Appendix Tables

The following appendix tables present county demographic characteristics for counties included and excluded from the analysis sample and results from robustness checks mentioned in the text.

Table A1.a: County Demographics by eWIC Rollout Phase and by Inclusion in the sample of Transaction Data

	Pilots I-III			Phase I			Phase II		
	Full	In[a]	Out[a]	Full	In[a]	Out[a]	Full	In[a]	Out[a]
Population	83,891	120,600	28,829	32,599	40,498	19,436	59,593	75,829	38,718
- Percent white	91%	90%	96%	95%	94%	95%	94%	92%	97%
- Percent black	4%	5%	1%	2%	2%	3%	3%	4%	1%
Households	19,062	27,105	6,998	6,584	8,079	4,093	13,717	17,030	9,458
- Percent with welfare income	26%	26%	23%	38%	38%	36%	31%	34%	24%
Families	18,949	26,947	6,953	6,510	7,976	4,067	13,590	16,867	9,377
- Percent with welfare income	25%	26%	23%	37%	38%	36%	31%	33%	24%
- Percent married couples	72%	71%	80%	66%	66%	69%	70%	67%	76%
- With welfare income	11%	11%	13%	16%	16%	17%	13%	14%	11%
- Percent single male head	6%	6%	7%	12%	12%	10%	8%	8%	6%
- With welfare income	2%	2%	3%	7%	8%	4%	3%	4%	2%
- Percent single female head	21%	23%	13%	22%	22%	21%	23%	25%	18%
- With welfare income	12%	13%	7%	14%	14%	15%	14%	15%	11%
Median household income ($2015)	$51,434	$52,944	$49,169	$39,237	$38,838	$39,902	$45,048	$45,450	$44,530

- Households with SNAP	$17,477	$17,396	$17,598	$15,763	$14,838	$17,303	$17,046	$16,431	$17,836
- Households without SNAP	$58,318	$60,667	$54,795	$46,943	$47,281	$46,378	$52,038	$53,795	$49,778
N	**5**	**3**	**2**	**8**	**5**	**3**	**16**	**9**	**7**

a. "In" indicates counties in the sample and "Out" represents counties out of the sample. The transaction data for this study are from one grocery chain in OH that has stores in 56 of the 88 counties. Thus some counties are not represented in the data.

Table A1.b: County Demographics by WIC eWIC Rollout Phase and by Inclusion in the sample of Transaction Data

	Phase III			Phase IV		
	Full	In[a]	Out[a]	Full	In[a]	Out[a]
Population	143,723	164,055	26,812	189,429	126,020	252,838
- Percent white	80%	80%	97%	81%	82%	80%
- Percent black	13%	13%	1%	14%	13%	14%
Households	34,120	38,947	6,361	42,527	29,419	55,635
- Percent with welfare income	29%	29%	30%	30%	29%	31%
Families	33,827	38,622	6,255	42,153	29,150	55,156
- Percent with welfare income	29%	29%	31%	30%	29%	31%
- Percent married couples	64%	64%	69%	63%	64%	63%
- With welfare income	10%	10%	15%	9%	9%	9%
- Percent single male head	8%	8%	10%	7%	8%	7%
- With welfare income	3%	3%	3%	3%	3%	3%
- Percent single female head	28%	28%	21%	29%	28%	30%
- With welfare income	16%	16%	13%	18%	17%	18%
Median household income ($2015)	51,131	52,581	42,789	49,716	48,498	50,935
- Households with SNAP	18,479	18,392	18,979	18,428	18,795	18,060
- Households without SNAP	56,834	58,330	48,233	55,372	54,025	56,718
N	**27**	**23**	**4**	**32**	**16**	**16**

a. "In" indicates counties in the sample and "Out" represents counties out of the sample. The transaction data for this study are from one grocery chain in OH that has stores in 56 of the 88 counties. Thus some counties are not represented in the data.

Source: ACS DEMOGRAPHIC AND HOUSING ESTIMATES, 2011-2015. American Community Survey 5-Year Estimates.https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?fpt=table

Table A2: Non-WIC Expenditures and WIC Redemptions Before/After eWIC Implementation and by Redemption Method

| | Pre-eWIC | | eWIC | | | |
	Non-WIC	WIC	Non-WIC	WIC	Voucher	EBT
All Counties	$410.57	$59.89	$392.88	$53.75	$38.21	$15.53
	(348.723)	(64.571)	(319.137)	(62.779)	(53.576)	(44.486)
July 2014	$404.36	$52.30	$404.22	$66.24	$29.98	$36.25
	(313.645)	(62.746)	(295.155)	(67.348)	(51.551)	(61.198)
August 2014	$348.54	$55.53	$368.85	$68.70	$33.84	$34.84
	(248.212)	(65.914)	(241.565)	(67.121)	(55.135)	(59.661)
October 2014	$362.26	$53.66	$365.05	$58.15	$23.19	$34.96
	(243.020)	(60.866)	(227.931)	(64.854)	(40.598)	(63.163)
January 2015	$369.16	$58.56	$397.71	$52.15	$23.88	$28.27
	(300.679)	(63.423)	(322.408)	(61.234)	(42.659)	(55.358)
March 2015[b]	$395.78	$58.24	$389.97	$52.09	$36.08	$15.98
	(467.859)	(65.130)	(364.876)	(69.663)	(53.026)	(50.187)
May 2015[b]	$417.78	$60.72	$395.51	$49.22	$46.45	$2.77
	(338.715)	(64.593)	(320.161)	(57.616)	(55.789)	(17.766)

a. After counties transitioned to eWIC, households could still redeem their valid vouchers up to three months later.
b. Phases II and III have three-months and one-month with eWIC (after baseline), respectively.

