Capitalization Effects for Culture Amenities

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Abstract

Despite widespread recognition and public support for the arts, little is known about the actual geographic access to arts services and their effects on local economies. First, using data from the Quarterly Census of Employment and Wages (QCEW) between 2000 and 2022, I document three empirical patterns: (a) contrary to public belief, the number and share of arts establishments has grown on average, (b) both the level and growth of artistic services are concentrated in the Southwest and Northeast, and (c) the growth in establishments has been matched by a corresponding increase in employment in these counties. Second, using house price appreciation data from the Federal Housing Finance Agency, I estimate a hedonic pricing model to recover capitalization effects for arts services within a county: a 10% increase in arts establishments is linked with a 0.17-0.48% rise in house prices with considerable heterogeneity in areas with a higher concentrations of college educated and higher income workers. My identification strategy exploits within-county variation after controlling for all shocks within a state and year. The results are robust to several diagnostics.

Keywords: Arts, Capitalization Effects, Culture, Hedonic Pricing.

JEL Codes: H41, L82, R23, R30, Z11

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1 Introduction

Ever since Baumol and Bowen (1966) described the "cost disease" of the performing arts, scholars and policymakers have debated the role and value of cultural production in a modern economy. While much attention has focused on the fiscal fragility of arts organizations and the challenges of sustaining artistic labor (Throsby, 2001), public enthusiasm for the arts remains remarkably strong. For instance, a 2018 survey by Ipsos reported that 91% of Americans believe that "the arts are part of a well-rounded education for K-12 students," and 72% report "attending an arts or cultural event during the previous year."[1] However, there is little empirical research on the value that consumers place on the arts and the corresponding local effects. The closest evidence comes from the Bureau of Economic Analysis (BEA) satellite account, which found that the arts and culture sectors accounted for 4.3% of gross domestic product (GDP) as of 2022.[2]

Theoretically, there are at least two reasons to expect that there are high economic and social returns to the arts. First, a voluminous body of macroeconomic research documents the growing demand for services (Buera and Kaboski, 2012), especially higher-value experience goods and services in cities (Diamond, 2016), over the process of structural transformation. Even with the rise of digitally-intensive goods and services (Gallipoli and Makridis, 2018), there is anecdotal evidence that consumers still value in-person activities. Second, the arts may have broader social impact as well, reducing political polarization by bringing people of different ideologies together around what is good, beautiful and true (Balietti et al., 2021). Similarly, the arts can provide

[1] https://www.americansforthearts.org/news-room/press-releases/americans-speak-out-about-the-arts-in-new-public-opinion-poll

[2] https://www.bea.gov/news/2024/arts-and-cultural-production-satellite-account-us-and-states-2022

inspiration, leading people to behave better and more pro-socially than they otherwise would have.[3] However, a big gap exists in the literature on how people actually value arts amenities.

The purpose of this paper is to document how arts activity has evolved across U.S. counties and to assess whether this evolution is reflected in local housing markets through capitalization. Using data from the Quarterly Census of Employment and Wages (QCEW) from 2000 to 2022, the first part of the paper establishes three descriptive facts. First, the number of arts establishments has increased in the average county over the past two decades. Second, both the level and growth of artistic services are geographically concentrated, with particularly strong expansion in the Southwest and Northeast. Third, this growth in establishments has been accompanied by rising employment in the same locations. These patterns contrast with the common narrative that the arts sector is in secular decline. They raise a sharper question about the economic forces sustaining this expansion. Prior work documents that individual artists have experienced worsening labor market outcomes over this period, including a widening earnings gap relative to non artists and low or negative returns to formal education, except where combined with entrepreneurial skills. These facts suggest that growth in arts activity need not reflect improved conditions for producers. Instead, they motivate an alternative hypothesis: that the expansion of arts establishments is supported by demand from local residents who value arts activity as a consumption amenity.

Next, I estimate capitalization effects for the arts using house price appreciation data. My baseline identification strategy exploits within-county variation, controlling for local changes in employment and population and state $\times$ year fixed effects. Drawing on additional zipcode-level data from the Internal Revenue Service (IRS), I replicate these results isolating within-zipcode variation, controlling for county $\times$ year fixed effects. Recognizing the potential for remaining time-

[3] See Mastandrea et al. (2019) for a review of the psychology literature.

varying shocks, I pursue several additional diagnostics. First, I also exploit quasi-experimental variation in state closures of businesses that were deemed "non-essential" during the Covid-19 pandemic, comparing counties that exhibited greater versus fewer days of closure for arts establishments. To ensure a meaningful comparison, I use an entropy balancing approach from Hainmueller (2012), matching based on similarities in population density and per capita income.[4] Second, I leverage historical variation in the disbursement of funding for arts organizations during the New Deal (Brounstein, 2024), which produces similar coefficient estimates. Third, I exploit the staggered introduction of cultural districts, which are designated by local governments to promote arts, culture, and creative sectors through special zoning regulations and economic incentives, (Breznitz and Noonan, 2018; Portillo and Wagner, 2021; Wagner and Portillo, 2024). After validating the parallel trends assumption and adhering to recent guidance on dynamic treatment effects (Roth et al., 2023), I show that cultural district designations are associated with increases in house prices and these effects are concentrated in areas with increases in arts amenities. These results not only help validate the earlier capitalization effects, but also suggest an alternative approach to financing the arts and encouraging their positive externalities and spillovers through place-based policymaking, consistent with a large body of work on agglomeration economies (Kline and Moretti, 2013; Greenstone et al., 2010; Moretti, 2021; Leonardi and Moretti, 2023).

The baseline specification exploits within-county variation and controlling for state × year fixed effects, showing that a 10% increase in arts establishments is associated with a 0.17-0.48% increase in house prices. Furthermore, the effects are concentrated among areas with higher shares of young professionals (ages 18-34), shares of people with at least a college degree, and shares with

[4] An obvious concern with this approach is that mobility during the pandemic could contribute to changes in house prices and the number of arts establishments. However, Makridis and Wang (2024) show that social networks played an important role in propagating shocks, much more so than physical mobility or distance.

people who earn over $100,000/year. There is slight evidence that the effects are also larger in more dense counties, but these estimates depend on using Zillow's house price measure. A back-of-the-envelope calculation from these capitalization effects shows that the average MWTP for a 1% increase in arts amenities is $5,000 in 2000 and $12,000 by 2023.

The value of place-based cultural amenities has been well-studied, including work on arts-led redevelopment, cultural districts, and the local spillovers from cultural infrastructure (Florida, 2002; Markusen and Gadwa, 2010; Schuetz, 2014; Portillo and Wagner, 2021; Wagner and Portillo, 2024). However, the remaining gaps are largely empirical. First, many measures of arts and cultural activity are either cross-sectional, confined to particular cities or neighborhoods, or constructed as components of broader amenity bundles, which makes it difficult to isolate arts-specific variation over time at national scale. Second, causal interpretation is challenging because arts activity covaries with local growth, changing demographics, and shifting consumption patterns, so estimates can reflect endogenous sorting and correlated investments rather than valuation. This paper provides nationally comprehensive evidence on the capitalization of arts activity using consistent administrative measures over two decades, and it disciplines interpretation using both within-county and within-zipcode variation and a wide array of robustness exercises.

1.1 Relevant Literature

This paper contributes to an active literature on equilibrium sorting models and the valuation of non-market amenities (Roback, 1982; Kuminoff et al., 2013). Although typically applied to estimate the value of education, safety, and environmental quality, these methods are also well-suited to value the arts because individuals clearly value the arts, even if they do not necessarily actively

participate and engage with them directly themselves. Most closely related, Bieri et al. (2023) develop and implement a methodology for calculating households' implicit expenditures on local amenities, emphasizing the significant influence of amenities like climate, environmental quality, and public goods on where people choose to live and work. In particular, they build a database of 75 amenities and apply a revealed preference approach to calculate implicit expenditures on these amenities, finding a total $562 billion as of 2000, or 8% of Americans' consumption expenditures.

While their results date back to an older literature on urban amenities (Blomquist et al., 1988; Albouy, 2016), very little work has been done quantifying the value of the arts. Most of the hedonics literature has been in the context of health risks (Davis, 2004; Chay and Greenstone, 2005b), pollution (Chay and Greenstone, 2005a), or school quality (Black, 1999). Nevertheless, there is some empirical evidence on arts amenities. For instance, Falck et al. (2011) exploit quasi-experimental variation in the timing and dispersion of baroque opera houses in Germany to estimate the effects on the attraction of human capital. Similarly, Ahlfeldt and Maennig (2009) find positive spillover effects on land values from three German multifunctional sports arenas. Schuetz (2014) examine the presence of positive spillovers from art galleries in Manhattan, but find the effects significantly diminished once accounting for controls. By examining the capitalization of arts establishments into housing prices using comprehensive data and causal inference, this study provides new insights into the economic returns of arts amenities, complementing existing research on the valuation of urban amenities, which are subject to debate in the era of remote work.

This paper also contributes to a literature on the economics of the arts and cities. The urban economics literature indicates that higher-skilled workers tend to cluster in areas with greater amenities, benefiting from agglomeration economies (Kline and Moretti, 2013; Diamond, 2016).[5]

[5]See Glaeser and Gottlieb (2009) for a survey of the early literature on cities and spatial economics, as well as

More recent evidence from Couture and Handbury (2020) shows that young college graduates have increasingly located next to non-durable amenities (e.g., restaurants) in cities. Similarly, Couture et al. (2024) show that between 1990 and 2014, an increasing proportion of high income workers have relocated into downtown city centers, raising inequality. Part of these downtown city amenities includes the arts. Florida (2002) argues that the development of an artistic class is crucial for urban growth. However, the labor market outcomes of actual artists have deteriorated over the past two decades, which threatens to impact the sustainability of the arts (Makridis, 2025b). This paper, by showing that the average county has seen an increase in arts establishments, even after accounting for population growth, presents a puzzle: if artists fare worse today, how have arts amenities, as measured by establishment and/or employment counts, expanded?

A related question is how cultural amenities can serve as a catalyst for gentrification. A related and complementary paper by Behrens et al. (2024) introduces a novel strategy for identifying the sectors that anticipate neighborhood change, finding that many of these sub-sectors are in cultural and creative industries. Consistent with and building on their results, this paper shows that consumers value cultural amenities, which would explain why these sectors have predictive power. Moreover, I provide evidence that policies encouraging the creative economy—through, for example, cultural district designations—have positive effects on house price appreciation.

Public support for the arts has been a contentious issue, with debates centering on the efficacy and role of government intervention. To that end, some suggest that funding for the arts, if it reaches the underlying artists, could yield positive externalities for both artists and their communities (Leroux and Bernadska, 2014; Makridis, 2024). Despite these theoretical foundations, empirical evidence on the causal impact of government arts funding remains limited, primarily due

Glaeser et al. (2001) for evidence on the value of consumption amenities in cities.

to the observational nature of most studies, which complicates the separation of treatment and selection effects (Alper and Wassall, 2006; Catterall et al., 2012).[6] This paper helps reconcile the puzzle of expanding arts establishments and lower artist wages by showing how the public values arts amenities, particularly in areas with higher income workers and more college graduates.

Studies on the agglomeration of labor markets provide useful analogs; for example, Kline and Moretti (2013) find significant long-term agglomeration effects from the Tennessee Valley Authority's investments in manufacturing. Similarly, Moretti (2021) document substantial productivity premiums for inventors in large occupational clusters, highlighting the broader benefits of agglomeration. In the context of the creative industries, Borowiecki (2013) and Kelly and O'Hagan (2007) find significant productivity gains and the emergence of artistic clusters through historical analysis. These findings underscore the potential for public investment in the arts to generate lasting economic benefits, aligning with studies on the spatial clustering of amenities and their impact on urban development (Florida, 2002; Diamond, 2016). These results are consistent with other examples from Germany (Ahlfeldt and Maennig, 2009; Falck et al., 2011), which point towards cultural amenities generating other positive externalities (e.g., attracting human capital).

2 Data, Measurement, and Descriptive Statistics

2.1 Data and Measurement

I draw on the Quarterly Census of Employment and Wages (QCEW), which is a quarterly count of employment and wages reported by employers, covering over 95% of U.S. jobs available at

[6] Brounstein (2024) is one of the few papers that exploits plausibly exogenous variation from the New Deal, showing that the funding led to a persistent effect on share of the number of artists. As a robustness exercise, I also leverage this historical variation to identify the marginal willingness to pay for arts amenities.

the county, Metropolitan Statistical Area (MSA), state, and national level, by detailed industry. Its primary source is administrative data from state unemployment insurance (UI) programs, supplemented by data from two Bureau of Labor Statistics (BLS) surveys: the Annual Refiling Survey and the Multiple Worksite Report. Before publication, BLS and state workforce agencies review and enhance the QCEW data, converting errors to correct values and confirming and annotating unusual movements. This makes it the "gold standard" for employment, wage, and establishment counts. While I extract the total employment, establishments, and wages across all organizations, I focus on private sector annual employment, number of establishments, and wages within the arts sector, focusing on number of establishments, as well as the total number (including public sector) to compute percent shares. I drop all observations with disclosure flags.

My baseline approach to measuring arts organizations involves using the North American Industry Classification Standard (NAICS) code 71, which includes arts, entertainment, and recreation. To focus on artistic organizations, I count the number of NAICS 71 establishments in a county after netting out NAICS 713, which covers amusement, gambling, and recreation industries. To be sure, this measure is not perfect since it also includes NAICS 7112, which covers spectator sports, but it is the most comprehensive way to measure the arts across counties since the majority of counties do not have data on employment, wages, or establishments when disaggregating by four-digit NAICS codes due to confidentiality considerations. (Unfortunately, while I was granted access to the underlying restricted micro-data, which would avoid this censoring problem and let me identify arts establishments with greater precision, the BLS cancelled all of it agreements with researchers over restricted data in June 2025 due to articulated resource constraints.)

To validate this proxy for the arts, I use national data across industries where there is not the same censoring problem due to confidentiality. In particular, I measure the arts directly using

three four-digit NAICS codes: (a) Performing Arts Companies, (b) Independent Artists, Writers, and Performers, and (c) Museums, Historical Sites, and Similar Institutions. Figure A.1 in the Online Appendix compares the baseline indirect measure with the new direct measure, showing a near perfect correlation although the levels are off. Figure A.2 conducts a similar validation at the county-level, showing that there is a high 0.82 correlation between the indirect and directs arts share measures. Here, however, roughly 1,800 counties are included in a given year.

To measure house price appreciation, I draw on the county house price appreciation longitudinal data from Bogin et al. (2019). One advantage of it over, for instance, the Zillow Zestimates data is that they use repeated sales transactions, purging variation in the quantity of housing and other time-invariant characteristics that are common with a location, although my results are robust to using Zillow estimates too. Furthermore, Bishop et al. (2020) point out that using predicted prices, or even aggregated prices, can lead to biased MWTP estimates. Crucially, however, the county and zipcode longitudinal series from Bogin et al. (2019) are generated based on the recommended transaction-level data where housing attributes are taken into account and then aggregated.

Finally, I use the Census Bureau's county-to-county flows net migration and the county population files. The flows data is summarized in five-year groups, e.g., 2007-2011, 2008-2012, and so on. To produce annual variation, I take the mid-point, i.e. 2007-2011 is converted to 2009, 2008-2012 is converted to 2010, and so on.

2.2 Descriptive Statistics

Figure 1 begins by plotting the spatial distribution in the number of NAICS 71 establishments and, more specifically, arts establishments per capita × 1000.[7] Panel A shows the average number of NAICS 71 establishments per county is higher in urban areas, with the highest numbers appearing in major cities and surrounding counties. The central U.S. generally shows lower numbers, although there is a lot of missing data due to censoring in the QCEW. Panel B shows arts establishments are more numerous in urban counties. However, the highest numbers are even more concentrated in certain cities known for their cultural significance. Both panels show that urban areas have a higher number of establishments, reflecting the urban concentration of economic activity and cultural infrastructure. The arts establishments, while following a similar pattern, are even more concentrated in key cultural centers.

Figure 2 plots the 2008-10 to 2020-22 growth rates. Panel A shows a varied growth pattern, with some counties experiencing significant growth (darker shades), while others have seen a decline (lighter shades). The growth is not uniformly distributed and seems to be concentrated in specific regions. Panel B shows the growth pattern for arts establishments is also mixed, with some areas showing strong growth and others experiencing a decline. The distribution of growth for arts establishments appears to be somewhat more dispersed than for the broader NAICS 71 category. Both NAICS 71 and arts establishments have experienced growth and decline in different regions. However, the growth of arts establishments seems to be less concentrated in specific areas and more spread out across the country.[8]

[7] Table A.1 in the Online Appendix presents means and standard deviations for each variable.

[8] Given the increase in population over time, a natural question is whether the growth observed still holds when looking at changes in the share of arts establishments. Figure A.4 in the Online Appendix shows that the shares have also grown over time, and that there is a correlation of 0.58 and 0.39 between the growth rates and

Finally, Figure 3 plots NAICS 71 and arts establishments as a percent share of the total. Panel A shows a higher concentration of NAICS 71 establishments in urban and coastal areas, with notable clusters in the West (e.g., California), the Northeast (e.g., New York), and some parts of the South (e.g., Florida). The central U.S. has a mix of moderate to low percentages, with some pockets of higher concentration. Panel B shows arts establishments also tend to cluster in urban and coastal regions, with the West Coast, Northeast, and parts of the South showing higher percentages. However, the concentration of arts establishments appears more pronounced in certain metropolitan areas compared to the broader NAICS 71 category. Both panels indicate a preference for arts and NAICS 71 establishments to be located in urban and coastal areas, likely due to higher population densities and greater economic opportunities. However, arts establishments show a more selective distribution, concentrating even more heavily in certain cultural hubs.

As robustness, Panels A and B in Figure A.3 in the Online Appendix document about employment and its growth using both the broader NAICS 71 and indirect arts measures. Unfortunately, only 2,338 counties are observed for NAICS 71 and even fewer 1,266 are observed for indirect arts. Nonetheless, average employment growth for these two measures are 0.138 and 0.388, respectively. The correlations between the growth in establishments and employment are 0.36 and 0.28, respectively. The almost identical correlation in the time series, coupled with the high correlation in the cross-section, provide confidence that the indirect measure performs reliably well.

