure travel, etc.) (Answer Q14)

(07) Medicine, health and fitness products (Go to Q15 after answering Q11)

(08) Tuition or tutoring fees (Go to Q15 after answering Q11)

(09) Transportation fares (i.e., taxi fares, train tickets) (Go to Q15 after answering Q11)

(10) Rent (i.e., rent for apartment or shop) (Go to Q15 after answering Q11)

(11) Donations (Go to Q15 after answering Q11)

(12) Given away as gifts (Go to Q15 after answering Q11)

(13) Sold to others (Go to Q15 after answering Q11)

(14) Other use _____ (Go to Q15 after answering Q11)

(97) Don't know

(98) Refuse to answer

Q12. How much of the shopping vouchers at your disposal was spent on food and drinks or household necessities (items in (01) and (02) of Q10)?

(01) $500 or Less	(02) $501–1000	(03) $1001–1500
(04) $1501–2000	(05) $2001–2500	(06) $2501–3000
(07) $3001–3500	(08) $3501–4000	(09) $4001–4500
(10) $4501–5000	(11) $5001–5500	(12) $5501–6000
(13) $6001–6500	(14) $6501–7000	(15) $7001–7500
(16) $7501–8000	(17) $8001–8500	(18) $8501–9000
(19) $9001–9500	(20) $9501–10000	(21) $10001–12000
(22) $12001–13000	(23) $13001–14000	(24) $14001–15000
(25) $15001–16000	(26) $16001–17000	(27) $17001–18000
(28) $18001–19000	(29) $19001–20000	(30) $20001 or more
(97) Don't know	(98) Refuse to answer	

Q12_1. What was the nature of those purchases?

(1) I would have made the purchases even without receiving shopping vouchers (Go to Q12_2)

(2) I made the purchases, only because of receiving shopping vouchers (Go to Q15)

(3) The purchases were made, because of discounts when using shopping vouchers (Go to Q15)

(4) All of the above are true to some extent (Go to Q12_2)

(8) Refuse to answer (Go to Q15)

Q12_2. Were the items that you bought more or less expensive than, or almost the same price as, you originally planned?

(1) More expensive

(2) Less expensive

(3) Almost the same price

(6) Other _____

(7) Don't know

(8) Refuse to answer

Q13. How much of the shopping vouchers at your disposal was spent on consumer durables, apparel and accessories, toys, books, stationery, magazines, CDs, and DVDs (items in (03)–(05) of Q10)?

(01) $500 or Less	(02) $501–1000	(03) $1001–1500
(04) $1501–2000	(05) $2001–2500	(06) $2501–3000
(07) $3001–3500	(08) $3501–4000	(09) $4001–4500
(10) $4501–5000	(11) $5001–5500	(12) $5501–6000
(13) $6001–6500	(14) $6501–7000	(15) $7001–7500
(16) $7501–8000	(17) $8001–8500	(18) $8501–9000
(19) $9001–9500	(20) $9501–10000	(21) $10001–12000
(22) $12001–13000	(23) $13001–14000	(24) $14001–15000
(25) $15001–16000	(26) $16001–17000	(27) $17001–18000
(28) $18001–19000	(29) $19001–20000	(30) $20001 or more
(97) Don't know	(98) Refuse to answer	

Q13_1. What was the nature of these purchases?

(1) I would have made the purchases even without receiving shopping vouchers (Go to Q13_2)

(2) I made the purchases, only because of receiving shopping vouchers (Go to Q15)

(3) The purchases were made, because of discounts when using shopping vouchers (Go to Q15)

(4) All of the above are true to some extent (Go to Q13_2)

(8) Refuse to answer (Go to Q15)

Q13_2. Were the items that you bought more or less expensive than, or almost the same price as, you originally planned?

(1) More expensive

(2) Less expensive

(3) Almost the same price

(6) Other _____

(7) Don't know

(8) Refuse to answer

Q14. How much of the shopping vouchers at your disposal was spent on meals at restaurants, barber shops, beauty salons, leisure travel, etc. (items in (06) of Q10)?

