

Varying Effects of New Construction on Existing Rents

A Minneapolis, MN Case Study

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in partnership with the Minnesota Housing Partnership & CoStar

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Motivation

- Increasing demand for urban lifestyle from higher income households
- Many metro areas are experiencing massive housing shortages
- Decreasing federal support for affordable housing
- Fears that new market rate construction contributes to gentrification and the loss of affordable housing

Minneapolis Findings Preview

- Null effect of new construction on existing rents on average
- Statistically different effects by quality sub-market
 - **Lower** rents for higher quality buildings close to new construction
 - **Higher** rents for lower quality buildings close to new construction
- Estimates range from 1% to 17% higher rents for lower quality housing in areas close to new con.
- The size and precision of the estimate varies by how I define "High" and "Low" sub-markets

Theory

Supply effect ↓

- Addition of new housing supply, even expensive housing, results in a net lowering of rents due to the shift in the supply curve (Glaeser et al., 2005).
- Over time as housing ages, it filters down market and becomes more affordable to lower income households (Rosenthal, 2014).
- General consensus that this dynamic holds at the regional scale

Amenity effect or Induced Demand ↑

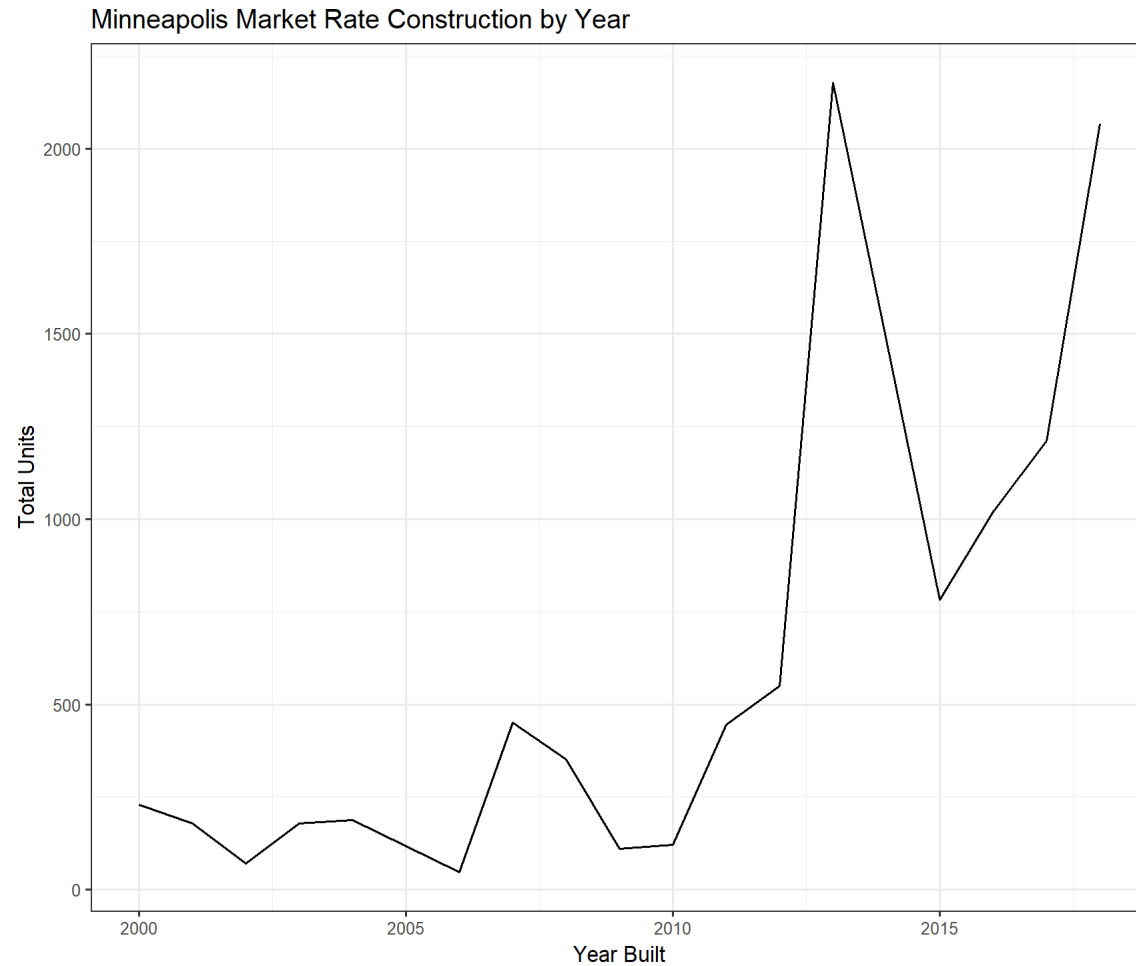
- New market rate construction is an amenity due to affluent residents and additional retail services creates feedback loop inducing more demand from wealthier households and this increases rents and lowers welfare of low income residents (Guerrieri et al., 2013; Couture et al. 2019).
- Hypothesized to work at the neighborhood scale

Housing Sub-market Theory

Heterogeneous effects ↑↓

- Interconnected sub-markets indexed by geography as well as by quality and type. Most urban neighborhoods contain multiple sub-markets (Galster & Rothenberg, 1991; Rosenthal, 2014).
- Effects of new construction could vary by quality sub-market
- Size of supply effect could be smaller for lower quality sub-markets.
- Amenity effect of new construction could create induced demand for lower quality housing

