

## **APPENDIX**

### **Data Cleaning Operations**

We arrive at the final dataset used in the analysis by performing the following data operations.

We first eliminate records that have missing values in key variables such as sale amount and date as well as in any of the structural characteristics. We also remove non-arm-length sales, transactions with quitclaim deeds and records with duplicate sale values or sale dates. We then use address information to geocode each transaction in ArcGIS software and Google Maps API. After removing transactions that were not geocoded due to incomplete address information, we obtained a sample of 244,233 sale observations, on which we perform further data cleaning operations. First, we keep records only of properties that sold more than once. This reduces our sample of geocoded properties down to 201,153 transactions involving 64,781 properties.

Second, properties that sold more than once in one year or more than 5 times during our sample period are eliminated. This is done to avoid any bias that could be introduced if high turnover of these properties is due to non-arm-length transactions or correlation of their prices and proximity to remediated brownfields with some unobservable characteristics. We also eliminate properties with anomalous characteristics (e.g. a property is listed as sold before it was built).

Finally, to eliminate outliers, sale prices that fall below the 1st and above the 99th percentile are dropped from the sample. The data set is a panel with 123,852 repeat sale transactions.

**Table A1:** Brownfield Cleanup Program Tax Credit Types Claimed by Sites Located In New York City, 2005-2014.

Credit Components	NYC		NY State (excluding NYC)	
	Dollar Amount	Percent of Total	Dollar Amount	Percent of Total
Cleanup	85,197,643	13.13	57,909,948	9.44
Tangible Property Redevelopment	557,637,048	85.94	522,914,206	85.28
On-Site Groundwater Remediation	2,619,487	0.40	4,888,647	0.80
Real Property Taxes	3,249,686	0.50	27,398,245	4.47
Insurance	150,000	0.02	30,000	0.00
<b>Total</b>	<b>648,853,865</b>		<b>613,141,046</b>	

Note. All program cost data are available from annual reports for 2005-2014 years. The first tax credits were claimed in 2007. All amounts in the table are nominal values, however, for BCP benefit and cost calculations these amounts are brought to 2011 using future and discount value formulas (refer to section 5 for more details).

**Table A2:** Capitalization Effects of BCP Site Entry and Cleanup Using Falsified Entry and Cleanup Dates.

	(1)	(2)	(3)	(4)
	-100 days	-200 days	-300 days	-400 days
Entry	-0.00141 (0.00266)	-0.00278 (0.00268)	-0.00164 (0.00270)	-0.00254 (0.00266)
Cleanup	-0.00365 (0.00563)	-0.00121 (0.00545)	-0.00250 (0.00530)	-0.000716 (0.00517)
Controls:				
Quarter FE	Y	Y	Y	Y
Property FE	Y	Y	Y	Y
Census Tract - Year FE	Y	Y	Y	Y
Observations	27,425	27,425	27,425	27,425
R-squared	0.94	0.94	0.94	0.94

