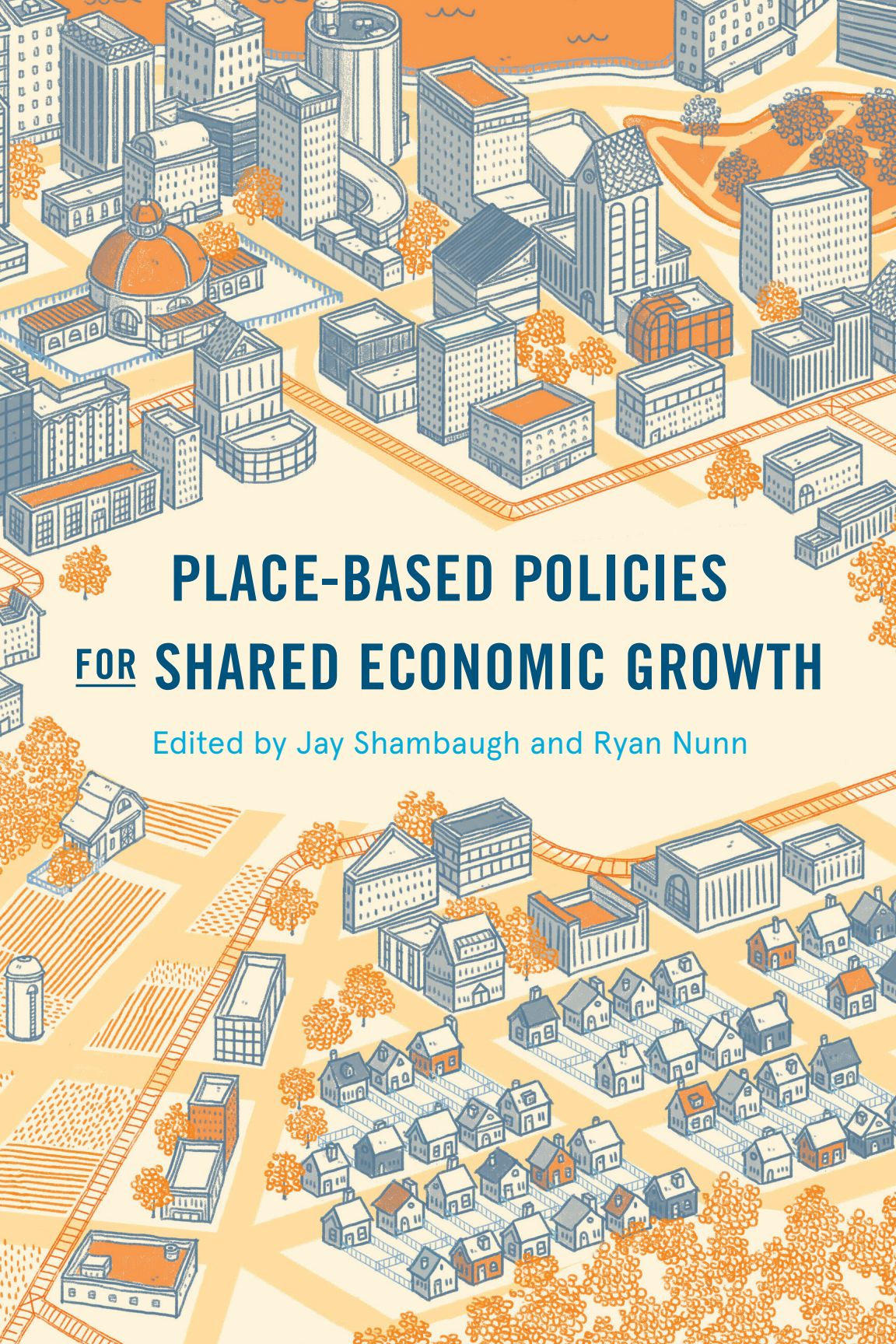


PLACE-BASED POLICIES FOR SHARED ECONOMIC GROWTH

Edited by Jay Shambaugh and Ryan Nunn

THE HAMILTON PROJECT

Place-Based Policies for Shared Economic Growth

Edited by

Jay Shambaugh and Ryan Nunn

SEPTEMBER 2018

BROOKINGS

Acknowledgments

The Hamilton Project is grateful to the members of its Advisory Council for their valuable contributions, with special thanks to Roger C. Altman, Robert E. Rubin, and Jason Furman for helpful discussion and insights. The contents of this volume and the individual papers do not necessarily represent the views of individual Advisory Council members, nor do they necessarily represent the views of the institutions with which the papers' authors are affiliated.

The chapters contained in this volume were greatly improved by the expert comments provided by participants at the June 2018 authors' conferences held at the Brookings Institution. We are grateful to all who participated in those meetings.

The editors wish to acknowledge the impressive contributions of the entire Hamilton Project staff. We are thankful to Kriston McIntosh for her advice on all aspects of production, as well as her thoughtful comments on much of the book. Lauren Bauer and David Dreyer contributed substantially to the development of the book. Jana Parsons managed the book production process from beginning to end, and Becca Portman performed book layout and graphic design. Patrick Liu, Jimmy O'Donnell, Benjamin Delsman, and Yared Lingo provided superb research assistance. We are also grateful for the contributions of Alison Hope and for valuable input from Stacy Anderson and Melanie Gilarsky. Meredith Miotke created the cover illustrations and Brianna Harden designed the cover.

The policy proposals included in this volume are proposals from the authors. As emphasized in The Hamilton Project's original strategy paper, the Project was designed in part to provide a forum for leading thinkers across the nation to put forward innovative and potentially important economic policy ideas that share the Project's broad goals of promoting economic growth, broad-based participation in growth, and economic security. The authors are invited to express their own ideas in policy papers, whether or not the Project's staff or Advisory Council agrees with the specific proposals. These policy papers are offered in that spirit.

Table of Contents

Foreword 1

Introduction 5
Ryan Nunn, Jana Parsons, and Jay Shambaugh

The Geography of Prosperity 11
Ryan Nunn, Jana Parsons, and Jay Shambaugh

The Historical Role of Race and Policy for Regional Inequality 43
Bradley L. Hardy, Trevon D. Logan, and John Parman

Rebuilding Communities Job Subsidies 71
David Neumark

Harnessing the U.S. Intergovernmental Grant System for Place-Based Assistance in Recession and Recovery 123
Tracy Gordon

Extending the Reach of Research Universities: A Proposal for Productivity Growth in Lagging Communities 157
E. Jason Baron, Shawn Kantor, Alexander Whalley

Development Economics Meets the Challenges of Lagging U.S. Areas: Applications to Education, Health and Nutrition, Behavior, and Infrastructure 185
Stephen C. Smith

About the Authors 243

Foreword

For the last several decades, the arc of our economy changed from convergence to divergence. On critical measures such as median household income, poverty, unemployment rates, and life expectancy, there exists a yawning gap between the best- and worst-performing communities.

Economists and policymakers are now able to measure these disparities at increasingly granular levels. At The Hamilton Project, we created a measure called the Vitality Index to assess economic and social well-being in every U.S. county. This index enables us to compare conditions in each county's vitality in 1980 and 2016.

