

# Minimum Wage Project: Means and Results

Chelsea Crain  
University of Iowa  
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# General Pass Through Geo

|                    | All                 | Cntrls              | Yelp<br>Change      | Eat24              | Eat24+GH           | All                 | Grubhub<br>Cntrls   | Eat24               |
|--------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| <i>Jul — Oct</i>   | 0.084<br>(0.040)    | 0.023<br>(0.067)    | 0.378<br>(0.178)    | 0.313<br>(0.212)   | -0.076<br>(0.216)  |                     |                     |                     |
| <i>Oct — Jan</i>   | 0.171***<br>(0.034) | 0.185**<br>(0.064)  | 0.668**<br>(0.198)  | 0.326**<br>(0.114) | -0.170<br>(0.171)  |                     |                     |                     |
| <i>Jan — Apr</i>   | 0.162***<br>(0.034) | 0.148*<br>(0.059)   | 0.556*<br>(0.202)   | 0.272<br>(0.183)   | 0.380<br>(0.188)   |                     |                     |                     |
| <i>Dec — Jan</i>   |                     |                     |                     |                    |                    | 0.260***<br>(0.010) | 0.271***<br>(0.007) | 0.201***<br>(0.027) |
| <i>Jan — Feb</i>   |                     |                     |                     |                    |                    | 0.245***<br>(0.042) | 0.293***<br>(0.028) | 0.130**<br>(0.040)  |
| <i>Feb — Mar</i>   |                     |                     |                     |                    |                    | 0.244***<br>(0.022) | 0.295***<br>(0.015) | 0.211***<br>(0.032) |
| <i>Mar — Apr</i>   |                     |                     |                     |                    |                    | 0.162***<br>(0.013) | 0.161***<br>(0.023) | -0.069<br>(0.044)   |
| Total Pass Through | 0.333***<br>(0.066) | 0.333***<br>(0.114) | 01.224**<br>(0.394) | 0.598**<br>(0.281) | 0.209**<br>(0.269) | 0.911**<br>(0.053)  | 01.019**<br>(0.069) | 0.473**<br>(0.12)   |
| N                  | 8805                | 5257                | 2099                | 2269               | 1092               | 3653                | 2760                | 730                 |
| NxT                | 35220               | 21028               | 8396                | 9076               | 4368               | 14612               | 11040               | 2920                |

\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

# General Pass Through Geo

|                    | Low Sales          | High Sales         | Low Emps          | High Emps          | Low Stars          | High Stars        |
|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|
| <i>Jul – Oct</i>   | -0.085<br>(0.079)  | -0.164<br>(0.137)  | 0.462<br>(0.315)  | -0.087<br>(0.152)  | -0.182<br>(0.104)  | -0.028<br>(0.098) |
| <i>Oct – Jan</i>   | 0.070<br>(0.066)   | -0.018<br>(0.089)  | 0.480*<br>(0.220) | -0.015<br>(0.100)  | 0.141<br>(0.092)   | 0.014<br>(0.065)  |
| <i>Jan – Apr</i>   | 0.121**<br>(0.040) | 0.330**<br>(0.101) | 0.503<br>(0.246)  | 0.323**<br>(0.109) | 0.208<br>(0.115)   | -0.033<br>(0.110) |
| Total Pass Through | 0.192<br>(0.105)   | 0.312<br>(0.187)   | 0.983*<br>(0.464) | 0.307<br>(0.207)   | 0.349**<br>(0.106) | -0.02<br>(0.169)  |
| N                  | 1333               | 1490               | 1485              | 1842               | 1344               | 2669              |
| NxT                | 5332               | 5960               | 5940              | 7368               | 5376               | 10676             |

\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

# Pass Through: Rest Chars Yelp Geo

|                  | (1)                 | (2)                 | (3)               | (4)                | (5)               | (6)                 |
|------------------|---------------------|---------------------|-------------------|--------------------|-------------------|---------------------|
|                  | Low Sales           | High Sales          | Low Emps          | High Emps          | Low Stars         | High Stars          |
| <i>Jul – Oct</i> | -0.0849<br>(0.0790) | -0.164<br>(0.137)   | 0.462<br>(0.315)  | -0.0870<br>(0.152) | -0.182<br>(0.104) | -0.0284<br>(0.0978) |
| <i>Oct – Jan</i> | 0.0701<br>(0.0663)  | -0.0180<br>(0.0888) | 0.480*<br>(0.220) | -0.0153<br>(0.100) | 0.141<br>(0.0924) | 0.0135<br>(0.0648)  |
| <i>Jan – Apr</i> | 0.121**<br>(0.0397) | 0.330**<br>(0.101)  | 0.503<br>(0.246)  | 0.323**<br>(0.109) | 0.208<br>(0.115)  | -0.0335<br>(0.110)  |
| Observations     | 5332                | 5960                | 5940              | 7368               | 5376              | 10676               |

Standard errors in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$

# General Pass Through Yelp Geo

|                  | (1)                 | (2)                  | (3)                | (4)                | (5)               |
|------------------|---------------------|----------------------|--------------------|--------------------|-------------------|
|                  | (mean) ch_Inp       | (mean) ch_Inp        | (mean) ch_Inp      | (mean) ch_Inp      | (mean) ch_Inp     |
| <i>Apr – Jul</i> | 0.0461<br>(0.0294)  | 0.0832**<br>(0.0215) | 0.310**<br>(0.114) | 0.0120<br>(0.143)  | 0.111<br>(0.339)  |
| <i>Jul – Oct</i> | 0.115<br>(0.0698)   | 0.0764<br>(0.0726)   | 0.639**<br>(0.192) | -0.0108<br>(0.280) | -0.296<br>(0.678) |
| <i>Oct – Jan</i> | 0.191**<br>(0.0483) | 0.202**<br>(0.0573)  | 0.451**<br>(0.127) | -0.0695<br>(0.136) | 0.105<br>(0.361)  |
| <i>Jan – Apr</i> | 0.157**<br>(0.0602) | 0.142*<br>(0.0556)   | 0.435**<br>(0.131) | 0.368<br>(0.192)   | 0.408<br>(0.483)  |
| Observations     | 35460               | 21204                | 9080               | 4368               | 2468              |