(01) $500 or Less   (02) $501–1000   (03) $1001–1500
(04) $1501–2000   (05) $2001–2500   (06) $2501–3000
(07) $3001–3500   (08) $3501–4000   (09) $4001–4500
(10) $4501–5000   (11) $5001–5500   (12) $5501–6000
(13) $6001–6500   (14) $6501–7000   (15) $7001–7500
(16) $7501–8000   (17) $8001–8500   (18) $8501–9000
(19) $9001–9500   (20) $9501–10000   (21) $10001–12000
(22) $12001–13000   (23) $13001–14000   (24) $14001–15000
(25) $15001–16000   (26) $16001–17000   (27) $17001–18000
(28) $18001–19000   (29) $19001–20000   (30) $20001 or more
(97) Don't know   (98) Refuse to answer

Q14_1. What was the nature of those purchases?

(1) I would have made the purchases even without receiving shopping vouchers (Go to Q14_2)
(2) I made the purchases, only because of receiving shopping vouchers (Go to Q15)
(3) The purchases were made, because of discounts when using shopping vouchers (Go to Q15)
(4) All of the above are true to some extent (Go to Q14_2)
(8) Refuse to answer (Go to Q15)

Q14_2. Were the items that you bought more or less expensive than, or almost the same price as, you originally planned?

(1) More expensive
(2) Less expensive
(3) Almost the same price
(6) Other _____
(7) Don't know
(8) Refuse to answer

Q15. When using shopping vouchers, did you use cash or credit cards, because the total purchase amount exceeded the value of your shopping vouchers?

(1) Yes
(2) No (Go to Q16)
(8) Refuse to answer (Go to Q16)

Q15_1. How much more did you spend?

(01) $500 or Less	(02) $501–1000	(03) $1001–1500
(04) $1501–2000	(05) $2001–2500	(06) $2501–3000
(07) $3001–3500	(08) $3501–4000	(09) $4001–4500
(10) $4501–5000	(11) $5001–5500	(12) $5501–6000
(13) $6001–6500	(14) $6501–7000	(15) $7001–7500
(16) $7501–8000	(17) $8001–8500	(18) $8501–9000
(19) $9001–9500	(20) $9501–10000	(21) $10001–12000
(22) $12001–13000	(23) $13001–14000	(24) $14001–15000
(25) $15001–16000	(26) $16001–17000	(27) $17001–18000
(28) $18001–19000	(29) $19001–20000	(30) $20001 or more
(97) Don't know	(98) Refuse to answer	

Q19_2. Do you agree with the following claim?
The shopping vouchers program has worsened Taiwan's fiscal situation

(1) Strongly agree

(2) Agree

(3) Somewhat agree

(4) Disagree

(5) Strongly disagree

(7) Don't know

(8) Refuse to answer

Q21. Supposing the government hands out shopping vouchers worth $3,600 per person in the second half of 2009 again, how will you use them if there is no discount for using shopping vouchers?

(1) Spend them on items that I would have purchased even without receiving shopping vouchers

(2) Spend them on items that I would not have purchased without receiving shopping vouchers

(3) Half and half

(4) Other (e.g., donations) _____

(7) Don't know

(8) Refuse to answer

Q22. Supposing the government decides to refund part of your 2008 personal income tax, and the amount is roughly $3,600 per person (the same amount as the value of shopping vouchers received by your household) in the second half of 2009, how will you use the income tax refund?

(1) I will spend it on items that I would have purchased even without receiving the tax refund

(2) I will spend it on items that I would not have purchased without receiving the tax refund

(3) Savings or investment

(4) I will use some on shopping, and savings or investment

(5) Other (i.e., donations) _____

(7) Don't know

(8) Refuse to answer

Q32. Are you optimistic about Taiwan's economy next year (2010)?

    (1) Very optimistic
    (2) Somewhat optimistic
    (3) Somewhat pessimistic
    (4) Very pessimistic
    (7) Don't know
    (8) Refuse to answer

Appendix B—Responses to Hypothetical Questions

In questions Q21 and Q22, we asked how the respondents would use their vouchers and tax refunds, respectively. See Table A8 for tabulations of the responses. In the hypothetical shopping vouchers question, we asked whether they would use them on (i) items that would have been purchased even without receiving shopping vouchers or (ii) on items that would not have been purchased without receiving shopping vouchers, where we allowed our respondents to answer (iii) "spending on both types of items" or (iv) other purposes. Likewise, in the hypothetical tax refunds question, we asked whether they would use the refund (i) on planned spending, (ii) savings or investment, (iii) use on unplanned spending, allowing them to answer (iv) "use some of it on shopping, and savings or investment" or (v) other purposes.

