

APPENDIX

Table A1: Appendix to Instrumental Variable (IV) estimation in Table 6

First-stage regression

Number of obs = 5882
 N. of clusters = 2553
 F(98, 5783) = 346.34
 Prob>F = 0
 R-squared = 0.9037
 Adj R-squared = 0.9021
 Root MSE = 6.8548

Tax	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
Age	-0.03	0.01	-3.23	0.00	-0.04	-0.01
Female	-0.94	1.17	-0.80	0.42	-3.25	1.36
Years of education						
1-8 years	0.88	0.33	2.71	0.01	0.24	1.52
9 years or more	1.47	0.42	3.49	0.00	0.64	2.29
Occupation						
Self-employed in non-farm agriculture	1.88	1.25	1.51	0.13	-0.56	4.33
Self-employed in non-agricultural activity	0.58	0.43	1.33	0.18	-0.27	1.43
Farm wage laborer	-0.51	0.45	-1.13	0.26	-1.40	0.38
Non-farm agricultural wage laborer	1.17	0.62	1.89	0.06	-0.04	2.37
Non-agricultural wage laborer	-0.47	0.46	-1.02	0.31	-1.36	0.43
Professional	0.76	1.32	0.58	0.56	-1.83	3.36
Managerial, administrative or clerking	1.01	0.73	1.38	0.17	-0.43	2.44
Student	0.37	0.87	0.43	0.67	-1.32	2.07
Unemployed	0.30	0.54	0.56	0.58	-0.75	1.36
Housewife/Housekeeper/Household manager	0.73	1.25	0.59	0.56	-1.71	3.18
Others	0.82	0.40	2.05	0.04	0.04	1.60

Tax	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
Socio-economic status						
Moderate	-0.17	0.32	-0.52	0.60	-0.81	0.47
High	0.78	0.34	2.32	0.02	0.12	1.45
Rural area of residence	-2.81	1.65	-1.70	0.09	-6.04	0.43
Cigarette brands						
Medium	18.15	0.32	56.87	0.00	17.53	18.78
High	45.66	0.45	101.16	0.00	44.77	46.54
Premium	87.71	1.25	69.92	0.00	85.25	90.17
Trend						
Wave 2	-0.24	0.28	-0.85	0.39	-0.78	0.31
Wave 3	8.40	0.32	26.47	0.00	7.78	9.03
Wave 4	13.78	0.46	29.96	0.00	12.88	14.68
Village codes						
2	-5.11	1.31	-3.89	0.00	-7.68	-2.53
3	-1.23	1.22	-1.01	0.31	-3.63	1.16
4	-0.61	1.16	-0.53	0.60	-2.89	1.67
5	-4.91	2.27	-2.16	0.03	-9.37	-0.45
6	1.66	1.44	1.15	0.25	-1.16	4.48
7	-0.51	1.47	-0.35	0.73	-3.39	2.37
8	-1.78	1.14	-1.56	0.12	-4.02	0.46
11	-5.15	1.42	-3.62	0.00	-7.93	-2.36
12	-2.63	1.46	-1.80	0.07	-5.48	0.23
13	-1.14	1.08	-1.06	0.29	-3.25	0.97
14	-0.98	1.09	-0.91	0.37	-3.11	1.15
15	-4.16	1.00	-4.15	0.00	-6.13	-2.20
16	-1.72	1.51	-1.14	0.26	-4.69	1.25
17	-2.68	1.10	-2.45	0.01	-4.83	-0.53
18	-3.14	1.22	-2.57	0.01	-5.54	-0.75
19	-6.53	1.08	-6.07	0.00	-8.64	-4.42
20	-4.94	1.04	-4.76	0.00	-6.98	-2.91
21	-2.04	1.19	-1.71	0.09	-4.38	0.30
22	-1.37	1.01	-1.36	0.17	-3.34	0.60
23	-0.91	1.29	-0.71	0.48	-3.44	1.61
24	-3.63	1.26	-2.88	0.00	-6.11	-1.16