Standard errors in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$

# General Pass Through RUSA

|                    | Yelp                 |                     |                    | Grubhub               |                      |
|--------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|
|                    | All                  | Cntrls              | Change             | All                   | Cntrls               |
| <i>Jul — Oct</i>   | 0.183***<br>(0.0317) | 0.173*<br>(0.0808)  | 0.398<br>(0.244)   |                       |                      |
| <i>Oct — Jan</i>   | 0.197**<br>(0.0644)  | 0.189<br>(0.104)    | 0.355<br>(0.373)   |                       |                      |
| <i>Jan — Apr</i>   | 0.270***<br>(0.0424) | 0.244**<br>(0.0667) | 0.636**<br>(0.140) |                       |                      |
| <i>Dec — Jan</i>   |                      |                     |                    | 0.181***<br>(0.00969) | 0.207***<br>(0.0108) |
| <i>Jan — Feb</i>   |                      |                     |                    | 0.266***<br>(0.0400)  | 0.273***<br>(0.0406) |
| <i>Feb — Mar</i>   |                      |                     |                    | 0.272***<br>(0.0210)  | 0.312***<br>(0.0455) |
| <i>Mar — Apr</i>   |                      |                     |                    | 0.188**<br>(0.0587)   | 0.193**<br>(0.0706)  |
| Total Pass Through | 0.65                 | 0.606               | 1.39               | 0.91                  | 0.985                |
| N                  | 7283                 | 6830                | 1786               | 3935                  | 3561                 |
| N x T              | 29132                | 27320               | 7144               | 15740                 | 14244                |

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$

# Pass Through: Rest Chars Yelp RUSA

|                  | (1)                | (2)                  | (3)               | (4)                  | (5)               | (6)                |
|------------------|--------------------|----------------------|-------------------|----------------------|-------------------|--------------------|
|                  | Low Sales          | High Sales           | Low Emps          | High Emps            | Low Stars         | High Stars         |
| <i>Oct — Jan</i> | 0.00202<br>(0.115) | 0.131*<br>(0.0402)   | 0.0978<br>(0.153) | 0.0668*<br>(0.0248)  | 0.0242<br>(0.131) | 0.0526<br>(0.0270) |
| <i>Jan — Apr</i> | 0.0222<br>(0.119)  | 0.374***<br>(0.0699) | 0.324<br>(0.183)  | 0.361***<br>(0.0474) | 0.715<br>(0.362)  | 0.0405<br>(0.0601) |
| Observations     | 6124               | 8824                 | 3416              | 9116                 | 3216              | 13996              |

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

# Pass Through: Item Chars GH Geo

|                    | (1)<br>Popular        | (2)<br>Side          | (3)<br>Sandwich       | (4)<br>Pizza         | (5)<br>Entre          | (6)<br>Desert       | (7)<br>Drink          |
|--------------------|-----------------------|----------------------|-----------------------|----------------------|-----------------------|---------------------|-----------------------|
| <i>Dec — Jan</i>   | 0.179***<br>(0.00429) | 0.165***<br>(0.0132) | 0.210***<br>(0.00441) | 0.141*<br>(0.0523)   | 0.147***<br>(0.00221) | 0.126**<br>(0.0162) | 0.166***<br>(0.00343) |
| <i>Jan — Feb</i>   | 0.231***<br>(0.00339) | 0.200**<br>(0.0530)  | 0.220***<br>(0.00548) | 0.182**<br>(0.0366)  | 0.155***<br>(0.0132)  | 0.114**<br>(0.0224) | 0.211**<br>(0.0290)   |
| <i>Feb — Mar</i>   | 0.143***<br>(0.0145)  | 0.260***<br>(0.0189) | 0.231***<br>(0.0141)  | 0.162<br>(0.141)     | 0.0504**<br>(0.00604) | 0.102**<br>(0.0228) | 0.0354<br>(0.0409)    |
| <i>Mar — April</i> | 0.0631**<br>(0.0150)  | 0.0670**<br>(0.0168) | 0.0245<br>(0.0369)    | -0.149**<br>(0.0364) | 0.0129<br>(0.00714)   | 0.0142<br>(0.0241)  | -0.00191<br>(0.0178)  |
| Observations       | 95389                 | 212921               | 227011                | 83246                | 324712                | 39854               | 127038                |

Standard errors in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$



# Pass Through: Item Chars GH RUSA

|                    | (1)                | (2)                  | (3)                  | (4)                 | (5)                  | (6)                 | (7)                |
|--------------------|--------------------|----------------------|----------------------|---------------------|----------------------|---------------------|--------------------|
|                    | Popular            | Side                 | Sandwich             | Pizza               | Entre                | Desert              | Drink              |
| <i>Dec — Jan</i>   | 0.108<br>(0.0634)  | 0.117***<br>(0.0148) | 0.267***<br>(0.0150) | 0.192**<br>(0.0539) | 0.179***<br>(0.0185) | 0.210**<br>(0.0586) | 0.0584<br>(0.0391) |
| <i>Jan — Feb</i>   | 0.695**<br>(0.231) | 0.171**<br>(0.0494)  | 0.309***<br>(0.0509) | 0.280**<br>(0.0612) | 0.194***<br>(0.0276) | 0.234**<br>(0.0933) | 0.486**<br>(0.105) |
| <i>Feb — Mar</i>   | 0.597**<br>(0.220) | 0.216**<br>(0.0407)  | 0.310**<br>(0.0706)  | 0.262**<br>(0.0994) | 0.142**<br>(0.0395)  | 0.284**<br>(0.0773) | 0.406**<br>(0.144) |
| <i>Mar — April</i> | 0.545*<br>(0.256)  | 0.0373<br>(0.0694)   | 0.121*<br>(0.0607)   | -0.0675<br>(0.0697) | 0.154**<br>(0.0544)  | 0.368**<br>(0.142)  | 0.368**<br>(0.147) |
| Observations       | 103851             | 229888               | 284775               | 97427               | 363538               | 43174               | 145785             |