Table A3: Percentage of Months in which no Purchases or Redemptions are Made

	All Food Expenditures			Pre-eWIC			eWIC		
	All Food Expenditures	Non-WIC	WIC	All Food Expenditures	Non-WIC	WIC	All Food Expenditures	Non-WIC	WIC
All Counties	0.5%	0.5%	0.6%	0.6%	0.6%	0.7%	18.0%	17.1%	21.4%
July 2014	1.7%	3.0%	0.1%	1.8%	3.1%	0.2%	21.2%	27.9%	13.3%
August 2014	1.4%	2.4%	0.3%	1.5%	2.5%	0.4%	17.6%	23.6%	10.4%
October 2014	1.0%	1.1%	0.8%	1.1%	1.1%	1.1%	18.7%	21.2%	15.6%
January 2015	0.6%	0.4%	0.8%	0.7%	0.4%	1.1%	16.8%	12.0%	22.6%
Mach 2015	0.5%	0.4%	0.9%	0.8%	0.7%	0.9%	17.9%	14.6%	24.5%
May 2015	0.4%	0.4%	0.6%	0.4%	0.4%	0.6%	18.0%	17.0%	23.9%

Table A4: Impact of eWIC on WIC Redemptions across the Event Period: Baseline is month before eWIC implementation; include counties that did not implement eWIC in sample period

	All WIC Redemptions	General Grocery	Produce	Infant Formula	Dairy	WIC Share
T-5	$0.06	-$0.57	-$0.19**	$1.26	-$0.45***	0.001
	(0.953)	(0.377)	(0.082)	(0.959)	(0.106)	(0.001)
T-4	$2.05***	-$0.47	-$0.31***	$2.94***	-$0.11	0.007***
	(0.709)	(0.376)	(0.073)	(0.685)	(0.114)	(0.002)
T-3	$0.68	$0.02	-$0.07	$1.05	-$0.32***	0.003
	(0.868)	(0.423)	(0.073)	(0.770)	(0.088)	(0.002)
T-2	$0.96	$0.15	-$0.14	$0.98*	-$0.03	0.003
	(0.692)	(0.228)	(0.105)	(0.490)	(0.065)	(0.002)
T-1	$0.56	$0.23	$0.09	$0.49	-$0.24***	0.000
	(0.819)	(0.349)	(0.086)	(0.722)	(0.089)	(0.002)
T+1	-$0.35	$0.32	$0.24***	-$0.76	-$0.14	-0.003
	(0.874)	(0.423)	(0.070)	(0.667)	(0.108)	(0.002)
T+2	$1.80	$0.21	-$0.13	$0.39	$1.33***	0.006**
	(1.369)	(0.617)	(0.107)	(1.101)	(0.102)	(0.003)
T+3	$7.11***	$1.84***	-$0.10	$1.79	$3.58***	0.011***
	(1.490)	(0.611)	(0.150)	(1.091)	(0.284)	(0.003)
T+4	$9.45***	$2.54***	-$0.21	$1.15	$5.97***	0.022***
	(1.447)	(0.837)	(0.217)	(1.620)	(0.444)	(0.003)
T+5	$12.28***	$2.79***	-$0.37***	$3.07**	$6.79***	0.030***
	(1.322)	(0.710)	(0.116)	(1.174)	(0.592)	(0.003)
Constant	$48.28***	$19.64***	$4.22***	$22.85***	$1.57***	0.139***
	(0.870)	(0.383)	(0.078)	(0.675)	(0.111)	(0.002)
N	120184	120184	120184	120184	120184	119561

Note: Results are from a fixed effects regression with month and household fixed effects and standard errors clustered at the county level (in parentheses). We include households in all counties. For the event horizon the month before eWIC implementation is used as the baseline month.
*$p<0.1$. **$p<0.05$. ***$p<0.01$.

Table A5: Impact of eWIC on non-WIC Expenditures across the Event Period: Baseline is month before eWIC implementation; include counties that did not implement eWIC in sample period

	All non-WIC Expenditures	General Grocery	Produce	Health/beauty Care
T-5	-$11.03**	-$0.91	-$1.98***	-$3.60***
	(4.395)	(2.690)	(0.425)	(0.806)
T-4	-$7.91	-$1.09	-$1.45***	-$1.90***
	(5.979)	(3.864)	(0.444)	(0.624)
T-3	-$7.11	-$1.67	-$1.28***	-$2.28***
	(5.191)	(3.493)	(0.431)	(0.710)
T-2	-7.20**	-$2.76	-$1.11***	-$1.46***
	(2.762)	(1.878)	(0.273)	(0.391)
T-1	-6.16**	-$3.51**	-$0.55**	-$1.29*
	(2.808)	(1.705)	(0.261)	(0.646)
T+1	$1.09	-$0.63	$0.29	-$0.35
	(3.778)	(2.135)	(0.320)	(0.618)
T+2	-$6.74	-$5.26	$0.33	$0.42
	(5.120)	(3.541)	(0.465)	(0.887)
T+3	-$0.58	-$1.55	$1.38*	$0.81
	(7.298)	(4.862)	(0.688)	(0.921)
T+4	-$9.63	-$6.28	$1.48***	$1.57*
	(6.310)	(3.953)	(0.498)	(0.806)
T+5	-$3.56	-$2.16	$2.30***	$1.78**
	(6.302)	(3.824)	(0.780)	(0.763)
Constant	$400.60***	$224.60***	$28.72***	$49.77***
	(4.017)	(2.288)	(0.306)	(0.631)
N	120184	120184	120184	120184

Note: Results are from a fixed effects regression with month and household fixed effects and standard errors clustered at the county level (in parentheses). We include households in all counties. For the event horizon the month before eWIC implementation is used as the baseline month.
*p<0.1. **p<0.05. ***p<0.01.

Table A6: Impact of eWIC on WIC Redemptions across the Event Period: Baseline is month before eWIC implementation; balanced panel (Includes households in pilot counties and those who implemented in January 2015)

