Online Appendix for:

Creative Destruction:
Barriers to Urban Growth and the Great Boston Fire of 1872

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I Appendix

This Appendix has five sections. In the first section, we explore potential biases in the tax assessment records and their relationship to market values. In the second section, we report some additional robustness checks for relative changes in land values and building values in the burned area relative to the unburned area. In the third section, we provide additional details on the estimation of the Fire's total impact on land value and alternative functional forms for parameterizing geographic spillover effects. In the fourth section, we provide additional details on our measurement of industry agglomeration. In the fifth section, as a modern epilogue to the historical results in the paper, we present estimated impacts on the combined value of land and buildings in 2012.

I.A Validity of Tax Assessment Records

A general concern with tax assessment data is whether the assessed values accurately reflect economic conditions. Assessed values were intended to reflect market values in historical Boston, in contrast to many other contexts. Indeed, an historical statistical analysis reflects on the relative accuracy of tax assessment statistics in Boston (Whitmore, 1896). The tax assessment records contain occasional notes to disputed property valuations, reflecting landowner appeals based on recent sales records of that building or comparable units. Assessed values were also not directly influenced by city finances, as properties were first assessed and then the tax rate was chosen to obtain the level of tax revenue targeted by the Boston City government (Fowler, 1873).

We collected supplemental data, from Boston's Registry of Deeds, to test the relationship between assessed values and the available data on property sales. We searched our assessment database for cases in which plots had changed owner names between 1867 and 1894, but retained the same street address and area in square feet. We then searched Boston's Registry of Deeds to confirm that a property sale had taken place, and obtained the sale price from the property's original deed of sale. This search yielded 72 preserved deeds for property sales outside the burned area and 16 property sales inside the burned area.

Figure 2 shows the relationship between properties' assessed value and sales value, along with the 45-degree line. Assessed values align closely with the available sales data in the burned and unburned areas, both before and after the Fire. Appendix Table 1 reports the average difference between assessed values and sales values, broken out by before and after the Fire in the burned and unburned areas. The estimated differences are small in magnitude, though imprecisely estimated due to the small sample, and we estimate no relative shift in the assessment-to-sales value ratio in the burned area after the Fire. In contrast to the use of sales records, the tax assessment data provide valuations for all plots and avoids selection bias in which plots are sold.

A potential concern is that assessed values and sales values might only align for properties that have been sold. The compared assessed values are from the period before the sales values, and so there is no mechanical effect whereby assessors would have used the sale of that particular plot in its assessment. We can also compare the assessed values of sold plots to the assessed values of other nearby plots to measure whether sold plots are systematically different. We do not observe a difference, on average, between the assessed land values of these sold plots and the assessed land values of unsold plots within the same city block and year.[1]

Assessors were instructed to assign market values to land and buildings, separately, and then also provide the total value. A natural concern is whether assessors were effective in obtaining separate valuations for land and buildings. It does appear that tax assessors were able to effectively separate plots' land value and building value, based on the assessment of vacant plots. Comparing the assessed land values for vacant plots to the assessed land values for non-vacant plots within 100 feet, we do not estimate a substantial or statistically significant difference. This implies that assessed land values were not influenced, on average, by the associated building values. There is also substantial variation in the fraction of total assessed value that is assigned to buildings.[2]

We have also explored further how land values were determined. The tax assessment ledgers contain some margin notes, which suggest that land assessments were often calculated by multiplying plot size by an assessed value per-foot. The same per-foot valuation is not mechanically applied to all nearby plots, as there are 3,419 unique land values per-foot among the 6,566 plots in 1872.[3] These land values also vary in expected ways with plot characteristics. Plots labeled "rear", and presumably without street access, are assessed 37% lower per square foot than other plots within the same block and street. Plots labeled

[1]In particular, we regress each plot's log assessed land value per square foot on a dummy variable for whether that plot was sold (i.e., included in our comparison of sold and assessed values) and block-by-year fixed effects. The estimated coefficient is -0.045 with a block-clustered standard error of 0.037. Perhaps not surprisingly, log building value per square foot is marginally higher for sold plots (coefficient of 0.131 with a block-clustered standard error of 0.072), since the sale of buildings might be associated with the upgrading of building structures or sold structures might otherwise be selected relative to nearby unsold structures. Land values provide the better test of comparability of assessment between sold and unsold plots, as land values are less likely to be associated directly with ownership changes.

[2]On average, building value makes up 37% of the combined value of buildings and land. In considering variation across plots in the fraction of total value assigned to buildings, the standard deviation across all plots and years is 19 percentage points. Conditional on block-by-year effects, which explain 49% of the variation in the fraction of total plot value assigned to the building, the standard deviation across plot residuals is 13 percentage points. Thus, even within a block and year, there remains substantial variation in the fraction of total assessed value that is assigned to a plot's building or land.

[3]The 10 most common values per square foot make up 15% of the total values, including: 2 (3.12%), 4 (2.04%), 3 (1.98%), 5 (1.74%), 2.5 (1.55%), 1 (1.26%), 1.5 (1.04%), 10 (0.99%), 3.5 (0.72%), and 6 (0.62%).