Standard errors in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$

# Quality Regs: Yelp Geo

|                    | <= 2.5    |           | 3         |           | 3.5       |            | >= 4     |          |
|--------------------|-----------|-----------|-----------|-----------|-----------|------------|----------|----------|
| <i>Jul – Oct</i>   | -3.221*   | -3.232*   | -0.930    | -0.940    | 0.041     | 0.041      | 0.940    | 0.938    |
|                    | (1.276)   | (1.287)   | (0.743)   | (0.743)   | (0.242)   | (0.234)    | (0.695)  | (0.693)  |
| <i>Oct – Jan</i>   | -3.329*   | -3.329*   | -1.966*   | -1.983*   | -0.335    | -0.326     | 1.509*** | 1.515*** |
|                    | (1.379)   | (1.374)   | (0.867)   | (0.868)   | (0.207)   | (0.214)    | (0.282)  | (0.281)  |
| <i>Jan – Apr</i>   | -3.445**  | -3.443**  | -1.171    | -1.183    | -0.796*   | -0.785*    | 0.775    | 0.782    |
|                    | (1.132)   | (1.128)   | (1.201)   | (1.204)   | (0.327)   | (0.348)    | (0.498)  | (0.494)  |
| Change Price       |           | -0.059    |           | 0.037     |           | -0.032     |          | -0.018   |
|                    |           | (0.080)   |           | (0.024)   |           | (0.031)    |          | (0.047)  |
| Total Pass Through | -6.774*** | -6.772*** | -3.136*** | -3.166*** | -1.131*** | 0-1.111*** | 2.284*** | 2.297*** |
|                    | (2.509)   | (2.499)   | (2.021)   | (2.028)   | (0.486)   | (0.518)    | (0.737)  | (0.731)  |
| N                  | 940       | 940       | 1080      | 1080      | 1801      | 1800       | 2996     | 2995     |
| NxT                | 3760      | 3760      | 4320      | 4320      | 7204      | 7200       | 11984    | 11980    |

\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

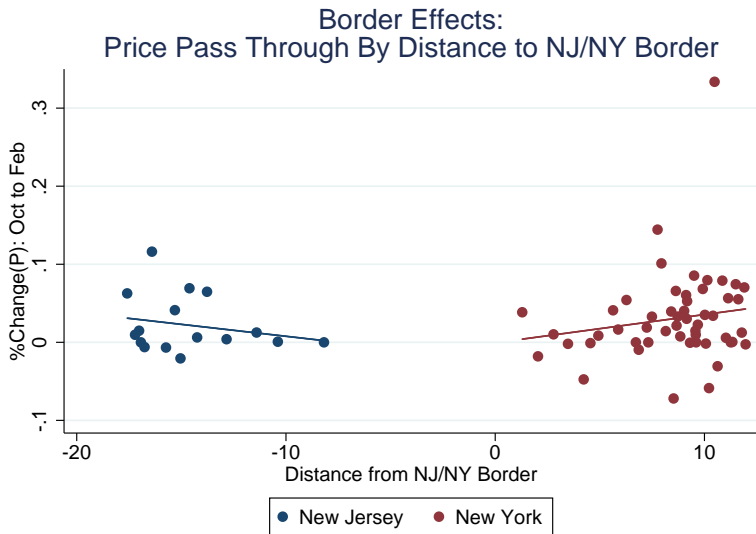
# Quality Regs: Yelp RUSA

|                  | (1)<br>All        | (2)<br>Cntrls     | (3)<br>≤2.5       | (4)<br>3          | (5)<br>3.5        | (6)<br>4          | (7)<br>>4        |
|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|
| <i>Oct – Jan</i> | 1.309*<br>(0.474) | 0.0507<br>(0.261) | -0.962<br>(0.682) | -1.043<br>(1.682) | 0.227<br>(0.381)  | 0.0656<br>(0.731) | 0.824<br>(0.576) |
| <i>Jan – Apr</i> | 1.052<br>(0.538)  | -0.216<br>(0.332) | -0.668<br>(0.588) | 0.286<br>(1.217)  | -0.558<br>(0.663) | -0.549<br>(0.431) | 0.145<br>(0.692) |
| Observations     | 24404             | 23612             | 3216              | 3667              | 6439              | 6437              | 3853             |