These patterns relate with empirical evidence from Borowiecki and Graddy (2021) about the socio-economic characteristics of artists and whether they locate. Using data from roughly 170 years, they study the historical development of creative activity and clusters within the arts,

share changes for NAICS 71 and arts, respectively. Figure A.5 in the Online Appendix also explores the spatial distribution of the wage bill for NAICS 71, as a share of the total wage bill, and correlates it with the share of NAICS 71 establishments, producing a correlation of 0.46.

finding that the proportion of female creatives has been relatively high, though time constraints often hinder the pursuit of creative occupations. Racial inequality remains persistent and slow to change, while access to financial resources within a family significantly facilitates entry into artistic careers. Furthermore, famous creatives can positively impact the uptake of creative occupations and contribute to the size and sustainability of creative centers.

3 Estimating Capitalization Effects for the Arts

The arts represent a unique category of non-market amenities that encompass a wide range of cultural, educational, and entertainment services. These amenities contribute to the overall quality of life by providing aesthetic pleasure, fostering community engagement, and enhancing social cohesion (Throsby, 2001). In the hedonic pricing framework, the presence and growth of arts establishments in a locality can be expected to positively influence housing prices due to:

1. Cultural Enrichment: Arts establishments such as galleries, theaters, and music venues enrich the cultural fabric of a community, attracting residents who value cultural experiences (often higher income) and can complement other goods/services (Florida, 2002).

2. Social Capital: Arts amenities often serve as social hubs, facilitating community interaction and cohesion, which can make neighborhoods more desirable (Leroux and Bernadska, 2014).

3. Economic Development: The concentration of arts establishments can stimulate local economies by attracting tourists, creating jobs, and encouraging spending in related sectors (e.g., restaurants, retail) (Markusen and Gadwa, 2010).

Following Bishop et al. (2020), I estimate capitalization effects through regressions of:

$$h_{ct} = \gamma a_{ct} + \beta X_{ct} + \phi_c + \lambda_t + \varepsilon_{ct} \tag{1}$$

where h_{ct} denotes the log house price in county c and year t, a the log number of arts establishments, X a vector of time-varying county controls, and ϕ and λ fixed effects on county and year.[9] Standard errors are clustered by county. The inclusion of both county and time fixed effects purges all heterogeneity that is constant across time within a county, and additional specifications also consider added state $\times$ year fixed effects to purge time-varying heterogeneity in state policy (e.g., funding for the arts that is driven by legislative agendas). Following Bishop et al. (2020), I show the results are robust to other measures of artistic amenities, including the number of artists per capita in a county and the number of arts nonprofits in a zipcode.

The primary concern with Equation 1 is that unobserved time-varying shocks that affect house prices could be correlated with the arts concentration. For example, if there is an influx of wealthy residents, then that would affect the demand for the arts and more expensive homes. To address this concern, I control for time-varying measures that correlate with local demand factors, including population, and both total establishment and employment growth. If an area is becomes popular, that should show up in population and/or employment.

However, there could still exist a range of unobserved factors, so I implement a set of diagnostic exercises that probe whether the main results are robust. First, recognizing that arts concentration is likely correlated with other local consumption amenities that can affect house prices, such as restaurant density and growth, I show that the baseline estimates are invariant to the inclusion of

[9]My use of log house prices from Bogin et al. (2019) is driven by their detailed construction of consistent price indices by county that control for a wide array of housing characteristics, weighted and aggregated within a country-year. This means that there is no need to include housing characteristics as additional right hand side variables in the empirical specification. However, the results are also robust to using Zillow's Zestimates index for median house price in a county-year.

restaurant activity. They too are invariant to the inclusion of air quality and pollution exposure.

Second, using the Covid-19 pandemic as a source of sharp and plausibly exogenous disruption to in-person cultural activity, I exploit differential intensity of arts-sector disruption, closures, and reopening patterns to test whether areas experiencing larger shocks to arts activity exhibit different house price dynamics. Consistent with theory and a causal interpretation, the effects on house prices are concentrated in counties with higher arts exposure.

Third, using additional data from the IRS within and across zipcodes, I introduce substantially stronger local controls by including county $\times$ year fixed effects and exploiting within-zipcode variation. These specifications absorb all time-varying county-level shocks, and the estimated relationship between local arts activity and housing prices remains similar, suggesting that unobserved county-year demand shocks are unlikely to be driving the main results.

Fourth, using variation in the timing of cultural district designations, I conduct an event-study style analysis. In these designs, capitalization effects are concentrated in the interaction with local arts concentration, which is consistent with the interpretation that housing markets respond more to cultural policy when baseline arts exposure is higher. At the same time, the event-study evidence shows some pre-trend sensitivity, motivating the use of modern staggered adoption estimators and reinforcing that these results should be read as supportive but not dispositive.

Fifth, as a historically grounded robustness check, I use New Deal era federal arts funding as a source of predetermined variation in local cultural capacity, following Brounstein (2024). Specifically, I instrument contemporary arts establishments using New Deal funding that went to a city for the arts and related measures, and I show that the resulting estimates are similar in sign, conditional on contemporaneous demographic controls and pre-period 1930 county characteristics. This exercise is informative because it relies on variation that is temporally distant from the

modern housing cycle and is therefore less plausibly driven by contemporaneous demand shocks. At the same time, it captures a different margin, long-run cultural capacity rather than short-run entry, so it is best interpreted as an additional diagnostic rather than a standalone causal estimate.

These diagnostics provide evidence that the estimated association between arts concentration and house price growth is not driven solely by broad local growth, correlated non-arts amenities, environmental quality changes, or mechanical measurement choices. Nevertheless, the analysis remains interpretive rather than fully structural—evidence of capitalization associated with changes in local cultural activity, rather than as a definitive MWTP for cultural amenities.

4 Baseline Results

4.1 Baseline Model

Table 1 documents the main results associated with Equation 1, coupled with some dimensions of heterogeneity. Starting with column 1, a 10% increase in the number of arts establishments is associated with a 0.39% increase in house prices. Recognizing the potential for unobserved heterogeneity, column 2 adds county and year fixed effects, exploiting within-county changes in the number of arts establishments and house price appreciation; the coefficient grows slightly in magnitude to a 0.50% increase for a corresponding 10% rise in arts establishments.

Even though unobserved heterogeneity arising from time-invariant factors is the greatest concern, there could also be other time-varying omitted variables. For example, an area that is booming, potentially due to improved schools or a rapidly growing economic environment, may simply attract more people and create more jobs. Column 3 controls for the annual growth rate

in total employment, establishments, and population. The results are unchanged. Furthermore, recognizing the heterogeneity in state policymaking, especially over such a long time span, column 4 introduces additional state × year fixed effects. The coefficient is reduced in half, suggesting that a 10% rise in establishments is associated with a 0.17% increase in house price appreciation.

Next, I explore several dimensions of heterogeneity, taking the 2015-2019 American Community Survey (ACS) demographic data to produce high/low indicators based on whether a county falls above/below the median of the distribution for a given variable. I find that the capitalization effects of the arts are concentrated in areas with a higher share of 18-34 year olds ("high youth"), a higher share of people with at least a college degree ("high college"), and a higher share of people earning over $100,000/year ("high Over 100K"). Interestingly, however, there is no heterogeneity when partitioning between high versus low population densities.[10]

Are these results sensitive to the measurement of house prices? As an alternative, I consider data from Zillow, namely the single family average house price and the higher tier house price, which have medians of $140,373.5 and $246,325.9, respectively. Tables A.4 and A.5 document these results. The main results are unchanged with two exceptions. First, the unconditional correlation is ten-times as larger with the Zillow data. That is because Bogin et al. (2019) focus on price effects, rather than quantity differences that could also be correlated with local characteristics (e.g., homes

[10]A natural question is how these coefficient estimates on arts amenities compare with, for instance, other "leisure luxuries," such as those studied by Couture and Handbury (2020). Table A.2 in the Online Appendix presents capitalization effects controlling for both arts and restaurant establishments, as well as employment in both categories, across the same sets of specifications. In the preferred specification containing both county and year fixed effects, the coefficient on restaurants remains roughly 8x as large in magnitude when measured using establishments, but statistically indistinguishable when measured using employment per capita. As a result, the potential for other non-arts amenities as a potential confounder does not qualitatively alter the results and only in minor ways affects the quantitative estimates. Figure A.6 shows that the correlation between arts and restaurant employment and establishments are around 0.88 in the same county, suggesting that there is evidence of complementarity and spillovers among them. Similarly, Table A.3 in the Online Appendix presents results using the log county arithmetic mean of particulate matter (PM) as an additional control. Although only 20% of the counties have pollution data available, and thus the coefficient estimates vary based on the sample, the inclusion of pollution as an additional control does not alter the results in a statistically significant way.

in Texas will tend to be larger than in Boston).[11] Second, the heterogeneous treatment effects generally go in the same direction with the exception that there is some statistically significant, positive interaction between high population density areas and arts establishments. Whether using single family or high tier home prices, the coefficients are significant at the 5% level.

Another concern is that the results are sensitive to the proxy for arts amenities. While the number of arts establishments is a sensible proxy for arts amenities, an alternative approach is to count the number of arts employees normalized by county population within the year. Table 2 documents these results. Starting with column 1, a percentage point (pp) increase in artists per capita is associated with a 15% increase in house prices. After controlling for county and year fixed effects in column 2, the estimate declines in magnitude to 9.2%. The estimate is invariant to the inclusion of overall employment, establishment, and population growth in column 3. After including state $\times$ year fixed effects, the estimate declines further in magnitude to 4.4%, but remains statistically significant at the 1% level. The remaining columns document the same pattern of heterogeneity as the main results, namely that the interactions with whether the county is above the median in its share of college graduates and individuals earning over $100,000/year are positive and statistically significant. These results suggest that the capitalization effects are not sensitive to focusing just on the number of arts establishments as a proxy for arts amenities.

One final concern with the results thus far is that the QCEW has poor coverage over the arts and culture sector, or perhaps nonprofits more generally. To answer this question, I draw on additional data from the NCCS from 1989 to 2014, covering data from the Internal Revenue Service (IRS) on the forms that nonprofits and charities file. I focus the sample on arts and culture

[11] In fact, the equivalence between the preferred specification containing fixed effects and controls with the Zillow versus Bogin et al. (2019) price index data suggests that the index does a good job controlling for housing characteristics. Hedonic price theory relates the price of a house with local amenities and housing characteristics. In this sense, the construction of the house price index is akin to a "stage zero" before it gets used in the baseline.

public charities, counting the number per zipcode-year, as well as other financial variables, such as contributions and program revenue. I also match these with the 2000 Decennial Census to measure local demographics. This data allows me to sequentially layer even stricter levels of fixed effects, including county × year, exploiting variation within the same zipcode over time after controlling for all shocks that are common within the same county and year.

Table 3 documents these results. While column 1 presents the raw correlation, generating a coefficient of 0.009 (p-value = 0.00), column 2 adds zipcode and year fixed effects, raising the coefficient to 0.011 (p-value = 0.00). Downwards bias could happen if public charities locate in less expensive areas, e.g. to save on costs. Columns 3 and 4 add state × year and county × year fixed effects, producing coefficients of 0.009 and 0.007, respectively. Furthermore, the same dimensions of heterogeneity are present here, namely on more educated and higher income areas. Similar results are also obtained if using the log contribution amount or program revenues (see Table A.7 in the Online Appendix). The qualitative similarity between these results and those obtained earlier is not surprising since there is a strong correlation of 0.68 between the number of arts charities in the IRS data and the number of arts establishments in the QCEW (see Figure A.8 in the Online Appendix) with the QCEW data implying a median number of 9 arts establishments across counties and the IRS data implying a median of 4.[12]

[12]Using these same data, I also estimate the heterogeneity in the return to arts amenities over time in Figure A.9 of the Online Appendix. The results show that there has been an increase from nearly -0.01 to 0.02 (statistically significant at the 1% level) from 1989 to 2015, suggesting that preferences for arts amenities have grown. Crucially, these estimates are obtained using county fixed effects, which was not possible with the QCEW data.

4.2 Robustness Exercises

Another identification strategy to assess the robustness of these results involves exploiting quasi-experimental variation emerging from the intensity of the lockdowns during the pandemic. Given that the lockdowns primarily affected industries deemed as "non-essential," which included the mandated closure of the arts, then the capitalization effect on house prices should vary as a function of the intensity and duration of these lockdowns. To measure the length of each state's lockdown, I use the COVID-19 US State Policy (CUSP).[13] Figure A.7 in the Online Appendix presents the spatial heterogeneity, ranging from zero days in South Dakota to 392 days in California. I subsequently partition states into high/low based on the median (73 days). Recognizing that states vary in observed ways, I use entropy balancing from Hainmueller (2012) to match states based on pre-pandemic characteristics, namely the employment share in information services, finance, insurance, and real estate, and the share of the population earning over $100,000/year.[14]

Table 4 documents these results restricted to the years 2019-2022. Just as in the main results, the direct effect of log arts establishments on house prices is positive. In fact, the coefficient estimate is roughly twice as large, which could be driven by artificially high house prices as a result of depressed mobility and forbearance on mortgages, which helped prevent a wave of foreclosures (Larson et al., 2025). More importantly, however, the direct effect of the indicator of the state having above the median in days of arts closures is negative, and roughly half to 2/3 the magnitude of the direct effect. In the preferred specification of column 4, which applies the entropy balancing

[13] https://statepolicies.com/data/

[14] One limitation of this approach is that the results only reflect capitalization effects if there is an expectation that the theaters may not return, and thus impact house prices longer-run. While that is not true at scale, there were many areas where people may have expected some theaters to close completely given the financial fragility that they were in (see Makridis (2025a) for evidence on the revenues and expenses of opera companies throughout the U.S. over these years).

weight, there is a countervailing 0.29% decline in house prices for the corresponding 10% increase in arts establishments among the states with long closures on arts establishments.[15] This suggests that house prices reflected the closures of arts establishments, which may have also led to broader declines in urban centers, such as a rise of vacancy rates and crime.

These findings are consistent with a capitalization mechanism, but they also clarify that the estimated price premium associated with arts density is not invariant to large shocks that impair the availability of in person cultural consumption. In particular, the negative interaction in long closure states should be interpreted as evidence of state dependent capitalization rather than as evidence against a positive amenity value of arts activity in normal times. A remaining concern, however, is that even outside the pandemic, arts establishments may be correlated with slow moving unobservables such as local civic capacity, historical downtown investment, or persistent neighborhood trajectories that are difficult to fully absorb with fixed effects and contemporaneous controls. To probe this concern, the next strategy relies on predetermined historical variation in public support for arts institutions that predates modern housing markets.

Yet another identification strategy draws on the results from Brounstein (2024), who compiles data on New Deal funding of arts institutions that persists in its effects on contemporaneous arts outcomes. Given that the historical factors that led to differential funding during the New Deal should be exogenous with respect to recent house prices, I use this historical variation in funding as an instrument for the log number of arts establishments averaged between 2000-2006 with the average log house price between 2000-2006 as the outcome variable. Furthermore, I control for

[15] To ensure that this result has a causal interpretation, I also implement a triple-difference estimator that traces out the evolution of house prices in response to changes in arts establishments in states that rank above and below the median in days theaters were closed, and before and after the pandemic (i.e., 2019 versus 2020-22). The triple interaction has a coefficient of -0.008 (p-value = 0.00), but the low coefficient estimate could be a function of not having enough variation.

a vector of 1930s demographic characteristics, as well as contemporaneous demographics. Table A.6 documents these results. Interestingly, I find very similar estimates as the baseline results presented earlier, significant at conventional levels. However, the F-statistic is slightly under the rule-of-thumb, so this simply serves as another comforting robustness exercise.[16]

Despite the modest first stage, the fact that the implied capitalization effect aligns closely with the baseline estimates reduces concern that the main results are driven entirely by reverse causality or contemporaneous unobservables. Accordingly, I treat this exercise as a robustness check that complements, rather than replaces, the primary identification strategies.

4.3 Housing Supply Elasticities

There is a large literature on the role that housing supply plays in accounting for price growth (Saiz, 2010; Glaeser and Gyourko, 2018). One concern is that the increase in house prices simply reflects gentrification and entry/exit into areas that are housing supply constrained. Table A.8 in the Online Appendix reproduces the main results, estimating the baseline specification separately for areas that rank above versus below the median in new housing supply units between 2005 and 2014. A range of specifications show that the positive effects on house prices are concentrated in the counties that exhibit higher housing unit expansion. Table A.9 in the Online Appendix replicates these results with the zipcode data, but does not find any systematic difference between zipcodes that rank above versus below the median in the growth rate of housing units.

[16] I focus on 2000-2006 because it is prior to the run-up of the financial crisis. The further out I go in the time series, the lower the F-statistic, which is intuitive since historical funding from the New Deal should become an increasingly more noisy proxy for contemporaneous outcomes as time elapses.

4.4 Aggregate Implications

The results thus far reflect the capitalization effects of arts amenities in house prices. As an illustrative exercise only, I can "convert" them to a marginal willingness to pay (MWTP), I estimate the baseline specification separately by state (see Figure A.10 in the Online Appendix for the distribution of these).[17] Following Kuminoff et al. (2010), I take the product between the capitalization effect coefficient and the value of single-family homes over 2000-2023 deflated using the 2017 personal consumption expenditure (PCE) index to obtain a time-varying MWTP.

Figure 4 documents the estimated mean and standard deviation MWTP by year using a weighted average across states based on the state's population as a share of the nation. The average starts at just under $5,000 in 2000 and rises to just over $10,000 by 2024 (normalized to 2017 real prices). While the increase reflects the rise in house prices, the base level nonetheless suggests that the MWTP is still meaningful (and remains consistent with the earlier evidence in Figure A.9 of the Online Appendix that the capitalization effect of arts amenities has grown).

5 Local Policy and Cultural District Designations

There has been significant debate about the efficacy of state and federal funding for the arts and the potential presence of positive spillovers (Leroux and Bernadska, 2014). One of the longstanding challenges has been the difficulty for arts organizations to quantify measurable outcomes using modern causal inference practices (Makridis, 2024). There is, however, some empirical evidence on

[17] One concern with some of these coefficients, when obtained at the state-level, is that states vary in their number of counties, as well as (and more problematic) the number of counties that are censored due to confidentiality issues with the QCEW. Figure A.11 shows that there is a positive correlation of 0.33 between the capitalization effect and state population as a share of the nation, suggesting that there is likely a downwards bias due to the censorship of values.

the impact of state policies that invest in the arts, although this variation is not necessarily exogenous (see Section B of the Online Appendix for institutional details on the staggered introduction of cultural district designations by state).