What we see alarms us. Inequality has grown across the country, and despite periods of strong economic growth when living standards improved across the earnings distribution—such as in the late 1990s—places with poor economic performance in 1980 are generally still struggling. Broad swaths of the rural South, Southwest, and Midwest continue to lag behind the rest of the economy. Natural disasters and the globalization of manufacturing have significantly depressed outcomes in formerly thriving cities such as Flint, Michigan, and New Orleans, Louisiana. By contrast, many coastal cities along with a number of other major metro areas have outperformed the rest of the country.

The evidence of geographic disparities continues to pile up. In the lowest-performing fifth of counties, 33 percent of prime-age adults are not employed—nearly double the rate of the best-performing places. Many of those who do have jobs earn wages depressed by a range of factors, including the disappearance of labor unions, the declining inflation-adjusted value of the minimum wage, and the absence of college degrees or even high school diplomas. The 23 percent poverty rate in the highest-poverty counties is nearly triple that of the lowest-poverty counties; life expectancy is a full six years higher in the top fifth than in the bottom fifth.

No serious examination of the geography of prosperity would be complete without a focus on how racial inequality exacerbates place-based problems and impedes the effectiveness of policies designed to ameliorate them. In their chapter, "The Historical Role of Race and Policy for Regional Inequality," the economists Bradley Hardy, Trevon Logan, and John Parman document the range of ways in which public policy has limited economic opportunity for black Americans. From discriminatory housing policy to exclusionary and unequal education systems, these policies contribute both to the spatial concentration of the African-American population in the United States and to poorer economic outcomes in these areas. As such, they have left a clear imprint on today's geographic disparities.

We agree with economists Benjamin Austin, Edward Glaeser, and Lawrence Summers, who recently argued that conditions today demand a reconsideration of place-based policies.* But it is also important to recognize that many place-based policies have failed, leading many economists to prefer programs that target individuals rather than places.

We therefore focus on ideas motivated by new evidence about those policies that do appear to work and lessons from those that have failed. Accordingly, in the chapters that follow we present proposals from a distinguished group of scholars who offer evidence-based solutions to the problems faced by struggling regions and their residents.

David Neumark proposes that the federal government subsidize employment in areas of extreme poverty, with the goal of revitalizing communities and boosting workers' careers over the long run through the acquisition of skills that are valued by private-sector employers.

Tracy Gordon proposes that the federal government do more to aid states with limited fiscal resources. Gordon considers how to overhaul the federal government's massive $700 billion intergovernmental grant apparatus to offset differences in the states' long-run fiscal capacity and respond more quickly to regional economic downturns and national recessions.

E. Jason Baron, Shawn Kantor, and Alexander Whalley offer a proposal for a regionally targeted expansion of the 1988 Manufacturing Extension Partnership Program. Their proposal would enable existing research universities to promote local economic development by transferring knowledge to local employers in struggling places.

* Austin, Benjamin, Edward Glaeser, and Lawrence Summers. Forthcoming. "Saving the Heartland: Place-based Policies in 21st Century America." *Brookings Papers on Economic Activity* (forthcoming).

Stephen Smith applies the evidence and experience of development economics in his proposal for improving U.S. policy ranging from infrastructure to education, health, and nutrition. These are ideas that are likely to improve the functioning of educational and safety net investments, thereby helping people in struggling areas to escape from poverty traps.

For a century, the progress the United States made toward realizing broadly shared economic growth gave our economy much of its unparalleled strength. Today, with these evidence-based proposals, we see steps that can help restore the conditions of inclusive growth that made it possible for individuals from any part of the country to benefit from economic opportunity.

ROGER C. ALTMAN

ROBERT E. RUBIN

Introduction

Ryan Nunn, *The Hamilton Project and the Brookings Institution*
Jana Parsons, *The Hamilton Project*
Jay Shambaugh, *The Hamilton Project, the Brookings Institution, and The George Washington University*

The United States has never been a place with uniform culture, politics, or economic outcomes. Regional disparities in economic performance are longstanding, and have led to both economic and policy responses. Workers and businesses in struggling areas sometimes migrate to other places, make investments that raise their productivity, and eventually catch up (at least in part) with workers and businesses in prospering areas. In addition, place-based policies—policies targeted to disadvantaged areas and their residents rather than directly to disadvantaged people—are sometimes enacted in an attempt to help struggling regions.

Place-based policies have a mixed record, with some prominent successes—such as the Tennessee Valley Authority bringing electric power and jobs to a previously very poor region—but with a number of failures as well. Economists have often been skeptical of both the efficacy and efficiency of targeting places instead of people. Nevertheless, evidence of stark regional economic gaps, lack of convergence in living standards over the past few decades, and declining geographic mobility all demand a reconsideration of whether there are effective policies that could help share economic growth and raise living standards in struggling places.

As we will show in our framing chapter, "The Geography of Prosperity," and illustrated in figure A, gaps in economic performance and living standards across U.S. counties are indeed very large. In 2016 the typical household income in the richest 20 percent of counties is more than twice that in the poorest 20 percent, and the gap has increased noticeably since 1980. People in top-performing counties are far more likely to work, less likely to be in poverty, and even more likely to live longer. These disparities are large in part because of rising national income inequality, but also because convergence between places has broadly slowed today.

In the first three quarters of the 20th century there was a general pattern of income convergence, with poorer regions catching up to richer ones

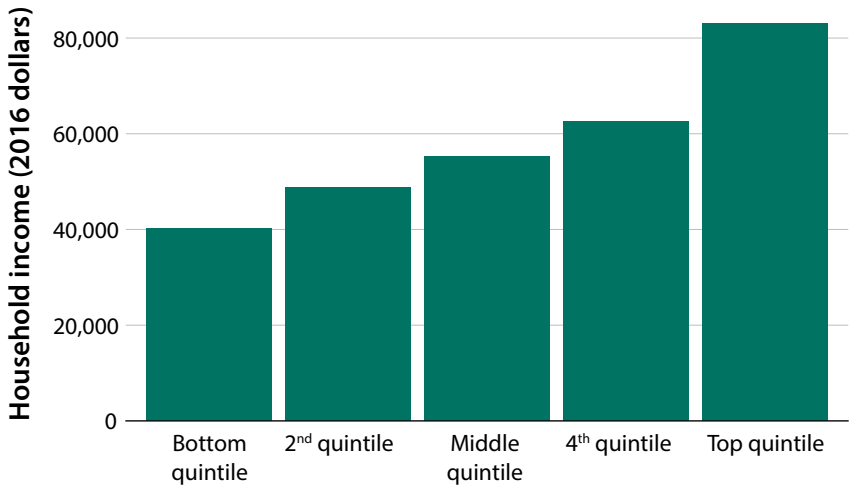
(see figure B). Moreover, shocks that led to high unemployment tended to dissipate as local economies rebounded or people moved away from struggling areas (Blanchard and Katz 1992). The lack of large, persistent gaps across places often made place-based policies seem either unnecessary or inefficient.

Today, though, both long-run convergence and recovery from negative shocks have slowed. Unemployment rates do not fall as quickly after a localized adverse shock, and economic shocks have become increasingly geographically concentrated, with persistent impacts on local labor markets (Autor, Dorn, and Hanson 2013). There has also been a decline in geographic mobility: workers, especially those with less than a college degree, are simply less likely to move across states than they once were (Wozniak 2018). At the same time, southern states and other states with relatively low levels of economic activity no longer experience substantially faster rates of economic growth than other states (Ganong and Shoag 2017).