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

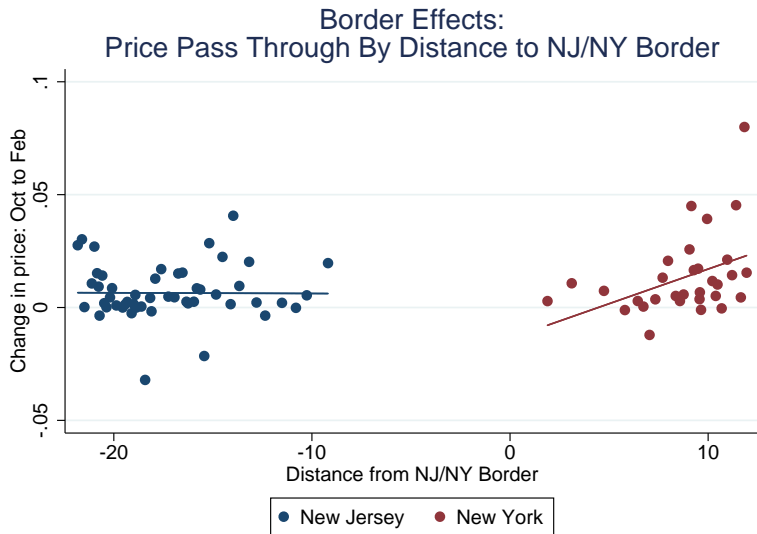
## Yelp Dist Graphic



# Yelp Dist Regs

|                               | (1)<br>Yelp           | (2)<br>Jul-Oct          | (3)<br>NYNY             | (4)<br>GH              | (5)<br>NYNY            |
|-------------------------------|-----------------------|-------------------------|-------------------------|------------------------|------------------------|
| 1(NY)                         | 0.0166<br>(0.0188)    | -0.00427<br>(0.0140)    |                         | -0.0398**<br>(0.0160)  |                        |
| Distance                      | -0.00157<br>(0.00106) | -0.000127<br>(0.000791) |                         | 0.00135*<br>(0.000796) |                        |
| ny=0 $\times$ dist_nynj_bord  | 0<br>(.)              | 0<br>(.)                |                         | 0<br>(.)               |                        |
| ny=1 $\times$ dist_nynj_bord  | 0.00265*<br>(0.00136) | 0.000817<br>(0.00101)   |                         | 0.00173<br>(0.00130)   |                        |
| nyc                           |                       |                         | -0.00712<br>(0.0198)    |                        | -0.00839<br>(0.0142)   |
| dist_nyny_bord                |                       |                         | -0.000131<br>(0.000625) |                        | 0.000344<br>(0.000553) |
| nyc=0 $\times$ dist_nyny_bord |                       |                         | 0<br>(.)                |                        | 0<br>(.)               |
| nyc=1 $\times$ dist_nyny_bord |                       |                         | 0.000671<br>(0.00203)   |                        | 0.000259<br>(0.00142)  |
| Constant                      | -0.0171               | 0.00202                 | 0.00644                 | 0.0262**               | 0.0146**               |

# GH Dist Graphic



# GH Dist Regs

|                              | (1)                      | (2)                       |
|------------------------------|--------------------------|---------------------------|
|                              | total_chlnp              | total_chlnp               |
| <b>1(NY)</b>                 | -0.0196<br>(0.0138)      | -0.0113<br>(0.0196)       |
| Distance                     | -0.0000298<br>(0.000578) | -0.000461<br>(0.000951)   |
| ny=0 $\times$ dist_nynj_bord | 0<br>(.)                 | 0<br>(.)                  |
| ny=1 $\times$ dist_nynj_bord | 0.00310**<br>(0.00117)   | 0.00278<br>(0.00146)      |
| chain                        |                          | -0.0148<br>(0.0266)       |
| ls                           |                          | 0.00680<br>(0.00789)      |
| employees                    |                          | -0.00319***<br>(0.000430) |
| sales                        |                          | 3.84e-08***<br>(5.22e-09) |
| Constant                     | 0.00592                  | 0.00413                   |

# Yelp Non Price Geo

|                  | (1)<br>Hours         | (2)<br>Days      | (3)<br>Total Items | (4)<br>est4        | (5)<br>est5        | (6)<br>est6         | (7)<br>est7          | (8)<br>est8           | (9)<br>est9       |
|------------------|----------------------|------------------|--------------------|--------------------|--------------------|---------------------|----------------------|-----------------------|-------------------|
| <i>Oct — Jan</i> | 0.194**<br>(0.0709)  | 0.244<br>(0.133) | 0.152<br>(0.105)   | 0.0533<br>(0.110)  | 0.300*<br>(0.143)  | -0.0522<br>(0.0304) | -0.00759<br>(0.0469) | -0.0907**<br>(0.0342) | -0.001<br>(0.053) |
| <i>Jan — Apr</i> | 0.0929**<br>(0.0327) | 0.158<br>(0.157) | 0.0380<br>(0.0939) | 0.0884<br>(0.0536) | 0.0846<br>(0.0887) | -0.0413<br>(0.0373) | -0.0714<br>(0.0385)  | -0.0154<br>(0.0530)   | 0.02<br>(0.053)   |
| Observations     | 31372                | 14612            | 16760              | 11148              | 20224              | 31372               | 14612                | 16760                 | 11148             |

Standard errors in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$



# Yelp Non Price RUSA

|                  | (1)              | (2)               | (3)              |
|------------------|------------------|-------------------|------------------|
|                  | Hours            | Days              | Total Items      |
| <i>Oct – Jan</i> | 3.258<br>(3.730) | -0.380<br>(0.234) | 3.189<br>(14.30) |
| <i>Jan – Apr</i> | 2.640<br>(6.450) | -0.166<br>(0.222) | 20.96<br>(25.64) |
| Observations     | 23700            | 23700             | 29144            |

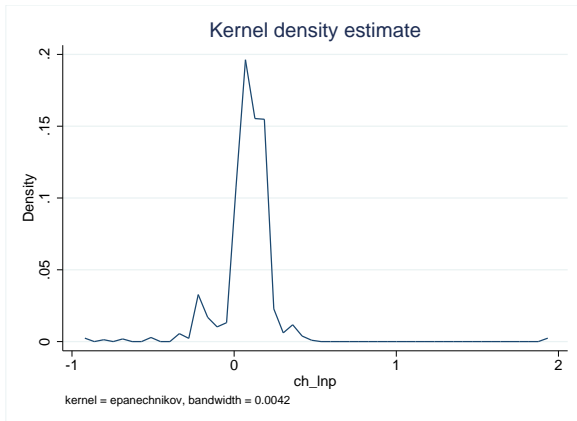
Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

# Yelp Means: Percent Change

|         | NYC Large         | NYC Small         | NYC MSA           | MA                 | Upstate             | CT                 | VT                 | NJ                | PA                 |
|---------|-------------------|-------------------|-------------------|--------------------|---------------------|--------------------|--------------------|-------------------|--------------------|
| Jul-Apr | 0.148<br>(3.007)  | 0.145<br>(2.359)  | 0.132<br>(4.451)  | 0.0806<br>(2.422)  | -0.00553<br>(1.788) | 0.0716<br>(1.190)  | -0.0441<br>(1.180) | 0.121<br>(4.125)  | 0.0824<br>(4.395)  |
| Oct-Jul | 0.0718<br>(3.972) | 0.113<br>(3.024)  | 0.0578<br>(3.333) | 0.128<br>(2.591)   | 0.0217<br>(2.844)   | 0.135<br>(4.263)   | 0.278<br>(3.069)   | 0.126<br>(2.873)  | 0.0846<br>(2.675)  |
| Jan-Oct | 0.294<br>(3.591)  | 0.220<br>(3.562)  | 0.0456<br>(3.477) | 0.292<br>(2.980)   | 0.0711<br>(1.422)   | 0.00397<br>(0.169) | 0.00314<br>(1.215) | 0.0925<br>(3.145) | 0.210<br>(3.284)   |
| Feb-Jan | 0.0474<br>(1.831) | 0.0796<br>(1.580) | 0.0350<br>(1.024) | 0.0403<br>(1.190)  | 0.0142<br>(1.639)   | 0<br>(0)           | 0<br>(0)           | 0.0202<br>(2.088) | 0.0402<br>(1.065)  |
| Mar-Feb | 0.0875<br>(2.813) | 0.0654<br>(3.158) | 0.0388<br>(1.811) | 0.00609<br>(2.489) | 0.00841<br>(1.897)  | 0.0276<br>(0.699)  | 0.0276<br>(0.648)  | 0.0112<br>(2.136) | 0.00868<br>(2.052) |
| Obs     | 122365            | 587943            | 147201            | 390310             | 107767              | 15365              | 15583              | 474162            | 348223             |