	All WIC Redemptions	General Grocery	Produce	Infant Formula	Dairy	WIC Share
T-5	-$0.77	$0.43	$0.03	-$0.76	-$0.47	-0.0003
	(1.308)	(0.486)	(0.126)	(1.556)	(0.289)	(0.004)
T-4	-$1.62	$0.28	-$0.23	-$0.94	-$0.73*	-0.004*
	(1.367)	(0.623)	(0.173)	(1.555)	(0.323)	(0.002)
T-3	-$0.26	$0.90*	$0.05	-$0.85	-$0.36	-0.0048
	(1.963)	(0.450)	(0.203)	(1.706)	(0.357)	(0.004)
T-2	-$0.71	$0.50	-$0.16	-$0.59	-$0.47	-0.009*
	(1.992)	(0.488)	(0.194)	(1.429)	(0.338)	(0.004)
T-1	-$0.73	$0.96*	$0.12	-$1.16	-$0.66**	-0.008*
	(1.363)	(0.471)	(0.130)	(0.855)	(0.206)	(0.004)
T+1	-$1.18	$0.64	$0.33**	-$1.33	-$0.82***	-0.014***
	(0.933)	(1.069)	(0.112)	(0.780)	(0.161)	(0.003)
T+2	$1.24	$1.33	-$0.11	-$0.45	$0.46**	-0.0076*
	(1.461)	(1.065)	(0.193)	(1.480)	(0.181)	(0.004)
T+3	$5.34**	$2.22***	-$0.32	$0.29	$3.15***	-0.0025
	(2.077)	(0.546)	(0.283)	(1.813)	(0.512)	(0.004)
T+4	$9.79***	$4.42***	$0.05	-$0.55	$5.87***	0.0089*
	(2.763)	(0.851)	(0.201)	(2.083)	(0.468)	(0.004)
T+5	$11.42***	$3.54***	-$0.23	$1.45	$6.65***	0.022***
	(1.355)	(0.755)	(0.137)	(1.262)	(0.516)	(0.002)
Constant	$45.20***	$18.69***	$3.23***	$22.10***	$1.18**	0.132***
	(1.408)	(0.441)	(0.132)	(1.423)	(0.427)	(0.004)
N	15169	15169	15169	15169	15169	14995

Note: Results are from a fixed effects regression with month and household fixed effects and standard errors clustered at the county level (in parentheses). The sample of households is balanced across all event months. For the event horizon the month before eWIC implementation is used as the baseline month.
*p<0.1. **p<0.05. ***p<0.01.

Table A7: Impact of eWIC on Non-WIC Expenditures across the Event Period: Baseline is month before eWIC implementation; balanced Panel (Includes households in pilot counties and those who implemented in January 2015)

	All Non-WIC Expenditures	General Grocery	Produce	Health/Beauty Care
T-5	-$12.25	$0.33	-$1.76**	-$3.68*
	(6.742)	(3.809)	(0.623)	(1.758)
T-4	-$4.01	$0.92	-$0.29	$0.71
	(6.480)	(4.204)	(0.367)	(1.263)
T-3	$3.82	$4.85	-$0.01	$0.66
	(5.568)	(4.195)	(0.372)	(0.846)
T-2	-$0.70	$1.11	-$1.17*	$1.78**
	(4.519)	(3.047)	(0.507)	(0.613)
T-1	$2.79	$2.01	-$0.31	$1.75***
	(2.486)	(1.719)	(0.353)	(0.467)
T+1	$8.88	$2.73	$1.87***	$0.89
	(4.845)	(2.790)	(0.363)	(1.700)
T+2	$11.75*	$6.98**	$2.29***	$1.03
	(5.506)	(2.735)	(0.620)	(1.325)
T+3	$13.45**	$7.08**	$2.68***	$2.81
	(4.431)	(2.688)	(0.606)	(1.726)
T+4	$13.78*	$7.21	$3.14***	$4.74***
	(6.267)	(3.865)	(0.878)	(0.786)
T+5	$3.49	$3.29	$3.14***	$2.58
	(4.686)	(3.030)	(0.799)	(1.435)
Constant	$382.20***	$225.20***	$24.96***	$43.13***
	(7.281)	(4.312)	(0.590)	(1.549)
N	15169	15169	15169	15169

Note: Results are from a fixed effects regression with month and household fixed effects and standard errors clustered at the county level (in parentheses). The sample of households is balanced across all event months. For the event horizon the month before eWIC implementation is used as the baseline month.
*p<0.1. **p<0.05. ***p<0.01.

Table A8: Impact of eWIC on WIC Redemptions across the Event Period: Baseline is month before eWIC implementation; only include counties that *were not pilots* (implementation during 2015)

	All WIC redemptions	General grocery	Produce	Infant formula	Dairy	WIC share
T-5	$9.57***	$2.69***	$0.54**	$6.48***	-$0.14	0.019***
	(0.740)	(0.856)	(0.258)	(1.290)	(0.127)	(0.005)
T-4	$5.95***	$2.69***	-$0.03	$3.28***	$0.02	0.027***
	(0.665)	(0.371)	(0.085)	(0.831)	(0.061)	(0.002)
T-3	$8.17***	$1.44	$0.55	$6.43***	-$0.25*	0.01
	(1.408)	(1.314)	(0.362)	(1.274)	(0.131)	(0.009)
T-2	$1.97*	$1.73***	-$0.08	$0.27	$0.06	0.008***
	(1.071)	(0.331)	(0.120)	(1.055)	(0.059)	(0.002)
T-1	$5.99***	-$0.34	$0.57	$5.99***	-$0.23	-0.001
	(1.620)	(1.534)	(0.420)	(1.754)	(0.215)	(0.011)
T+1	$1.62	-$2.80	$0.46	$4.42	-$0.46**	-0.015
	(2.364)	(1.681)	(0.465)	(2.813)	(0.220)	(0.012)
T+2	-$1.15	-$2.10***	-$0.32**	$0.01	$1.26***	-0.0039
	(1.810)	(0.697)	(0.154)	(1.461)	(0.120)	(0.003)
T+3	$7.10**	-$3.21	$0.01	$7.12*	$3.17***	-.01
	(3.229)	(2.048)	(0.597)	(3.667)	(0.397)	(0.014)
T+4	$4.04	-$2.73**	-$0.83***	$2.59	$5.02***	0.0053
	(2.800)	(1.108)	(0.221)	(3.350)	(0.707)	(0.004)
T+5	$11.57***	-$3.88	-$0.47	$9.93**	$5.99***	-0.002
	(4.143)	(3.160)	(0.567)	(4.538)	(0.798)	(0.013)
Constant	$54.44***	$20.98***	$4.72***	$27.30***	$1.43***	0.14***
	(0.347)	(0.182)	(0.059)	(0.283)	(0.027)	(0.001)
N	82007	82007	82007	82007	82007	81653

Note: All models control for month and household fixed effects. Standard errors (in parentheses) clustered at the county level. The month before eWIC implementation is the baseline month (T). *p<0.1; **p<0.05: ***p<0.01.