While disadvantaged areas have generally failed to catch up, a select few areas of the country have shot far ahead. In addition to rising income levels, measures of innovation and dynamism reflect this pattern: for example, more than 75 percent of all venture capital funding in 2017 went to just three states (Pitchbook and NVCA 2018; authors' calculations). The top 50

FIGURE A.

Household Income by County Income Quintile



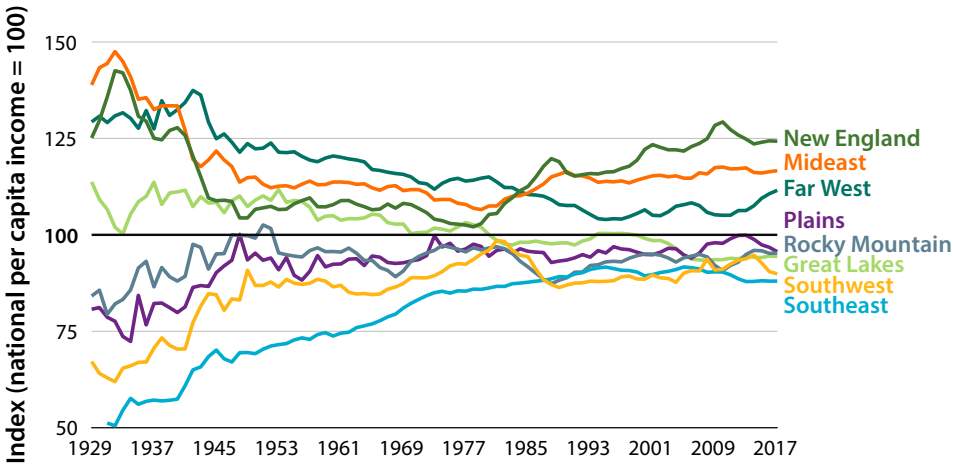
Source: American Community Survey (U.S. Census Bureau 2012–16); authors' calculations.

Note: Population-weighted quintiles of county median household income are first calculated, and then population-weighted averages of median household income—within each quintile—are presented in the figure.

THE HAMILTON PROJECT BROOKINGS

FIGURE B.

Per Capita Income Relative to National Average by Region, 1929–2017



Source: Bureau of Economic Analysis (BEA) 1929–2018; authors' calculations.
Note: Regions are BEA regional categories.

THE HAMILTON PROJECT
BROOKINGS

counties accounted for more than half of all patents in 2015 (U.S. Patent and Trademark Office; authors' calculations). Business start-ups have been similarly concentrated, with only seven states accounting for nearly 50 percent of all start-ups in 2014 (Business Dynamics Statistics [Census 2014]; authors' calculations).

Substantial gaps in economic outcomes exist at the region, state, county, and even neighborhood levels. Even places that are generally prospering tend to have large pockets of disadvantage: 7 percent of extreme poverty Census tracts (i.e., tracts with a poverty rate of at least 40 percent) are in counties in the top quintile of median household income.

The Role of Place-Based Policies

Gaps in income and economic performance across areas have drawn extensive policy attention throughout the history of this country. Whether a part of Henry Clay's early 19th century infrastructure plan for internal improvements, the establishment of land grant colleges in the second half of the 19th century, or the New Deal–era Tennessee Valley Authority, many past plans for place-based policies focused on physical or educational infrastructure. In more recent decades, place-based policies have taken a variety of different forms, all aimed at stimulating economic activity in distressed locations.

Economists have looked to a few different justifications for place-based policies. First, there may be a need to better match workers to employers (Neumark and Simpson 2015). As Austin, Glaeser, and Summers (forthcoming) note, if increases in labor demand have larger impacts in struggling areas, this suggests that policies targeted at specific places could be optimal.

Second, for places exposed to damaging shocks, there is an insurance rationale for place-based policies (Kline and Moretti 2014). Third, a lack of local public goods—whether due to long-run disparities or damaging temporary shocks—may call for place-based investments in institutions and other public goods (Kline and Moretti). Finally, equity considerations suggest that if some people are not able to or do not want to move from a struggling region, it would be appropriate to help them when possible.

As outlined in Austin, Glaeser, and Summers (forthcoming), there are several different types of place-based policies. These include direct public investment, such as the federal highway system. They also include more-indirect policies such as tax benefits or grants to businesses and individuals. For example, the New Markets Tax Credit program attracts capital to low-income neighborhoods by giving tax credits to individual and corporate investors. Finally, policies could come in the form of regulatory relief, as in the United Kingdom's enterprise zones.

Perhaps the most well-known modern set of place-based policies in the United States are enterprise zones, which are geographically targeted tax benefit and grant programs that exist at both the state and federal levels to encourage business development. Analysis summarized in Neumark and Simpson (2015) shows that enterprise zones have had mixed results. These policies have generally failed to increase employment or reduce poverty, in particular for poor residents in these areas, but have sometimes increased property values, which is unlikely to help the most disadvantaged in targeted areas.

Whereas many previous attempts at place-based policies have appeared either inefficient or ineffective, the patterns noted here, and in more detail in our framing chapter, raise the question of whether there exist efficient policy responses that can help struggling regions grow faster and attain higher living standards. Careful examination of the body of evidence generated by previous place-based policies, as well as a new emphasis on rigorous evaluation and experimentation, suggest multiple directions for policy that are explored in this volume.

In the framing chapter of this volume we review the geographic disparities that characterize our modern economy, elaborating on many of the patterns discussed in this introduction and illuminating some of the forces that contribute to the success or stagnation of places. In the following chapter economists Bradley Hardy, Trevon Logan, and John Parman examine the connection between racial and geographic inequality, highlighting the roles of racial segregation and structural racism in public policy. The legacy of these policies continues to shape economic outcomes for people and places today, and their effects should be taken into account when crafting any place-based policies.

The final four chapters in this volume provide new directions for place-based policies. David Neumark of the University of California, Irvine, builds on the accumulated evidence of unsuccessful policies to suggest a better approach to geographically targeted employment subsidies. Neumark proposes that the federal government subsidize employment in places that are struggling, focusing on nonprofit jobs that contribute to local public goods and lead to private sector employment. Tracy Gordon of the Urban-Brookings Tax Policy Center draws on the experience of the American Recovery and Reinvestment Act of 2009 to propose a set of reforms that would ensure that federal policies more effectively support places with limited fiscal capacity and resilience. Economists E. Jason Baron, Shawn Kantor, and Alexander Whalley propose an expanded Manufacturing Extension Partnership that would increase the effectiveness of universities at promoting local economic growth. The volume concludes with a chapter by Stephen Smith of The George Washington University, who draws insights from development economics to improve place-based policies in the United States.

References

Austin, Benjamin, Edward Glaeser, and Lawrence Summers. Forthcoming. "Saving the Heartland: Place-based Policies in 21st Century America." *Brookings Papers on Economic Activity* (forthcoming).

Autor, David H., David Dorn, and Gordon H. Hanson. 2013. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States." *American Economic Review* 103 (6): 2121–68.

Blanchard, Olivier, and Lawrence Katz. 1992. "Regional Evolutions." *Brookings Papers on Economic Activity* (1): 1–75.