Market Rate Construction

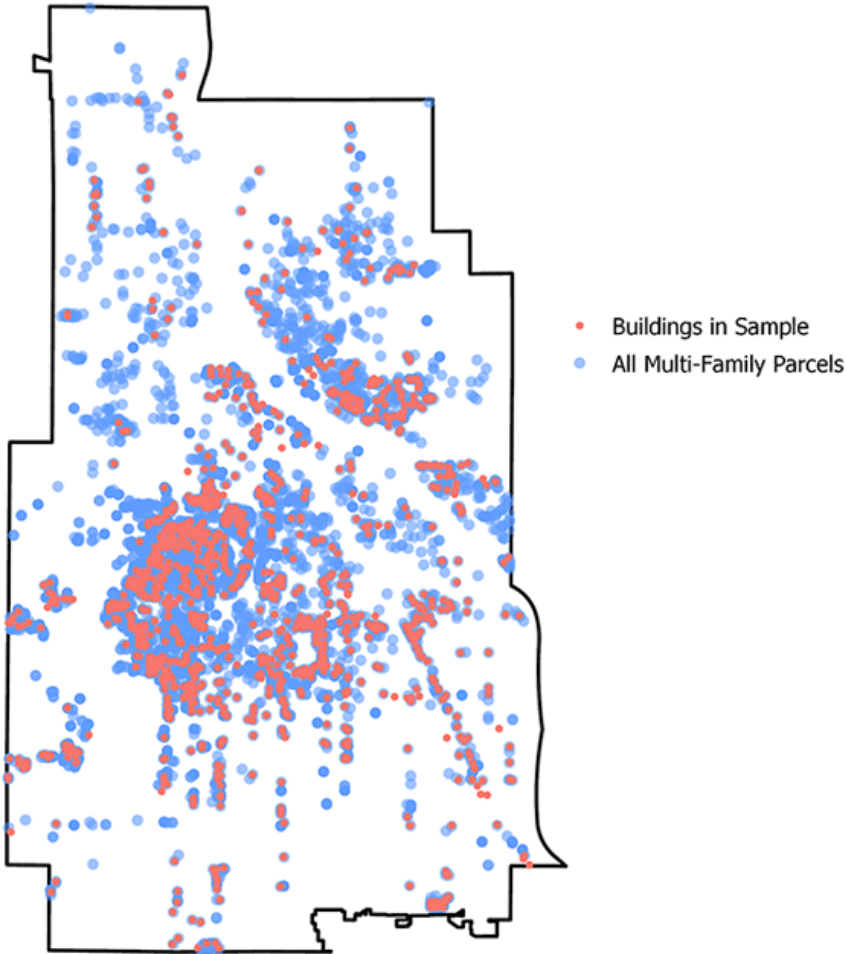
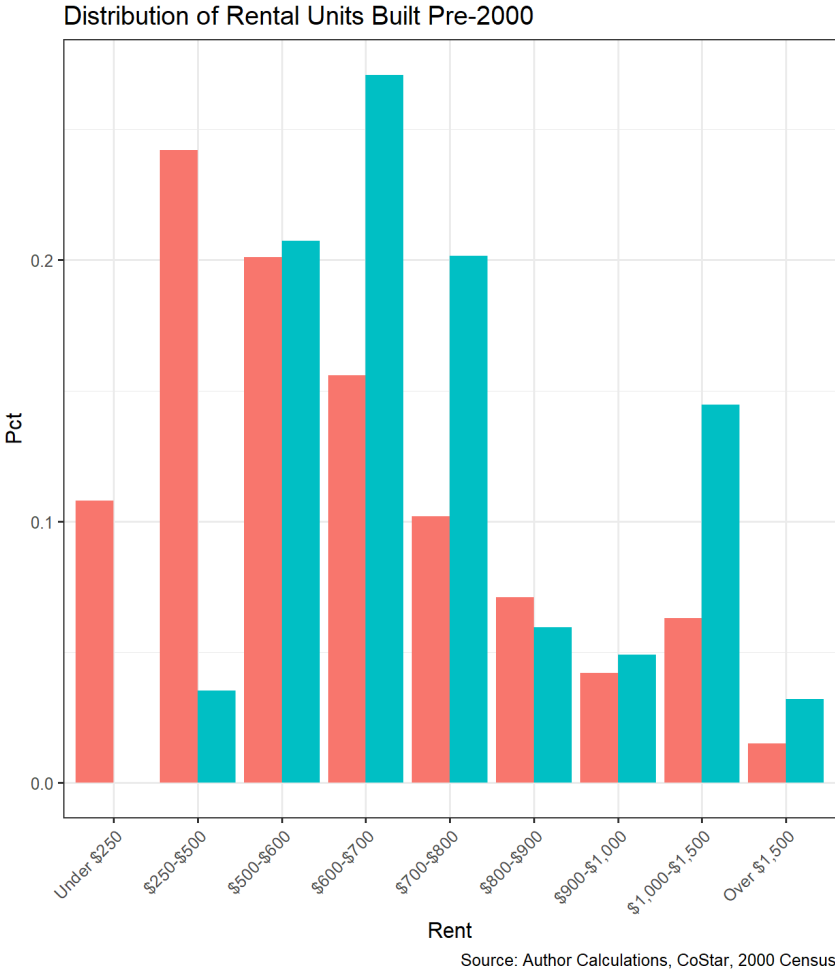


Source: Author Calculations, CoStar

Estimation Sample

- Existing Rents – Panel of buildings built pre-2000 City of Minneapolis from CoStar
 - Longitudinal quarterly rental data (2008 Q1- 2018-Q4)
 - Each data row represents a building-bedroom-quarter average rent
 - 433 buildings, total of 659 building-bedroom combinations (N = 28,996)
 - "Treated" = within 200m of new construction (Asquith et. al, 2019)
 - "Control" = between 200m - 800m of new construction
- New Construction also from CoStar (2003-2018)
 - Market-rate construction > 50 units in project
 - Observe total units, year built, average rents (N = 67)