Table A9: Impact of eWIC on non-WIC Expenditures across the Event Period: Baseline is month before eWIC implementation; only include counties that *were not pilots* (implementation during 2015)

	All non-WIC expenditures	General grocery	Produce	Health/beauty care[a]
T-5	-$8.50	-$2.53	$1.41	-$4.49***
	(6.845)	(4.608)	(0.915)	(1.169)
T-4	-$32.06***	-$17.14***	-$2.17***	-3.32***
	(5.761)	(3.840)	(0.396)	(0.750)
T-3	-$3.43	-$3.16	$2.35*	-$2.78*
	(10.370)	(7.658)	(1.283)	(1.371)
T-2	-$18.12***	-$10.32***	-$1.77***	-$1.68**
	(4.508)	(3.087)	(0.399)	(0.722)
T-1	$12.60	$5.16	$3.48***	-$0.26
	(11.730)	(7.949)	(1.071)	(1.484)
T+1	$24.21	$10.66	$4.76***	$0.72
	(19.230)	(12.320)	(1.551)	(1.947)
T+2	-$0.72	-$2.13	$0.32	$1.67
	(7.928)	(5.177)	(0.619)	(1.059)
T+3	$31.29	$15.39	$6.03**	$2.58
	(29.480)	(19.220)	(2.260)	(2.481)
T+4	-$1.96	-$0.93	$1.91*	$1.18*
	(8.054)	(4.663)	(0.985)	(0.677)
T+5	$51.87**	$28.48*	$8.87***	$4.83
	(24.790)	(15.650)	(2.404)	(2.911)
Constant	$411.70***	$231.30***	$27.56***	$54.31***
	(1.401)	(0.977)	(0.156)	(0.247)
N	82007	82007	82007	82007

Note: All models control for month and household fixed effects. Standard errors (in parentheses) clustered at the county level. The month before eWIC implementation is the baseline month (T).
*p<0.1; **p<0.05: ***p<0.01.
a. This is the department that sells infant formula.

Table A10: Impact of eWIC on WIC Redemptions across the Event Period: Baseline is month before eWIC implementation; only households that redeem benefits for infant formula

	All WIC Redemptions	General Grocery	Produce	Infant Formula	Dairy	WIC Share
T-5	-$1.87	-$1.92***	-$0.33**	$1.07	-$0.69***	0.0006
	(1.611)	(0.466)	(0.123)	(1.526)	(0.179)	(0.002)
T-4	$0.60	-$2.13***	-$0.51***	$3.49**	-$0.25	0.00860**
	(1.593)	(0.614)	(0.157)	(1.435)	(0.202)	(0.003)
T-3	-$0.43	-$0.92**	-$0.15	$1.21	-$0.57***	0.0002
	(1.566)	(0.388)	(0.156)	(1.344)	(0.136)	(0.004)
T-2	-$1.27	-$0.85**	-$0.32*	$0.11	-$0.20*	-0.0042
	(1.213)	(0.417)	(0.160)	(0.974)	(0.106)	(0.003)
T-1	-$0.07	-$0.06	$0.03	$0.35	-$0.39**	-0.0012
	(1.389)	(0.466)	(0.124)	(1.067)	(0.187)	(0.004)
T+1	-$2.05	-$0.12	$0.18	-$1.65	-$0.47**	-0.00634*
	(1.583)	(0.534)	(0.119)	(1.181)	(0.189)	(0.003)
T+2	$2.82	$0.87	-$0.06	$0.27	$1.74***	0.00702*
	(1.938)	(0.731)	(0.185)	(1.602)	(0.171)	(0.004)
T+3	$8.75***	$2.26***	-$0.06	$1.97	$4.58***	0.0121**
	(2.223)	(0.789)	(0.211)	(1.727)	(0.375)	(0.005)
T+4	$14.67***	$5.02***	-$0.02	$1.49	$8.18***	0.0304***
	(2.536)	(0.875)	(0.264)	(2.531)	(0.657)	(0.004)
T+5	$17.54***	$4.63***	-$0.08	$3.82**	$9.18***	0.0376***
	(2.271)	(0.744)	(0.132)	(1.730)	(0.895)	(0.005)
Constant	$58.54***	$19.85***	$4.18***	$32.55***	$1.96***	0.148***
	(1.629)	(0.529)	(0.135)	(1.254)	(0.205)	(0.003)
N	64129	64129	64129	64129	64129	63763

Note: Results are from a fixed effects regression with month and household fixed effects and standard errors clustered at the county level (in parentheses). The sample includes only households that redeemed WIC benefits for infant formula at least once during the sample period. For the event horizon the month before eWIC implementation is used as the baseline month.
*p<0.1. **p<0.05. ***p<0.01.

Table A11: Impact of eWIC on Non-WIC Expenditures across the Event Period: Baseline is month before eWIC implementation; only households that redeem benefits for infant formula

	All Non-WIC Expenditures	General Grocery	Produce	Health/Beauty Care
T-5	-$19.00***	-$5.15	-$2.13***	-$5.64***
	(6.875)	(4.151)	(0.612)	(1.244)
T-4	-$24.32**	-$12.20*	-1.86**	-$2.19*
	(9.355)	(6.446)	(0.881)	(1.199)
T-3	-$22.00**	-$11.62*	-$1.91**	-$3.23***
	(8.689)	(6.293)	(0.910)	(0.988)
T-2	-$15.78**	-$8.55	-$1.78***	-$1.16
	(7.486)	(5.331)	(0.635)	(0.811)
T-1	-$8.64	-$5.53	-$0.85**	-$0.80
	(5.915)	(3.734)	(0.391)	(0.999)
T+1	-$6.09	-$6.43*	$0.01	-$0.05
	(5.825)	(3.401)	(0.518)	(0.933)
T+2	-$8.29	-$7.06	$0.06	$1.07
	(7.340)	(4.964)	(0.559)	(0.874)
T+3	-$1.69	-$3.07	$1.10	$2.10
	(11.400)	(7.444)	(0.886)	(1.427)
T+4	-$8.61	-$6.55	$1.28**	$3.17***
	(6.874)	(4.538)	(0.552)	(1.061)
T+5	-$7.87	-$4.85	$1.87*	$2.69**
	(8.837)	(5.577)	(1.088)	(1.313)
Constant	$419.10***	$235.90***	$28.98***	$54.74***
	(6.060)	(3.548)	(0.511)	(1.125)
N	64129	64129	64129	64129

Note: Results are from a fixed effects regression with month and household fixed effects and standard errors clustered at the county level (in parentheses). The sample includes only households that redeemed WIC benefits for infant formula at least once during the sample period. For the event horizon the month before eWIC implementation is used as the baseline month.
*p<0.1. **p<0.05. ***p<0.01.

