Appendix A

*STATA Regression Results*

. \* Use sales data, then make long

. use statadata.dta, clear

. reshape long q, i(product label\_color) j(wk)

(note: j = 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15)

Data wide -> long

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Number of obs. 73 -> 1095

Number of variables 17 -> 4

j variable (15 values) -> wk

xij variables:

q1 q2 ... q15 -> q

-----------------------------------------------------------------------------

.

. \* Generate dummies to distinguish label colors, no labels, and treatment (week 12)

. gen red = (label\_color=="red")

. gen yellow = (label\_color=="yellow")

. gen green = (label\_color=="green")

. gen labeled = (label\_color !="none")

. gen treat = (wk>11)

. gen ln\_q = ln(q)

(280 missing values generated)

. drop if product==999

(15 observations deleted)

.

. \* Set fixed effect - sets unit as "product" by time period "wk"

. xtset product wk

panel variable: product (strongly balanced)

time variable: wk, 1 to 15

delta: 1 unit

.

. \* Overall effect of labels

. gen labeled\_treat = labeled\*treat

. xtreg q labeled treat labeled\_treat i.wk, fe i(product)

note: labeled omitted because of collinearity

note: 15.wk omitted because of collinearity

Fixed-effects (within) regression Number of obs = 1080

Group variable: product Number of groups = 72

R-sq: within = 0.0755 Obs per group: min = 15

between = 0.0025 avg = 15.0

overall = 0.0107 max = 15

F(15,993) = 5.41

corr(u\_i, Xb) = -0.0203 Prob > F = 0.0000

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q | Coef. Std. Err. t P>|t| [95% Conf. Interval]

-------------+----------------------------------------------------------------

labeled | (omitted)

treat | 11.76271 2.9531 3.98 0.000 5.967676 17.55774

labeled\_tr~t | -8.453464 2.232408 -3.79 0.000 -12.83424 -4.072686

|

wk |

2 | 1.915833 2.694176 0.71 0.477 -3.371099 7.202766

3 | 2.808195 2.694176 1.04 0.298 -2.478738 8.095127

4 | 2.094444 2.694176 0.78 0.437 -3.192488 7.381377

5 | 3.400278 2.694176 1.26 0.207 -1.886655 8.68721

6 | 8.231667 2.694176 3.06 0.002 2.944734 13.5186

7 | 5.154028 2.694176 1.91 0.056 -.1329045 10.44096

8 | 12.38708 2.694176 4.60 0.000 7.100151 17.67402

9 | 8.440694 2.694176 3.13 0.002 3.153762 13.72763

10 | -4.046111 2.694176 -1.50 0.133 -9.333043 1.240821

11 | 6.441667 2.694176 2.39 0.017 1.154734 11.7286

12 | 2.708195 2.694176 1.01 0.315 -2.578738 7.995127

13 | -3.766528 2.694176 -1.40 0.162 -9.05346 1.520405

14 | -3.1675 2.694176 -1.18 0.240 -8.454432 2.119432

15 | (omitted)

|

\_cons | 11.81139 1.90507 6.20 0.000 8.072963 15.54981

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sigma\_u | 34.21845

sigma\_e | 16.165056

rho | .81754854 (fraction of variance due to u\_i)

------------------------------------------------------------------------------

F test that all u\_i=0: F(71, 993) = 66.75 Prob > F = 0.0000

. xtreg ln\_q labeled treat labeled\_treat i.wk, fe i(product)

note: labeled omitted because of collinearity

note: 13.wk omitted because of collinearity

Fixed-effects (within) regression Number of obs = 800

Group variable: product Number of groups = 71

R-sq: within = 0.1367 Obs per group: min = 1

between = 0.0006 avg = 11.3

overall = 0.0234 max = 15

F(15,714) = 7.54

corr(u\_i, Xb) = -0.0293 Prob > F = 0.0000

------------------------------------------------------------------------------

ln\_q | Coef. Std. Err. t P>|t| [95% Conf. Interval]

-------------+----------------------------------------------------------------

labeled | (omitted)

treat | .1667313 .1390742 1.20 0.231 -.106312 .4397746

labeled\_tr~t | -.4175925 .1004976 -4.16 0.000 -.6148986 -.2202864

|

wk |

2 | -.0468036 .1241556 -0.38 0.706 -.2905573 .1969501

3 | -.0859811 .1236461 -0.70 0.487 -.3287346 .1567723

4 | -.0534156 .125707 -0.42 0.671 -.3002152 .193384

5 | .088084 .12565 0.70 0.484 -.1586036 .3347715

6 | .1362943 .1223334 1.11 0.266 -.1038818 .3764705

7 | .0564634 .1253218 0.45 0.652 -.1895798 .3025067

8 | .3014544 .1223224 2.46 0.014 .0612998 .5416091

9 | .2112326 .1231511 1.72 0.087 -.0305489 .4530141

10 | -.6421737 .1300784 -4.94 0.000 -.8975556 -.3867919

11 | .1363752 .1240945 1.10 0.272 -.1072585 .380009

12 | .3538731 .1203222 2.94 0.003 .1176456 .5901006

13 | (omitted)

14 | .1873514 .1221031 1.53 0.125 -.0523727 .4270755

15 | .3380774 .1220139 2.77 0.006 .0985285 .5776263

|

\_cons | 2.195864 .0904028 24.29 0.000 2.018377 2.373351

-------------+----------------------------------------------------------------

sigma\_u | 1.2475061

sigma\_e | .61763936

rho | .80313333 (fraction of variance due to u\_i)

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F test that all u\_i=0: F(70, 714) = 43.64 Prob > F = 0.0000

.