"corner" are assessed 31% higher per square foot than other plots within the same block and street. Each 100 feet of distance from the Old State House lowers land value per square foot by 4.3%.[4] Block fixed effects explain 72% of the variation in land value per-foot (25 buildings per block), whereas block-by-street fixed effects explain 83% of the variation (7 buildings per block-street).

The main empirical results are also consistent with tax assessors effectively separating land values and building values. Following the Fire, land values increased substantially among nearby unburned plots while building values were initially unchanged. Land values also increased similarly among burned plots and nearby unburned plots, suggesting that the absence of buildings did not mechanically increase assessment of land. Similarly, following individual building fires, there was no change in assessed land values. These results corroborate our findings that vacant plots are not assessed systematically different land values, and that the ratio of assessed values to sales values did not change relatively in the burned area after the Fire.

I.B Robustness of Land Value and Building Value Impacts

One natural question concerns potential spatial correlation in plots' land value and building value, which might cause the empirical analysis to overstate the statistical precision of the estimates. Our main empirical specifications allow for spatial correlation within blocks, but we now consider allowing for spatial correlation across plots that declines linearly in geographic distance up to some distance cutoff (Conley, 1999). Appendix Table 2 presents the estimated impacts on land value and building value, along with standard errors that assume different distance cutoffs. The estimated coefficients correspond exactly to those in Table 2 and Table 4, and the estimated standard errors generally rise and then decline with further distance cutoffs. The statistical precision remains similar, however.

Controlling for differential changes associated with plots' distance to the Old State House, which proxies for distance to peak values at the center of the city, Appendix Table 3 reports similar estimated impacts of the Fire on land value and building value. Distance to the Old State House has substantial predictive power in explaining cross-sectional differences between burned and unburned areas, prior to the Fire, and so these results are further indications that baseline cross-sectional differences are not strongly associated with differential changes over the sample period. Further, when estimating impacts on land value and building value by distance to the burned boundary, the estimated distance bin figures look indistinguishable when controlling for distance to the Old State House. The main specifications are weighted by plot size, for reasons discussed above, but Appendix Table 3 also reports similar estimates

[4] Controlling for block fixed effects, rather than block-by-street fixed effects, the corresponding coefficients are 42%, 42%, and 5.5%.

from unweighted regressions.

I.C Estimating the Total Impact of the Fire

To estimate the total impact of the Fire on plots' land value in the burned and unburned areas, we model the Fire's impact using a piecewise linear function: constant within the burned area, decreasing linearly with plots' distance to the Fire boundary ($dist$),[5] and then zero after some distance cutoff (c):

$$V_{dist} = \beta_1 \max\left\{\frac{c - dist_{it}}{c}, 0\right\} \tag{1}$$

We then estimate Equation 2 in the main text, substituting this piecewise linear function for the indicator function denoting the burned area. Using non-linear least squares, we simultaneously estimate the fire effect β_1 and distance cutoff c that best fits the data.

We then calculate the estimated effect of the Fire on each plot ($\hat{Y}_{it}$), based on the estimated impact in the burned area ($\hat{\beta}_1$) and the estimated cut-off point beyond which the Fire has no further effects ($\hat{c}$). Finally, for a given year, we calculate the fraction of each plot's land value that is due to the Fire and sum across all plots.

As robustness checks in the estimation of the spillover effects, we experimented with three alternative formulas for the spillover function:

1. A variant allowing the spillover to be non-linear:

$$V_{dist} = \beta_1 \max\left\{\left(\frac{c - dist_{it}}{c}\right)^{\gamma}, 0\right\}$$

2. An asymptotic variant with no cut-off:

$$V_{dist} = \beta_1 \left(\frac{1}{1 + \beta_2 dist_{it}}\right)^{\gamma}$$

3. A fourth-degree polynomial with no cut-off:

$$V_{dist} = \sum_{n=1}^{4} \beta_n dist_{it}^{n}$$

Appendix Figure 3 shows the four estimated spillover functions, including the baseline piecewise linear model. All of the functions produce fairly similar estimates in approximating the

[5] This distance is zero for points within the burned area.

nonparametric relationship apparent in Figure 5. The three non-linear specifications estimate the mean in the burned area to be slightly greater than the baseline model, a steeper decay in the spillover effect, and spillover effects continuing into plots further from the Fire. Divergent properties of polynomials are visible past 3000 feet, where the third function turns back upwards, as only 6.3% of the sample lies beyond 3000 feet from the burned area.

The first and second alternative models allow us to generate alternative estimates of the Fire's total impact, as they include an estimate of where spillover effects end. The first model estimates a total impact of \$16 million (with a standard error of \$3.8 million), which is only slightly larger than our baseline estimate. Estimates are less similar with the second alternative formula, as we must assume the Fire's spillover effects disappear only when distance goes to infinity, and the estimated impact is \$124 million. Identification of the second alternative model is tenuous, however, as the within-sample functional form is used to project impacts on distances far out of sample. Our baseline estimates are more conservative, assuming that the spillover effects go to zero at some cutoff within the sample region. Within the sample region, all four functional forms provide a broadly similar parameterization of the basic relationship seen in Panel A of Figure 4.

