The Impact of Expired Community Reinvestment Area Property Tax Abatements

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CONDUCTED BY
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Executive Summary

This report follows our previous independent studies on Franklin County tax abatements that were conducted as a complement to the Franklin County Auditor's annual Tax Incentive Review Council (TIRC) report process. Specifically, this report revisits findings from our 2021 report (found here). That report specifically investigated whether Community Reinvestment Area (CRA) abatements for residential houses contributed to rising home prices in the county.

Using covariate matching to identify counterfactual houses without abatements and fixed-effects regression models, we concluded that active property tax abatements did increase home prices, depending on how large the abatement was (i.e., the scale of the CRA renovation on the property) and how many years were remaining on the abatement when the property was sold. We also found that active CRA abatements had positive spillover effects on the prices of neighboring properties up to 100 meters (roughly one block) and attributed this effect to realtor comps capturing the abated property's renovation (i.e., "the neighborhood is up and coming").

This year's study examines what happens to home prices, appraised values, and neighboring home values *after* a CRA abatement's term ends and it rolls off the property. Does the property retain its higher price and/or value? Do buyer adjust such that their price reflects the full property tax burden? Do nearby values adjust downward as CRA abatements end and their neighbors' renovations age? In 2021, we did not have enough data to fully evaluate this because there was not a large enough sample of homes with both expired CRA abatements **and** a recent sale, which is a relatively specific data requirement given that there are generally only a few thousand abated properties in the county in full at a given time. In 2026, however, we have five additional years of data that also include many sales from after the COVID-19 pandemic dramatically impacted the housing market. We believe this expanded sample not only allows for more viable statistical analysis but also is more relevant and applicable for the modern Franklin County housing market.

This paper uses the sample of expired abatements from 2014-2025, which means the abatements were initiated in 2000 or after, since many run for 10 to 15 years in length. We use similar methodology to our 2021 study, matching each property with an expired abatement that sold to a plausible counterfactual property that sold in the same taxing district in the same year to prevent cross-city and cross-year market comparisons. We then regress the sale price on the abatement expiration status, how many years prior to the sale the abatement had expired (which captures the age of the renovations), and a collection of housing and neighborhood characteristics. We include year and school-district fixed effects to control for universal time factors and time-invariant geographic characteristics that buyers value, predominantly school quality.

We repeat this analysis using 2023 appraised valued from the county's last update to home values to test whether expiring abatements are captured in the form of declining home values relative to similar, never-abated properties. We also re-test for spillover effects of expiring abatements on nearby properties. Finally, we conduct a Census tract analysis to try and glean insights into how areas with heavy abatement volume may be changing or gentrifying, regardless of abatement expirations.

This report has several key findings:

1. Expiring abatements carry a positive home-price premium of roughly 12.3% in the year they expire. Each additional year after expiration reduces the premium by about 5.3%. These effects are statistically significant (non-random) in the controlled, fixed-effects sample. What this means is that as an abatement rolls off, buyers are likely unaware. This is attributed to property taxes in Ohio being paid retroactively. Once the full property tax burden kicks in, buyers begin to devalue the abatement and, presumably, its associated renovations, which are generally over a decade old. By the third year after an abatement ends, there is no positive price effect remaining for ever having received a CRA abatement. This is consistent with our prior conclusion that the financial value of a CRA abatement is realized by the first owner who sells a property with an active (or expired within the past two years) CRA abatement. Buyers of actively abated properties pay more for the property, and future sellers of an expired CRA do not recoup the full price premium.

   We note for readers that this does **not** mean that home prices declined. Our results control for other factors, to hold other housing factors constant. Another way to think about our negative effect for per year after expiration is to consider if the hypothetical housing market overall rose 10% overall in the county. Our results suggest that residential parcels with a CRA abatement that expired two years ago would then experience a 10.8% price increase, while properties with CRA abatements that expired three years ago would experience only a 5.5% price increase.

2. Appraisal values did not decline in 2023 for expired CRA abatements relative to similar parcels, regardless of whether they had expired before or after the previous appraisal cycle. In fact, we find that properties with past CRA abatements actually experienced a roughly 8.4% higher reappraisal, relative to their matched similar properties.

   We attribute this to the 2023 reappraisal process. This methodology incorporates housing market data that is lagged by nature. That means that there likely were not enough expired CRA abatements, with enough of a negative premium built up, to move the overall housing market. Additionally, for expired abatements to meaningfully manifest in market data, enough of the parcels would have to be brought to market rather than owners continuing to occupy them. Given that there are only about 2,900 such properties that have sold over 12 years, this is not an unexpected result for a market-based reappraisal.

   We also speculate that even the Auditor's sexennial reappraisal would not capture declining abatement values since it does not inspect home interiors. This means that housing buyers see dated CRA renovations that appraisers do not. Additionally, buyers have financial incentive to negotiate prices based on both the age of renovations and the fact that they will be the party paying property taxes on the parcel. Appraisers lack such an incentive to lower a specific property's appraisal value for the purpose of lowering its property tax costs to the owner.

3. Expired CRA abatements did not produce negative spillover effects onto their neighbors. In fact, positive effects of about 10% and 9% remained for neighbors up to 50 and 100 meters away, respectively. We attribute this finding to the fact that the positive spillover effects from active abatements we found in 2021were never directly contingent on abated property taxes nor on renovation quality. That is, the positive spillover effects likely operated via realtor comps, with agents and sellers promoting "up-and-coming" neighborhoods and home buyers placing value on those upcoming areas with recently renovated, higher-priced neighbors via their willingness to pay more to buy nearby.

   It makes intuitive sense, then, that nearby prices do not automatically decline when abatements on their neighbors expire. The renovations may be dated and the property taxes are due but those do not directly impact neighboring properties instantaneously. Spillovers lag the market, which is where the direct effect on prices first appears (i.e., a buyer pays less for an expired abatement and then this lower relative price eventually may matriculate into comps). However, we also note that realtors (particularly listing agents) have no direct economic incentive to adjust their comps or lower their asking price simply because a neighbor's abatement expired. The inflationary effects of abatements as signals of neighborhood improvement may simply get permanently baked in.

4. Although the causal impact of CRA abatements on increased tax revenue collection is difficult to estimate due to simultaneously rising tax rates, we provide some summary statistics for the sample of 2,140 residential parcels with CRA abatements that expired between 2014 and 2025. We apply historic tax rates from the year each parcel's abatement began and tax rates from the year after it expired to 1) estimate new tax revenue generated after the abatement expires and 2) calculate, on average, how long this new revenue would take to make taxing jurisdictions whole (i.e., even if abatements raise revenue after they expire, how long would it take to "pay off" the foregone revenue from the abatement?). After adjusting for inflation, the mean parcel with an expired abatement generated $1,515 more property tax revenue than it did in the year its CRA abatement began. The median parcel generated just $162 more in real terms. This means that it would still take 36.6 and 266.6 years, respectively, for the mean and median foregone revenue increase to pay off their respective foregone revenues. These are higher bound estimates that do not account for spillover effects, although our analysis, when paired with consistently smaller spillover effects found in previous analyses, suggests that it still likely takes decades after an abatement expires for public services to recoup foregone revenue. It also remains unclear if the new higher revenue may have been collected anyway due to overall rising market valuations in the county and rising tax rates due to levies.

5. Finally, we explore the impact of abatements (as a share of total tract parcel value) on indicators of gentrification, including median household income, educational attainment, and racial diversity at the Census tract level. We do this using cross-walked Census tracts for consistent geographies. First, we regress each 2020 Census tract's 2001-2026 cumulative CRA abated value (as a share of total residential value) on its 2000 Census

demographics. We find that after controlling for each other, a higher 2000 non-white population was a good predictor of future CRA abatement in the tract. This is consistent with the fact that CRAs are endogenous; they are purposefully targeted at specific geographies in the city as a matter of law and policymaking. This also suggests, however, that our findings regarding higher home prices and appraisal values are also targeted in tracts that had larger non-white populations in 2000. This raises concerns about whether CRAs contribute to gentrification and the displacement of minority residents via pricing out and displacement.

To further test this, we then regress the 2010-2024 change in each tract's non-white population, median household income level, and share of bachelor's degree or higher holders on the 2000-2010 abated value share. This tests whether tracts that had more abated value experienced future demographic shifts. We find that all three variables, even when controlling for each other, were statistically significant. This suggests a very strong correlation between CRA abatement at the tract level and rising median income, rising educational attainment, and declining non-white populations. We note that the R^2 here is relatively low, despite the results retaining statistical significance. We interpret this to mean that CRA abatements are not the sole, or even primary, explanation for the gentrification of these tracts but are likely a contributing factor.

We believe these results are important for policymakers to understand. Creating new CRAs and approving new abatements has lasting economic consequences. First, most of the financial value of CRAs is realized by the property owner conducting renovations, who then sells the property while the abatement is active or very newly expired. A nontrivial number of such sales are made by real estate developers, who show up as LLCs in the raw data. Our 2021 study showed that buyers who purchase a property with an active CRA generally pay for the abatement as a part of the purchase price, and this study extends these results to suggest that those buyers cannot recoup their premium once the abatement expires. If they sell significantly after the abatement has expired, our results suggest they sell at a loss relative to similar properties, likely due to now-dated renovations that carry full property tax liability compared to the time of their purchase. Policymakers should consider this rule of thumb: the first property seller is the primary "winner" of the CRA abatement when weighing whether or not to establish a new CRA.

It is also important for policymakers to realize that some price-effects of CRAs appear to be permanent. Appraisal values and nearby property prices do not seem to decline (at least in the decade or so we can observe) following the expiration of a CRA abatement. While no doubt some would consider rising property values a tremendous success, our results also suggest that these abatements disproportionately targeted non-white areas in the early 2000s and have very likely contributed to ongoing gentrification by pricing out lower-income or less educated residents, regardless of race. While "neighborhood revitalization" is often the primary goal of such tax abatement programs for residential properties, we urge policymakers to also consider that revitalization through subsidizing higher home prices, ultimately capitalized on by sellers, also changes the cultural, demographic, and economic makeup of a neighborhood and that these

changes carry real, unobserved accessibility and costs for existing residents and the county's middle- and low-income residents.

The remainder of this report provides a full, detailed description of our data, methodology, results, and discussion.

2. Introduction & Background

Since our original 2021 study for the Franklin County Auditor (found here), a lingering question about property tax abatements has been what happens after abatements expire. Given that most property tax abatements in Franklin County are granted for fifteen years, there was insufficient data through 2020 to confidently answer this question. Between 2020 and 2026, more abatements have since expired and there is now enough data to address this question in this year's report to the Auditor.

It is worth reviewing our prior findings, particularly in 2021 and 2022 (found here) to appropriately understand this year's report. Our results in those studies suggested that residential and commercial/industrial property buyers value active Community Reinvestment Area (CRA) tax abatements. We found that these abatements had a larger positive effect on the sale price of properties based on two characteristics: total abated value and remaining term.

First, properties that had larger CRA abatements, in dollar terms, tend to sell for more than otherwise comparable properties. This makes intuitive sense, since a CRA's abated value is directly based on the dollar value of the property renovations required to receive the abatement. That means that the larger a CRA abatement is, the more extensive the renovation to the property was, which generally suggests nicer, updated properties.

Second, we found that buyers were willing to pay more for properties with more years of CRA abatement remaining. That is, buyers valued having years remaining of low property taxes. We found in 2021 that, in practice, the property tax abatement was realized by the *seller*. That is, buyers were willing to pay a premium at the time of sale for the tax abatement in exchange for a lower property tax bill. In some cases, this likely meant that buyers still effectively paid the property taxes but upfront, or rolled into their mortgage principal, rather than as a semi-annual tax bill.

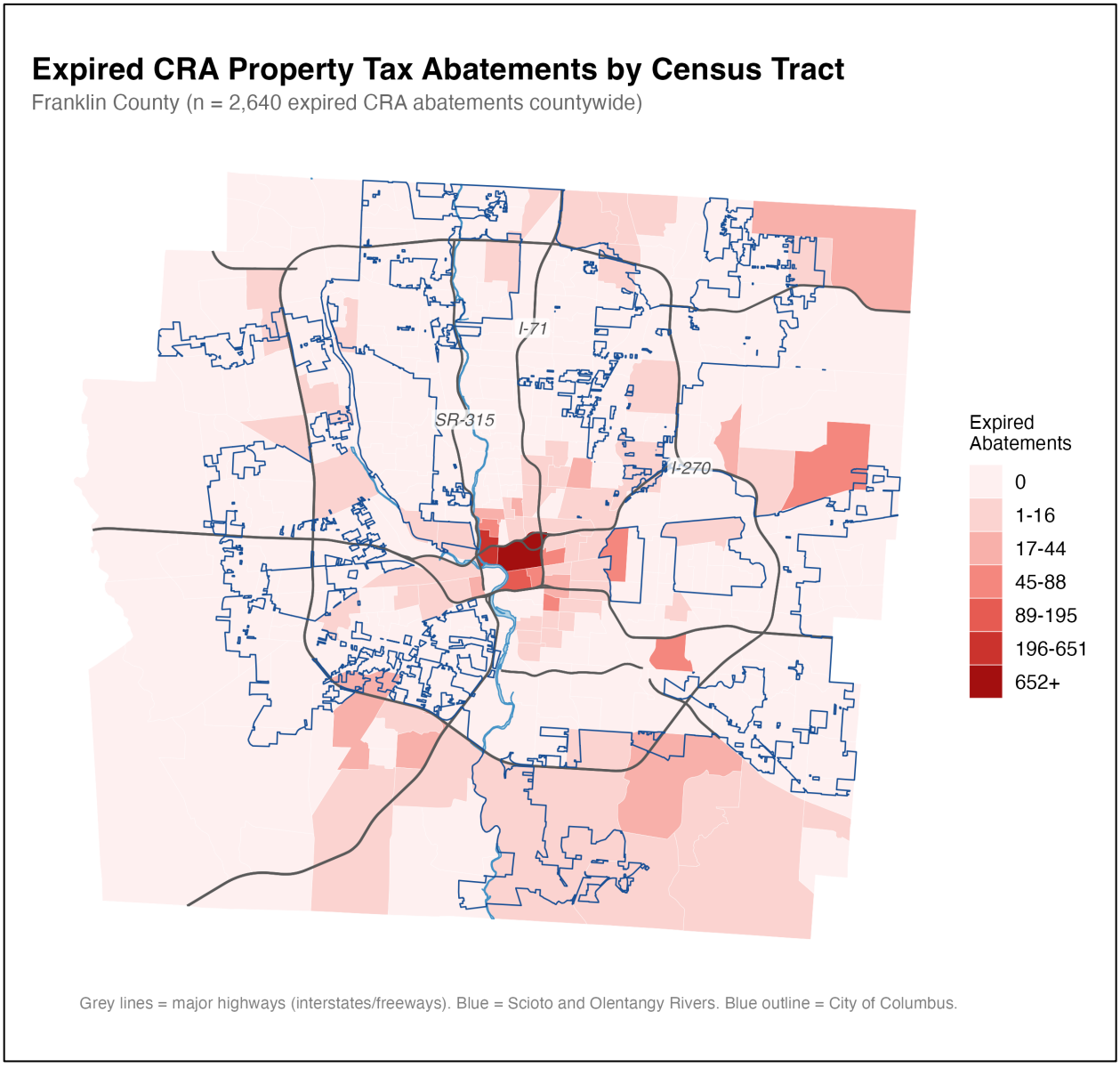
Our prior work also demonstrated that CRA abatements have spillover effects onto nearby properties. Our explanation for this phenomenon is that realtors often use comparable sales ("comps") when pricing homes for sale. If an immediately nearby house (say, next door or across the street) was recently renovated and received a CRA abatement, it sells for slightly more than similar unabated houses due to both its abatement and its improved quality. This higher sale price, in turn, slightly raises neighborhood comps. We found this effect persisted within about 100 meters (roughly one block) of the abated property. Consistent with what one might expect, the positive price spillover effects were smaller than the effect on the property that actually received an abatement. We also found that there was an "option value" to the CRA area altogether. That is, when choosing between similar properties on the border of a CRA area, buyers were willing to pay more for a property for which they could receive a tax abatement if they conducted future renovations.

