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Local Impacts of Economic Development Administration Construction Investments

EDA Program Evaluation

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The US Economic Development Administration (EDA) invests in economic development projects throughout the country to promote innovation, competitiveness, and economic growth. Through its programs, EDA funds planning grants, technical assistance, large-scale construction projects, revolving small-business loan funds, and various other economic development activities. This brief summarizes the local impacts that EDA's construction projects have on jobs and neighborhoods.

This research study provides new estimates of the impacts of EDA construction projects. Early research on EDA construction investments by Rutgers University used data collection from prior grantees, input-output models, and regression analysis to understand the impacts of EDA's Public Works program (Burchell 1997; Burchell 2003). The regression analysis included in the study estimated that EDA investments increased county employment but did not have statistically significant impacts on compensation (Haughwout 1999). The US Government Accountability Office (GAO) criticized these findings, showing that when county-level employment before the start of EDA grants is included in regression analyses, EDA grants no longer have a significant effect on jobs (GAO 1999). A later study by Grant Thornton in 2008 analyzed EDA construction grants from 1990 to 2005 using regression models designed to address both the criticisms introduced by GAO and concerns that the grantmaking process might be correlated with outcomes. That study found that EDA investments in construction projects increased jobs in nonmetropolitan counties but not metropolitan counties. However, the instrumental variables used in the study were not clearly unrelated to the outcome measures, which could have led to impact-biased estimates. More recently, Han, Whitacre, and Ji (2020) replicated and revised the Rutgers-Haughwout methodology to examine the impacts of Public

Works grants from 2010 while accounting for unobservable differences between counties and spillover effects to nearby counties. Their estimates suggest that EDA Public Works projects have a significant positive effect on both targeted and neighboring counties' employment.

BOX 1

Program Evaluation of EDA

This brief is the fifth in a series of products from the Urban Institute evaluating EDA and the agency's effects on local economies. The first brief describes the agency's programs and projects using EDA's administrative data (Theodos et al. 2021a); the second brief describes the agency's background and goals and provides a history of EDA (Theodos et al. 2021b); the third brief examines the locations of EDA grants (Theodos et al. 2023); and the fourth brief explores EDA's role in disaster recovery and mitigation (Marx et al. 2024). Results are summarized at urban.org/EDA.

This evaluation estimates the impacts of EDA construction projects on businesses, jobs, and incomes. We use panel data to create a more rigorous quasi-experimental method than those used in previous studies that accounts for trends over time. We estimate the impacts of grants for EDA construction projects awarded from 2010 onward[1] on establishments (for-profit firms and nonprofit organizations), jobs, and incomes of nearby residents at both the census tract and county levels. Our impact estimates compare establishments, jobs, and incomes three to eight years after a grant award to their same levels three-plus years before the grant award. We also add several data sources to strengthen our understanding of EDA's impacts on local areas.

Our analysis reveals the following:

- EDA construction projects are associated with an increase in the number of establishments in the *census tract* where projects are located. We estimate that tracts with EDA construction projects awarded between 2010 and 2014 had up to five more establishments per $1 million invested (including both EDA grant funding and leveraged local investment) than they would have had in the absence of the project.[2] We do not detect an increase in the number of establishments in the county where projects are located.
- Tracts with EDA construction projects awarded between 2010 and 2015 have between 3 and 67 more jobs in the tract per $1 million invested. This amounts to an average cost of between $15,000 and $333,000 for each additional job (averaging $29,000) in the immediate vicinity of a project, with about half the cost coming from EDA funds and about half coming from the grantee.
- EDA construction projects awarded between 2010 and 2015 are associated with more jobs in the *county* than there would have been in the absence of the project. We estimate that counties with EDA projects have an additional 175 to 1,578 jobs for every $1 million invested

(or between 3,548 and 10,506 additional jobs per EDA grant). This amounts to an average cost of less than $6,000 per job.

- EDA construction projects are not associated with a statistically significant increase in the number of jobs held by residents in the census tracts where projects take place. However, we find that $1 million in EDA construction project investment is associated with increased jobs for residents at the county level, resulting in 178 to 1,612 more jobs held by residents. And for each EDA construction grant, we find between 3,678 and 10,262 more jobs held by residents in the county.
- Job growth is concentrated in counties that had more jobs before the EDA project (i.e., the top half of counties in terms of number of jobs in 2004). In contrast, income growth is concentrated in nonmetropolitan counties.
- The high levels of job growth across counties appear to be driven by facilities and transportation projects but not utilities projects. Utilities projects, however, are associated with growth in the number of establishments in the county.

We summarize these findings in table 1.

TABLE 1
Summary of Estimated Impacts of EDA by Geography

Outcome	Tract	County
Establishments	+	Not detected
Jobs	+	+
Jobs held by residents	Not detected	+
Median income	-	+

Sources: Urban Institute analysis of EDA program, Data Axle, Longitudinal Employer-Household Dynamics, and American Community Survey data.
Notes: + or – indicates the direction of impact estimated with statistical significance at the $p < 0.05$ level in our preferred model. See tables 2 and 3 for point estimates and additional details.

Intended Outcomes and Data Sources

EDA has developed a logic model for its work that links its inputs to intended outputs and outcomes (figure 1). Key inputs include funding and resources, while outputs include support, networking, coaching, financing, and planning resources. EDA expects these steps to lead to increased and improved innovation, markets and networks, and capacity. Longer-term outcomes include firm growth, job growth, and wage growth.

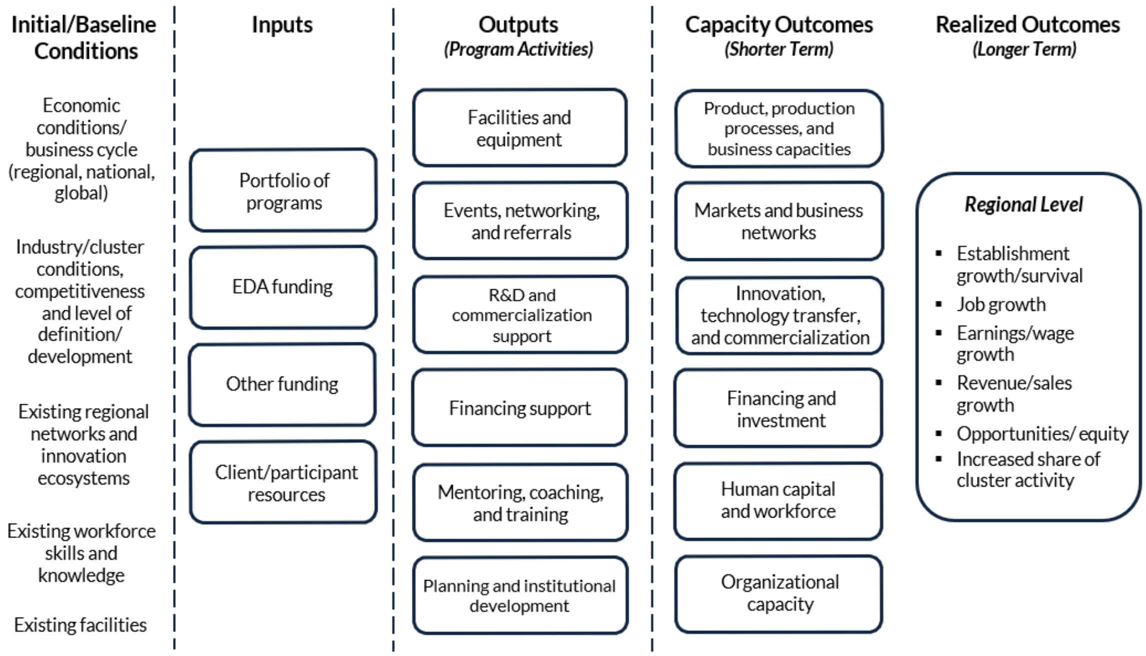
Below, we detail the outcomes and data sources used in this impact assessment of EDA construction projects.