In response to the hypothetical question on a future voucher program, 67.4% of our respondents indicated that they would use the vouchers on planned spending, while only about 4.0% intended to use them on unplanned spending, 27.0% of them on a mix of planned and unplanned spending, and 1.7% of them for other purposes. We observe a similar pattern of responses to the hypothetical tax rebates question. While 67.8% of our respondents would use the tax rebates on planned spending or savings/investment, 24.8% of them intended a mix of uses, while 1.8% of them would use the tax rebates for other purposes.

Assuming that respondents answering mixed use (i.e., (iii) in Q21 and answering (iv) in Q22) in the two hypothetical questions intended to spend half of their vouchers or tax rebates on planned items, then MPC estimates based on the hypothetical questions would be 0.175 and 0.18 under the future shopping vouchers and tax rebates senarius, respectively.

Appendix C—Aggregate Implications

This Appendix checks the consistency of our estimation results and explores the implications of the voucher program on the aggregate consumption.
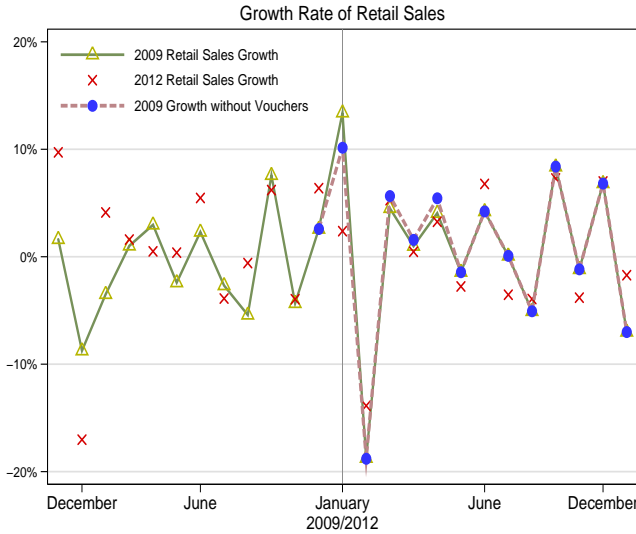
Panel (A)   Panel (B)

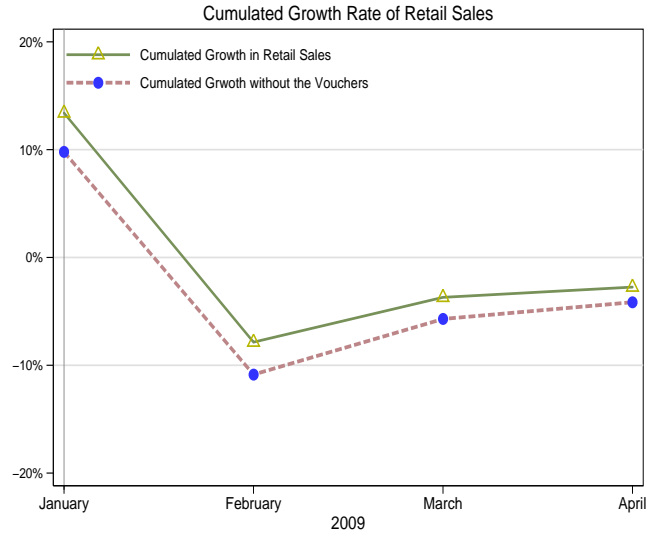Figure A1: Counterfactual Analysis on Growth of Retail Sales

Notes: Data on retail sales come from *Department of Statistics, Ministry of Economic Affairs*, which conducted monthly surveys of retailers and restaurants and imputes retail and restaurant sales for the whole country.

We check the consistency of our results by comparing the retail (inclusive of restaurants) sales growth without vouchers with the comparable growth data in 2012. To construct the figures without vouchers, we assume that shopping vouchers generated 34.12% (i.e., our MPC estimate inclusive of the effect of out-of-pocket expenditure) of new spending and 36.00% of this new spending took place in January 2009, with 30%, 20% and 14% spending having occurred in the second to the fourth months (the same fraction of spending over time as found by Sahm *et al.*, 2010. See their Table 4). We subtract the voucher-related new spending from the retail sales to compute the counterfactual month-over-month growth.