Breznitz and Noonan (2018) provide cross-sectional evidence that areas with higher educational investments in arts and digital media also exhibit greater employment in these sectors. Building upon this result using a difference-in-difference estimator on the introduction of cultural districts in Louisiana, Portillo and Wagner (2021) find that residential properties within cultural district boundaries sell for 7% more following the designation, relative to those outside the district. Similarly, using data across 18 states and 375 cultural districts, Wagner and Portillo (2024) find that employment among cultural establishments increases by 2.6-3.2% following the designation, but do not find evidence of spillover effects on other types of establishments. Brounstein (2024) shows that in New Deal funding had a persistent effect on the share of artists.

Following the longitudinal variation in the staggered introduction of cultural districts across 18 states in Wagner and Portillo (2024), I build upon these results by estimating similar difference-in-difference regressions with house prices as the outcome variable.[18] The matched data is substantially smaller, containing only 162 counties.[19] A regression of an indicator for the match on log employment, log population, and log arts establishing, producing null coefficients for employment and population, but a coefficient of -0.024 for arts establishments significant at the 1% level.

Table 5 documents these results. Starting with the unconditional correlations in columns 1 and 4, the capitalization effect between arts establishments or artists/capita and house prices is con-

[18]In addition, I extend Wagner and Portillo (2024) by finding that the designation of a cultural district is associated with a 5.6% increase in arts establishments, conditional on total employment, establishment, and population growth, as well as county and year fixed effects.

[19]Restricting the data to counties that have a cultural district designation between 2005 and 2018, which would leave five years before and after to test parallel trends, also does not change the results. Doing that produces 122 counties.

centrated in the cultural districts. However, as county and time fixed effects are added in columns 2 and 5, the direct effect also becomes positive, although not statistically significant in the case of artists/capita. Columns 3 and 6 add overall employment, establishment, and population growth as controls, and the results do not change substantially. In this baseline specification, a 10% increase in arts establishments after the designation of a county as a cultural district is associated with an additional 0.24% increase in house prices (a 0.53% increase before the designation). Similarly, a 1pp increase in artists/capita after the designation of a county as a cultural district is associated with an 20% increase in house prices (a 3.2% increase before the designation). Furthermore, all the increase in house prices resulting from the cultural district designation is concentrated in the interaction with the arts concentration, consistent with theory.[20]

To assess whether the timing is plausibly exogenous, Figure A.12 in the Online Appendix plots the cumulative density function of cultural districts from 2000 to 2022. Furthermore, Panels A and B in Figure A.13 in the Online Appendix test for parallel trends, showing that there is some pre-trend, particularly when failing to account for time-varying county controls. Driven by concerns about dynamic treatments (Roth et al., 2023), I follow Callaway and Sant'Anna (2021). The results show that there is no significant effect before the designation of a cultural district (coefficient = 0.0029, p-value = 0.325), but a significant positive effect after the treatment (coefficient = 0.0436, p-value = 0.003). Additionally, the treatment effect grows over time with the post-treatment periods, showing consistently positive and statistically significant effects.

What does all this mean for the future of the arts and the optimal role of public funding? While public support for the arts is efficiency-enhancing if there are positive externalities, the

[20]For reference, the capitalization effect on house prices of cultural districts if 4.8%, obtained through a regression of log house prices on an indicator for cultural district, controlling for county and year fixed effects. This coefficient is identified off variation within the same county over 2000 to 2022, comparing house prices before versus after the designation.

arts community has often looked to federal support as a panacea. However, at least within the performing arts community, net operating income has remained flat since 2005 and ticket sales have dipped (Makridis, 2025a), pushing theaters into financial upheaval. An alternative and complementary approach is for states and local governments to empower through the designation of cultural districts and/or refinements to the tax code. In particular, the evidence presented here suggests that designating an area as a cultural district can have a persistent effect on house prices, which would be consistent with positive externalities from arts/culture organizations in an area.

6 Conclusion

There is a voluminous literature that uses hedonic pricing and sorting models to infer the value of not only non-market goods, but also urban amenities. Drawing on these methods, this paper provides new insights into the economic value of arts amenities by quantifying their impact on local housing markets. Using data from the Quarterly Census of Employment and Wages (QCEW) and house price appreciation data, I document significant effects of arts establishments on house prices, suggesting that consumers place substantial value on access to the arts. Specifically, a 10% increase in the number of arts establishments is associated with a 1.7-5% increase in house prices, with the effects being more pronounced in areas with higher concentrations of young professionals, college-educated individuals, and higher-income households. These findings contribute to the broader literature on equilibrium sorting models and the valuation of non-market amenities (Kuminoff and Mathes, 2023), showing that arts amenities are valued by households and influence their location choices, as well as provide local economic and social benefits (Throsby, 2001).

Several questions remain for future research. First, what are the long-term impacts of sustained

investment in arts amenities on local economies? Understanding the persistence of these effects can inform policy decisions about the allocation of resources to the arts. Second, how do different types of arts establishments (e.g., visual arts, performing arts) vary in their impact on local housing markets and overall economic development? Third, how do demographic and socioeconomic factors mediate the relationship between arts amenities and housing prices? Future research could explore these questions using more granular data and advanced econometric techniques.

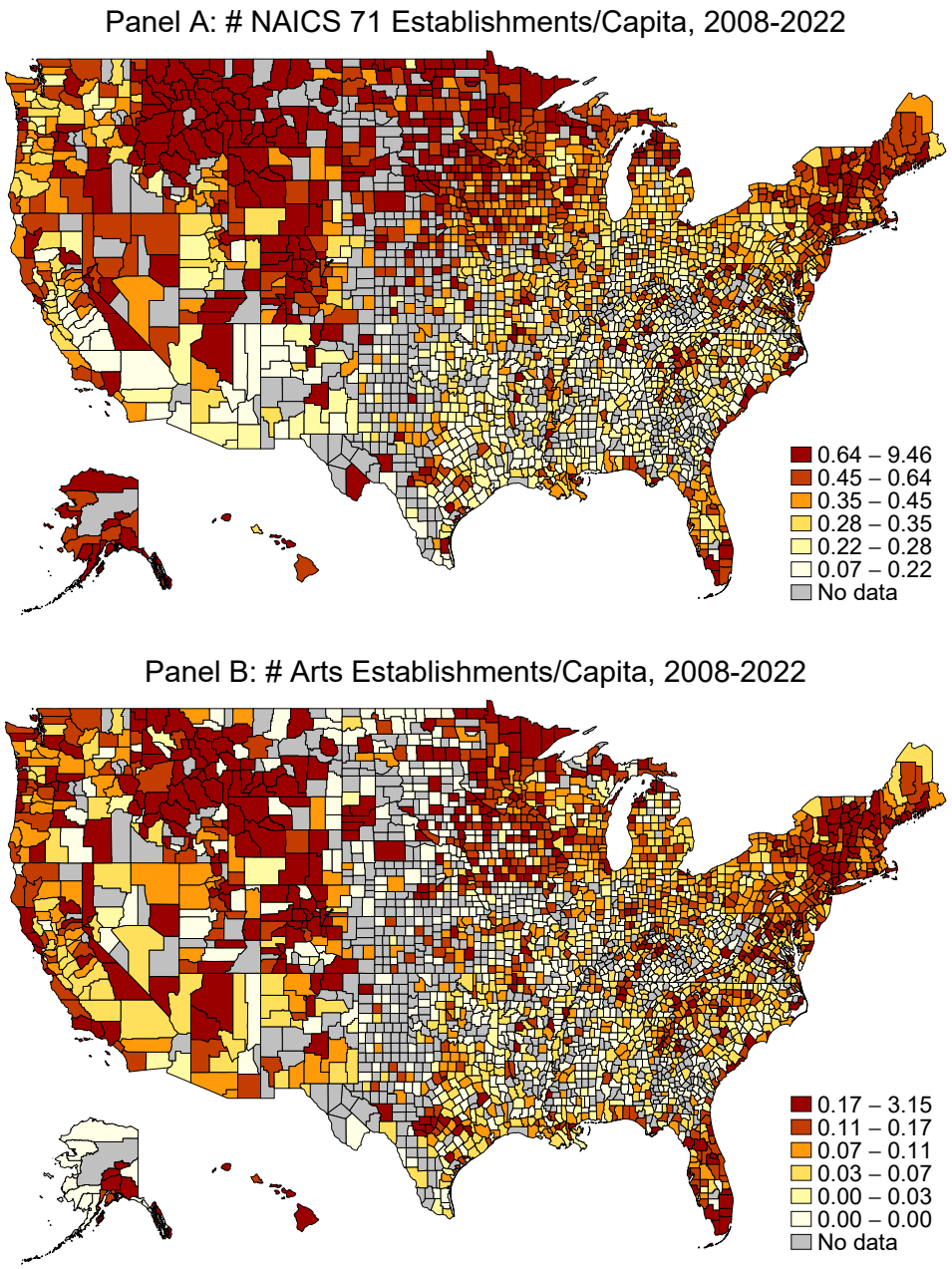
Tables and Figures

Table 1: Estimating the Capitalization Effects of Arts Establishments

Dep. var. =	log(House Price Index)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Arts Establishments)	.039***	.050***	.048***	.017***	.027***	.047***	-.001	.047***
	[.002]	[.005]	[.005]	[.003]	[.007]	[.005]	[.007]	[.012]
× High Youth					.035***			
					[.010]			
× High College						.091**		
						[.044]		
× High Over 100K							.074***	
							[.010]	
× High Population Density								.001
								[.013]
Employment Growth			-.168***	-.037**	-.170***	-.168***	-.162***	-.168***
			[.024]	[.018]	[.024]	[.024]	[.024]	[.024]
Establishment Growth			.398***	.366***	.393***	.397***	.398***	.397***
			[.036]	[.032]	[.036]	[.036]	[.036]	[.036]
Population Growth			.672***	.345***	.678***	.674***	.685***	.672***
			[.095]	[.058]	[.095]	[.095]	[.095]	[.094]
R-squared	.05	.87	.88	.95	.88	.88	.88	.88
Sample Size	34848	34751	33668	33640	33668	33668	33668	33668
County FE	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State x Year FE	No	No	No	Yes	No	No	No	No

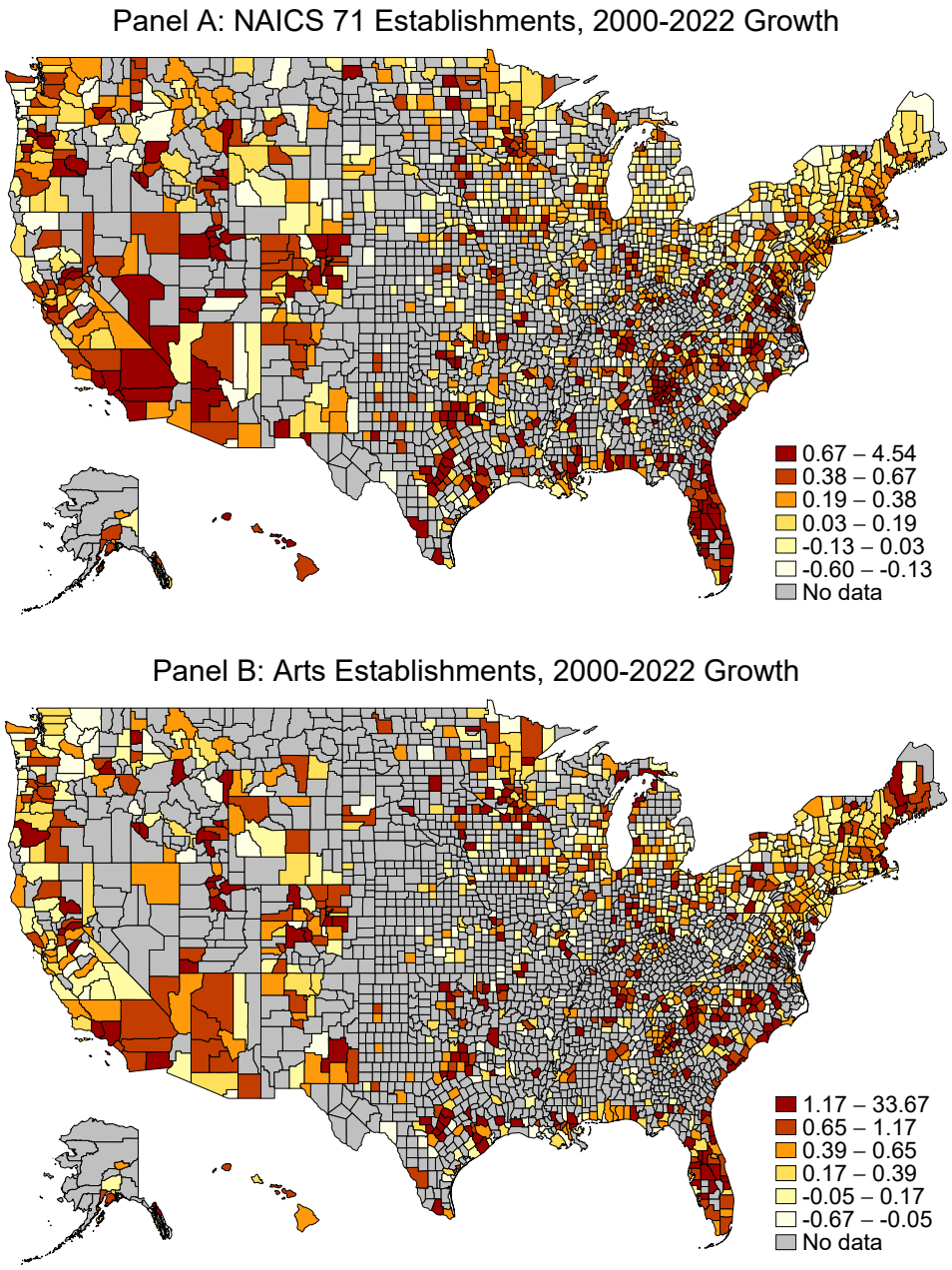
Notes.—Sources: Quarterly Census of Employment and Wages (QCEW), Bogin et al. (2019), and Census Bureau (2001-2022). The table reports the coefficients associated with regressions of the log house price index on the log number of establishments (log plus one to allow for zeros), conditional on the year-to-year growth rate in total employment, establishments, and population and county, year, and state × year fixed effects. Growth rates are trimmed at the top and bottom percentiles. Standard errors are clustered at the county-level.

Figure 1: Spatial Distribution of Average Number of NAICS 71 and Arts Establishments



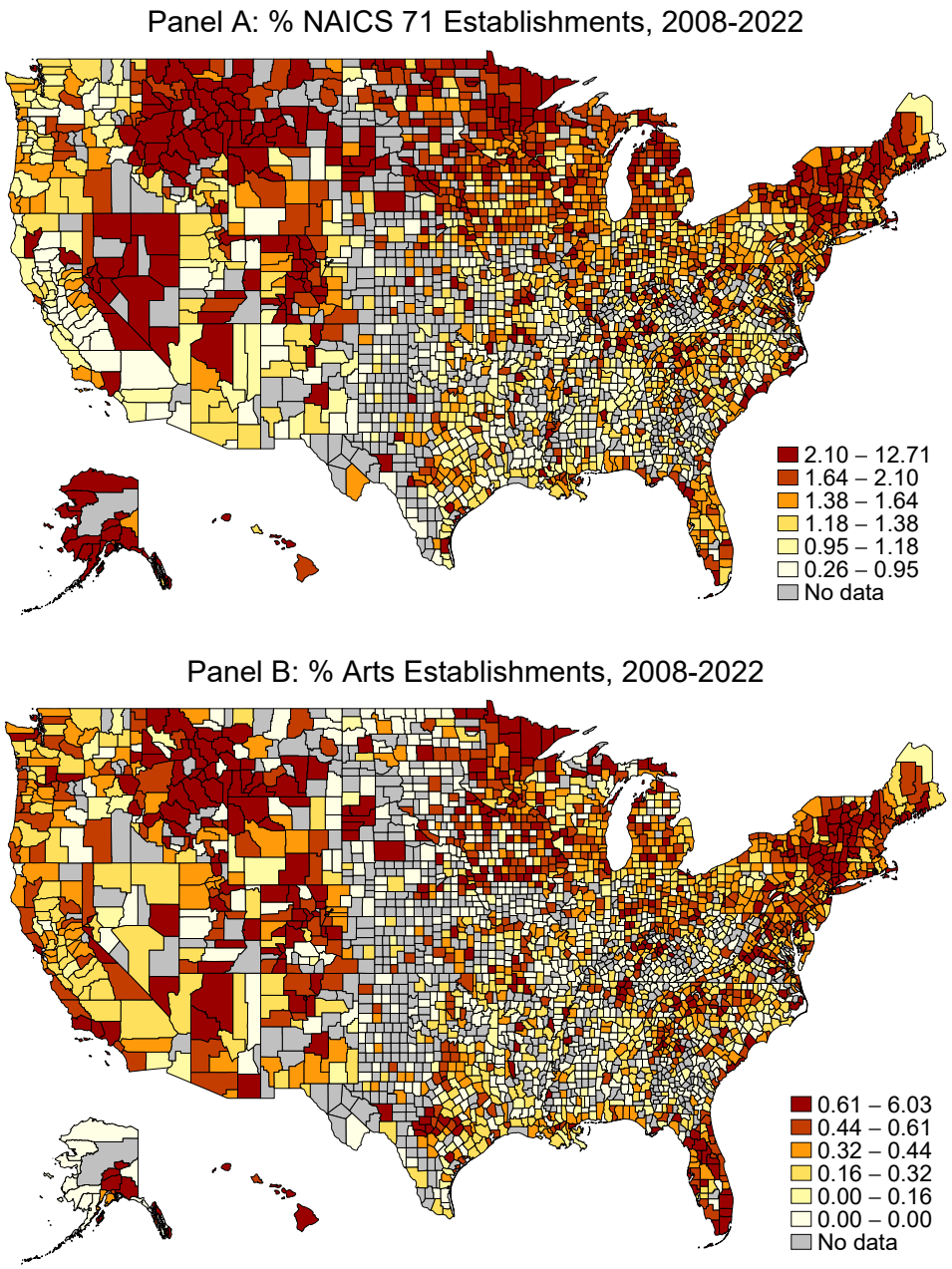
Notes.—Source: Quarterly Census of Employment and Wages (QCEW). The figure plots the average number of establishments per capita in the North American Industry Classification (NAICS) 71 classification in Panel A, and the number of arts establishments per capita in Panel B. NAICS 71 includes arts, sports, and recreation. Arts is defined as NAICS 71 netting out NAICS code 713, which includes recreation, but still retains spectator sports. The average number of establishments per capita × 1000 in Panels A and B are 0.485 and 0.107, respectively. The sample is restricted to private establishments only.