- **Number of establishments.** We access data on the number of establishments from Data Axle (formerly InfoUSA). Data Axle provides proprietary point-level data on business establishments through its database of approximately 25 million establishments. Establishments include for-profit businesses and nonprofit organizations. Unlike other business establishment data, such as County Business Patterns, Data Axle data are available at the address level.

- **Number of jobs in neighborhoods and counties.** Because many people do not live in the same community where they work, we examine employment in two ways. We look first at the number of jobs located in neighborhoods (census tracts) and counties, which may be held by residents who live there or elsewhere. We use the Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) workplace area characteristics from the US Census Bureau, which contain information on the total number of jobs in tracts where people work. LODES data are available from 2002 to 2019, though some data are missing for various states in certain years (Alaska, Arizona, Arkansas, Massachusetts, Mississippi, New Hampshire, and Washington, DC).
- **Number of jobs held by residents.** Our second measure of employment is the number of jobs held by residents of a given county or neighborhood, referred to by the Census Bureau as LODES residence area characteristics. We exclude the counties surrounding states with missing data because the resident data have undercounts due to the missing workplace area characteristics in those states.
- **Median income.** The final outcome we assess is median income for residents of the census tract or county. We use the 2000 Decennial Census and each five-year American Community Survey (ACS) dataset from 2005–09 to 2015–19. We assign estimates from the five-year data to the middle year. We gather both ACS and Decennial Census data from the IPUMS National Historic Information System.

FIGURE 1

EDA Logic Model



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Sources: EDA and SRI International.

For each data source and outcome, we aggregate the data to the census tract level and the county level to estimate the impacts of EDA construction projects in each tract and county.

We use program data from EDA about grants for construction projects,[3] which include a description of the project, the project's location, and the date of the grant award. We examine grants from 2010–15, totaling 804 grants, with about $1.5 billion in EDA funding and $3.1 billion in total project cost (both adjusted for inflation to 2021 dollars). We classify the construction projects funded with these grants as facilities (49 percent), utilities (31 percent), or transportation infrastructure (20 percent) for a more refined analysis of project type.[4] EDA grants generally last between two and four years, with the average construction project taking 3.6 years to complete (Theodos et al. 2021a).

Most construction grants go to communities that have only one grant, with more than 89 percent of grants located in census tracts with only one construction grant. Roughly 37 percent of construction grants are in counties with only one construction grant. For construction grants from 2010-15, the median grant amount was $1.4 million and the median total project cost was $2.8 million, adjusted for inflation to 2021 dollars. Approximately 55 percent of EDA construction grants from 2010–15 are for projects in metropolitan areas, and 45 percent are for projects not in metropolitan areas.[5] Seventy-nine percent of EDA construction grants from this time period were in larger job-holding counties—those in the top half of job counts nationally—while 21 percent of grants were located in smaller job-holding counties.

Compared with the US average, counties that receive EDA investment in construction have lower median household incomes, higher poverty rates, lower median home values, and higher vacancy rates. Census tracts that receive EDA investment in construction also have lower median household incomes, higher poverty rates, lower median home values, higher vacancy rates, and higher unemployment rates.

Counties with EDA construction investment have an average of 0.38 jobs per capita, similar to the US average of 0.41, while census tracts with EDA construction investment have higher jobs per capita at 1.54 from 2010 to 2021. Counties and census tracts that receive EDA construction investment have lower median household incomes relative to the US average ($59,069), at $45,507 and $50,706, respectively. Counties with EDA construction investment have an average of 0.05 firms per capita, similar to the US average of 0.04, while census tracts have more than double the US average at 0.10 firms per capita.

Methodology

We use two-way fixed-effects regressions (with fixed effects for both year and location) to estimate the quasi-experimental treatments effect of EDA construction grants on census tracts and counties. Fixed-effects models estimate the changes within observations over time. Our estimates isolate the impacts of grants awarded starting in 2010. We control for impacts of grants awarded before the study period (between 1997 and 2009) and within the same county. Our regressions also control for nonlinear changes at the national level that could bias estimates based on the timing of EDA grants, such as a recession or economic expansion. The models also control for expected job loss in manufacturing (using a Bartik shift-share measure) and damage to businesses from disasters.[6]

We use a fixed-effects regression rather than another quasi-experimental technique, such as regression discontinuity or instrumental variables, since there is no strict cut point for eligibility to employ in a regression discontinuity model, nor is there an exogenous source of variation that is strong enough to predict EDA investments to be used in an instrumental variables approach. We experimented with a variety of fuzzy regression discontinuity models and found none with a first-stage Craig-Donald F-statistic above 5.[7] The fixed-effects approach also allows us to identify average rather than local treatment effects. That is, it tells us the average effect that EDA investments have on all places that receive such an investment, rather than telling us what impacts EDA investments have on places that are near a cut point for eligibility (if it existed).

We assume that the impacts of EDA projects do not scale with population, and therefore we do not scale the number of establishments or jobs by population or log transform the values. In other words, our null assumption is that two similar EDA projects would produce a similar number of new businesses and new jobs rather than grow the number of businesses or jobs in the area by a similar percentage. Instead, to understand differential impacts of EDA projects in job-rich areas, we separately estimate impacts for counties with larger and smaller workforces and counties inside and outside of metropolitan areas.

We estimate treatment effects beginning three years after the award of an EDA construction grant and control for changes during the period of project implementation from two years before to two years after each grant was awarded. The estimated treatment effect therefore compares three or more years after a construction grant with the three years before a grant was awarded. This tells us the effect of EDA construction projects without bias from announcement effects or a construction period. We estimate effects per $1 million invested—including both EDA grant funding and leveraged local investment—and per EDA grant award.