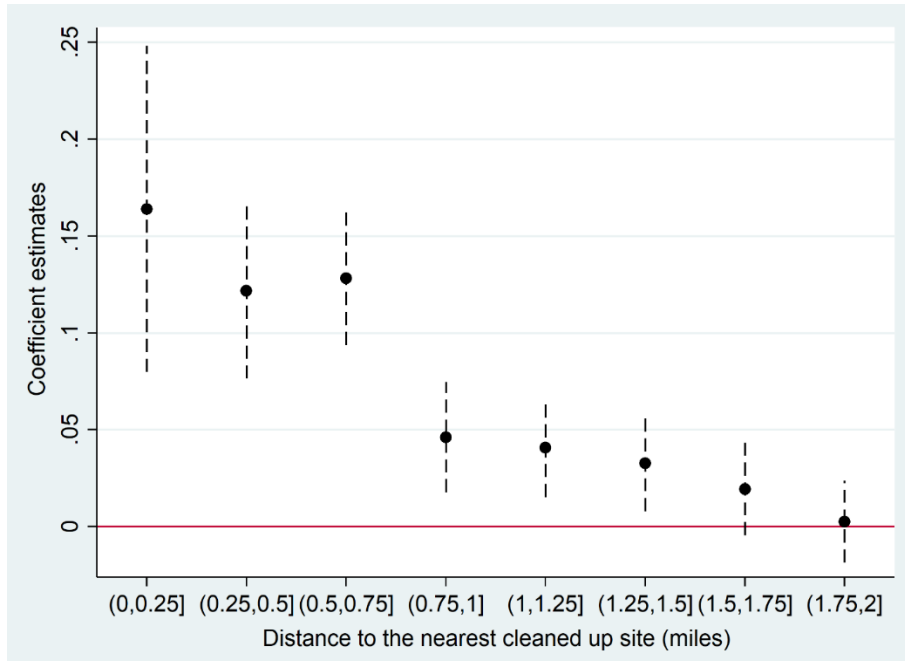
Note: Standard errors in parentheses clustered at property level. Each column moves entry and cleanup dates by 100, 200, 300 and 400 days before the actual dates. Estimation is done on properties sold before entry and cleanup (pre-treatment sample). \* p<0.10; \*\* p<0.05; \*\*\* p<0.01.

**Table A3:** Capitalization Effect of Site Redevelopment Through BCP on Local Property Values Using Different Months of Redevelopment.

	Dependent Variable: log sale price			
	(1) -3 months	(2) -6 months	(3) +3 months	(4) +6 months
Entry	0.0103*** (0.0038)	0.0103*** (0.0038)	0.0103*** (0.0038)	0.0103*** (0.0038)
Cleanup	-0.0005 (0.0033)	-0.0005 (0.0033)	-0.0005 (0.0033)	-0.0005 (0.0033)
Redevelopment	0.0022 (0.0106)	0.0019 (0.0104)	0.0020 (0.0110)	0.0013 (0.0115)
Observations	72,253	72,253	72,253	72,253
R-squared	0.82	0.82	0.82	0.82

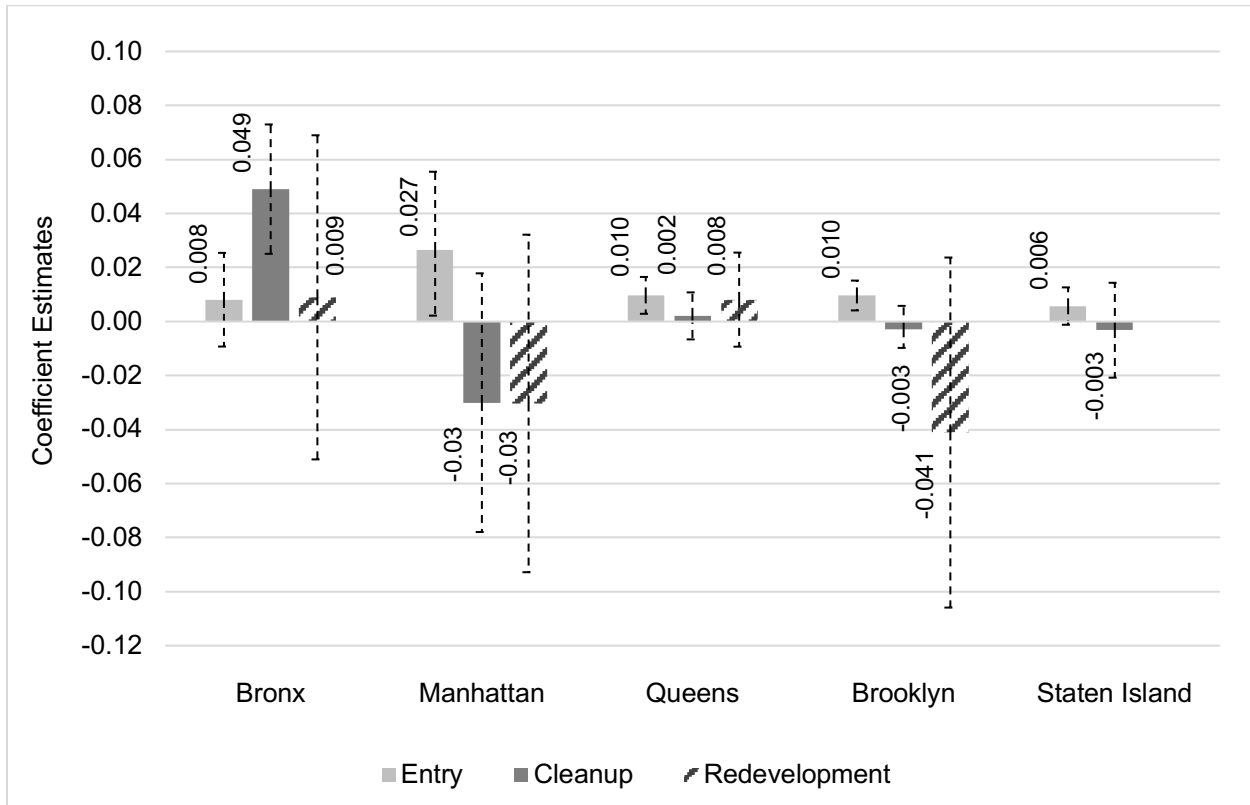
Note: Sample includes residential property transactions between 2004 and 2011. Entry, cleanup and redevelopment variables are created as density measures described in equation [3]. Standard errors are in parentheses and clustered at the property level. \* p<0.10; \*\* p<0.05; \*\*\* p<0.01.