Figure 2: Spatial Distribution of Growth in Number of NAICS 71 and Arts Establishments



Notes.—Source: Quarterly Census of Employment and Wages (QCEW). The figure plots the growth rate between the 2000-05 and 2020-22 (average) in the number of establishments in the North American Industry Classification (NAICS) 71 classification in Panel A, and the number of arts establishments in Panel B. NAICS 71 includes arts, sports, and recreation. Arts is defined as NAICS 71 netting out NAICS code 713, which includes recreation, but still retains spectator sports. The average growth rates in Panels A and B are 0.29 and 0.65, respectively. Furthermore, the correlation between these growth rates and the normalized by population growth rates are 0.84 and 0.88, respectively. The sample is restricted to private establishments only.

Figure 3: Spatial Distribution of NAICS 71 and Arts Establishments, Share of Total



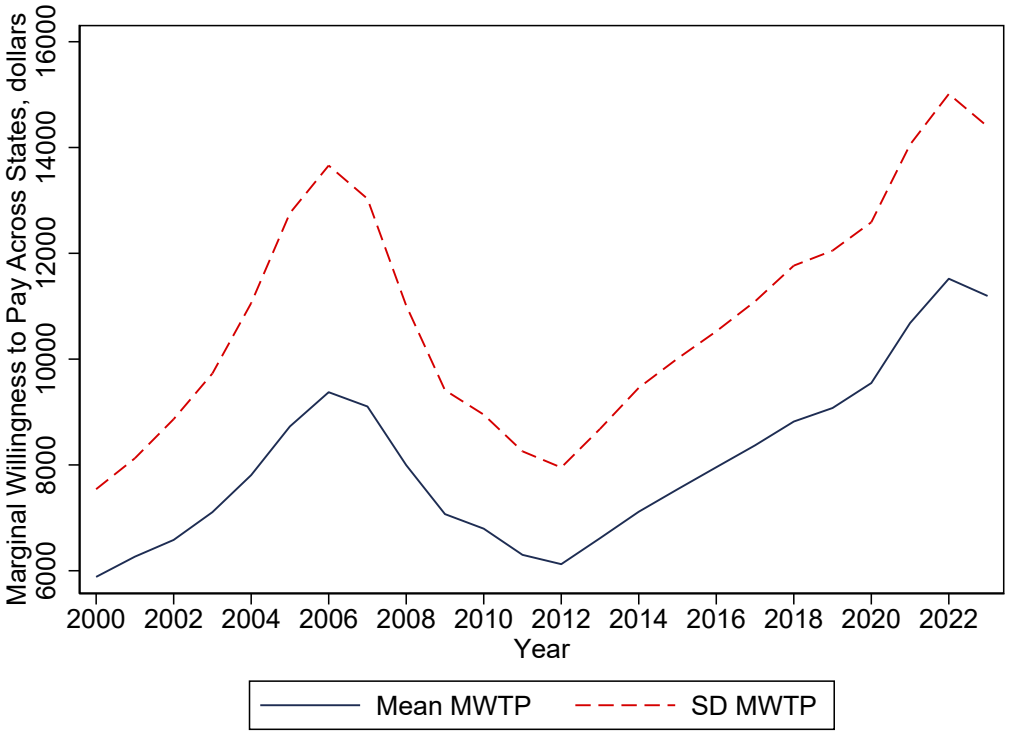
Notes.—Source: Quarterly Census of Employment and Wages (QCEW). The figure plots the average percent share number of total private establishments in the North American Industry Classification (NAICS) 71 classification in Panel A, and the number of arts establishments in Panel B, relative to total establishments in the county. NAICS 71 includes arts, sports, and recreation. Arts is defined as NAICS 71 netting out NAICS code 713, which includes recreation, but still retains spectator sports. The average share of establishments in Panels A and B are 1.58% and 0.35%, respectively.

Table 2: Capitalization Effects of Arts Employment Per Capita

Dep. var. =	log(House Price Index)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Arts Employment/Capita	15.05***	9.22***	9.18***	4.42***	7.54**	8.49***	1.36	15.40***
	[3.88]	[1.91]	[1.82]	[1.20]	[2.96]	[1.80]	[2.15]	[5.07]
× High Youth					2.62			
					[3.75]			
× High College						16.71*		
						[9.41]		
× High Over 100K							12.04***	
							[3.43]	
× High Population Density								-8.05
								[5.37]
Employment Growth			-.18***	-.04**	-.18***	-.18***	-.18***	-.18***
			[.02]	[.02]	[.02]	[.02]	[.02]	[.02]
Establishment Growth			.42***	.37***	.42***	.42***	.42***	.42***
			[.04]	[.03]	[.04]	[.04]	[.04]	[.04]
Population Growth			.64***	.34***	.64***	.64***	.64***	.64***
			[.09]	[.06]	[.09]	[.09]	[.09]	[.09]
R-squared	.01	.87	.87	.95	.87	.87	.87	.87
Sample Size	34848	34751	33668	33640	33668	33668	33668	33668
County FE	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State x Year FE	No	No	No	Yes	No	No	No	No

Notes.—Sources: Quarterly Census of Employment and Wages (QCEW), Bogin et al. (2019), and Census Bureau (2001-2022). The table reports the coefficients associated with regressions of the log house price index on the employment count in the arts divided by the population, conditional on the year-to-year growth rate in total employment, establishments, and population and county, year, and state × year fixed effects. Growth rates are trimmed at the top and bottom percentiles. Standard errors are clustered at the county-level.

Figure 4: Marginal Willingness to Pay, 2000-2024



Notes.—Source: Quarterly Census of Employment and Wages (QCEW), Bogin et al. (2019), Zillow, and Census Bureau (2001-2022). The figure reports the state population share in the nation and the standard deviation across states for the marginal willingness to pay (MWTP) over arts amenities. That is obtained by taking the product of the state-specific capitalization effect and the price of a single-family home. The average is weighted by the state population as a share of the nation (using 2014-18 Census data). House prices are normalized according to the personal consumption expenditure (PCE) deflator normalized to 2017 prices.

Table 3: Robustness Using Alternative Data on Public Arts Charities and House Prices

Dep. var. =	log(House Price Index)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
# Arts Establishments	.009***	.011***	.010***	.007***	.010***	-.009**	.005**	.015***
	[.001]	[.001]	[.001]	[.001]	[.002]	[.004]	[.003]	[.004]
× High Youth					.002			
					[.002]			
× High College						.021***		
						[.004]		
× High Over 100K							.007**	
							[.003]	
× High Population Density								-.004
								[.004]
R-squared	.01	.86	.93	.97	.86	.86	.86	.86
Sample Size	101805	100962	100930	86839	100962	100962	100962	100962
Zipcode FE	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State x Year FE	No	No	Yes	Yes	No	No	No	No
County x Year FE	No	No	No	Yes	No	No	No	No

Notes.—Sources: NCCS, Bogin et al. (2019), and Census Bureau (2000). The table reports the coefficients associated with regressions of the log house price index (zipcode) on the number of arts and culture charities, conditional on various layers of fixed effects (e.g., county, year, and both state × year and county × year fixed effects). Standard errors are clustered at the zip-level.

Table 4: Robustness Using Heterogeneity in Arts Closures During the Pandemic

Dep. var. =	log(House Price Index)			
	(1)	(2)	(3)	(4)
log(Arts Establishments)	.049***	.034***	.032***	.036***
	[.002]	[.007]	[.006]	[.007]
× High Days of Arts Closures	.004	-.025***	-.026***	-.029***
	[.003]	[.008]	[.008]	[.008]
High Days of Arts Closures	-.080***			
	[.007]			
Employment Growth			.004	-.007
			[.019]	[.020]
Establishment Growth			.104***	.112***
			[.025]	[.026]
Population Growth			.195***	.198***
			[.027]	[.029]
R-squared	.11	.98	.98	.98
Sample Size	9429	9420	9420	9420
County FE	No	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes
Balancing Weight	No	No	No	Yes

Notes.—Sources: Quarterly Census of Employment and Wages (QCEW), Bogin et al. (2019), and COVID-19 US State Policy (2019-2022). The table reports the coefficients associated with regressions of the log house price index on the log number of establishments (log plus one to allow for zeros), conditional on the year-to-year growth rate in total employment, establishments, and population and county and year fixed effects. The balancing weight is obtained through the entropy balancing approach of Hainmueller (2012) regressing an indicator for whether the state is above the median in number of days that arts establishments, like theaters, were required to be closed (median = 73) on the employment share in information services, finance, insurance, and real estate, and the share of people earning over $100,000/year. Standard errors are clustered at the county-level.

Table 5: Leveraging Quasi-Random Variation in Cultural District Designations

Dep. var. =	log(House Price Index)					
	(1)	(2)	(3)	(4)	(5)	(6)
log(Arts Establishments)	-.015***	.047**	.053***			
	[.005]	[.019]	[.020]			
Artists/Capita				-1.029	3.237	4.918
				[6.138]	[7.896]	[8.545]
Cultural District	.195***	.027	.027	.266***	.068***	.067***
	[.021]	[.023]	[.022]	[.015]	[.018]	[.018]
× Arts Establishments	.038***	.025***	.024***			
	[.007]	[.007]	[.007]			
× Artists/Capita				22.385**	19.946***	18.201**
				[10.731]	[7.373]	[7.726]
Employment Growth			.012			.057
			[.078]			[.085]
Establishment Growth			.184*			.178*
			[.102]			[.104]
Population Growth			.301**			.268*
			[.147]			[.145]
R-squared	.41	.86	.86	.40	.86	.85
Sample Size	2389	2386	2304	2389	2386	2304
County FE	No	Yes	Yes	No	Yes	Yes
Year FE	No	Yes	Yes	No	Yes	Yes
State x Year FE	No	No	No	No	No	No

Notes.—Sources: Quarterly Census of Employment and Wages (QCEW), Wagner and Portillo (2024), Bogin et al. (2019), and Census Bureau (2001-2022). The table reports the coefficients associated with regressions of the log house price index on the log number of establishments (log plus one to allow for zeros) and artists per capita, interacted with an indicator for whether the county was designated as a cultural district in the given year, conditional on the year-to-year growth rate in total employment, establishments, and population and county and year fixed effects. Growth rates are trimmed at the top and bottom percentiles. Standard errors are clustered at the county-level.

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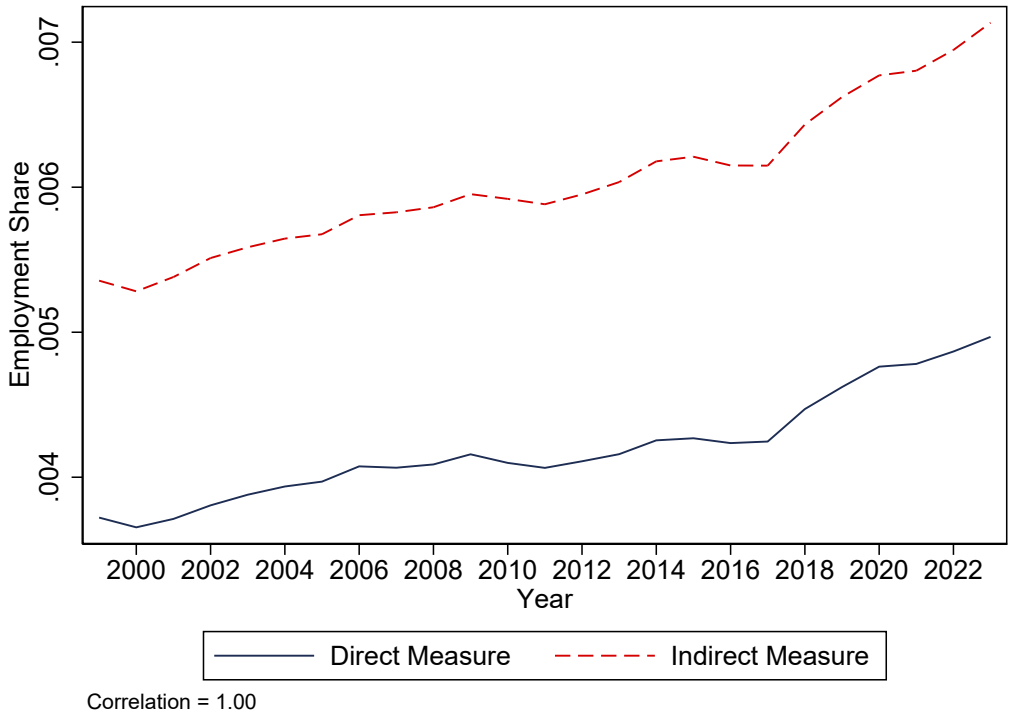
A Online Appendix (Supporting Tables and Figures)

Table A.1: Summary Statistics

	Pooled		High Arts		Low Arts	
	(1)		(2)		(3)	
	mean	sd	mean	sd	mean	sd
House Price Index, 2000	148	44	155	49	141	38
Zillow Single Family Price	201613	155174	245023	187995	149426	74503
Arts Employment	347	1707	703	2409	16	33
Arts Establishments	34	296	67	424	2	2
Total Establishments	5261	15638	9904	21572	943	692
Total Employment	80893	210526	153212	285889	13629	11756
Total Wages	4.15e+09	1.40e+10	8.07e+09	1.95e+10	493594685	471078228
Population	182944	441132	337443	597254	39246	31186
Employment Growth	0.01	0.03	0.01	0.03	0.00	0.04
Establishment Growth	0.01	0.03	0.02	0.03	0.01	0.03
Population Growth	0.01	0.02	0.01	0.02	0.00	0.02
Male, %	0.50	0.02	0.49	0.01	0.50	0.02
White, %	0.83	0.15	0.80	0.15	0.85	0.14
Black, %	0.09	0.13	0.10	0.12	0.08	0.13
Married, %	0.51	0.06	0.49	0.06	0.52	0.06
Less than High School, %	0.11	0.05	0.10	0.04	0.13	0.05
High School, %	0.89	0.05	0.90	0.04	0.87	0.05
Some College, %	0.57	0.10	0.62	0.09	0.52	0.09
College, %	0.26	0.11	0.32	0.10	0.21	0.07
More than College, %	0.13	0.08	0.17	0.08	0.10	0.05
Observations	36475		17577		18898	

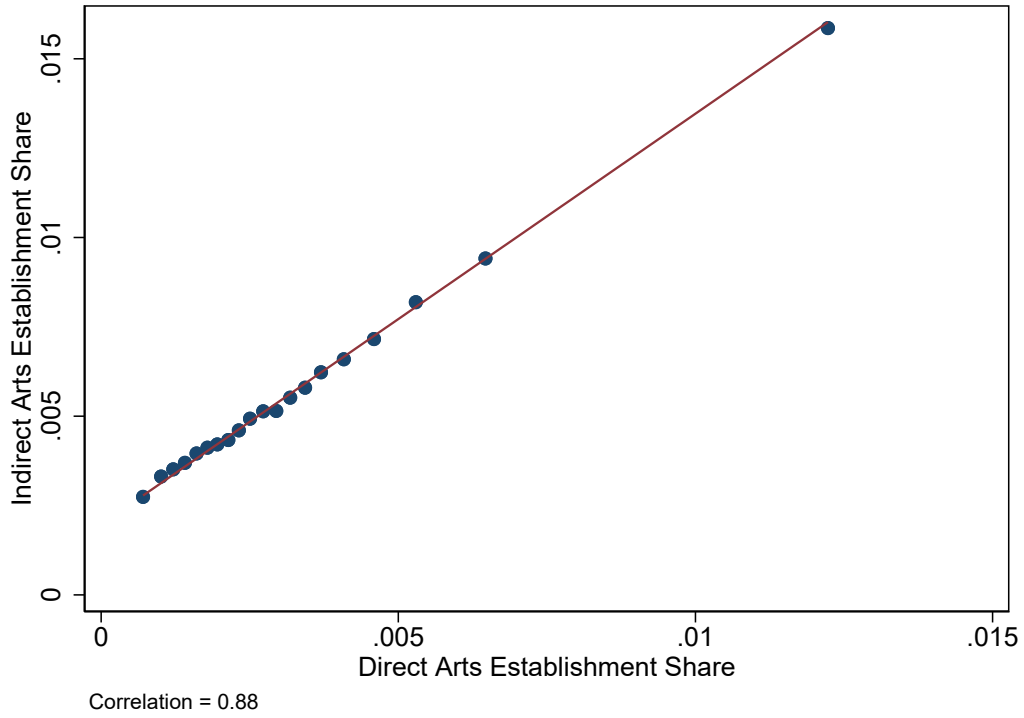
Notes.—Sources: Quarterly Census of Employment and Wages (QCEW), Bogin et al. (2019), and Census Bureau (2001-2022). The table reports the means and standard deviations of each of the variables: house price index (2000 basse year), house price for single family homes, employment in the arts, number of arts establishments, total establishments, total employment, average wages, population, employment growth, establishment growth, population growth, share male (from 2015-19 ACS), share White, share Black, share married, and the education distribution (less than high school, high school, some college, college, more than college). Growth rates are trimmed at the top and bottom percentiles. Standard errors are clustered at the county-level.