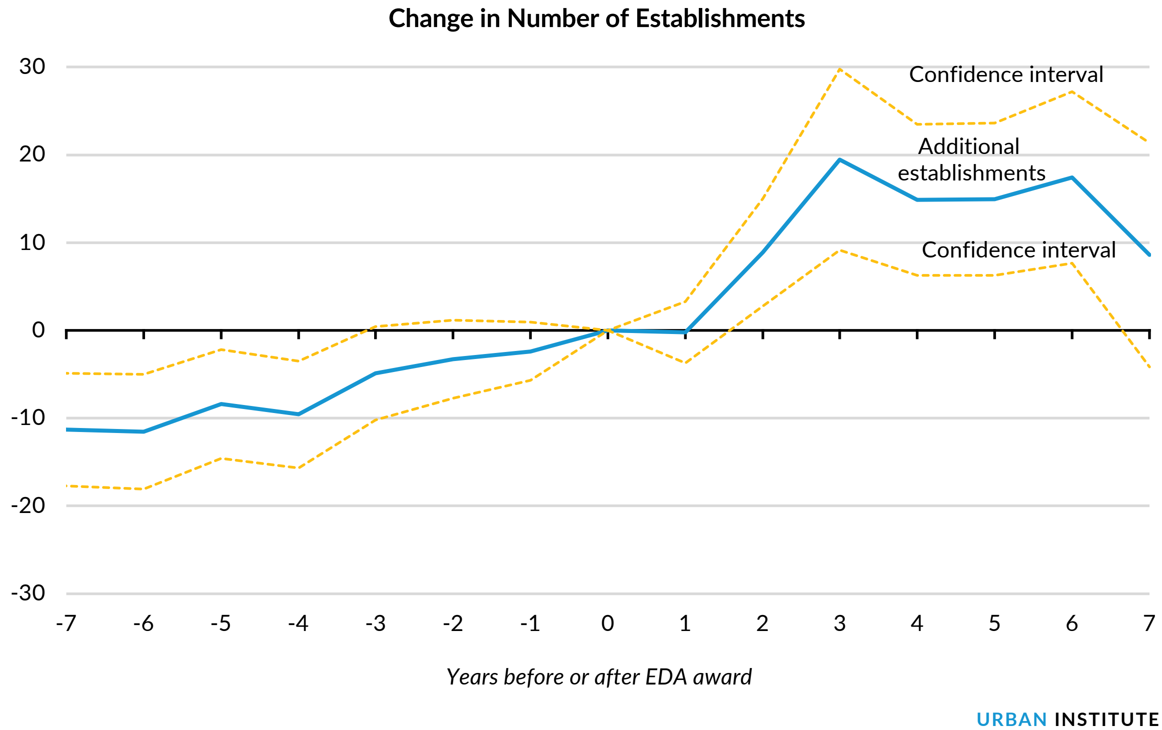
A two-way fixed-effects model produces unbiased estimates of impact if there are parallel trends before treatment (i.e., places must have similar changes in outcomes before receiving an EDA investment) and treatment effects that are constant over time (Chaisemartin and D'Haultfoeuille 2022). To test these assumptions, we estimate an event study analysis that looks at the changes in outcomes each year, before and after an EDA construction grant is awarded, prior to identifying our preferred fixed-effects model. The event study model allows us to determine whether projects are placed in neighborhoods or counties where the number of establishments, neighborhood jobs, jobs held by residents, or incomes were growing or declining relative to the rest of the country before the grant was awarded. Where we find evidence of growth or decline before the EDA award, we add a control variable to account for preexisting, place-specific linear trends so they do not bias our results. In other words, controlling for local trends gives us greater confidence that the effects we estimate are because of an EDA construction project rather than a result of preexisting trends that were present in communities before the project. Having a comparison group (places without EDA construction projects) that is much larger than the treatment group (places with EDA construction projects) minimizes any bias stemming from treatment effects that grow or shrink over time.[8]

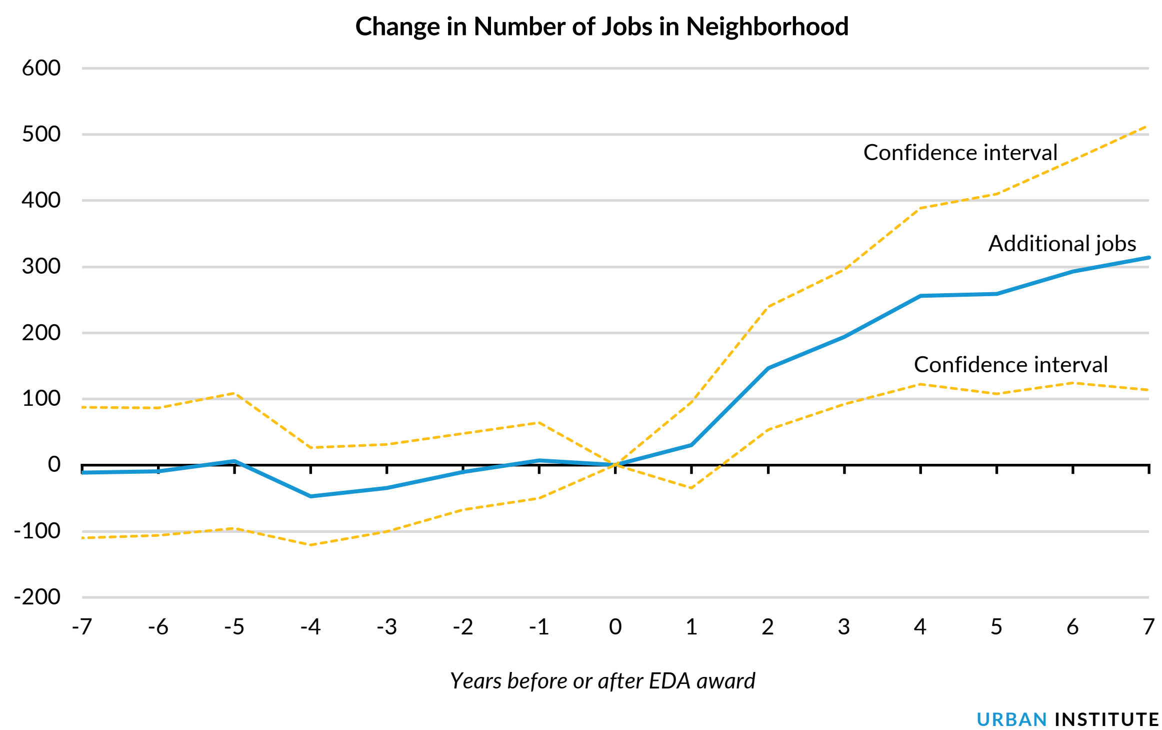
Neighborhood Impacts of EDA Construction Projects

As mentioned, event study analysis helps us understand trends in the run-up to EDA construction grants (figure 2). We find evidence of neighborhood-level trends before an EDA construction grant for some outcomes but not for others.