Ganong, Peter, and Daniel W. Shoag. 2017. "Why Has Regional Income Convergence in the U.S. Declined?" *Journal of Urban Economics* 102 (November): 76–90.

Kline, Patrick M., and Enrico Moretti. 2013. "Place Based Policies with Unemployment." *American Economic Review: Papers & Proceedings* 103 (3): 238–43.

———. 2014. "People, Places, and Public Policy: Some Simple Welfare Economics of Local Economic Development Programs." *Annual Review of Economics* 6: 629–62.

Neumark, David, and Helen Simpson. 2015. "Place-based Policies." In *Handbook of Regional and Urban Economics,* vol. 5b, edited by Gilles Duranton, J. Vernon Henderson, and William C. Strange, 1197-287. Amsterdam, Netherlands: Elsevier.

Pitchbook and the National Venture Capital Association (NVCA). 2018. "4Q 2017 PitchBook-NVCA Venture Monitor, Table 'Deal Flow by State.'" Pitchbook, Seattle, WA.

U.S. Bureau of Economic Analysis (BEA). 1929–2018. "Per Capita Personal Income in the United States BEA Regions." U.S. Bureau of Economic Analysis, Suitland, MD. Retrieved from FRED, Federal Reserve Bank of St. Louis.

U.S. Census Bureau (Census). 2014. "Business Dynamics Statistics." U.S. Census Bureau, Suitland, MD.

———. 2012–16. "American Community Survey." U.S. Census Bureau, Suitland, MD. Prepared by Social Explorer.

U.S. Patent and Trademark Office. 2015. "U.S. State Patenting Breakout by Regional Component: Count of 2000–2015 Utility Patent Grants." U.S. Patent and Trademark Office, Washington, DC.

Wozniak, Abigail. 2018, February. "Coming and Going: Encouraging Geographic Mobility at College Entry and Exit to Lift Wages." In *Revitalizing Wage Growth: Policies to Get American Workers a Raise*, edited by Jay Shambaugh and Ryan Nunn, 77–91. Washington, DC: The Hamilton Project.

The Geography of Prosperity

Ryan Nunn, *The Hamilton Project and the Brookings Institution*
Jana Parsons, *The Hamilton Project*
Jay Shambaugh, *The Hamilton Project, the Brookings Institution, and The George Washington University*

Abstract

Over the last several decades, the fortunes of regions and communities across the United States have stopped converging. Evolving patterns of trade and technology, among other factors, have created concentrated prosperity while leaving many places behind. In order to formulate an effective policy response at the local, state, and federal levels, it is necessary to understand how economic activity has shifted, as well as the factors that are associated with success or failure for particular places. To present a full picture of which places are thriving, how that picture has changed over time, and what factors are associated with success or failure, we created the Vitality Index, which measures the economic and social well-being of a place. We find that places in 1980 with higher levels of human capital, more diverse economies, lower exposure to manufacturing, higher population density, and more innovative activity tended to have higher vitality scores in 2016. Further, both the differences in fiscal capacity among states and declining migration rates can reinforce differences in economic outcomes across places. The analysis in this chapter underscores the complicated overlap of gaps across places: differences across regions, states, and counties are all substantial, as are differences within counties.

Introduction

Where people live is a crucial determinant of their economic opportunities. While much of economics concerns differences across individuals—gaps in income, wealth, and education—it is also important to examine differences across places; these geographic disparities can indicate important constraints on individual opportunity as well as failings of public policy to lay the groundwork for economic growth.

There is wide variation in economic outcomes across the United States. Not all economic gaps are surprising or new: for example, urban regions are on average richer than rural areas, and New England has a higher average income than the Southeast (U.S. Bureau of Economic Analysis [BEA] 2017). More surprising is that these regional patterns overlay dramatically different economic outcomes across counties in the United States, and that in recent decades struggling places have made unusually little headway in catching up with prospering places.

These gaps between counties are stark, with substantial inequality on a number of dimensions. Median household income in the top quintile of counties in the United States is more than twice as high as median household income in the bottom quintile of counties, and poverty rates are nearly three times as high in the worst-performing counties compared to top performers (see table 1). Other measures tell similar stories: unemployment rates are twice as high in the worst-performing counties, and 15.9 percentage points fewer prime-age (25–54) residents are employed in the worst-performing counties compared to the best-performing counties. These are striking disparities: consider that the national decline in prime-age employment from 2000 through 2010 was a comparatively small 6.4 percentage points, and this decline has generated concern among

TABLE 1.

Worst-Performing and Best-Performing Quintiles of Selected County Indicators

	Worst-performing quintile	Best-performing quintile	Difference
Median household income	$40,300	$83,000	$42,700
Poverty rate	22.7%	8.1%	14.6 p.p.
Unemployment rate	10.7%	5.8%	5.9 p.p.
Prime-age EPOP	66.7%	82.6%	15.9 p.p.
Housing vacancy rate	21.7%	5.2%	16.5 p.p.
Life expectancy	75.8 years	81.8 years	6.0 years

Source: American Community Survey (ACS; Census 2012–16); Institute for Health Metrics and Evaluation (IHME; 1980–2014); authors' calculations.

Note: Quintiles are calculated separately for each variable. For household income, population-weighted quintiles of county median household income are first calculated, and then population-weighted averages of median household income—within each quintile—are presented in the table. EPOP is the employment-to-population ratio. P.p. refers to percentage points.

THE HAMILTON PROJECT
BROOKINGS

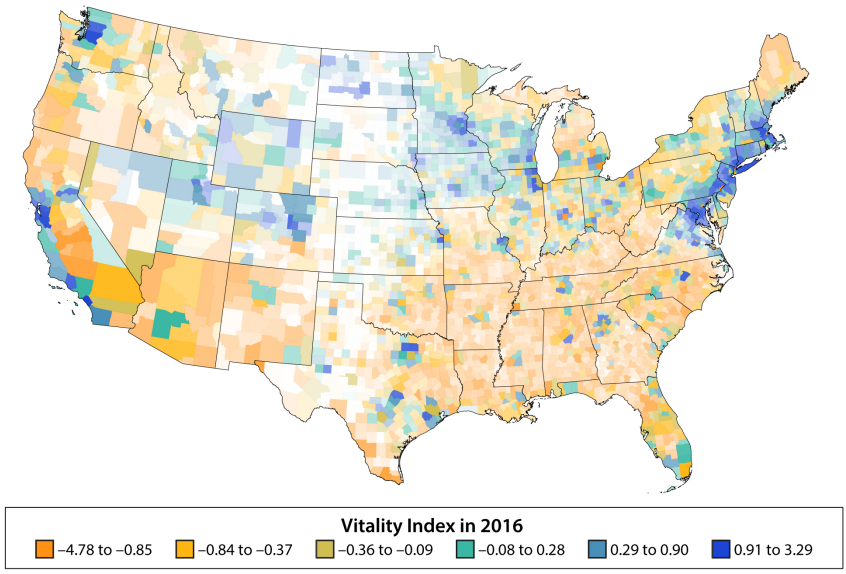
researchers and policymakers alike (Bureau of Labor Statistics [BLS] 2000–10; Abraham and Kearney 2018).