Figure A.1: Validating the Time Series Patterns of Indirect Arts Proxy



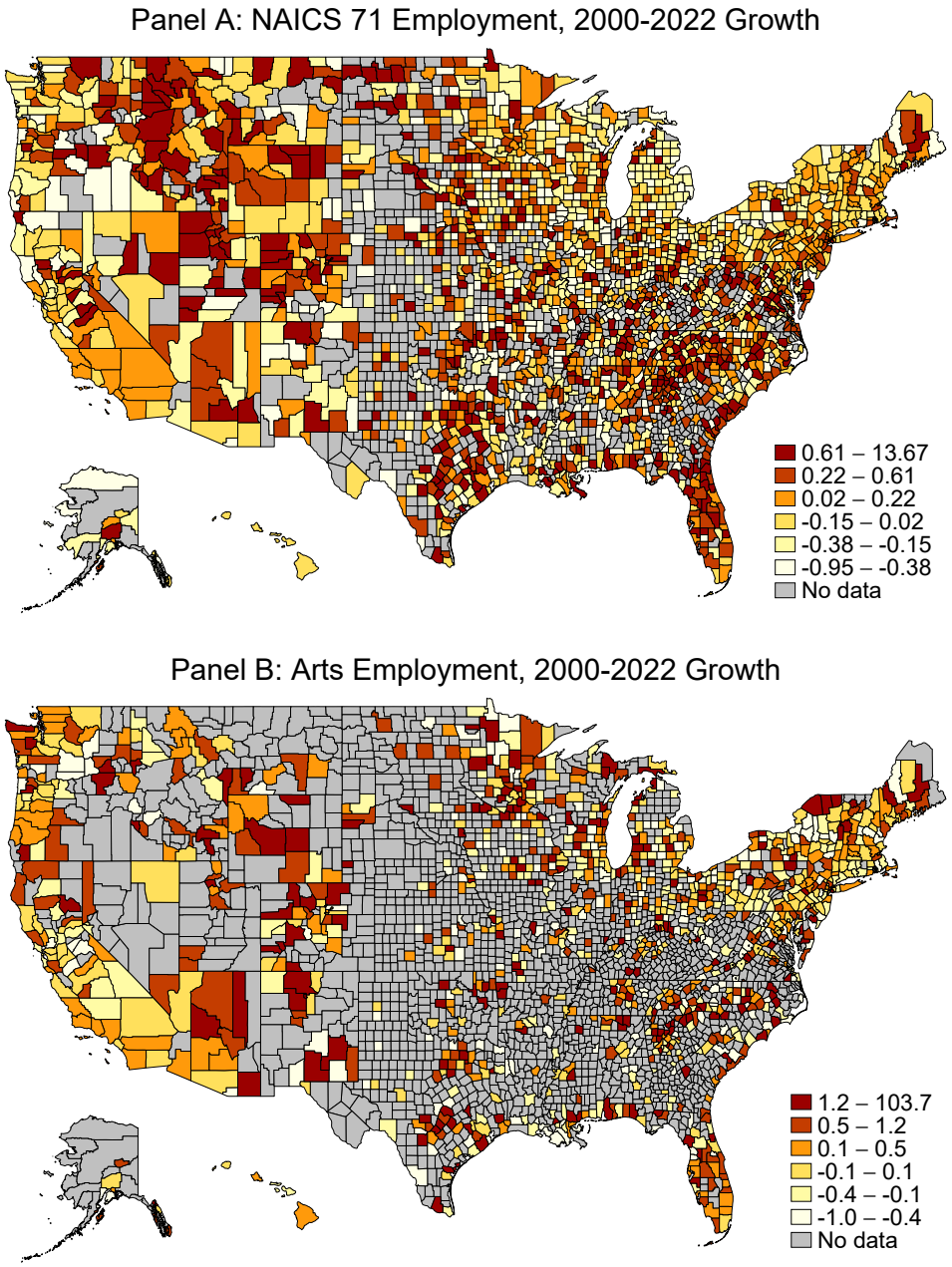
Notes.—Source: Quarterly Census of Employment and Wages (QCEW). The figure plots the proportion of arts establishments, as a share of the total, over time using two definitions. In the first definition, arts organizations are defined as: NAICS 7111 (Performing Arts Companies), NAICS 7115 (Independent Artists, Writers, and Performers), and NAICS 7121 (Museums, Historical Sites, and Similar Institutions). In the second definition, arts organizations are defined as NAICS 71 net of 713, which includes recreation, but still retains spectator sports.

Figure A.2: Validating the Cross-section of Indirect Arts Proxy



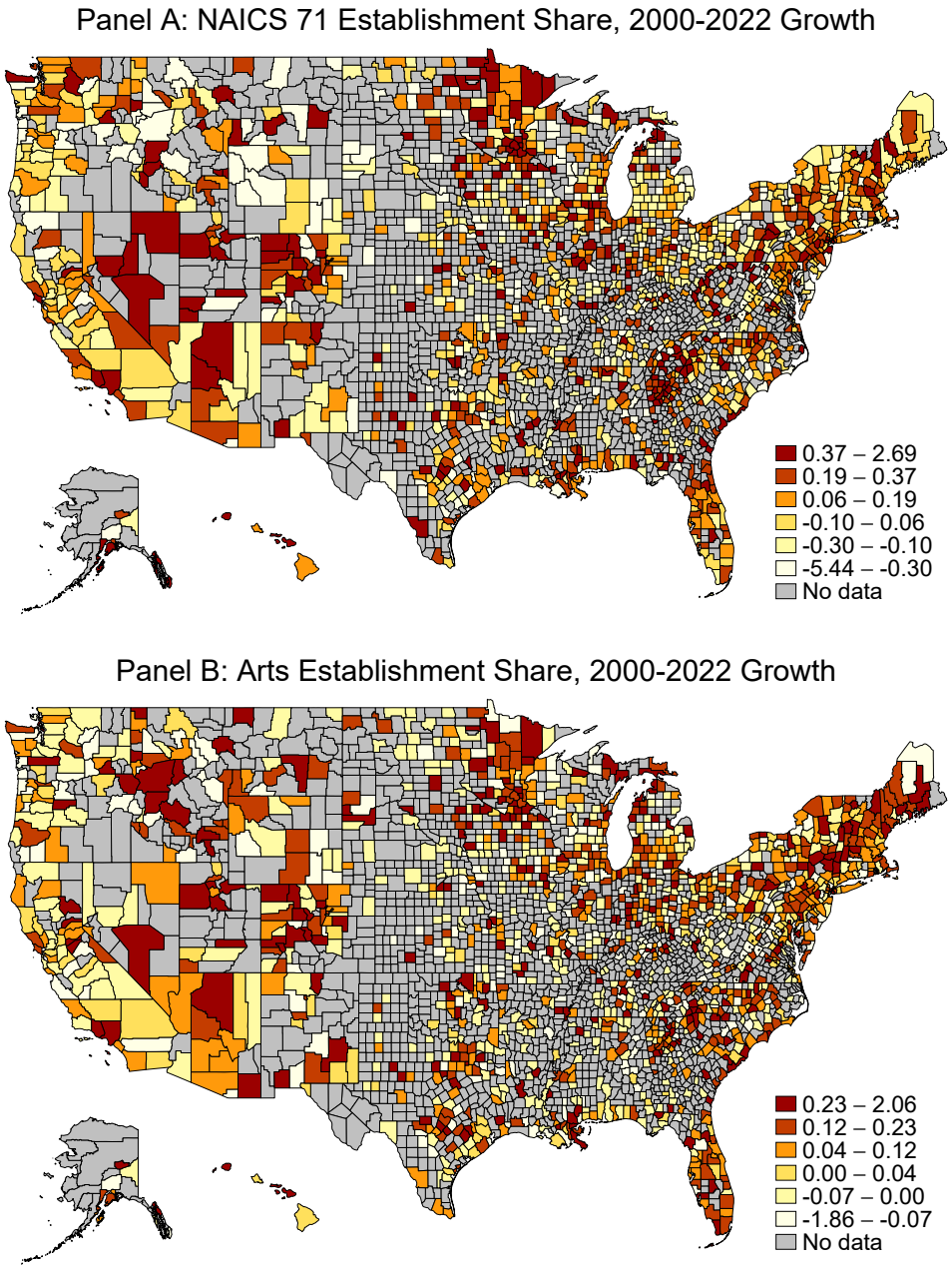
Notes.—Source: Quarterly Census of Employment and Wages (QCEW). The figure plots the proportion of arts establishments, as a share of the total, across counties using two definitions. In the first definition, arts organizations are defined as: NAICS 7111 (Performing Arts Companies), NAICS 7115 (Independent Artists, Writers, and Performers), and NAICS 7121 (Museums, Historical Sites, and Similar Institutions). In the second definition, arts organizations are defined as NAICS 71 net of 713, which includes recreation, but still retains spectator sports. The binscatter is restricted to the set of common counties over 2000-2022, which covers roughly 600-750 counties on a given year.

Figure A.3: Spatial Distribution of Growth in Number of NAICS 71 and Arts Establishments



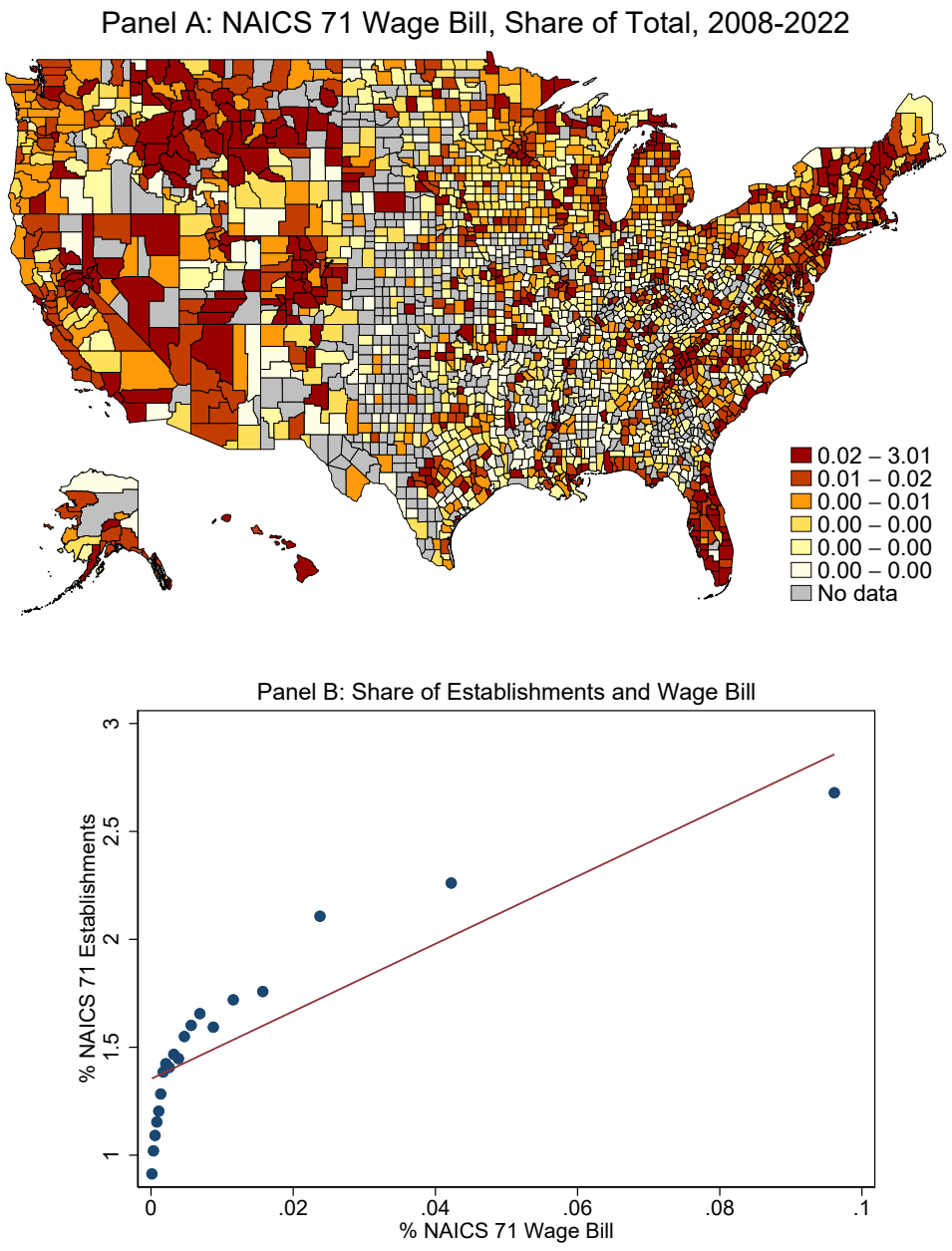
Notes.—Source: Quarterly Census of Employment and Wages (QCEW). The figure plots the growth rate between the 2000-05 and 2020-22 (average) in the number of employees in the North American Industry Classification (NAICS) 71 classification in Panel A, and the number of arts employees in Panel B. NAICS 71 includes arts, sports, and recreation. Arts is defined as NAICS 71 netting out NAICS code 713, which includes recreation, but still retains spectator sports. The average growth rates in Panels A and B are 0.19 and 0.86, respectively. The sample is restricted to private establishments only.

Figure A.4: Spatial Distribution of Growth in Share of NAICS 71 and Arts Establishments



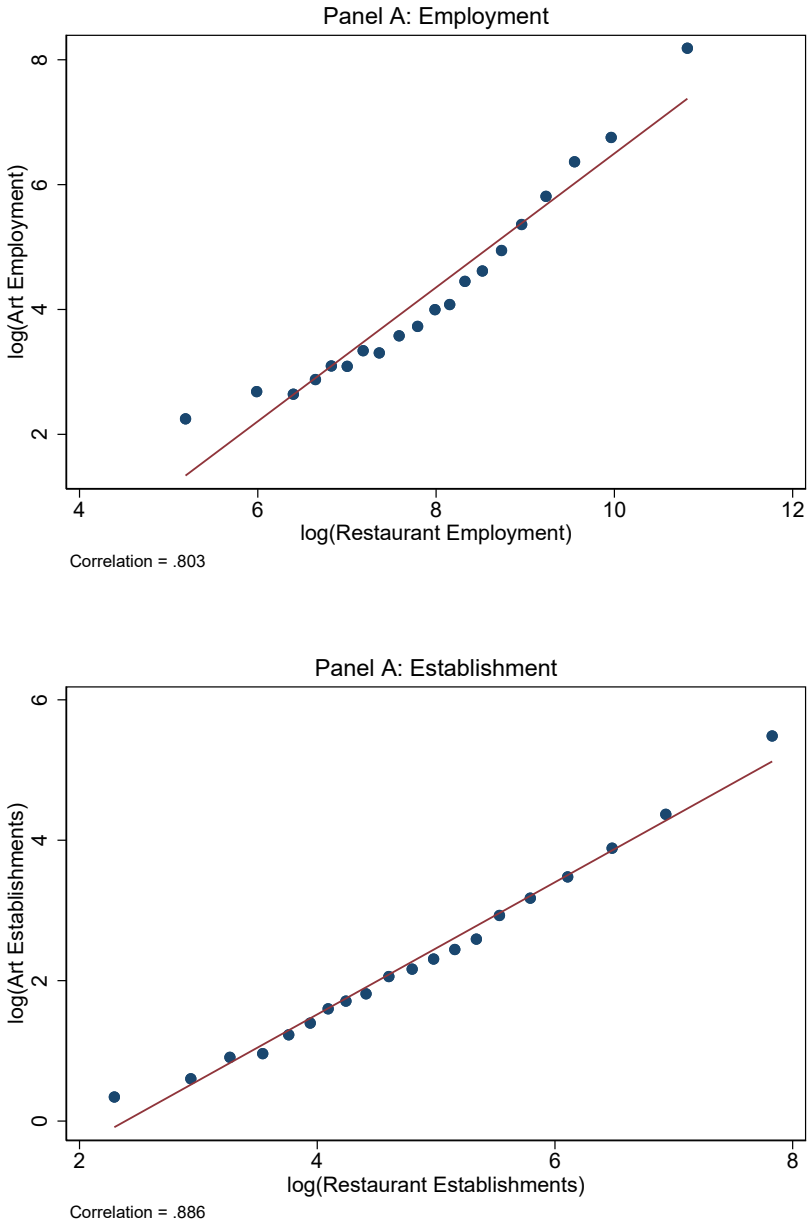
Notes.—Source: Quarterly Census of Employment and Wages (QCEW). The figure plots the percentage point change between the 2000-05 and 2020-22 (average) in the share of establishments in the North American Industry Classification (NAICS) 71 classification in Panel A, and the share of arts establishments in Panel B. NAICS 71 includes arts, sports, and recreation. Arts is defined as NAICS 71 netting out NAICS code 713, which includes recreation, but still retains spectator sports. The average percentage point change in the shares in Panels A and B are 0.036 and 0.066, respectively. The sample is restricted to private establishments only.

Figure A.5: Spatial Distribution of NAICS 71 Wage Bill Share



Notes.—Source: Quarterly Census of Employment and Wages (QCEW). The figure plots the average share of the wage bill (employment × average wage) of total private establishments in the North American Industry Classification (NAICS) 71 classification in Panel A, and a binscatter with the corresponding share in Panel B. NAICS 71 includes arts, sports, and recreation. The correlation between the two in Panel B, after excluding an outlier county that had a share of 3%, is 0.46.

Figure A.6: Binscatter of Arts and Restaurant Employment and Establishments



Notes.—Source: Quarterly Census of Employment and Wages (QCEW). The figure plots the average number of establishments and employment in the arts and restaurants/other eating places. Arts is defined as NAICS 71 netting out NAICS code 713, which includes recreation, but still retains spectator sports. Restaurants is defined as NAICS 7225. The sample is restricted to private establishments only.

Table A.2: Robustness on Capitalization Effects With Restaurant Controls

Dep. var. =	log(House Price Index)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Arts Establishments)	.091***	.047***	.045***	.024***				
	[.006]	[.007]	[.007]	[.005]				
log(Restaurant Establishments)	-.060***	.339***	.319***	.168***				
	[.007]	[.020]	[.020]	[.014]				
Artist Employment/Capita					12.989***	2.978	3.240	1.530
					[4.673]	[2.490]	[2.471]	[1.523]
Restaurant Employment/Capita					2.365***	5.162***	5.171***	1.415***
					[.394]	[.644]	[.625]	[.403]
Employment Growth			-.015	-.057***			-.118***	-.095***
			[.028]	[.021]			[.031]	[.023]
Establishment Growth			.297***	.299***			.514***	.407***
			[.041]	[.042]			[.045]	[.044]
Population Growth			.597***	.231***			.658***	.250***
			[.084]	[.062]			[.088]	[.063]
R-squared	.06	.94	.94	.97	.03	.93	.93	.97
Sample Size	17918	17783	17783	17765	17918	17783	17783	17765
County FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
State x Year FE	No	No	No	Yes	No	No	No	Yes

Notes.—Sources: Quarterly Census of Employment and Wages (QCEW), Bogin et al. (2019), and Census Bureau (2001-2022). The table reports the coefficients associated with regressions of the log house price index on the log number of establishments (log plus one to allow for zeros), log number of restaurants/other eating places, artists per capita, and employment in restaurants per capita, conditional on the year-to-year growth rate in total employment, establishments, and population and county, year, and state × year fixed effects. Growth rates are trimmed at the top and bottom percentiles. Standard errors are clustered at the county-level.