Sample comparison to population



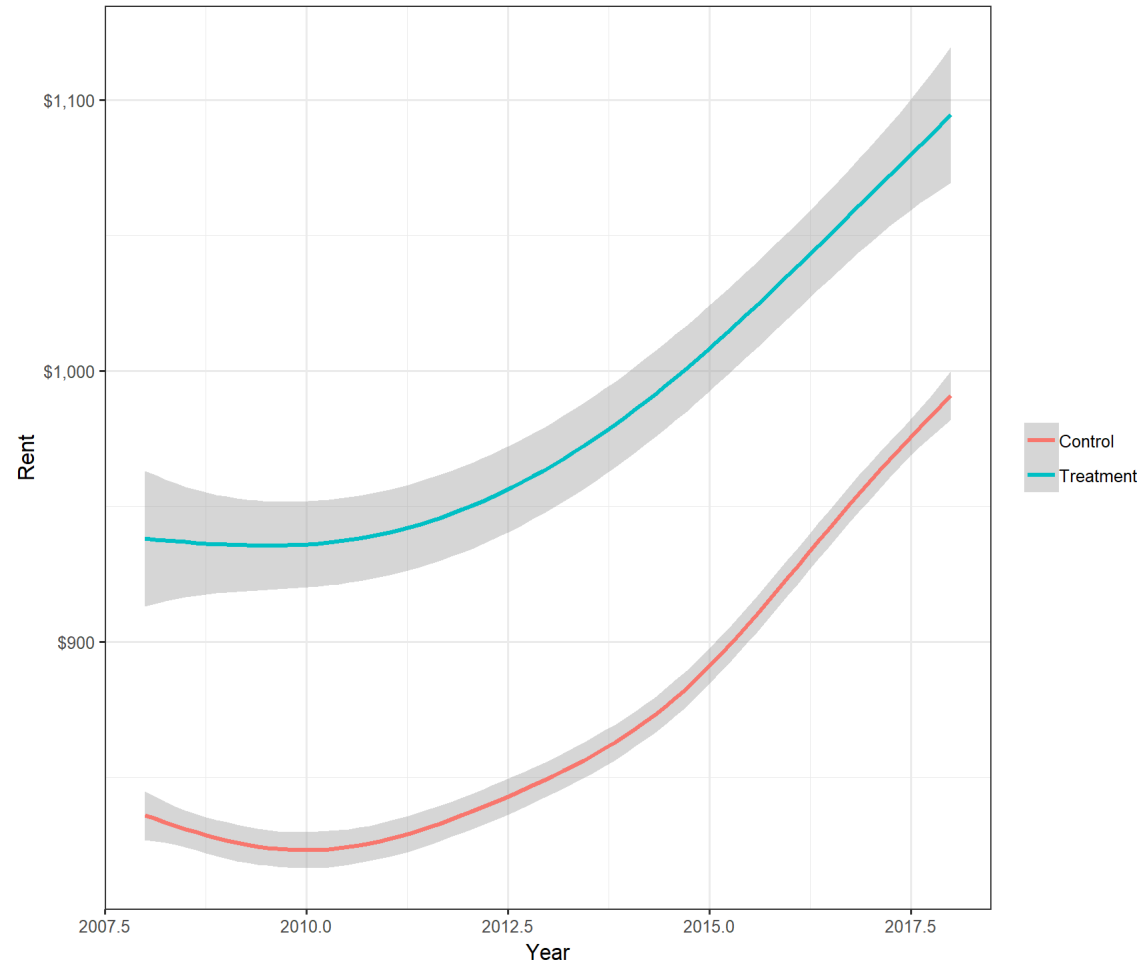
Comparing Treatment Buildings to Control

1 BR Sample			
	Control	Treated	Total
Rent	756.1	818.8	770.7
	(161.7)	(254.2)	(188.8)
Units in Bld	33.3	43.2	35.6
	(59.3)	(54.8)	(58.4)
Year Built	1943.8	1937.1	1942.2
	(25.9)	(25.5)	(25.9)
N Bld	317	96	413

2 BR Sample			
	Control	Treated	Total
Rent	958.1	1150.5	1002.7
	(243.2)	(531.5)	(341.5)
Units in Bld	38.7	50.2	41.4
	(74)	(65.5)	(72.2)
Year Built	1945.0	1937.3	1943.2
	(28)	(26.6)	(27.8)
N Bld	189	57	246