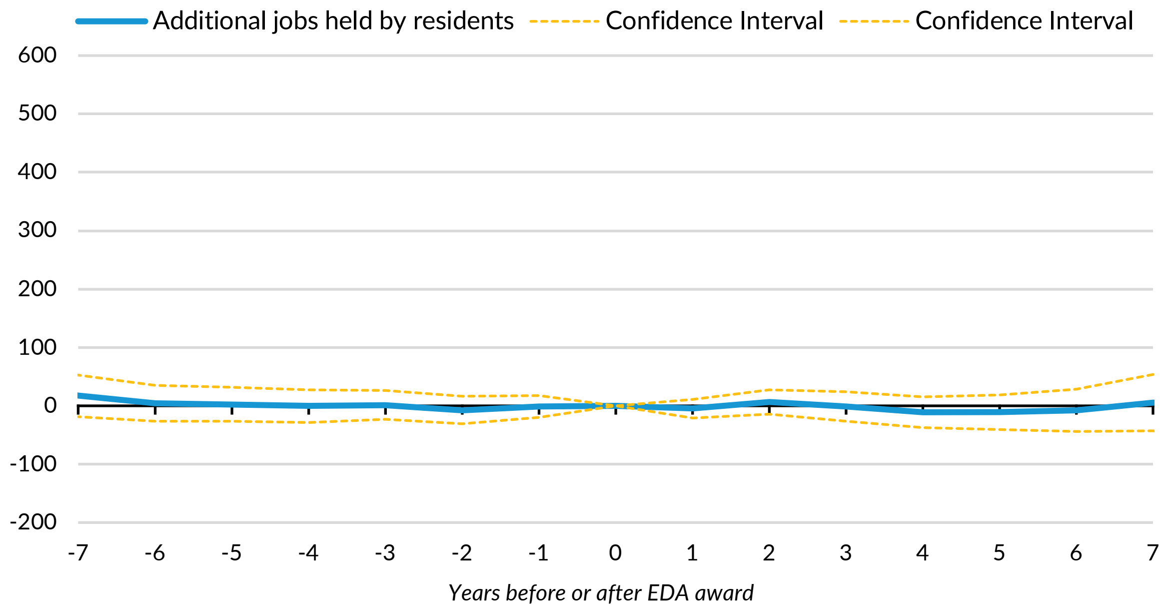
FIGURE 2

Changes in Census Tracts Before and After EDA Construction Grants





Change in Number of Jobs Held by Residents



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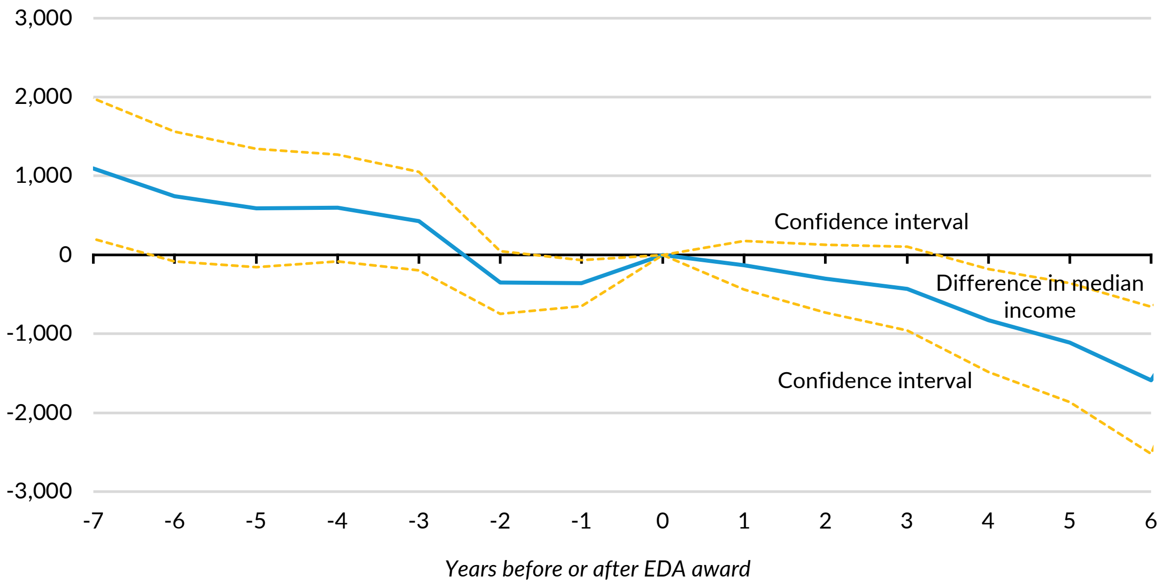
Change in Median Income (Dollars)



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Sources: Urban Institute analysis of EDA program, Data Axle, Longitudinal Employer-Household Dynamics, and American Community Survey data.

Notes: Figures display the results of event study regressions for EDA grants awarded between 2010 and 2021. Blue lines display coefficients estimated in event study models, and gray lines display the 95 percent confidence interval. Regressions include year and tract fixed effects, controls for the number of grants previously awarded for the county since 1997, expected job loss in manufacturing (a Bartik shift-share) and damage to businesses from disasters. We calculate 95 percent confidence intervals using heteroskedastic robust standard errors clustered at the tract level. We adjust median income for inflation to 2021 dollars.

- Tracts with EDA construction projects typically saw moderate growth in the number of establishments before receiving the project grant from EDA. Establishment growth then spiked in the three years following the award before leveling off.
- We see no evidence of neighborhood preexisting trends for the number of jobs in census tracts before EDA construction grants. The number of jobs in neighborhoods does appear to pick up after EDA construction grants.
- Looking at the impacts on residents near project locations, our margin of error is too large to identify trends in employment, but we can rule out large changes.
- We see evidence of a preexisting trend for incomes, but unlike for establishments, incomes are falling rather than growing relative to the rest of the country. This may be a product of EDA prioritizing investments in places experiencing economic distress. (See Theodos et al. 2023 for additional information on where EDA makes investments). Unfortunately, this trend of falling incomes appeared to continue after the EDA grant was awarded.

Based on the event study results, we include controls for pre-award trends when estimating EDA's impact on two outcomes—the number of establishments in a tract and the median income in a tract—but not when looking at their effects on jobs or the number of jobs held by residents. We next estimate impact results using the fixed-effects model described above. This method produces estimates of the change in the number of establishments and jobs and median income in the census tract. These impacts could result either directly from the project or indirectly because of increased economic activity in the census tract.

Starting with establishments, we find that EDA construction projects are associated with a statistically significant increase in the number of establishments—between just above 0 and 5 additional establishments for every $1 million invested in a neighborhood, with 95 percent confidence (table 2). (The average EDA construction project had a total project cost of $3.85 million.) The point estimate of 2.5 establishments per $1 million translates to a cost per establishment of $400,000, including both EDA funding and local investment. The upper bound estimate of 5 establishments per $1 million translates to an average cost of $200,000 per new establishment. We also estimate the effect of one EDA construction grant, rather than the effect of $1 million of investment, and find that a single grant is associated with an increase of between 5 and 20 establishments.

Turning to effects on employment, we estimate that EDA construction projects are associated with between 3 and 67 more jobs in a neighborhood for every $1 million invested. This equates to a cost (including both EDA funding and local investment) of between $14,925 and $333,333 per job, or an average of roughly $29,000 per job. We estimate that EDA construction projects are associated with an increase of between 118 and 378 additional jobs per grant in the census tract (table 2).

EDA construction projects show no detectable relationship with the number of jobs held by residents in a neighborhood. This is the case whether looking at effects per $1 million invested or construction grant counts.

Perhaps surprisingly, we see that EDA construction projects are associated with a reduction in median income at the neighborhood level (table 2). This could be because the products of the construction grants displace residents from the neighborhood or because residents with higher incomes choose to move out so as not to be near the newly constructed project (perhaps because of negative amenity effects). This effect is statistically significant at the 0.05 level when looking at the effect per $1 million of investment but not when estimating the effect per EDA grant.