Given our prior conclusions that active CRA abatements are associated with higher property prices, it is worth exploring what happens to property prices and values after these abatements expire.

3. Data Sources and Data Cleaning

In the full sample of data for Franklin County, there are 2,640 properties for which a CRA tax abatement has expired between 2014 and 2026 (meaning the abatement was initiated between 2001 and 2011). These properties are predominantly located in downtown Columbus, as shown in **Figure 1**.

Figure 1. Expired CRA Property Tax Abatements by Census Tract, 2026

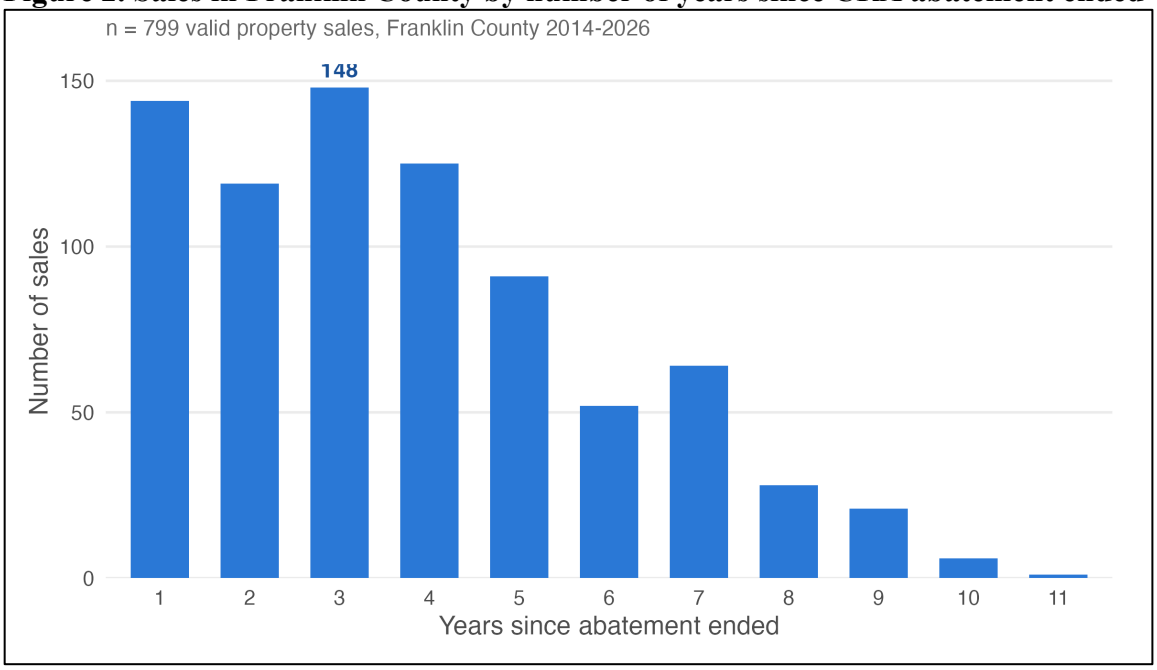


Data Source: Franklin County Auditor, Tax Incentive

But to credibly analyze the effect of abatement expiration on home prices, we required data for a large enough sample of Franklin County properties that met two core requirements: having both a CRA abatement that had rolled off (expired) between 2014 and 2026 **and** having also been sold on the open market in a valid, arm's-length transaction (i.e., not a deed transfer) **after** the abatement ended.[1]

Given that these are highly specific criteria, at the time of our prior reports on CRAs, there was insufficient data for valid statistical analysis. Since then, however, there have been both more abatement roll-offs and more property sales. **Figure 2** shows the number of sales by year since the property's CRA abatement expired in our current 2026 dataset. Out of the 2,640 properties with an expired abatement granted since 2000, 799 have been sold on the market since 2014.[2]

Figure 2. Sales in Franklin County by number of years since CRA abatement ended



Data Source: Franklin County Auditor

A new feature of this year's analysis is that we also analyzed the impact of abatement expiration on the 2023 appraised values for Franklin County properties. This was the most recent year that the county completed a required full reappraisal of parcels via inspection, as required by Ohio law.

[1] We note that, consistent with our prior reports, the Franklin County Auditor's tax abatement datasets are robust and publicly accessible beginning for 2014. The Auditor's office has made efforts to compile and digitize records dating back to 2014, which generally captures most CRA abatements active from 2000 onward, with 2 exceptions beginning in 1992 and 1997. This is because the 2014 dataset includes all active abatements and most of the abatements generally have a 10 to 15-year period.

[2] At the time of our 2021 study, fewer than 50% of this study's 799 treated parcels had both a valid sale and an expired abatement.

We then combine the appraisal, sale, and abatement data with parcel characteristic data from the sale year using the Franklin County Auditor's FTP Direct Download parcel files. These housing characteristics include square footage, the number of bedrooms and bathrooms (including half-baths), and the original construction year of the building, adjusted for the time of sale.

We then merge in socio-economic and demographic data at the U.S. Census tract level for each parcel from the American Community Survey (ACS). This process was complicated by the fact that the Census tract boundaries changed during our observation period for the 2020 Census. That is, a sale of a parcel in 2014 (the earliest sale year in our dataset) should have socio-economic estimates derived from its 2010 Census tract, which would more accurately capture the demographic characteristics of the neighborhood that the buyer observed at the time of sale. Using 2020 tract boundaries and ACS estimates centered on 2019, for example, would pose two major problems: First, if property tax abatements causally contribute to the demographic shifts within tracts, then using future, post-2020 tract ACS averages means that we would be controlling for the future effects of the abatement itself and bias our results. That is, perhaps the tract demographics evolved in the future *because* of the active or expired abatements. Second, because some 2010 Census tracts split or merged in 2020, using current tract boundaries for a pre-2020 sale blends neighborhood areas that may have had more distinct demographic characteristics back when the sale occurred.

We correct the data for both problems. We construct a crosswalk from the 2010 boundaries to the current Census tract boundaries for each parcel. This enables us to correctly use 5-year estimates from older vintages of the ACS data centered on each sale year for the tract boundary in effect at the time of the sale. The summary statistics for the properties that were previously abated and then had a valid sale sometime between 2014 and 2026 are presented in **Table 1** alongside the properties that never received a CRA abatement and the subset of properties with an active CRA abatement.

Table 1. Summary statistics for properties sold after abatement expiration

Variable	Never Abated: Mean (SD)	Never Abated: Median	Abatement Expired: Mean (SD)	Abatement Expired: Median
N	200769		797	
Sale price ($)	$334,103 ($1,324,264)	$227,000	$340,508 ($174,190)	$285,300
Current appraisal value ($)	$305,103 ($585,180)	$267,300	$324,316 ($169,444)	$266,700
Square footage	1631.56 (707.80)	1449.00	1314.06 (525.93)	1182.00
Bedrooms	3.08 (0.86)	3.00	1.86 (0.82)	2.00
Total bathrooms	2.34 (0.93)	2.00	2.03 (0.93)	2.00
Sale year	2020 (4)	2020	2022 (2)	2022
Tract median household income ($)	$83,243 ($36,891)	$77,328	$74,507 ($18,254)	$74,848
Tract % under 18	23.28 (7.12)	24.34	4.46 (6.90)	1.98
Tract % over 65	12.96 (5.85)	12.20	9.64 (6.05)	6.30
Tract % bachelor's degree+	43.42 (21.94)	43.10	67.11 (15.68)	75.00
Tract % White	65.82 (21.33)	70.78	71.89 (16.06)	78.19
Tract % Black	18.46 (19.47)	10.61	12.49 (13.08)	6.19
Tract % Asian	5.12 (5.67)	3.61	5.23 (4.12)	4.14
Tract % Hispanic	5.76 (5.36)	3.94	5.49 (3.24)	4.19

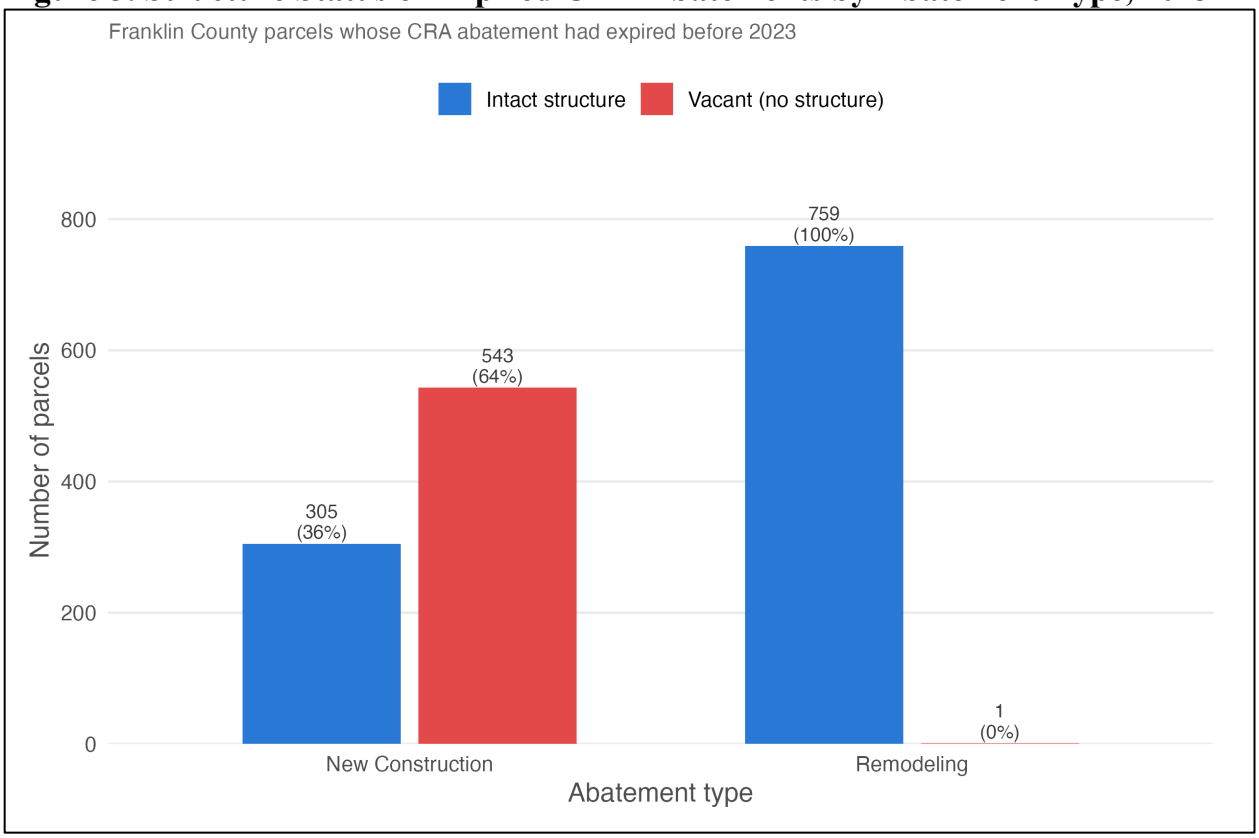
Sample: restricted to never-abated and expired-abatement sales (the same sample the main regression analysis runs on). Sales that occurred while an abatement was still active are excluded, as they are neither a clean treated nor control observation for this analysis. Tract demographic columns use the ACS 5-year window centered on each sale's year.

In this study, we also analyze the effects of expired CRA abatements on the appraised value of parcels. To achieve this, we use appraisal value data from the most recently completed 2023 county-wide reappraisal, although this also required several adjustments.

First, the 2023 snapshot of appraised values from the auditor's parcel CSV showed roughly 34% (544) of the parcels with an expired abatement were vacant, with no appraised building value in 2023. As **Figure 3** indicates, of these 544 parcels that had an expired CRA abatement prior to the 2023 reappraisal and had no building appraised value when appraised in 2023, 543 of the abatements were for new construction. Before we could continue, we needed to understand why this was the case, given that 544 parcels represent a significant portion of the expired abatement sample. Is it plausible that these were construction projects that had been built

and torn down within the lifecycle of the abatement? Or were abated projects that were never actually constructed?