# Yelp Change $\ln(p)$ Density: Outliers?



# Eat24 Means: Percent Change

|         | NYC Large         | NYC Small         | NYC MSA           | MA                | Upstate           | NJ                 | PA                |
|---------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|
| Jul-Apr | 0.453<br>(3.958)  | 0.291<br>(2.975)  | 0.556<br>(3.396)  | 0.0246<br>(2.747) | -0.278<br>(2.865) | 0.106<br>(5.122)   | 0.141<br>(5.292)  |
| Oct-Jul | 0.124<br>(2.909)  | 0.207<br>(3.625)  | 0.0123<br>(0.623) | 0.206<br>(3.331)  | -0.232<br>(3.628) | 0.239<br>(2.670)   | 0.158<br>(1.906)  |
| Jan-Oct | 0.579<br>(4.364)  | 0.266<br>(2.953)  | 0.0964<br>(6.325) | 0.545<br>(2.954)  | 0.118<br>(1.217)  | 0.217<br>(4.184)   | 0.402<br>(3.360)  |
| Feb-Jan | 0.147<br>(1.528)  | 0.103<br>(1.654)  | 0.0654<br>(1.383) | 0.0882<br>(1.510) | 0<br>(0)          | -0.0222<br>(1.447) | 0.0704<br>(1.647) |
| Mar-Feb | 0.0350<br>(0.771) | 0.0899<br>(2.867) | 0.174<br>(1.580)  | 0.0889<br>(1.680) | 0<br>(0)          | 0.0628<br>(1.717)  | 0.0161<br>(0.917) |
| Obs     | 33791             | 238418            | 40072             | 128614            | 20234             | 147993             | 114114            |

# Geocoded Yelp Means: Percent Change

|         | NYC               | NYC MSA           | MA                | NY Upstate        | CT                 | VT                 | NJ                | PA                |
|---------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| Jul-Apr | 0.139<br>(2.396)  | 0.0945<br>(3.923) | 0.0777<br>(2.336) | 0.0784<br>(2.319) | 0.0753<br>(3.355)  | -0.0356<br>(1.270) | 0.111<br>(4.907)  | 0.111<br>(4.184)  |
| Oct-Jul | 0.118<br>(3.052)  | 0.0376<br>(3.033) | 0.116<br>(2.401)  | 0.0528<br>(2.629) | 0.151<br>(3.938)   | 0.522<br>(3.540)   | 0.0768<br>(2.435) | 0.0839<br>(3.146) |
| Jan-Oct | 0.202<br>(3.774)  | 0.0102<br>(2.944) | 0.256<br>(2.877)  | 0.0353<br>(1.187) | 0.00663<br>(0.241) | 0.0210<br>(1.319)  | 0.170<br>(4.594)  | 0.173<br>(2.980)  |
| Feb-Jan | 0.0662<br>(1.789) | 0.0529<br>(1.224) | 0.0351<br>(1.239) | 0.0230<br>(1.589) | 0<br>(0)           | 0<br>(0)           | 0.0327<br>(1.898) | 0.0360<br>(1.121) |
| Mar-Feb | 0.0730<br>(2.879) | 0.0943<br>(1.179) | 0.0369<br>(2.376) | 0.0371<br>(0.770) | 0.0247<br>(0.661)  | 0.0239<br>(0.602)  | 0.0148<br>(1.918) | 0.0168<br>(1.765) |
| Obs     | 1074449           | 219822            | 517650            | 154847            | 17160              | 18017              | 625056            | 443474            |

# Grubhub Means: Percent Change

|         | NYC Large        | NYC Small        | NYC MSA          | MA               | Upstate           | CT                | NJ                | PA               |
|---------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|------------------|
| Jan-Dec | 0.321<br>(2.078) | 0.267<br>(2.840) | 0.237<br>(2.213) | 0.281<br>(2.096) | 0.0701<br>(2.297) | 0.0322<br>(2.733) | 0.112<br>(1.870)  | 0.446<br>(4.438) |
| Feb-Jan | 0.293<br>(2.612) | 0.388<br>(3.094) | 0.181<br>(2.091) | 0.370<br>(2.618) | 0.454<br>(3.366)  | 0.0253<br>(1.668) | 0.217<br>(2.557)  | 0.264<br>(2.786) |
| Mar-Feb | 0.534<br>(3.673) | 0.234<br>(2.572) | 0.104<br>(1.731) | 0.108<br>(2.117) | 0.182<br>(3.077)  | 0.0965<br>(4.297) | 0.0858<br>(2.154) | 0.120<br>(1.886) |
| Obs     | 82115            | 521764           | 119421           | 143102           | 55084             | 22986             | 217892            | 192193           |

# Grubhub Geocoded Means: Percent Change

|              | NYC Large | NYC Small | NYC MSA | MA     | Upstate | CT    | NJ     | PA     |
|--------------|-----------|-----------|---------|--------|---------|-------|--------|--------|
| Dec-Jan      | 0.578     | 0.293     | 0.349   | 0.287  | 0.00694 | 0.178 | 0.0373 | 0.418  |
| Jan-Feb      | 0.337     | 0.430     | 0.177   | 0.208  | 0.426   | 0.179 | 0.183  | 0.256  |
| Feb-Mar      | 0.378     | 0.257     | 0.108   | 0.141  | 0.177   | 0.174 | 0.0706 | 0.182  |
| Mar-Apr      | 0.192     | 0.170     | 0.239   | 0.180  | 0.315   | 0.181 | 0.211  | 0.253  |
| Dec-Apr      | 1.485     | 1.152     | 0.867   | 0.832  | 0.911   | 0.705 | 0.498  | 1.109  |
| Observations | 101454    | 591318    | 134535  | 321582 | 71654   | 87386 | 522212 | 425472 |