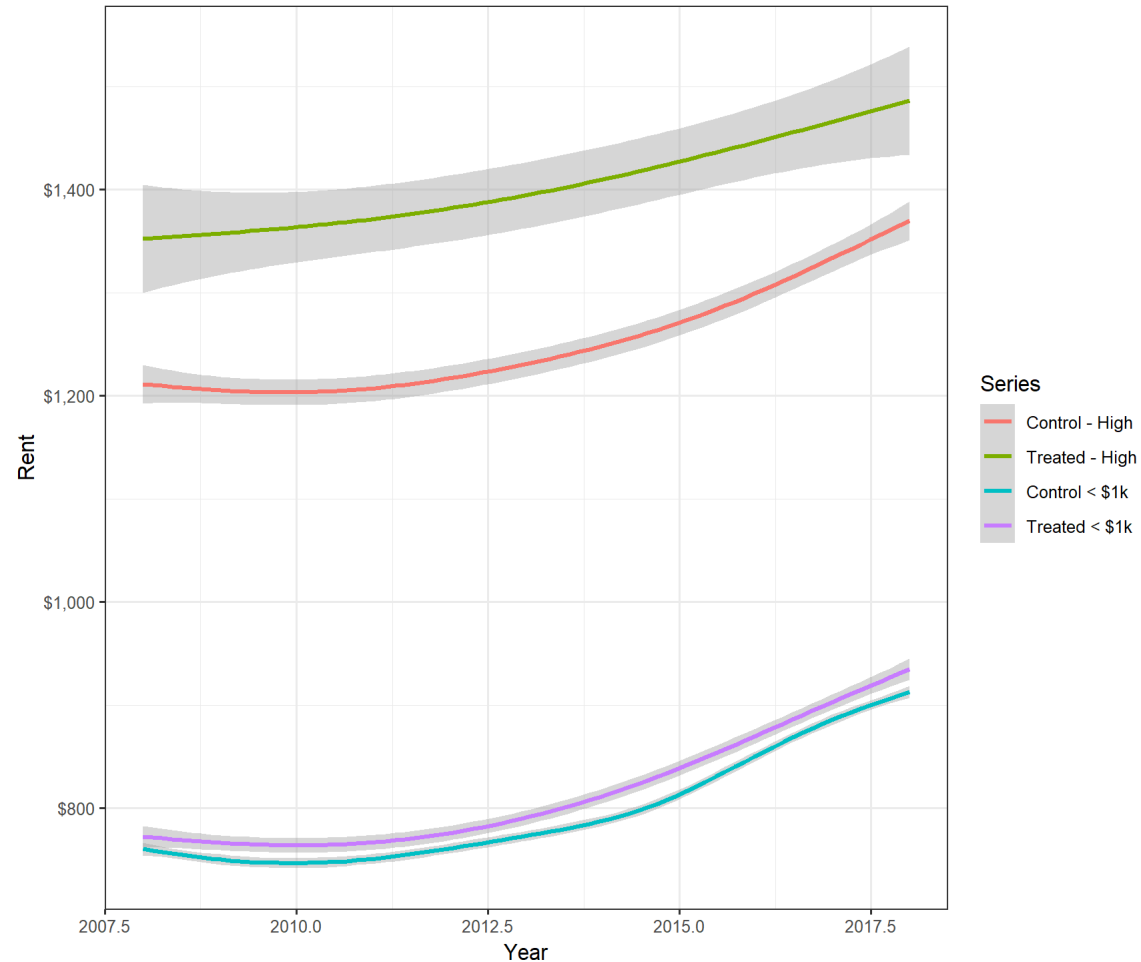
"Treated" = treated in any year in sample

Rent Trends by Year



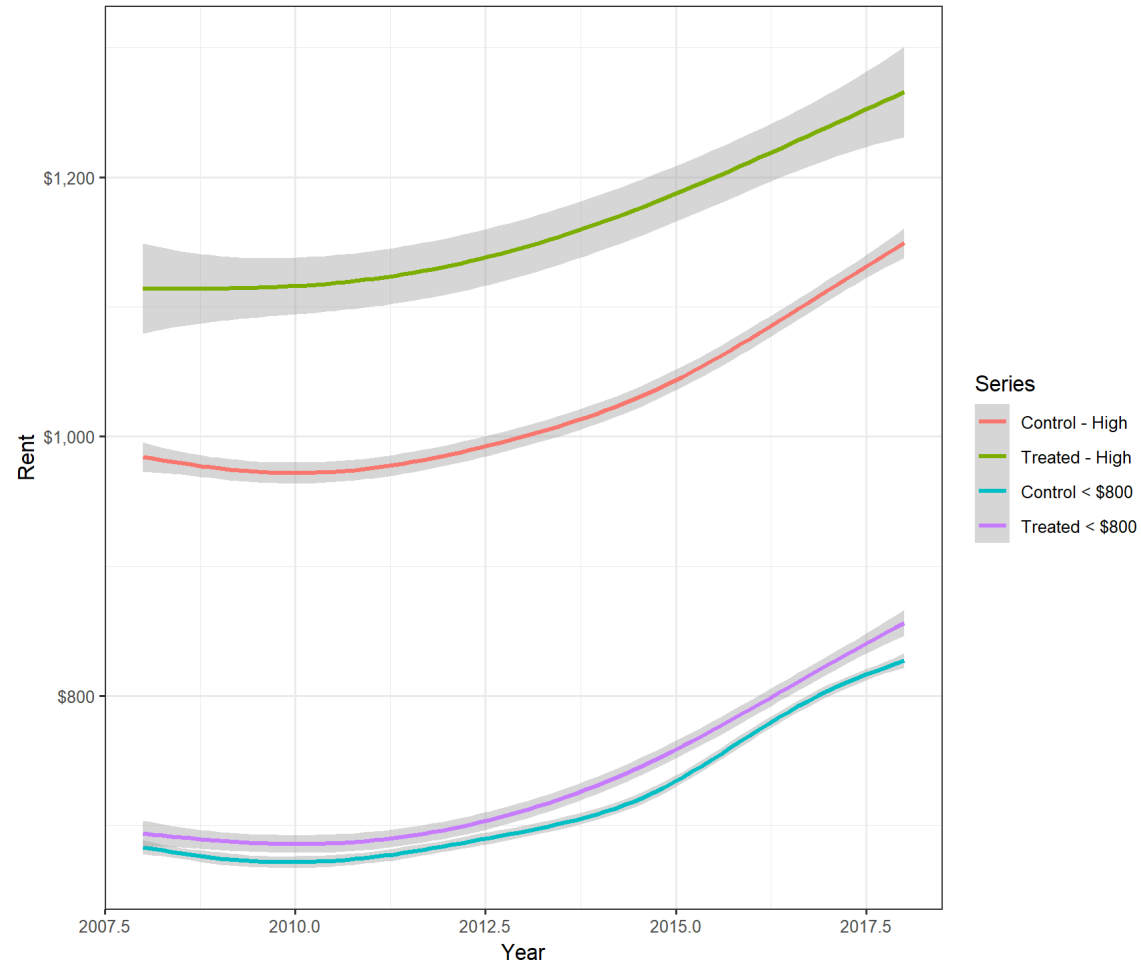
Source: Author Calculations, CoStar

Rent Trends by Quality Sub-market (Under \$1000)