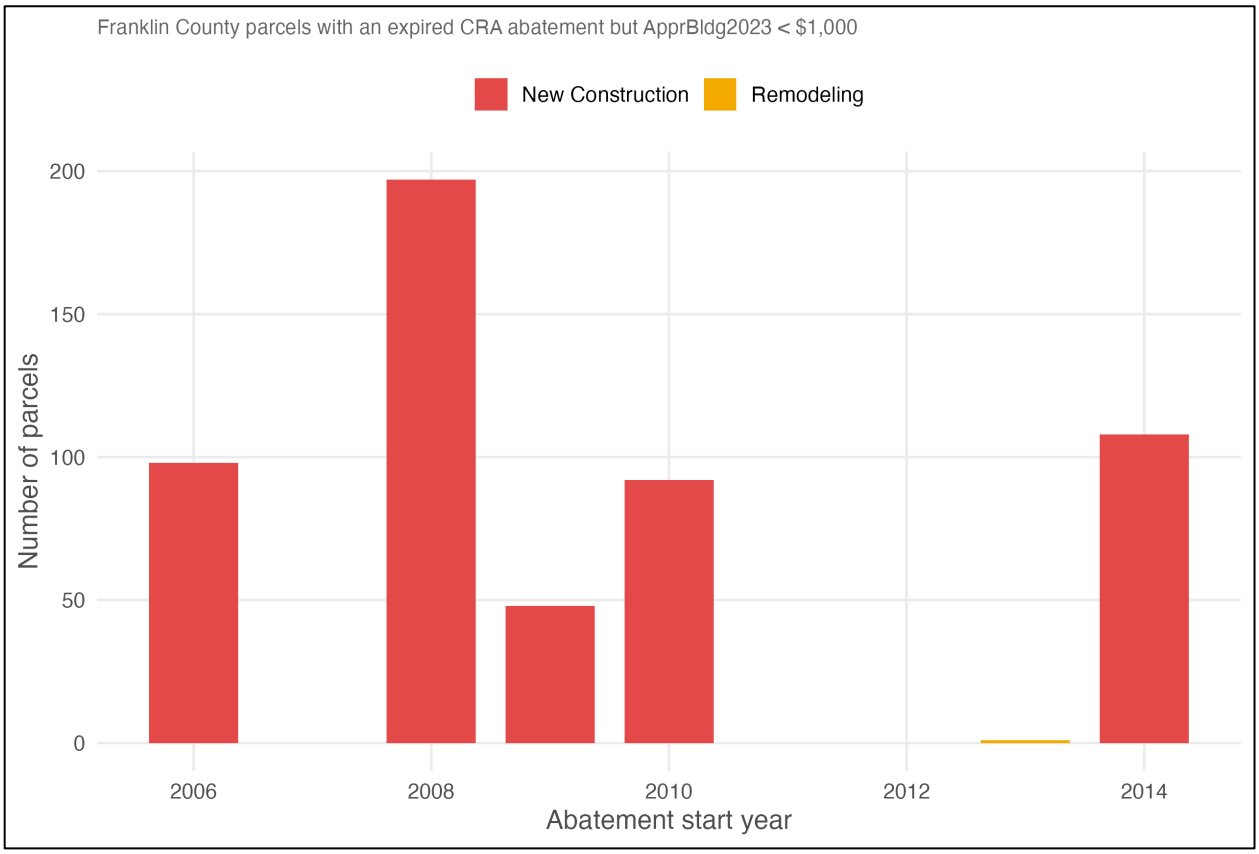
Figure 3. Structure Status of Expired CRA Abatements by Abatement Type, 2023



Data Source: Franklin County Auditor

Our first assumption, given that these are overwhelmingly new construction abatements, was that these parcels had received a new construction CRA abatement, but never actually began construction. This would have been a higher possibility during the 2008 financial crisis and subsequent Great Recession, when new construction projects were shown to default at higher rates than existing home purchases and when many regions experienced widespread construction labor shortages (Mayock and Tzioumis, 2021; Le, 2025). To explore this, we examined the start years of the CRAs covering the properties that, as of 2023, had no appraised building value in the county's reassessment.

Figure 4. Vacant (No Structure) CRA Parcel Count by Abatement Start Year



Data Source: Franklin County Auditor

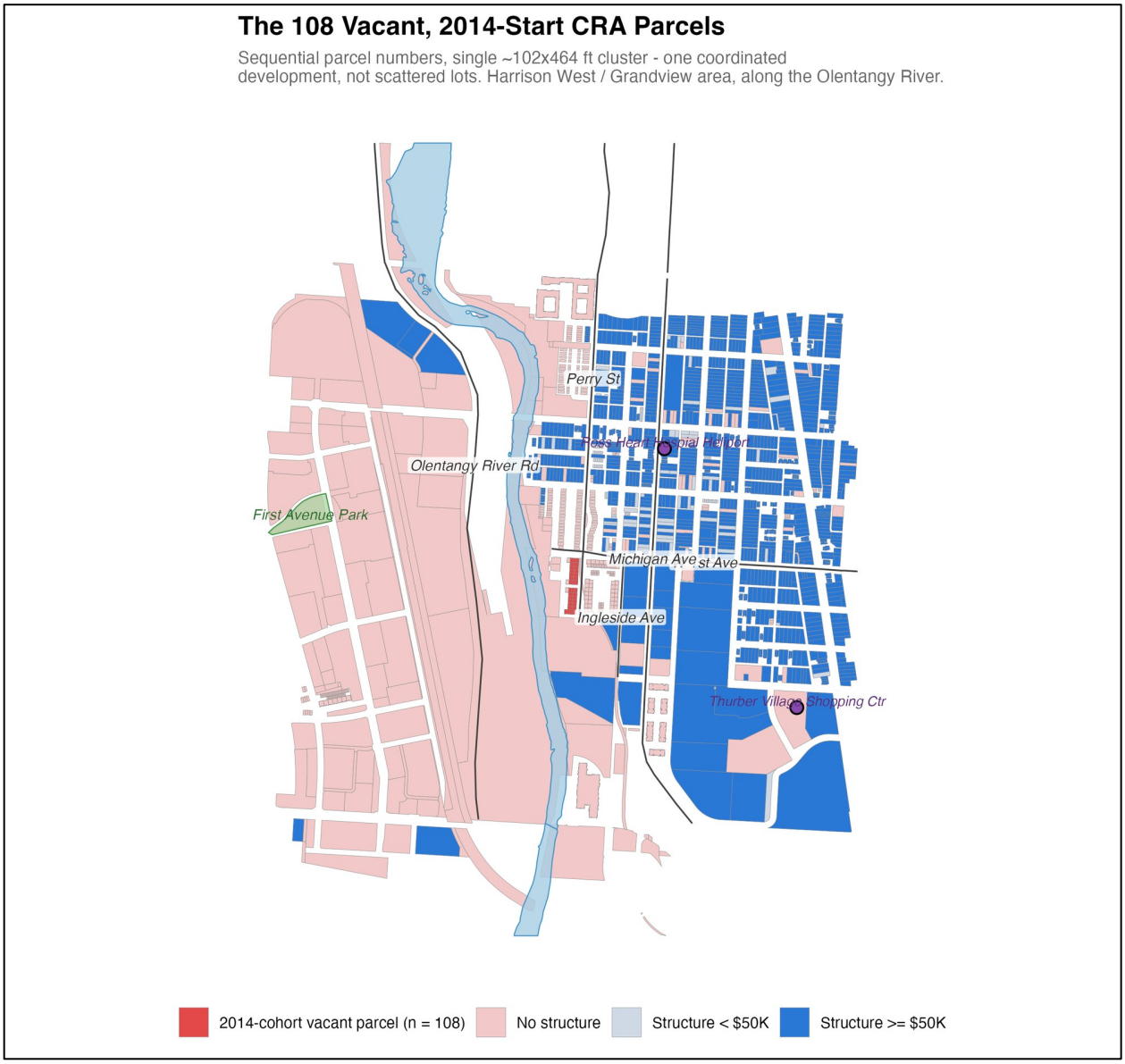
Figure 4 suggests that the majority (~ 450) of the vacant parcels with an expired new construction CRA abatement were indeed abatements that had originally started either in the run-up to or during the Great Recession. Although this finding still presents two key problems: first, a large cohort of 108 CRA abatements that began in 2014 would not be easily explained by the Great Recession, since their approval occurred afterward. Second, the 2006-2010 cohort of CRA abatements all reported significant foregone tax revenue from their abatements, suggesting that structures were indeed built. This likely ruled out the Great Recession explanation.

To uncover what was happening in the data with these parcels, we mapped the 108 parcels whose abatement began in 2014. When mapped, as shown in **Figure 5**, all 108 "vacant" parcels are a part of a set of condominiums just south of the Ohio State Wexner Medical Center. This set of condos had a sale date in February 2023 (just prior to reappraisal and, coincidentally, just after their CRA expired). Examining the ownership data in the transaction record reveals that the condos then underwent deconversion, reclassifying them as rental units under a single LLC owner.

This means that the reappraisal value of "$0" in the 2023 appraisal cycle is likely attributable to the condominium deconversion rather than demolition. With that understanding, we then re-examined the 2006-2010 vacant parcels and found that 543 of the 544 "vacant" parcels in the appraisal data were also condominium deconversions and also not vacant due to demolition. This data problem is solved by using appraisal data from the parcel shapefile, rather than the 2023 parcel CSV export in the Auditor's Direct FTP. The shapefile dataset seems to correctly contain building values for the condominium parcel IDs and

eliminates the phantom "vacant" parcels from the CSV file, and allows for the full sample to be used when analyzing the impact of expired abatements on appraisal values.

Figure 5. Map of the Parcels with 2014 CRAs But Vacant in the 2023 Reappraisal



4. Methodology & Identification

a. Covariate Matching

Next, following our previous reports built on work by Dehejia and Wahba (2002) and Abadie and Imbens (2006), the identification of our model utilizes nearest-neighbor covariate matching to identify counterfactual control properties for the treated (previously abated) properties. That is, covariate matching ensures that we are comparing the properties where abatements have expired to properties that are otherwise similar, except that they never received an abatement. This is a critical step that prevents our model from comparing, for example, a 3-bedroom home in Columbus to an 8-bedroom home in Dublin or a home in Bexley built in 1910 to a new home in Columbus. Appendix A contains the covariate balancing for our matching process. In essence, this is a robustness step that checks to ensure that our matching was successful: the differences in housing and socio-economic characteristics between the expired abatement parcels and never-abated parcels in our sample are not statistically different after matching. Having established this pool of strong counterfactual control parcels, we proceed with our regression modeling.

b. Regression Model Specification

The next step was to determine the specification of our hedonic regression model, following Rosen (1974). This type of model treats parcel characteristics (square footage, bedrooms, bathrooms, neighborhood characteristics) as traits with distinct value to buyers that interact to determine the price of a property. In this framework, we treat having had an abatement as one such binary characteristic to capture the reality that the property previously had a qualifying abatement and, thus, a past renovation. We also then include a variable indicating how many years it has been since the abatement expired *at the time of the sale*. **Equation 1** shows our regression model specification algebraically to aid in the replicability of the study.

Equation 1.

$$ln(SalePrice_i) = \beta_1 AbatementEnded_i + \beta_2 YearsSinceEnded_i + \boldsymbol{\beta_3} ParcelCharacteristics_i + \boldsymbol{\beta_4} TractDemographics_{c,i} + \boldsymbol{\lambda_{t(i)}} + \boldsymbol{\mu_{s(i)}} + \varepsilon_i$$

Parcel characteristics include the number of bedrooms, bathrooms, and finished square footage at the time of sale. Tract demographic controls include the racial composition of the tract population (with native Americans as the reference group)[3], the percentage of the tract over age 65, the percentage of the tract population under age 18, and the percentage of the tract population

[3] "Reference group" in this case does not mean that Native American populations were excluded from the results. Statistically, when a group of variables are included, a reference group or omitted group is necessary to prevent percentages from summing to 1, resulting in perfect multicollinearity in the regression model. In other words, the model needs something to measure the variation in other population groups in reference to.

holding a bachelor's degree or higher at the time of sale. Our preferred regression specification includes year fixed effects, $\boldsymbol{\lambda_{t(i)}}$, and school district fixed effects, $\boldsymbol{\mu_{s(i)}}$, for each parcel.[4]

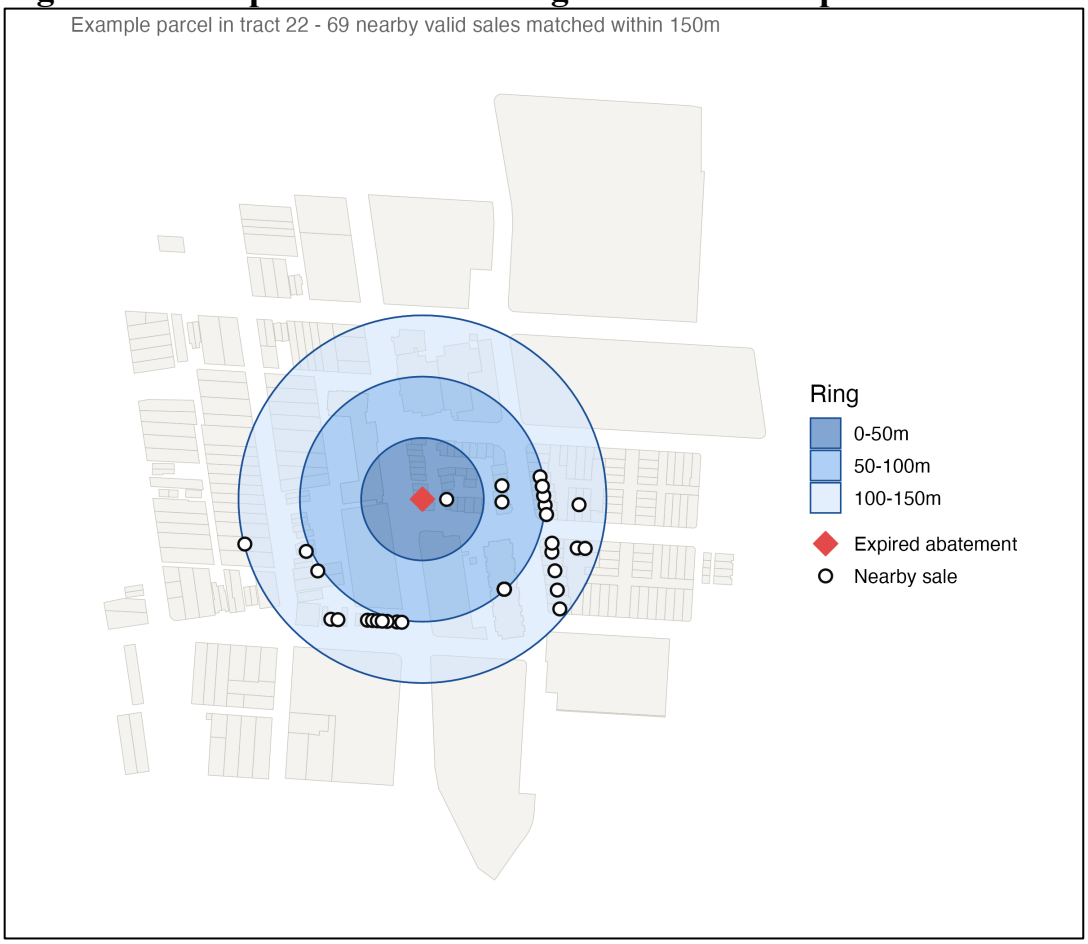
c. Geographic Spillover Effects onto Neighboring Parcels

To assess any spillover effects of expiring abatements on nearby parcels, we follow a similar methodology to our 2021 study. In that study, we used abated parcels and then, using GIS methods, identified other parcels within concentric "donut" rings around the abatement property. Each ring captured sales progressively further away from the abated parcel. We established rings in 50-meter increments, which generally represent about half of one Columbus City block. In effect, we tested parcels half a block, one block, and one-and-a-half blocks away.

We repeat that methodology here but instead use properties for which an abatement has expired as the focal point of the ring, as illustrated in **Figure 6.** In each case, we then conduct another round of matching, which matches nearby sales in the donut ring to otherwise similar sales further away than 150 meters from the expired abatement, which improves the credibility of our results.

[4] Sale-year fixed effects absorb county-wide housing price trends and broader economic conditions that were in-common among all sold properties in a given year. This means that any variation in prices comes from *within* the sale year, rather than across different years with different housing market conditions. School district fixed effects absorb time-invariant differences across school district lines (i.e., school quality, tax rates, or other local amenities like access to parks that are consistent throughout the school district). For more see Mundlak, 1978.