Table A.3: Robustness on Capitalization Effects With Pollution Controls

Dep. var. =	log(House Price Index)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Arts Establishments)	.045***	.098***	.095***	.049***				
	[.006]	[.017]	[.017]	[.011]				
log(PM2.5 Arithmetic Mean)	-.141***	.055***	.054***	.027**	-.125***	.057***	.056***	.029**
	[.022]	[.014]	[.013]	[.012]	[.022]	[.014]	[.013]	[.012]
Artist Employment/Capita					18.076***	15.534***	15.687***	5.912*
					[4.185]	[4.273]	[4.424]	[3.318]
Employment Growth			-.145*	.060			-.178**	.052
			[.079]	[.062]			[.077]	[.060]
Establishment Growth			.452***	.682***			.496***	.699***
			[.088]	[.106]			[.088]	[.107]
Population Growth			.496***	.401***			.457***	.382***
			[.139]	[.127]			[.141]	[.129]
R-squared	.07	.88	.88	.96	.04	.87	.87	.96
Sample Size	7894	7847	7426	7312	7894	7847	7426	7312
County FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
State x Year FE	No	No	No	Yes	No	No	No	Yes

Notes.—Sources: Quarterly Census of Employment and Wages (QCEW), Environmental Protection Agency (EPA), Bogin et al. (2019), and Census Bureau (2001-2022). The table reports the coefficients associated with regressions of the log house price index on the log number of establishments (log plus one to allow for zeros) and artists per capita, log arithmetic mean of particulate matter (PM) 2.5, conditional on the year-to-year growth rate in total employment, establishments, and population and county, year, and state × year fixed effects. Growth rates are trimmed at the top and bottom percentiles. Standard errors are clustered at the county-level.

Table A.4: Robustness of Capitalization Effects Using Single Family Home Price

Dep. var. =	log(Single Family Home Price)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Arts Establishments)	.191***	.032***	.030***	.017***	.023***	.029***	.010*	.015**
	[.002]	[.004]	[.004]	[.003]	[.005]	[.004]	[.006]	[.007]
× High Youth					.013			
					[.008]			
× High College						.105*		
						[.056]		
× High Over 100K							.038***	
							[.008]	
× High Population Density								.022**
								[.009]
Employment Growth			-.063***	-.026*	-.063***	-.063***	-.063***	-.062***
			[.019]	[.014]	[.019]	[.019]	[.019]	[.019]
Establishment Growth			.339***	.149***	.338***	.338***	.338***	.338***
			[.036]	[.032]	[.036]	[.036]	[.036]	[.036]
Population Growth			.367***	.156***	.369***	.367***	.369***	.367***
			[.087]	[.045]	[.087]	[.087]	[.088]	[.088]
R-squared	.29	.97	.97	.98	.97	.97	.97	.97
Sample Size	43061	43045	42449	42406	42449	42449	42449	42449
County FE	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State x Year FE	No	No	No	Yes	No	No	No	No

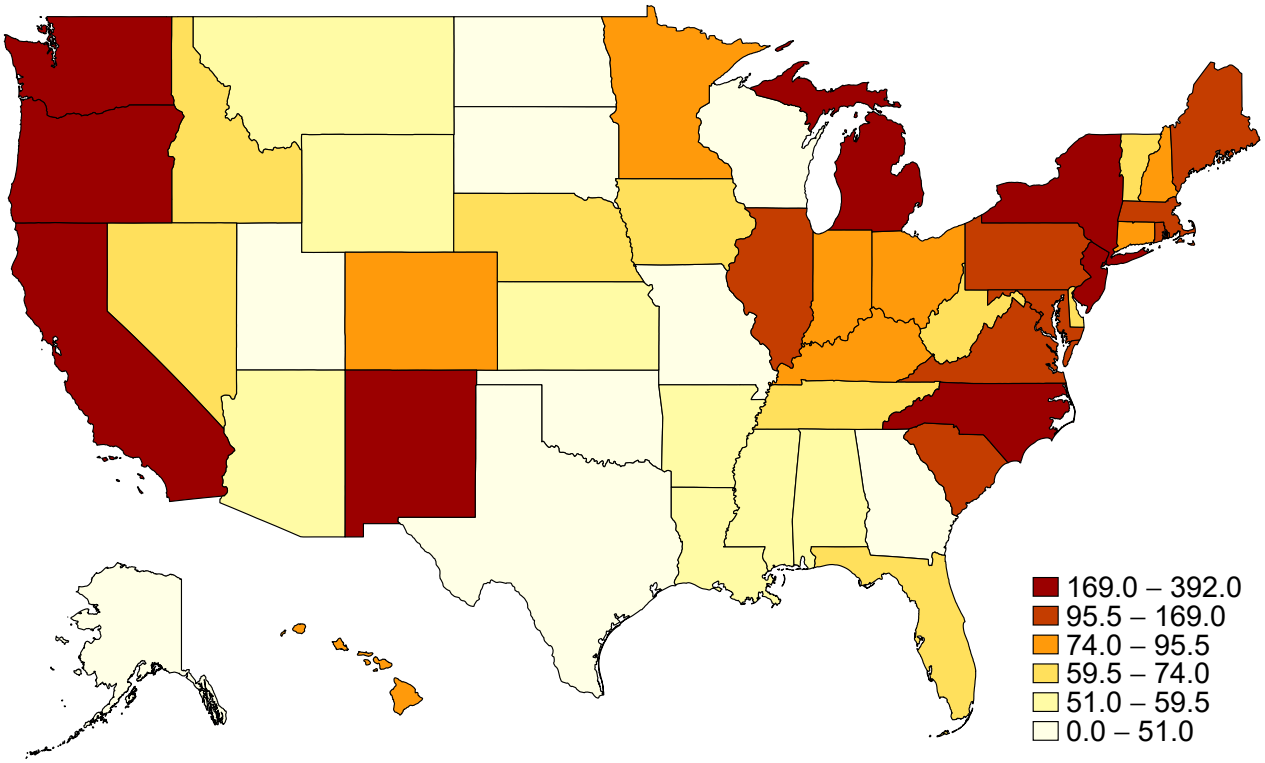
Notes.—Sources: Quarterly Census of Employment and Wages (QCEW), Zillow, and Census Bureau (2001-2022). The table reports the coefficients associated with regressions of the log single family home price on the log number of establishments (log plus one to allow for zeros), conditional on the year-to-year growth rate in total employment, establishments, and population and county, year, and state × year fixed effects. Growth rates are trimmed at the top and bottom percentiles. Standard errors are clustered at the county-level.

Table A.5: Robustness of Capitalization Effects Using High Tier Home Price

Dep. var. =	log(High Home Tier Price)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Arts Establishments)	.157***	.050***	.047***	.019***	.033***	.046***	.004	.044***
	[.007]	[.006]	[.006]	[.005]	[.008]	[.006]	[.010]	[.015]
× High Youth					.024**			
					[.011]			
× High College						.075		
						[.052]		
× High Over 100K							.061***	
							[.012]	
× High Population Density								.004
								[.016]
Employment Growth			-.107***	-.027	-.108***	-.107***	-.105***	-.107***
			[.027]	[.022]	[.027]	[.027]	[.027]	[.027]
Establishment Growth			.361***	.215***	.357***	.361***	.360***	.361***
			[.038]	[.038]	[.038]	[.038]	[.038]	[.038]
Population Growth			.427***	.212***	.433***	.428***	.435***	.428***
			[.083]	[.054]	[.084]	[.084]	[.084]	[.084]
R-squared	.23	.97	.97	.99	.97	.97	.97	.97
Sample Size	29481	29363	28765	28716	28765	28765	28765	28765
County FE	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State x Year FE	No	No	No	Yes	No	No	No	No

Notes.—Sources: Quarterly Census of Employment and Wages (QCEW), Zillow, and Census Bureau (2001-2022). The table reports the coefficients associated with regressions of the log high tier home price on the log number of establishments (log plus one to allow for zeros), conditional on the year-to-year growth rate in total employment, establishments, and population and county, year, and state × year fixed effects. Growth rates are trimmed at the top and bottom percentiles. Standard errors are clustered at the county-level.

Figure A.7: Heterogeneity in Duration of State Closures of Arts Facilities and Theaters



Notes.—Source: COVID-19 US State Policy. The figure plots the number of days (duration) between the beginning of closures of arts facilities (e.g., theaters) and the reopening, by state, in 2020-21.

Table A.6: Robustness Using Historical Variation from the New Deal

Dep. var. =	log(House Price Index)			
	(1)	(2)	(3)	(4)
log(Arts Establishments)	.040***	.025***	.028*	.026*
	[.004]	[.006]	[.014]	[.014]
Male, %		.356	-.706	-.023
		[.646]	[.781]	[.465]
Married, %		-.709***	-.450	-.596*
		[.228]	[.324]	[.319]
Age Under 18, %		-1.406***	-1.776**	-1.536**
		[.506]	[.696]	[.646]
Age 25-34, %		-.623	-.570	-.157
		[.509]	[.544]	[.504]
Age 35-64, %		-.353	-.664	-.710*
		[.453]	[.536]	[.418]
Age 65+, %		.172	-.065	.288
		[.645]	[.630]	[.492]
White, %		-.265**	-.320***	-.149
		[.128]	[.124]	[.152]
Black, %		-.343***	-.382***	-.422**
		[.130]	[.146]	[.166]
College, %		-.868***	-.904***	-.895***
		[.153]	[.174]	[.161]
Over 100K/yr, %		1.138***	1.090***	1.191***
		[.158]	[.165]	[.157]
Avg Age, 1930				.012***
				[.003]
Female, % 1930				-.496
				[.320]
Black, % 1930				-1.242
				[1.218]
White, % 1930				-1.591
				[1.209]
Literate, %				-.572
				[.393]
Speaks English, %				-.430
				[.289]
R-squared	.28	.62	.60	.69
Sample Size	206	206	196	196
F-stat			7.21	5.70
Demographic Controls	No	Yes	Yes	Yes
1930 Controls	No	No	No	Yes
Has IV	No	No	Yes	Yes

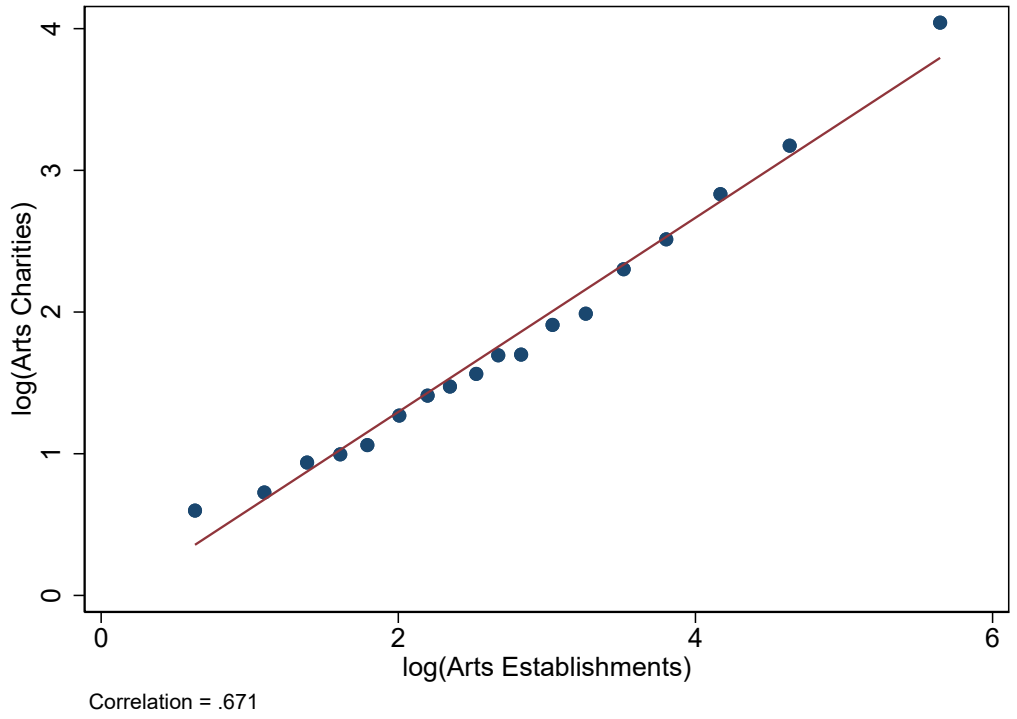
Notes.—Sources: Quarterly Census of Employment and Wages (QCEW), Bogin et al. (2019), Brounstein (2024), and American Community Survey (2005-2009). The table reports the coefficients associated with regressions of the log house price index on the log number of establishments (log plus one to allow for zeros), instrumenting arts establishments with New Deal funding for the arts, conditional on contemporaneous demographic factors and 1930 demographic controls. The sample is restricted to an average from 2000-2006. Current demographic controls include the following shares: male, married, age distribution (under 18, 25-34, 35-64, and 65+), White, Black, College, and earning over $100,000/year. Demographics from 1930s include: average age, female, White, Black, literate, and speaking English. These latter controls are obtained from Brounstein (2024) who also constructed the instruments: the New Deal funding that went to a city for the arts, arts employment, and arts employment share. I also take quadratics of these as instruments. Standard errors are clustered at the county-level.

Table A.7: Robustness Using Data on Public Arts Charities' Contributions and Revenues

Dep. var. =	log(House Price Index)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Contributions)	.013***	.004***	.002***	.001***				
	[.001]	[.001]	[.000]	[.000]				
log(Program Revenue)					.011***	.002***	.002***	.002***
					[.001]	[.001]	[.001]	[.000]
R-squared	.01	.86	.93	.97	.01	.86	.93	.98
Sample Size	95879	94973	94939	81053	86359	85492	85459	72534
Zipcode FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
State x Year FE	No	No	Yes	Yes	No	No	Yes	Yes
County x Year FE	No	No	No	Yes	No	No	No	Yes

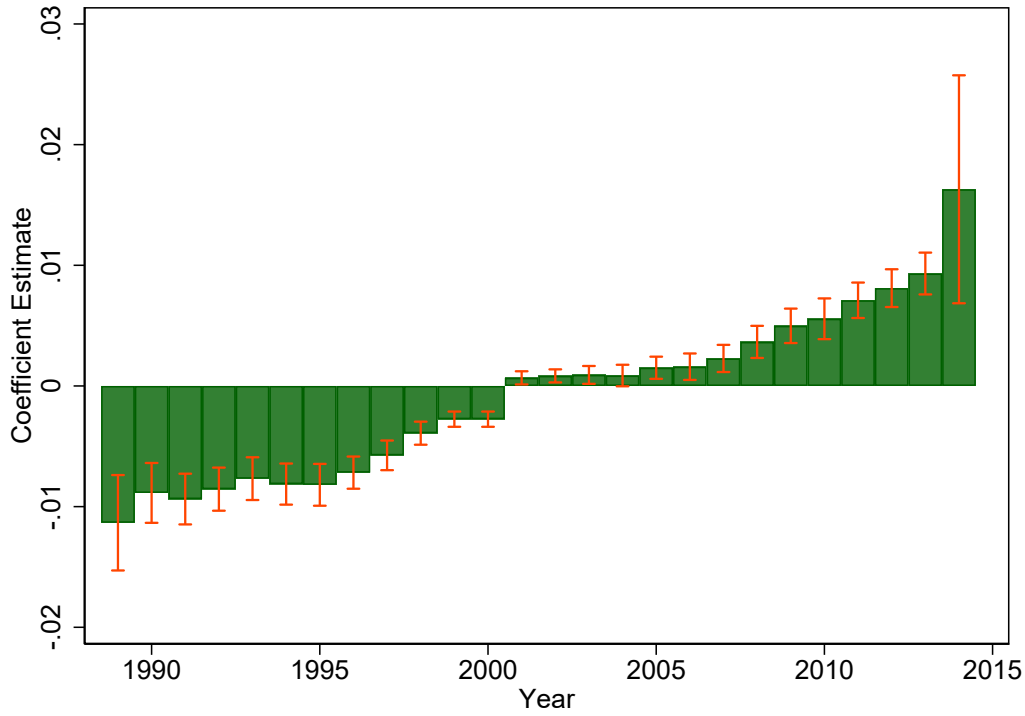
Notes.—Sources: NCCS, Bogin et al. (2019), and Census Bureau (2000). The table reports the coefficients associated with regressions of the log house price index (zipcode) on the log amount of contributions and program revenues, conditional on various layers of fixed effects (e.g., county, year, and both state × year and county × year fixed effects). Growth rates are trimmed at the top and bottom percentiles. Standard errors are clustered at the county-level.

Figure A.8: Correlation Across NCCS and QCEW Arts Measures



Notes.—Source: NCCS and QCEW (2000-2014). The figure reports the correlation across counties and years between the number of log arts establishments at the county level in the QCEW and the log number of arts charities in the NCCS.

Figure A.9: Heterogeneity in Capitalization Effects Over Time



Notes.—Source: NCCS and QCEW (2000-2014). The figure reports the coefficients associated with regressions of the log house price index (zipcode) on the number of arts and culture charities, conditional on county fixed effects, over each year. Standard errors are clustered at the zip-level.