TABLE 2

Estimated Impact of EDA on the Economies of Census Tracts

	Establishments	Jobs	Jobs held by residents	Median income
Effect per $1 million	2.5*	35*	0	-$127*
(95% confidence interval)	(0 to 5)	(3 to 67)	(-6 to 5)	(-250 to -3)
Effect per EDA construction grant	12.3**	249***	-17	-$650
(95% confidence interval)	(5 to 20)	(118 to 378)	(-49 to 15)	(-1,361 to 62)
Model details				
Average in year of EDA grant decision	319	3,357	1,765	$47,169
Decision dates of grants	2010–2014	2010–2015	2010–2015	2010–2013
Years in analysis	2003–2017	2004–2018	2004–2018	2007–2016
Place trends	Yes	No	No	Yes
Number of awards	735	823	815	618
Number of place-by-year observations	1,008,060	1,009,635	980,025	665,470

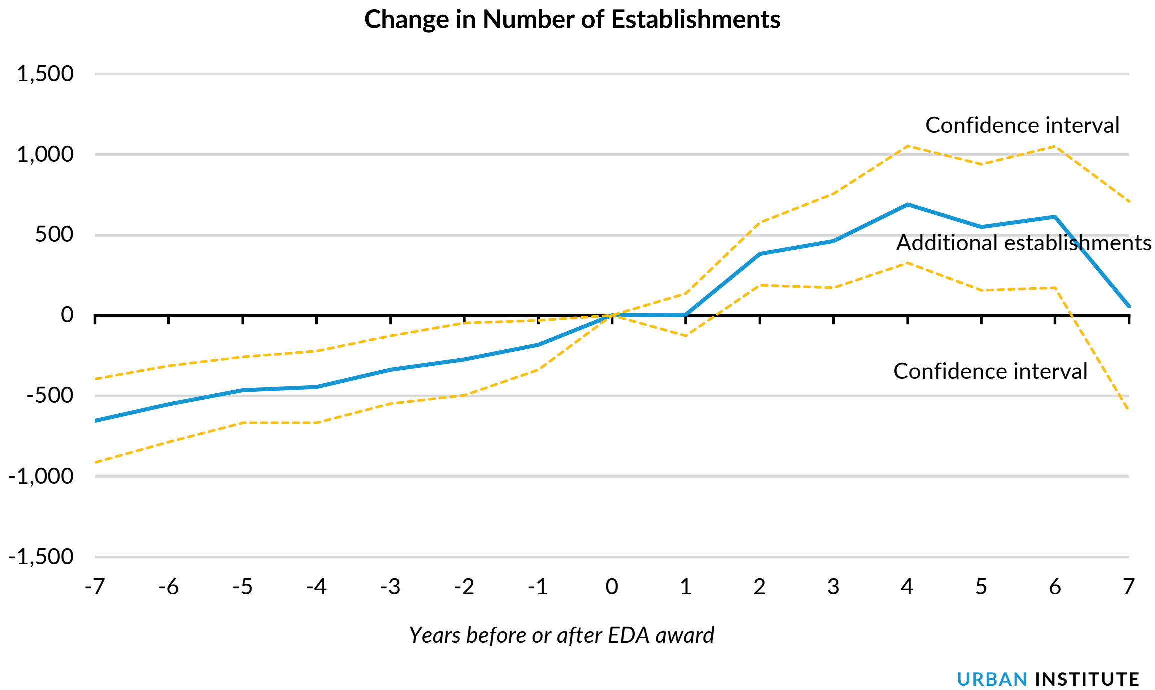
Sources: Urban Institute analysis of EDA program, Data Axle, Longitudinal Employer-Household Dynamics, and American Community Survey data.

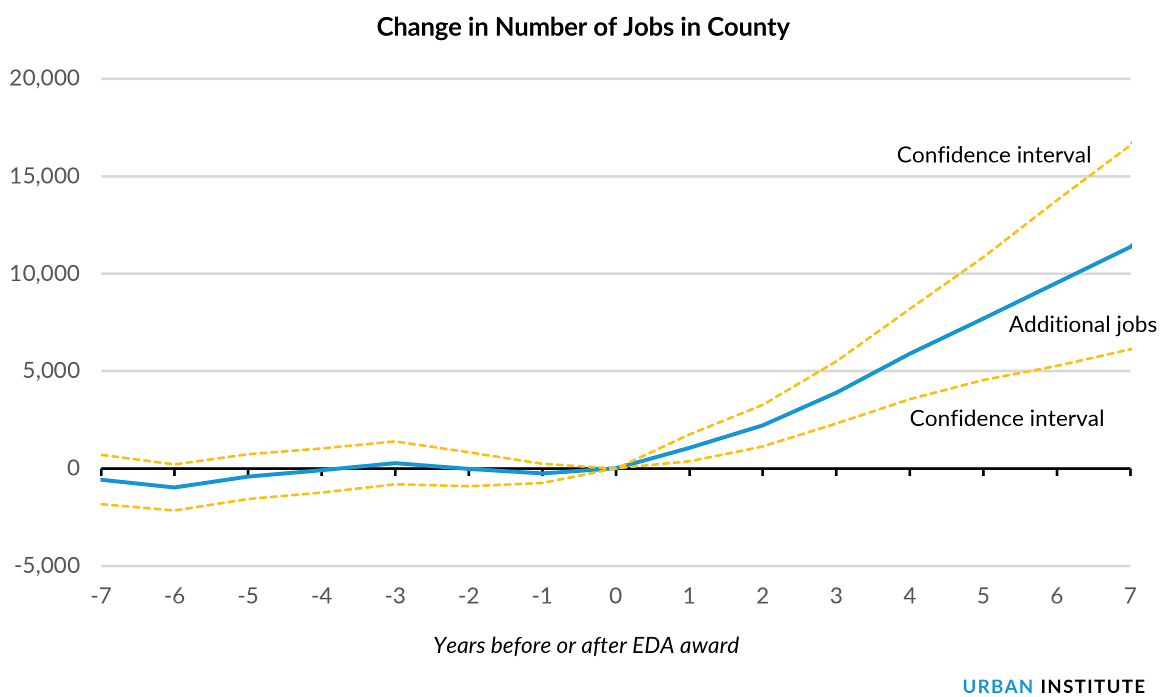
Notes: Estimates of impact are based on grants awarded in the years listed in the row "decision dates of grants." We calculate 95 percent confidence intervals (listed in parentheses) using heteroskedastic robust standard errors clustered at the tract level. Regressions include year and tract fixed effects, controls for the total investment or number of grants previously awarded for the county since 1997, expected job loss in manufacturing (a Bartik shift-share) and damage to businesses from disasters, and a five-year development window (two years before the decision date through two years after). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