. \* Compare labels against the control

. gen red\_treat = red\*treat

. gen yellow\_treat = yellow\*treat

. gen green\_treat = green\*treat

. xtreg q red yellow green treat red\_treat yellow\_treat green\_treat i.wk, fe i(product)

note: red omitted because of collinearity

note: yellow omitted because of collinearity

note: green omitted because of collinearity

note: 15.wk omitted because of collinearity

Fixed-effects (within) regression Number of obs = 1080

Group variable: product Number of groups = 72

R-sq: within = 0.0808 Obs per group: min = 15

between = 0.0022 avg = 15.0

overall = 0.0111 max = 15

F(17,991) = 5.12

corr(u\_i, Xb) = -0.0239 Prob > F = 0.0000

------------------------------------------------------------------------------

q | Coef. Std. Err. t P>|t| [95% Conf. Interval]

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red | (omitted)

yellow | (omitted)

green | (omitted)

treat | 11.76271 2.947704 3.99 0.000 5.978251 17.54717

red\_treat | -12.16418 2.76054 -4.41 0.000 -17.58136 -6.747005

yellow\_treat | -3.315998 3.920362 -0.85 0.398 -11.00916 4.377167

green\_treat | -6.251275 3.004901 -2.08 0.038 -12.14797 -.3545754

|

wk |

2 | 1.915833 2.689253 0.71 0.476 -3.361451 7.193118

3 | 2.808195 2.689253 1.04 0.297 -2.46909 8.085479

4 | 2.094444 2.689253 0.78 0.436 -3.18284 7.371729

5 | 3.400278 2.689253 1.26 0.206 -1.877007 8.677562

6 | 8.231667 2.689253 3.06 0.002 2.954382 13.50895

7 | 5.154028 2.689253 1.92 0.056 -.1232567 10.43131

8 | 12.38708 2.689253 4.61 0.000 7.109799 17.66437

9 | 8.440694 2.689253 3.14 0.002 3.16341 13.71798

10 | -4.046111 2.689253 -1.50 0.133 -9.323395 1.231173

11 | 6.441667 2.689253 2.40 0.017 1.164382 11.71895

12 | 2.708195 2.689253 1.01 0.314 -2.56909 7.985479

13 | -3.766528 2.689253 -1.40 0.162 -9.043812 1.510757

14 | -3.1675 2.689253 -1.18 0.239 -8.444784 2.109784

15 | (omitted)

|

\_cons | 11.81139 1.901589 6.21 0.000 8.079785 15.54299

-------------+----------------------------------------------------------------

sigma\_u | 34.232637

sigma\_e | 16.135518

rho | .81821688 (fraction of variance due to u\_i)

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F test that all u\_i=0: F(71, 991) = 66.79 Prob > F = 0.0000

. xtreg ln\_q red yellow green treat red\_treat yellow\_treat green\_treat i.wk, fe i(product)

note: red omitted because of collinearity

note: yellow omitted because of collinearity

note: green omitted because of collinearity

note: 13.wk omitted because of collinearity

Fixed-effects (within) regression Number of obs = 800

Group variable: product Number of groups = 71

R-sq: within = 0.1378 Obs per group: min = 1

between = 0.0013 avg = 11.3

overall = 0.0236 max = 15

F(17,712) = 6.69

corr(u\_i, Xb) = -0.0295 Prob > F = 0.0000

------------------------------------------------------------------------------

ln\_q | Coef. Std. Err. t P>|t| [95% Conf. Interval]

-------------+----------------------------------------------------------------

red | (omitted)

yellow | (omitted)

green | (omitted)

treat | .1697663 .1392246 1.22 0.223 -.1035736 .4431062

red\_treat | -.4929513 .1317555 -3.74 0.000 -.7516271 -.2342756

yellow\_treat | -.3376116 .1627508 -2.07 0.038 -.6571403 -.0180828

green\_treat | -.3884858 .1298497 -2.99 0.003 -.6434199 -.1335517

|

wk |

2 | -.045718 .1242688 -0.37 0.713 -.2896952 .1982592

3 | -.0839989 .123766 -0.68 0.498 -.3269888 .158991

4 | -.0513298 .1258331 -0.41 0.683 -.2983781 .1957185

5 | .0890971 .1257618 0.71 0.479 -.1578113 .3360055

6 | .1379092 .1224506 1.13 0.260 -.1024983 .3783166

7 | .0584938 .1254439 0.47 0.641 -.1877904 .304778

8 | .3031032 .12244 2.48 0.014 .0627167 .5434898

9 | .2121489 .1232553 1.72 0.086 -.0298385 .4541363

10 | -.6402546 .130199 -4.92 0.000 -.8958745 -.3846346

11 | .138501 .1242167 1.11 0.265 -.1053739 .3823759

12 | .3548138 .1204229 2.95 0.003 .1183874 .5912403

13 | (omitted)

14 | .1822441 .1223265 1.49 0.137 -.0579196 .4224078

15 | .3360691 .1221304 2.75 0.006 .0962903 .5758479

|

\_cons | 2.194264 .0904931 24.25 0.000 2.016599 2.371929

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sigma\_u | 1.246558

sigma\_e | .61813125

rho | .80264069 (fraction of variance due to u\_i)

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F test that all u\_i=0: F(70, 712) = 43.57 Prob > F = 0.0000

. test yellow\_treat = green\_treat

( 1) yellow\_treat - green\_treat = 0

F( 1, 712) = 0.08

Prob > F = 0.7766