Panel (A) of Figure A1 plots the 2009 retail sales growth, the counterfactual growth rates assuming the absence of vouchers, and the 2012 growth rates. We use the 2012 sales growth as a benchmark, because in both 2009 and 2012 the Chinese New Year happened in the late February. The lunar new year affects the seasonality of consumption significantly. Moreover, the trend of quarterly real GDP growth for 2011 and 2012 was very similar to that for 2008–2009—both are U-shaped.[A1] Panel (A) of Figure A1 shows that the 2009 sales growth without

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[A1]The real quarterly GDP growth rates for 2011 and 2012 are 7.63%, 4.76%, 3.63%, 1.18%, 0.53%, 0.08%, 1.35% and 3.85%, while those for 2008–2009 are 7.55%, 5.66%, -1.23%, -7.53%, -8.12%, -6.58%, -1.41% and 8.82%.

vouchers follows a similar pattern as that of 2012. This implies our estimation based on survey data is consistent with the aggregate phenomenon.

We next explore the aggregate implications of Taiwan's voucher program by constructing a counterfactual cumulated retail growth measure.[A2] Panel (B) of Figure A1 plots the counterfactual cumulated retail sales growth in comparison with the actual one. It indicates that the program boosted the cumulated sales growth by 10.02% over the first four months after the launch of the program.

[A2] Define the cumulated retail growth rate as $\Delta_t^R = (R_t - R_0)/R_0$, where R_t is the retail sales in month t with $t = 0$ denoting December 2008. The counterfactual one is defined as $\tilde{\Delta}_t^R = [(R_t - d_t \cdot \widehat{\text{MPC}} \cdot V) - R_0]/R_0$, where V is the total value of vouchers disbursed, d_t is the fraction of spending in month t as specified above, and $\widehat{\text{MPC}}$ is our estimate of MPC inclusive of out-of-pocket spending.

Appendix D—Tables

Table A1: Short List of Vendors' Promotions and Discounts Targeted at Vouchers Users

Category	Vendor	Items	Discount Period	Discount	Website
Necessities	7-Eleven	Beverage, Food	2009/1/14–2/18	30% off	http://www.7-11.com.tw/Company/news_page.asp?dId=303
Necessities	Family Mart	Beverage, Food	2009/1/13–2/9	35–40% off	http://www.family.com.tw/Enterprise/news_in.aspx?ID=131
Necessities	Shin Kong Mitsukoshi	Grocery	2009/1/18–2/28	up to 25% off	http://www.skm.com.tw/event/200901con/store_110.html
Durables	IKEA Home Furniture	Furniture	2009/1/18–2/11	50% off	http://img.epaper.com.tw/img/Shopping/20090123/cp01.gif
Durables	Giant Bicycle	Bicycles	2009/1/18–9/30	20% off	http://www.giant-bicycles.com/en-us/news/article/12996/
Durables	ASUS	EeeBox 120G	2/12-2/16	52% off	http://www.techbang.com/posts/491-coupons-are-the-latest-thing-to-explore-3c-products-coupons-and-special-exhibition
Services	Caesar Park Hotel	Accomodation	2009/1/19–3/31	62% off	http://www.caesarpark.com.tw/kenting2/news2.php?no=779
Services	Hotel Royal-Nikko Taipei	Meals & Accomodation	2009/1/18–6/26	30%-56%	http://www.royal-taipei.com.tw/newsdetail.php?newsid=218
Others	Taiwan High Speed Rail Co.	Transportation Fares	2009/3/1–5/31	up to 50% off	http://www.thsrc.com.tw/tw/News/Detail/4ab2a5c5-540f-4dbe-81c2-c1ea78ee4c96/625

Table A2: Telephone Interview Outcomes

Calls completed		12077	43.13%
(1)	Interviews completed	3832	13.7%
(2)	Non-residential phone number	1888	6.7%
(3)	Under 18 or non-citizen	97	0.4%
(4)	Disabled	197	0.7%
(5)	Do not speak Chinese or Hokkien dialect	22	0.1%
(6)	Have already been interviewed	20	0.1%
(7)	Within-household sampled respondent not at home	1095	3.9%
(8)	Refused	4816	17.2%
(9)	Redirected to mobile phone	75	0.3%
(10)	Did not claim shopping vouchers yet	24	0.1%
(11)	Interrupted during interview	11	0.00%
Calls failed		15922	43.1%
(12)	Not answered	11409	40.8%
(13)	Fax machine	1556	5.6%
(14)	Line busy	1101	3.9%
(15)	Answering machine	101	0.4%
(16)	Number not in service	8	0.0%
(17)	Telephone out of order	447	1.6%
(18)	Number temporarily out of service	15	0.1%
(19)	Telephone set to "do not disturb"	1285	4.6%
CATI system crashed		1	0.0%
Calls attempted		28000	100%