Our within-Boston empirical analysis is unable to quantify all aggregate effects at the city level, though positive spillover impacts by distance to the Fire boundary generally appear to dissipate within the sample region. Some of the direct Fire effects may reflect displacement of economic activity, though the presence of significant spillover effects continue to suggest the existence of substantial cross-plot externalities. Relative increases in land value for nearby unburned plots imply at least large relative gains from widespread and simultaneous reconstruction at higher levels of building quality.

I.D Measuring Impacts on Industry Agglomeration

To measure how agglomerated each industry is in the burned and unburned areas, we calculate L_{ib} for each industry i in each area b. This L function provides a normalized measure of the number of same-industry establishments within a radius r of each establishment, relative to the number of establishments that would be expected under perfect spatial randomness (following Ripley, 1977). For industry i with N_{ib} establishments in an area b with square footage A_b, let λ_{ib} be the sample estimate of the density of establishments per square foot: $\lambda_{ib} = N_{ib}/A_b$. The value of L_{ib} for radius r, is then given by:

$$L_{ib}(r) = \sqrt{\lambda_{ib}^{-1} \sum_{k=1}^{N_i} \sum_{j=1, j \neq k}^{N_{ib}} \mathbb{I}\left[d(k,j) < r\right] / \pi N_i} - r, \tag{2}$$

where $\mathbb{I}\left[d\left(k,j\right)<r\right]$ is an indicator function equal to one if firms k and j are within distance r of each other. We calculate $L_{ib}\left(r\right)$ for three radius values (50, 100, 200) and for 18 industries in 1867, 1872, 1882, and 1894.

Values of $L_{ib}>0$ are associated with greater agglomeration, whereas negative values signify a more uniform dispersion than would occur given a random distribution of points. A value of L_{ib} equal to $-r$ is associated with complete dispersion (i.e, no establishments in industry i have other establishments from industry i with r feet). A value of L_{ib} equal to $\sqrt{A_b/\pi}-r$ is associated with complete agglomeration (i.e., all establishments in industry i are within r feet of each other).

To mitigate "edge effects," we do not consider firms within r feet of the sample boundary in the outer summation, indexed by k, in equation 2. These firms near the boundary are included as potentially being part of clusters of firms near the non-boundary firms and are included in the j-indexed inner summation. Similarly, firms across the boundary of the burned area are counted as potentially being part of the cluster of firms on the other size of the boundary. Edges of the sample area that intersect with the ocean or Boston Common (a large park) are not counted as boundaries since firms near these edges chose to locate in spots where the potential for agglomeration was naturally limited.

Appendix Table 6 presents these estimates of agglomeration, by industry, for the burned area and unburned areas.[6] Most industries display some clustering, but there is no systematic increase in industry agglomeration in the burned area, relative to the unburned area, from 1872 to 1882 (column 8) or from 1872 to 1894 (column 9). Industries appear to become somewhat less agglomerated over time in the burned area, especially the more common industries, though some industries become more agglomerated.

I.E Epilogue: Estimated Impacts in 2012

As an epilogue, we consider whether the burned area differs from unburned areas in the modern period. We use data on Boston property values from plot assessments in 2012, which are intended to be assessed at market value.[7] Separate valuations for land and buildings are unavailable for condominiums, which make up a substantial portion of the downtown Boston area, so we are limited to analyzing the combined value of plot land and buildings.

Appendix Table 7 reports changes from 1872 to 2012 in the burned area, relative to changes in the unburned area. There is no statistically significant difference in the basic specification (column 1), though the burned area becomes substantially more valuable conditional on controls for plots' pre-Fire characteristics (column 2). The influence of pre-Fire

[6]For this Appendix Table, the distance radius is set to 100 feet.

[7]For details on assessment methodology, see: http://www.cityofboston.gov/assessing/assessedvalues.asp. We assigned plot locations by merging on plot ID to the Boston parcels map: http://boston.maps.arcgis.com.

controls is somewhat surprising, as we expected pre-Fire plot characteristics to have little predictive power in 2012 data. The burned area is close to the modern high-value financial district, which may not be due to the Fire and may reflect a spurious relationship between the Fire and long-run impacts. The identification assumption of parallel trends becomes increasingly tenuous over longer periods of time and, indeed, these estimates are more sensitive to the empirical specification and including controls for distance to Post Office Square and the Old State House. There is no indication that the burned area was disadvantaged over the long-run, though we suggest caution in interpreting these results as evidence of long-run gains.

