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Strategies to Build Economic Strength in Lagging Areas: Investment, Tax Incentives, Wage Subsidies, Worker Training, and Education

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Paper No. 219
December 2019

ISSN: 1252-3066

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Strategies to Build Economic Strength in Lagging Areas: Investment, Tax Incentives, Wage Subsidies, Worker Training, and Education.

JEL No.: R12, R23, R28, R58

Keywords: Local Economic Development, Tax Subsidies, Job Training, Preschool

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Acknowledgement: I acknowledge support on a project from the Citizens Budget Commission of New York City (CBC). The current paper draws on aspects of the work performed for CBC. Maria Doulis, Riley Edwards, and David Friedfel of the CBC provided guidance on and supplied some data for the CBC project. I am grateful for their substantive inputs; they do not necessarily endorse this paper nor its conclusions.

I. Introduction

For more than five decades, economists and policy makers have observed and researched growing disparities in job opportunities and earnings among working families and have proposed strategies to improve job and earnings prospects for those at the bottom and middle of the earnings distribution. The disparities also have a spatial dimension in that some states and regions of the United States grow, while others lag, with corresponding job opportunities in growing and lagging regions. However, even within states that enjoy relative prosperity, the gains from job creation occur disproportionately, as high-wage jobs grow only in some areas of thriving states. There are growing earnings and job disparities among states; among different areas within states; and between residents who work in high-wage occupations and in less-skilled jobs within the thriving areas of states.

The paper first discusses growth disparities among regions of the United States and the reasons they have widened in recent decades. It then turns to growth disparities within regions and MSAs. Federal and state governments have addressed economic development in areas through place subsidies that utilize a variety of tax forgiveness, as well as wage subsidies. Sections three through seven of the paper review the types of subsidy policies directed at economic development of particular places and assesses their effectiveness. Section eight addresses the empirical evidence on State Enterprise Zones (EZ), Federal Employment Zones, and related programs.

The last two sections focus on job training and other policies that assist lower-skilled workers find employment. Wage subsidies help low-skilled workers with job placement. These sections also discuss preparing youth for future employment using ongoing research on income and social mobility through improving conditions in neighborhoods for children as well as high-quality preschool education programs

for children. People-based policies that build human capital in children need greater priority, and to the extent possible, they need to be differentially directed toward children in distressed areas.

II. Interregional Convergence and then Disparities

Rather than regional divergence, the economics and regional science literatures in the 1970s and 1980s focused on the evident income convergence among states and regions, as predicted under conditions of factor mobility by interregional trade models, and that are inspired by international trade theories. Barro, as well as Barro and Sala-i-Martin, confirm income convergence at an annual rate of 1.8 percent among states during the 1880 to 1980 period.[1] Carlino and Mills (1996) validate a convergence trend among states into the 1990s, while noting a brief divergence from trend in the 1980s.[2] During these periods of regional convergence within the U.S., less skilled workers migrated from low-wage regions to high-wage regions. The population movement increased average wages in lower-than-national-average wage regions and reduced average wages in higher-than-national-average wage regions. The interregional migrants earned higher real incomes in their new regional locations. The movement of labor and population across states and regions led to regional convergence in incomes and wages, as well as workers' skills.

Even during the period of interregional convergence, some regions of the United States – Appalachia, for example – lagged. In addition, economists and policymakers cautioned as early as the late 1950s and early 1960s that regions with their employment concentrated in a few industries were subject to downturns or longer-term stagnation, because they were vulnerable to economic forces that could change

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[1] Barro, Robert J. and Xavier Sala-i-Martin. 1991. "Convergence across States and Regions." *Brookings Papers on Economic Activity*. Vol. 1: 107-182. Barro, R., & Xavier Sala-i-Martin. 1992. Convergence. *Journal of Political Economy*, *100*(2), 223-251. Retrieved from http://www.jstor.org/stable/2138606.

[2] Carlino, Gerald and Leonard Mills. 1996. "Convergence and the U.S. States: A Time-Series Analysis." *Journal of Regional Science*. 36: 597-616.

demand for their products and/or workers. [3] Such forces include adoption of substitute intermediate goods that change demand for products - the use of more cement instead of steel in lower rise buildings. For example, changes in production technologies (automation), or competition from other regions or countries. A diverse regional economy less tied to a few industries or plants acted as insurance against a national or regional decline in any particular industry.

Starting in the 1980s and accelerating in the 1990s and beyond, automation affected job growth, wages, and regional convergence. Acemoglu and Restrepo, in a series of papers, show the effects of automation on workers' by their occupations, education levels, sex, and region of residence in the U.S.[4] They estimate that automation has had its largest effects in automotive, plastics and chemicals, and metal product industries, affecting about one-third of manufacturing employment and about 3 percent of total private employment, according to the U.S. Bureau of Labor Statistics.[5] Technological change has affected jobs held by males more than females, especially males with education levels that range from less than high school to some college, but no degree. On the other hand, job creation has occurred in higher wage jobs in knowledge industries that require college degrees, as well as in low-wage service jobs.

Globalization, in the forms of offshoring and trade in goods and services, also affected jobs with its largest effects in the first decade of the 21st century. Autor, Dorn, and Hansen examine the effects that

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[3] Chinitz, Benjamin. 1961."Contrasts in Agglomerations: New York and Pittsburgh" *American. Economic Review, Papers and Proceedings* 2 (May): 279 - 289.

[4] Acemoglu, Daron and Pascual Restrepo. "Robots and Jobs: Evidence from the U.S. Labor Market." National Bureau of Economic Research, Working Paper No. 23285, March, 2017. There are negative employment and wages effects on workers in automobile manufacturing, electronics, metal products, chemicals, pharmaceuticals, plastic, food, glass and ceramics and negative but smaller effects in construction, business services, wholesale, services and retail. A few sectors show modest gains in employment, including finance, public sector, manufacturing areas that include recycling, basic metals, textiles, paper, furniture, and transportation equipment other than automobiles. See also, Autor, David. 2010. "Polarization of Job Market Opportunities in the U.S. Labor Market: Implications for Employment and Earnings." Center for American Progress, The Hamilton Project, an economics policy initiative of the Brookings Institution. https://economics.mit.edu/files/5554.

[5] See https://www.bls.gov/web/empsit/ceseeb1a.htm

competition from imports have had on the U.S. labor market, especially after 2000.[6] Autor, Dorn, and Hansen succinctly summarize the effects of both automation and globalization on workers and jobs.[7] "Concurrent with the rapid growth of US imports from China, the effect of trade competition on the manufacturing sector has become stronger over time, while the effects of technological change on employment composition in the manufacturing sector has subsided.

Conversely, the impact of technology on jobs in the non-manufacturing sector is growing, as technological change seems to be shifting from automation of production in manufacturing, to computerization of (routine) information processing in knowledge-intensive industries." (p 644) Given the above trends, the composition of job growth can be expected to continue toward high-skill, high-wage jobs in non-manufacturing sectors, as well as toward jobs in personal services that traditionally have had lower wages.

The growth in high-skill jobs has significant spatial/ regional implications. Skilled jobs in particular cluster due to agglomeration economies, and have concentrated in areas along the west and east coasts of the United States.[8] On the other hand, globalization and technological change have reduced job growth in the

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[6] Autor, David H. and David Dorn. 2013. "The Growth of Low-Skill Service Jobs and the Polarization of the U.S. Labor Market." *American Economic Review*. 103 (5): 1553-97. Autor, David H., David Dorn, and Gordon H. Hansen. 2013. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States." *American Economic Review*. 103(6): 2121-68.

[7] Autor, David H., David Dorn, and Gordon H. Hansen. 2015. "Untangling Trade and Technology: Evidence from Local Labor Markets," *Economic Journal*. 125(584): 621-646.

[8] Marshall emphasized the importance of agglomeration economies, and Jane Jacobs called attention to knowledge spillovers in urban areas. See Marshall, Alfred 1920. *Principles of Economics*. London MacMillan and Jacobs, Jane. 1969. *The Economy of Cities*. New York Vintage. There is a large empirical literature that shows the productivity implications when manufacturing firms cluster. See Rosenthal, Stuart S. and William C. Strange. 2001. "The Determinants of Agglomeration." *Journal of Urban Economics*. 50: 191-229. Rosenthal Stuart S. and William C. Strange. 2003. "Geography, Industrial Organization, and Agglomeration." *The Review of Economics and Statistics*. 50(2): 377-393. Glaeser and Mare place agglomeration in the context of cities. See Glaeser, Edward and David C. Maré. 2001. "Cities and Skills." *Journal of Labor Economics*, 19 (2): 316-342. *JSTOR*, JSTOR, www.jstor.org/stable/10.1086/319563. Buzard et al. show the clustering of research and development firms in chemical, electronics and other knowledge industries along the east and west coasts. See Buzard, Kristy, Gerald A Carlino, Robert M. Hunt, Jake K. Carr and Tony E. Smith. 2017. "The Agglomeration of American R&D Labs." *Journal of Urban Economics*. 101: 14-26.

regions between the two coasts, and has had especially large effects on jobs in the region that is east of the Mississippi River and west of the Eastern corridor that runs from Boston to Washington, D.C.[9]

Around the same time as technological change and globalization began to influence jobs and change regional advantages, migration of low-wage workers declined, while high-wage workers in knowledge industries continued to move to major cities.[10] Lin finds evidence that workers with more education adapt more readily to "new work" or knowledge work in occupations that require adoption and use of newer technologies.[11]

III. Regional Agglomeration, Productivity, and Migration Slowdown

Alfred Marshall theorized that industry agglomeration increased productivity, and Jane Jacobs added that agglomeration of people in larger cities increased worker productivity through general knowledge transfers among workers. A number of studies have verified that real wages are higher and continue to increase in large cities and especially in knowledge-producing occupations.[12]

While agglomeration economies increase productivity and wages among knowledge workers, zoning and other building regulations in many cities have limited the supply elasticity of housing. Consequently, the real prices of housing in knowledge cities and regions have increased, and knowledge workers' wages have outpaced the price of housing. As a result, knowledge workers' welfare increases when they move to larger

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[9] Austin, Benjamin, Edward Glaeser, and Lawrence H. Summers. 2018. "Saving the Heartland: Place-Based Policies in 21st Century America." *Brookings Papers on Economics Activity*. Spring pp. 151-255. See page 157. https://www.brookings.edu/bpea-articles/saving-the-heartland-place-based-policies-in-21st-century-america/

[10] Ganong, Peter and Daniel Shoag. 2017. "Why Has Regional Income Convergence in the U.S. Declined?" *Journal of Urban Economics*. 102: 76-90.

[11] Lin Jeffrey. 2011. "Technological Adaptation, Cities and New Work." *Review of Economics and Statistics*. 93(2):544-574.

[12] Autor, David. Richard T. Ely Lecture, "Work of the Past, Work of the Future." Richard T. Ely Lecture American Economic Association: Papers and Proceeding, May 2019, 109(5), 1-32. https://www.aeaweb.org/webcasts/2019/aea-ely-lecture-work-of-the-past-work-of-the-future or http://economics.mit.edu/faculty/dautor/video

cities. On the other hand, the real wages of workers outside of the knowledge industries do not keep pace with housing costs in knowledge cities.