County Impacts of EDA Construction Projects

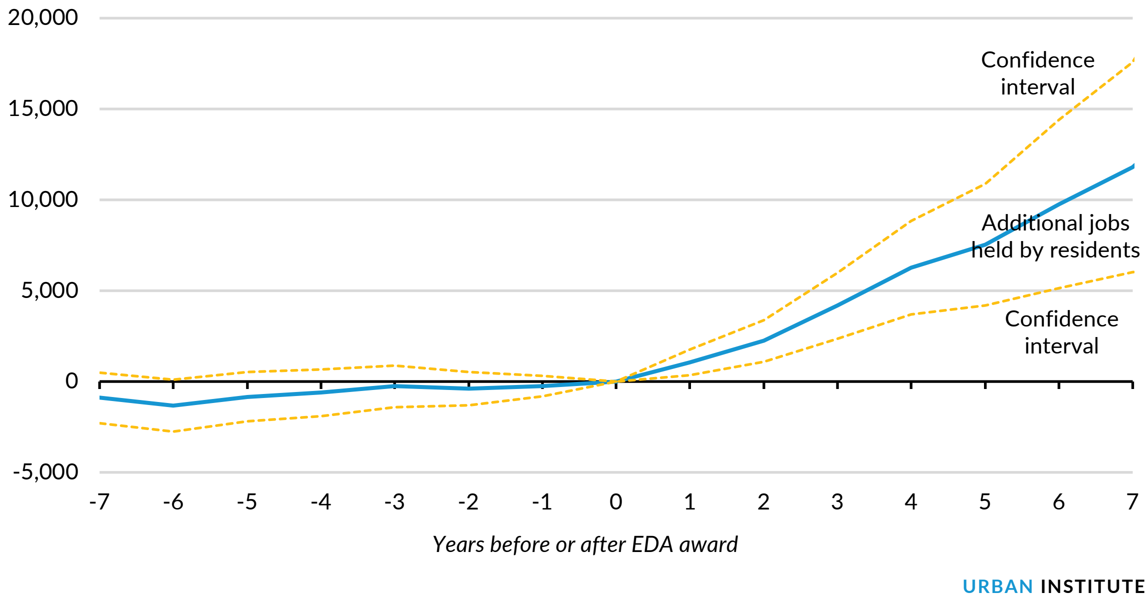
We were interested in not only examining the highly localized effects of EDA construction projects—as we did above by looking at census tracts—but also identifying their effects on larger geographic areas, given that some projects may be large enough in scale or benefit that the effects "spill over" to surrounding communities. Although EDA construction projects may be located at a single point, they are generally intended to benefit a larger area. As such, we also examine the effect of EDA construction projects on county-level outcomes. Again, our methods produce estimates of the net increase or decrease in the total number of establishments and jobs and changes in median income for all residents in the area, whether these changes are directly associated with the project or were indirectly created or relocated because of increased economic activity.

FIGURE 3
Changes in Counties Before and After EDA Projects

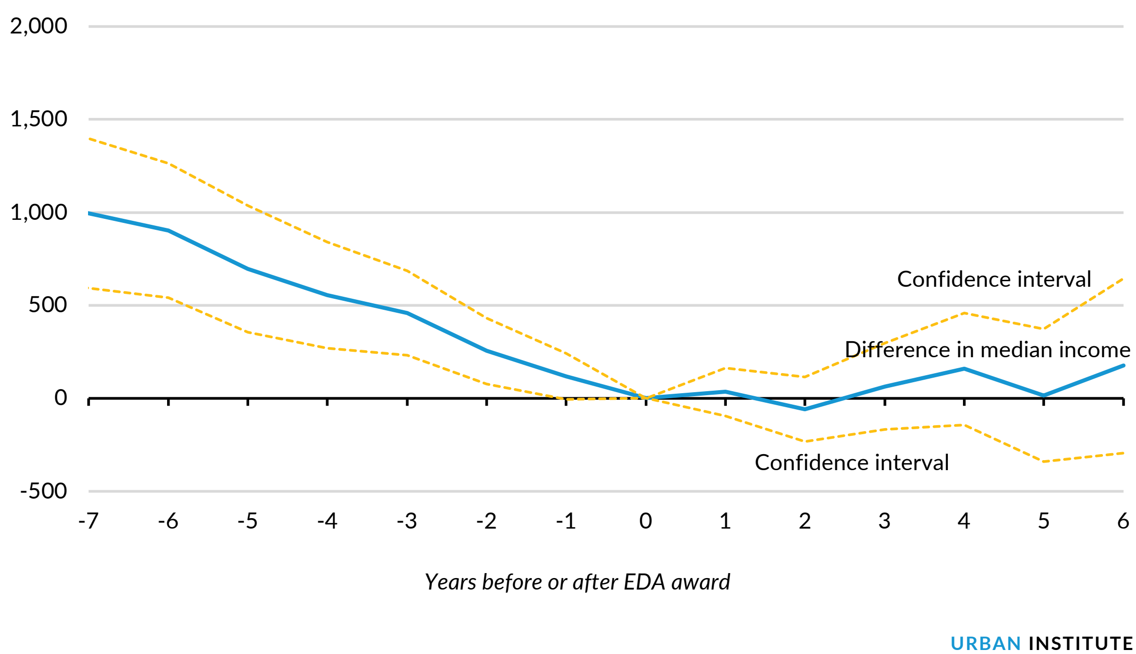




Change in Number of Jobs held by Residents



Change in Median Income (Dollars)



Sources: Urban Institute analysis of EDA program, Data Axle, Longitudinal Employer-Household Dynamics, and American Community Survey data.

Note: Figures display the results of event study regressions for EDA grants awarded between 2010 and 2021. Blue lines display coefficients estimated in event study models, and gray lines display the 95 percent confidence interval. Regressions include year and tract fixed effects, controls for the number of grants previously awarded for the county since 1997, expected job loss in manufacturing (a Bartik shift-share), and damage to businesses from disasters. We calculate 95 percent confidence intervals using heteroskedastic robust standard errors clustered at the tract level. We adjust median income for inflation to 2021 dollars.

As with census tracts, we first plot whether there are patterns in counties before EDA construction grants were awarded (figure 3). We see similar patterns present in pre-grant county trends as in the tract level. Counties with EDA projects typically saw moderate growth in the number of establishments before receiving an EDA award. Establishment growth then spiked in the three years following the award before leveling off. And like the tract-level event studies, jobs in the county were relatively flat before an EDA award but increased after. Similar to our findings at the tract level, we do not see evidence of a preexisting trend in the number of jobs held by residents of the county; however, we do see increasing employment after the grant. (The difference between the tract- and county-level findings may be because many more people live and work in the same county than live and work in the same tract.) As at the tract level, incomes at the county level appear to have been falling before the EDA grant was awarded. The decline stops shortly after the EDA award, and incomes are essentially flat at the county level. Our estimates of EDA's impact on the number of establishments in a tract and the median income in the tract include controls for pre-award trends, but our estimates of EDA's impact on jobs in the county and jobs held by residents of the county do not, as pre-award trends are not visible.

With regression analysis, we are unable to determine whether $1 million invested in EDA construction projects leads to an increase in the number of establishments within the county; our 95 percent confidence interval ranges from 96 fewer jobs to 39 more jobs (table 3). Given that we estimated an increase of between 0 and 5 jobs at the tract level, we may just not have the precision to pick up the effects.

We find that $1 million in EDA construction project investment is associated with an average increase of between 175 and 1,578 jobs in a county (table 3). This amounts to a cost per job of less than $6,000 at the county level. For each EDA grant, we estimate an increase of between 2,548 and 10,262 jobs per county.

Unlike at the census tract level, we find that $1 million in EDA construction project investment is associated with increased jobs for residents—between 178 and 1,612 more jobs held by residents in the county. And we find approximately 3,679 to 10,262 more jobs held by residents in the county for each EDA construction grant.

Finally, and in contrast with the tract-level estimate, we also find a modest increase in median income of between $6 and $85 per $1 million invested. We also estimate that county median income increases by $382 on average (between $165 and $596) per construction grant.