mean coefficients; se in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

# Grubhub Geocoded Means Rest Level: Percent Change

|              | NYC Large | NYC Small | NYC MSA | MA    | Upstate | CT     | NJ     | PA    |
|--------------|-----------|-----------|---------|-------|---------|--------|--------|-------|
| Dec-Jan      | 0.427     | 0.373     | 0.430   | 0.209 | 0.215   | 0.255  | 0.161  | 0.511 |
| Jan-Feb      | 0.379     | 0.501     | 0.235   | 0.181 | 0.420   | 0.425  | 0.277  | 0.386 |
| Feb-Mar      | 0.314     | 0.275     | 0.151   | 0.321 | 0.170   | 0.125  | 0.0647 | 0.193 |
| Mar-Apr      | 0.350     | 0.235     | 0.276   | 0.205 | 0.392   | 0.0837 | 0.200  | 0.271 |
| Dec-Apr      | 1.470     | 1.385     | 1.093   | 0.915 | 1.198   | 0.888  | 0.702  | 1.360 |
| Observations | 1020      | 5216      | 928     | 2748  | 636     | 804    | 4064   | 3136  |

mean coefficients; se in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$



# Quality Means: Yelp

|              | NYC               | NYC MSA           | MA                | Upstate           | NJ                | PA                |
|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Apr-Jul      | -0.476<br>(15.46) | -0.542<br>(13.00) | 0.227<br>(13.59)  | -0.386<br>(11.84) | -1.078<br>(13.54) | -0.142<br>(12.43) |
| Jul-Oct      | -0.894<br>(15.38) | -1.460<br>(14.36) | -0.615<br>(14.18) | 0.199<br>(12.73)  | -1.052<br>(13.02) | -0.821<br>(12.92) |
| Oct-Jan      | 0.294<br>(14.61)  | 0.643<br>(13.44)  | 0.516<br>(13.55)  | 0.546<br>(10.58)  | 0.161<br>(13.04)  | -0.107<br>(12.70) |
| Jan-Apr      | -0.274<br>(14.53) | 0.130<br>(12.85)  | -0.161<br>(13.65) | -0.106<br>(11.11) | 0.471<br>(13.10)  | -0.439<br>(12.61) |
| Observations | 13656             | 1817              | 5706              | 1460              | 5344              | 3992              |

mean coefficients; sd in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

# Yelp: Price Pass Through of a 10% MW Increase

|                            | (1)<br>RUSA          | (2)<br>RUSA          | (3)<br>RUSA          | (4)<br>RUSA+Eat24  | (5)<br>Geo           | (6)<br>Geo             | (7)<br>Geo+Eat24     |
|----------------------------|----------------------|----------------------|----------------------|--------------------|----------------------|------------------------|----------------------|
| $\Delta \ln(mw_{Jan-Oct})$ | 0.0914**<br>(0.0248) | 0.0878<br>(0.0474)   | 0.0946*<br>(0.0477)  | 0.0055<br>(0.1073) | 0.130***<br>(0.0137) | 0.0641***<br>(0.0109)  | 0.00557<br>(0.0266)  |
| $\Delta \ln(mw_{Feb-Jan})$ |                      | 0.0543**<br>(0.0200) | 0.0611**<br>(0.0209) | 0.0489<br>(0.0511) |                      | 0.0594***<br>(0.00968) | 0.0766**<br>(0.0155) |
| $\Delta \ln(mw_{Mar-Feb})$ |                      | 0.0638**<br>(0.0231) | 0.0706**<br>(0.0243) | 0.0315<br>(0.0316) |                      | 0.0756***<br>(0.0119)  | 0.0888**<br>(0.0362) |
| Total                      | 0.091                | 0.206                | 0.226                | 0.086              | 0.130                | 0.202                  | 0.171                |
| Controls                   | Yes                  | No                   | Yes                  | Yes                | No                   | No                     | No                   |
| Obs                        | 1408780              | 1878374              | 1878374              | 782051             | 1968874              | 3281458                | 1099284              |

Standard errors in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$

$$\Delta \ln p_{ijkt} = \sum_{h=0}^2 w_h \Delta \ln mw_{kt-h} + \mathbf{X}_j \boldsymbol{\lambda} + \epsilon_k + \epsilon_t + \epsilon_{ijkt} \quad (1)$$

# Yelp Rests: Price Pass Through of a 10% MW Increase

|                  | (1)                 | (2)                  | (3)                | (4)                | (5)               |
|------------------|---------------------|----------------------|--------------------|--------------------|-------------------|
|                  | (mean) ch_lnp       | (mean) ch_lnp        | (mean) ch_lnp      | (mean) ch_lnp      | (mean) ch_lnp     |
| <i>Apr – Jul</i> | 0.0461<br>(0.0294)  | 0.0832**<br>(0.0215) | 0.310**<br>(0.114) | 0.0120<br>(0.143)  | 0.111<br>(0.339)  |
| <i>Jul – Oct</i> | 0.115<br>(0.0698)   | 0.0764<br>(0.0726)   | 0.639**<br>(0.192) | -0.0108<br>(0.280) | -0.296<br>(0.678) |
| <i>Oct – Jan</i> | 0.191**<br>(0.0483) | 0.202**<br>(0.0573)  | 0.451**<br>(0.127) | -0.0695<br>(0.136) | 0.105<br>(0.361)  |
| <i>Jan – Apr</i> | 0.157**<br>(0.0602) | 0.142*<br>(0.0556)   | 0.435**<br>(0.131) | 0.368<br>(0.192)   | 0.408<br>(0.483)  |
| Observations     | 35460               | 21204                | 9080               | 4368               | 2468              |