Table A3: Categories and Items of Voucher Spending*

(1) "Whether spent on items" Asked	(2) Items inclued	(3) Purchased	(4) "Value spent on the category" Asked	(5) Purchased
⟨ 1 ⟩	Groceries	56.4%	⟨ A ⟩ Necessities	70.3%
⟨ 2 ⟩	Household necessities (e.g., personal care products, kitchen supplies and utensils)	62.7%		
⟨ 3 ⟩	Consumer durables (e.g., consumer electronics, furniture, electrical appliances, cookware, automobiles, bicycles)	29.0%	⟨ B ⟩ Durables	57.7%
⟨ 4 ⟩	Apparel and accessories, jewelry, home decor	33.2%		
⟨ 5 ⟩	Toys, books, magazines, CDs, and DVDs	9.7%		
⟨ 6 ⟩	Services (restaurants, barber shops, beauty salons, traveling, etc.)	23.0%	⟨ C ⟩ Services	23.0%
⟨ 7 ⟩	Medicine, health and fitness products	4.2%	⟨ D ⟩ Others	16.0%
⟨ 8 ⟩	Tuition for private lessons	2.3%		
⟨ 9 ⟩	Transportation fares	9.5%		
⟨ 10 ⟩	Rent	0.03%		
⟨ 11 ⟩	Donations	1.5%		
⟨ 12 ⟩	As gifts to other people	1.7%		
⟨ 13 ⟩	Sold for cash to somebody else	0.5%		
⟨ 14 ⟩	Other uses	1.0%		

Notes: The 14 categories in column (1) are aggregated into 4 categories in column (4). In columns (3) and (5), the numbers are for the percentage of respondents having made a purchase of items in the category. The value of voucher spending was not asked for category ⟨ D ⟩.