References

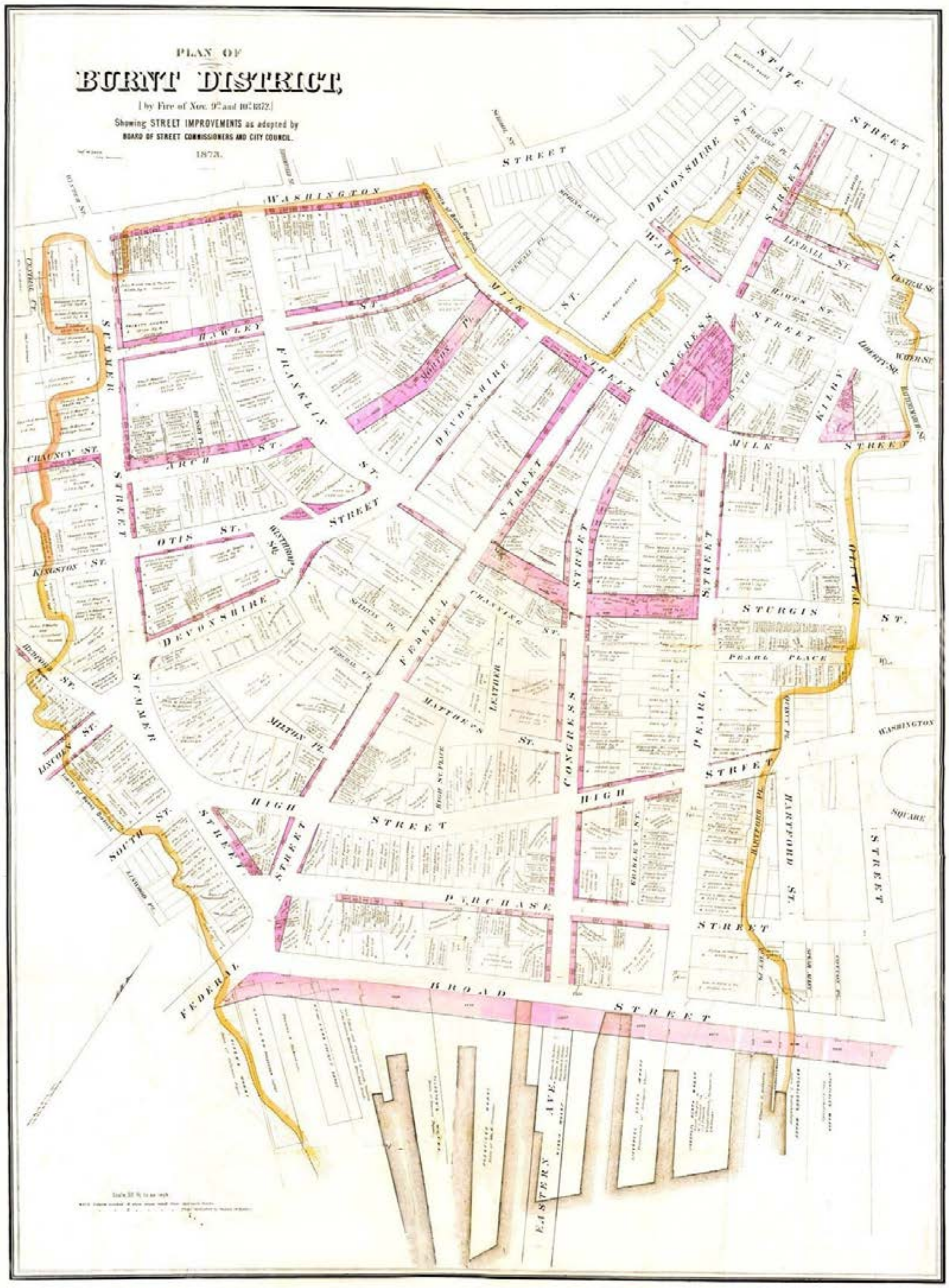
Conley, T.G. 1999. "GMM Estimation with Cross Sectional Dependence." *Journal of Econometrics*, 92(1): 1–45.

Fowler, William Worthington. 1873. *Fighting Fire.* Dustin, Gilman and Co.

Ripley, Brian D. 1977. "Modelling Spatial Patterns." *Journal of the Royal Statistical Society. Series B (Methodological)*, 39(2): 172–212.