Standard errors in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$

# Grubhub: Price Pass Through of a 10% MW Increase

|                            | (1)                  | (2)                  | (3)                  |
|----------------------------|----------------------|----------------------|----------------------|
| $\Delta \ln(mw_{Jan-Dec})$ | 0.168***<br>(0.0110) | 0.140***<br>(0.0135) | 0.207***<br>(0.0169) |
| $\Delta \ln(mw_{Feb-Jan})$ | 0.225***<br>(0.0230) | 0.219**<br>(0.0595)  | 0.285**<br>(0.0671)  |
| $\Delta \ln(mw_{Mar-Feb})$ | 0.153***<br>(0.0196) | 0.255**<br>(0.0632)  | 0.321**<br>(0.0783)  |
| Total                      | 0.395                | 0.614                | 0.813                |
| Controls                   | No                   | No                   | Yes                  |
| FE                         | No                   | Yes                  | Yes                  |
| Observations               | 1465718              | 1465718              | 1465718              |

Standard errors in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$

# Grubhub Rest: Price Pass Through of a 10% MW Increase

|                    | (1)                  | (2)                   | (3)                   |
|--------------------|----------------------|-----------------------|-----------------------|
|                    | (mean) ch_inp        | (mean) ch_inp         | (mean) ch_inp         |
| <i>Dec – Jan</i>   | 0.212***<br>(0.0145) | 0.193***<br>(0.00974) | 0.201***<br>(0.00549) |
| <i>Jan – Feb</i>   | 0.252***<br>(0.0116) | 0.226**<br>(0.0481)   | 0.263***<br>(0.0306)  |
| <i>Feb – Mar</i>   | 0.160***<br>(0.0208) | 0.240**<br>(0.0421)   | 0.288***<br>(0.0462)  |
| <i>Mar – April</i> | 0.149***<br>(0.0190) | 0.171**<br>(0.0508)   | 0.179**<br>(0.0633)   |
| Observations       | 18552                | 18552                 | 12940                 |

Standard errors in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$

# Grubhub Rest: Price Pass Through of a 10% MW Increase

|                    | (1)<br>Popular        | (2)<br>Side          | (3)<br>Sandwich       | (4)<br>Pizza         | (5)<br>Entre          | (6)<br>Desert       | (7)<br>Drink          |
|--------------------|-----------------------|----------------------|-----------------------|----------------------|-----------------------|---------------------|-----------------------|
| <i>Dec — Jan</i>   | 0.179***<br>(0.00429) | 0.165***<br>(0.0132) | 0.210***<br>(0.00441) | 0.141*<br>(0.0523)   | 0.147***<br>(0.00221) | 0.126**<br>(0.0162) | 0.166***<br>(0.00343) |
| <i>Jan — Feb</i>   | 0.231***<br>(0.00339) | 0.200**<br>(0.0530)  | 0.220***<br>(0.00548) | 0.182**<br>(0.0366)  | 0.155***<br>(0.0132)  | 0.114**<br>(0.0224) | 0.211**<br>(0.0290)   |
| <i>Feb — Mar</i>   | 0.143***<br>(0.0145)  | 0.260***<br>(0.0189) | 0.231***<br>(0.0141)  | 0.162<br>(0.141)     | 0.0504**<br>(0.00604) | 0.102**<br>(0.0228) | 0.0354<br>(0.0409)    |
| <i>Mar — April</i> | 0.0631**<br>(0.0150)  | 0.0670**<br>(0.0168) | 0.0245<br>(0.0369)    | -0.149**<br>(0.0364) | 0.0129<br>(0.00714)   | 0.0142<br>(0.0241)  | -0.00191<br>(0.0178)  |
| Observations       | 95389                 | 212921               | 227011                | 83246                | 324712                | 39854               | 127038                |

Standard errors in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$

# Yelp Rest: Price Pass Through of a 10% MW Increase

|                  | (1)                 | (2)                 | (3)               | (4)                | (5)               | (6)                 |
|------------------|---------------------|---------------------|-------------------|--------------------|-------------------|---------------------|
|                  | Low Sales           | High Sales          | Low Emps          | High Emps          | Low Stars         | High Stars          |
| <i>Jul – Oct</i> | -0.0849<br>(0.0790) | -0.164<br>(0.137)   | 0.462<br>(0.315)  | -0.0870<br>(0.152) | -0.182<br>(0.104) | -0.0284<br>(0.0978) |
| <i>Oct – Jan</i> | 0.0701<br>(0.0663)  | -0.0180<br>(0.0888) | 0.480*<br>(0.220) | -0.0153<br>(0.100) | 0.141<br>(0.0924) | 0.0135<br>(0.0648)  |
| <i>Jan – Apr</i> | 0.121**<br>(0.0397) | 0.330**<br>(0.101)  | 0.503<br>(0.246)  | 0.323**<br>(0.109) | 0.208<br>(0.115)  | -0.0335<br>(0.110)  |
| Observations     | 5332                | 5960                | 5940              | 7368               | 5376              | 10676               |

Standard errors in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$

# Grubhub Item: Price Pass Through of a 10% MW Increase

|                    | (1)                  | (2)                   | (3)                  | (4)                  | (5)                   | (6)                   |
|--------------------|----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|
|                    | Low Sales            | High Sales            | Low Emps             | High Emps            | Low Price             | High Price            |
| <i>Dec – Jan</i>   | 0.0736**<br>(0.0301) | 0.272***<br>(0.00410) | 0.116***<br>(0.0103) | 0.199***<br>(0.0182) | 0.288***<br>(0.00866) | 0.182***<br>(0.00684) |
| <i>Jan – Feb</i>   | 0.192**<br>(0.0375)  | 0.301*<br>(0.139)     | 0.163**<br>(0.0301)  | 0.229<br>(0.168)     | 0.297***<br>(0.0151)  | 0.235***<br>(0.0342)  |
| <i>Feb – Mar</i>   | 0.175***<br>(0.0276) | 0.293**<br>(0.113)    | 0.138***<br>(0.0196) | 0.290*<br>(0.120)    | 0.375**<br>(0.0709)   | 0.235**<br>(0.0592)   |
| <i>Mar – April</i> | 0.125<br>(0.0978)    | 0.254*<br>(0.129)     | 0.0845<br>(0.0968)   | 0.282*<br>(0.130)    | 0.114*<br>(0.0566)    | 0.0905**<br>(0.0269)  |
| Observations       | 3376                 | 3420                  | 4232                 | 1700                 | 3488                  | 3824                  |