Labor market disparities are accompanied by large gaps in life expectancy as well as differences in housing markets. Life expectancy is six years higher in the counties with the highest life expectancy compared to those with the lowest, and the share of houses in an area that are vacant is more than four times as high in counties from the worst-performing quintiles versus the best-performing quintiles. Taken together, these gaps suggest a meaningfully different economic life for residents in some counties relative to others.[1]

To present the full picture of which places are thriving, we created the Vitality Index, which measures the economic and social well-being of a place. Whereas county median income and poverty rates are the most important components of this index, the other variables described in table 1 also play important roles. See box 1 for a description of the index and its construction.

FIGURE 1.

Vitality Index by County



Source: ACS (Census 2012–16); IHME 1980–2014; authors' calculations.

Note: Yellow counties have below-average vitality and blue counties have above-average vitality. Darker counties have larger populations.

THE HAMILTON PROJECT BROOKINGS

BOX 1.

The Vitality Index

We construct a composite measure of several different indicators to determine a county's vitality in 1980 and 2016.[2] Employing a statistical technique called "confirmatory factor analysis," we create an index that summarizes the common variation of several measures of economic activity and well-being. The indicators and their relative weights in the formation of the index are as follows:

- Median household income (45 percent)[3]
- Poverty rate (24 percent)
- Life expectancy (13 percent)
- Prime-age employment-to-population ratio (9 percent)
- Housing vacancy rate (5 percent)
- Unemployment rate (4 percent)

We chose these characteristics to provide a well-rounded—though necessarily incomplete—picture of the conditions that directly reflect economic and social well-being in a county. By contrast, we excluded from the index other important factors such as education, population density, and industry composition. Those characteristics of a place arguably do not themselves reveal whether a place is struggling or flourishing; rather, they might be responsible for generating or predicting that vitality. For example, the college-educated share of the population may be causally related to the vitality of a place, but in and of itself a higher share of college-educated residents does not necessarily mean that a place has greater vitality than another county with equivalent income, poverty, life expectancy, and other similar conditions. We also exclude variables such as employment growth that may largely be a function of changes in population; however, we include employment rate indicators to summarize the labor market as well as vacancy rates to distinguish places that are hollowing out from places that are flourishing.[4]

The Vitality Index is calculated in 1980 and 2016 for all counties in the contiguous United States.[5] Counties with a Vitality Index above zero are doing better than the (population-weighted) average county, and those with a vitality score below zero are doing worse.

Because the measure puts the six variables on the same scale before combining them, a growing spread in any given variable would not be represented by a change in the index over time.

Other organizations have created indices that measure the economic well-being and standard of living of places, using a variety of variables and levels of geography. Examples include *The New York Times*' Upshot ranking of counties (Flippen 2014), the Economic Innovation Group's Community Distress Index (Economic Innovation Group 2017), Moody's Regional Diversity, Volatility, and Vitality Index (Lafkis and Fazio 2017), and the Brookings Metropolitan Policy Program's Metro Monitor (Shearer et al. 2018), which tracks the 100 largest metro areas. Relative to other approaches, one virtue of our Vitality Index is that it does not stipulate equal weight for all its component measures. Rather, the use of confirmatory factor analysis allows us to assign weights to components depending on how closely associated they are with the underlying county vitality we seek to capture.

For a more detailed description of the Vitality Index and its construction, see the accompanying online technical appendix.

Figure 1 shows the Vitality Index for 2016, with blue counties receiving the highest scores and yellow counties receiving the lowest. The map also depicts relative population by representing populous areas in darker colors and sparsely populated areas with lighter colors.[6] The Vitality Index shows that in 2016 the East Coast metropolitan areas and their suburbs, many West Coast cities, and the upper Midwest and Plains regions were thriving. Some of the high-vitality parts of the upper Midwest in particular appear lighter on the map due to their relatively small populations. And a few successful cities score high on the index (e.g., Denver, Raleigh, and Seattle) even when the surrounding regions often score much lower.

In contrast, broad swaths of the rural South, Southwest, and lower Midwest have below-average vitality scores. Except for a few better-performing cities, most of the South is below average, and virtually all of Arkansas, Kentucky, Mississippi, and West Virginia have low scores. Not all cities are thriving. Detroit, Gary, New Orleans, Toledo, and a number of other Midwestern and southern cities have low scores. While more of the map appears yellow than blue, this reflects the fact that many of the highly successful urban

areas are geographically small (but populous) compared to some large rural counties that score lower on the index.[7]

Economic Convergence Has Slowed

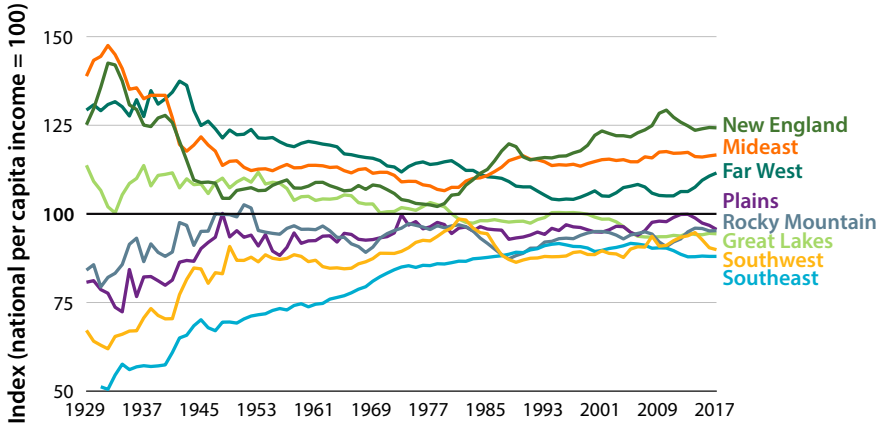
That there are differences within the U.S. economy or that some places are wealthier than others is not news. But it is newsworthy that struggling places have made unusually little headway in catching up with prospering places over the past few decades.

In the past, the usual process of convergence was one in which struggling places grow faster than places that are already thriving, thus closing the gap between them. Even vast disparities between areas can be eliminated over time as families move, businesses form and relocate, and policies are altered to better support growth. This dynamic had generally characterized places and regions in the United States through the middle of the 20th century. The Southeast rose from 50 percent of average national income in 1930 to 86 percent by 1980; during the same time New England fell from 130 percent to 105 percent as the rest of the country caught up.

Furthermore, if a negative economic shock hit a particular place, subsequent recovery tended to reverse the local downturn. In some cases people moved away, and in other cases economic activity returned, but when unemployment rose in a given region it did not tend to stay high. In

FIGURE 2.

Per Capita Income Relative to the National Average by Region, 1929–2017



Source: BEA 1929–2018; authors' calculations.
Note: Regions are BEA regional categories.

THE HAMILTON PROJECT
BROOKINGS

particular, high (or low) unemployment rates did not tend to persist from 1975 to 1985 (Blanchard and Katz 1992). More recently, unemployment rates have become far more persistent; local areas with high unemployment continue to have high unemployment in later years (Autor, Dorn, and Hanson 2013; Kline and Moretti 2013; Rappaport 2012).[8] Moreover, the rate of prime-age men in a particular place who did not work in 2010 is highly correlated with that same rate in 1980 (Austin, Glaeser, and Summers, forthcoming).