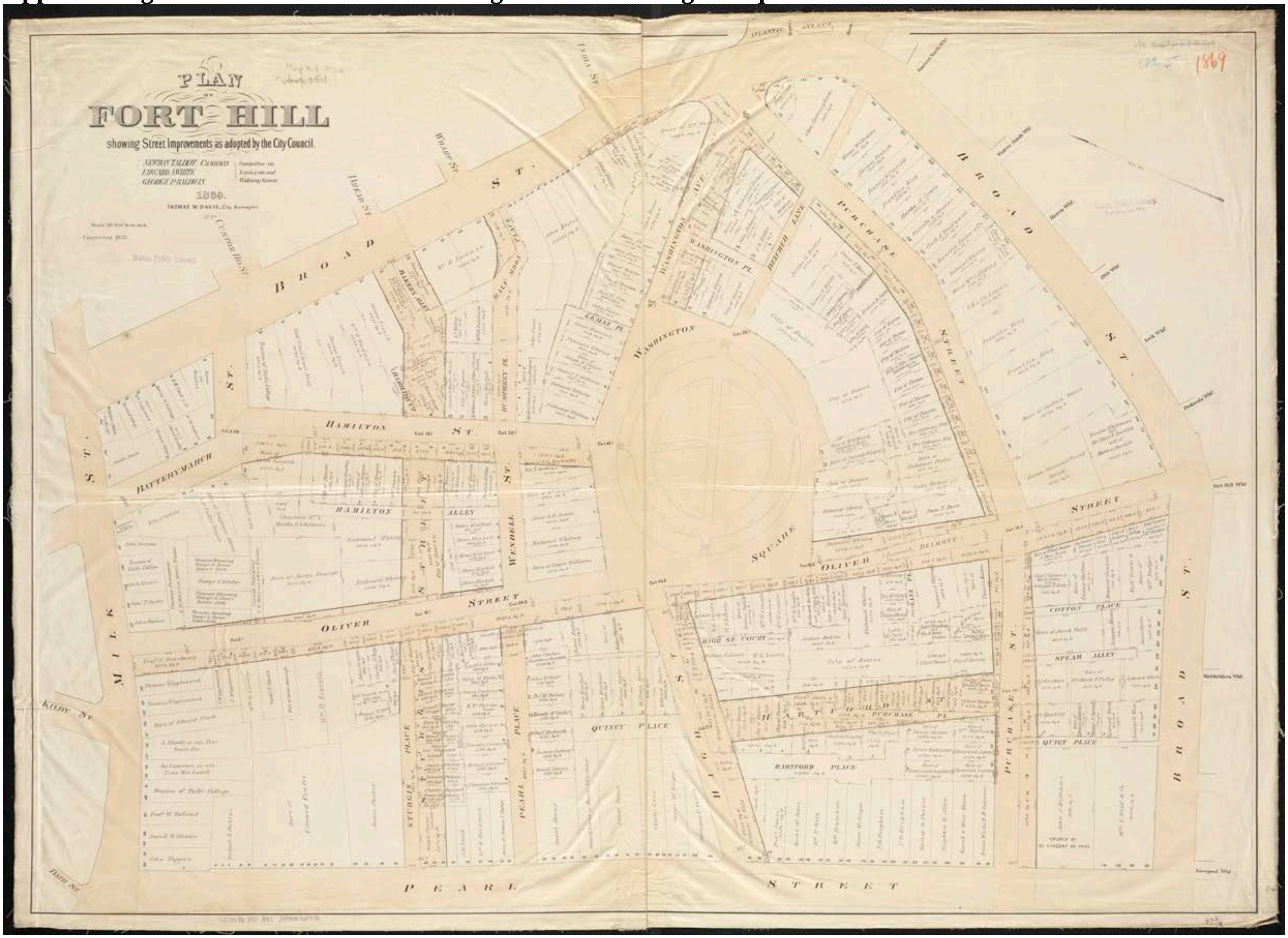
Whitmore, Henry. 1896. "Real Estate Values in Boston." *Publications of the American Statistical Association*, 5(33): 1–17.

Appendix Figure 1. Post-Fire Road Widening around the Burned Area



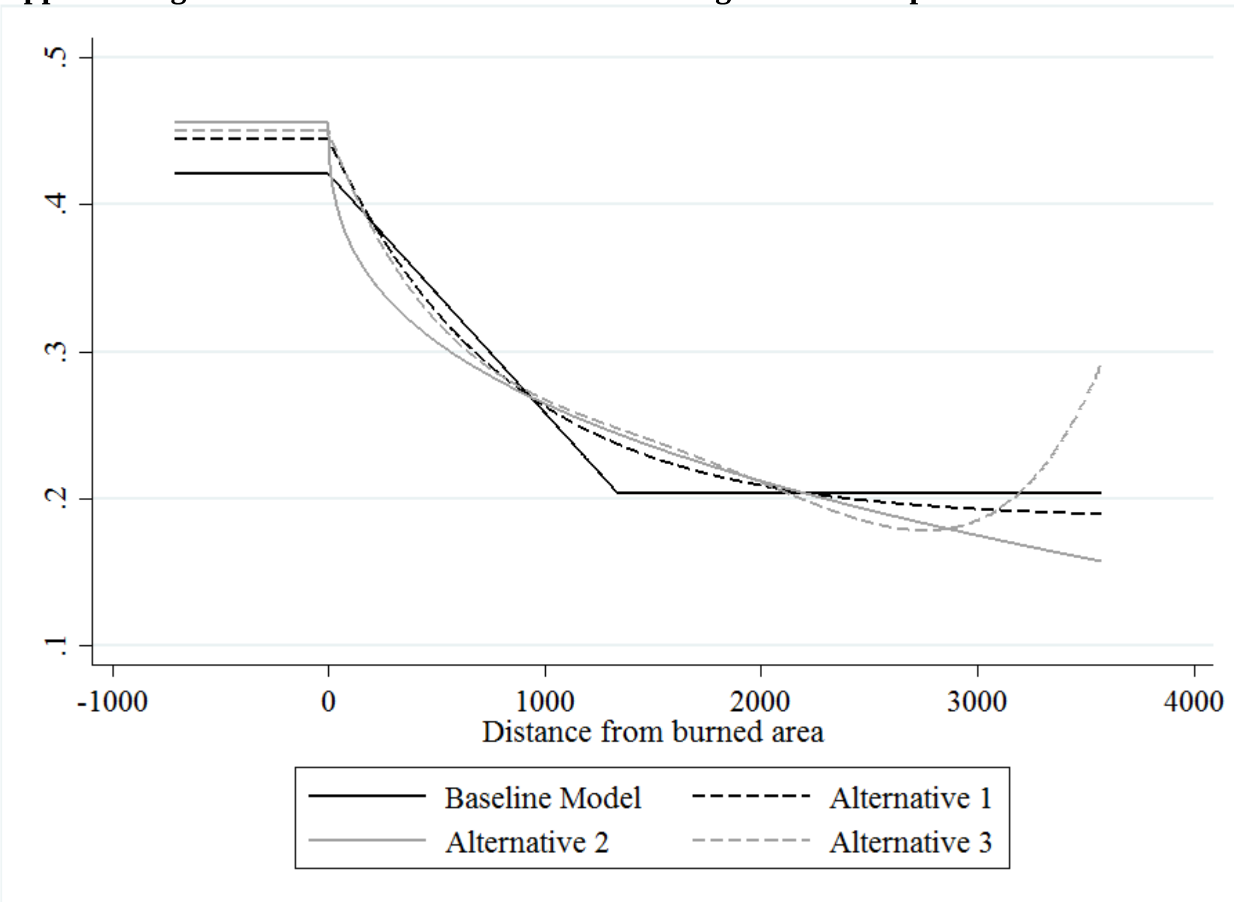
Notes: This map of the burned district indicates areas (shaded in pink) that were purchased by the City for road widening and the creation of Post Office Square.