**Figure A1:** Property Effects of Site Cleanup By Distance Bands.



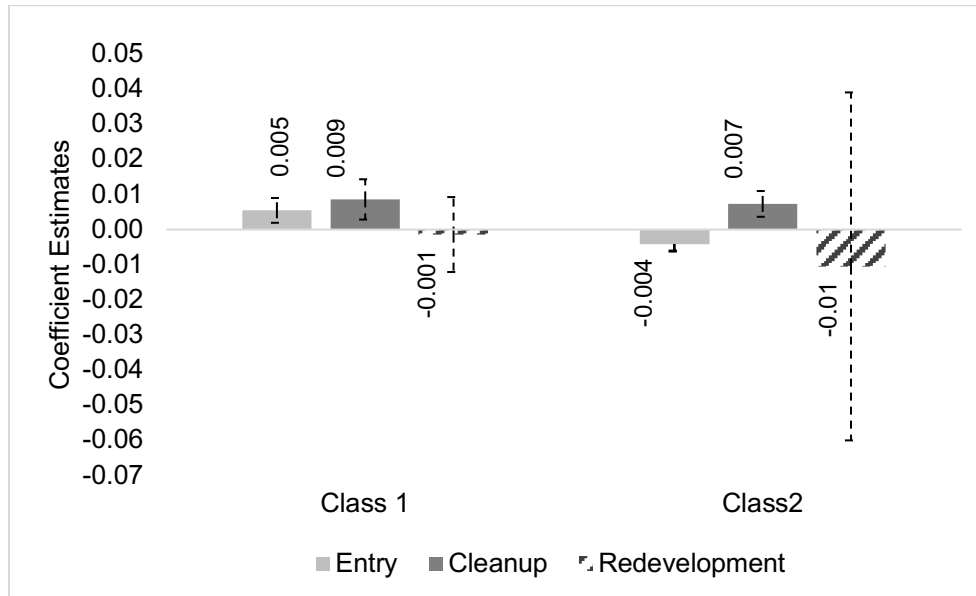
Note: The vertical dashed lines represent 95% confidence intervals.