Robust convergence in regional income is also apparent throughout much of the 20th century. States were converging economically from the late 1800s to the 1980s, in terms of both per capita income and gross state product (Barro and Sala-I-Martin 1991). For example, southern states had low per capita incomes in 1880 and subsequently had relatively high growth rates. Indeed, figure 2 shows that per capita income among different regions of the United States converged toward the national average until about 1980.

However, this century-long trend appears to have ended. After 1980 per capita income convergence slowed dramatically, and perhaps even reversed to become slightly divergent. Ganong and Shoag (2017) document these trends at the state level, pointing to high housing costs in desirable areas

FIGURE 3A.

Levels and Growth of Real Median Household Income by County, 1960–80

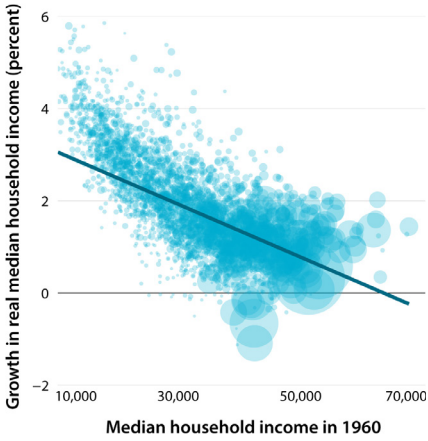
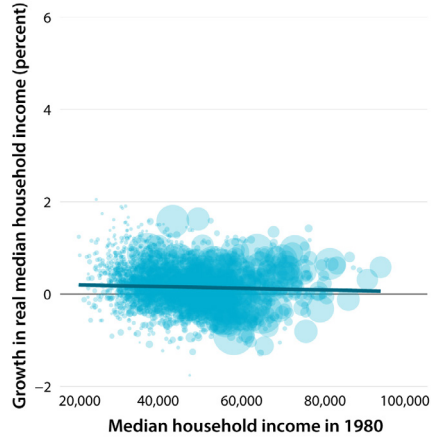


FIGURE 3B.

Levels and Growth of Real Median Household Income by County, 1980–2016



Source: 1960 and 1980 Decennial Censuses and ACS (Census 1960, 1980, 2012–16); authors' calculations.

Note: Median household income is deflated using the CPI-U-RS. Bubble size is proportional to county population in 1980. Growth in real median household income is the annualized rate.

THE HAMILTON PROJECT BROOKINGS

and decreased net migration as factors slowing convergence. Austin, Glaeser, and Summers (forthcoming) find evidence consistent with a lack of convergence in median incomes for prime-age men at a more local level from 1980 to 2010.[9]

In our analysis of county-level data from 1960 to 2016 we find similar patterns. Figure 3a shows median household income in 1960 plotted against the annualized percent change in real median household income from 1960 to 1980. The fact that there is a negative relationship indicates that counties with low 1960 incomes tended to have higher percent increases in incomes from 1960 to 1980, allowing them to converge toward the richer counties. However, since 1980 this relationship has completely broken down. Figure 3b shows that there was no relationship between 1980 income levels and subsequent income growth. Some poorer counties were able to make progress—for example, low-income counties in the Atlanta and Memphis areas—but many were not. Similarly, though a few initially richer counties—for example, counties in the Cleveland and Indianapolis areas—experienced a relative decline, many did not. In the aggregate, though, recent years have seen no convergence between poorer and richer counties.[10]

HOW PLACES HAVE CHANGED

To better understand how particular places have changed over time, we use the county-level Vitality Index—which encompasses more outcomes than just household income—to explore which counties are prospering and which are struggling.

County vitality has been relatively persistent over the past 40 years: the counties that are doing well continue to do well, and the counties that are not doing well continue to lag (figures 4a and 4b). One exception is the upper Midwest, which had many below-average vitality areas in 1980. With the relatively recent boom in U.S. oil and gas extraction (in particular the rise of hydraulic fracturing, or fracking), some areas in North Dakota, South Dakota, and northern Nebraska have experienced substantial increases in vitality. Conversely, many (though not all) of the core Midwest manufacturing cities slid down the Vitality Index: for example, figures 4a and 4b show Michigan and Ohio with lower vitality in 2016 than in 1980.

But, for the most part, if a county had low vitality in 1980 it was likely to have low vitality in 2016. Table 2 shows that 71 percent of counties in the bottom vitality quintile in 1980 remained there in 2016, and fully 92 percent remained in the bottom two quintiles. On the other end of the distribution, 58 percent of the counties in the top vitality quintile remained there over

FIGURE 4A.

Vitality Index by County, 1980

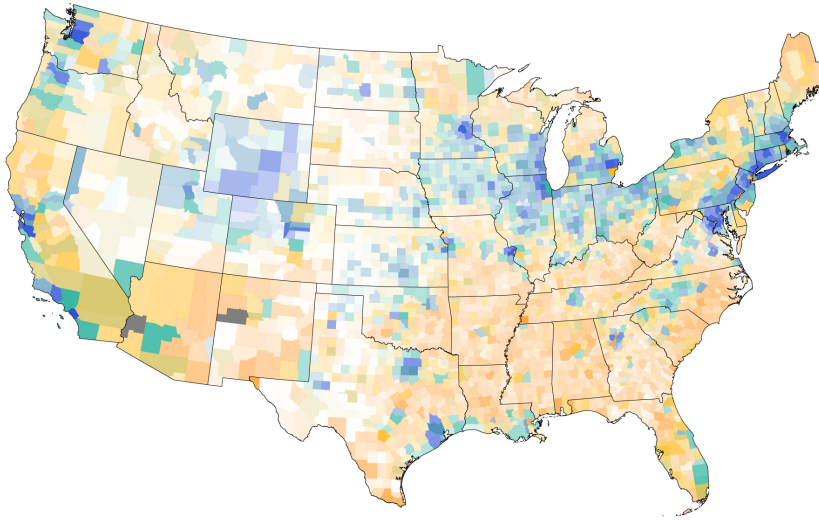
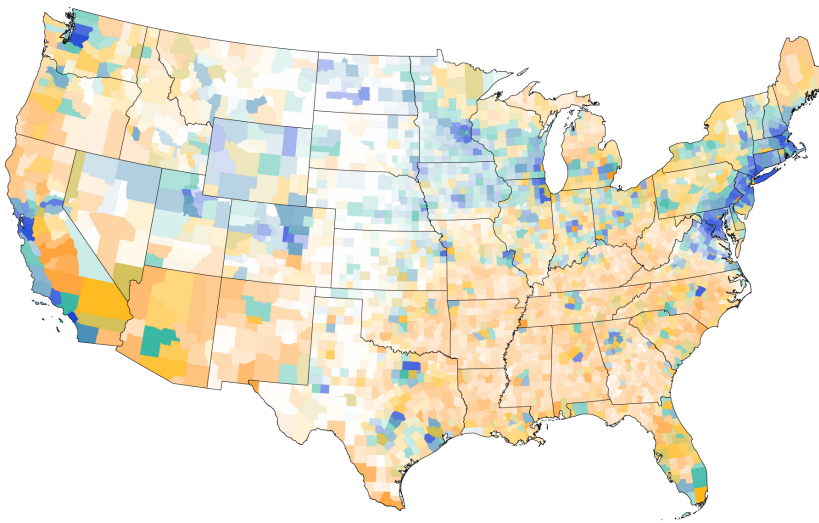


FIGURE 4B.