Table A12: Impact of eWIC on WIC Redemptions across the Event Period: Baseline is month before eWIC implementation; only households that *do not* redeem benefits for infant formula

	All WIC Redemptions	General Grocery	Produce	Dairy	WIC Share
T-5	$0.89	$1.10*	-$0.11	-$0.09	0.0108***
	(0.694)	(0.606)	(0.170)	(0.130)	(0.003)
T-4	$0.57	$0.96	-$0.19	-$0.20*	0.00812***
	(0.652)	(0.598)	(0.122)	(0.102)	(0.003)
T-3	$1.18	$1.36*	$0.00	-$0.18	0.0100**
	(0.876)	(0.774)	(0.198)	(0.121)	(0.004)
T-2	$0.46	$0.78**	-$0.19	-$0.13	0.00583**
	(0.443)	(0.373)	(0.167)	(0.086)	(0.002)
T-1	$0.71	$0.65	$0.08	-$0.02	0.0022
	(0.793)	(0.690)	(0.200)	(0.115)	(0.003)
T+1	-$0.44	-$0.57	$0.03	$0.10	-0.0034
	(0.727)	(0.627)	(0.177)	(0.114)	(0.003)
T+2	-$1.22*	-$1.33**	-$0.34**	$0.45***	-0.00449*
	(0.660)	(0.623)	(0.162)	(0.159)	(0.002)
T+3	$0.86	-$0.04	-$0.42**	$1.32***	-0.0022
	(0.663)	(0.561)	(0.194)	(0.197)	(0.003)
T+4	-$1.35	-$2.41**	-$0.61**	$1.67***	-0.0060
	(1.085)	(0.920)	(0.233)	(0.188)	(0.006)
T+5	-$0.95	-1.802*	-$1.14***	$1.99***	-0.0030
	(1.210)	(1.006)	(0.206)	(0.348)	(0.006)
Constant	$27.96***	$22.22***	$4.64***	$1.10***	0.0928***
	(0.694)	(0.599)	(0.177)	(0.127)	(0.003)
N	26920	26920	26920	26920	26796

Note: Results are from a fixed effects regression with month and household fixed effects and standard errors clustered at the county level (in parentheses). The sample includes only households that never redeemed WIC benefits for infant formula. For the event horizon the month before eWIC implementation is used as the baseline month.
*p<0.1. **p<0.05. ***p<0.01.

Table A13: Impact of eWIC on Non-WIC Expenditures across the Event Period: Baseline is month before eWIC implementation; only households that *do not* redeem benefits for infant formula

	All Non-WIC Expenditures	General Grocery	Produce	Health/Beauty Care
T-5	-$1.00	$3.56	-$1.85***	$0.71
	(3.374)	(2.437)	(0.437)	(0.754)
T-4	$0.53	$4.28	-$0.54	-$0.04
	(4.404)	(2.771)	(0.403)	(0.878)
T-3	$1.37	$2.58	-$0.23	$0.27
	(5.107)	(3.441)	(0.466)	(0.635)
T-2	$0.11	$1.28	-$0.87**	-$0.27
	(4.498)	(3.321)	(0.344)	(0.953)
T-1	-$2.96	-$0.88	-$0.38	$1.06
	(6.078)	(3.815)	(0.559)	(0.693)
T+1	-$0.42	-$0.04	$0.60	-$0.25
	(3.883)	(2.231)	(0.365)	(0.811)
T+2	-$2.70	-$1.20	$0.73	-$0.52
	(3.511)	(3.349)	(0.458)	(1.110)
T+3	-$6.34	-$4.13	$1.71**	-$0.71
	(5.244)	(3.771)	(0.739)	(0.835)
T+4	-$10.96*	-$5.22	$1.89***	$1.55*
	(6.399)	(3.720)	(0.656)	(0.871)
T+5	-$1.69	-$1.28	$2.96***	$0.28
	(4.203)	(2.501)	(0.703)	(1.133)
Constant	$334.90***	$190.70***	$25.94***	$34.79***
	(3.565)	(2.375)	(0.399)	(0.814)
N	26920	26920	26920	26920

Note: Results are from a fixed effects regression with month and household fixed effects and standard errors clustered at the county level (in parentheses). The sample includes only households that never redeemed WIC benefits for infant formula. For the event horizon the month before eWIC implementation is used as the baseline month.
*p<0.1. **p<0.05. ***p<0.01.

Table A14: Impact of eWIC on WIC Redemptions across the Event Period: Baseline period includes month before and month during eWIC implementation; linear time trend is also included

	All WIC Redemptions	General Grocery	Produce	Infant Formula	Dairy	WIC Share
T-5	-$8.88	-$2.42	$0.40	-$4.91	-$1.95**	-0.0234*
	(6.343)	(2.818)	(0.568)	(4.865)	(0.735)	(0.014)
T-4	-$5.59	-$2.30	$0.13	-$2.01	-$1.40**	-.0132
	(5.318)	(2.408)	(0.486)	(4.014)	(0.571)	(0.012)
T-3	-$4.69	-$1.06	$0.30	-$2.62	-$1.30***	-.0132
	(4.016)	(1.879)	(0.380)	(2.919)	(0.448)	(0.010)
T-2	-$3.86	-$0.92	-$0.01	-$2.17	-$0.76**	-0.0120*
	(2.378)	(1.131)	(0.292)	(1.592)	(0.280)	(0.007)
T-1	-$1.36	-$0.13	$0.19	-$0.88	-$0.54**	-0.0056
	(1.726)	(0.856)	(0.181)	(1.333)	(0.222)	(0.005)
T+2	$4.76**	$0.72	-$0.42***	$2.58*	$1.88***	0.0144**
	(1.984)	(0.769)	(0.132)	(1.460)	(0.283)	(0.006)
T+3	$11.07***	2.319**	-$0.59**	$4.98***	$4.35***	0.024***
	(2.864)	(1.127)	(0.279)	(1.803)	(0.543)	(0.007)
T+4	$15.79***	$3.66**	-$0.75*	$5.79**	$7.10***	0.041***
	(3.921)	(1.725)	(0.430)	(2.521)	(0.479)	(0.010)
T+5	$19.55***	$3.89*	-$1.11**	$8.63**	$8.14***	0.052***
	(4.673)	(2.216)	(0.458)	(3.234)	(0.680)	(0.012)
Linear Trend	-$1.37	-$0.42	$0.13	-$0.78	-$0.29**	-0.0054**
	(1.148)	(0.519)	(0.105)	(0.819)	(0.137)	(0.003)
Constant	$72.68***	$24.95***	$2.38	$39.52***	$5.84***	0.212***
	(17.030)	(7.782)	(1.555)	(12.350)	(2.044)	(0.040)
N	91049	91049	91049	91049	91049	90559