Tax	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
25	-2.36	2.25	-1.05	0.29	-6.77	2.04
26	-2.44	2.23	-1.10	0.27	-6.81	1.93
27	-1.73	2.92	-0.59	0.55	-7.45	3.99
28	-2.36	2.22	-1.06	0.29	-6.71	2.00
29	3.39	3.20	1.06	0.29	-2.88	9.66
30	-1.49	2.04	-0.73	0.47	-5.49	2.51
31	-5.64	2.11	-2.67	0.01	-9.78	-1.50
32	2.10	2.51	0.84	0.40	-2.81	7.02
33	-3.16	2.39	-1.32	0.19	-7.85	1.52
34	-3.05	2.05	-1.49	0.14	-7.07	0.97
35	-3.06	1.28	-2.39	0.02	-5.56	-0.55
36	0.07	1.14	0.06	0.95	-2.16	2.29
37	1.44	1.39	1.03	0.30	-1.29	4.16
38	2.91	3.89	0.75	0.46	-4.71	10.53
39	-1.24	1.14	-1.08	0.28	-3.48	1.00
40	-0.94	1.18	-0.79	0.43	-3.26	1.39
41	-2.34	2.03	-1.16	0.25	-6.31	1.63
42	2.48	1.13	2.19	0.03	0.26	4.70
43	-1.46	2.27	-0.64	0.52	-5.91	2.99
44	-3.59	2.01	-1.79	0.07	-7.52	0.34
47	-1.46	1.95	-0.75	0.46	-5.28	2.36
48	0.75	1.41	0.53	0.59	-2.02	3.53
49	-1.95	1.84	-1.06	0.29	-5.56	1.65
50	-0.52	1.21	-0.43	0.67	-2.90	1.86
51	-3.41	2.05	-1.66	0.10	-7.44	0.61
52	0.24	1.40	0.17	0.87	-2.50	2.98
53	-4.12	2.07	-1.99	0.05	-8.18	-0.07
54	-2.36	1.24	-1.90	0.06	-4.80	0.07
56	-4.16	1.21	-3.44	0.00	-6.52	-1.79
57	-0.45	1.11	-0.40	0.69	-2.63	1.73
58	-2.59	1.53	-1.69	0.09	-5.59	0.42
59	-3.90	2.00	-1.95	0.05	-7.82	0.02
60	-3.17	1.35	-2.35	0.02	-5.81	-0.52
61	-4.31	2.04	-2.11	0.04	-8.30	-0.31
62	-3.07	1.03	-2.98	0.00	-5.09	-1.05
63	-2.03	1.97	-1.03	0.30	-5.89	1.83
64	-2.63	1.16	-2.28	0.02	-4.90	-0.37
65	-2.42	2.05	-1.18	0.24	-6.43	1.59

Tax	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]
66	-0.35	1.18	-0.29	0.77	-2.66 1.96
67	-1.34	1.64	-0.82	0.41	-4.57 1.88
68	-4.38	2.12	-2.06	0.04	-8.54 -0.21
69	-5.65	2.02	-2.79	0.01	-9.61 -1.68
70	-2.01	1.14	-1.77	0.08	-4.24 0.22
71	-4.64	2.05	-2.26	0.02	-8.65 -0.62
72	-0.40	1.79	-0.23	0.82	-3.91 3.10
73	-5.16	1.98	-2.61	0.01	-9.04 -1.29
74	-2.66	1.10	-2.42	0.02	-4.82 -0.51
75	-5.28	2.09	-2.53	0.01	-9.37 -1.19
76	-1.60	1.04	-1.53	0.13	-3.65 0.44
77	-4.11	1.99	-2.06	0.04	-8.01 -0.20
78	-3.48	1.13	-3.08	0.00	-5.70 -1.26
79	-1.62	1.15	-1.41	0.16	-3.88 0.64
80	-1.65	1.03	-1.60	0.11	-3.68 0.37
Constant	5.74	2.02	2.84	0.01	1.77 9.70