Vitality Index by County, 2016



Source: 1980 Decennial Census and ACS (Census 1980, 2012–2016); IHME 1980–2014; authors' calculations.

Note: Map break points are based on 2016 population-weighted vitality. Yellow counties have below-average and blue counties have above-average vitality. Darker counties have larger populations. Gray counties are those that did not exist in 1980.

THE HAMILTON PROJECT
BROOKINGS

our sample period, and 87 percent remained in the top two quintiles. The places in the United States with the most consistently high levels of vitality are the Northeast corridor; West Coast areas including Los Angeles, Seattle, and Silicon Valley; and cities throughout the country, including Atlanta, Austin, Denver, and others.

Against a backdrop of relatively high overall persistence in vitality, figure 5 highlights areas of both positive and negative change. The Rust Belt extending throughout Indiana, Michigan, Ohio, and Pennsylvania saw steep declines in vitality over this period. As noted above, areas throughout the Dakotas south through Texas saw increases in vitality, likely driven by oil and gas extraction. However, given that these areas are relatively unpopulated, they show up only as light blue in figure 5. It is important to note that in some cases changes in vitality can tell a story quite different from that told by levels of vitality. For example, counties in Minneapolis and St. Paul experienced decreases in vitality, but the largest county in that metropolitan area was still in the top quintile of vitality in both periods.

The eight counties that began in the bottom quintile in 1980 and ended in the top quintile in 2016 are all low-population counties in fracking areas (Nebraska, North Dakota, and South Dakota). However, New York County (i.e., the borough of Manhattan) jumped from the second-to-last quintile to the top quintile and is consequently in the 99th percentile for change in

TABLE 2.

County Vitality Mobility by Quintile, 1980–2016

1980 Vitality quintile	2016 Vitality quintile: 1 (lowest)	2	3	4	5 (highest)
1 (lowest)	71%	21%	5%	2%	1%
2	23%	41%	19%	12%	5%
3	5%	27%	34%	22%	12%
4	0.5%	10%	31%	34%	24%
5 (highest)	0.0%	2%	11%	29%	58%

Source: 1980 Decennial Census and ACS (Census 1980, 2012–16); IHME 1980–2014; authors' calculations.

Note: Quintiles are county-weighted.

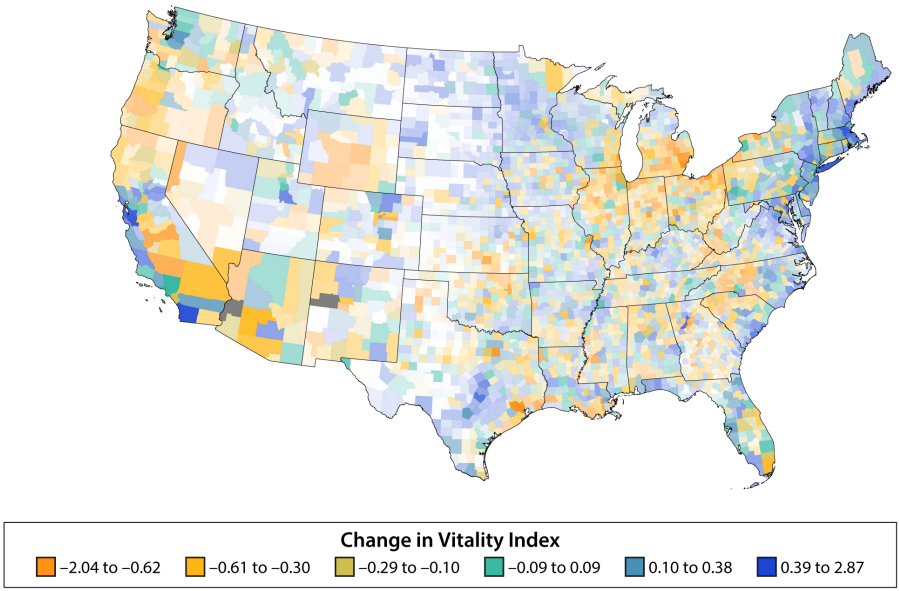
vitality from 1980 to 2016, higher even than San Francisco. Conversely, counties in Flint and New Orleans are two of the eleven counties that were in the top quintile in 1980 but fell to the second-to-last quintile in 2016, due to the decline in auto manufacturing and Hurricane Katrina, respectively.

Figure 6 highlights the Vitality Index in both 1980 and 2016 for an illustrative set of counties. For example, many coastal cities that were notably below average in 1980 are now among the highest vitality counties. By contrast, cities in the Rust Belt in 1980 had levels of vitality that were close to average. Rust Belt areas subsequently experienced substantial decreases in vitality from 1980 to 2016. This does not come as a surprise given the declines in the Rust Belt's heavy manufacturing sector, which started before 1980 (Ohanian 2014).

Given that many have pointed to Pittsburgh as a model comeback city (e.g., *Time* 2015), it is particularly notable that the county containing Pittsburgh (Allegheny County) had only slightly above-average vitality in both 1980 and 2016. However, it is important to recall that much of the decline of Pittsburgh's manufacturing sector took place throughout the 1980s; the subsequent rebound (some of which occurred near but outside Allegheny

FIGURE 5.

Change in Vitality Index by County, 1980–2016



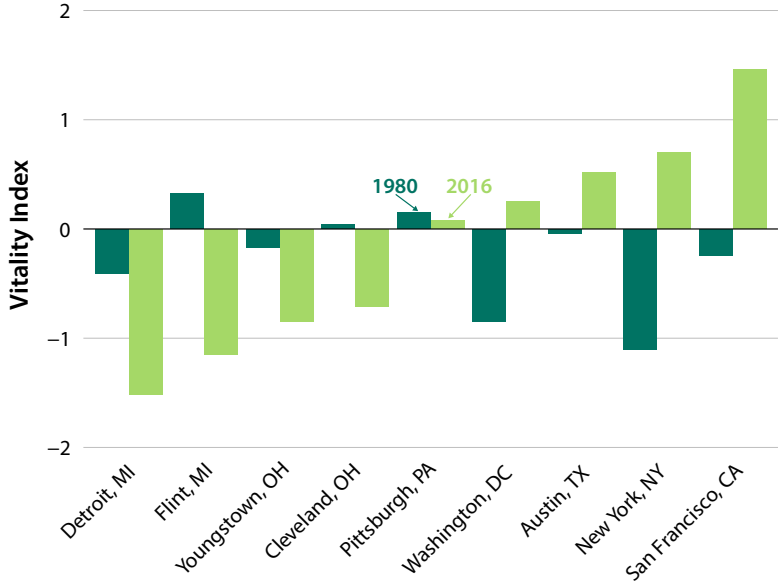
Source: 1980 Decennial Census and ACS (Census 1980, 2012–16); IHME 1980–2014; authors' calculations.

Note: Yellow counties decreased in vitality from 1980 to 2016 and blue counties have increased in vitality over that same period. Darker counties have larger populations. Gray counties are those that did not exist in 1980.

THE HAMILTON PROJECT BROOKINGS

FIGURE 6.

Vitality Index for Selected Cities, 1980 and 2016



Source: 1980 Decennial Census and ACS (Census 1980, 2012–16); IHME 1980–2014; authors' calculations.