Figure 6. Example of Distance Rings Around an Expired Abatement



Data Source: Franklin County Auditor, Author Mapping in RStudio using latitude and longitude coordinate systems EPSG:3735

5. Regression Results

In **Table 2,** we report the results of several runs of our regression model using the natural logarithm of sale price as the outcome and abatement expiration and years since abatement expiration as the variables of interest.[5] The first model excludes fixed effects with no matching. The second model is run on the matched counterfactual sample of similar properties, but still excludes fixed effects. The third model includes both year and school district fixed effects and is run on the matched sample of parcels.

Table 2. Main Results
Regression of Parcel Sale Price on Abatement Expiration Status

	Dependent Variable: Log(SalePrice)		
	(1) Unmatched Sample	(2) Matched Sample	(3) Matched Sample with Fixed Effects
Abatement expired (own parcel)	0.206*	-0.091	0.116**
	(0.112)	(0.075)	(0.057)
Years since own abatement expired	-0.013*	0.001	-0.054***
	(0.008)	(0.006)	(0.015)
Bedrooms	0.042***	-0.037	-0.050**
	(0.012)	(0.023)	(0.021)
Full bathrooms	0.106***	0.101**	0.122***
	(0.015)	(0.039)	(0.037)
Half bathrooms	-0.001	0.167***	0.161***
	(0.015)	(0.030)	(0.025)
Log(square footage)	0.457***	0.638***	0.654***
	(0.037)	(0.132)	(0.125)
% White	-0.021***	-0.019*	-0.007
	(0.003)	(0.011)	(0.008)

[5] Utilizing the logarithm of sale price and appraised value, rather than their linear forms, helps reduce effects from "long right tails" that are common in housing distributions (i.e., few observations with high prices). To interpret our results, we use the following conversion of the log coefficient: $\%\Delta Y = 100 \times (e^{\hat{\beta}} - 1)$ where e is Euler's number (2.71828…) and $\hat{\beta}$ is the estimated coefficient on the variable of interest given in the regression results table (i.e., 0.116 for "Abatement Expired").

	Dependent Variable: Log(SalePrice)		
	(1) Unmatched Sample	(2) Matched Sample	(3) Matched Sample with Fixed Effects
% Black	-0.019***	-0.024*	-0.012
	(0.004)	(0.012)	(0.008)
% Asian	-0.022***	-0.008	0.001
	(0.004)	(0.016)	(0.012)
% Hispanic	-0.008	-0.014	-0.004
	(0.005)	(0.012)	(0.009)
% Under 18	-0.013***	-0.003	-0.004
	(0.003)	(0.009)	(0.007)
% Over 65	0.005**	0.003	0.005
	(0.002)	(0.004)	(0.004)
% Bachelor's degree+	0.006***	0.006*	0.004
	(0.001)	(0.003)	(0.002)
Log(median household income)	0.718***	0.262**	0.222**
	(0.046)	(0.109)	(0.095)
N	201,566	1,594	1,594
R^2	0.535	0.506	0.571
Covariate-matched sample	No	Yes	Yes
Sale year / school district FE	No	No	Yes

* p < 0.1, ** p < 0.05, *** p < 0.01

Standard errors clustered by census tract in parentheses. Sample: Sales of parcels whose abatement had expired vs. never-abated sales, Franklin County, 2014-2026. Columns 2-3 use a covariate-matched sample (1:1 nearest-neighbor propensity-score matching on housing characteristics, tract demographics, sale year, and school district) Tract demographic controls use the ACS 5-year window centered on each sale's year.

Next, **Table 3** repeats a similar analysis as in Table 2, but uses total appraised value from the 2023 county-wide reappraisal instead of sale price. The sample is larger because it now includes *all* Franklin County parcels with a CRA abatement that expired prior to 2023 (relaxing the requirement that the parcel also had a valid arm's-length sale). The "years since abatement" variable in this model is thus redefined to reflect how many years *prior to 2023* the parcel's abatement had ended as opposed to how many years prior to the sale year definition used in Table 2. This table also drops the year fixed effects, since all properties received updated reappraisals in the same year.

Before running this model, we also restrict our sample to properties whose appraised building value is greater than $1,000 to exclude vacant or demolished parcels that may have once had a tax incentive. This inherently removes the condominium deconversions discussed in the data section that would bias the results.

This is a new analysis introduced in this paper that was not assessed in 2021 in part due to the fact that the 2020 Triennial Update happened in the chaotic COVID-19 housing environment. However, going into this analysis, we hypothesized that appraisal values may not adjust for expired property tax abatements. One explanation for this hypothesis is that the reappraisal process does not include an interior inspection of properties and thus cannot account for the aging of CRA renovations. If someone received a 10-year CRA to update a kitchen, for example, and that abatement had been expired for 7 years at the time of the 2023 reappraisal, then the kitchen "renovation" was actually 17 years old. This aging would be directly observable to a homebuyer, who can acutely factor it into their offer price, but would not be directly observable via an exterior appraisal by the county. Thus, we expected to find little negative effect on appraisal values of expiring abatements.

Table 3. Regression of 2023 Appraised Value on Abatement Expiration Status

	Dependent Variable: Log(2023 Total Appraised Value)	
	(1) Anytime	(2) Between Appraisals (2018-2023)
Abatement expired by 2023 (own parcel)	0.010	0.081***
	(0.073)	(0.023)
Years since own abatement expired (as of 2023)	0.000**	-0.013
	(0.000)	(0.013)
Bedrooms	-0.062***	-0.069***
	(0.023)	(0.023)
Total bathrooms	0.114***	0.101***
	(0.017)	(0.030)
Log(square footage)	0.793***	0.793***

	Dependent Variable: Log(2023 Total Appraised Value)	
	(1) Anytime	(2) Between Appraisals (2018-2023)
	(0.105)	(0.114)
% White	-0.001	0.002
	(0.004)	(0.006)
% Black	-0.004	0.000
	(0.005)	(0.006)
% Asian	0.013*	0.020***
	(0.007)	(0.007)
% Hispanic	-0.001	0.002
	(0.005)	(0.006)
% Under 18	-0.001	-0.001
	(0.003)	(0.004)
% Over 65	0.001	0.003
	(0.002)	(0.003)
% Bachelor's degree+	0.006***	0.007***
	(0.002)	(0.002)
Log(median household income)	0.153**	0.143**
	(0.064)	(0.065)
N	3,174	2,236
R^2	0.742	0.709
Covariate-matched sample	Yes	Yes
School district FE	Yes	Yes

* p < 0.1, ** p < 0.05, *** p < 0.01

Standard errors clustered by census tract in parentheses.

Column 1: treated = any CRA abatement that expired before 2023. Column 2: treated = CRA abatement expired specifically in 2018-2023 between reappraisal cycles. Matched separately in each column (different treated population, different matched controls)

Finally, **Table 4** presents the results of the spillover effects regressions. These test whether or not expired abatements affect the sale values of neighboring properties. In our 2021 study, we found that active abatements do spill over onto immediate neighbors in the 0 to 50 meter range and the 50 to 100 meter range. Our explanation for this phenomenon at the time was that the active CRA abatements (and their corresponding renovations) are used by real estate agents in their comp analysis process and serve as a signal to homebuyers about the "up-and-coming" status of a redeveloping neighborhood.

If this hypothesis holds, then we would expect to see little negative spillover effect on neighboring properties when abatements expire. That is, real estate agents have no obvious incentive to lower listing prices for nearby properties even once a neighboring property loses its property tax abatement. This is in contrast to residents who buy parcels with expired abatements, who actively account for both the resumed property tax liability and the aging quality of the CRA renovations. In short, buyers of previously abated properties have an incentive not to pay a premium (or not pay as large a premium) for an expired abatement with dated renovations while realtors selling nearby properties lack an incentive to adjust prices downward to account for a neighbor's expired abatement.

We present the regression results for only the matched sample, including school district and year fixed effects for each concentric distance ring.

Table 4. Spillover Analysis
Regression of Proximity to Expired Abatements on Sale Price

	Dependent Variable: Log(SalePrice)		
	0-50m	50-100m	100-150m
Near a recently expired abatement	0.101**	0.087**	0.018
	(0.045)	(0.035)	(0.040)
Years since nearby abatement expired	-0.012	-0.002	0.003
	(0.010)	(0.007)	(0.007)
Bedrooms	-0.022	-0.020	-0.043**
	(0.022)	(0.018)	(0.021)
Full bathrooms	0.132***	0.140***	0.138***
	(0.030)	(0.024)	(0.021)
Half bathrooms	-0.004	-0.017	-0.015
	(0.031)	(0.033)	(0.047)
Log(square footage)	0.501***	0.643***	0.741***
	(0.060)	(0.079)	(0.078)

	Dependent Variable: Log(SalePrice)		
	0-50m	50-100m	100-150m
% White	0.003	0.005	0.010**
	(0.004)	(0.005)	(0.005)
% Black	0.004	0.004	0.009*
	(0.004)	(0.005)	(0.005)
% Asian	-0.004	-0.003	-0.005
	(0.009)	(0.008)	(0.006)
% Hispanic	-0.007	-0.003	0.003
	(0.005)	(0.005)	(0.005)
% Under 18	-0.001	-0.004	-0.005
	(0.004)	(0.003)	(0.003)
% Over 65	0.003	0.004	0.001
	(0.004)	(0.004)	(0.004)
% Bachelor's degree+	0.013***	0.011***	0.009***
	(0.002)	(0.002)	(0.002)
Log(median household income)	-0.032	-0.040	0.043
	(0.086)	(0.058)	(0.057)
N	356	710	1,056
R^2	0.738	0.772	0.720
Adjusted R^2	0.719	0.762	0.710
Covariate-matched sample	Yes	Yes	Yes
Sale year FE	Yes	Yes	Yes
School district FE	Yes	Yes	Yes

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Standard errors clustered by Census tract.

Sample: valid, arm's-length sales of never-abated homes, Franklin County, 2014-2026. Each column is a separate covariate-matched sample using 1:1 nearest-neighbor matching on parcel characteristics, tract demographics, sale year, and school district.

6. Discussion

a. General Discussion on Sale Price and Appraisal Values

Our preferred model is model (3) in Table 2, which is conducted using the covariate-matched sample and includes both year and school district fixed effects. As discussed, covariate matching ensures that we are comparing the most similar counterfactual parcel sale to one that has had an abatement expire, and the fixed effects control for widespread housing market conditions and time-invariant characteristics, such as school quality.

The two key findings are that parcels with an expired abatement broadly enjoy a positive price premium of roughly 12.3% over otherwise similar properties that were never abated, but this premium decays by approximately 5% per year after the abatement expires.[6]

Table 5 illustrates how these estimates would apply over time to the median home in our sales sample, which sold for $285,300. We find that for the median home in our sample, the effect of the expiring abatement on sale price in the expiration year is 12.3% and then declines to just 0.8% 2 years after the CRA property tax abatement expires. Beginning in the 3rd year after an abatement ends, sellers of a previously abated home would experience a price effect of – 4.5%, suggesting that post-abatement buyers likely adjust their offer price for both aging renovations and the fact that they would pay the full property tax burden on the property.

The fact that the expiration year ("Year 0") still carries a positive price premium is partly explained by the fact that in Ohio, property taxes accrue and are paid retroactively. This means that buyers may have some confusion in Year 0 about an expired abatement and don't feel the full property tax burden increase until the following year. Additionally, comps for properties sold in the same year that their abatement expires likely include similar sales from previous years, meaning realtors could include comps that have an abatement and, thus, have a price premium consistent with our 2021 and 2022 findings.

[6] These estimates are adjusted back to linear form from the logarithm of price. See footnote 5.

Table 5. Point-Estimate Sale Price Effect by Years Since Abatement Expiration

Point-Estimate Sale Price Effect by Years Since Abatement Expiration

Applied to the median matched treated-sample sale price ($285,300)

Year	% Effect on Sale Price	Dollar Effect	Adjusted Price[1]
0	+12.3%	+$35,198	$320,498
1	+6.4%	+$18,357	$303,657
2	+0.8%	+$2,401	$287,701
3	-4.5%	-$12,717	$272,583
4	-9.5%	-$27,040	$258,260
5	-14.2%	-$40,611	$244,689
6	-18.7%	-$53,468	$231,832
7	-23.0%	-$65,650	$219,650
8	-27.1%	-$77,192	$208,108
9	-30.9%	-$88,127	$197,173
10	-34.5%	-$98,488	$186,812
11	-38.0%	-$108,304	$176,996

[1] Holds all other regression covariates (property characteristics, tract demographics, sale year and school district fixed effects) constant at their sample values.

Data Sources: Franklin County Auditor, Author Estimates & Calculations. We illustrate point estimates through year 11, the maximum year in our sample.

To be clear, we are not predicting or forecasting that prices for these parcels will **decline**. Table 5 is an illustration of the effect of abatement expiration *in isolation* and cannot account for changes in other variables in the future, or future-year housing market dynamics that would counteract the expiration's negative effect.

For example, we find that a parcel whose CRA abatement expired 3 years ago carries a - 4.5% price effect in our sample. However, if comparable never-abated home prices have risen 10% over the prior 3 years due to general real estate market trends, then in reality, buyers would actually observe that the expired abatement parcel's price is 5.5% higher over the period (10% - 4.5%). In our model, the year and school-district fixed effects control for and absorb this general market increase. It is important to note that, consistent with what we generally observe in the county, a home's price can still rise on net, even if an expired abatement carries a negative effect.

Our core finding is that properties that have had an abatement have benefited from a positive premium (consistent with our prior results from 2021 and 2022), but the premium erodes quickly over time at roughly 5% per year. For the median property in our sample, complete erosion of the abatement premium occurs between years 2 and 3 after abatement expiration.

These results make intuitive sense and are consistent with our hypotheses. First, properties that had a CRA abatement in the past have received a renovation of some kind. Our prior results from 2021 suggest that buyers value both the renovation (total CRA abated value) and the lower property tax bill (years remaining on an active abatement at the time of sale) and are willing to pay a price premium for both the size and remaining term of an abatement. Our 2026 results now show that once the CRA abatement rolls off the parcel, buyers begin to quickly adjust for the higher property tax bill and possibly devalue the abatement-related renovation less over time. In other words, the next buyer may not value a

"new" decade-plus-old kitchen as much without the commensurate property tax abatement and, thus, is less willing to pay a price premium for it.

This further supports our 2021 conclusion that the bulk value of CRA abatements is primarily capitalized by the first owners who sell a property *while the abatement is active*. Future owners who buy an abated property and then resell it immediately upon expiration of the abatement can recoup a small portion of the premium they paid for the abatement. Our findings suggest that the amount of the premium that they would recoup diminishes annually for two years after the abatement expires. After two years, our results show that the second owners cannot recoup any of the original abatement premium by selling to a third owner and, all else equal, experience a negative effect on their sale price relative to otherwise similar properties.