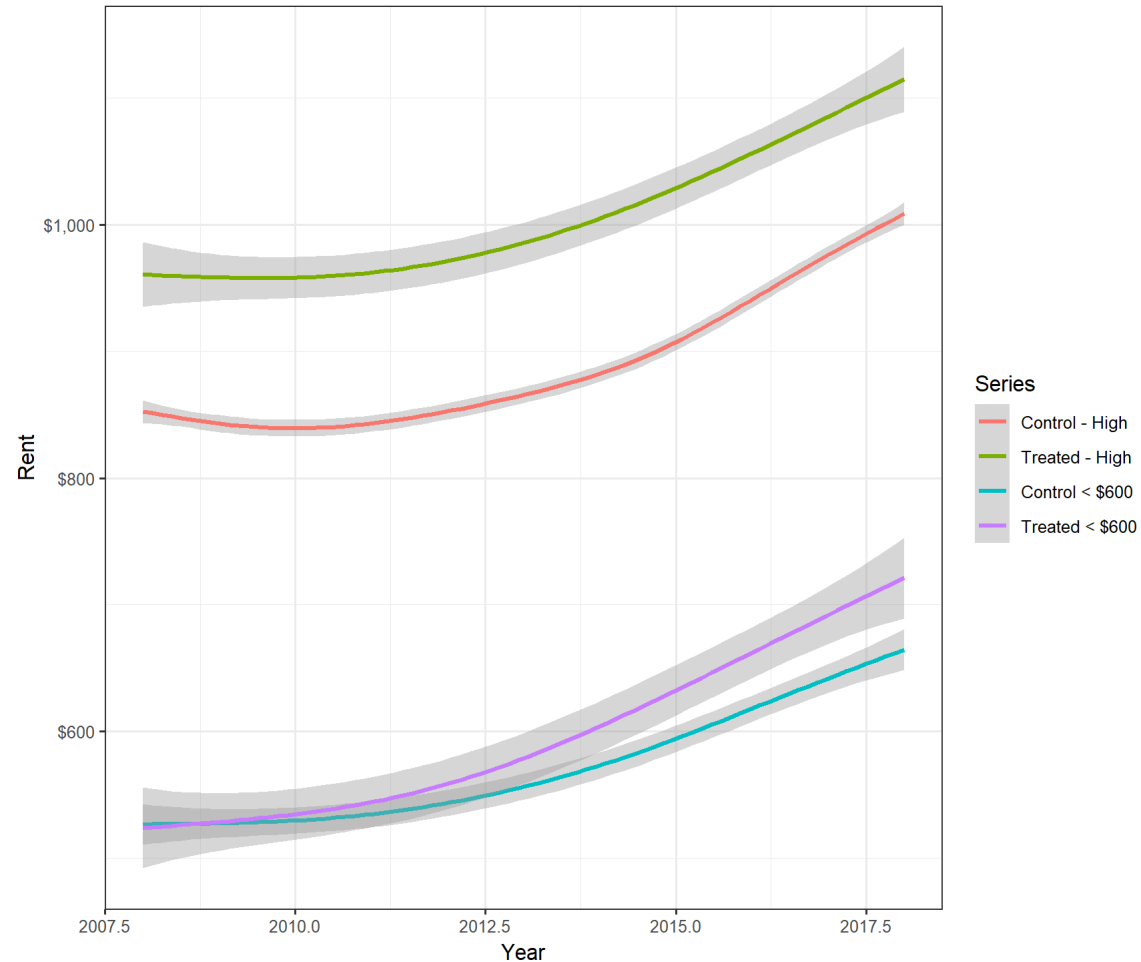
Source: Author Calculations, CoStar

Rent Trends by Quality Sub-market (Under \$800)



Source: Author Calculations, CoStar

Rent Trends by Quality Sub-market (Under \$600)