Autor has recently demonstrated the above trends, showing that real wages of knowledge workers increase when they move to large cities that have knowledge-based industries and that generally lie along the east and west coasts of the United States. Further, he charts real wages of less-skilled workers against city sizes in each of the years 1970, 1980, 2000, and 2015. Real wages of less-skilled workers increase with city size in 1970, 1980, and 2000, although the real wage premium earned in larger cities versus smaller cities shrinks over the period. By 2015, the real wage premium for less-skilled workers in larger versus smaller cities has almost disappeared due to continued increases in housing costs in large cities. Low-skilled workers no longer improve their real wages and welfare by migrating to larger and growing cities once housing costs are taken into account.[13]

Ganong and Shoag show in fact that migration of low-skilled workers has dramatically slowed down, because their real wages do not increase when they move to knowledge-based cities. As a result, income convergence among regions has ceased. Further, they show that places with more restrictive land use regulations have had the largest increase in housing prices and the slowest in-migration rates among workers not in knowledge-based industries.[14]

Their specific empirical evidence reveals that intercountry migration (number of movers divided by county population) that stood at 7 percent in 1950, declined gradually to 6 percent into the early 2000s.

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[13] Autor, David. Ibid.

[14] Ganong, Peter and Daniel Shoag. 2017. "Why Has Regional Income Convergence in the U.S. Declined?" *Journal of Urban Economics*. 102: 76-90. They note that places with less restrictive zoning continue to exhibit income convergence with other places.

After 2008, inter-county migration rates declined more quickly and reached 3.7 percent in 2015. Intra-county migration rates experienced a similar slowdown, declining steadily from 13 percent in 1950 to about 10 percent in mid 1990s, and decreasing to 7 percent by 2015. With little reason to migrate, less skilled workers have remained in places that suffer job losses from technology and globalization forces, while high skilled workers have moved to, and have concentrated in, knowledge-based and growing areas.[15]

IV. Intraregional Disparities within Thriving Regions

Coastal regions have benefited from the growth acceleration in knowledge industries - finance; other business services; electronics; chemicals, including pharmaceuticals; measuring, analyzing, and control devices; among a few others.[16] While these regions and their mega-cities thrive overall, they have substantial numbers of residents who do not participate in the high wage jobs. Autor's findings on wage polarization patterns is particularly evident in thriving cities and regions, where substantial percentages of people work, and yet, live at or near poverty income levels. In New York City, for example, the five-county poverty rate stands at 14.2 percent of households, but poverty rates in three of the five counties that comprise New York City stand at 28.6 percent in Bronx, 20.6 percent in Kings (Brooklyn), and 17.2

[15] Austin, Benjamin, Edward Glaeser, and Lawrence H. Summers. 2018. "Saving the Heartland: Place-Based Policies in 21st Century America." *Brookings Papers on Economics Activity*. Spring pp. 151-255. See page 157. https://www.brookings.edu/bpea-articles/saving-the-heartland-place-based-policies-in-21st-century-america/ A report from McKinsey Global Institute presents updated migration figures with no change in trend. McKinsey Global Institute. 2019. "The Future of Work in America: People and Places, Today and Tomorrow."

[16] Buzard, Kristy, Gerald A Carlino, Robert M. Hunt, Jake K. Carr and Tony E. Smith. 2017. "The Agglomeration of American R&D Labs." *Journal of Urban Economics*. 101: 14-26.

percent in Manhattan.[17] Moreover, children living in households that are below or barely above poverty levels have lower probabilities for income and social mobility.[18]

Governments have enacted policies to address poverty, educational opportunities, and jobs for low-income households in cities for 50 or more years. Some programs direct benefits to individuals and households. A number of other programs attempt to support economic activity in specific places through subsidies to housing, businesses, or other entries located within particular areas. These place subsidy programs attempt to improve economic conditions in specially designated locales, and thereby attempt to improve economic outcomes for individuals who reside in these places.

V. Pros and cons of Place Subsidies

Economists have generally argued against place-based subsidies that direct funds to businesses and/or infrastructure, and instead favor allocating aid directly to people. A principal objection to place-based subsidies is that place subsidies direct funds to less productive or lagging regions, thereby reinforcing inefficient location patterns and reducing national income. Put another way, the same money spent in growing areas could produce greater productivity, more employment, and higher national income.[19] Nonetheless, various policies have directed place subsidies to both large regional areas and small areas within regions. In the latter case, the subsidies direct funds to areas within central cities that have few employers, low employment participation, and /or high unemployment among their residents.

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[17] Data on poverty from U.S. Bureau of the Census, Small Area Income and Poverty Program Estimates. https://www.census.gov/programs-surveys/saipe.html

[18] Chetty, Raj, David Grusky, Maximilian Hell, Nathaniel Hendren, Robert Manduca, and Jimmy Narang. "The Fading American Dream: Trends in Income Mobility since 1940." *Science* 28 Apr 2017: Vol. 356, Issue 6336, pp. 398-406 DOI: 10.1126/science.aal4617

[19] A classic reference is Noll, Roger G. and Andrew Zimbalist. 1997. *Sports, Jobs and Taxes.* Washington, D.C. The Brookings Institution.

On the other hand, place subsidies could induce greater area economic efficiency if they compensate for negative externalities and or increase productivity by inducing agglomeration economies. Kahn (2012) has advanced an equity rationale to justify place subsidies.[20] He notes that differences in development levels among regions can become untenable based on cultural or national norms, and policy makers use place subsidies with the intention of boosting development in places, even if there are higher returns for alternative uses of the funds.

For large regions, governments have supported infrastructure investments - canals, railroads, highways, for example - that undergird regional development efforts. Other programs attempt to foster development in smaller distressed areas within cities using subsidies to industries, typically through tax forgiveness programs. However, the rationales behind particular place-subsidy programs are often elusive. Specifically, the intended beneficiaries by income group or other socio-economic characteristics are vague, and because intended beneficiaries and outcomes lack clear definition, the programs' effectiveness are difficult to measure.

Justifying place subsidies at an abstract level begs questions about the effectiveness of place subsidies in providing local employment, the amount of investment it might take to have measurable effects on economic outcomes, the benefits and costs of the investments in the local areas, as well as whether the outcomes increase national output. Nonetheless, Kahn has identified equity grounds as a key reason that policy makers fund place subsidies, and for that reason, place subsidies policies in one form or another are likely to continue.

[20] Kahn, Mathew E. 2012. "Cities, Economic Development, and the Role of Place-Based Policies: Prospects for Appalachia." In *Appalachian Legacy: Economic Opportunity After the War on Poverty*. James P. Ziliak (Editor). Washington D.C. Brookings Institution Press: 149-168.

VI. Place Subsidy Programs Across Large Regions

Place subsidies range from regionally based programs that target large areas that cross many states to those that target small areas in cities in attempts to boost employment among workers who live in specific places. The Tennessee Valley Authority (TVA) and the President's (Johnson) Appalachia Regional Commission (PARC) represent two large regionally based federal government efforts to foster development. States and/or private investments in cities and regions are additional examples of regional development strategies.

States and local governments have generally attempted to stimulate development in smaller depressed areas of cities. They use state and local tax incentives directed at businesses and sometimes combine them with grants in aid directed at specific city areas that are designated as enterprise zones or similar names. The federal government recently introduced Federal Empowerment Zones (FEZ) that also target small, depressed areas within cities. Business in these zones receive wage subsidies and tax incentives or tax forgiveness.

Figure 1 provides a list of place subsidies along with their key features. Studies that evaluate regional and city area place subsidies are discuss below. Where research findings allow, programs' effectiveness are reported.

VII. Figure 1

Taxonomy of Place Subsidies

Large Federal, State or Private Investments				
Programs	Focus Areas	Sources of Funds	Tax Incentives	Successful
TVA	Large regional area	Federal	No	Yes
PARC (Appalachia)	Large number of county areas in 13 different states	Federal with input from states and localities	No	Somewhat
Ben Franklin Technology-Based Economic Partnership	Four large regions covering State of PA	State, local, private	Includes local tax incentives but they do not drive the program	Yes Employment gains occur largely in higher-wage industries and occupations
Grand Rapids, MI (GR)	Grand Rapids region	Private funds. State location of MSU medical school in GR	Not a main feature of the program	Yes
Albany, NY	Nanotechnology	State of NY and Private investment	Yes. Not a main feature of the program.	Yes

Taxonomy of Place Subsidies (Continued)

Place Subsidies for Low-Income Areas of Cities				
State Enterprise Zones				
Programs	Focus Areas	Sources of Funds	Tax Incentives	Successful
State Enterprise Zones (EZ)	40 states introduced EZs by 2008. State and local governments offer subsidies to businesses that locate in distressed areas of cities.	Subsidies vary by state and include tax credits against state income taxes based on wages of employees; tax credits for capital investment; and property tax forgiveness. Some states also reduce regulations and improve city infrastructure	Yes. Most of the programs offer only tax subsidies	Evidence is mixed. States have moved away from EZ strategies.

Taxonomy of Place Subsidies (Continued)

Federal Zones				
Programs	Focus Areas	Sources of Funds	Tax Incentives	Successful
Federal Empowerment Zones (FEZ)	Small Areas (10 sq. miles) of eight different cities	Federal employer-wage tax credit. $100 million block grant for business assistance, training, youth services, housing assistance.	Yes. Employers receive a 20% wage subsidy on the first $15,000 of earnings for employees who live and work in the FEZ. Higher percentage for 179 capital expensing allowance. Partial exclusion of capital gains on investments in FEZs.	Mixed evidence of success.
Federal Enterprise Communities (FEC)	66 areas of cities that applied for but not awarded FEZs	No block grant and less generous wage subsidies than FEZs.	Yes. Employers receive wage subsidies.	Evidence of success.
Opportunity Zones (OZ)	Provision of Tax Cut Job Act 2017 (TCJA). Many zones designated. Not restricted to the lowest income areas.	Forgive investors' capital gains taxes when gains invested in OZs for ten years or more.	Yes. Potentially forgives all capital gains.	Too recently implemented to have empirical evidence on effectiveness.

Source: Various publications and author summaries.

VIII. Large Federal Regional Development Programs: TVA and PARC

Klein and Moretti, Widner, and Ziliak in three separate studies have evaluated the economic effects of two large place subsidies, The Tennessee Valley Authority (TVA) and the President's Appalachian Regional Commission (PARC). TVA started in 1933 and continued until 1960. TVA subsidies largely supported electricity-generating dams, flood control systems, and navigable canals. A small portion of funds went to malaria control, educational programs, and health clinics.[21] The scale of investment at its peak amounted annually to $750 per household in the region or about 10 percent of annual income for a typical household. [22] Klein and Moretti found the direct effects of the investment increased regional manufacturing productivity by 8.7 percent and increased household incomes in the TVA region. When they also accounted for the agglomeration effects that TVA induced, TVA generated net benefits to the region as well as raised the productivity of manufacturing in the nation overall by 0.4 percent.