Table A4: Patterns of Shopping Vouchers on Hand and Used

Amount	Frequency [Percentage]					
	(1) On hand	(2) Used	(3) Necessities	(4) Durables	(5) Services	(6) Out-of-Pocket
$0	0 [0%]	122 [3.7%]	865 [29.7%]	1232 [42.3%]	2240 [77.0%]	430 [16.36%]
$1–500	3 [0.1%]	13 [0.4%]	65 [2.2%]	73 [2.5%]	65 [2.2%]	572 [21.76%]
$501–1000	11 [0.3%]	27 [0.8%]	105 [3.6%]	125 [4.3%]	99 [3.4%]	405 [15.41%]
$1001–1500	2 [0.1%]	22 [0.7%]	87 [3.0%]	116 [4.0%]	78 [2.7%]	186 [7.07%]
$1501–2000	24 [0.7%]	49 [1.5%]	146 [5.0%]	142 [4.9%]	74 [2.5%]	190 [7.23%]
$2001–2500	8 [0.2%]	32 [1.0%]	112 [3.9%]	99 [3.4%]	58 [2.0%]	100 [3.80%]
$2501–3000	7 [0.2%]	39 [1.2%]	115 [4.0%]	118 [4.1%]	49 [1.7%]	133 [5.06%]
$3001–3500	1 [0.0%]	35 [1.1%]	73 [2.5%]	65 [2.2%]	34 [1.2%]	68 [2.59%]
$3501–4000	1324 [39.6%]	1,142 [34.5%]	467 [16.1%]	312 [10.7%]	93 [3.2%]	71 [2.70%]
$4001–4500	11 [0.3%]	23 [0.7%]	50 [1.7%]	30 [1.0%]	11 [0.4%]	28 [1.07%]
$4501–5000	21 [0.6%]	42 [1.3%]	62 [2.1%]	55 [1.9%]	17 [0.6%]	80 [3.04%]
$5001–5500	10 [0.3%]	16 [0.5%]	55 [1.9%]	38 [1.3%]	7 [0.2%]	22 [0.84%]
$5501–6000	11 [0.3%]	24 [0.7%]	59 [2.0%]	42 [1.4%]	12 [0.4%]	52 [1.98%]
$6001–6500	2 [0.1%]	10 [0.3%]	26 [0.9%]	16 [0.6%]	2 [0.1%]	14 [0.53%]
$6501–7000	5 [0.2%]	25 [0.8%]	45 [1.6%]	32 [1.1%]	4 [0.1%]	15 [0.57%]
$7001–7500	450 [13.5%]	395 [11.9%]	150 [5.2%]	87 [3.0%]	22 [0.8%]	14 [0.53%]
$7501–8000	6 [0.2%]	18 [0.5%]	41 [1.4%]	22 [0.8%]	6 [0.2%]	17 [0.65%]
$8001–8500	7 [0.2%]	12 [0.4%]	18 [0.6%]	13 [0.5%]	4 [0.1%]	5 [0.19%]
$8501–9000	4 [0.1%]	25 [0.8%]	39 [1.3%]	16 [0.6%]	0 [0%]	8 [0.30%]
$9001–9500	6 [0.2%]	9 [0.3%]	13 [0.5%]	4 [0.1%]	2 [0.1%]	4 [0.15%]
$9501–10000	8 [0.2%]	27 [0.8%]	50 [1.7%]	32 [1.1%]	6 [0.2%]	25 [0.95%]
$10001–12000	439 [13.1%]	472 [14.3%]	94 [3.2%]	86 [3.0%]	15 [0.5%]	45 [1.71%]
$12001–13000	7 [0.2%]	5 [0.2%]	24 [0.8%]	11 [0.4%]	1 [0.0%]	9 [0.34%]
$13001–14000	4 [0.1%]	3 [0.1%]	16 [0.6%]	11 [0.4%]	2 [0.1%]	5 [0.19%]
$14001–15000	542 [16.2%]	399 [12.1%]	62 [2.1%]	66 [2.3%]	6 [0.2%]	31 [1.18%]
$15001–16000	4 [0.1%]	3 [0.1%]	10 [0.3%]	7 [0.2%]	0 [0%]	10 [0.38%]
$16001–17000	3 [0.1%]	2 [0.1%]	7 [0.2%]	3 [0.1%]	0 [0%]	3 [0.11%]
$17001–18000	247 [7.4%]	176 [5.3%]	28 [1.0%]	30 [1.0%]	1 [0.0%]	5 [0.19%]
$18001–19000	0 [0%]	0 [0%]	3 [0.1%]	0 [0%]	0 [0%]	1 [0.04%]
$19001–20000	1 [0.0%]	1 [0.0%]	5 [0.2%]	0 [0%]	1 [0.0%]	5 [0.19%]
$20001 and above	177 [5.3%]	141 [4.3%]	18 [0.6%]	27 [0.9%]	1 [0.0%]	76 [2.89%]
Sample Average	8886.68 (5463.97)	7920.78 (5381.53)	3725.95 (4242.88)	2882.91 (4193.51)	680.16 (1857.76)	2613.0947 (4334.9947)
Total	3345	3309	2910	2910	2910	2629

Notes: In column (1), among the 3,832 respondents, 487 indicated that they had given or sold all vouchers to others and were excluded. In column (2), among the 3,345 respondents, 36 answered "don't know" to the amount of their voucher spending (Q8 or Q9) and were excluded. In columns (3)–(5), among the 3309 respondents, 399 answered "don't know" to the questions on the amount of their voucher spending (Q12_1, Q13_1 & Q14_1) or items they have spent on (Q10) were excluded. In column (6), among the 2910 respondents, 281 respondents answered "don't know" to the question on the amount of their out-of-pocket spending. The sample averages (standard deviation in parentheses) are computed using the midpoints of the ranges.

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Table A5: Marginal Propensity to Consume: Corrected for Reporting and Recall Errors

	(1) MPC	(2) MPC (Excluding Effects of Discounts)
Estimate	0.247 (0.007)	0.167 (0.006)
Observations	2797	2797

Notes: The following corrections are made. (i) Use the sum of the reported voucher spending as the total voucher spending for respondents who reported having used no vouchers on other items (category ⟨ D ⟩). (ii) Drop the observation when a respondent reported having spent on category ⟨ D ⟩ (others) and the sum of the estimates of voucher spending on necessities, durables and service is greater than the estimate of total voucher spending. Standard errors in parentheses.