Instrumental variables (2SLS) regression

Number of obs = 5882

Wald chi2(25) = 1792.7

Prob>chi2 = 0

R-squared = 0.4678

Root MSE = 7.0632

(Std. Err. Adjusted for 2553 clusters in unqid)

RIP	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
Tax	0.56	0.09	6.11	0.00	0.38	0.74
Age	-0.03	0.01	-3.65	0.00	-0.05	-0.02
Female	-1.15	0.92	-1.25	0.21	-2.96	0.66
Years of education						
1-8 years	-0.16	0.41	-0.38	0.70	-0.95	0.64
9 years or more	-1.96	0.54	-3.65	0.00	-3.02	-0.91
Occupation						
Self-employed in non-farm agriculture	-1.55	0.86	-1.81	0.07	-3.23	0.13
Self-employed in non-agricultural activity	-1.55	0.40	-3.90	0.00	-2.32	-0.77
Farm wage laborer	2.11	0.53	3.96	0.00	1.07	3.16
Non-farm agricultural wage laborer	-0.79	0.70	-1.13	0.26	-2.16	0.58
Non-agricultural wage laborer	0.74	0.48	1.56	0.12	-0.19	1.68
Professional	-1.33	1.14	-1.17	0.24	-3.57	0.90
Managerial, administrative or clerking	-2.54	0.76	-3.36	0.00	-4.03	-1.06
Student	2.37	1.56	1.52	0.13	-0.68	5.42
Unemployed	0.43	0.73	0.59	0.56	-1.00	1.86
Housewife/Housekeeper/Household manager	0.96	1.06	0.91	0.37	-1.12	3.04
Others	-0.08	0.43	-0.17	0.86	-0.93	0.78
Socio-economic status						
Moderate	0.03	0.39	0.07	0.95	-0.73	0.78
High	-2.09	0.38	-5.54	0.00	-2.83	-1.35

RIP	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	RIP
Rural area of residence	2.76	0.37	7.50	0.00	2.04	3.48
Cigarette brands						
Medium	-3.25	1.75	-1.86	0.06	-6.69	0.18
High	-9.41	4.24	-2.22	0.03	-17.72	-1.10
Premium	-24.50	7.94	-3.08	0.00	-40.08	-8.93
Trend						
Wave 2	-1.14	0.35	-3.24	0.00	-1.83	-0.45
Wave 3	-3.39	0.84	-4.06	0.00	-5.03	-1.76
Wave 4	-8.90	1.29	-6.89	0.00	-11.43	-6.37
Constant	7.97	0.77	10.30	0.00	6.45	9.48

Tests of endogeneity

Ho: variables are exogenous

Robust regression $F(1,2552) = 2.17583$ ($p = 0.1403$)

(Adjusted for 2553 clusters in uniqid)

First-stage regression summary statistics

Variable	R-sq.	Adjusted R-sq.	Partial R-sq.	Robust F(74,2552)	Prob>F
Tax	0.9037	0.9021	0.0672	3.88944	0

(F statistic adjusted for 2553 clusters in uniqid)

Table A2: Appendix to Instrumental Variable (IV) estimation in Table 7.**First-stage regression**