Even with their positive results, Klein and Moretti caution that TVA investment may not uniquely affect national growth. Similar investment elsewhere may have contributed more than 0.4 percent to the nation's growth in manufacturing, for example. Moreover, they note that the positive results may be specific to a time when manufacturing enjoyed robust growth in the U.S. They suggest that their results may not scale to other regions nor apply in a new economy that relies on high-tech clusters and an educated workforce for job creation.[23]

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[21] Moretti, Enrico. 2012. *The New Geography of Jobs.* New York: Houghton, Mifflin, Harcourt. pg. 200.

[22] Kline, Patrick and Enrico Moretti. 2014. "Local Economic Development, Agglomeration Economies and the Big Push: 100 Years of Evidence from the Tennessee Valley Authority." *Quarterly Journal of Economics.* 129 (1): 275-331.

[23] Crisuolo et al. report employment effects of United Kingdom industrial policy between 1997 and 2004. The policy targeted high unemployment regions and subsidized capital in manufacturing firms located in the targeted regions. Whether a subsidy to capital will create jobs depends on the output effects that the subsidy creates as well as the elasticity of substitution between capital and labor because the subsidy reduces the cost of capital relative to labor. They find that a 10 percent decrease in the price of capital increases jobs by 10 percent in small manufacturing enterprises (fewer than 50 employees), and no employment effects for larger manufacturing enterprises. They also found no increase in total factor productivity. See *Criscuolo, Chiara,*

The President's Appalachian Regional Commission (PARC) started in 1965 as a long-term economic improvement program for a large swath of countries located in 13 different states - a region that spans a larger geographic area than the TVA. Widner evaluated the program after 25 years of operation and Ziliak updated Widner's work.[24] Widner notes that PARC has three main functions. It serves as a forum for ideas about economic development. Each state, however, formulates a specific development strategy and proposes its own projects in line with its development strategy. PARC serves as a coordinating body to foster collaboration on projects among states in the region.

Both Widner and Ziliak acknowledge that counties lying in Northern, Southern, and Central portions of Appalachia have different potentials for development. Poverty rates also differ significantly among the three areas; residents of Central counties were worse off overall than Northern and Southern Appalachian counties' residents.

PARC's major development theme centered on leveraging existing regional growth poles or taking advantage of the economic strengths in the cities and regions adjacent to Appalachian counties. Another focus was creating job opportunities in industries unrelated to coal to diversify the economy, help job growth, and improve prospects for long-term development. At the same time, some areas had few public services - local education, health, police, fire, hospitals, or streets. Limited amounts of federal, state, and local dollars were invested in public services and human capital/development. The bulk of the PARC money went to extending interstate highways to facilitate traffic flow through the region. The aim here is

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Ralf Martin, Henry G. Overman, and John Van Reenen. 2019. "Some Causal Effects of an Industrial Policy." American Economic Review, 109 (1): 48-85.

[24] Widner, Ralph R. 1990. "Appalachian Development after 25 Years: An Assessment." *Economic Development Quarterly.* 4(4) (November): 291-312. Ziliak, James P. 2012 "The Appalachian Regional Development Act and Economic Change." *Appalachian Legacy: Economic Opportunity after the War on Poverty."* Ed. James P. Ziliak. Washington, D.C.: Brookings Institution Press.

to ease transportation in and out of the Appalachian region that would in turn entice branch plant start-ups from industries located in major cities (growth poles) bordering Appalachian counties. The new highways would also provide opportunities for residents to commute to jobs in other areas.

Widner finds that during PARC's first 25 years, southern Appalachian counties that border medium-sized metropolitan areas exhibited higher growth than counties in other areas of Appalachia. He notes that during the same period, however, the southern region of the country in general experienced greater growth than other areas of the country, and the higher overall growth of the U.S. southern region contributed in part to southern Appalachia's success relative to other areas of Appalachia. Nonetheless, Widener concludes that the PARC development strategies played a significant role.

In addition, PARC provided additional vocational training for residents of Appalachia. While the regional economy has not absorbed many of these trained workers and many leave the area, Widner suggests that the region made progress on many fronts, including health, education, and housing for residents. He notes in conclusion that the quality of the work force will determine future local economic development. Populations in Appalachia have educational gaps when compared to populations outside Appalachia. The educational gaps, he suggests, are similar to those between many low-income neighborhoods within cities and their more affluent intraregional neighbors.

Ziliak applies econometric analysis to estimate the effects that PARC's investments have had on poverty rates and per capita income growth in Appalachia between 1960 and 2000. Poverty rates fell in southern and central Appalachian counties. However, relative to poverty rates in other rural counties in America, they increased in northern counties. He also finds that infrastructure and transportation investments reduced poverty much more than the human development subsidies.

Per capita income grew faster during the 1960 to 2000 period in Appalachia than in other rural counties in America. Per capita income growth was uneven among Appalachian counties, however. Those Appalachian counties adjacent to urban areas that lie just outside of Appalachia had slower per capita income growth rates than counties that lie outside of Appalachia and are adjacent to the same urban areas.[25] Ziliak concludes that more investment is needed in the region, as well as a better understanding of the contributions various components of PARC make to poverty reduction and per capita income growth.

VIII-1. Large Scale Place Investments by States and Private Investors

States, private investors, and local governments have undertaken other targeted investments in efforts to turn around regional economies. Three major initiatives include areas that cover the State of Pennsylvania; Grand Rapids, Michigan; and Albany, New York. All attempt to recharge lagging regional economies. Each utilizes a different financial approach.

The State of Pennsylvania, concerned about its fading industrial base, launched the Ben Franklin Technology-Based Economic Partnership (BFTP) in 1983. It divided the state into four regions - Pittsburgh and the western portion of the State, the Philadelphia area, University Park in the central swath of the State, and Lehigh Valley - former home of Bethlehem Steel - that lies in the eastern third of the state and north of the Philadelphia area.

[25] Ziliak notes that one previous study compared income growth in Appalachia to income growth in other rural counties in America and found income grew faster in Appalachia, while a second study compared income growth in Appalachia to income growth in counties bordering Appalachia and found income grew more slowly in Appalachia. Ziliak's findings are consistent with the findings of the other two studies that used the two different comparison groups of counties. See Isserman, Andrew and Terance Rephann. 1995. "The Effects of the Appalachian Regional Commission." *Journal of the American Planning Association. 61(3):345-365, and* Glaeser, Edward, and Joshua Gottlieb. 2008. "The Economics of Place Making Policies." *Brookings Papers on Economic Activity*. 1 (Spring):155-253.

The State of Pennsylvania invested funds that it received from a 1998 tobacco settlement into regional life sciences initiatives, which amounts to $64 million per year for the ensuing 25 years.[26] In 2002, Pennsylvania also funded a Greenhouse Life Sciences initiative, and invested $100 million in three locations, Pittsburgh, Central PA, and Southeastern PA, to support public/private partnerships (government, businesses, universities, and other partners). Because each of the four regions had different initial strengths in technology-based industries and life sciences, each would leverage the investment funds differently. As a result, the organizations formed, the types of jobs created, and the populations that benefit from the BFTP program differ among Pennsylvania's four regions.

For example, Lehigh Valley established the Lehigh Valley Development Committee (LVDC), comprised of leaders from business, government, financial, and university to guide development in the region. The LVDC organization has a paid staff and is funded from a newly instituted local hotel tax. The LVDC plan aimed to establish an advanced manufacturing cluster in life sciences, build high-value business services, and capitalize on its extant food and beverage processing industry. It also promoted life sciences research, entrepreneurship, and the establishment of new companies.

To overcome the lack of venture capital in the region - a recurring issue in lagging cities and regions – the LVDC organized 16 area regional banks to provide startup loans to new companies. LVDC also recruited new U.S. and international establishments. The region also benefits from its population size, a technology oriented university in its center, and its proximity to the pharmaceutical and technology corridor that runs

[26] Act 77 State of Pennsylvania
https://www.legis.state.pa.us/cfdocs/legis/li/uconsCheck.cfm?yr=2001&sessInd=0&act=77

from Boston to Washington D.C.[27] The region has built an advanced manufacturing base around medical activities and other industries, which provides employment for its residents.

Pittsburgh and Philadelphia have had significant life sciences in their universities and hospitals located in their respective regions. Pittsburgh, for example, continued to develop its medical center at The University of Pittsburgh, which is currently the largest employer in Pittsburgh followed by the University of Pittsburgh itself. Pittsburgh also remains a major center for financial activities. Capitalizing on the strengths of Carnegie-Mellon University, the Pittsburgh economy has also had job growth in robotics, advanced manufacturing, and autonomous systems. High-wage and highly educated persons in these fields thrive in Pittsburgh. The region has also retained major firms and attracted others – Alcoa, Bayer, Google, and Uber. In addition, the region has developed a diversified energy production system. It exports energy produced from coal, natural gas, nuclear, solar, and wind power - industries where workers require advanced skills but do not require advanced degrees.

A drawback is that the region does not yet have the level of entrepreneurship to convert the innovations from research and development at its universities to downstream manufacturing and service jobs. The high-tech transformation also has not created jobs for disadvantaged workers. Pittsburgh city's poverty rate stands at 23 percent.[28]

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[27] Lehigh Valley Economic Council Annual Report 2017 "Come Here, Start here, Grow Here." https://lehighvalley.org/wp-content/uploads/2018/03/LVEDC-2017-Annual-Report.pdf

[28] Andes, Scott, Mitch Horowitz, Ryan Helwig, and Bruce Katz. "Capturing the next economy: Pittsburgh's rise as a global innovation city." Brookings Institution. September 2017 https://www.brookings.edu/wp-content/uploads/2017/09/pittsburgh_full.pdf Similar results apply to the Philadelphia area.

Grand Rapids, MI[29]

Grand Rapids City has 199,000 residents and its MSA has with 1.0 million residents. The region has three major employment areas – Grand Rapids City being one of the three. The region's manufacturing sector, especially fabricated metals, was tied to the automobile industry, and its leading industry began to struggle as early as the 1980s, and declined rapidly between 2000 and 2005.

Grand Rapids City business leaders anticipated the decline in Michigan's automobile industries and foresaw a need for new development. In 1991, a Grand Vision Committee formed which later became a Grand Action Committee for Grand Rapids City. Several business leaders in Grand Rapids City owned closely held, locally based companies, including Amway, Steelcase Office Furniture, and Meijer Food. They provided the main impetus for implementing development plans. (The other two employment centers in the Grand Rapids region created their own development councils.)

The leaders invested private funds, derived from their personal donations and from their foundations, in parks, convention centers, and other community infrastructure in Grand Rapids downtown and areas near downtown. For example, Van Andel of Amway bought a downtown hotel and created the Amway Grand Plaza in an area around the renovated hotel. The DeVos Family used its funds to establish a downtown campus of Grand Valley State University.