Source: Author Calculations, CoStar

Dynamic Model Specification

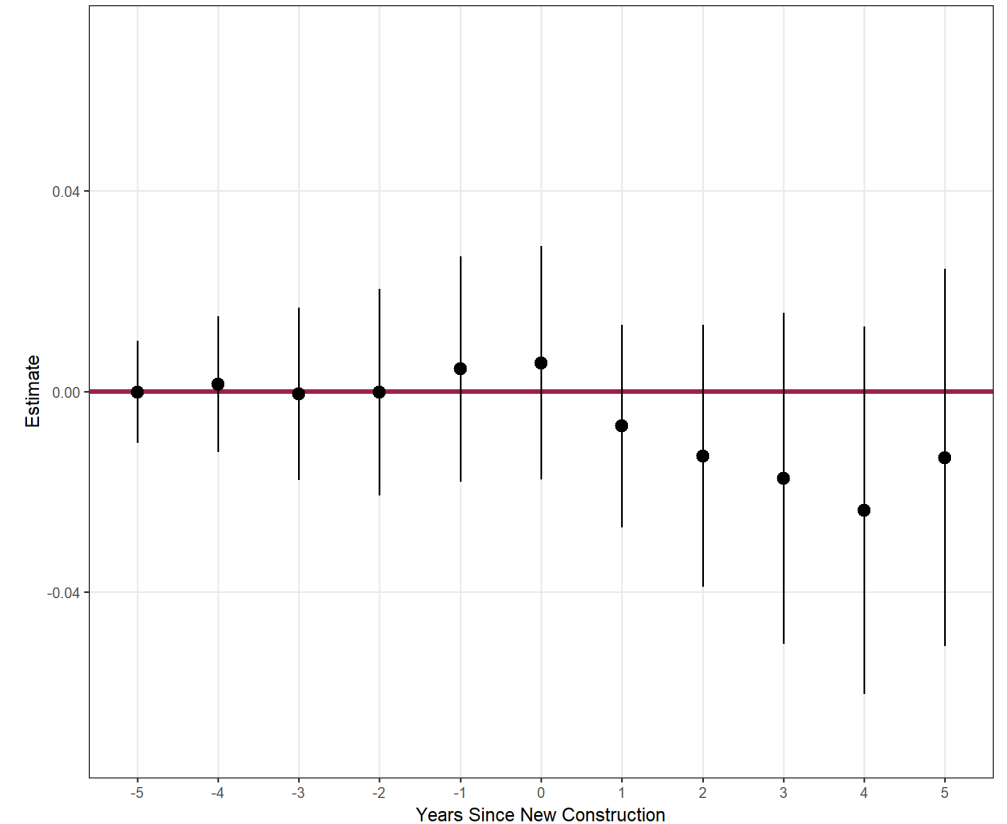
$$y_{it} = \alpha_i + \gamma_t + \sum_{k=-5}^5 \beta_k D_k + e_{it}$$

Where:

- y_{it} is Building/bedroom average rent in year-quarter t
- α_i is Building/bedroom fixed effect
- γ_t = Year-quarter fixed effect
- k indexes relative years from treatment
- D is the treatment variable

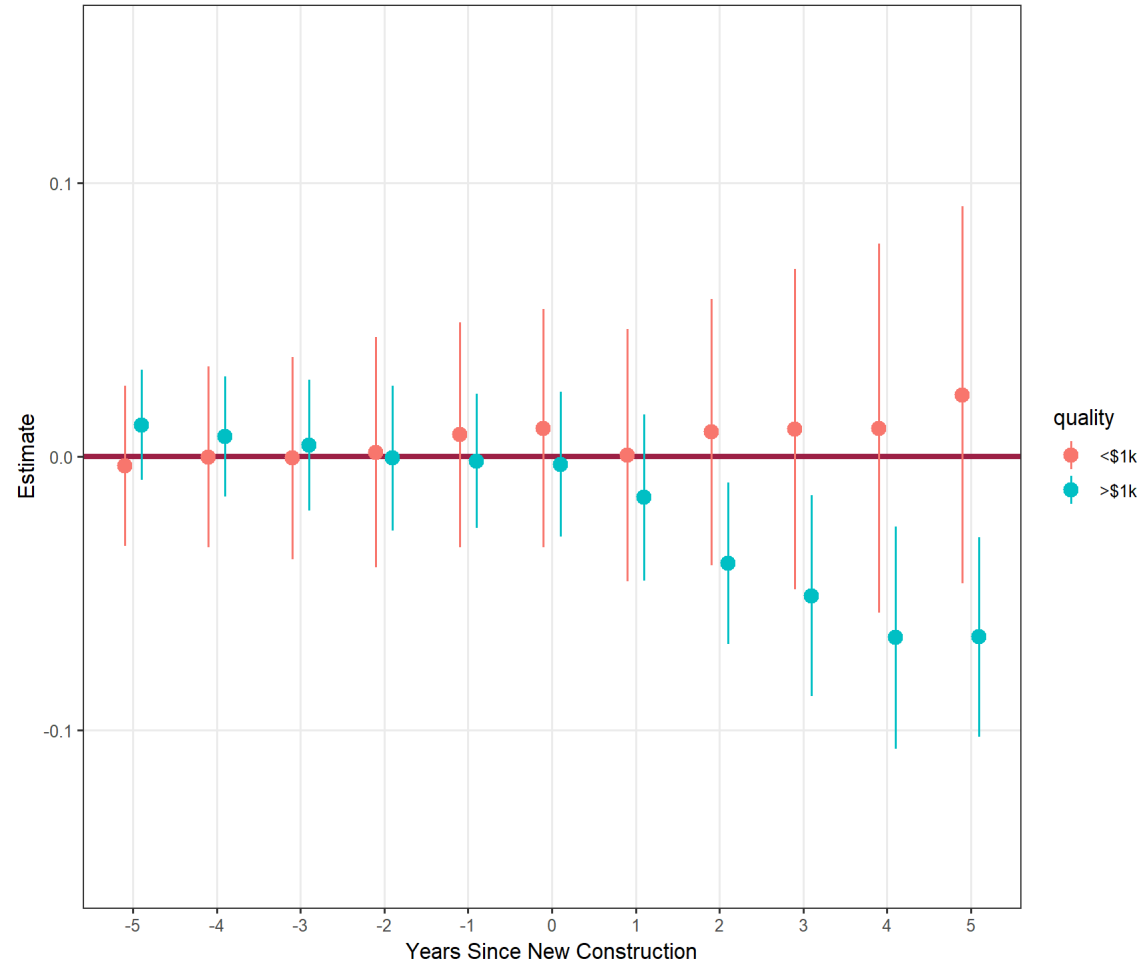
Spatial Event Study - Base Model

- Negative effect on rents overall (not statically significant)
- Masks significant variation based on the quality sub-market
- The following models compare differing definitions of "low" and "high" quality sub-markets
- Results are more extreme as quality declines suggesting an overall compression of rents in treated areas