TABLE 3

Estimated Impacts of EDA on the Economies of Counties

	Establishments	Jobs	Jobs held by residents	Median income
Effect per $1 million	-28.5	877*	895*	$45*
(95% confidence interval)	(-96 to 39)	(175 to 1,578)	(178 to 1,612)	(6 to 85)
Effect per EDA award	-72.0	7,027***	6,970***	$382***
(95% confidence interval)	(-328 to 184)	(3,548 to 10,506)	(3,678 to 10,262)	(165 to 596)
Model details				
Average in year of EDA grant decision	13,927	140,202	129,696	49,898
Decision dates of grants	2010–2014	2010–2015	2010–2015	2010–2013
Years in analysis	2003–2017	2004–2018	2004–2018	2007–2016
Place trends	Yes	No	No	Yes
Number of awards	621	702	694	534
Number of place-by-year observations	43,710	43,725	43,185	29,400

Sources: Urban Institute analysis of EDA program, Data Axle, Longitudinal Employer-Household Dynamics, and American Community Survey data.

Notes: Estimates of impact are based on grants awarded in the years listed in the row "decision dates of grants." We calculate 95 percent confidence intervals (listed in parentheses) using heteroskedastic robust standard errors clustered at the tract level. Regressions include year and tract fixed effects, controls for controls for the number of grants previously awarded for the county since 1997, expected job loss in manufacturing (a Bartik shift-share), damage to businesses from disasters, and a five-year development window (two years before the decision date through two years after). We adjust all amounts for inflation to 2021 dollars. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Differing Effects Based on Size of County Workforce and Metropolitan Status

We examine whether EDA construction projects had different effects in larger or smaller counties and inside or outside of metropolitan statistical areas. At the census tract level, we do not see substantial differences between projects located in larger versus smaller counties (defined as being in the top or bottom 50 percent of counties in terms of number of jobs in 2004). We also do not see substantial differences between the effects of projects in metropolitan areas and those outside of metropolitan areas, which include both micropolitan areas and counties not in a metropolitan or micropolitan area. (We do not show these results.)

At the county level, however, some differences emerge. Consistent with the result for all counties, we do not see impacts on the number of establishments for larger or smaller counties. Sizable impacts on jobs in the county and jobs held by residents do appear, but only in counties with larger pre-award workforces. In larger-workforce counties, we estimate that EDA construction projects produce between 13 and 1,495 jobs in the county with 95 percent confidence and lead to between 20 and 1,531 more jobs held by residents for every $1 million spent (including both EDA funding and leveraged investment) (table 4). Despite the evidence of job growth in larger-workforce counties, we find that EDA investment did not affect median income in those places. The median income growth found when looking at all counties appears to be driven by effects in counties with fewer jobs, but our estimate lacks the statistical precision to say this with 95 percent confidence.

TABLE 4

Estimated Impacts of EDA on the Economies of Counties, by Size of County Workforce

	Establishments	Jobs	Jobs held by residents	Median income
Effect per $1 million in top 50% of counties	-28	754*	775*	$3
(95% confidence interval)	(-101 to 44)	(13 to 1,495)	(20 to 1,531)	(-20 to 27)
Effect per $1 million in bottom 50% of counties	0	10	25	$150
(95% confidence interval)	(-4 to 3)	(-25 to 44)	(-6 to 57)	(-20 to 319)
Model details (top 50% of counties)				
Average in year of EDA grant decision	17,179	170,952	157,952	$51,649
Decision dates of grants	2010–2014	2010–2015	2010–2015	2010–2013
Years in analysis	2003–2017	2004–2018	2004–2018	2007–2016
Place trends	Yes	No	No	Yes
Number of awards	504	578	570	429
Number of place-by-year observations	21,990	21,990	21,495	14,710
Model details (bottom 50% of counties)				
Average in year of EDA grant decision	719	4,242	6,392	$43,205
Decision dates of grants	2010–2014	2010–2015	2010–2015	2010–2013
Years in analysis	2003–2017	2004–2018	2004–2018	2007–2016
Place trends	Yes	No	No	Yes
Number of awards	117	124	124	105
Number of place-by-year observations	21,270	21,735	21,690	14,690

Sources: Urban Institute analysis of EDA program, Data Axle, Longitudinal Employer-Household Dynamics, and American Community Survey data.

Notes: Counties are divided by whether they fell into the top or bottom 50 percent in terms of number of jobs in 2004. Estimates of impact are based on grants awarded in the years listed in the row "decision dates of grants." Ninety-five percent confidence intervals (listed in parentheses) are heteroskedastic robust and clustered at the tract level. Regressions include year and tract fixed effects, controls for the number of grants previously awarded for the county since 1997, expected job loss in manufacturing (a Bartik shift-share), damage to businesses from disasters, and a five-year development window (two years before the decision date through two years after). We adjust all amounts for inflation to 2021 dollars. Projects in territories (American Samoa, Guam, Northern Mariana Islands, and Virgin Islands) are excluded due to insufficient jobs data. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

We do not find evidence that EDA construction projects affect the number of establishments in metropolitan or nonmetropolitan counties (table 5). It appears that greater growth of jobs and jobs held by residents at the county level may be occurring in metropolitan areas, but we cannot say with certainty given the lack of precision in our estimates for this subgroup. (The metropolitan job estimates, which are significant, are comparable to the full group effect.) It does not appear that EDA construction projects in nonmetropolitan areas affect jobs at the county level. We do not see evidence of income changes for metropolitan areas. In contrast, we find that EDA construction projects in nonmetropolitan counties raised median incomes by $18 to $178 per $1 million invested.

TABLE 5

Estimated Impacts of EDA on the Economies of Counties, by Metropolitan or Nonmetropolitan Area

	Establishments	Jobs	Jobs held by residents	Median income
Effect per $1 million in MSAs	-28	785	824	$10
(95% confidence interval)	(-106 to 49)	(-41 to 1,610)	(-33 to 1,682)	(-16 to 36)
Effect per $1 million outside MSAs	-2	15	42	$98*
(95% confidence interval)	(-10 to 5)	(-43 to 73)	(-14 to 98)	(18 to 178)
Model details (in MSAs)				
Average in year of EDA grant decision	24,747	248,079	229,092	$55,025
Decision dates of grants	2010–2014	2010–2015	2010–2015	2010–2013
Years in analysis	2003–2017	2004–2018	2004–2018	2007–2016
Place trends	Yes	No	No	Yes
Number of awards	341	390	382	290
Number of place-by-year observations	16,530	16,530	16,065	11,050
Model details (outside MSAs)				
Average in year of EDA grant decision	1,794	13,751	15,488	$44,382
Decision dates of grants	2010–2014	2010–2015	2010–2015	2010–2013
Years in analysis	2003–2017	2004–2018	2004–2018	2007–2016
Place trends	Yes	No	No	Yes
Number of awards	280	312	312	244
Number of place-by-year observations	27,180	27,195	27,120	18,350

Sources: Urban Institute analysis of EDA program, Data Axle, Longitudinal Employer-Household Dynamics, and American Community Survey data.

Notes: MSA = metropolitan statistical area. Impact estimates are based on grants awarded in the years listed in the row "decision dates of grants." Ninety-five percent confidence intervals (listed in parentheses) are heteroskedastic robust and clustered at the tract level. Regressions include year and tract fixed effects, controls for the number of grants previously awarded for the county since 1997 expected job loss in manufacturing (a Bartik shift-share), damage to businesses from disasters, and a five-year development window (two years before the decision date through two years after). We adjust all amounts for inflation to 2021 dollars. Projects in territories (American Samoa, Guam, Northern Mariana Islands, and Virgin Islands) are excluded due to insufficient data. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Differences between Facilities, Utilities, and Transportation Projects

We also separately examine outcomes of EDA projects by project type. Our previous research classified EDA construction projects into three types: facilities, utilities, and transportation (see Theodos et al. 2021a for more detail on these definitions). At the census tract level, we do not find substantive differences in impacts across project types (results not included), but there are notable differences in outcomes by project type at the county level (table 6). EDA–funded utilities projects are associated with between 5 and 110 additional establishments per $1 million spent on the project. However, we do not see evidence that utilities projects lead to job or income growth.