To diversify the employment base, the group established the Medical Mile in downtown Grand Rapids. Van Andel invested $1 billion to establish the Andel Research Institute for biomedical research that opened in 2000. The Grand Action Committee raised $20 million to match a Michigan State alumnus' gift

[29] A Brookings report examines turnarounds in a number of locations and reports extensively on Grand Rapids. Atkins, Patricia, Pamela Blumenthal, Adrienne Edisis, Alex Friedhoff, Leah Curran, Lisa Lowry, Travis St. Clair, Howard Wial, and Harold Wolman. "Responding to Manufacturing Job Loss: What Can Economic Development Policy Do?" Metropolitan Policy Program at Brookings Institution. June 2011.

to lure relocation of a significant portion of Michigan State University's College of Human Medicine to Grand Rapids. Spurred by the presence of the medical school and Andel Research Institute, Spectrum Health located to Grand Rapids City, and several manufacturing companies changed their operations to fabricate medical devices and other orthopedic products.

Except for the location of a major portion of Michigan State's College of Human Medicine, the Grand Rapids transformation occurred largely without state intervention or funding. Nonetheless, despite the large investments and high multipliers associated with high-wage employees in advanced manufacturing and medical facilities, the region's revitalization has not benefited all residents. The poverty rate among residents of Grand Rapids City hovers at 25 percent and stands at 11.6 percent in the MSA.

Albany, NY[30]

Albany, being a capital city, has a large state government work force. The area also houses a large public university (SUNY Albany), a leading engineering school (Rensselaer Polytechnic Institute), and IBM operated a large facility located between NYC and Albany. Nonetheless, the Albany area began to experience economic decline in the 1970s and 1980s. In the mid-1980s, Governor Mario Cuomo led efforts to attract nanotechnology to the region. Regional leaders also established the Center for Economic Growth in 1987, funded with donations from large private companies, banks, trade unions, and universities. In 1988, the Governor funded a graduate research initiative on advanced semiconductors at SUNY Albany. Before he left office in 1994, he enhanced SUNY Albany's strength in the sciences by funding new faculty hires and investments in research labs.

[30] https://www.ncbi.nlm.nih.gov/books/NBK158826/#ch7.s1

With the large NYS commitment to semiconductors, SEMATECH - a non-profit organization of semi-conductor manufacturers that perform research – relocated from Austin, Texas to Albany, NY, followed by Tokyo Electronics. In 2004, NYS, SEMATECH, and IBM contributed a total of about $500 million to establish a College of Nanotechnology at SUNY Albany.[31] Tokyo Electronics contributed $200 million to the SUNY Albany Center for Excellence.

The public-private investments attracted additional nanotechnology-manufacturing companies to the area to take advantage of knowledge spillovers/agglomeration economies associated with the innovations in nanotechnology occurring in the area. NYS continues to subsidize nanotechnology relocations in the area, including $1.2 billion in incentives to Global Foundries to build a semiconductor factory in Malta - a suburb located 20 miles north of Albany. In addition, Hudson Valley Community College offers a 25-credit nanotechnology certificate to train students for entry-level positions in nanotechnology manufacturing.

While nanotechnology is highly competitive globally, NYS has certain advantages, such as its stable geology necessary for chip manufacturing and a cluster of research and major manufacturing facilities. Semiconductor technology also has applications in biological areas, such as synthetic biology, human body implants, and biometric monitoring. Expansion to more areas could further diversify the production lines and make the region less vulnerable to downturns in a single specialized industry.

[31] NYS invested $210 million; SEMATECH $40 million plus $120 million in kind; IBM $100 million.

VIII-2. Lessons from Large-Scale Place Subsidies as Development Policies

The foregoing big investment strategies have had success in growing regional economies, and in the latter three cases, transforming the regions from traditional manufacturing based economies to ones more concentrated in high-tech and advanced manufacturing. Part of their successes may also be attributable to their region-wide emphases, (as opposed to focusing on a small area of a city) to their extant skilled work forces, and to population sizes of a million of more residents.

The turnarounds have other common elements worth noting:

1. The strategies require large investments, typically sustained over decades. For example, to increase a region's GDP by 20 percent may require an investment of 200 percent of the region's GDP, assuming a 10 percent rate of return on investment. The financial investment and support has occurred for 20 or more years. Given the amount of investment needed, this strategy may not easily scale to more than one area of a state.

2. Larger regions have exhibited the most growth potential because these areas generally have human capital, universities, agglomeration economies, and cultural amenities, all of which regional strategies can leverage for higher returns on investment.

3. Albany, Grand Rapids, and Pennsylvania have invested in growth industries that involve engineering, advanced manufacturing, life sciences, universities, or medical facilities, and often two or three from the above list. They have targeted relatively high-wage, export-based activities that have high multipliers for local service jobs. Either through community colleges or other curricula, the regions have invested in educating and sustaining skilled workforces.

4. Regions have implemented training customized to the local employers' demand for workers who prepare themselves to work in better-paying technical positions in healthcare, information systems and other advanced manufacturing areas.[32] Training curricula require input from local employers who will hire trained individuals.[33]

5. Successful places have formed organizations of leaders from business, government, universities, financial institutions, and other local organizations who invest financially in and commit personal service to the area.[34] Regional financial institutions with appropriate government partnership can provide needed venture capital in areas that traditional venture capitalists avoid.

6. Poverty persists in these regions, and growth in high-skilled jobs does not necessarily lead to employment of low-income residents and reduce poverty. Parallel programs of direct wage subsidies, and Earned Income Tax Credits are needed to employ lower-skilled workers. Investment in high-quality local education will prepare the youth in the region for future jobs.

IX. Place Studies Targeted at Particular Companies or Locations.

Federal, state, and local governments have enacted a number of initiatives to attract employers to low-income areas of cities. In special cases, state and localities have engaged in megadeals - generous tax forgiveness programs and provisions for new infrastructure - to attract major employers. Businesses

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[32] Bartik, Timothy J. 2018. "What Works to Help Manufacturing-Intensive Local Economies?" Upjohn Institute Technical Report No. 18-035. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. Page 99. https://doi.org/10.17848/tr18-035

[33] Studies show that employer-based job training programs can have had success, but employers have limited incentive to train workers when the skill transfer easily to other jobs outside the company or region. See Heckman, James J. 1999. "Doing it Right: Job Training and Education," The Public Interest, 135, Spring: 91-107. Employer incentives increase when workers accept lower wages during the training period. Job training offered in community colleges when customized to regional demand for employment using input from local employers has proven more effectives. See evaluation of Project Quest program in San Antonio, Texas.. https://www.questsa.org/skills-training/ And Schwartz, Nelson D. 2019. "Job Training is a Shot at Prosperity for Texans." NY Times. August 20. B1 and B4.

[34] Bartik, Timothy J. 2018. Op.cit.

typically drive the megadeals and choose their locations. Megadeals do not necessarily target specific locations in lagging areas within cities or lagging regional economies.

IX-1. Megadeals

Megadeals are by their nature sui generis in that they occur episodically; the subsidized plant/industry ranges from large manufacturing to major retailing; and the new plant generally chooses among generous offers from a number of states and localities. Government enticements generally include tax forgiveness, public expenditures on new infrastructure that supports the business, and/or workforce training.[35] Recent examples include large automobile manufacturing plants - BMW, Mercedes, Nissan –, and more recently, Hon Hai Precision Industry (FOXCONN), as well as a non-manufacturing location (Amazon).

Economists and policy makers generally regard these subsidies as necessities, because local and state leaders want to win locations of large firms that promise large numbers of new jobs in a locality and state. However, analysts generally reason that the wages and job benefits the firms bring do not warrant the mega subsidies they receive from states and localities. In addition, the deals induce firms to choose locations based on fiscal incentives rather than the inherent productivity at various locations. As such, a firm's ultimate choice of a location may misalign with maximization of national productivity and output.

On the other hand, firms may take advantage of the subsidies and locate in a place they would have chosen based on productivity considerations alone. In that case, the location optimizes national productivity. However, the tax revenues forgone in the megadeal introduce opportunity costs associated with tax

[35] Mattera, Philip, Kasia Tarczynska with Greg LeRoy. "Megadeals: The Largest Economic Development Subsidy Packages Ever Awarded by State and Local Governments in the United States." June 2013 data updated to 2018 https://www.goodjobsfirst.org/megadeals. Firms that receive mega-deals sometimes make payment in lieu of taxes that may support public investments that benefit the firm or support local public expenditures.

reductions that extant businesses and people could have enjoyed had the tax concessions not occurred. With tax reductions, people could have had more funds to spend on private goods and/or chosen more local public goods.

Greenstone, Hornbeck, and Moretti (2010) identify another channel through which a new large plant location might warrant large state or local subsidies or tax forgiveness (megadeals). In their empirical analysis, they find that extant plants in an area experience productivity gains when a new very large plant locates in their region. Larger gains accrue to extant plants that share labor pools with and use similar technologies to the newly located plant.[36] They do not measure the size of the productivity gains and therefore do not compare the productivity gains to the cost of the subsidies. The main point of their paper is that such external economies exist.

Not all megadeals produce sizeable or even positive external benefits - megadeals for large malls, for example. The opportunistic and episodic nature of mega deals make them unreliable as economic development strategies. Nonetheless, these "deals" may payoff locally when the new company produces export-based outputs, when deals draw investment and jobs to a region that otherwise would not have occurred, or yield agglomeration/productivity benefits to extant firms in the region.

Overall, megadeals appear woven into state and local responses to location overtures of large firms/projects. State and localities should evaluate carefully the direct, indirect, and spillover productivity benefits of the large firm in determining the extent of tax subsidies. Ultimately, the deals may not drive

[36] Greenstone, Michael, Richard Hornbeck, and Enrico Moretti. 2010. "Identifying Agglomeration Spillovers: Evidence from Winners and Losers of Large Plant Openings." *Journal of Political Economy*. 118 (3): 536 -598.

location choice, and instead provide economic rents. Or, if they do drive location choice, they, from a national perspective, may induce inefficient location choices.

IX-2. Place Subsidies in Declining Areas of Cities.

Despite economists' reservations about the efficacy of place subsidies, governments have long used place subsidies in many forms. For example, public housing programs began in the 1930s in Atlanta, and in the 1950s and ensuing decades, public housing, urban renewal, model cities, and other programs aimed to redevelop central cities. Government place subsidies have evolved to tax breaks and other types of subsides available when employers locate in particular areas of cities or regions. The rationale behind place subsidies is to generate economic activity in selected areas to improve employment prospects of disadvantaged workers who reside in the areas.

