Regression Results for TWFE Model

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Summary Table

Table 1: HPPD Regressions with Facility & Month FE

	RN HPPD	LPN HPPD	CNA HPPD	Total HPPD
for_profit	0.003	0.017+	0.044**	0.064**
	(0.009)	(0.010)	(0.017)	(0.021)
non_profit	0.037*	0.020	0.116***	0.172***
	(0.014)	(0.016)	(0.029)	(0.039)
is_chain	0.006	-0.013*	-0.033***	-0.040**
	(0.005)	(0.005)	(0.009)	(0.012)
num_beds	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
ccrc_facility	-0.014*	-0.001	-0.007	-0.022
	(0.007)	(0.007)	(0.016)	(0.023)
occupancy_rate	-0.002***	-0.003***	-0.003***	-0.009***
	(0.000)	(0.000)	(0.000)	(0.000)
pct_medicare	0.001	0.001***	0.001	0.002*
	(0.001)	(0.000)	(0.000)	(0.001)
pct_medicaid	-0.000	-0.000**	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
cm_state_q = 1	-0.006	-0.013*	0.006	-0.013
	(0.011)	(0.007)	(0.015)	(0.024)
cm_state_q = 2	-0.003	-0.010	0.009	-0.004
	(0.012)	(0.006)	(0.013)	(0.022)
cm_state_q = 3	0.001	-0.011+	0.015	0.005
	(0.012)	(0.006)	(0.013)	(0.022)
cm_state_q = 4	0.012	-0.007	0.015	0.020
	(0.018)	(0.006)	(0.013)	(0.026)
urban	-0.004	0.006	-0.013	-0.011
	(0.010)	(0.011)	(0.018)	(0.025)
Num.Obs.	634978	634978	634978	634978

	RN HPPD	LPN HPPD	CNA HPPD	Total HPPD
R2	0.034	0.466	0.224	0.083
RMSE	2.23	0.28	0.87	2.52
Std.Errors	by: cms_certification_number & month	by: cms_certification_number & month	by: cms_certification_number & month	by: cms_certification_number & month
FE: cms_certification_number	X	X	X	X
FE: month	X	X	X	X

- p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Raw Summaries

`summary(m1)`

```
## OLS estimation, Dep. Var.: rn_hppd
## Observations: 634,978
## Fixed-effects: cms_certification_number: 7,137,  month: 97
## Standard-errors: Clustered (cms_certification_number & month)
##                   Estimate Std. Error  t value  Pr(>|t|)
## for_profit       0.0027826324  0.0088087   0.3159  0.752767
## non_profit       0.0365599008  0.0141404   2.5855  0.011228 *
## is_chain         0.0064241148  0.0045947   1.3982  0.165284
## num_beds        -0.0000000338  0.0000010  -0.0338  0.973129
## ccrc_facility   -0.0137417786  0.0067124  -2.0472  0.043368 *
## occupancy_rate  -0.0020650547  0.0001926 -10.7195 < 2.2e-16 ***
## pct_medicare     0.0008017193  0.0006322   1.2680  0.207852
## pct_medicaid    -0.0001270942  0.0000855  -1.4867  0.140358
## cm_state_q::1   -0.0059171990  0.0110542  -0.5353  0.593686
## cm_state_q::2   -0.0027604173  0.0117499  -0.2349  0.814763
## cm_state_q::3    0.0008310604  0.0120317   0.0691  0.945075
## cm_state_q::4    0.0118369891  0.0178294   0.6639  0.508344
## urban           -0.0035861733  0.0098821  -0.3629  0.717480
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 2.23088     Adj. R2: 0.022627
##                Within R2: 6.251e-5
```