Appendix Figure 2. Pre-Fire Road Widening around Washington Square



Notes: This map of the Fort Hill neighborhood (near the later burned area) shows pre-Fire changes in the road network and expansion of Washington Square.

Appendix Figure 3. Functional Forms for Estimating the Total Impact on Land Value



Notes: The baseline model shows the estimated functional form, reported in Table 3, which parameterizes the results shown in Panel A of Figure 4. Alternative models 1, 2, and 3 report alternative estimated functional forms, as described in the Appendix.

Appendix Table 1. Average Log Sale Value Minus Log Assessed Value

	After Fire: 1882 and 1894 (1)	Before Fire: 1867 and 1872 (2)	Difference: (2) - (1) (3)
Burned Area	-0.042	0.083	-0.125
	[0.297]	[0.162]	(0.119)
Unburned Area	-0.143	0.030	-0.173
	[0.631]	[0.312]	(0.124)
Difference	0.102	0.054	0.048
	(0.151)	(0.078)	(0.169)

Notes: Based on data from Boston's Registry of Deeds, matched to our tax assessment database, cells report the average log difference in sale price and assessed value of plots (sale price - assessed value). Column 1 reports estimates from after the Fire (in 1882 and 1894), and Column 2 reports estimates from before the Fire (in 1867 and 1872). Row 1 reports estimates in the Burned Area, and Row 2 reports estimates in the Unburned Area. Standard deviations are reported in brackets. Row 3 reports the difference in the Burned Area, relative to the Unburned Area; and Column 3 reports the difference after the Fire, relative to before the Fire. Column 3, row 3, reports the difference-in-difference estimate. The sample includes 72 plots in the Unburned Area, and 16 plots in the Burned Area. Robust standard errors are reported in parentheses.

Appendix Table 2. Conley Standard Errors at Varying Assumed Distance Cutoffs

	Log Value per Square Foot					
	Land Value			Building Value		
	Full Sample	Close Sample	Distant Sample	Full Sample	Close Sample	Distant Sample
	(1)	(2)	(3)	(4)	(5)	(6)
1873 x Burned	0.167	0.147	0.261	-2.024	-2.026	-1.917
Clustered by Block	(0.019)	(0.031)	(0.031)	(0.168)	(0.169)	(0.178)
250 foot cutoff	(0.019)	(0.020)	(0.029)	(0.165)	(0.165)	(0.171)
750 foot cutoff	(0.021)	(0.024)	(0.037)	(0.259)	(0.257)	(0.263)
1,250 foot cutoff	(0.022)	(0.025)	(0.041)	(0.249)	(0.247)	(0.249)
1,750 foot cutoff	(0.018)	(0.021)	(0.039)	(0.209)	(0.208)	(0.214)
1882 x Burned	0.143	0.130	0.284	0.509	0.462	0.700
Clustered by Block	(0.038)	(0.065)	(0.065)	(0.053)	(0.049)	(0.084)
250 foot cutoff	(0.038)	(0.037)	(0.058)	(0.058)	(0.056)	(0.085)
750 foot cutoff	(0.057)	(0.056)	(0.092)	(0.064)	(0.062)	(0.098)
1,250 foot cutoff	(0.063)	(0.064)	(0.104)	(0.051)	(0.047)	(0.101)
1,750 foot cutoff	(0.057)	(0.061)	(0.103)	(0.045)	(0.038)	(0.100)
1894 x Burned	-0.140	-0.149	-0.143	0.399	0.261	0.785
Clustered by Block	(0.058)	(0.077)	(0.077)	(0.079)	(0.073)	(0.108)
250 foot cutoff	(0.052)	(0.054)	(0.068)	(0.077)	(0.076)	(0.102)
750 foot cutoff	(0.093)	(0.099)	(0.104)	(0.097)	(0.097)	(0.131)
1,250 foot cutoff	(0.111)	(0.118)	(0.115)	(0.082)	(0.080)	(0.131)
1,750 foot cutoff	(0.109)	(0.119)	(0.110)	(0.080)	(0.070)	(0.124)
Controls:						
Year Fixed Effects	X	X	X	X	X	X
Year FE x Pre-Fire Values	X	X	X	X	X	X
Number of Plots	44543	19944	28438	43067	18908	27579