Spatial mismatch has shaped some thinking about place subsidies. In the 1960s, John Kain found evidence of spatial mismatch or that employment opportunities declined for central city workers, especially for black, male (the language of that time) workers, as jobs decentralized from central cities to adjacent suburbs. He concluded that segregation patterns in housing isolated African Americans from jobs that were leaving the city and moving to suburban locations. Both access to information about the locations of job openings as well as the added cost of commuting from the city to suburban job locations reduced employment for African Americans residing in cities.[37]

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[37] Kain, John F. 1968. "Housing Segregation, Negro Employment, and Metropolitan Decentralization. *The Quarterly Journal of Economics. 82*(2): 175-197. Retrieved from http://www.jstor.org/stable/1885893. See also Kain, John F. 1992. "The Spatial Mismatch Hypothesis: Three Decades Later." *Housing Policy Debate.* 3(2): 371-462. The research spawned a number of papers on housing values in central cities, with some research finding housing values lower in areas with concentrated number of African-American residents that might compensate for longer commutes to suburban jobs. Follain, Jr. James R, and Stephen Malpezzi. 1981. "Another Look at Racial Differences in Housing Prices." *Urban Studies.* 18: 195-203.

Kain and Persky argued against what they termed "ghetto gilding"; that is, place subsidies that provide jobs and other improvements in cities, because they ultimately reinforce existing economically inefficient residential patterns within cities.[38] Instead, they advocated for a first-best approach that would open up housing opportunities for African Americans at suburban locations. More specifically, they recommended addressing discrimination against African-Americans in housing at suburban locations, including discriminatory practices in building, zoning, and lending. With access to housing outside central cities areas, African Americans could live closer to jobs and have better access to employment.

Ellwood, Ihlandfeldt and others in different papers began to question spatial mismatch and Kain's initial findings.[39] Their work did not lead them to support place subsidies, however. More recently, Hellerstein, Neumark and McInerny have also challenged aspects of spatial mismatch.[40] While acknowledging that spatial mismatch plays a role in joblessness among African American workers in cities, their study finds that the location of employers who hire African American workers is more important than spatial mismatch per se.

More precisely, employers located in central city areas that are nearer African-American residential areas tend to hire white workers for all types of jobs. In contrast, central city employers who hire African-American workers tend to locate farther away from African American residential areas. As a result, African Americans work farther away from their residences than other races. Because of the above hiring patterns,

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[38] Kain, John F. and Joseph J. Persky. 1969. "Alternatives to the Gilded Ghetto." *The Public Interest*. 14: 74-91.

[39] Ellwood, David. 1986. "The Spatial Mismatch Hypothesis: Are There Teenage Jobs Missing in the Ghetto?" In *The Black Youth Employment Crisis.* Edited by Richard B. Freeman and Harry J. Holzer. Chicago: University of Chicago Press. Pp 147-187. Ihlandfeldt, Keith. 1994. "The Spatial Mismatch between Jobs and Residential Locations Within Urban Areas," *Cityscape: A Journal of Policy Development and Research*. 1(1): 219-243.

[40] Hellerstein, Judith K. David Neumark and Melissa McInerney. 2007. "Spatial Mismatch or Racial Mismatch?" NBER Working Paper Series. Working Paper 13161 http://nber.org.papers/w13161

Hellerstein et al. suggest that placed-based policies motivated by the need to address spatial mismatch or bring jobs to specific areas of cities may not increase employment among African Americans or other groups, and may not address poverty reduction to the extent that the policy makers anticipate.

Overall, the above literature questions whether programs that aim to attract new employers to depressed areas or foster business already in the area to expand and reduce unemployment in the depressed area. Even if the subsidies do create new jobs, they may not employ workers who live in the depressed area. I turn to a review of federal, state, and local programs that use tax and other incentives to create jobs.

X. Tax Incentives as Tools for Development of Distressed Areas

Fueled by thinking on supply-side economics, states created enterprise zones as early as the 1980s to attract manufacturing enterprises to distressed economic zones of cities to increase the number of jobs and wages in these areas. A reading of the empirical findings suggests more tax incentive programs have failed to deliver job creation than have succeeded. Among the reasons is that new jobs in zone areas may displace jobs in other areas of the city when businesses relocate from outside the zone to inside the zone.

Analysts therefore have observed that counting the total number of new jobs in an enterprise zone may overstate the total number of jobs created. A related question is whether the jobs created benefit the zone residents, as the EZ program intends.[41] Enterprise zone program evaluation should also account for the types of jobs created (ex. full or part-time), the duration of the jobs, and the level of wages.

Capitalization of the program benefits into land prices, housing prices, and housing rents represent an unintended effect of enterprise zone policies. Capitalization can occur when a program successfully

[41] Peters, Alan H., and Peter S. Fisher. 2002. State Enterprise Zone Programs: Have They Worked? Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. https://doi.org/10.17848/9781417524433

attracts firms and/or households to the targeted area. Residents may find their housing prices and rents increase in the area. Current homeowners gain, while renters who experience higher rents and who are employed prior to the enterprise zone program may see their real incomes decline. The capitalization effects also apply to Federal Empowerment Zones that were adopted in the 1990s, and are considered in a later section of this paper.

In summary, evaluation of tax incentives and other employment programs should include the number and types of jobs created – export-based jobs, and full or part-time jobs –, the duration of the jobs, and the workers who receive the jobs; that is, residents of the zone who were previously unemployed, for example. Evaluations also should measure the wages for the new jobs, poverty reduction in the area, and housing price capitalization or rent increases in the zone. Capitalization is of particular concern for programs that target a small urban area because housing supply is more inelastic in a smaller area there than it is for an entire region. Housing prices and rents are more apt to increase in EZ areas.

X-1. More Details on States' Subsidies to Low-Income Areas of Cities

As various times, 40 states have adopted EZ policies. Tax reduction incentives for firms relocating or expanding in the targeted area represent a common dimension of EZ programs, although the types of taxes forgiven, and additional incentives provided vary considerably among states and programs. For example, states and localities have reduced one or more taxes on inventories, property, corporate income business income, or sales for businesses that locate or expand their employment in the zone. Existing businesses may qualify for the tax benefits whether they expand their employment, depending on the particular state program. In some cases, EZ programs include grants-in-aid to improve social conditions in the targeted local area and/or make infrastructure improvements in the local area as well as the tax incentives.

Bartik collected data on the structure of the tax incentives offered in 33 states and 45 industries. Together, the 33 states comprise 92 percent of U.S. GDP, and the 45 industries in the 33 states comprise 91 percent of U.S. labor compensation.[42] His data do not only consider tax incentives for EZ programs. Rather, the data describe several business incentives, including local government property tax abatements, sales tax forgiveness on business inputs, tax credits against state businesses taxes for job creation, state or local customized job training, state abatements for corporate income taxes, and research and development tax credits.

Property taxes and sales taxes on business inputs account for 57 percent of state and local tax incentives on business. However, property tax abatements and sales tax relief on business inputs and inventories do not directly subsidize hiring more workers. Instead, the incentives promote firm expansion and employment increases by increasing businesses' profits. On the other hand, if part of the incidence of property and sales taxes falls on capital, the incentives could reduce the cost of capital, and along with encouraging business expansions, may encourage substitution of capital for labor.[43] Bartik further notes, that since 1990, states have shifted qualifications for tax incentives more directly to reward job creation.

The following section reviews what we know about the effectiveness of state EZ programs, based on a selection of often-cited studies. Early EZ programs aim to increase manufacturing jobs in the zone. Some studies examine employment changes in the zone, while other studies get more granular and examine

[42] Bartik, Timothy J. 2017. "A New Panel Database on Business Incentives for Economic Development Offered by state and Local Governments in the United States." Prepared for the Pew Charitable Trusts. http://research.upjohn.org/reports/225
[43] Papke and others make this point. Papke, Leslie E. 1993. "What Do We Know about Enterprise Zones?" in Tax Policy and the Economy. Volume 7 J.M. Poterba, Ed., NBER MIT Press: 37-72.

employment changes among low-wage workers. Figure 2 contains a summary of each study that is reviewed in more detail below.

Figure 2

Selected Studies of Place Subsidies for Areas of Cities

Study/Authors	Enterprise Zone Incentives and Places Analyzed	Results
Rubin and Richards (1992)	Examined results for zones in United Kingdom (UK) and states in U.S.	UK zones not found to generate jobs. Successful EZ program is states characterized by: areas that have potential for private development; have a significant portion of industrial and commercial activity; can support a professionally managed and active organization that establishes a public-private partnership.
Papke (1993)	Examines early evidence on enterprise zones in states.	Subsidies to capital induces substitution of capital for labor. Infrastructure deficiency or lack of trained labor discourage location more than a high cost of capital. Labor subsidies create employment but do not necessarily increase workers' wages.
Papke (1994)	Indiana EZ program grants relief from 100% of local property tax on business inventories and an employment tax credit for 10% of wages with max. credit of $1,500.	Inventories increase and unemployment claims decrease in the 10 Indiana zones in the 1980s.
Boarnet and Bogart (1996)	Tax credits against corporate income taxes if firm hires new full-time employees. Also, reduced sales taxes and reductions in unemployment insurance taxes.	No effects on employment or property values at the municipal level in enterprise zones municipalities relative to municipalities eligible for enterprise zones but did not receive zone designation.
Neumark and Kolko (2010)	California EZ program provides tax credits for 50% of qualified wages (defined as 150% of minimum wage) for disadvantaged workers regardless of whether they live in the enterprise zone area, income tax credit for sales and use taxes on machinery purchases, accelerated depreciation, and income tax credits for workers who live and work in the zone.	Enterprise zones in CA do not increase total employment in the enterprise zone and reduces the total number of businesses. May indicate that businesses consolidate as number as fewer business employ the same number of employees. Study also finds that the shares of jobs in low-wage manufacturing industries do not increase.

Selected Studies of place Subsidies for Areas of Cities (Continued)

Study/Authors	Federal Empowerment Zones	Results
Ham, Swenson, Imrohrorglu, and Song (2011)	Simultaneously estimates effects of incentives associated with Enterprise Zones in CA, FL, MA, NY, OH, and OR created in the 1990s, as well as Federal Empowerments Zones and Enterprise Community Programs. State zone benefits range from hiring incentives and state exemptions from payroll taxes to property tax abatements.	Poverty and unemployment during the 1990s reduced in state enterprise zones located in CA, MA, and NY. Finds significant reduction in poverty and unemployment and increased in wages and salary income and employment in Federal Empowerment Zones and Enterprise Community Programs.
Busso, Gregory, and Kline (2013)	Federal Empowerment Zones located in six large cities subsidize the employment of workers who live and work inside the zone. In addition to the wage subsidy for these workers, zones also receive a substantial block grant for business assistance infrastructure, training programs, housing subsidies, and other physical developments. The Department of Housing and Urban Development estimated that the federal tax credits and block grants stimulated as much as five times the their amounts in additional private investment in the zones.	From 1992 to 2000, empowerment zone designation created jobs in zone areas for zone and non-zone residents. Earnings increased for local workers and they found increases in housing prices but not rents and not the cost of living for zone residents. Results did not reveal the relative importance of the wage credits, block grants, and private investment in jobs and earnings growth.
Hanson (2009)	Examines employment, poverty and median property values changes between 1990 and 2000 in census tracts with empowerment zones.	Does not find empowerment ones created jobs or reduced poverty in empowerments zones. He finds that median property values increased in the zones, which he infers is indirect evidence of increases in economic activity in empowerment zones.
Hanson and Rohlin (2011)	Examines changes (between 1994 and 1996 and between 1994 and 2000) in shares of total city establishments and in shares of total city employment in census tracts with empowerment zones for each of seven industry categories, using Dun and Bradstreet Data.	The wage tax credit increases establishment and employment shares in less capital-intensive industries - retail sales and service industries and decreases shares in transportation and in finance, insurance and real estate industries.