`summary(m2)`

```
## OLS estimation, Dep. Var.: lpn_hppd
## Observations: 634,978
## Fixed-effects: cms_certification_number: 7,137,  month: 97
## Standard-errors: Clustered (cms_certification_number & month)
##                   Estimate Std. Error  t value   Pr(>|t|)
## for_profit       0.0169481117   0.010044   1.6874 0.09477937 .
## non_profit       0.0195328179   0.015582   1.2536 0.21304065
```

```
## is_chain      -0.0128799296   0.005425  -2.3743 0.01957233 *
## num_beds       -0.0000000148   0.000001  -0.0148 0.98825621
## ccrc_facility  -0.0009780799   0.007292  -0.1341 0.89357919
## occupancy_rate -0.0030669237   0.000179 -17.1785  < 2.2e-16 ***
## pct_medicare    0.0007934229   0.000233   3.4051 0.00096703 ***
## pct_medicaid   -0.0003153491   0.000101  -3.1137 0.00243543 **
## cm_state_q::1  -0.0134837317   0.006657  -2.0255 0.04559458 *
## cm_state_q::2  -0.0098911568   0.006431  -1.5379 0.12735702
## cm_state_q::3  -0.0108301088   0.006321  -1.7135 0.08985078 .
## cm_state_q::4  -0.0069554543   0.006464  -1.0760 0.28460894
## urban           0.0057754487   0.011348   0.5089 0.61197023
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 0.278545     Adj. R2: 0.460291
##                    Within R2: 0.007682
```

summary(m3)

```
## OLS estimation, Dep. Var.: cna_hppd
## Observations: 634,978
## Fixed-effects: cms_certification_number: 7,137,  month: 97
## Standard-errors: Clustered (cms_certification_number & month)
##                    Estimate Std. Error  t value     Pr(>|t|)
## for_profit      0.0441636727   0.016679   2.6478 0.00947098741 **
## non_profit      0.1157401522   0.029150   3.9705 0.00013855800 ***
## is_chain       -0.0330633015   0.008688  -3.8054 0.00024912893 ***
## num_beds       -0.0000000379   0.000001  -0.0379 0.96983000465
## ccrc_facility  -0.0072932032   0.016400  -0.4447 0.65752693664
## occupancy_rate -0.0034772176   0.000278 -12.5108    < 2.2e-16 ***
## pct_medicare    0.0005812050   0.000414   1.4024 0.16401274572
## pct_medicaid   -0.0008973522   0.000162  -5.5454 0.00000025799 ***
## cm_state_q::1   0.0062694524   0.015448   0.4058 0.68576762689
## cm_state_q::2   0.0088487697   0.013373   0.6617 0.50975781246
## cm_state_q::3   0.0151115143   0.013070   1.1562 0.25046575218
## cm_state_q::4   0.0150469163   0.013145   1.1447 0.25519351049
## urban          -0.0132674679   0.018357  -0.7227 0.47159603390
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 0.868317     Adj. R2: 0.215237
##                    Within R2: 0.00119
```

summary(m4)

```
## OLS estimation, Dep. Var.: total_hppd
## Observations: 634,978
## Fixed-effects: cms_certification_number: 7,137,  month: 97
## Standard-errors: Clustered (cms_certification_number & month)
##                    Estimate Std. Error  t value     Pr(>|t|)
## for_profit      0.0638944165   0.021275   3.0032 0.00340635478 **
```

```
## non_profit      0.1718328696   0.039234    4.3797 0.00003031446 ***
## is_chain        -0.0395191176   0.012101   -3.2659 0.00151366947 **
## num_beds        -0.0000000865   0.000001   -0.0864 0.93128930851
## ccrc_facility   -0.0220130603   0.023310   -0.9444 0.34734626270
## occupancy_rate  -0.0086091960   0.000487  -17.6961     < 2.2e-16 ***
## pct_medicare     0.0021763473   0.000871    2.4983 0.01418013361 *
## pct_medicaid    -0.0013397955   0.000248   -5.4094 0.00000046313 ***
## cm_state_q::1   -0.0131314804   0.024096   -0.5450 0.58704220089
## cm_state_q::2   -0.0038028071   0.022130   -0.1718 0.86392267265
## cm_state_q::3    0.0051124645   0.022020    0.2322 0.81690101837
## cm_state_q::4    0.0199284487   0.025546    0.7801 0.43725068189
## urban           -0.0110781918   0.024892   -0.4450 0.65729015824
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 2.52371    Adj. R2: 0.072059
##                 Within R2: 7.805e-4
```