In terms of the effect of expiring abatements on appraisal values, Table 3 shows our estimates for the effect of expiring abatements on a parcels' 2023 appraisal values. Our preferred specification is model (2), which examines specifically one appraisal window. This is because the appraisal process likely considers a parcel's appraised value from prior reappraisal cycles. That is, the abatement expiring is a singular event in time that is captured by the next reappraisal that occurs soonest after the abatement ends. For this reason, model (2) restricts the sample to just those CRA abatements that rolled off between 2018 and 2023, between appraisal cycles. The model still includes year and school district fixed effects and is conducted on a covariate-matched sample, whose balance is reported in Appendix A.

We find that the number of years since an abatement expired has no bearing on the reappraisal value, but whether or not the parcel was ever abated (i.e., had an expired abatement at all) still carried a positive and statistically significant 8.4% (log-adjusted) effect on appraised value.

The most obvious explanation is that the reappraisal process captures both renovations and, to a degree, past sale prices. The reappraisal examines the exterior of properties, where aging interior renovations are not captured, as opposed to buyers who directly observe old CRA interior renovations. We conclude that expiring CRA abatements do not decay over time in appraisal values in the same way that they decay in sale prices.

Finally, **Table 4** shows the results of our regression to test for spillover effects on nearby parcels. Properties close by (within 50 meters) of a previously abated property exhibit the highest price premium, which declines, as expected, over distance until it is no longer significant beyond 100 meters (roughly 1 block in Columbus). This price premium is roughly 10% for parcels between 0 and 50 meters away from a neighbor with an expired abatement and roughly 8% for parcels between 51 and 100 meters away. We find that there is no offsetting negative price spillover effect over time. That is, once a neighbor receives a CRA abatement, the price level of the neighborhood shifts up permanently.

This is consistent with our hypothesis that real estate agents are the primary mechanism for setting the listing price of homes and that there is no direct incentive for realtors to make minor downward adjustments for each year a neighboring home's abatement has expired. This is particularly true if the neighboring home has itself not been resold since its abatement was active and, thus, the negative own-price effect we estimate for it would also not appear in realtor comps analysis. We do not ascribe bad intentions to realtors; it is simply likely that their comp process does not actively seek out unsold properties whose abatements expired but does capture sales of actively abated properties reflecting a positive abatement premium.

In full, then, our results suggest that buyers devalue CRA abatements once they expire but this effect is not instantaneous; it takes approximately 2 years to manifest in sale prices after the abatement ends. We find no measurable decline in appraisal value nor in neighboring property prices once a CRA abatement

expires. These null findings are consistent with both the methodology of reappraisal process and with the listing real estate agent comp process and pricing incentive structures.

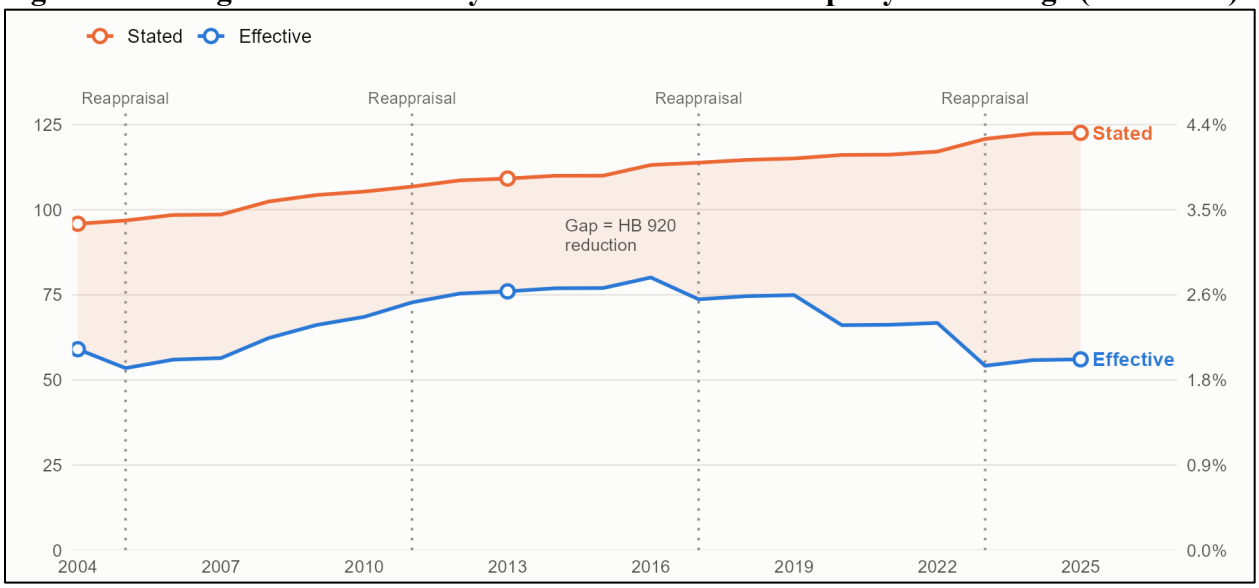
b. Are Taxing Districts 'Made Whole' Once CRA Abatements Expire?

A large question regarding CRA abatements is whether they rapidly "earn out" the abatement after expiration. That is, do they contribute to rising home prices and values such that higher property tax revenues collected after they expire more than offset the foregone revenue during the abatement term.

Those in favor of tax abatement programs argue that abatements spur economic development that would not have otherwise occurred and, thus, raise the overall property tax base by more than it would have organically risen. Our analysis in 2021 found that abatements do increase home prices, which are then used as an input during triennial updates to re-appraise property values that form the county's tax base. This analysis finds that while abatement expiration contributes to lower home prices than counterfactual unabated property, these reductions are not observed in the appraisal values. Thus, it is at least plausible that abatements contribute to rising property values by initially raising home prices and therefore valuations.

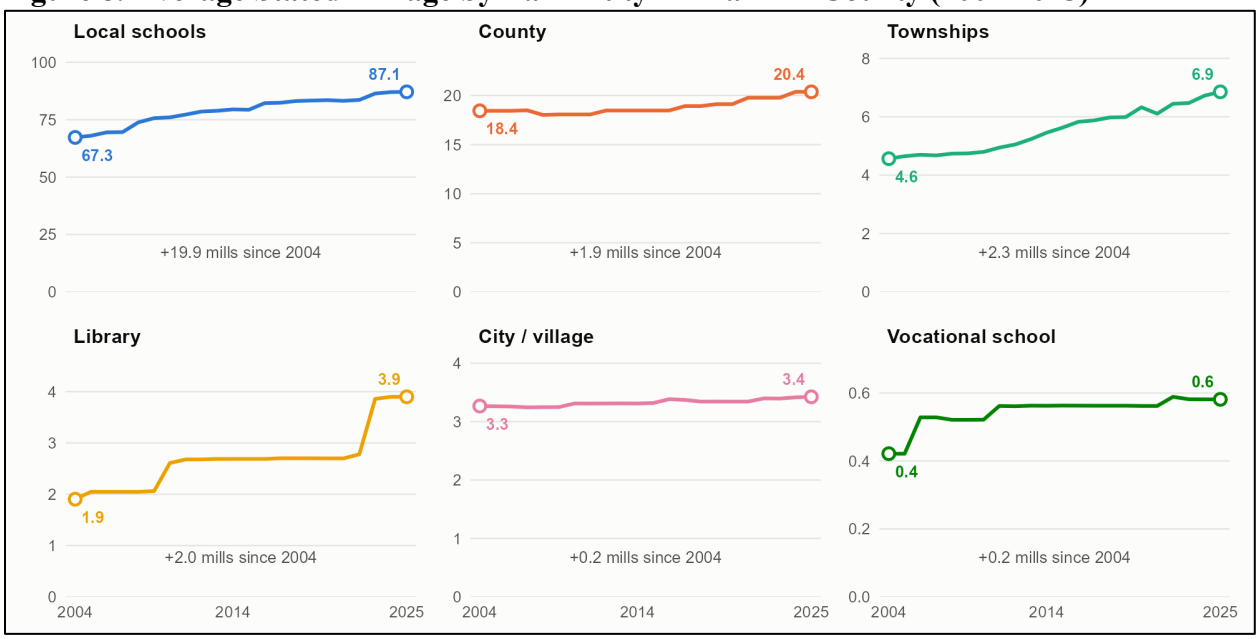
But this claim is extremely difficult to assess with any degree of causation in practice. First, property tax rates themselves have trended upward across Franklin County since 2004. Figure 7 shows the average stated and effective property tax rate in Franklin County across jurisdictions, weighted by the number of parcels in each jurisdiction. Figure 8 shows the average stated millage (prior to reduction prescribed by HB920) by type of taxing entity, weighted in the same manner.

Figure 7. Average Franklin County Stated and Effective Property Tax Millage (2004-2025)



Data Source: Frankin County Auditor Historic Tax Rate Sheets, Author Calculations. Average is weighted by current residential partial count in each taxing jurisdiction before rollback. Taxes are paid on 35% of assessed value.

Figure 8. Average Stated Millage by Tax Entity in Franklin County (2004-2025)



Data Source: Franklin County Auditor Historic Tax Rate Sheets. Averages across tax jurisdictions are weighted by current residential parcel count. Rates sum to annual total millage.

School districts have predominantly driven the increase in state property tax rates since 2004. There are likely several reasons for this. First, House Bill 920 enacted in 1976 created a reduction factor that prevents outside millage from increasing automatically with rising property values during reassessment. This means that as costs rise due to growth and inflation, Ohio school districts must generally seek levies to keep up with costs, growing enrollment, or to capture new revenue associated with rising property values and growth. This reduction factor mechanism is reflected in the relative stability of the effective property tax rate over time shown in Figure 7.

Second, as our 2021 analysis found, there is at least some correlation between the frequency of school levies and the intensity of property tax abatements within a district. That is, when a school district has more foregone revenue it may seek to offset that with higher-than-otherwise property tax rates on unabated property owners (and eventually on the abated properties, once the abatement expires). Because abatements may be correlated with rising property tax rates (and thus higher revenue) they become endogenous in the analysis.

In short, then do abated properties generate higher property tax revenues after they expire because they successfully spurred growth and raised the tax *base* by more than it would have risen otherwise? Or do they lead to higher revenues simply because the act of abating contributes to property tax-reliant entities raising *rates* by more than they would have otherwise? House Bill 920 inherently clouds this picture and makes any causal interpretation one way or another nearly impossible.

Table 6 provides a snapshot for the roughly 2,200 residential properties who have had a CRA abatement expire since 2014 and shows the average foregone revenue in the first year of the abatement, the taxes paid in the first full year of abatement and the taxes paid in the first year after the abatement expired. Table 6 also shows the mean and median net increase in property taxes paid after expiration as opposed to when the abatements began and the 15-year total foregone tax revenue from the mean and median abatement.

Table 6. Nominal Property Taxes on Abated Parcels, First Abated Year and First Expiration Year

Property tax per abated parcel: first abated year vs. year after expiry

Measure	n	Mean	Median
First abated year: foregone tax	2,140	$1,842	$1,530
First abated year: hypothetical unabated full tax	2,140	$2,348	$1,915
First abated year: tax paid with abatement	2,140	$506	$201
Year after expiry: full tax (actual district rate)	2,140	$4,292	$3,836
Increase after expiry vs. first-year unabated tax	**2,140**	**$1,944**	**$567**
Total foregone tax (annual x abatement term)	**2,140**	**$43,513**	**$33,925**
Time to recoup foregone tax (total / increase)		**22.4 yrs**	**59.8 yrs**

Data Source: Franklin County Auditor parcel snapshots and tax incentive data, Author Calculations using historic tax tables and tax abatement data. Each row follows the same 2,140 CRA abatements on residential properties that expired between 2014 and 2023. Foregone revenue mean and median are calculated after estimated each individual parcel's foregone revenue over its own unique CRA term. Nominal dollars (not inflation-adjusted)

As Table 6 indicates, the mean increase in property tax revenue after abatement expiration ($1,944) is nearly four times higher than the median ($567), and suggests that the mean effect is driven by a smaller subset of properties that experienced relatively large valuation increases. The median property with an abatement that expired between 2014 and 2026 only generated $567 more property tax revenue in nominal property tax revenue after expiration than it did in the first year of its abatement. Compared with the median abatement's total foregone revenue total of $33,925, this means that the median CRA abated property with an expired abatement would take 59.8 years (at current property tax rates) to fully recoup its own foregone revenue.

We note that these represent upper-bound estimates. Spillover effects onto neighboring properties could shorten this timeline, although our analyses in 2021, 2022, and 2026 have all found that price and value spillover effects on neighbors are much smaller than the effects on the abatement property. We conclude that it would still likely take decades before the new, higher tax revenue collected after an abatement expires would make taxing entities whole. We note again that it remains unclear if the abatements themselves are causally or primarily responsible for the increase in tax revenue in the first place.

The timeline for properties recouping their own foregone CRA abatement revenue becomes further extended when the values are adjusted for inflation using the Consumer Price Index (CPI-U) for all urban areas from the U.S. Bureau of Labor Statistics (BLS). Table 7 shows the same figures as Table 6, but in 2024 dollars, with each parcel with an expired abatement individually adjusted for inflation before averaging.

Table 7. Real Property Taxes on Abated Parcels, First Abated Year and First Expiration Year (2024 dollars)

Property tax per abated parcel, real 2024 dollars: first abated year vs. year after expiry

Measure	n	Mean	Median
First abated year: foregone tax	2,140	$2,725	$2,205
First abated year: hypothetical unabated full tax	2,140	$3,457	$2,781
First abated year: tax paid with abatement	2,140	$732	$313
Year after expiry: full tax (actual district rate)	2,140	$4,972	$4,526
Increase after expiry vs. first-year unabated tax	**2,140**	**$1,515**	**$162**
Total foregone tax (annual x abatement term)	**2,140**	**$55,436**	**$43,108**
Time to recoup foregone tax (total / increase)		**36.6 yrs**	**266.6 yrs**

Data Source: Franklin County Auditor parcel snapshots and tax incentive data, Author Calculations using historic tax tables. Each row follows the same 2,140 CRA abatements on residential properties that expired between 2014 and 2023. Each parcel is adjusted for inflation between its unique abatement start and end years using CPI-U before averaging.

After adjusting for inflation, the mean parcel with an expired abatement generated $1,515 more property tax revenue than it did in the year its CRA abatement began. The median parcel generated just $162 more in real terms. This means that it would take 36.6 and 266.6 years, respectively, for the mean and median tax revenue increase to pay off their foregone revenue due to their abatement.

We encourage policymakers to consider this lag when evaluating whether to establish new CRAs. Although abated properties begin contributing new revenue to school districts and other public services once their abatement expires, it takes decades before the new, higher revenue collection pays off the revenue given up during the abatement period. Additionally, it is unclear if the abatements are responsible for the new higher revenue collected because property tax rates have been increased in the interim. It is entirely possible that districts could collect a higher amount of revenue today without ever having needed to forego revenue in the first place.

c. Do Neighborhood Demographics Change Over Time with CRA Abatements?