Source: Cited studies and author summaries.

Selected Studies of Place Subsidies for Areas of Cities (Continued)

Study/Authors	Federal Empowerment Zones	Results
Reynolds and Rohlin (2015)	Examines changes between 1990 and 2000 in the number of households in: nine separate income categories relative to the poverty line; 13 separate income categories; 16 separate housing gross rent and housing value categories for 838 census blocks with empowerment zones and 3,658 census blocks in enterprise communities (applied for and did not receive empowerment zone status). Uses empowerment zones' blocks as experimental group and enterprise communities' blocks as a control group.	Find increases in number of households with incomes twice the poverty rate, but households with incomes of $100,000 or more drive almost all of the increase. Also, find increases in density of households with incomes less than ½ the poverty line. Find increases in rents and housing values for high-cost housing in empowerment zones. Overall, zone designation benefits higher income households, and increases the number of household in deep poverty.

Source: Cited studies and author summaries.

X-2. Evidence on Effectiveness of State Enterprise Zone Programs

Initial EZ programs focused on property tax relief, sales tax abatements, reductions in unemployment insurance taxes, and accelerated depreciation on new equipment for state corporate income taxes. Papke conducted an early study that analyzed employment and other economic effects of Indiana's EZ program. Indiana's program at that time forgave property taxes on business inventories as well as provided employers with a wage tax credits equal to 10 percent of wages up to a $1,500 maximum for each zone resident hired.[44] Using a quasi-experimental design and panel data for local tax jurisdictions - not enterprise zones per se - she compares employment and other outcomes for local tax jurisdictions that contain zones with the same outcomes for similar local tax jurisdictions that do not contain zones.

[44] Papke, Leslie E. 1994. "Tax Policy and Urban Development: Evidence from the Indiana Enterprise Zone Program." *Journal of Public Economics*. 54: 37-49.

She finds that in local jurisdictions with zones, business inventories increased 8 percent, an expected result because property tax abatement on business inventories represents the most generous aspect of the enterprise zone tax incentive package. In addition, the value of machinery and equipment declined, while local unemployment claims decreased. With the limitation on available data, the study could not establish a direct link between employment of zone residents and wage tax credits, however.

Boarnet and Bogart also apply quasi-experimental methods, similar to Papke's, to examine the EZ effects for New Jersey's program. [45] They examine employment and property value increases in New Jersey municipalities that received EZs compared to those municipalities with areas that qualified as EZs but were not designated as EZs.

In New Jersey, firms expanding in or relocating to the zone and hiring new full-time employees received tax credits against the state corporate income tax, reductions in sales taxes on business purchases, reductions in retail sales taxes, and reductions in unemployment insurance taxes. They find no employment effects in municipalities with EZs compared to municipalities without zones, and no difference in property values between municipalities with zones and municipalities without zones. Due to data limitations, they also could not measure employment and property value effects for the EZ areas themselves.

California has packaged a set of incentives for firms that locate or are located in specified zone areas and hire disadvantaged workers regardless of their residences. Neumark and Kolko use a quasi-experimental design and compare employment changes in zone areas with employment changes in similar areas that do

[45] Boarnet, Marlon G. and William T Bogart. 1996. Enterprise Zones and Employment." *Journal of Urban Economics.* 40(2): 198-215.

not receive zone designations. [46,47] They use Dun and Bradstreet national longitudinal establishment files and measure changes in employment within zones and in their control areas during the 1992-2004 period. They also account in their analysis for federal programs, such as Enterprise Communities and Empowerment Zones that overlap the EZ zone areas during their measurement period.

The most costly aspect of the California program is that it subsidizes establishments to hire "disadvantaged workers" without regard to their residences. In addition, the program offers tax reductions for business sales taxes, accelerated depreciation, longer carry forward periods for losses on state corporate income taxes, and personal income tax credits to zone employees.

Their study does not find evidence that establishments increase employment in EZs. Because the subsidy to low-wage workers combined with the machinery/equipment depreciation allowances favor manufacturing establishments that hire low-wage workers, they also examine whether the share of lower-wage manufacturing industries increase in the zones. They find no evidence that the shares of lower-wage manufacturing industries increase.

While Neumark and Kolko do not find evidence that the California EZ program increases employment of low-wage workers or total employment in the zones, they are careful to state that their results only apply to California, because zone programs in other states use different incentives. Nonetheless, as the results for the above studies illustrate, the prevailing evidence is that tax incentives have not had measurable

[46] Neumark, David and Jed Kolko. 2010. "Do Enterprise Zones Create Jobs? Evidence from California's Enterprise Zone." *Journal of Urban Economics.* 68: 1-19.

[47] They point out that previous studies suffer measurement error because, given available data, the studies could not use data for the EZ itself. Instead, studies have used data that measure variables for local taxing districts, census tracts, and municipalities to approximate EZs.

effects on employment or poverty reduction in EZs. Perhaps because of the foregoing evidence, states have deemphasized EZ tax subsidies in recent years in favor of other types of place subsidies.

X-3. Evidence on the Effectiveness of Federal Empowerment Zones

The federal government in 1993 through the U.S. Department of Housing and Urban Development designated eight urban communities in eight different cities as Federal Empowerments Zones (FEZs) that span on average 10 square miles in each city. Employers in each FEZ received (for up to ten years) a tax credit of 20 percent on the first $15,000 of wages paid to each worker who both lives and works in the zone. Employers in the zone also qualified for expanded expensing allowances for equipment purchases applied to their federal corporate income taxes; favorable treatment on capital gains from investments; and tax-exempt bond financing. In addition, six urban local governments with FEZs each received a $100 million block grant to fund one or more of business assistance, worker training, youth services, and/or housing assistance. Three rural areas with zone designations received the same tax advantages as above and $40 million in block grants. At the same time, the federal government designated Enterprise Communities (ECs) - 49 cities that applied for but did not receive FEZ designation. ECs did not initially receive tax credits but received tax-exempt bond financing and each local government received $2.95 million in block grants.

Busso, Gregory and Kline use quasi-experimental techniques like those used in EZ studies to examine the employment, wage and housing price effects in FEZs compared to a control group of urban ECs.[48] Most of the FEZs consist of contiguous groups of census tracts. Accordingly, Busso et al. use confidential

[48] Busso, Matias, Jesse Gregory, and Patrick Kline. 2013. "Assessing the Incidence and Efficiency of a Prominent Placed Based Policy." *American Economic Review*. 103(2): 897-947.

microdata from the Decennial Census, the Standard Statistical Establishment List, and the Longitudinal Business Database to construct a panel of employment, wages, and housing prices for households and establishments in each of the relevant census tracts.

They find employment increases for FEZs relative to the control group. Further, larger firms (six or more employees) in the FEZs have increased employment more than firms with five or fewer employees. Thus, there are both a larger number of firms with six or more employees and a greater number of employees in FEZs overall. Weekly wages increase for workers who both live and work in the FEZ, but not for workers who work inside but reside outside the FEZ. They also find that housing values have increased in the zones but that housing rents have not increased. In summary, their evidence suggests that FEZ residents find jobs, have higher wages, and do not have higher rents that offset their wage gains.

One caveat, however, is that the research cannot identify whether the employment and wage changes are due to tax incentives, wage subsidies, or block grants. The exact mechanisms that lead to employment increases is subject to speculation; and leaves open the question of whether removing one element of the program - the block grant, for example - would lead to similar employment, wage and housing price results.

Ham, Swenson, Imrohoroglu and Song have estimated effects of incentives associated with state EZs, FEZs, and federal ECs on unemployment rates, poverty rates, the fraction of households with wage and salary income, household average wage and salary income, and employment for residents of census tracts in designated zones using data for the 1980, 1990 and 2000 periods.[49]

[49] Ham, John C. Charles Swenson, Ayse Imrohoroglu and Heonjae Song. 2011. "Government Programs Can Improve Local Labor Markets: Evidence from State Enterprise Zone, Federal Empowerment Zones, and Federal Enterprise Community." *Journal of Public Economics*. 95: 779-797.

Ham et al. find that places with EZs experienced increases in wages and salaries, reduced poverty, and lowered unemployment on average for all the states and areas in their sample, although the strength of the results are heterogeneous among states and areas. For example, FEZs have had larger effects in California and Massachusetts for both of the estimators in their research, but in Florida, they find FEZ effects for only one of the two estimators. In addition, one of the two estimators reveals reductions in poverty and increases in the fractions of households with wage and salary income - not lower unemployment – for New York, Ohio, and Oregon.

The subsidies to FEZs reduce unemployment and poverty in census tracts, increase wage and salary income, as well as employment. ECs experience similar effects on unemployment and poverty reduction, as well as increases in average wages and employment. Because ECs have smaller subsidies than FEZs, one could speculate that the FEZ program could produce similar wage and employment outcomes with smaller subsidies.

A caveat to the Ham et al. results is that census data record the employment of residents of a census tract regardless of whether they work in the census tract, but employers in FEZs receive wage subsidies only for workers who both live and work in the zone. Their use of data on residential employment may introduce measurement error in the programs' employment effects. In addition, the reduction in measured poverty may result from movement of higher-wage jobs and people to the zones.

The next few papers offer contrary evidence on FEZ effectiveness. In three different papers, Hanson; Hanson and Rohlin; and Reynolds and Rohlin examine the effects of FEZs on employment, housing prices and rents among different income groups who live in the FEZ.[50] Hanson, using census tracts as

[50] Hanson, Andrew. 2009. "Local Employment, Poverty, and Property Values effects of Geographically-Targeted Tax Incentives: An Instrumental Variables Approach." *Regional Science and Urban Economics*. 39:721-731. Hanson, Andrew and

observations, finds that FEZ designations increase property values and have small employment and poverty reduction effects. The property value effects are robust for different estimation methods and those results suggest indirectly that economic activity has increased in FEZs, even though he does not find significant employment increases nor poverty reduction for residents.

Hanson and Rohlin extend Hanson's analysis using Dun and Bradstreet establishment data. They reason that the wage tax credit benefits lower-wage, labor-intensive establishments more than less labor-intensive establishments. (The establishment data use place of work rather than place of residence to measure employment.) Their results confirm that FEZ designations alter the industry mix in the zone. That is, the shares of city employment in FEZs increase in the labor-intensive retail and service sectors, but they decrease in less labor-intensive transportation and finance, insurance and real estate sectors. Because employment increase in some industries and decreases in others, these findings may help explain the conflicting results among studies about whether FEZ policies increase total employment in the FEZ.

In a third paper, Reynolds and Rohlin use census block data to examine which households in the income distribution gain from FEZs. They find that within FEZs the density of households whose incomes are below poverty increases; the density of households whose incomes exceed twice the poverty rate increases; and the density of households with incomes above $100,000 (in year 2000 dollars) increases. Moreover, the increase in the number of households with incomes above $100,000 explains almost all of increase in the density of households with incomes above twice the poverty level.