Note: Results are from a fixed effects regression with month and household fixed effects and standard errors clustered at the county level (in parentheses). A linear time trend is included. For the event horizon the months both before and during eWIC implementation are the baseline period.
*p<0.1. **p<0.05. ***p<0.01.

Table A15: Impact of eWIC on Non-WIC Expenditures across the Event Period: Baseline period includes month before and month during eWIC implementation; linear time trend is also included

	All Non-WIC Expenditures	General Grocery	Produce	Health/Beauty Care
T-5	-$35.28	-$24.33*	-$1.02	-$4.54
	(23.310)	(13.550)	(2.261)	(4.641)
T-4	-$33.84	-$24.35*	-$0.62	-$2.27
	(20.340)	(12.470)	(1.893)	(3.765)
T-3	-27.59*	-$20.20**	-$0.76	-$2.59
	(14.900)	(9.613)	(1.460)	(2.777)
T-2	-19.23*	-$14.02**	-$1.08	-$1.19
	(10.830)	(6.905)	(0.970)	(1.969)
T-1	-$10.87	-$8.20*	-$0.47	-$0.38
	(6.889)	(4.211)	(0.546)	(1.445)
T+2	$2.14	$3.54	-$0.15	$0.89
	(5.589)	(3.333)	(0.589)	(1.315)
T+3	$9.78	$9.68**	$0.67	$1.66
	(8.073)	(4.779)	(0.951)	(1.595)
T+4	$8.23	$11.47	$0.63	$2.34
	(13.400)	(8.008)	(1.374)	(2.755)
T+5	$16.37	$18.40	$1.19	$2.78
	(20.020)	(11.450)	(2.017)	(3.110)
Linear Trend	-$2.17	-$2.86	$0.16	$0.16
	(4.120)	(2.376)	(0.410)	(0.772)
Constant	$456.30***	$285.00***	$25.11***	$51.24***
	(61.470)	(35.620)	(5.984)	(11.840)
N	91049	91049	91049	91049

Note: Results are from a fixed effects regression with month and household fixed effects and standard errors clustered at the county level (in parentheses). A linear trend is included. For the event horizon the months both before and during eWIC implementation are the baseline period. *p<0.1. **p<0.05. ***p<0.01.

Table A16: Effect of eWIC on WIC Redemptions: County fixed Effects, baseline is month before eWIC implementation

	All WIC Redemptions	General Grocery	Produce	Infant Formula	Dairy	WIC Share
T-5	-$0.83	-$0.98*	-$0.26*	$0.94	-$0.53***	0.002
	(1.472)	(0.540)	(0.136)	(1.229)	(0.175)	(0.004)
T-4	$0.85	-$1.14**	-$0.41***	$2.69**	-$0.27*	0.008**
	(1.428)	(0.518)	(0.134)	(1.217)	(0.149)	(0.003)
T-3	$0.14	-$0.19	-$0.10	$0.89	-$0.45***	0.003
	(1.344)	(0.506)	(0.136)	(1.112)	(0.156)	(0.003)
T-2	-$0.64	-$0.34	-$0.28***	$0.17	-$0.19*	-0.002
	(1.040)	(0.375)	(0.108)	(0.895)	(0.113)	(0.003)
T-1	$0.25	$0.16	$0.05	$0.29	-$0.26*	0.000
	(1.095)	(0.449)	(0.125)	(0.881)	(0.148)	(0.003)
T+1	-$1.61	-$0.29	$0.13	-$1.17	-$0.28*	-0.005*
	(1.142)	(0.449)	(0.122)	(0.905)	(0.166)	(0.003)
T+2	$1.54	$0.14	-$0.15	$0.24	$1.31***	0.003
	(1.249)	(0.441)	(0.120)	(1.050)	(0.166)	(0.003)
T+3	$6.24***	$1.45**	-$0.18	$1.47	$3.50***	0.009**
	(1.702)	(0.596)	(0.142)	(1.395)	(0.299)	(0.004)
T+4	$9.35***	$2.51***	-$0.22	$1.10	$5.96***	0.020***
	(2.069)	(0.707)	(0.153)	(1.661)	(0.430)	(0.005)
T+5	$11.50***	$2.44***	-$0.44**	$2.78	$6.72***	0.027***
	(2.264)	(0.755)	(0.170)	(1.863)	(0.477)	(0.006)
Constant	$42.70***	$22.12***	$4.19***	$14.24***	$2.15***	0.118***
	(3.047)	(1.287)	(0.267)	(2.495)	(0.436)	(0.008)
N	91049	91049	91049	91049	91049	90559

Note: Results are from a fixed effects regression with month and county fixed effects and standard errors clustered at the household level (in parentheses). For the event horizon the month before eWIC implementation is used as the baseline month.
*p<0.1. **p<0.05. ***p<0.01.