Our results combine to show that parcels that have received a CRA property tax abatement for conducting renovations in the past experience a price increase that otherwise similar properties do not. Once the abatement expires, home buyers value the abatement and renovations less over time, although their initial positive effects remain somewhat persistent in county reappraisals and their positive spillover effects on neighboring property prices remain. These are likely due to both the observation and lagged nature of the appraisal process and the fact that relatively few expired abatement properties are sold and thus appear in realtor comps.

Our findings mean that, while expired CRA abatement premiums eventually drop out of property prices on a roughly 2-year lag, they remain “sticky” in appraisal values and in neighboring home prices. This finding raises a critical question about how persistently elevated home valuations and neighborhood prices shift neighborhood demographics. The answer to this question can help policymakers to better understand how abatements may permanently impact and shape neighborhoods in the county.

Here, we provide some follow-up insights as an extension of our discussion, using Census tract-level demographic data to examine some indicators of possible gentrification (Hammel and Wyly, 1996). To use tract-level data requires an adjustment to the tract boundaries across Censuses. This means cross-walking 2010 Census tract data to 2020 tracts using a set of statistical weights. We derive these weights from the individual parcel counts overlaid on the Census tract maps. The share of parcels in prior tract boundaries that overlap the new boundaries forms the adjustment factor for that tract's demographic estimates from older vintages of data. This adjustment procedure allows us to estimate demographic changes over time on static geographies.

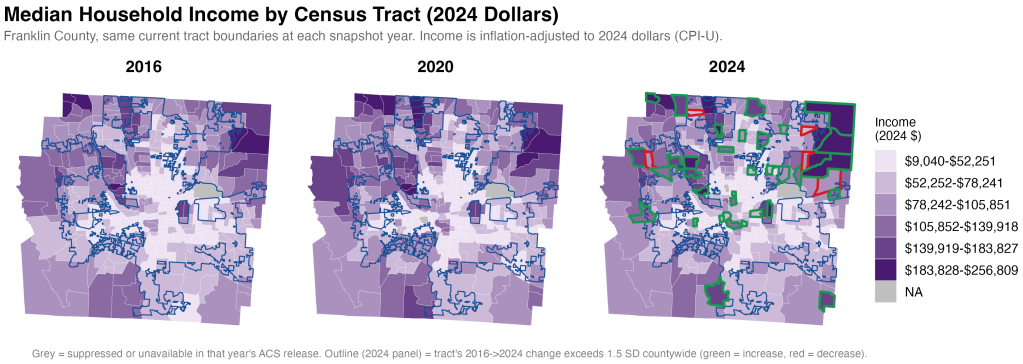
We examine indicators of gentrification, following Freeman (2005) and McKinnish et al. (2010). Specifically, we examine median household income, the percentage of the population with a bachelor's degree or higher, and the percentage of the population that is non-white at the tract-level. Established research suggests that tracts that experience substantial changes in racial demographics while also experiencing rising income and rising educational attainment simultaneously are undergoing some version of gentrification. We highlight that gentrification need not be racial. McKinnish et al. (2010) as well as Pattillo (2010) provide evidence that income and educational (i.e. "class-based") measures can often signal gentrification, even within solidly minority neighborhoods, as more affluent and middle-class minority residents move into "up and coming" historically minority neighborhoods.

In an attempt to capture changes over time, we present snapshot maps for three different, equally spaced years in our sample. We begin in 2016 (the first year with a large number of expired abatements in our sample). Using the same ACS data for which we conducted our analysis, cross-walked to the 2020 Census tracts by parcel count, we show a mapset for three variables: (a) median income, (b) percentage of the population with a bachelor's degree or higher, and (c) percentage of the population that is non-white. We provide a county-wide mapset in Figure 9 and Figure 10 provides a zoomed-in demographic map set for the downtown Columbus tracts with the highest number of both active and expired CRA abatements in the county. To see this, refer to Figure 1, which provides a choropleth map of the 2020 Census tracts with the highest number of expired CRA abatements, as of 2026

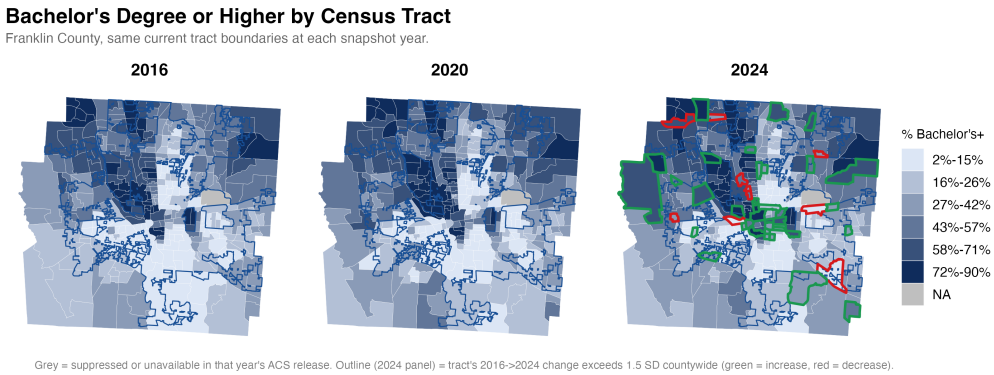
In the 2024 maps, Census tracts outlined in red experienced a negative change of more than 1.5 standard deviations relative to the county average between 2014 and 2024. Green tracts experienced a positive change of more than 1.5 standard deviations from the county average between 2014 and 2024.

Figure 9. Franklin County Demographic Changes by 2020 Census Tract, 2016, 2020, 2024

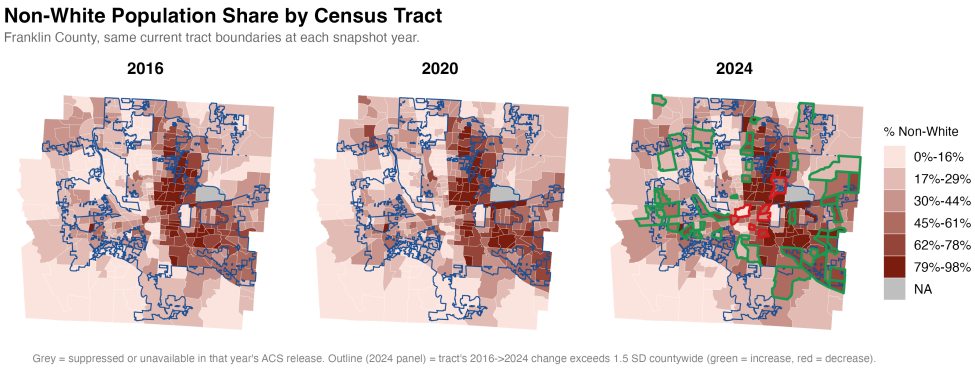
(a) Median household income



(b) Percentage of residents with bachelor's degree or higher



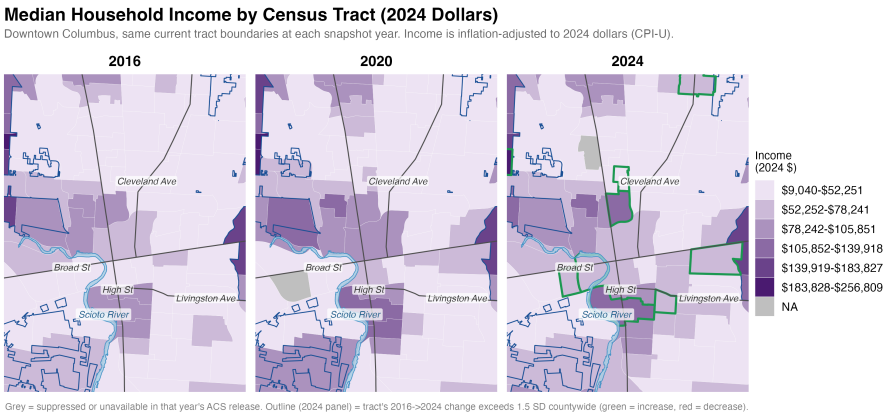
(c) Percentage of residents who are non-white



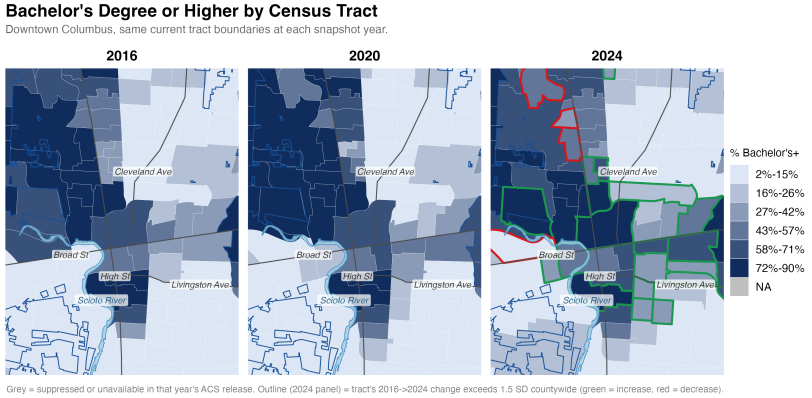
Data: U.S. Census Bureau

Figure 10. Downtown Columbus Demographic Changes by 2020 Census Tract, 2016, 2020, 2024

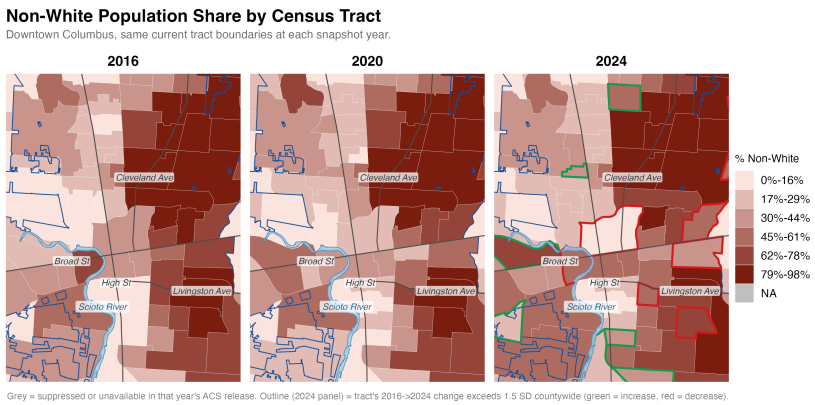
(a) Median household income



(b) Percentage of the population with a bachelor's degree or higher



(c) Percentage of the population that is non-white



Visual inspection of the maps in Figure 9 and Figure 10 suggests that there may be a correlated decline in non-white populations and an increase in bachelor's degree or higher residents in some of the tracts that have received the largest number of CRA abatements, with median income effects less visually apparent.

To more rigorously assess any possible correlation, we conduct several simple regressions. First, did the post-2000 spike in CRA abatements target less white, less educated, and/or lower-income tracts initially? Given that CRAs were designed to target blighted neighborhoods for revitalization, this seems plausible. To test this, we regress the cumulative share of CRA abated value for residential properties on the 2000 Census tract baseline demographics. We reconstruct the 2000 Census tract boundaries to the 2020 Census tract boundaries using the same parcel-level weighting procedure to ensure consistent geographies over time. We then regress following **Equation 2.**

Equation 2.

$$Abated\ Value\ Share_t = \beta_0 + \beta_1 \boldsymbol{Z_{2000,t}} + \boldsymbol{\beta X_{2000,t}} + \varepsilon_t$$

Next, did the cumulative share of abatements (the vast majority of which began prior to 2015) have any relationship to the 2010-2024 demographic change in the Census tracts, following the Great Recession? We assess this with a regression model specified by **Equation 3.**

Equation 3.

$$\Delta \boldsymbol{Z_{2010-2024,t}} = \beta_0 + \beta_1 \boldsymbol{Abated\ Value\ Share_t} + \boldsymbol{\beta X_{2010-2024,t}} + \varepsilon_t$$

In both regression equations, Abated Value share is the cumulative abated value share from 2001 onward for residential properties in each tract, t. The variable $\boldsymbol{Z_t}$ represents the demographic variable of interest (either median household income, non-white share of population, or bachelor's or higher share of the population) while $\boldsymbol{X_t}$ represents the other two demographic variables in each run.

The key idea is that we are testing two separate mechanisms for potential correlation: (1) selection and (2) change. Selection examines whether the baseline 2000 demographics of a Census tract correlate with the volume and scale of residential CRA abatements that it eventually would receive. This could imply that local officials constructed the CRAs to target these areas (or that these areas self-selected into CRA utilization). Change, on the other hand, examines if the 2010-2024 change in tract demographics was subsequently correlated with the volume and scale of residential CRA abatements it had already received. In other words, did the CRAs potentially influence how tracts would later develop?

We test these two questions by regressing all three indicators of gentrification: non-white population share, median household income, and the percentage of the tract population with a bachelor's degree or greater. In each case, we control for the others (i.e., if we are testing median income, we control for educational attainment and non-white share). If CRA abatements are, at least in part, a contributing factor to gentrification through higher housing prices, we would expect to see a correlation with CRAs going into tracts that in 2000 had some combination of lower median incomes, lower education levels, and higher non-white populations. We would then expect that tracts with larger shares of value abated by CRAs increased their median income, educational attainment, and/or white populations at a faster rate

than the county overall between 2010 and 2024. The results of the regressions are presented in **Table 6** and plotted in **Figure 9** and **Figure 10**.

Table 8. Regression Results for Demographic Selection and Changes

Controlled: Single-Family CRA-Abated Value Share vs. Tract Demographics						
Analysis	**Variable**	**Model**	**Coefficient (SE)**	**p-value**	**R2**	**N**
Selection (2000 baseline, controlled)	% Bachelor's Degree+	AbatedValueShare ~ PctBachelorsPlus2000 + controls	-0.000212 (0.00575)	0.9707	0.109	322
Selection (2000 baseline, controlled)	% Non-White	AbatedValueShare ~ PctNonWhite2000 + controls	0.0182 (0.00431)	0.0000***	0.109	322
Selection (2000 baseline, controlled)	Median Household Income ($, real 2024)	AbatedValueShare ~ MedianIncome2000 + controls	-3.28e-06 (3.35e-06)	0.3276	0.109	322
Change (2010-2024, controlled)	% Bachelor's Degree+	ChangeBachelors ~ AbatedValueShare + controls	1.03 (0.351)	0.0036**	0.029	322
Change (2010-2024, controlled)	% Non-White	ChangeNonWhite ~ AbatedValueShare + controls	-1.69 (0.413)	0.0001***	0.067	322
Change (2010-2024, controlled)	Median Household Income ($, real 2024)	ChangeIncome ~ AbatedValueShare + controls	$1,520 ($697)	0.0301*	0.020	322

Same sample and construction as the uncontrolled table. "Selection (controlled)" is ONE model (AbatedValueShare ~ all three 2000 baselines together) - each row is that model's coefficient on the named variable, controlling for the other two. "Change (controlled)" is a SEPARATE model per outcome (its own 2010-2024 change ~ AbatedValueShare + the OTHER two variables' 2010 baseline levels, not the outcome's own lagged level). Stars: *** p<0.001, ** p<0.01, * p<0.05.