Shawn Rohlin. 2011. "The Effect of Location-Based Tax Incentives on Establishment Location and Employment across Industry Sectors." *Public Finance Review*. 39(2): 195-225. Reynolds, C. Lockwood and Shawn Reynolds. 2015. "The Effects of Location-Based Tax Policies on the Distribution of Household Income: Evidence from the Federal Empowerment Zone Program." *Journal of Urban Economics*. 88: 1-15.

They also find that housing values increase in FEZ areas that initially have higher housing values, and gross rents experience small increases in these same areas. The increase in housing values is consistent with higher demand for owner-occupied housing among higher-income residents and the jobs created for that group. Little or no increase in rental housing prices is consistent with little or no increase in demand for rental housing among lower-paid residents and workers for whom their evidence suggests FEZs do not help.

To summarize the results of the above five papers, the evidence on the effectiveness of FEZs is mixed. The disaggregate results from the Reynolds and Rohlin paper offer a more fine-grained interpretation of FEZ policy effectiveness. To the extent that FEZs or similar programs alter the economic landscape of areas, the program benefits may bypass lower-income residents and improve prospects for gentrification of the area. One could use the findings in the last three papers to speculate that increases in retail and service establishments make the FEZs more attractive to higher income households who then move into the areas.

X-4. Discussion of Tax Incentive Programs

The literature reviewed here suggests that reducing taxes or eliminating them altogether has not proven an effective means to turn around regional economies or even smaller distressed areas that lie within otherwise economically thriving metropolitan areas. Programs that feature wage subsidies in the form of tax credits to employers have higher probabilities for job creation, but studies do not uniformly find them effective.

Using a relatively optimistic assumption of 1.5 for an elasticity of job growth with respect to wage reductions from subsidies and a job growth multiplier of 2.0, substantial wage subsidies can produce cost

effective job growth.[51] However, Bartik suggests that, when manufacturing jobs are created in distressed zones, in-migrants to the zones receive 85 percent or more of the jobs created, or few extant residents of the zones get the jobs.

Bartik makes another point about wage subsidies. He notes that the methods of financing the wage subsidies can have a variety of secondary effects, such as reduced school spending or a range of other program cuts as well as opportunity costs if tax increases finance the subsidies. The net effects of wage subsidies may be even smaller once benefits forgone due to expenditure cuts or tax increases are considered.

XI. Job Training

Job training programs offer another path to employment for disadvantaged workers and to reemployment for displaced workers. Program effects and their effectiveness can be measured in a number of ways, such as, outcomes that include employment or finding a job, the employment duration, and the earnings in the new positions compared to earnings in the previous employment. Heckman, LaLonde and Smith review both the empirical methodologies used in studies of publicly funded job programs and report their effectiveness. The programs they analyze include formal classroom training, wage and employment subsidies, subsidized and non-subsidized employer-provided training, and job search assistance.[52] It should be mentioned that non-subsidized (by government) employer-provided training typically has more

[51] Bartik, Timothy J. 2018. "What Works to Help Manufacturing-Intensive Local Economies?" Upjohn Institute Technical Report No.18-035. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. Pp. 13-14. https://doi.org/10.17848/tr18-035

[52] Heckman, James J. Robert J. LaLonde, and Jeffrey A. Smith 1999. "The Economics and Econometrics of Active Labor Market Programs." In Orley Ashenfelter and David Card, editors, *Handbook of Labor Economics*. Volume 3a. Amsterdam: Elsevier. Pp 1865-2097.

spending associated with it than publicly funded training programs. Researchers, however, typically do not have access to data to evaluate employer-provided job training.

Their review reports findings from studies that use experimental and non-experimental methods to measure training programs' effectiveness. The empirical results on the effects of job training on employment and other variables differ across studies and even differ across studies that analyze the same job programs. Heckman et al. attribute the variation in results both to different degrees of selection bias for those opting into an experiment and to model misspecification.

Moreover, because of data limitations, researchers generally cannot measure a key dimension of publicly funded job training effectiveness; namely, increases in workers' hourly wages directly attributable to training programs. Consequently, earnings (not hourly wages) and employment represent the most common outcome measure for U.S. programs. Many studies also report findings on a variety of non-labor market outcomes, such as, the utilization of social assistance programs, more educational attainment, less criminality, and less teenage pregnancy.

Lack of data also limits the calculation of the net social benefits of public training programs. For example, while training costs are generally available, other costs associated with training, including the value of training participant's leisure time, their forgone earnings, the deadweight loss from taxation to finance training programs, and the displacement effects if newly trained workers replace other workers, are not generally considered.[53] (See Heckman et al. p. 2043-44.) Heckman et al. also note that the cost of public training programs typically amounts to $1,000 per trainee (in 1999 dollars). Even with a return as high as 10 percent on the training investment, participants might realize $100 increases in their earnings. Where

[53] For a discussion of displacement effects, see Davidson, Carl and Stephen Woodbury. 1993. "The Displacement Effect of Reemployment Bonus Programs." *Journal of Labor Economics*. 11: 575-605.

researchers find positive effects from training programs, participants' earnings increase commensurate with a 10 percent return on the investment in training. One conclusion is that if the objective of U.S. policy is to increase participants' earnings significantly, it needs to increase the amount it invests in training programs.

Heckman et al. summarize the empirical results from job training studies. After job training, earnings of women increase more than earnings of men, and adult workers gain more from training compared to younger, less-experienced workers. Low-skilled populations do not benefit from classroom training or from on-the-job training. Wage subsidies to employers improve employment and earnings of low-skilled workers.[54]

Card, Kluve and Weber have updated the Heckman et al. review of active labor market policies in the United States and in 46 other countries. A few countries operate most of the training programs; six countries among the 46 have 2/3s of the training programs. Germany alone has 30 percent of the programs.[55] Active labor market policies include training, job search assistance, subsidized employment, public sector employment and a variety of other programs. Together, training, job search assistance, and subsidized employment account for over 75 percent of active labor market programs among the 46 countries.

Their cross-country meta-analysis of training programs' effectiveness reveals that, on average, active labor market programs have small to no effects in the short-run; the effects become more positive in the

[54] Heckman et al. note that the U.S. spending as a percentage of GDP on publicly funded training programs ranks last among the OECD countries they examine.

[55] Card, David, Jochen Kluve, and Andrea Weber. 2015. "What Works? A Meta-Analysis of Recent Active Labor Market Program Evaluations." NBER Working Paper Series. Working Paper 21431. Card, David, Jochen Kluve, and Andrea Weber. 2010. "Active Labor Market Program Policy Evaluations." *The Economic Journal.* 120 548: F452-F477.

medium term (2 to 3 years); and get stronger in the longer run. Programs that build human capital have larger long-run effects on earnings and employment than job search and other programs.

Program effectiveness varies by workers' sex, age, employment experience, and skill levels. The effects of training programs are larger for females than for males and higher for long-term unemployed (experienced) workers. Programs have no, or even negative, effects on employment for young workers and for older workers. Low-skill or disadvantaged workers benefit most from job search assistance. All active labor market policies have larger effects during recessions.

Their conclusions are similar to those that Heckman et al. draw for the U.S. The magnitudes of the effects of training programs on increased earnings is proportional to the amount that different countries invest per training program participant. In addition, matching an active-labor-market training policy to a particular type of worker - females, disadvantaged, and longer-term unemployed workers - enhances program benefits and their effectiveness.

Bartik and others point to customized job training to help local economies reemploy displaced workers. Community colleges work with local employers to develop customized education programs that train a workforce for specific jobs in local industries. The results from the job training literature suggest that customized training programs are most helpful for workers with experience or motivated younger workers, but probably not as useful to employ or increase the earnings of disadvantaged workers.[56] Job search assistance - helping them to find jobs - and wage subsidies seem to be the most effective programs for disadvantaged workers.

[56] Bartik, Timothy J. 2018. "What Works to Help Manufacturing-Intensive Local Economies?" Upjohn Institute Technical Report No.18-035. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. Page 3. https://doi.org/10.17848/tr18-035.

The Project Quest in San Antonio, Texas appears to have had success with training and job placement for disadvantaged workers. The program places trainees in community colleges where they learn skills needed for jobs in high demand - health care and nursing, information technology and other jobs in high demand in the San Antonio region. The program also spends on average $11,000 per trainee (substantially more than typical), as well as pays half the tuition and provides help with housing rents and utilities where needed.[57] The success of Project Quest reinforces Heckman's message noted above. Effective job training programs may require considerably more spending per participant than typical in publicly funded job training programs.

XII. Improving Earnings and Employment for Low-Income Populations

The skewed distribution of job growth into lower pay and higher pay jobs is likely to continue to reduce the percentage of jobs classified as middle wage. Workers displaced by technology have requested job training, advance notice of technological implementation by employers, and severance packages to mitigate displacement effects from technology.[58] Enhanced job training programs along the lines that Bartik has recommended are needed for this group of workers. Job search programs can place disadvantaged workers in jobs where they may earn minimum or slightly above minimum wages.

Preparing future workers for employment appears to require more than job training programs in adulthood. A growing amount of research suggests that early intervention for children needs greater policy priority.

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[57] Schwartz Nelson D. "Job Training Is a New Shot At Prosperity for Texans." *New York Times*. August 20, 2019, B1 and B4. And https://questsa.org/

[58] Frey, Carl Benedikt. 2019. "The High Cost of Impeding Automation." *Wall Street Journal Report: Technology*. October 25. R1-R3. See Sidebar: 2018 Members of the Culinary Union, R3.

Mounting evidence (Moving to Opportunity) supports the tenant that growing up in better neighborhoods enhances a child's income and social mobility, as measured by their earnings and an array of social behaviors.[59] Chetty and his coauthors have explored income and social mobility using different datasets and their work corroborates the evidence in the Moving to Opportunity experiment.[60] The studies emphasize that the earlier a child is exposed to better neighborhoods, schools, and social frameworks the greater the income mobility and social outcomes. Put another way, moving children as teens, even early teens, can lead to no effect or even negative effects on income and social mobility.

On the other hand, it is not practical to move millions of children and their families to neighborhoods that afford them better opportunities. Chetty notes that we need to improve opportunities in current neighborhoods. Katz and Krueger propose a few policies that likely would increase economic mobility among those in the lower portion of the income distribution. Among the suggestions is universal preschool to help restore increasing educational attainment in successive generations, which they note has lagged since the 1980s.[61]

Based on extensive empirical research, James Heckman has advocated preschool programs for children from disadvantaged backgrounds. In a portion of his work, he has shown that programs such as head start and the Perry preschool program (discussed below) may increase cognitive test scores, and preschool programs have measurable effects on non-cognitive abilities, such as perseverance, self-control,

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[59] Chetty, Raj, Nathaniel Hendren and Lawrence Katz. 2016. "The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment." *American Economic Review* 106(4): 855-902.