Notes: The reported coefficients correspond exactly to those reported in Table 2 and Table 4: column 1 corresponds to column 2 of Table 2; column 2 corresponds to column 4 of Table 2; column 3 corresponds to column 6 of Table 2; column 4 corresponds to column 2 of Table 4; column 5 corresponds to column 4 of Table 4; column 6 corresponds to column 6 of Table 4. For each coefficient, alternative standard errors are reported based different assumed distance cutoffs in the estimation of Conley standard errors (Conley 1999): 250 feet, 750 feet, 1,250 feet, and 1,750 feet. As a basis of comparison, we also report our main standard errors that are clustered by block.

Appendix Table 3. Impact on Land Value and Building Value, Alternative Specifications

	Baseline Specification		With Additional Controls:			Unweighted
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Log Value of Land per Square Foot						
1873 x Burned	0.167	0.162	0.146	0.171	0.119	0.189
	(0.019)	(0.019)	(0.019)	(0.018)	(0.024)	(0.020)
1882 x Burned	0.143	0.140	0.141	0.137	0.092	0.146
	(0.038)	(0.038)	(0.042)	(0.042)	(0.046)	(0.045)
1894 x Burned	-0.140	-0.143	-0.038	-0.175	-0.140	-0.108
	(0.058)	(0.058)	(0.059)	(0.058)	(0.074)	(0.061)
Panel B. Log Value of Building per Square Foot						
1873 x Burned	-2.024	-2.037	-1.997	-2.016	-2.041	-1.713
	(0.168)	(0.165)	(0.172)	(0.168)	(0.172)	(0.160)
1882 x Burned	0.509	0.477	0.292	0.510	0.291	0.533
	(0.053)	(0.055)	(0.060)	(0.051)	(0.071)	(0.054)
1894 x Burned	0.399	0.350	0.068	0.403	0.036	0.469
	(0.079)	(0.076)	(0.093)	(0.072)	(0.111)	(0.062)
Controls:						
Year Fixed Effects	X	X	X	X	X	X
Year FE x Pre-Fire Values	X	X	X	X	X	X
Nearest Road Width		X			X	
Nearest Water Main Width		X			X	
Distance to Post Office Square			X		X	
Distance to Old State House				X	X	

Notes: The reported specifications in Panel A correspond to Table 2 and those in Panel B correspond to Table 4. Column 1 reports estimates from our baseline specification (Column 2 in Tables 2 and 4). Column 2 includes additional controls for each plot's nearest road width (interacted with year) and nearest water main diameter (interacted with year). Column 3 includes controls for each plot's distance to Post Office Square (interacted with year). Column 4 includes controls for each plot's distance to the Old State House (interacted with year). Column 5 includes all of these controls. Column 6 reports estimates from an unweighted regression. In Columns 1, 2, 3, 4, and 5, the regressions are weighted by plot size. Robust standard errors clustered by block are reported in parentheses.

Appendix Table 4. Impact of the 1869 Road Widening Project around Washington Square

	Log Value of Land per Square Foot	
	(1)	(2)
1869 x Within 50 Feet of Road Widening	-0.248	-0.260
	(0.033)	(0.034)
1871 x Within 50 Feet of Road Widening	-0.125	-0.159
	(0.101)	(0.088)
1872 x Within 50 Feet of Road Widening	0.079	0.063
	(0.073)	(0.061)
Controls:		
Year Fixed Effects	X	X
Year FE x 1867 Values		X
R-squared	0.021	0.900
Number of Plots	26546	19807

Notes: For all specifications, the outcome variable is the log value of land per square foot. Each Column reports the estimated difference between plots within 50 feet and beyond 50 feet from the 1869 Washington Square road widening project, relative to the omitted year of 1867. Column 2 includes controls for each plot's nearest plot value in 1867 (most often the value of those same plot boundaries) and controls for each plot's city block average value in 1867. The regressions are weighted by plot size. Robust standard errors clustered by block are reported in parentheses.