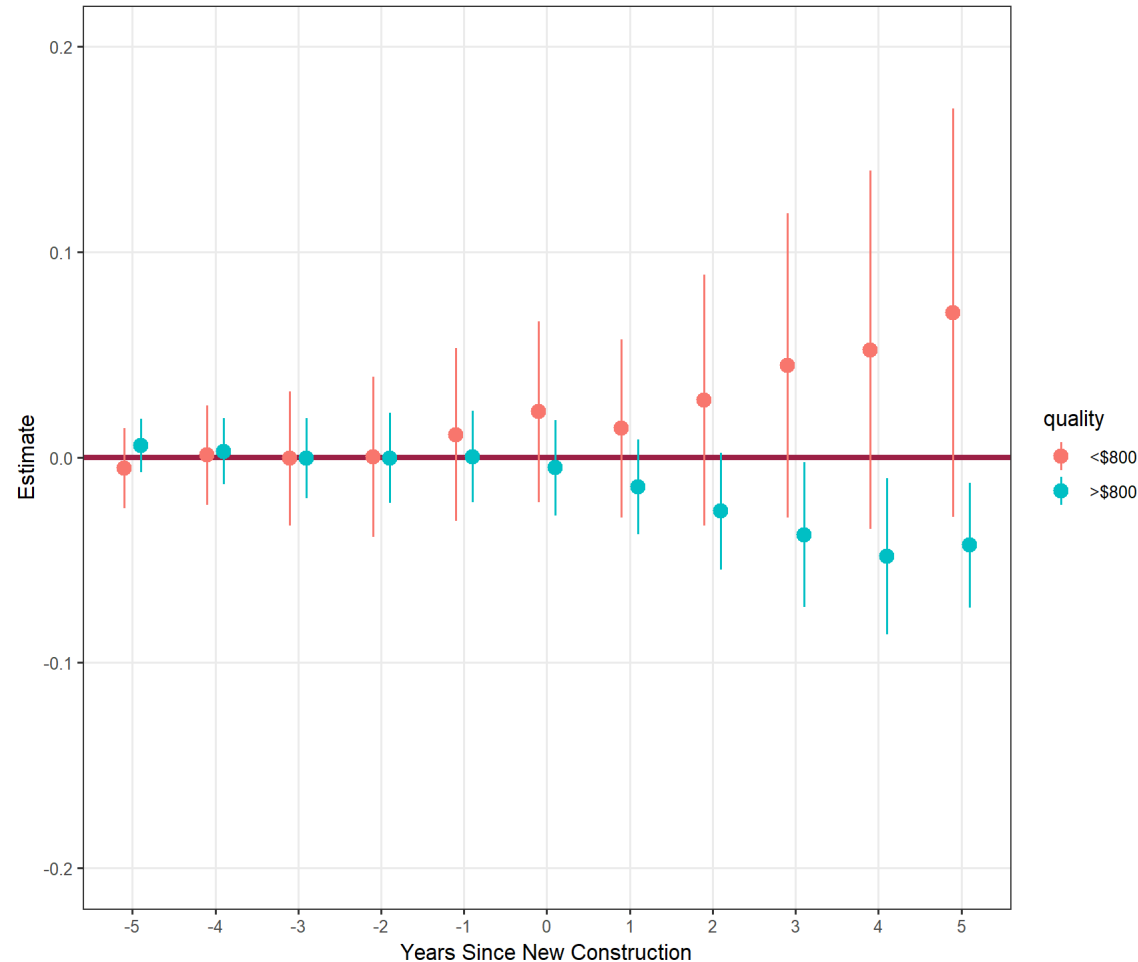
Source: Author Calculations, Costar

Model differentiating Effects by Sub-market (Under \$1k)