Figure 11. Plots of Tract Selection Regressions (Abatement on Demographics in 2000)

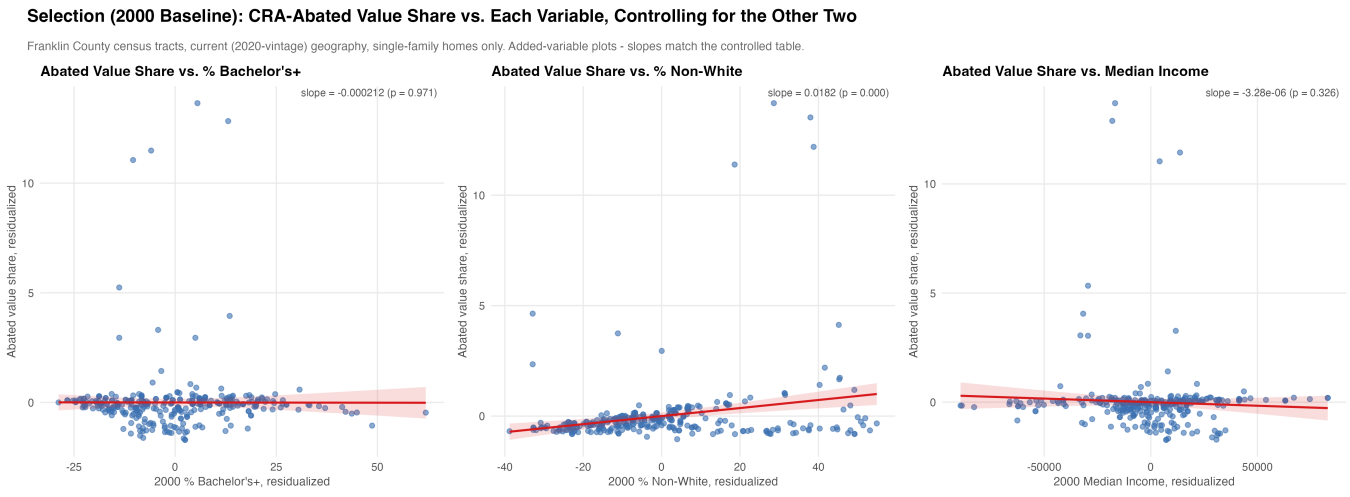
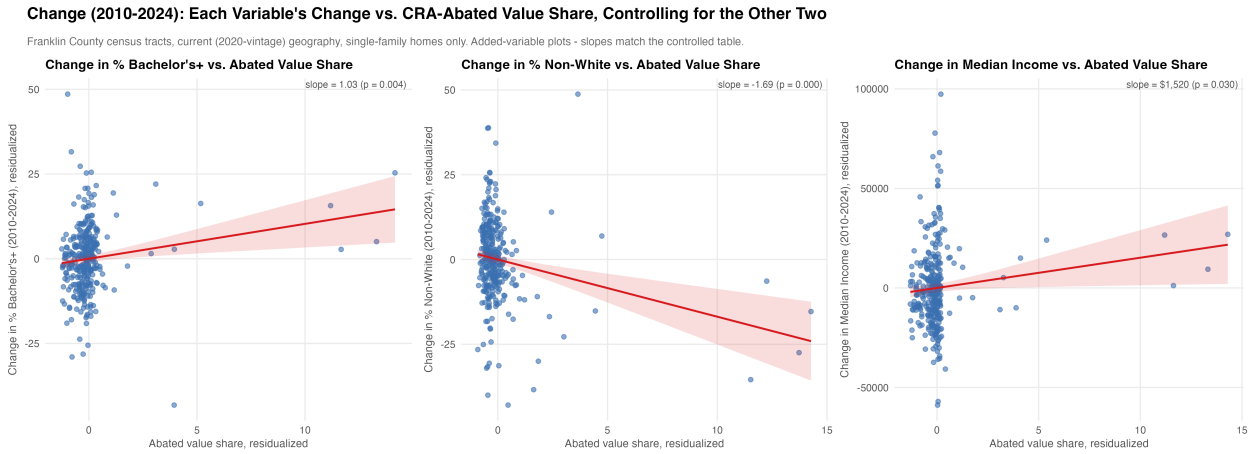


Figure 12. Plots of Tract Change Regressions (Demographic Changes from 2010-2024 on Abatements)



The regression results support a compelling case for strong correlations between residential CRA abatements and demographic changes. First, it appears that when controls are introduced, only the non-white share of the population had a statistically significant relationship between 2000 levels and future abatement volume. That is, we find that tracts with larger shares of non-white residents in 2000 were more likely to have larger shares of their residential property value subsequently abated by CRAs. It appears that a tract's 2000 levels of income or educational attainment had no statistical relationship with the scale of future CRA abatements granted in the tract.

There are several possible explanations for this finding. Because CRAs have a requirement for blight set by the state and are drawn by local municipal officials, this could suggest that early CRAs in the county were targeted at minority tracts. It could also suggest that the higher non-white population tracts within a CRA were focused on by real estate developers or flippers more intensively. We do not find the explanation that non-white residents tend to apply for and receive CRA abatements at a larger scale than white property owners a plausible explanation for the data. Indeed, there is no research to suggest that an individual's racial background would make them more or less likely to conduct renovations, when all residents in the area have the same opportunity regardless of race.

Next, even when controlling for each other, the growth of median income, educational attainment, and the decline of non-white populations within tracts between 2010 and 2024 all experience a statistically significant relationship with the share of residential property value exposed to CRA abatements. That is, tracts that have had a larger share of their residential property value exposed to CRA abatements have increased their median income, increased the share of their population with a bachelor's degree or higher, and decreased their non-white population faster relative to tracts with less or no CRA abated value. These findings lead us to conclude that CRAs have likely been a contributing factor to tract-level gentrification within the county.

We caution that in each of these models, the R^2 measure remains low even though the results survive t-testing for statistical significance. Our interpretation of these results is that at least early CRAs were likely focused in historically minority neighborhoods and CRA abatements have subsequently had a statistically significant effect on tract-level demographics. But we believe CRAs explain only a small

portion of the variance in overall tract demographic shifts. Still, we believe that local leaders should understand that while CRAs offer a policy tool to revitalize neighborhoods, our results strongly suggest that they also raise neighborhood home prices and appraisals in ways that may be semi-permanent and, in turn, contribute to gentrifying neighborhoods that price out low-income, less educated, and minority residents.

7. Conclusion and Recommendations

This analysis uses new data from the prior five years to analyze the effects of expiring CRA abatements in Franklin County. Our report has five main findings:

First, we find that an expired abatement is associated with an initial 12.3% positive housing price premium at the time of expiration that likely captures the final year of abated property taxes and the remaining value of the home renovation conducted to initially receive the abatement. After the abatement expires, the housing price experiences a 5.3% decline in price in each subsequent year after expiration, all else constant. This means that the CRA abatement price premium is entirely erased by year 3 after expiration. Our results support our prior finding that the value of CRA abatements is realized by the seller of the property. Our new results further refine this old conclusion; the value of a CRA abatement is primarily capitalized by the **first** seller of an abated property and can be recouped, to a lesser degree, by subsequent sellers up until 3 years after the abatement expires.

Second, in terms of appraised values, we find that appraisals likely lag housing sale effects and do not adjust downward over time to account for expired abatements. We attribute this to the fact that appraisers only view the outside of properties during the sexennial reappraisals and only use market data during the triennial updates. There is not a feasible way for appraisers to account for the depreciation of interior CRA renovations over time that buyers acutely observe and price in. This is an area for additional policy consideration. It is our recommendation that the state of Ohio and county officials develop a mechanism that allows for an expired abatement to clearly factor into a parcel's appraisal value, given that this suggests a 10 to 15 year timeline since renovation. If the parcel has not been to market since its abatement expired, it is very likely that its decaying price premium does not show up in market analysis data and, thus, is not presently considered. In other words, it seems that an owner would need to sell their parcel with an expired abatement and move in order to register its lower value in the current appraisal methodology.

Third, we find that close-by properties to abated parcels, whose values rise due to spillover effects from the renovations and abatement in our 2021 analysis, also do not experience price decay over time once their neighbor's abatement expires. This is consistent with real estate agents only using recent sales in their comp analysis (which may not capture homes where abatements roll off if they have not been to market) and with listing real estate agents having no economic incentive to lower listing prices just because a neighboring property lost its abatement or has outdated renovations.

Fourth, we find that by applying the effective property tax rates and current-year valuations at the start and end of each CRA abatement in our sample, the mean and median CRA abatements do not instantly make up for the foregone revenue once the owners of those parcels resume property tax payments. That is, on average, CRA abatements generate more revenue after their abatement expires, but the additional revenue increase is relatively small compared to the average amount of foregone taxes over the lifetime of the abatement. The key question is whether this increase in revenue is driven by rising property values (and thus, potentially the abatement), whether it is driven by rising property tax *rates*, or some combination of both. Analysis is further complicated by Ohio House Bill 920, which was passed in 1976

and creates a reduction factor that purposefully sustains original school levy revenues, absent a new levy, even if property values increase. It is difficult to say anything causal about abatements in this context other than that they are likely endogenous to both values and property tax rates. For values, abatements are tied to renovations and, as our analyses have shown, higher prices during their active period. This contributes to a rising tax base. But abatements may also be endogenous to rising tax rates. Our 2021 analysis found that there is at least some correlation between school districts that frequently sought new levies within the county and those that had the highest amount of abated revenue foregone. That is, districts (and other public entities reliant on property taxes) may seek to raise rates on unabated properties as a response to losing revenue to abatements. These higher rates would then also apply to the abated properties once the abatements expire. More research into this question is needed, but we can conclude that it very likely takes years (and potentially decades) for the new, higher property taxes collected after an abatement expires to recoup the foregone tax revenue from the abatement.

Finally, we find that there is a strong and statistically significant correlation between Census tracts that had large non-white populations in 2000 and subsequent CRA abatement value in the tract. We attribute this to either the tract being intentionally targeted via the CRA creation requirements for blight or developers focusing on redevelopment within the minority tracts within a CRA. We find that between 2010 and 2024, tracts with larger shares of their residential property exposed to CRAs increased their median incomes, increased the share of their population with a bachelor's degree or higher, and decreased their non-white populations at a faster pace than tracts with low or no CRA exposure. Our results suggest that CRAs, primarily through their contribution to higher home prices, have contributed to the gentrification of portions of the county. We believe this is a very important finding that should lead local officials to reexamine CRA abatements in a new light.

Appendix A: Balance Testing for the Covariate Matching Procedure

All matching was conducted in R using the package MatchIt (Ho, et al., 2011)

Figure A.1: Covariate Balance for the Matched Sample of Properties with Expired Abatements