Table A.8: Heterogeneity in Capitalization Effects by Growth in Housing Units (County)

Dep. var. =	log(House Price Index)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Arts Establishments)	.048***	.053***	-.001	-.022**				
	[.005]	[.006]	[.009]	[.009]				
× High Unit Growth				.086***				
				[.011]				
Arts Employment/Capita					9.178***	10.772***	1.209	.088
					[1.824]	[2.228]	[2.859]	[3.177]
× High Unit Growth								11.444***
								[3.923]
Employment Growth	-.168***	-.157***	-.210***	-.167***	-.181***	-.172***	-.211***	-.181***
	[.024]	[.028]	[.044]	[.024]	[.024]	[.028]	[.044]	[.024]
Establishment Growth	.398***	.447***	.144**	.400***	.421***	.472***	.143**	.422***
	[.036]	[.041]	[.058]	[.036]	[.036]	[.041]	[.058]	[.036]
Population Growth	.672***	.699***	.620***	.685***	.643***	.667***	.623***	.642***
	[.095]	[.109]	[.161]	[.096]	[.092]	[.106]	[.161]	[.092]
R-squared	.88	.88	.87	.88	.87	.88	.87	.87
Sample Size	33668	27085	6583	33668	33668	27085	6583	33668
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample	All	High Growth	Low Growth	All	All	High Growth	Low Growth	All

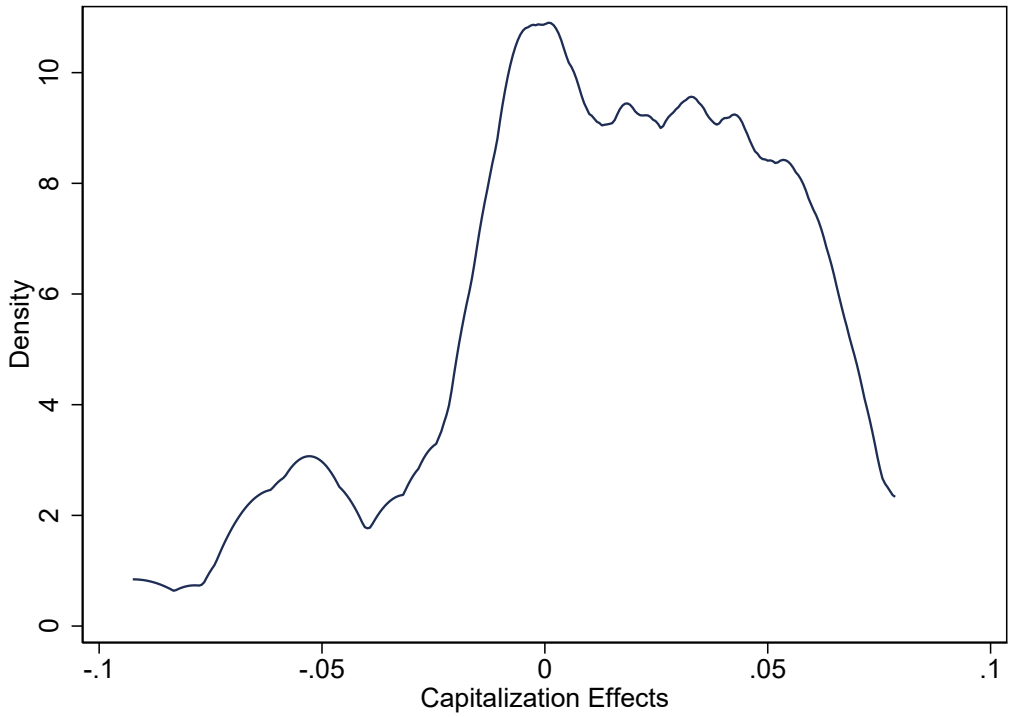
Notes.—Sources: Quarterly Census of Employment and Wages (QCEW), Bogin et al. (2019), and Census Bureau (2001-2022). The table reports the coefficients associated with regressions of the log house price index on the employment count in the arts divided by the population and log number of arts establishments, interacted or restricted to the subset of counties that rank above/below the growth in the number of housing units from the five-year 2005-09 and 2010-14 ACS, conditional on the year-to-year growth rate in total employment, establishments, and population and county, year, and state × year fixed effects. Growth rates are trimmed at the top and bottom percentiles. Standard errors are clustered at the county-level.

Table A.9: Heterogeneity in Capitalization Effects by Growth in Housing Units (Zipcode)

Dep. var. =	log(House Price Index)			
	(1)	(2)	(3)	(4)
# Arts Establishments	.0098***	.0091***	.0108***	.0106***
	[.0009]	[.0010]	[.0015]	[.0015]
× High Unit Growth				-.0011
				[.0017]
R-squared	.93	.94	.93	.93
Sample Size	100915	68436	32276	100915
County FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State x Year FE	No	No	No	No
Sample	All	High Growth	Low Growth	All

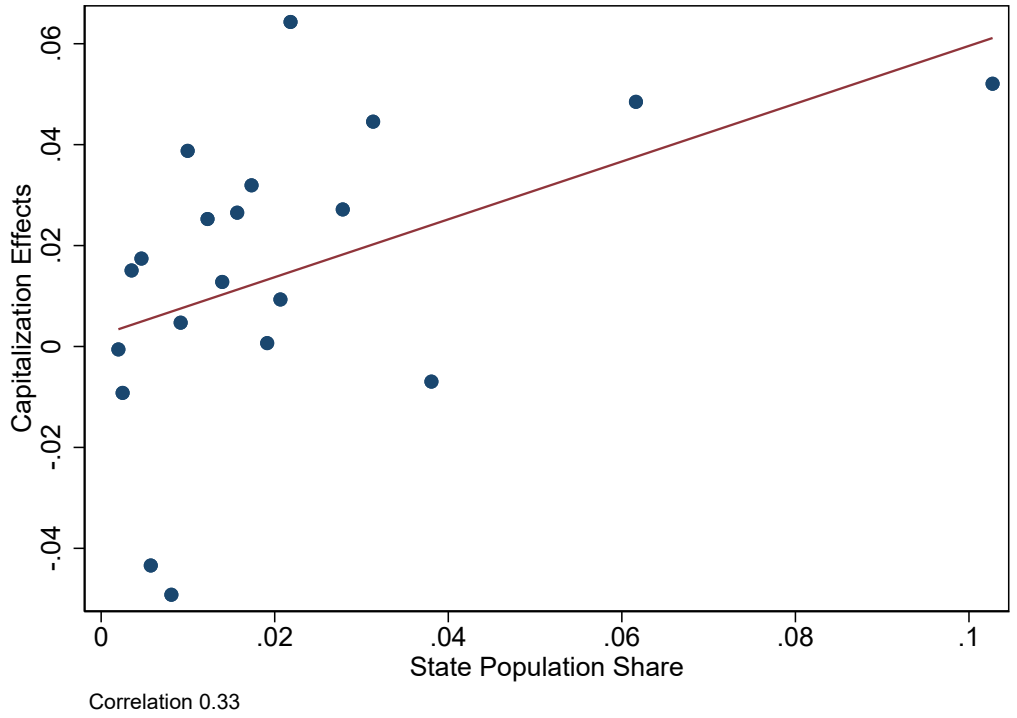
Notes.—Sources: NCCS, Bogin et al. (2019), and Census Bureau (2000-2014). The table reports the coefficients associated with regressions of the log house price index on the number of public arts and culture charities, interacted or restricted to the subset of zipcodes that rank above/below the growth in the number of housing units from the five-year 2007-11 and 2014-18 ACS, conditional on zipcode and state × year fixed effects. The five-year 2007-11 is used as the initial year since it is the first five-year ACS that contains zipcodes. Standard errors are clustered at the zipcode-level.

Figure A.10: Distribution of State-level Capitalization Effects



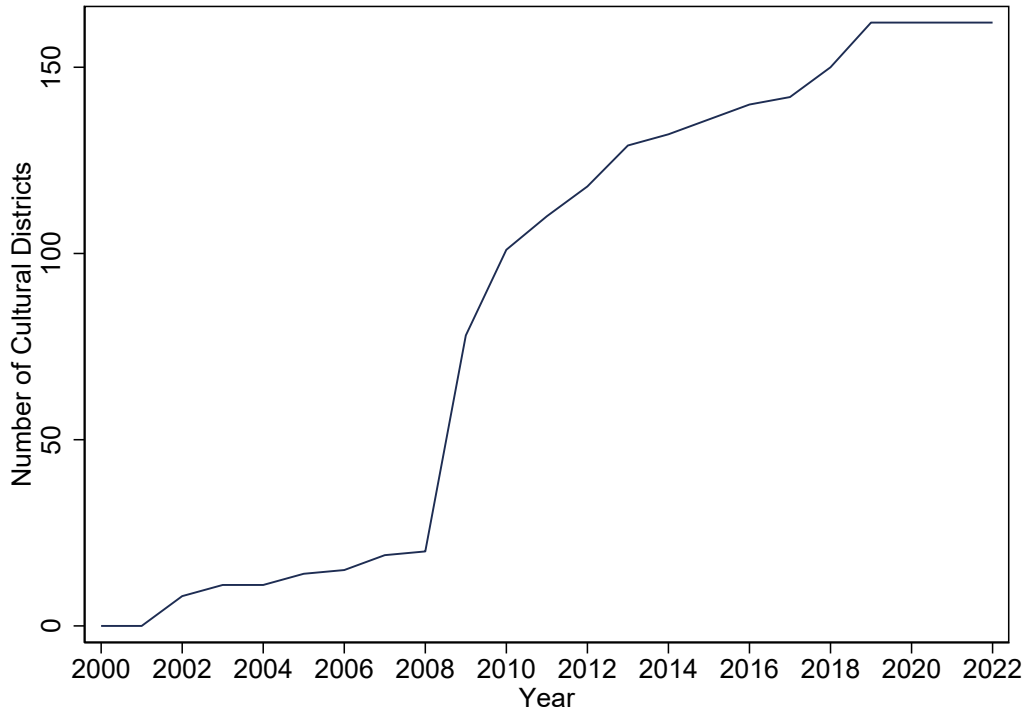
Notes.—Source: Quarterly Census of Employment and Wages (QCEW), Bogin et al. (2019), and Census Bureau (2001-2022). The figure reports the distribution of coefficients associated with regressions of the log house price index on the log number of establishments (log plus one to allow for zeros) separately by state, conditional on the year-to-year growth rate in total employment, establishments, and population and county and year fixed effects. Growth rates are trimmed at the top and bottom percentiles. Standard errors are clustered at the county-level.

Figure A.11: Relationship Between Capitalization Effects and Number of Counties in Sample



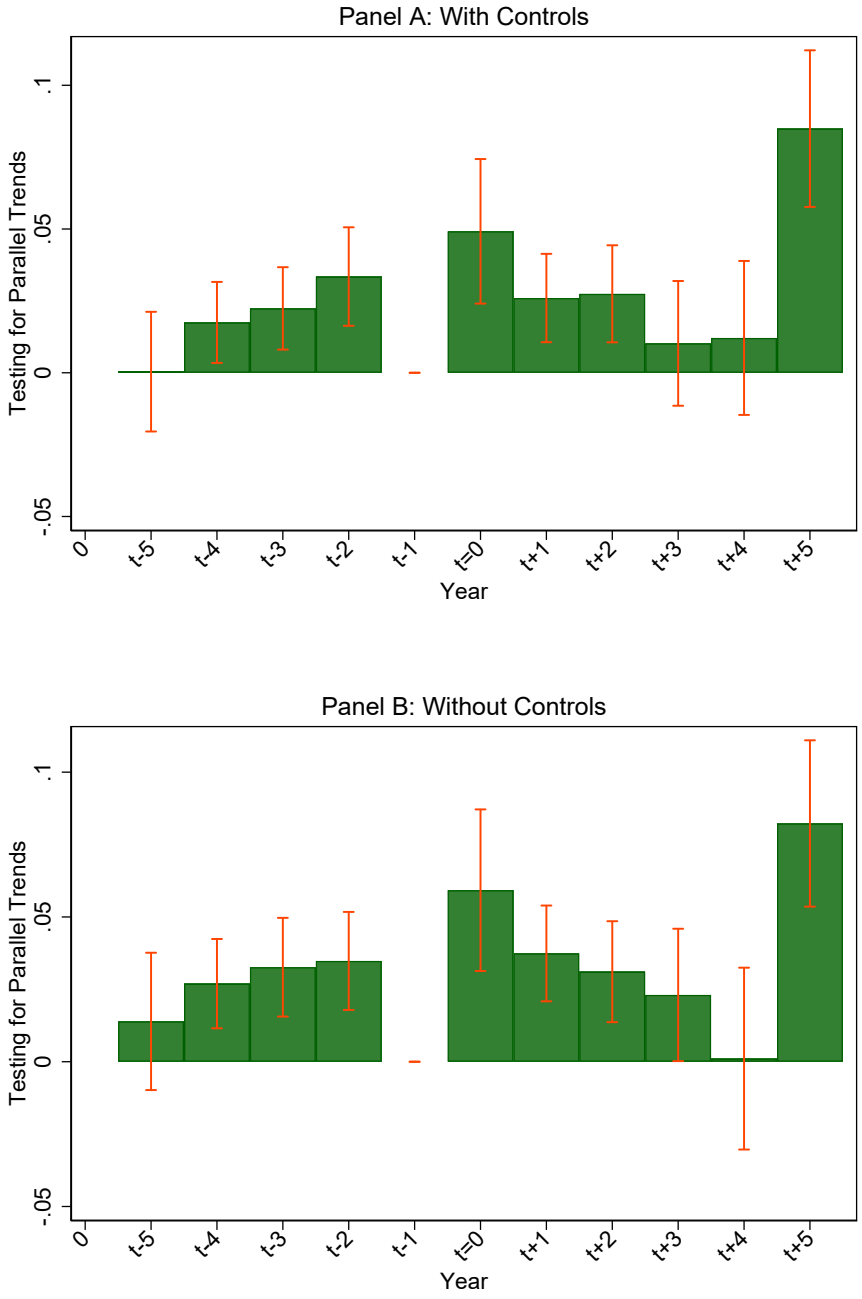
Notes.—Source: Quarterly Census of Employment and Wages (QCEW), Bogin et al. (2019), and Census Bureau (2001-2022). The figure reports the relationship between the capitalization effects (e.g., see Figure A.10) and state population as a share of the nation (using 2014-18 Census data).

Figure A.12: Time Series in the Number of Cultural Districts



Notes.—Source: Wagner and Portillo (2024). The figure plots the number of cultural district designations over time across the sample of counties in the data.

Figure A.13: Testing for Parallel Trends with Cultural Districts



Notes.—Source: Quarterly Census of Employment and Wages (QCEW), Wagner and Portillo (2024), and Bogin et al. (2019). The figures plot the coefficients associated with regressions of log house prices on five leads and lags on whether the county has been designated as a cultural district, omitting the first lag, conditional on log population, year-to-year growth rate in total employment, establishments, log population, and county and year fixed effects (Panel A), and unconditionally, just with the county and year fixed effects (Panel B). Growth rates are trimmed at the top and bottom percentiles. Standard errors are clustered at the county-level.

B Online Appendix (Cultural District Details)

B.1 Massachusetts

- Designation Mechanism & Process: Massachusetts launched a state-sponsored Cultural Districts program in 2011, enabled by an economic development act passed in 2010.[21] The law authorized the Mass Cultural Council to designate official cultural districts and set criteria.[22] Municipalities must initiate the process by defining a district locally and obtaining city/town approval. In practice, local arts stakeholders petition the local government to endorse a cultural district plan, then apply to the Mass Cultural Council for state designation. The application is open (rolling deadline) and not overtly competitive—any community that meets the guidelines can be designated. Early interest was high (over 100 communities expressed interest when the program launched), indicating a broad, voluntary uptake rather than a narrow political selection. The first cohort of five districts was approved by the Mass Cultural Council's board in early 2012, following this local nomination process.

- Timing & Motivation: The cultural districts initiative was part of Massachusetts' post-recession stimulus efforts. It was explicitly framed as a tool for economic revitalization through arts and culture, aiming to "stimulate new arts and cultural activity and attract creative businesses". At launch, officials highlighted goals like attracting artists and cultural enterprises, encouraging business and job growth, boosting tourism, preserving historic buildings, and enhancing property values in the community. The emphasis was on leveraging local

[21] https://ediclynn.org/news/images/mass_cultural_press_release.pdf
[22] https://massculturalcouncil.org/communities/cultural-districts/statutory-language/

cultural assets to drive economic growth and strengthen "local character" and quality of life. Notably, housing affordability or prices were not singled out in the official rationale—the focus was on overall economic and community development. In many cases, however, designations aligned with broader downtown redevelopment plans. (For example, Lynn and Pittsfield—part of the first districts—were post-industrial downtowns where officials hoped arts investment would spur revitalization.)

- Endogeneity Considerations: There is little evidence that Massachusetts chose cultural districts because of pre-existing housing market trends; rather, communities self-selected into the program for cultural/economic reasons. The selection criteria centered on cultural concentration and local commitment, not real estate metrics. That said, the policy explicitly sought to influence real estate: the authorizing statute lists "enhance property values" as an intended outcome of cultural districts. This suggests policymakers anticipated that designation would affect the local housing/business market. In practice, many districts were in economically struggling or underutilized areas (where officials hoped to spark investment), while a few were already thriving arts hubs. For instance, Watertown's cultural district was designated in 2024 after a decade of population and revenue growth in the city—here, the designation was a capstone to ongoing growth, not a purely exogenous shock. Overall, Massachusetts' cultural districts were not random: localities with the interest and capacity to apply often had either nascent arts-driven revitalization underway or an existing cultural cluster. There was no indication of districts being timed directly in response to sudden house price spikes or dips; instead, the program often preceded or coincided with hoped-for economic upticks. Public discourse around the program did not overtly tie it to home prices,

aside from general optimism that expanding the tax base (through tourism and renewed investment) would “benefit everyone”.

- Staggered Implementation: Massachusetts’ cultural districts rolled out gradually. The first 5 districts were approved in 2012. In subsequent years, additional communities applied and were designated on a rolling basis. By 2014–2015 the number had grown into the dozens, and by late 2024 the Commonwealth had 58 state-designated Cultural Districts spanning every region of the state. The expansion appears broadly inclusive: big cities (Boston alone has multiple districts) and small towns alike have joined. There is not a clear partisan or geographic pattern; adoption depended on local initiative. One pattern is that many early adopters were “obvious” cultural hubs (e.g. Boston’s Fenway museum area) or downtowns with active arts organizations, and over time more small/medium towns (e.g. Westfield, a 2024 addition) came on board. The program’s enabling legislation also instructed state agencies to prioritize resources to designated districts, and recently the state even gave modest operating grants ($15,000) to each district. Overall, the rollout was driven by local demand and state approval capacity rather than a centrally planned schedule, resulting in a staggered but steady increase in designations each year. Massachusetts has temporarily paused new applications (FY2023–25) for program review, but will resume thereafter, indicating the state is managing the growth of the program deliberately.