Facilities and transportation construction projects look quite similar in their effects and are distinct from utilities projects. For both facilities and transportation projects, we do not see evidence that EDA investments are associated with a greater number of establishments. However, we do find that EDA facilities and transportation projects are associated with strong job growth in terms of both the number of jobs in the county and number of jobs held by county residents. We estimate that every $1 million spent on facilities projects increases the number of employed residents by between 52 and 2,320, with 95 percent confidence, and every $1 million spent on transportation projects increases the number of employed residents by between 4 and 3,273. No project type has a statistically significant relationship with median income when examined alone, but this is due in part to less precision. While our 95 percent confidence intervals include zero, our point estimates for the effects of both facilities and transportation projects on median income exceed the full county estimate (which is statistically significant).

TABLE 6

Estimated Impacts of EDA on the Economies of Counties, by Project Type

	Establishments	Jobs	Jobs held by residents	Median income
Effect per $1 million in facilities projects	-55	1,187*	1,186*	$48
(95% confidence interval)	(-179 to 68)	(129 to 2,244)	(52 to 2,320)	(-15 to 111)
Effect per $1 million in utilities projects	58*	-35	73	$29
(95% confidence interval)	(5 to 110)	(-345 to 274)	(-216 to 363)	(-17 to 75)
Effect per $1 million in transportation projects	-101	1,806	1,639*	$63
(95% confidence interval)	(-218 to 17)	(-161 to 3,773)	(4 to 3,273)	(-13 to 140)
Model details				
Average in year of EDA grant decision	13,927	140,202	129,696	$49,898
Decision dates of grants	2010–2014	2010–2015	2010–2015	2010–2013
Years in analysis	2003–2017	2004–2018	2004–2018	2007–2016
Place trends	Yes	No	No	Yes
Number of awards	621	702	694	534
Number of place-by-year observations	43,710	43,725	43,185	29,400

Sources: Urban Institute analysis of EDA program, Data Axle, Longitudinal Employer-Household Dynamics, and American Community Survey data.

Notes: Estimates of impact are based on grants awarded in the years listed in the row "decision dates of grants." We calculate 95 percent confidence intervals (listed in parentheses) using heteroskedastic robust standard errors clustered at the tract level. Regressions include year and tract fixed effects, controls for the number of grants previously awarded for the county since 1997 for expected job loss in manufacturing (a Bartik shift-share), damage to businesses from disasters, and a five-year development window (two years before the decision date through two years after). We adjust all amounts for inflation to 2021 dollars. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Conclusion

This brief examines the local economic impacts of EDA construction projects. There are several methodological limitations to our study, but the approach taken here nevertheless represents a considerable step forward in evaluating the program's effects. Our estimates include effects on businesses, jobs, and income, either directly related to the EDA projects or measured indirectly through economic activity spurred or encouraged by the EDA projects.

Our research can be summarized by three key findings. First, EDA investments in construction projects led to both establishment and job growth for neighborhoods. We estimate that census tracts with EDA construction projects have up to 5 more establishments and 3 to 67 more jobs for every $1 million invested (including both EDA grants and leveraged investment) than they would have had in the absence of the project.

Second, the average county saw an increase in jobs and higher median incomes following EDA investments, though these effects vary somewhat by county size and metropolitan status. Job growth is evident in larger and metropolitan counties. Income growth, however, is evident in nonmetropolitan counties. We hypothesize from these findings that high levels of countywide job growth after EDA projects result from the project being close to existing jobs. On the other hand, income growth in nonmetropolitan counties may be an indicator that projects in areas with smaller populations can have effects on the people who live near them.

Third, at the county level, economic effects differed somewhat by project type. Facilities and transportation projects are associated with significant employment growth, while utilities projects are not. We estimate that every $1 million spent on facilities projects increases the number of employed residents in the county by between 52 and 2,320, and the same investment in transportation projects increases the number of employed residents in the county by between 4 and 3,273. Utilities projects, in contrast, are associated with growth in the number of establishments—between 5 and 110 for every $1 million invested—but are not associated with countywide job growth. Neither facilities nor transportation projects are associated with a statistically significant increase in the number of establishments in the county.

Our findings should be interpreted with two important caveats. First, our research does not differentiate between new businesses and jobs and people who relocate to take advantage of benefits from an EDA construction project. In other words, our estimates can be interpreted as effects on local economies but cannot be aggregated to consider effects across a region or the United States. Second, these findings are not prescriptive. Average effects, even for subgroups, do not factor in the particular needs of each community.

Notes

1 Analyses estimate the impacts of EDA construction grants awarded from 2010 through 2013, 2014, or 2015, depending on the availability of outcome data. The specific time frames corresponding to each estimate appear

in tables 1 to 5. We stop the analysis in a year early enough to support analysis of postproject outcomes, also allowing for a "during project" phase for construction.

[2] Unless otherwise specified, ranges refer to 95 percent confidence intervals. We report 95 percent confidence intervals, rather than point estimates, throughout this brief to highlight the level of uncertainty in our estimates. We refer to the tract-level impact estimate as "up to 5 establishments" because the 95 percent confidence interval ranges from just above 0 to about 5.

[3] More than two-thirds of EDA funding goes toward construction projects, though this represents just 20 percent of EDA grants (Theodos et al. 2021a).

[4] We establish these categories by building on EDA's internal project classifications. In the small percentage of cases where project classifications were still in doubt, we used a combination of automatic text analysis and individual sorting to determine the correct category for those grants. In the most challenging cases, EDA staff assisted with individual sorting to ensure grants were correctly classified.

[5] Metropolitan/nonmetropolitan and urban/rural definitions are similar but not identical. For more on this distinction and data about the location of EDA projects according to both definitions, see Theodos et al. 2023.

[6] We calculated damages to businesses from disasters using verified loss data from the Small Business Association's disaster loan program.

[7] Results can be made available upon request of the authors.

[8] We perform the Bacon Decomposition (Goodman-Bacon, Goldring, and Nichols 2019) on our primary county-level results, reestimating the treatment effect using a simplified model and calculating the fraction of the estimate determined by comparisons to places without any EDA projects (which are unbiased). We find that at least 85 percent of the treatment effects estimated in these models are attributed to comparison between places with and without EDA construction projects, and less than 5 percent of the treatment effects are attributed to comparisons between places that had grants for EDA construction projects awarded at different times. We can assume even less room for bias in the tract-level analysis because it has vastly more comparison units. As a further precaution, we also estimate average treatment effects for the period three to six years following an EDA construction grant using the methodology described in Chaisemartin and D'Haultfoeuille (2020), which provides an unbiased estimate of treatment effects and allows for nonbinary treatment, controls, and linear time trends. The impacts estimates using this methodology are broadly similar to those estimated using our preferred model.

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