Appendix Table 5. Number of Unique Owners and Number of Plots, by Burned and Unburned Areas

	Number of Owners		Annual Percent Change		Number of Plots		Annual Percent Change	
	Burned	Unburned	Burned	Unburned	Burned	Unburned	Burned	Unburned
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1867	402	3,524			620	6,120		
1872	367	3,385	-1.74	-0.79	580	6,013	-1.29	-0.35
1873	346	3,395	-5.72	0.30	519	5,970	-10.52	-0.72
1882	322	3,282	-0.77	-0.37	486	5,503	-0.71	-0.87
1894	309	3,095	-0.34	-0.47	465	5,076	-0.36	-0.65
2012					112	1,964	-0.64	-0.52

Notes: Columns 1 and 2 report the number of unique owner names in the burned area and unburned area, respectively. Columns 3 and 4 report the annual percent change from the period before in the number of unique owners. Columns 5 and 6 report the number of individual land plots in the burned area and unburned area, and columns 7 and 8 report the annual percent change in this number from the period before. Note that 8 of the 19 owner declines between 1872 and 1873, and 20 of the 61 plots eliminated between 1872 and 1873, were a direct consequence of land taken for road widening.

Appendix Table 6. Industry-by-Industry Changes in Agglomeration (Ripley's L Function, 100 foot radius)

		Clustering Index						Difference-in-Difference	
		Burned Area			Unburned Area			Burned vs. Unburned	
	Obs.	1872	1882	1894	1872	1882	1894	1872 to 1882	1872 to 1894
Industry	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Shoes	297	215	143	187	233	555	392	-394	-186
Leather	159	171	178	185	264	1167	1100	-895	-823
Clothes	112	93	154	166	153	138	243	76	-17
Liquors	110	224	287	-100	199	207	185	56	-310
Dry Goods	107	108	101	-100	282	380	283	-105	-208
Hats	107	169	440	204	215	246	228	240	21
Tailor	88	311	457	142	222	364	321	4	-268
Machinery	50	248	130	28	532	331	228	84	85
Hardware	48	62	118	221	440	276	254	221	345
Jewelry	48	675	854	641	373	628	679	-76	-339
Printer	48	78	99	105	283	197	227	107	83
Fancy Goods	46	140	-100	318	161	-100	404	21	-65
Teams	45	26	-11	24	210	347	-100	-174	308
Kitchen Goods	37	87	216	-100	192	500	289	-179	-283
Cigars	35	318	318	-100	98	235	188	-137	-509
Paper	34	145	169	111	351	115	219	260	98
Clothing Accessories	18	152	412	142	790	240	273	810	507
Cotton	13	165	71	-100	-100	659	-100	-853	-265

Notes: For the 18 most common identifiable industries, column 1 reports the number of times that industry is observed in 1872. Columns 2 to 4 report agglomeration index values for that industry in the burned area in 1872, 1882, and 1894. These values are generated by Ripley's L function with a distance radius of 100 feet (refer to the Appendix for details), and more positive values correspond to greater industry agglomeration. Columns 5 to 7 report estimates for the unburned area in 1872, 1882, and 1894. Column 8 reports the change from 1872 to 1882 in the burned area, relative to the change in the unburned area; Column 9 reports the change from 1872 to 1894 in the burned area, relative to the change in the unburned area.

Appendix Table 7. Impact in 2012 on Combined Value of Land and Building in the Burned Area, Relative to the Unburned Area

	Log Combined Value of Land and Building Per Square Foot								
	Full Sample			Close Sample			Distant Sample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2012 x Burned	0.126	0.574	0.118	0.256	0.518	0.11	0.025	0.826	0.467
	(0.216)	(0.215)	(0.260)	(0.235)	(0.224)	(0.256)	(0.238)	(0.341)	(0.478)
Controls:									
Year Fixed Effects	X	X	X	X	X	X	X	X	X
Year FE x Pre-Fire Values		X	X		X	X		X	X
Distance to Post Office Square			X			X			X
Distance to Old State House			X			X			X
R-squared	0.836	0.901	0.906	0.853	0.906	0.912	0.873	0.907	0.908
Number of Plots	8642	8642	8642	3630	3630	3630	5704	5704	5704

Notes: The reported specifications correspond to those reported in Tables 2 and 4, but the outcome variable is the combined value of land and buildings per square foot because separate data are less available in 2012. Column 1 reports the estimated difference in 2012 between all plots in the burned area and all plots in the unburned area, relative to the difference in the omitted year 1872. Column 2 includes controls for each plot's nearest plot value in pre-Fire years (1867, 1869, 1871, 1872) and controls for each plot's city block average value in pre-Fire years (1867, 1869, 1871, 1872). Column 3 includes controls for the distance of the plot from the Old State House and from Post Office Square, as in Appendix Table 3. Columns 4 - 6 report corresponding estimates, but limiting the sample of unburned plots to those within 1,338 feet of the Fire boundary. Columns 7 - 9 report corresponding estimates, but limiting the sample of unburned plots to those beyond 1,338 feet from the Fire boundary. The sample is limited to 1872 and 2012. The regressions are weighted by plot size. Robust standard errors clustered by block are reported in parentheses.