B.2 Texas

- Designation Mechanism & Process: Texas’s cultural districts were enabled by state legislation in 2005 (HB 2208), which authorized the Texas Commission on the Arts (TCA) to

officially designate cultural districts.[23] TCA administers a competitive application process: local entities such as nonprofit arts organizations, municipalities, or arts alliances can apply for their area to be certified. Not every applicant is approved—in the initial years, only about half of applying communities succeeded, indicating a vetting process.[24] TCA guidelines suggest that a successful cultural district application requires a well-defined district with established cultural assets, local leadership, and a branding/management plan. In fact, TCA notes that state designation is most likely to be awarded to a district that already exists de facto—i.e. an area with a concentration of arts venues and an organized managing entity. This means the impetus usually comes from local stakeholders: city cultural offices, downtown development groups, or arts nonprofits typically initiate the application, often building on an existing "arts district" concept. Notably, when the program launched, a few major city districts (like the Dallas Arts District and Houston Museum District) were grandfathered in and recognized as state cultural districts without having to apply from scratch, since they were already prominent cultural zones.

- Timing & Motivation: Although authorized in 2005, Texas did not designate any cultural districts until 2009. The inaugural batch in 2009 included several pilot communities (Austin, Lubbock, McAllen, etc.), followed by more in 2010. The timing corresponded with a growing statewide push to use arts as an economic development engine. By 2009–2011, Texas leadership (including the nonprofit Texas Cultural Trust) was actively reframing the Arts Commission's role as an economic catalyst. The stated reasons for designations mirror those in other states: to strengthen local economies and downtowns through arts activity, increase

[23] https://www.arts.texas.gov/wp-content/uploads/2012/04/CulturalDistrict_MeasuringSuccess.pdf
[24] https://www.texastribune.org/2012/12/16/state-encouraged-use-arts-economic-development/

tourism, and foster community pride. TCA explicitly enumerated goals such as attracting artists and creative enterprises, spurring business and job growth, establishing tourist destinations, rehabilitating historic buildings for new cultural uses, and enhancing property values in the district. The emphasis was on creative placemaking as a strategy for urban revitalization. Notably, while boosting real estate values was seen as a positive outcome, TCA also warned of gentrification as a potential challenge ("an unintended consequence of increasing property values") and urged districts to balance growth with inclusion. Overall, the motivation was economic development and community vitality; any impact on housing markets (positive or negative) was a byproduct of that larger goal. Importantly, Texas initially provided no direct funding with the designation; it was an honorific status meant to help communities leverage other grants. (Only later did the state start offering small grants to cultural districts, backed by legislative appropriations around 2017.)[25]

- Potential Endogeneity: The evidence suggests Texas's cultural district designations were endogenously shaped by local cultural and economic conditions. Rather than randomly assigning districts, the state responded to where local interest and existing cultural assets were strongest. As noted, TCA favored districts that were already organized and "ready to go". This implies many designated districts were in neighborhoods that had begun revitalizing through arts on their own. For example, Houston's Museum District and Dallas's Arts District were thriving well before 2009 and simply received official designation in 2010—clearly not an exogenous shock, but an affirmation of an existing arts-driven boom. On the other hand, some districts were in smaller cities aiming to revitalize blighted areas. The Texas

[25]https://nasaa-arts.org/newsletter/2022-nasaa-notes-issues/september-2022-nasaa-notes/state-cultural-districts-nebraska-texas-colorado-maryland/

Tribune profiled San Angelo's cultural district: in 2009 the state designated a 200-acre area that local leaders described as previously "run-down" and deserted by visitors. The designation was part of an ambitious local revitalization plan (street improvements, gallery openings, historic fort rehab) already in motion. In such cases, one could argue the policy responded to early signs of neighborhood turnaround or at least to a concerted local campaign to ignite one. There is no indication that TCA deliberately timed designations in response to short-term fluctuations in home prices—instead, the long-term development trajectory was key. That said, because cultural district status was sought by communities expecting it to bolster development, it's likely those areas were on a trajectory distinct from the average neighborhood (either already trending up or actively targeted for improvement). Any concurrent factors – say, a new transit line or major employer – would have been part of the local growth narrative that made the district viable. Thus, treating Texas's cultural districts as an exogenous shock would be questionable; they are part and parcel of a broader development strategy, often codifying momentum that was already present.

- Staggered Rollout: Texas's cultural districts rolled out in waves. No districts were named from 2005 until 2009, when TCA approved the first cohort of 7 pilot districts. In 2010, TCA added several more, including formally recognizing pre-existing urban districts (bringing the total to 12 by end of 2010). From 2011 onward, the Commission held an annual application cycle for new designations. By late 2012, a total of 19 districts had been designated (14 via application plus 5 grandfathered). The program continued to expand each year through the 2010s: by 2017 TCA had 35 state-designated cultural districts in 30 communities, and by 2022 it had grown to 51 districts statewide. The spatial distribution is broad – from

major city centers (Houston alone has multiple) to mid-size city downtowns (Corpus Christi, Denton) to small-town historic squares. Politically, the designations occurred under both Republican and Democratic state leadership without issue, suggesting bipartisan support for arts-led development. One can observe that many early designations clustered in cities with strong arts infrastructure (Austin, Houston, Dallas all had districts by 2010). Later, more rural or smaller places (like Winnsboro or Denison) joined once they could marshal the required partnerships and plans. In that sense, there may be a self-selection pattern: better-resourced communities (or those with obvious cultural assets) went first, and others followed as they developed capacity. As of the last few years, Texas continues to invite new applications annually, so the rollout is ongoing. This staggered, voluntary uptake means any DiD study would see a variety of treatment timings across Texas locales, often correlating with local initiative and prior cultural investment rather than random timing.

B.3 Louisiana

- Designation Mechanism & Process: Louisiana's Cultural Districts program was created by Act 298 of the 2007 state legislature and launched in 2008.[26] Unlike the Massachusetts and Texas programs, Louisiana's approach is highly decentralized: the law allows any local government (city or parish) to designate a cultural district by local ordinance, subject to certification by the state Department of Culture, Recreation and Tourism. In effect, if a municipality identifies a geographic area to be a "hub of cultural activity" and commits to certain requirements (such as annual reporting), the state will certify it so the area can receive

[26] https://www.crt.state.la.us/cultural-development/arts/cultural-districts/

special tax incentives. There is no fixed limit on the number of districts and no competition—it's a policy tool available to all communities, urban or rural. The process involves a local government passing a resolution/ordinance defining the district boundaries and goals, then submitting an application to the state Division of the Arts. The state verifies that the area meets the broad definition (a concentration of cultural assets or historic buildings) and then grants official designation. The program has been widely embraced: by mid-2018, Louisiana had 97 certified cultural districts across 63 towns in 37 parishes, and the number has grown to 127 districts in 2024, indicating many localities have taken advantage of this automatic designation mechanism. Key to the program are the incentives it provides: (1) a state historic rehabilitation tax credit (up to 25% of rehab costs) for any income-producing historic building within a cultural district, and (2) a sales tax exemption on the sale of original artworks within the district. These benefits were designed to entice private investment in properties and creative businesses in the designated areas. Importantly, Louisiana does not require a pre-existing arts organization or any particular cultural programming to designate a district—some districts were created to stimulate redevelopment of an area.

- Timing & Motivation: The launch in 2008 was timed in the context of post-Hurricane Katrina recovery and a statewide push to grow the "cultural economy." Lt. Governor Mitch Landrieu championed the cultural district legislation as part of a package of cultural tax incentives aimed at revitalizing communities after the 2005–2005 hurricane disasters. The explicit motivation was to spark community revitalization through cultural activity: the law's stated purpose is "revitalizing a community by creating a hub of cultural activity". By encouraging the reuse of historic buildings and the opening of arts enterprises, officials

hoped to combat blight and economic decline in struggling areas. Indeed, the program was described as a "place-based cultural economy initiative" to boost local development. At the time of enactment, many Louisiana towns (especially New Orleans neighborhoods) had vacant, storm-damaged buildings—thus, offering tax credits and art-sale tax exemptions was a strategy to attract developers, galleries, and creative businesses to those areas. This was part of a broader plan ("Louisiana Rebirth" and cultural economy strategy) that recognized culture, tourism, and heritage as keys to economic recovery. Housing affordability per se was not a primary stated concern; rather, the focus was on increasing investment (which implies property value appreciation) and repopulating commercial corridors. However, by encouraging redevelopment, the program implicitly aimed to stabilize property values in areas that had seen decline. In summary, Louisiana's cultural districts were motivated by economic development and blight reduction, using arts and culture as the catalyst.

- Potential Endogeneity: Because any local government could create a cultural district at will – and many did so strategically – the designations in Louisiana are clearly non-random and often endogenously timed to local conditions. In practice, local officials tended to designate districts in areas that had: a) significant cultural/historic assets but economic underperformance (e.g. an old downtown or arts corridor needing a boost), or b) active revitalization efforts already underway. For example, New Orleans swiftly designated numerous cultural districts in historic neighborhoods post-Katrina to leverage the incentives for rebuilding (including the Arts District/Warehouse District, St. Claude Arts Corridor, etc.). These were areas where artists were already locating or where tax credits could tip the balance for redevelopment. The timing often coincided with other initiatives: a town might create

a cultural district at the same time it joined the Main Street program or after receiving a downtown planning grant, signaling an orchestrated development agenda rather than an exogenous policy shock. The legislative requirement that localities report annually on economic impacts also suggests an expectation that districts would cause measurable changes in business activity, property renovations, etc., which likely encouraged local governments to pick districts that were poised for improvement. On the other hand, since the bar to entry was low, some very small towns designated cultural districts largely to avail themselves of the tax perks, even if real estate trends were flat—in such cases the policy could be seen as a stimulus introduced without any prior upswing. Overall, though, the location and timing of Louisiana's cultural districts were driven by local development objectives. Public debates did not usually frame it as capturing a rising market (it was more about creating a market), but certainly officials anticipated real estate benefits. For instance, the program's supporters touted increased renovations and business openings as successes. In sum, the cultural district designations in Louisiana were highly policy-driven and targeted, often occurring alongside other economic shocks or trends (hurricane recovery, downtown renewal programs) that could confound any simple before-and-after analysis of housing prices.

- Staggered Implementation: Louisiana's program grew rapidly and in a somewhat clustered fashion. Immediately after the 2007–08 launch, many districts were created in New Orleans and Baton Rouge (where the need was urgent and cultural assets abundant), as well as in smaller historic towns. By 2010, the state had dozens of districts certified. Growth continued each year as more local governments learned of the program. By July 2018 there were 97 districts statewide, and by 2022 this reached 124 districts in 77 municipalities (ranging from big

cities to rural villages). As of 2024, there are 127 districts, covering all corners of Louisiana. The rollout has been cumulative and overlapping—designations occurred every year rather than in discrete cohorts. For example, in 2022 alone, six new districts were added across different parishes in a single announcement. This means the "treatment date" varies widely: some places have been districts for 15+ years, others joined just this year. There may be slight political patterns: the program started under a Democratic administration (Landrieu) and flourished under both subsequent Republican and Democratic leaders, thanks to strong buy-in from local economic development advocates. Geographically, one pattern is that downtown areas and historic neighborhoods were common choices for districts (since those benefit most from historic tax credits), but the program also allowed for culturally unique areas (like an African-American heritage district in a smaller city) to be designated even if not a traditional downtown. In terms of any strategic sequence, many of the earliest districts were in Katrina-affected areas (2008–2010), suggesting an initial wave tied to disaster recovery. Later waves correspond to statewide expansion and even use in rural development—by 2018–2020 we see more small-town districts. The state did not limit how many districts could form, so the implementation can be viewed as demand-driven: whenever a local community saw fit, they applied and were certified. This results in a staggered adoption that could correlate with local economic cycles (e.g. an oil town might create a cultural district in response to an oil bust to diversify the economy). This wide temporal and spatial spread provides variation, but one must be mindful that why a district was designated in 2008 in one parish could differ from a 2018 designation elsewhere (context-specific triggers).

B.4 California

- Designation Mechanism & Process: California's state-level Cultural Districts program is relatively new and was established by Assembly Bill 189 (2015), which authorized the California Arts Council (CAC) to officially designate cultural districts.[27] The CAC designed the program as a pilot initiative launched in 2017. Through an open application and rigorous selection process, the Arts Council selected an inaugural cohort of 14 Cultural Districts in mid-2017. This initial group was treated as a two-year pilot: each designated district received a 5-year certification (2017–2022) along with modest grant funding ($5,000/year for technical assistance during the pilot) and state promotional support. The selection process in 2017 was competitive – applicants across the state had to form partnerships (at least a city/local government, a nonprofit cultural organization, and a business entity), submit a cultural asset map, and craft a vision and strategic plan. The CAC's criteria put strong emphasis on equity, inclusion, and authentic cultural representation. Out of numerous applicants, 14 were chosen to ensure geographic and cultural diversity (e.g. districts ranged from large urban neighborhoods like Los Angeles' Little Tokyo to small towns like Eureka and Truckee). Since the pilot, the program has been relatively paused in terms of new designations – the CAC did not add more districts during 2018–2022, instead monitoring the pilot cohort. As of 2025, the Arts Council is relaunching the program to select up to 10 new districts for a second cohort. Going forward, designations will be time-limited (5-year terms) and tied to grant cycles. In summary, California's mechanism is a state-run certification with

[27] https://arts.ca.gov/press-release/california-arts-council-announces-launch-of-2025-cultural-districts-grant-program/

periodic competitive calls, and local entities must collaborate and apply for the honor. This structured process differs from the rolling or open-ended approach in other states.

- Timing & Motivation: The timing of California's program (mid-2010s) coincided with rising concerns about preserving cultural heritage amid economic growth. The official motivation voiced by the CAC is to "assist communities in leveraging cultural assets for economic and social vitality". State leaders highlighted California's extraordinary cultural diversity and wanted to celebrate and sustain it. In 2017, the CAC described the new districts as showcasing "thriving cultural diversity and unique artistic identities" of local communities. Practically, the program aimed to drive place-based economic development (arts-driven tourism, creative industry jobs) while also supporting local identity. Uniquely, some of California's inaugural districts were selected in part because they had pressing cultural preservation needs. For instance, two San Francisco districts—Calle 24 Latino Cultural District and SoMa Pilipinas Filipino Cultural Heritage District—had been recently created at the city level specifically to address gentrification and displacement of those communities. Their state designation in 2017 gave them additional recognition. The backdrop in many California cities was a real estate boom in the 2010s (tech-driven in the Bay Area, etc.), and the cultural district concept was seen as a way to channel growth more equitably or at least shine a light on heritage before it was erased. State Arts Council statements stress "creating sustainable ecosystems where artists and cultural workers can thrive, where history and heritage are honored." In short, California's program was part celebratory (branding cultural hubs) and part protective (buttressing those hubs against economic pressures).

- Potential Endogeneity: California's state designations were deeply intertwined with local

economic and cultural dynamics – they were explicitly not random interventions. The application process itself required evidence of existing cultural concentration and community buy-in, meaning selected districts already had notable cultural activity. Many also had ongoing local initiatives. For example, before the state program, San Francisco had passed city ordinances to create cultural districts as a response to gentrification (in 2014–2016 for Calle 24 and others). These neighborhoods were experiencing rapid rises in property values and rents due to tech industry growth, and the cultural district was a tool to "stabilize. . . communities facing or at risk of displacement or gentrification".[28] This indicates that the designation was endogenously responding to real estate trends: policymakers and community groups deliberately established districts in locations where housing pressures threatened cultural resources. The state then selected some of those very areas for the pilot, likely because they already had momentum and formal organization. In Los Angeles, Little Tokyo's designation came amid downtown development pressures, and the district effort was tied to preserving legacy businesses and affordable housing for its community. It's clear that these designations were anticipated to influence (or at least accompany) neighborhood trajectories—for instance, by attracting heritage tourism or grant resources, potentially helping local businesses survive. On the flip side, one could argue that some districts (like Balboa Park in San Diego or the Grass Valley/Nevada City joint district) were in stable or even upscale cultural tourism areas where the designation mostly formalized a status quo. Even there, the selection was not random—those areas had long-standing cultural attractions. In all cases, the rollout followed existing patterns of cultural clustering and, at times, activism around urban development. Public records and debates explicitly connect the cultural district designations with real

[28] https://www.planning.org/conference/nationalconferenceactivity/9165419/

estate and development issues. For example, San Francisco officials tied cultural districts to strategies for affordable housing, small business retention, and anti-displacement measures. Thus, from an empirical standpoint, treating California's cultural district designations as exogenous shocks would be problematic—they are clearly concurrent with and conditional on local socio-economic trends.

- Staggered Implementation: California's implementation has been in distinct phases rather than continuous. The 2017 pilot cohort of 14 districts is well-documented. These districts received their designation all at once (in a single announcement), and their status was set to last five years before renewal or expansion of the program. After 2017, the state did not immediately add more districts; the next big step is happening in 2025, where the CAC is opening applications for up to 10 new districts to join the program. This implies a second cohort will be designated for the 2026–2030 period. The pattern so far is that the state is intentionally staggering designations to manage the program as a pilot and subsequent expansion. Geographically, the 2017 cohort was spread across 11 counties—ensuring a mix of Northern, Southern, coastal, and inland communities. Politically, the program had strong support in the legislature (it passed via AB 189) and aligns with California's broader creative economy initiatives. One can observe that many of the 2017 districts overlapped with places that had received other cultural grants or designations (for example, several are also California Main Street communities or on the National Register of historic places). The forthcoming 2025 cohort will likely also consider regional distribution and need. Because of the cohort model, from a research perspective the treatment timing in California is basically two waves: 2017 and 2025 (plus possibly future additions). All 14 initial districts "turned

on" simultaneously in mid-2017, which makes a classic staggered DiD tricky within the state (not much variation in timing among those). However, comparing the pilot group to the upcoming 2025 group could be insightful, as the latter might be systematically different (perhaps more rural, or responding to post-pandemic recovery needs). Thus, California's cultural district designations are policy-driven in batches, and those batches correlate with specific policy objectives and contexts in time (e.g., the 2017 batch in a pre-COVID tech boom context, the 2025 batch in a post-COVID recovery and renewed equity context).