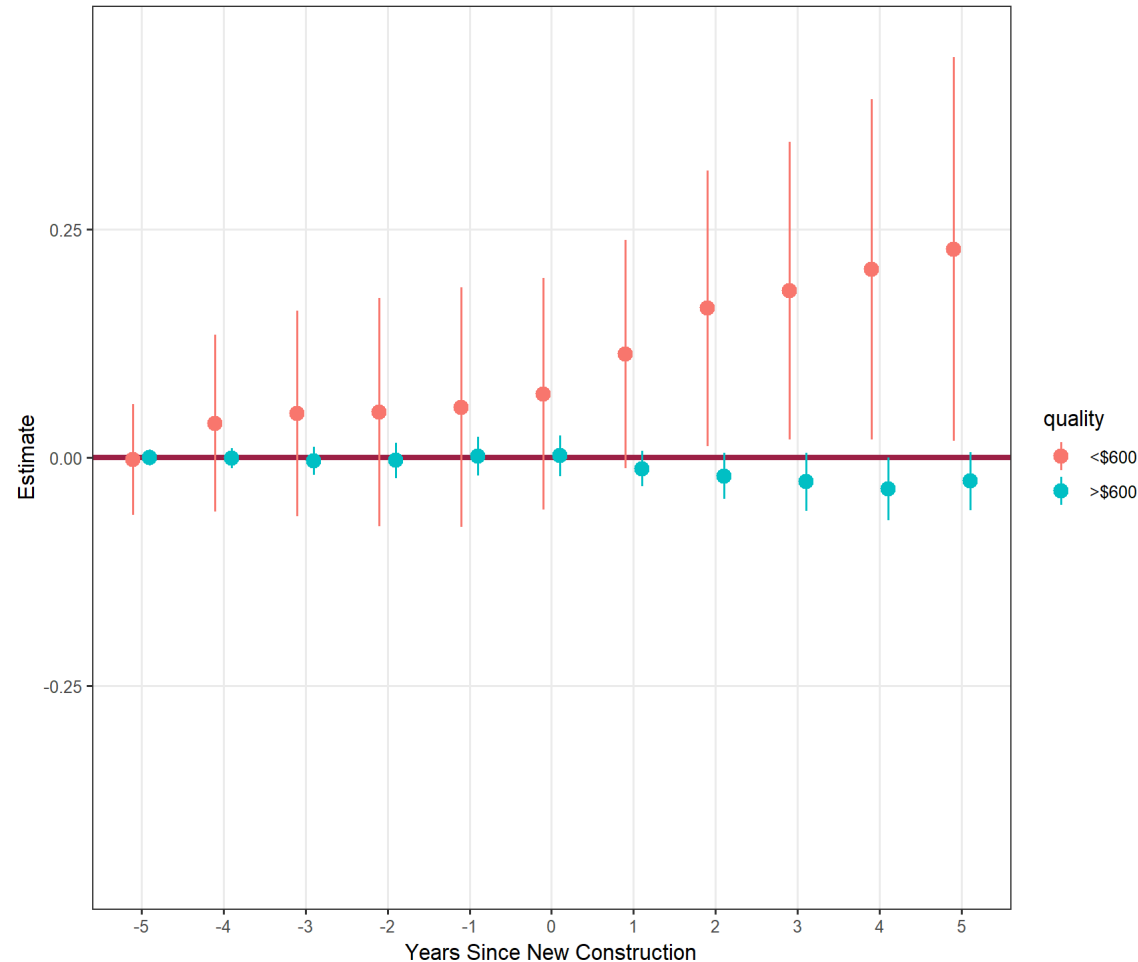
Source: Author Calculations, Costar

Model differentiating Effects by Sub-market (Under \$800)



Source: Author Calculations, Costar

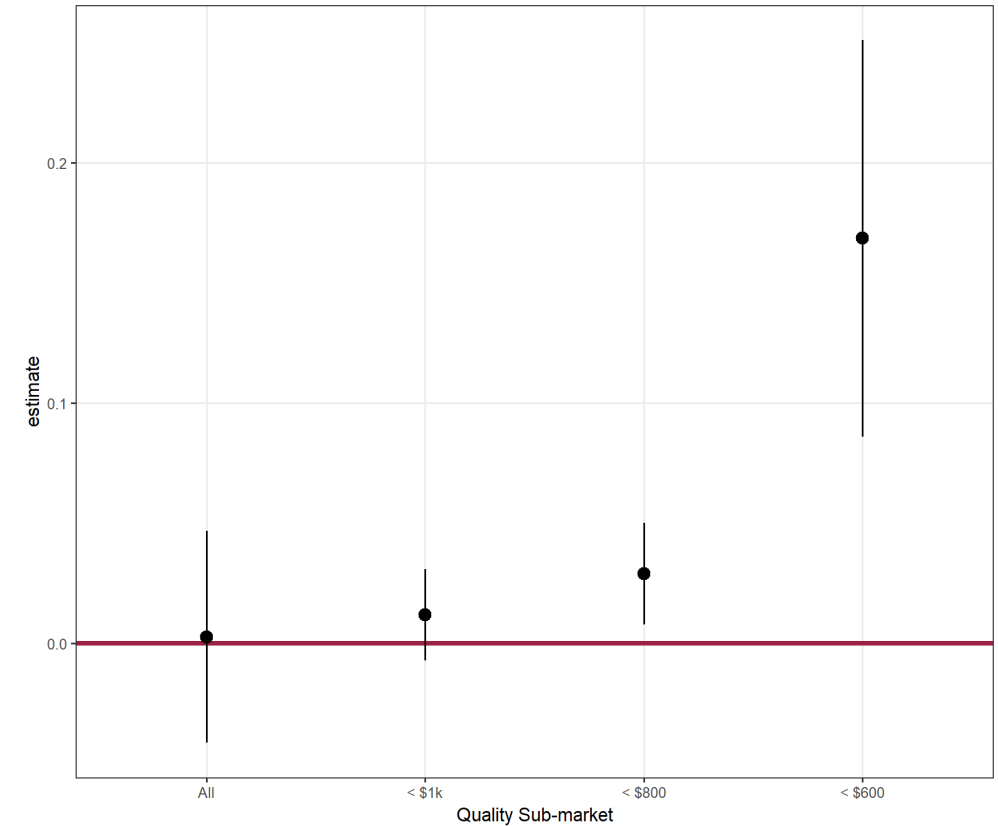
Model differentiating Effects by Sub-market (Under \$600)



Source: Author Calculations, Costar

Average Treatment on the Treated (ATT) Models

- Average treatment effects model from Callaway & Sant'Anna (2018)
- Controls for differences across time and treatment cohorts
- ATT ranges from 1% to 17% depending on sub-market definition



Source: Author Calculations, Costar

Limitations/Next Steps

Limitations

- One city case study
- (Sometimes) noisy sub-market estimates
- Models do not control for possible time varying differences between treated/control lower quality sub-markets

Next Steps

- Triple-diff model? to control for the above issues
- Sensitivity analysis around distance thresholds
- Geographic analysis and tests for spatial clustering