Number of obs = 5882

N. of clusters = 2553

F(107, 5774) = 1061.76

Prob>F = 0

R-squared = 0.9261

Adj R-squared = 0.9261

Root MSE = 5.9536

Tax	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
Age	-0.03	0.01	-3.70	0.00	-0.05	-0.01
Female	-1.30	0.91	-1.43	0.15	-3.07	0.48
Years of education						
1-8 years	0.76	0.30	2.56	0.01	0.18	1.34
9 years or more	1.18	0.38	3.08	0.00	0.43	1.93
Occupation						
Self-employed in non-farm agriculture	1.61	1.04	1.55	0.12	-0.42	3.65
Self-employed in non-agricultural activity	0.46	0.39	1.20	0.23	-0.30	1.22
Farm wage laborer	-0.49	0.45	-1.09	0.28	-1.37	0.39
Non-farm agricultural wage laborer	1.33	0.58	2.28	0.02	0.19	2.47
Non-agricultural wage laborer	-0.32	0.43	-0.75	0.45	-1.16	0.52
Professional	1.39	1.16	1.20	0.23	-0.88	3.66
Managerial, administrative or clerking	1.21	0.59	2.05	0.04	0.06	2.37
Student	1.51	0.73	2.06	0.04	0.07	2.94
Unemployed	0.65	0.51	1.27	0.20	-0.35	1.65
Housewife/Housekeeper/Household manager	1.57	1.24	1.27	0.21	-0.86	3.99
Others	0.69	0.38	1.82	0.07	-0.05	1.43
Socio-economic status						
Moderate	-0.08	0.29	-0.29	0.77	-0.65	0.48
High	0.67	0.30	2.26	0.02	0.09	1.25

Tax	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
Rural area of residence	-1.92	1.56	-1.23	0.22	-4.98	1.15
Cigarette brands						
Medium	12.42	0.37	34.03	0.00	11.71	13.14
High	37.61	0.55	68.70	0.00	36.53	38.68
Premium	73.70	1.36	54.36	0.00	71.04	76.36
Interactions of brands and trend						
Low-price brands						
Wave 2	-1.56	0.46	-3.38	0.00	-2.47	-0.66
Wave 3	1.54	0.33	4.66	0.00	0.89	2.19
Wave 4	7.00	0.43	16.33	0.00	6.16	7.84
Medium-price brands						
Wave 2	2.01	0.55	3.69	0.00	0.94	3.08
Wave 3	9.26	0.43	21.51	0.00	8.42	10.10
Wave 4	3.28	0.73	4.47	0.00	1.84	4.72
High-price brands						
Wave 2	0.85	0.71	1.21	0.23	-0.53	2.24
Wave 3	6.54	0.73	8.94	0.00	5.11	7.97
Wave 4	18.83	0.76	24.66	0.00	17.33	20.33
Premium brands						
Wave 2	-2.67	1.57	-1.70	0.09	-5.74	0.40
Wave 3	15.46	2.56	6.04	0.00	10.45	20.48
Wave 4	30.36	1.48	20.47	0.00	27.45	33.27
Village codes						
2	-3.68	1.14	-3.24	0.00	-5.91	-1.46
3	-1.63	1.01	-1.60	0.11	-3.61	0.36
4	-1.04	1.01	-1.03	0.30	-3.02	0.94
5	-4.63	1.91	-2.42	0.02	-8.37	-0.88
6	1.23	1.37	0.90	0.37	-1.45	3.91
7	-0.57	1.39	-0.41	0.68	-3.29	2.15
8	-2.05	1.03	-2.00	0.05	-4.07	-0.04
11	-5.36	1.21	-4.42	0.00	-7.74	-2.98
12	-3.17	1.11	-2.85	0.00	-5.36	-0.99
13	-2.27	0.91	-2.49	0.01	-4.06	-0.49
14	-1.94	0.89	-2.18	0.03	-3.69	-0.20
15	-3.65	0.92	-3.96	0.00	-5.46	-1.85