Table A6: Multivariate Analysis of Spending Shares

	Necessities		Durables		Services	
	(1)	(2)	(3)	(4)	(5)	(6)
Age≤ 29	0.010 (0.265)	0.013 (0.264)	0.6376** (0.2732)	0.6544** (0.2730)	0.3356 (0.3305)	0.3856 (0.3327)
Age 30	0.261 (0.245)	0.258 (0.245)	0.5289** (0.2606)	0.5247** (0.2601)	0.3544 (0.3207)	0.3534 (0.3218)
Age 40	0.070 (0.230)	0.061 (0.230)	0.2795 (0.2447)	0.2577 (0.2445)	-0.0993 (0.3087)	-0.1031 (0.3100)
Age 50	0.033 (0.203)	0.028 (0.203)	0.1906 (0.2217)	0.1781 (0.2213)	-0.1631 (0.2894)	-0.1722 (0.2901)
Elementary school	0.051 (0.187)	0.054 (0.187)	-0.6323*** (0.2115)	-0.6163*** (0.2123)	-0.9105*** (0.3045)	-0.8858*** (0.3062)
College	0.123 (0.163)	0.128 (0.163)	0.3616** (0.1656)	0.3806** (0.1653)	0.5124*** (0.1841)	0.5190*** (0.1837)
Married	0.147 (0.158)	0.123 (0.162)	-0.0480 (0.1659)	-0.1291 (0.1696)	0.1983 (0.2094)	0.0643 (0.2127)
Kids	0.016 (0.160)	-0.013 (0.160)	-0.0006 (0.1688)	-0.0882 (0.1696)	-0.1577 (0.2073)	-0.2869 (0.2071)
Female	0.345*** (0.127)	0.336*** (0.129)	0.2527* (0.1317)	0.2226* (0.1331)	0.3529** (0.1563)	0.2895* (0.1576)
Family income–Missing	-0.354** (0.176)	-0.342* (0.176)	-0.2339 (0.1822)	-0.2038 (0.1830)	-0.0297 (0.2191)	0.0129 (0.2194)
Family income–Zero	-0.079 (0.188)	-0.079 (0.187)	-0.2075 (0.1959)	-0.2109 (0.1955)	-0.3266 (0.2353)	-0.3322 (0.2346)
Family income 1st Quartile	-0.152 (0.226)	-0.147 (0.226)	-0.2164 (0.2378)	-0.2056 (0.2382)	-0.5984** (0.2976)	-0.5937** (0.2977)
Family income 4th Quartile	-0.548** (0.220)	-0.548** (0.221)	-0.1562 (0.2279)	-0.1514 (0.2285)	0.0585 (0.2669)	0.0529 (0.2673)
Income increased	-0.196 (0.150)	-0.199 (0.150)	-0.1603 (0.1556)	-0.1718 (0.1559)	-0.2849 (0.1892)	-0.2992 (0.1897)
Vouchers on hand — Below NT\$3,500		-0.059 (0.134)		-0.2150 (0.1407)		-0.5154*** (0.1751)
Vouchers on hand — Above NT\$10,001		0.159 (0.182)		0.3835** (0.1906)		0.0851 (0.2195)
Economy–optimistic	-0.061 (0.196)	-0.069 (0.195)	-0.0841 (0.2039)	-0.0983 (0.2036)	-0.1704 (0.2465)	-0.1766 (0.2455)
Economy–pessimistic	-0.098 (0.162)	-0.091 (0.162)	-0.1622 (0.1698)	-0.1412 (0.1706)	-0.2596 (0.2115)	-0.2221 (0.2122)
Economy–DK	0.040 (0.221)	0.048 (0.221)	-0.2612 (0.2424)	-0.2341 (0.2430)	-0.4608 (0.3149)	-0.3902 (0.3160)
Constant	1.607*** (0.257)	1.650*** (0.272)	1.2599*** (0.2747)	1.4104*** (0.2893)	-0.0086 (0.3431)	0.3528 (0.3561)
# respondents				2910		

Note: Standard errors in parentheses.
*, **, ***denote statistically significant at the 10%, 5%, and 1% levels, respectively.