Standard errors in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .001$



# Yelp: Changes in Quality

|                    | <= 2.5    |           | 3         |           | 3.5       |            | >= 4     |          |
|--------------------|-----------|-----------|-----------|-----------|-----------|------------|----------|----------|
| <i>Jul – Oct</i>   | -3.221*   | -3.232*   | -0.930    | -0.940    | 0.041     | 0.041      | 0.940    | 0.938    |
|                    | (1.276)   | (1.287)   | (0.743)   | (0.743)   | (0.242)   | (0.234)    | (0.695)  | (0.693)  |
| <i>Oct – Jan</i>   | -3.329*   | -3.329*   | -1.966*   | -1.983*   | -0.335    | -0.326     | 1.509*** | 1.515*** |
|                    | (1.379)   | (1.374)   | (0.867)   | (0.868)   | (0.207)   | (0.214)    | (0.282)  | (0.281)  |
| <i>Jan – Apr</i>   | -3.445**  | -3.443**  | -1.171    | -1.183    | -0.796*   | -0.785*    | 0.775    | 0.782    |
|                    | (1.132)   | (1.128)   | (1.201)   | (1.204)   | (0.327)   | (0.348)    | (0.498)  | (0.494)  |
| Change Price       |           | -0.059    |           | 0.037     |           | -0.032     |          | -0.018   |
|                    |           | (0.080)   |           | (0.024)   |           | (0.031)    |          | (0.047)  |
| Total Pass Through | -6.774*** | -6.772*** | -3.136*** | -3.166*** | -1.131*** | 0-1.111*** | 2.284*** | 2.297*** |
|                    | (2.509)   | (2.499)   | (2.021)   | (2.028)   | (0.486)   | (0.518)    | (0.737)  | (0.731)  |
| N                  | 940       | 940       | 1080      | 1080      | 1801      | 1800       | 2996     | 2995     |
| NxT                | 3760      | 3760      | 4320      | 4320      | 7204      | 7200       | 11984    | 11980    |

\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

# Yelp: Border Effects

|                                      | (NJ)<br><i>Oct – Feb</i> | (NJ)<br><i>Oct – Feb</i> | (NJ)<br><i>Jul – Oct</i> | (NY MSA)<br><i>Oct – Feb</i> |
|--------------------------------------|--------------------------|--------------------------|--------------------------|------------------------------|
| Constant ( $\alpha_0$ )              | .00261<br>(.00145)       | .00268<br>(.00146)       | -.000689<br>(.000873)    | .00198<br>(.00318)           |
| NYC ( $\alpha_1$ )                   | -.00339**<br>(.00160)    | -.00410**<br>(.00161)    | .00218**<br>(.000961)    | -.00589<br>(.00329)          |
| Distance ( $\alpha_2$ )              | .0000454<br>(.0000566)   | .0000683<br>(.0000568)   | -.0000366<br>(.0000339)  | .000245<br>(.000168)         |
| NYC $\times$ Distance ( $\alpha_3$ ) | .000350***<br>(.0000678) | .000322***<br>(.0000679) | .0000461<br>(.0000405)   | .000293*<br>(.000177)        |
| Observations                         | 80402                    | 80402                    | 80402                    | 23368                        |

$$\begin{aligned}
 \Delta \ln(p_{ij, Feb-Oct}) = & \alpha_0 + \alpha_1 \mathbb{1}(NY = 1) \\
 & + \alpha_2 D_j + \alpha_3 [D_j * \mathbb{1}(NY = 1)] \\
 & + \gamma X_{ij} + \epsilon_{ij}
 \end{aligned}$$

# Yelp: Border Effects

|                               | (1)<br>Yelp           | (2)<br>Jul-Oct          | (3)<br>NYNY             | (4)<br>GH              | (5)<br>NYNY            |
|-------------------------------|-----------------------|-------------------------|-------------------------|------------------------|------------------------|
| <b>1(NY)</b>                  | 0.0166<br>(0.0188)    | -0.00427<br>(0.0140)    |                         | -0.0398**<br>(0.0160)  |                        |
| Distance                      | -0.00157<br>(0.00106) | -0.000127<br>(0.000791) |                         | 0.00135*<br>(0.000796) |                        |
| ny=0 $\times$ dist_nynj_bord  | 0<br>(.)              | 0<br>(.)                |                         | 0<br>(.)               |                        |
| ny=1 $\times$ dist_nynj_bord  | 0.00265*<br>(0.00136) | 0.000817<br>(0.00101)   |                         | 0.00173<br>(0.00130)   |                        |
| nyc                           |                       |                         | -0.00712<br>(0.0198)    |                        | -0.00839<br>(0.0142)   |
| dist_nyny_bord                |                       |                         | -0.000131<br>(0.000625) |                        | 0.000344<br>(0.000553) |
| nyc=0 $\times$ dist_nyny_bord |                       |                         | 0<br>(.)                |                        | 0<br>(.)               |
| nyc=1 $\times$ dist_nyny_bord |                       |                         | 0.000671<br>(0.00203)   |                        | 0.000259<br>(0.00142)  |
| Constant                      | -0.0171<br>(0.0117)   | 0.00202<br>(0.0117)     | 0.00644<br>(0.0117)     | 0.0262**<br>(0.0117)   | 0.0146**<br>(0.0117)   |

# Grubhub: Border Effects

|                       | (1)                      | (2)                       |
|-----------------------|--------------------------|---------------------------|
|                       | total_chlnp              | total_chlnp               |
| <b>1(NY)</b>          | -0.0196<br>(0.0138)      | -0.0113<br>(0.0196)       |
| Distance              | -0.0000298<br>(0.000578) | -0.000461<br>(0.000951)   |
| ny=0 × dist_nynj_bord | 0<br>(.)                 | 0<br>(.)                  |
| ny=1 × dist_nynj_bord | 0.00310**<br>(0.00117)   | 0.00278<br>(0.00146)      |
| chain                 |                          | -0.0148<br>(0.0266)       |
| ls                    |                          | 0.00680<br>(0.00789)      |
| employees             |                          | -0.00319***<br>(0.000430) |
| sales                 |                          | 3.84e-08***<br>(5.22e-09) |
| Constant              | 0.00592                  | 0.00413                   |