Tax	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
16	-1.63	1.31	-1.24	0.22	-4.19	0.94
17	-3.24	0.96	-3.37	0.00	-5.12	-1.35
18	-3.67	1.14	-3.22	0.00	-5.91	-1.44
19	-6.21	0.93	-6.69	0.00	-8.03	-4.39
20	-5.09	0.88	-5.81	0.00	-6.81	-3.37
21	-2.80	1.12	-2.51	0.01	-4.99	-0.61
22	-2.29	0.86	-2.65	0.01	-3.99	-0.60
23	-1.08	1.40	-0.78	0.44	-3.82	1.65
24	-3.10	1.08	-2.86	0.00	-5.22	-0.97
25	-2.80	1.95	-1.44	0.15	-6.61	1.01
26	-1.65	2.03	-0.81	0.42	-5.63	2.33
27	-1.18	2.79	-0.42	0.67	-6.65	4.30
28	-0.75	1.97	-0.38	0.70	-4.63	3.12
29	-2.33	1.85	-1.26	0.21	-5.96	1.30
30	-1.49	1.85	-0.81	0.42	-5.11	2.13
31	-2.92	1.82	-1.61	0.11	-6.49	0.64
32	2.20	2.43	0.91	0.36	-2.55	6.96
33	-1.74	2.14	-0.82	0.42	-5.93	2.45
34	-2.07	1.86	-1.12	0.26	-5.71	1.57
35	-2.51	1.10	-2.29	0.02	-4.67	-0.36
36	-0.34	0.94	-0.37	0.71	-2.18	1.50
37	1.42	1.35	1.05	0.29	-1.22	4.06
38	2.73	3.68	0.74	0.46	-4.48	9.94
39	-1.75	0.96	-1.83	0.07	-3.62	0.13
40	-1.76	1.00	-1.76	0.08	-3.71	0.20
41	-1.66	1.88	-0.88	0.38	-5.35	2.03
42	2.28	1.04	2.18	0.03	0.23	4.32
43	-1.30	1.99	-0.65	0.52	-5.20	2.61
44	-3.72	1.78	-2.09	0.04	-7.21	-0.23
47	-1.52	1.52	-1.00	0.32	-4.51	1.46
48	-1.87	1.29	-1.45	0.15	-4.39	0.66
49	-1.81	1.61	-1.13	0.26	-4.97	1.34
50	-1.04	1.14	-0.91	0.36	-3.27	1.19
51	-2.99	1.89	-1.58	0.11	-6.68	0.71
52	-0.55	1.11	-0.50	0.62	-2.72	1.62
53	-3.58	1.94	-1.84	0.07	-7.39	0.23
54	-2.50	1.02	-2.45	0.01	-4.50	-0.50
56	-4.05	1.13	-3.60	0.00	-6.26	-1.85

Tax	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
57	-0.26	1.08	-0.24	0.81	-2.39	1.87
58	-2.26	1.34	-1.68	0.09	-4.89	0.37
59	-3.22	1.85	-1.74	0.08	-6.85	0.41
60	-2.65	1.15	-2.31	0.02	-4.90	-0.41
61	-3.96	1.89	-2.10	0.04	-7.66	-0.26
62	-2.75	0.91	-3.03	0.00	-4.53	-0.97
63	-1.77	1.80	-0.98	0.33	-5.31	1.77
64	-2.68	0.98	-2.74	0.01	-4.59	-0.76
65	-1.97	1.89	-1.04	0.30	-5.67	1.74
66	-0.26	1.09	-0.24	0.81	-2.41	1.88
67	-0.47	1.70	-0.27	0.78	-3.81	2.87
68	-3.17	1.98	-1.60	0.11	-7.05	0.71
69	-4.37	1.89	-2.31	0.02	-8.06	-0.67
70	-1.61	1.10	-1.46	0.14	-3.76	0.55
71	-4.04	1.88	-2.15	0.03	-7.72	-0.36
72	-0.43	1.56	-0.28	0.78	-3.48	2.62
73	-4.46	1.84	-2.42	0.02	-8.08	-0.85
74	-3.22	0.95	-3.41	0.00	-5.08	-1.37
75	-4.72	1.86	-2.54	0.01	-8.36	-1.08
76	-1.29	0.97	-1.32	0.19	-3.19	0.62
77	-3.04	1.81	-1.67	0.09	-6.59	0.52
78	-3.81	0.96	-3.95	0.00	-5.70	-1.92
79	-2.11	0.99	-2.14	0.03	-4.05	-0.18
80	-1.82	0.90	-2.02	0.04	-3.59	-0.05
Constant	11.18	1.89	5.91	0.00	7.47	14.90