Table A17: Effect of eWIC on Non-WIC Food Expenditures: County fixed Effects, baseline is month before eWIC implementation:

	All Non-WIC Expenditures	General Grocery	Produce	Infant Formula
T-5	-$13.22**	-$2.35	-$2.05***	-$3.63***
	(5.513)	(3.597)	(0.526)	(0.976)
T-4	-$16.20**	-$6.76	-$1.44**	-$1.54*
	(6.921)	(4.659)	(0.672)	(0.930)
T-3	-$14.36**	-$6.99	-$1.38**	-$2.04**
	(6.522)	(4.389)	(0.667)	(0.890)
T-2	-$10.41**	-$5.23	-$1.49***	-$0.83
	(5.205)	(3.481)	(0.515)	(0.760)
T-1	-$6.46*	-$3.80	-$0.67*	-$0.19
	(3.878)	(2.446)	(0.405)	(0.761)
T+1	-$4.41	-4.398*	$0.21	-$0.18
	(4.065)	(2.662)	(0.443)	(0.760)
T+2	-$6.68	-$5.26	$0.26	$0.52
	(5.238)	(3.577)	(0.520)	(0.835)
T+3	-$3.45	-$3.51	$1.29*	$1.11
	(7.078)	(4.715)	(0.677)	(1.089)
T+4	-$9.42	-6.119*	$1.46**	$1.61
	(5.907)	(3.694)	(0.583)	(1.206)
T+5	-$5.68	-$3.59	$2.22***	$1.87
	(7.567)	(4.882)	(0.714)	(1.379)
Constant	$424.60***	$251.10***	$30.66***	$38.61***
	(23.080)	(14.630)	(1.691)	(3.094)
N	91049	91049	91049	91049

Note: Results are from a fixed effects regression with month and county fixed effects and standard errors clustered at the household level (in parentheses). For the event horizon the month before eWIC implementation is used as the baseline month.
*p<0.1. **p<0.05. ***p<0.01.

Table A18: Effect of eWIC on WIC Redemptions: County fixed Effects, baseline is month before eWIC implementation; Full Panel

	All WIC Redemptions	General Grocery	Produce	Infant Formula	Dairy	WIC Share
T-5	-$0.77	$0.43	$0.03	-$0.76	-$0.47	-0.04%
	(2.767)	(0.987)	(0.242)	(2.236)	(0.324)	(0.007)
T-4	-$1.62	$0.28	-$0.23	-$0.94	-0.729**	-0.42%
	(2.879)	(1.058)	(0.272)	(2.350)	(0.332)	(0.007)
T-3	-$0.26	$0.90	$0.05	-$0.85	-$0.36	-0.61%
	(2.806)	(1.048)	(0.260)	(2.322)	(0.338)	(0.007)
T-2	-$0.71	$0.50	-$0.16	-$0.59	-$0.47	-0.99%
	(2.672)	(1.013)	(0.246)	(2.226)	(0.360)	(0.007)
T-1	-$0.73	$0.96	$0.12	-$1.16	-0.656**	-0.00874*
	(2.127)	(0.805)	(0.210)	(1.758)	(0.294)	(0.005)
T+1	-$1.18	$0.64	$0.33	-$1.33	-0.818**	-0.0142**
	(2.430)	(0.956)	(0.248)	(1.960)	(0.356)	(0.006)
T+2	$1.24	$1.33	-$0.11	-$0.45	$0.46	-0.89%
	(2.543)	(1.006)	(0.251)	(2.039)	(0.475)	(0.007)
T+3	5.338*	2.221**	-$0.32	$0.29	3.149***	-0.30%
	(2.821)	(1.117)	(0.251)	(2.266)	(0.546)	(0.007)
T+4	9.791***	4.417***	$0.05	-$0.55	5.871***	0.89%
	(3.303)	(1.162)	(0.272)	(2.609)	(0.674)	(0.008)
T+5	11.42***	3.542***	-$0.23	$1.45	6.652***	0.0229***
	(2.789)	(0.965)	(0.231)	(2.306)	(0.466)	(0.007)
Constant	44.26***	21.25***	3.973***	16.98***	2.061***	0.122***
	(4.261)	(1.605)	(0.332)	(3.319)	(0.719)	(0.011)
N	15169	15169	15169	15169	15169	14995

Note: Results are from a fixed effects regression with month and county fixed effects and standard errors clustered at the household level (in parentheses). Only counties in Pilots I-III and Phase I are included to make the estimation sample balanced in the event months. For the event horizon the month before eWIC implementation is used as the baseline month.
*p<0.1. **p<0.05. ***p<0.01.

Table A19: Effect of eWIC on Non-WIC Expenditures: County fixed Effects, baseline is month before eWIC implementation; Full Panel

	All Non-WIC Expenditures	General Grocery	Produce	Health/Beauty Care
T-5	-$12.25	$0.33	-1.756**	-3.678**
	(8.064)	(5.028)	(0.870)	(1.573)
T-4	-$4.01	$0.92	-$0.29	$0.71
	(8.884)	(5.435)	(0.934)	(1.834)
T-3	$3.82	$4.85	-$0.01	$0.66
	(8.397)	(5.131)	(0.889)	(1.734)
T-2	-$0.70	$1.11	-$1.17	$1.78
	(7.921)	(4.809)	(0.837)	(1.605)
T-1	$2.79	$2.01	-$0.31	$1.75
	(6.307)	(3.785)	(0.668)	(1.345)
T+1	$8.88	$2.73	1.865**	$0.89
	(6.610)	(4.069)	(0.739)	(1.530)
T+2	$11.75	$6.98	2.289***	$1.03
	(7.775)	(4.788)	(0.783)	(1.676)
T+3	$13.45	$7.08	2.675***	$2.81
	(8.345)	(5.195)	(0.842)	(1.802)
T+4	$13.78	$7.21	3.142***	4.739**
	(8.651)	(5.323)	(0.869)	(1.890)
T+5	$3.49	$3.29	3.136***	$2.58
	(7.414)	(4.581)	(0.746)	(1.628)
Constant	428.5***	251.1***	31.07***	38.58***
	(24.110)	(15.190)	(1.889)	(3.406)
N	15169	15169	15169	15169

Note: Results are from a fixed effects regression with month and county fixed effects and standard errors clustered at the household level (in parentheses). Only counties in Pilots I-III and Phase I are included to make the estimation sample balanced in the event months. For the event horizon the month before eWIC implementation is used as the baseline month.
*p<0.1. **p<0.05. ***p<0.01.