[60] Chetty, Raj and Nathaniel Hendren 2018. "The Effects of Neighborhoods on Intergenerational Mobility I: Childhood Exposure Effects" *Quarterly Journal of Economics*. 133(3): 1107-1162. And Chetty, Raj and Nathaniel Hendren. 2018. "The Effects of Neighborhoods on Intergenerational Mobility II: County Level Estimates." *Quarterly Journal of Economics*. 133(3): 1163-1228.

[61] Katz, Lawrence F. and Alan B. Krueger. 2017. "Documenting the Decline in U.S. Economic Mobility." *Science*. 28 April: Vol. 356, Issue 6336, pp. 382-383. DOI: 10.1126/science.aan3264

industriousness, sociability, time preference, and leadership - abilities and skills that employers value in their workers. For example, Heckman et al. find that non-cognitive skills have large and statistically significant effects on hourly wages of both males and females at all levels of education, ranging from high school dropout through four-year college degree.[62] Non-cognitive abilities and skills also explain a range of improved social behaviors.

Stewart's recent evidence suggests that better non-cognitive (soft) skills also increases median wages in STEM and non-STEM occupations. Specifically, median wages are highest for workers with both high-STEM skills and high soft skills, while workers with low-STEM skills but high soft skills have the second highest median wages. Workers in occupations that require high-STEM and low soft skills rank third highest in median wages, and those workers in occupations that require neither STEM nor soft skills have the lowest median wages.[63]

XII-1. More on PreSchool

The Perry preschool project used a social experiment to measure the effects of preschool enrollment on the future incomes of disadvantaged children. The experiment ran for five successive years from 1962 to 1967 in Ypsilanti, Michigan.[64] The treated group, followed until age 39, is more likely to graduate from high school, has higher employment rates and earnings, has lower rates of arrest, measures better on other

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[62] Heckman, James J. Jora Stixrud, and Sergio Urzua 2006. "The Effects of Cognitive and Non-Cognitive Abilities on Labor Market Outcomes and Social Behavior." *Journal of Labor Economics*. 24: 411-482.

[63] Stewart, Fran. 2018. *The STEM Dilemma: Skills That Matter to Regions*. Kalamazoo, MI: Upjohn Press. Also Stewart, Fran. 2018. STEM and the Local Economy: Do Regions Reap the Benefits of a STEM-Educated Workforce? W.E. Upjohn Institute Employment Research Newsletter January 25 (1): 1-4.

[64] Students in the treated group received 2.5 hours per day of classroom instruction plus 1.5 hours per week of teacher home visits. Students in the control group received neither classroom instruction nor home visits from teachers. See Barnett, S., Belfield, C., Montie, J., Nores, M., Scheweihart, L., and Xiang, Z. "The High/Scope Perry Preschool Study Through Age Forty." High/Scope Education Research foundation (2005), High/Scope Press. Web. http://www.highscope.org/file/Research/PerryProject/specialsummary_rev2011_02_2.pdf and "The High/ Scope Perry Preschool Study." Susanne M. Glasscock School of Continuing Studies, School of Literacy and Culture, Rice University. http://centerforeducation.rice.edu/slc/LS/PPP.html

social behaviors, as well as uses public assistance programs at a lower rate than the control (non-preschool) group.

Heckman and Karapakula have recently used refined statistical techniques on the Perry data to adjust better for randomization protocols needed for the small sample sizes in the Perry experiment. In addition, they tracked the experimental and control participants to the age of 55, and they find that the effects of preschool persist past age 39, and the treated group has better health, higher employment rates, better cognitive and non-cognitive skills, as well as better outcomes in the social areas mentioned above. The treatment effects are particularly strong for males. They conclude, "Improvements in childhood home environments and parental attachment appear to be an important source of the long-term benefits of the program."[65]

In a subsequent paper, Heckman and Karapakula measure whether there are external effects of the Perry preschool program on the siblings and progeny of the original Perry preschoolers.[66] They find that the children of the original Perry preschoolers also have lower crime rates, higher education levels and higher employment rates compared to the children of the control group. The effects are especially pronounced among male progeny. They are careful to sort out confounding effects, such as the treated group living in better neighborhoods than the untreated group. In fact, the neighborhoods, using standard measure of social environments, of the treated group are no better than and sometimes worse than the neighborhoods of the untreated group. Preschool then, and not neighborhood effects, explain the observed positive outcomes for children of the treated group.

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[65] Heckman, James J. and Ganesh Karapakula. 2019. "The Perry Preschoolers at Midlife: A Study in Design-Specific Inference." National Bureau of Economic Research Working Paper No. 25888 May. https://www.nber.org/papers/w25888
[66] Heckman, James J. and Ganesh Karapakula. 2019. Ibid.

They also find substantial positive effects on the siblings of the Perry participants, even though the siblings did not participate in the preschool. Again, the effects are larger and more notable for male siblings.

XIII. Summary and Conclusions

Significant areas of the United States have lagged economically behind economies on either coast of the U.S., particularly the eastern heartland - a region east of Mississippi River and west of the east coast. Middle wage job losses in manufacturing industries have reduced well-being among a significant number of workers, especially workers in the eastern heartland.[67] Labor migration from trailing to growing regions has in the past served to address job losses in certain regions. The evidence from several studies shows that migration of low- and middle-wage workers has slowed considerably, because moving to growing areas often leaves these migrants worse off, as the cost of housing in growth areas offsets the wage gains they might realize in growth areas. The slowdown in migration leaves many in declining regions where factories continue to close or relocate; globalization has already affected jobs; and technology appears to threaten more jobs. The combination of migration slowdown and job losses in regions leads policymakers and researchers to think about subsidies to individuals tied to places and circumstances.[68]

An extensive literature advocates customized job training - community colleges and employers cooperating to train workers for jobs that employers need - to retrain displaced workers for employment in new fields and with new employers. By contrast, disadvantaged workers gain employment more through job search assistance and wage subsidies paid to employers than through training programs.

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[67] Austin, Benjamin, Edward Glaeser, and Lawrence H. Summers. 2018. "Saving the Heartland: Place-Based Policies in 21st Century America." *Brookings Papers on Economics Activity*. Spring pp. 151-255. See page 157. https://www.brookings.edu/bpea-articles/saving-the-heartland-place-based-policies-in-21st-century-america/

[68] Austin, Benjamin, Edward Glaeser, and Lawrence H. Summers. 2018. "Saving the Heartland: Place-Based Policies in 21st Century America." *Brookings Papers on Economics Activity*. Spring pp. 151-255. See page 157. https://www.brookings.edu/bpea-articles/saving-the-heartland-place-based-policies-in-21st-century-america/

In efforts to attract employers and jobs to inner-city areas, state and cities have relied on tax reductions in enterprise zone areas. Based on many studies, those programs appear to have limited success. To the extent that they attract new employers or encourage expansion of existing businesses, the employers tend to hire workers who live outside the targeted area. These programs may in the end increase the economic rents of employers, and only marginally increase employment among disadvantaged or even among more educated, better-trained workers.

Federal Empowerment Zones offer, among other things, wage subsidies to employers who hire workers who both live and work in the empowerment zone. Busso et al. conclude that wage subsidies increase employment among workers who both reside and work in Federal Empowerment Zones, and Neumark encourages wage subsidies based on the residence of the individual.[69] Other studies find that the Federal Empowerment Zones have had more limited effectiveness.

To have meaningful effects on employment for disadvantaged workers, Phelps has suggested wage subsidies of up to 75 percent of employers' cost for an unlimited amount of time for the lowest paid workers; the subsidy would phase out as wages increase, however.[70] The size of the subsidy needed to expand the number employed will also depend on worker productivity, the types of jobs available, and the elasticity of demand for labor, among other factors. There are concerns about stigmatization for workers

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[69] Busso, Matias, Jesse Gregory, and Patrick Kline. 2013. "Assessing the Incidence and Efficiency of a Prominent Placed Based Policy." *American Economic Review*. 103(2): 897-947. Neumark, David. 2018. "Rebuilding Community Job Subsidies." In Jay Shambaugh and Ryan Nunn (editors) *Place-Based Policies for Shared Economic Growth*. Washington, D.C. Brookings Press https://www.brookings.edu/wp-content/uploads/2018/09/ES_THP_PBP-book_20190425.pdf

[70] Phelps, Edmnd S. 1994. "Low-Wage Employment Subsidies versus the Welfare State." *American Economic Review, Papers and Proceedings*. 84(2): 54-58. See also, Phelps, Edmund S. 1997. *Rewarding Work*. Cambridge, MA: Harvard University Press. And Phelps, Edmund S. 2001. "Subsidize Wages." In Philippe Van Parijs et al. (editors) *What's Wrong with a Free Lunch?* Boston, MA: Beacon Press pp. 51-59.

with wage subsides, and employers would need to exercise discretion with information about the employees for whom the employer receives subsidies.[71]

Moving to Opportunity and ensuing work of Chetty et al. has shown that children growing up in neighborhoods with improved social environments leads to higher chances of income and social mobility in their adult lives. However impractical it is to move children to better neighborhoods, it is possible to improve the social environments of their own neighborhoods. Addressing child poverty is known to benefit children later in life.[72] Another valuable approach for children would place them in high-quality preschools, which have shown promise for development of their non-cognitive skills and cognitive skills. Evidence suggests preschool leads to more economic mobility and to better life outcomes that endure across generations. Programs, such as high-quality preschool, may increase national income.

In addition to job training and preschool, Austin, Glaeser and Summers discuss the potential for differentially higher in-kind and earned-income-tax-credit (EITC) subsidies for households stuck in lagging economic regions.[73] Others have noted, that in real dollars, the same nominal EITC has more value in lagging regions that typically have lower costs of living. A basic income allowance for households in lagging regions also has merit, although that and the other enhanced subsidies to household in these

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[71] Dickert-Conlin, Stacy and Douglas Holtz-Eakin. 2000. 'Employee-Based versus Employer-Based Subsidies to Low-Wage Workers: A Public Finance Perspective." *In Finding Jobs: Work and Welfare Reform*. Edited by David E. Card and Rebecca M. Blank. New York: Russell Sage Foundation. Pp 262-94.

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[73] Austin, Benjamin, Edward Glaeser, and Lawrence H. Summers. 2018. "Saving the Heartland: Place-Based Policies in 21st Century America." *Brookings Papers on Economics Activity*. Spring pp. 151-255. See page 157. https://www.brookings.edu/bpea-articles/saving-the-heartland-place-based-policies-in-21st-century-america/

regions may introduce undesirable economic incentives and can be fraught with administrative and legal complexities.[74]

[74] Paying a basic income to disadvantaged populations in particular lagging regions may cause migration of people to those regions. Length of residency qualifications can be imposed on programs, but in some cases, these are challenged on constitutional (equal protection) grounds. See Van Parijs, Phillippe and Yannick Vanderborght. 2017. *Basic Income: A Radical Proposal for a Free Society and a Sane Economy*. Cambridge MA: Harvard University Press. See paperback edition 2019, Chapter 6 pages 133-145.

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