**Figure A2:** Heterogeneous Capitalization Effects of BCP Site Entry and Cleanup by New York City Boroughs.



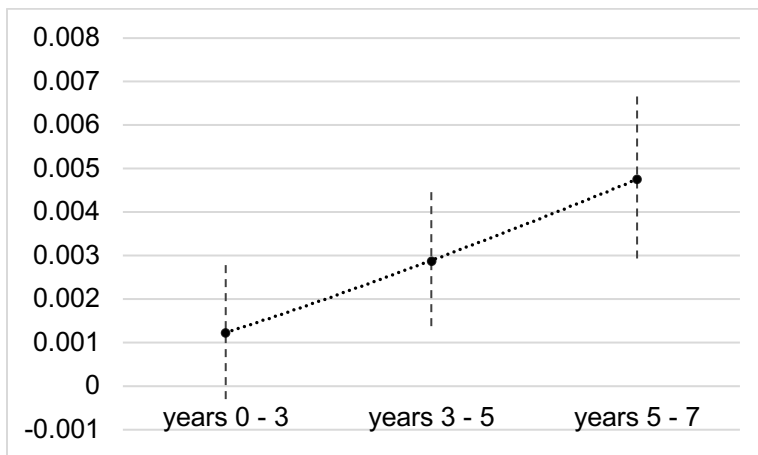
Note: The bars and numbers next to the bars are the estimated coefficients. The vertical dashed lines represent 95% confidence intervals. The effects are estimated separately for each borough using the model from equation [2]. Entry, cleanup and redevelopment are density measures constructed according to equation [3] as sums of inverse distances of BCP sites located within 1 mile of a property. Estimates for site entry and cleanup rely on the full sample of residential property transactions, while the effect of site redevelopment is estimated using residential property transactions between 2004 and 2011.

**Figure A3:** Heterogeneous Capitalization Effects of BCP Site Entry and Cleanup by Class 1 and Class 2 Property Types.



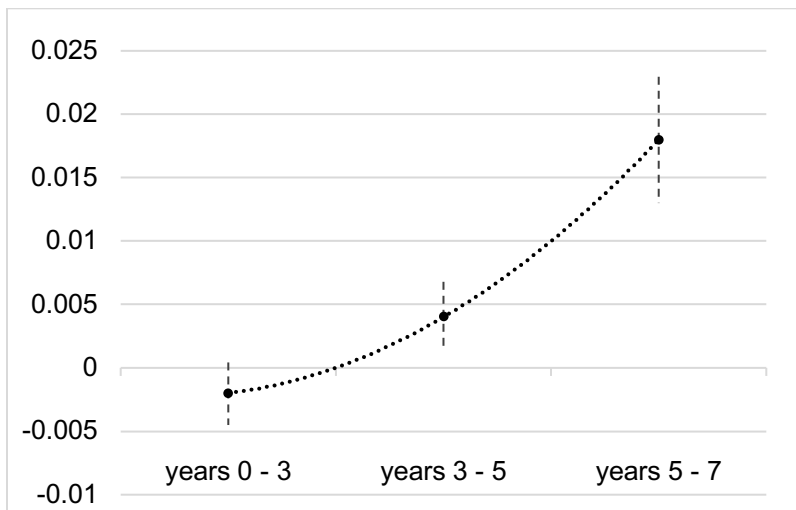
Note: The bars and numbers next to the bars are the estimated coefficients. The vertical dashed lines represent 95% confidence intervals. The effects are estimated separately for Class 1 and Class 2 properties using the specification in equation [2]. Entry, cleanup and redevelopment are density measures constructed according to equation [3] as sums of inverse distances of BCP sites located within 1 mile of a property. Estimates for site entry and cleanup rely on the full sample of residential property transactions, while the effect of site redevelopment is estimated using residential property transactions between 2004 and 2011.

**Figure A4:** Time to Capitalization of BCP Site Entry.



Note: The vertical dashed lines represent 95% confidence intervals.

**Figure A5:** Time to Capitalization of BCP Site Cleanup.



Note: The vertical dashed lines represent 95% confidence intervals.