Table A7: Multivariate Analysis of MPC

	MPC		Out-of-pocket spending	
	(1)	(2)	(3)	(4)
Age≤ 29	0.146****	0.146***	-1.10e+03***	-1.01e+03***
	(0.032)	(0.032)	(369.076)	(365.037)
Age 30	0.053*	0.052*	-433.653	-450.779
	(0.031)	(0.031)	(353.791)	(349.326)
Age 40	0.017	0.010	-171.215	-234.455
	(0.029)	(0.029)	(338.047)	(334.145)
Age 50	0.002	0.002	-360.735	-382.490
	(0.026)	(0.026)	(309.079)	(305.216)
Elementary school	0.001	0.002	-849.490***	-745.466**
	(0.025)	(0.025)	(301.021)	(297.503)
College	0.005	0.007	41.415	112.787
	(0.019)	(0.019)	(209.797)	(207.577)
Married	0.028	0.023	180.052	-183.682
	(0.020)	(0.020)	(231.151)	(232.714)
Kids	0.019	0.012	301.605	-81.653
	(0.020)	(0.020)	(227.871)	(230.148)
Female	-0.020	-0.021	-269.488	-422.807**
	(0.015)	(0.015)	(174.999)	(174.586)
Family income–Missing	-0.032	-0.031	173.764	294.629
	(0.023)	(0.023)	(258.452)	(255.688)
Family income–Zero	-0.010	-0.011	-187.194	-205.153
	(0.023)	(0.023)	(263.575)	(260.247)
Family income 1$^{\text{st}}$ Quartile	-0.012	-0.012	-118.133	-64.438
	(0.028)	(0.028)	(322.735)	(318.725)
Family income 4$^{\text{th}}$ Quartile	-0.021	-0.020	829.249***	846.201***
	(0.028)	(0.028)	(319.542)	(315.556)
Income increased	0.006	0.005	163.122	104.252
	(0.019)	(0.019)	(219.552)	(216.886)
Vouchers on hand — Below NT$3,500		-0.009		-1.15e+03***
		(0.017)		(194.651)
Vouchers on hand — Above NT$16,001		0.029		1163.268***
		(0.024)		(271.758)
Economy–optimistic	0.013	0.013	642.646**	579.074**
	(0.022)	(0.024)	(272.349)	(269.071)
Economy–pessimistic	-0.035*	-0.034	-115.290	-20.335
	(0.019)	(0.021)	(240.931)	(238.166)
Economy–DK	0.006	0.009	-327.555	-129.950
	(0.025)	(0.027)	(344.303)	(341.276)
Constant	0.205****	0.210***	2833.126***	3631.368***
	(0.033)	(0.036)	(385.609)	(405.578)
R^2	0.016	0.017	0.029	0.055
# respondents	2910	2910	2629	2629

Notes: Standard errors in parentheses.
*, **, *** denote statistically significant at the 10%, 5%, and 1% levels, respectively.

Table A8: Hypothetical Questions

Q21. If the government were to have a second voucher program, how would you use your shopping vouchers from the second shopping voucher program?	Percentage	
	(1)	(2)
(i) Spend on items that I would have purchased even without receiving shopping vouchers	67.4	67.4+13.5=80.9
(ii) Spend on items that I would not have purchased without receiving shopping vouchers	4.0	4.0+13.5=17.5
(iii) Spend on each category of items	27.0	0
(iv) Other (i.e., donations)	1.7	1.7
Total	100.0	100

Wording of question Q21: *Suppose the government were to hand out shopping vouchers worth $3,600 per person in the second half of 2009 again, how would you use them if there were no discount for using shopping vouchers?* In column (2), we assume that half of those respondents answering response (iii) ("Spend on each category of items") will spend their shopping vouchers on items in response A, and the other half on those in response (ii).

Q22. If the government were to refund part of your income tax, how would you use your tax refund?	Percentage		
	(1)	(1')	(2)
(i) Spend on items that I would have purchased even without receiving the tax refund	54.0	} 67.8	67.8+12.4=80.2
(ii) Savings or investment	13.8		
(iii) Spend on items that I would not have purchased without receiving the tax refund	5.6	5.6	5.6+12.4=18.0
(iv) Use some of it on shopping, and savings or investment	24.8	24.8	0
(v) Other (i.e., donations)	1.8	1.8	1.8
Total	100	100	100

Notes: Wording of question Q22: *Suppose the government decides to refund your 2008 personal income tax, and the amount is roughly $3600 per person (the same amount as the value of the shopping vouchers received by your household) in the second half of 2009, how would you use the income tax refund?* In column (2), we assume that half of those respondents answering response (iv) ("Use some of it on shopping, and savings or investment") will spend their shopping vouchers on items in responses (i) and (ii), and the other half on those in response (iii).