Table A20: Effect of eWIC on WIC Redemptions: County fixed Effects, baseline is month before eWIC implementation; Pilots I-III omitted from sample

	All WIC Redemptions	General Grocery	Produce	Infant Formula	Dairy	WIC Share
T-5	$9.57***	$2.69***	$0.54**	$6.48***	-$0.14	0.0192***
	(2.333)	(0.929)	(0.248)	(1.952)	(0.182)	(0.006)
T-4	$5.95***	$2.69***	-$0.03	$3.28***	$0.02	0.0266***
	(1.294)	(0.513)	(0.125)	(1.084)	(0.103)	(0.003)
T-3	$8.17***	$1.44	$0.55*	$6.43***	-$0.25	0.0104
	(2.670)	(1.082)	(0.296)	(2.239)	(0.197)	(0.006)
T-2	$1.97*	$1.73***	-$0.08	$0.27	$0.06	0.009***
	(1.088)	(0.402)	(0.113)	(0.933)	(0.109)	(0.003)
T-1	$5.99**	-$0.34	$0.57*	$5.99**	-$0.23	-0.0009
	(2.854)	(1.192)	(0.335)	(2.403)	(0.237)	(0.007)
T+1	$1.62	-$2.80**	$0.46	$4.42	-$0.46	-0.0151*
	(3.273)	(1.366)	(0.386)	(2.717)	(0.303)	(0.008)
T+2	-$1.15	-$2.10***	-$0.32**	$0.01	$1.26***	-0.0040
	(1.526)	(0.532)	(0.150)	(1.269)	(0.195)	(0.004)
T+3	$7.10*	-$3.21**	$0.01	$7.12**	$3.17***	-0.0102
	(3.929)	(1.599)	(0.439)	(3.246)	(0.466)	(0.010)
T+4	$4.04	-$2.73***	-$0.83***	$2.59	$5.02***	0.0053
	(3.144)	(1.023)	(0.219)	(2.453)	(0.649)	(0.008)
T+5	$11.57**	-$3.88**	-$0.47	$9.93**	$5.99***	-0.0020
	(4.876)	(1.903)	(0.517)	(3.982)	(0.860)	(0.013)
Constant	$51.35***	$25.86***	$4.79***	$18.52***	$2.18***	0.137***
	(2.768)	(1.221)	(0.256)	(2.306)	(0.397)	(0.008)
N	82007	82007	82007	82007	82007	81653

Note: Results are from a fixed effects regression with month and county fixed effects and standard errors clustered at the household level (in parentheses). Pilots I-III are omitted from the estimation sample. For the event horizon the month before eWIC implementation is used as the baseline month.
*p<0.1. **p<0.05. ***p<0.01.

Table A21: Effect of eWIC on Non-WIC Expenditures: County fixed Effects, baseline is month before eWIC implementation; Pilots I-III omitted from sample

	All Non-WIC Expenditures	General Grocery	Produce	Health/Beauty Care
T-5	-$8.50	-$2.53	$1.41	-$4.49***
	(7.579)	(4.817)	(0.902)	(1.272)
T-4	-$32.06***	-$17.14***	-$2.17***	-$3.32***
	(5.331)	(3.530)	(0.545)	(0.741)
T-3	-$3.43	-$3.16	$2.35*	-$2.78*
	(10.410)	(6.884)	(1.208)	(1.508)
T-2	-$18.12***	-$10.32***	-$1.77***	-$1.68**
	(4.752)	(3.116)	(0.470)	(0.766)
T-1	$12.60	$5.16	$3.48***	-$0.26
	(9.789)	(6.330)	(1.167)	(1.649)
T+1	$24.21**	$10.66	$4.76***	$0.72
	(12.010)	(7.915)	(1.422)	(1.956)
T+2	-$0.72	-$2.13	$0.32	$1.67*
	(7.247)	(5.052)	(0.731)	(0.986)
T+3	$31.29*	$15.39	$6.03***	$2.58
	(17.970)	(12.000)	(1.924)	(2.391)
T+4	-$1.96	-$0.93	$1.91**	$1.18
	(8.635)	(5.303)	(0.964)	(1.576)
T+5	$51.87***	$28.48**	$8.87***	$4.83
	(18.530)	(11.930)	(2.060)	(3.007)
Constant	$427.90***	$251.80***	$29.15***	$42.78***
	(22.680)	(14.380)	(1.673)	(2.992)
N	82007	82007	82007	82007

Note: Results are from a fixed effects regression with month and county fixed effects and standard errors clustered at the household level (in parentheses). Pilots I-III are omitted from the estimation sample. For the event horizon the month before eWIC implementation is used as the baseline month.

Table A22: Effect of eWIC on WIC Redemptions: Household fixed Effects, baseline is
month before eWIC implementation; data separated into Voucher and EBT redemptions

	All WIC Redemptions	Voucher Redemptions	eWIC - Redemptions
T-5	-$0.83	2.132**	-$2.97***
	(1.021)	(0.920)	(0.489)
T-4	$0.85	2.364**	-$1.52***
	(1.048)	(1.089)	(0.410)
T-3	$0.14	2.220*	-2.09***
	(1.149)	(1.195)	(0.335)
T-2	-$0.64	$0.22	-$0.87**
	(0.897)	(0.918)	(0.415)
T-1	$0.25	$0.73	-$0.50
	(1.036)	(0.971)	(0.308)
T+1	-$1.61	-$2.70***	$1.08
	(1.092)	(0.856)	(0.668)
T+2	$1.54	-$13.34***	$14.86***
	(1.381)	(1.364)	(1.005)
T+3	$6.24***	-$26.48***	$32.69***
	(1.479)	(1.787)	(1.767)
T+4	$9.35***	-$41.04***	$50.38***
	(1.444)	(1.095)	(1.277)
T+5	$11.50***	-$43.83***	$55.32***
	(1.357)	(1.463)	(1.988)
Constant	$49.47***	$48.14***	1.344*
	(1.099)	(0.877)	(0.725)
N	91049	91049	91049

Note: Results are from a fixed effects regression with month and household fixed effects and standard errors clustered at the county level (in parentheses). WIC redemptions are divided into voucher redemptions and eWIC redemptions. For the event horizon the month before eWIC implementation is used as the baseline month.