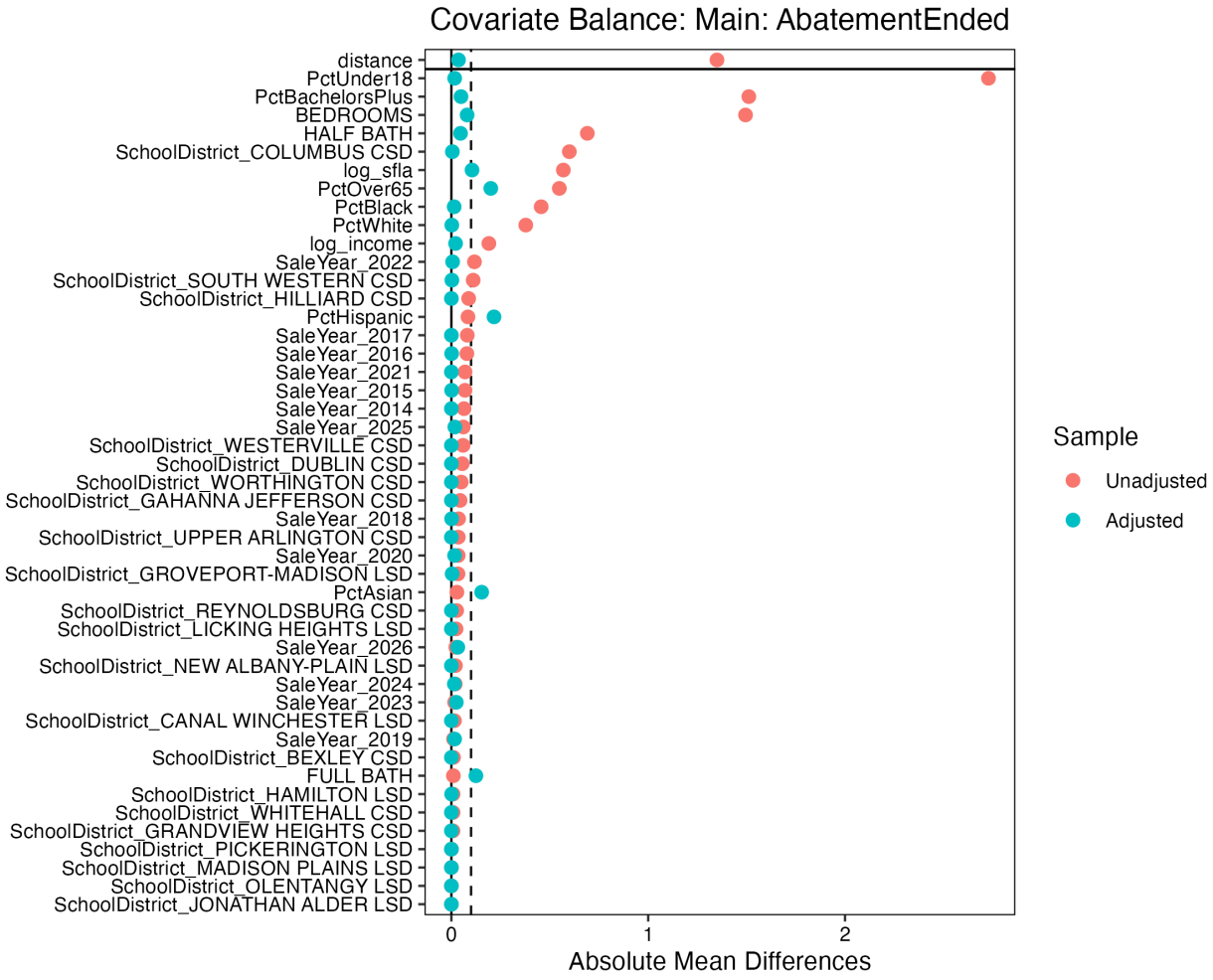


Figure A.2: Covariate Balance for All 2023 Appraised Properties

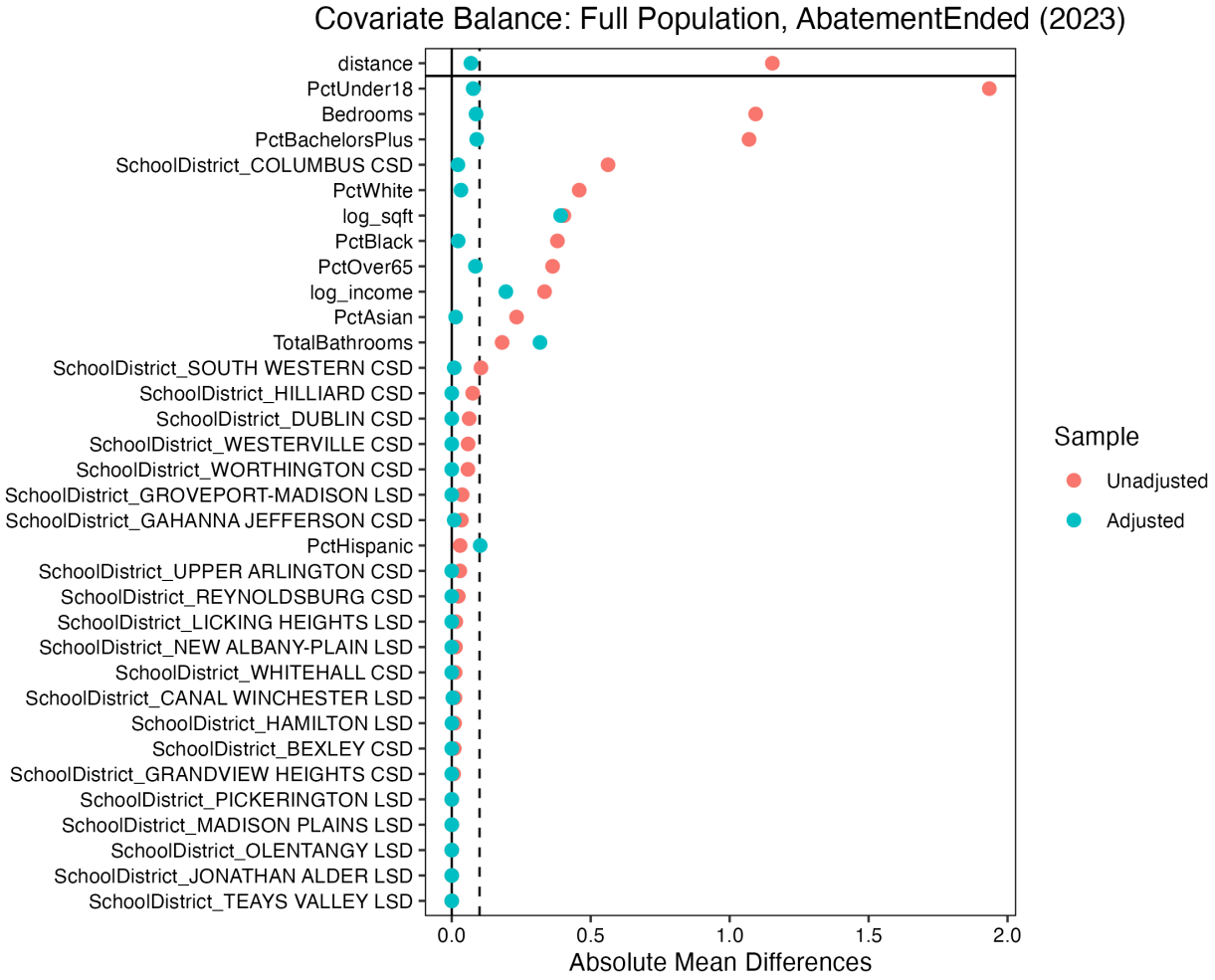


Figure A.3: Covariate Balance for 0-50m Spillover Properties

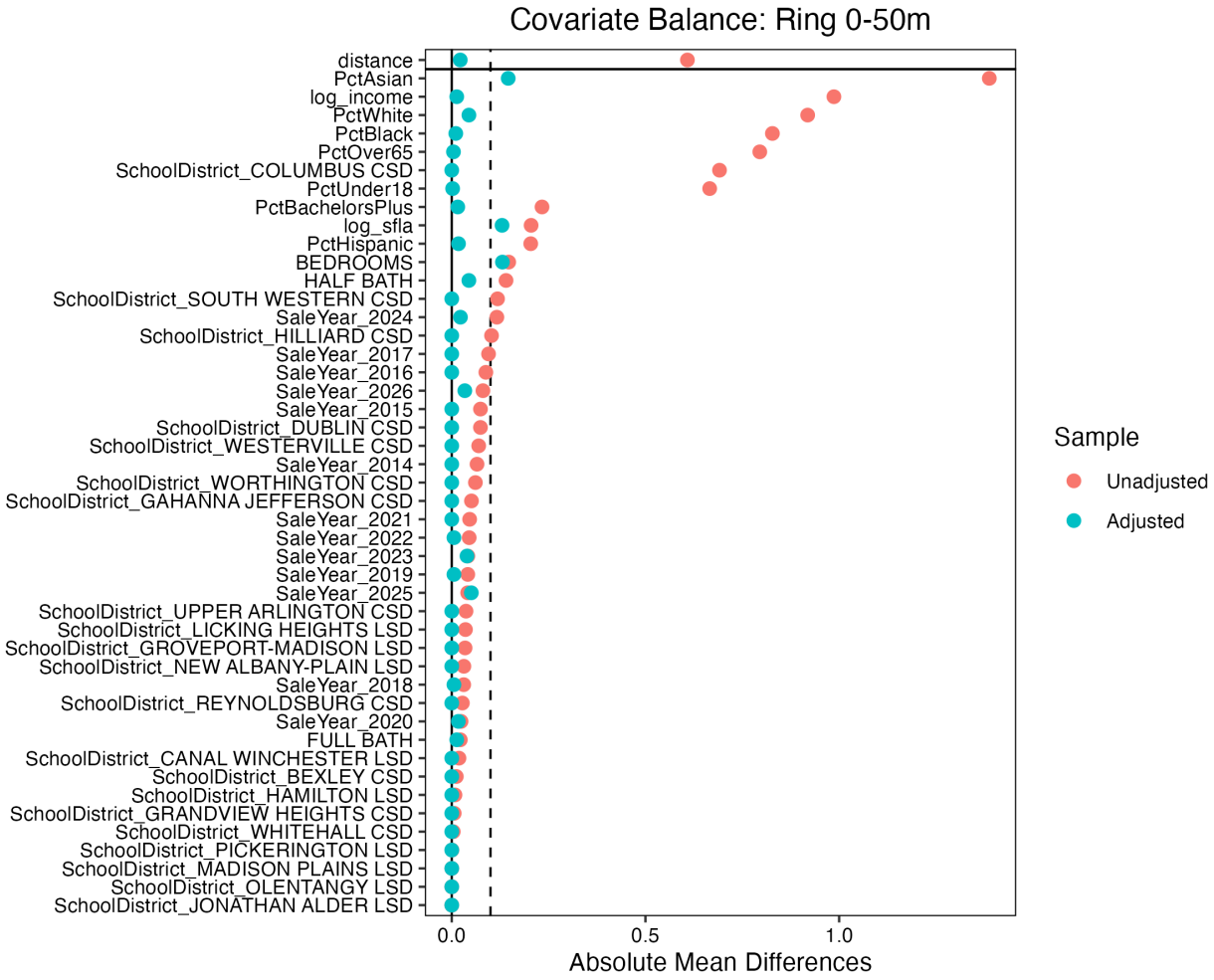


Figure A.4: Covariate Balance for 51-100m Spillover Properties

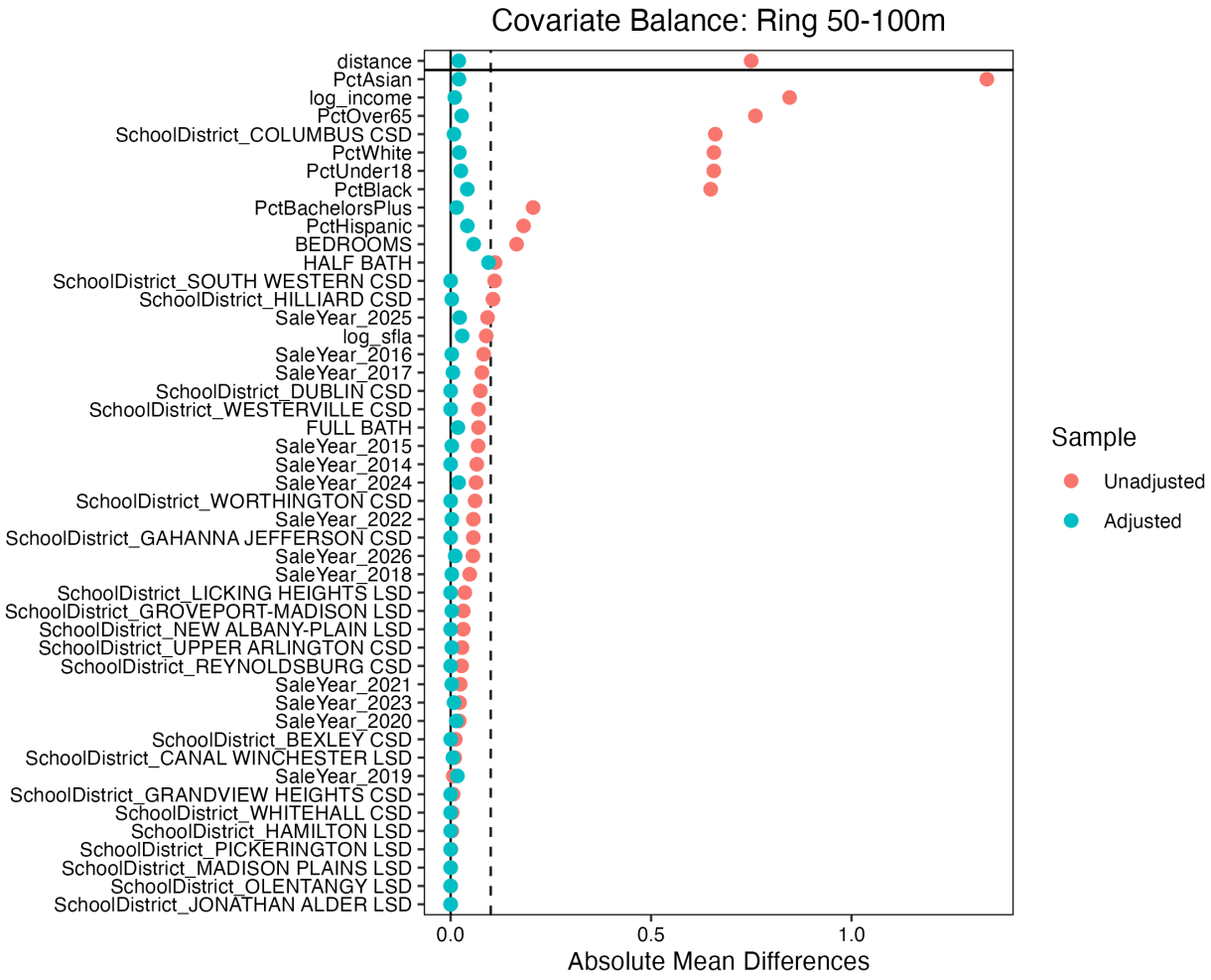
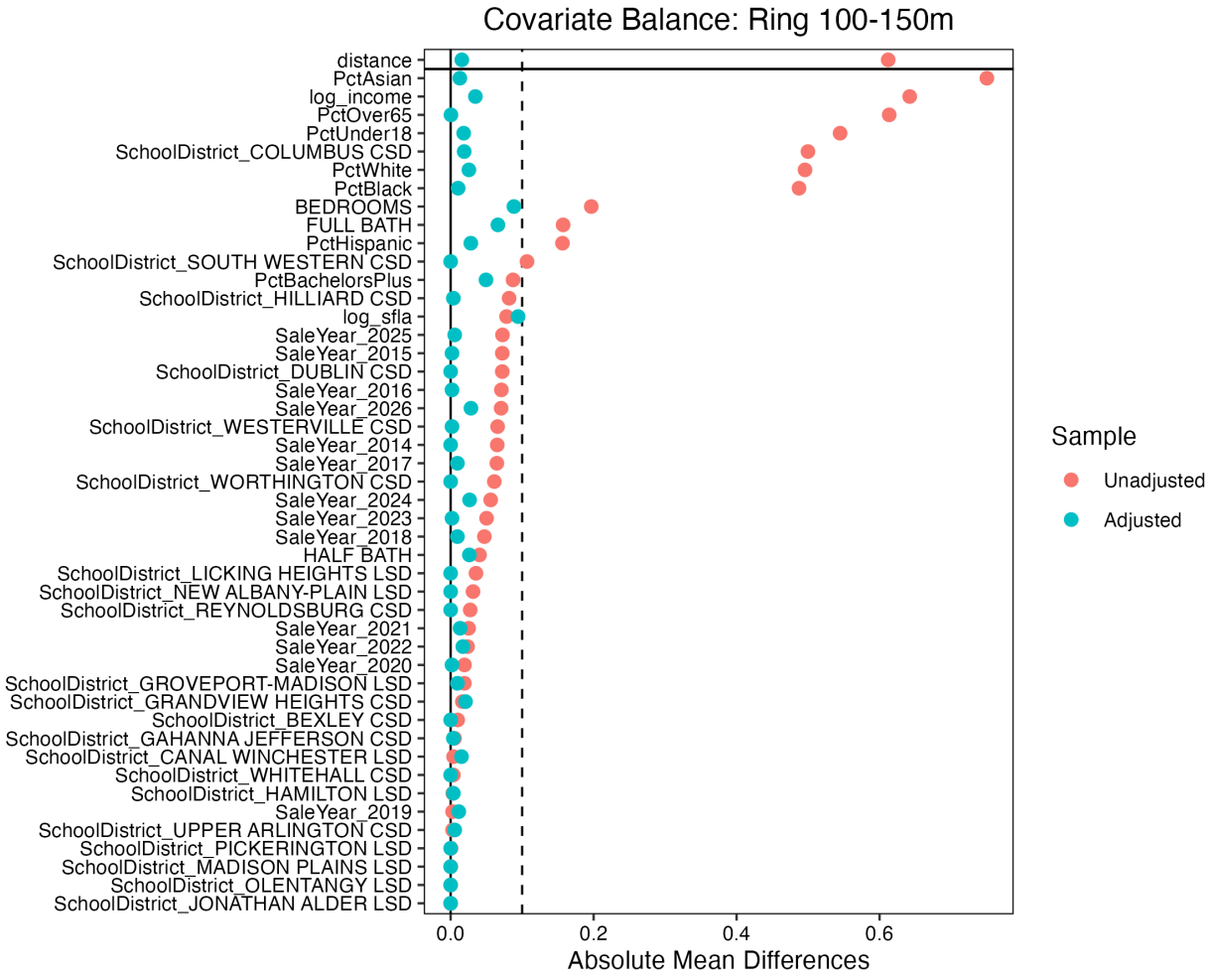


Figure A.5: Covariate Balance for 101-150m Spillover Properties



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