Instrumental variables (2SLS) regression

Number of obs = 5882

Wald chi2(34) = 2674.38

Prob>chi2 = 0

R-squared = 0.5099

Root MSE = 6.778

(Std. Err. Adjusted for 2553 clusters in unqid)

RIP	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
Tax	0.69	0.10	6.77	0.00	0.49	0.90
Age	-0.03	0.01	-3.16	0.00	-0.05	-0.01
Female	-1.03	0.89	-1.16	0.25	-2.79	0.72
Years of education						
1-8 years	-0.30	0.40	-0.73	0.47	-1.09	0.50
9 years or more	-2.17	0.52	-4.19	0.00	-3.18	-1.15
Occupation						
Self-employed in non-farm agriculture	-1.34	0.67	-2.00	0.05	-2.65	-0.03
Self-employed in non-agricultural activity	-1.39	0.38	-3.63	0.00	-2.14	-0.64
Farm wage laborer	2.28	0.51	4.47	0.00	1.28	3.28
Non-farm agricultural wage laborer	-1.18	0.66	-1.79	0.07	-2.47	0.11
Non-agricultural wage laborer	0.74	0.46	1.61	0.11	-0.16	1.63
Professional	-2.31	1.37	-1.68	0.09	-5.00	0.38
Managerial, administrative or clerking	-2.58	0.77	-3.34	0.00	-4.09	-1.07
Student	1.39	1.59	0.87	0.38	-1.73	4.51
Unemployed	0.23	0.66	0.35	0.72	-1.07	1.54
Housewife/Housekeeper/Household manager	0.27	1.14	0.23	0.82	-1.97	2.51
Others	-0.13	0.43	-0.30	0.76	-0.97	0.71
Socio-economic status						
Moderate	0.07	0.37	0.18	0.86	-0.67	0.80
High	-2.03	0.35	-5.75	0.00	-2.72	-1.34

RIP	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
Rural area of residence	2.89	0.35	8.28	0.00	2.20	3.57
Cigarette brands						
Medium	-0.62	1.48	-0.42	0.67	-3.52	2.27
High	-6.05	3.95	-1.53	0.13	-13.80	1.69
Premium	-24.50	7.83	-3.13	0.00	-39.84	-9.16
Interactions of brands and trend						
Low-price brands						
Wave 2	0.93	0.57	1.61	0.11	-0.20	2.05
Wave 3	0.63	0.43	1.44	0.15	-0.22	1.48
Wave 4	-2.62	0.85	-3.09	0.00	-4.28	-0.96
Medium-price brands						
Wave 2	-1.92	0.67	-2.87	0.00	-3.24	-0.61
Wave 3	-5.13	1.16	-4.42	0.00	-7.41	-2.86
Wave 4	-6.36	0.65	-9.74	0.00	-7.64	-5.08
High-price brands						
Wave 2	-5.28	1.27	-4.17	0.00	-7.76	-2.80
Wave 3	-9.02	1.49	-6.06	0.00	-11.95	-6.10
Wave 4	-18.50	2.34	-7.91	0.00	-23.08	-13.92
Premium brands						
Wave 2	-1.70	2.57	-0.66	0.51	-6.74	3.33
Wave 3	-7.94	3.25	-2.44	0.02	-14.31	-1.56
Wave 4	-27.60	3.89	-7.09	0.00	-35.23	-19.97
Constant	2.14	1.14	1.87	0.06	-0.10	4.38

Tests of endogeneity

Ho: variables are exogenous

Robust regression $F(1,2552) = 2.03608$ ($p = 0.1537$)

(Adjusted for 2553 clusters in unqid)

First-stage regression summary statistics

Variable	R-sq.	Adjusted R-sq.	Partial R-sq.	Robust F(74,2552)	Prob>F
Tax	0.9275	0.9261	0.0732	3.63683	0

(F statistic adjusted for 2553 clusters in unqid)