Note: Cities refer to the largest county contained in the metropolitan statistical area.

THE HAMILTON PROJECT BROOKINGS

FIGURE 7A.

Vitality Index by Region, 1980 and 2016

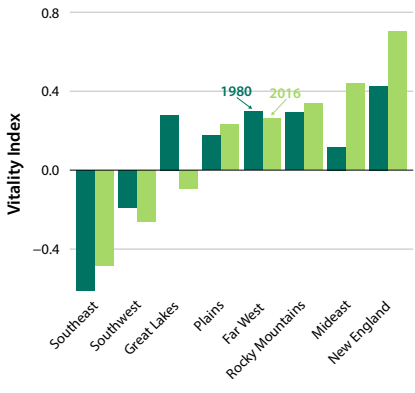
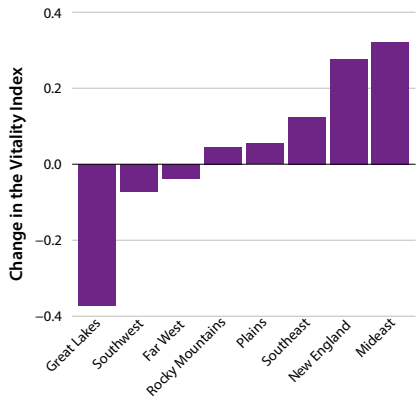


FIGURE 7B.

Change in Vitality Index by Region, 1980–2016



Source: 1980 Decennial Census and ACS (Census 1980, 2012–16); IHME 1980–2014; authors' calculations.

Note: The Vitality Index is weighted based on region population in each year. Regions are BEA regional categories.

THE HAMILTON PROJECT BROOKINGS

County) is therefore not isolated in our data. In some sense, the striking feature of Pittsburgh's experience from 1980 to 2016 is that it did not decline in the way many other prominent Midwest manufacturing cities did.

At the regional level, the Southeast and Southwest were clearly struggling in terms of vitality in 1980, and are still not doing well. In contrast, New England and the Mideast (i.e., Delaware, the District of Columbia, Maryland, New Jersey, New York, and Pennsylvania) started above average in 1980 and improved from 1980 to 2016 (figures 7a and 7b). These patterns are consistent with previous findings of slowing regional convergence (Ganong and Shoag 2017) and contemporary regional disparities (Austin, Glaeser, and Summers, forthcoming). Some regions, though, saw a reversal of fortune. The Great Lakes region, which had above-average vitality in 1980, subsequently fell substantially below average by 2016 (experiencing the largest decline of any region). This Rust Belt decline is consistent with the Austin, Glaeser, and Summers characterization of what they call the "Eastern Heartland" as having suffered the most of all regions over the past 30 years.

What Explains County Vitality?

What do struggling (or thriving) places have in common? Having described the broad patterns of convergence—or lack thereof—and the regions that have prospered or struggled in recent decades, it is also important to characterize the factors that are associated with county vitality. Below we consider five factors—population density, the degree of industry concentration, the manufacturing share of employment, the share of those without a high school degree, and the share of college graduates—that help explain both vitality and its change over time. In total, these five factors explain 71 percent of the variation in vitality across counties in 1980, and 66 percent of the variation in 2016 (in both cases, contemporaneous values of the factors are used). They are also helpful in understanding the change in vitality across counties over time. While it is not possible from this analysis to infer the causal impacts of these common factors, understanding associations can lead to further research and can help to direct policy toward relevant considerations. To conclude the section, we also consider the relationship between vitality and measures of innovation.

POPULATION DENSITY

Both low- and high-density places can host thriving communities, and this is evident in our analysis. But one would ordinarily expect thriving, desirable places to attract migration that boosts their populations, and struggling places to experience population decline. Moreover, economic

changes can increase or decrease the relative productivities of rural, suburban, and urban areas with differing levels of population density.

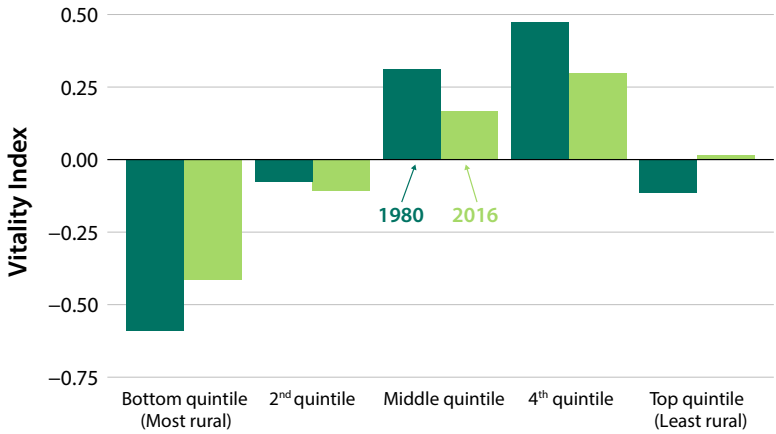
Figure 8 shows the average Vitality Index for the most- and least-rural counties.[11] In 1980 the second-least-rural areas were the most vital, indicating that relatively high-density places (though not the highest) were having the most success. Holding these categorizations fixed over time—i.e., tracking counties based exclusively on their 1980 categorization—we see that this pattern persisted into 2016.[12] The most-rural counties saw some improvement, but continued to have the lowest vitality. The least-rural counties also saw improvement and are now about average.

Economists often invoke so-called agglomeration economies—the economic benefits derived from living and working in proximity—when discussing the relationship between population density and economic activity (e.g., Marshall 1920). Some industries have long benefited from clustering: the concentration of automotive manufacturers in southeast Michigan (with suppliers clustering in the broader region) is a prime example (Klepper 2010).

An important part of agglomeration economies is the labor market advantage that exists when there are many buyers and sellers of labor—

FIGURE 8.

Vitality Index by Quintile of Rural Population Share, 1980 and 2016



Source: 1980 Decennial Census and ACS (Census 1980, 2012–16); IHME 1980–2014; authors' calculations.

Note: Quintiles are set based on 1980 rural population share. The Vitality Index is weighted by county population in each year.

THE HAMILTON PROJECT BROOKINGS

that is, when labor markets are thick. Thick labor markets can benefit both workers and firms through better matches and lower risk (Bleakley and Lin 2012; Wheeler 2008). Better matches in turn can raise worker productivity, benefiting their particular areas and the country as a whole (Acemoglu 1997; Helsley and Strange 1990; Rotemberg and Saloner 2000, as cited in Moretti 2011). Agglomeration economies appear to be relatively strong for skilled workers in nonroutine jobs, but nonexistent for unskilled workers (Andersson, Klaesson, and Larsson 2014), suggesting that agglomeration interacts importantly with a county's share of more-educated workers.

THE DEGREE OF INDUSTRY CONCENTRATION

Dense counties with thick labor markets tend to offer lower risk to workers, who can more easily find new employment after job loss (Moretti 2011). Similarly, a county may be exposed to less risk—for example, from evolving trade and technological conditions—when it features a wide range of industries. Indeed, state and local policymakers often seek to diversify their local economies to avoid these sorts of risks (e.g., McAuliffe 2014).[13] We therefore examine the differences between counties with a relatively small number of dominant industries (high concentration) and those with a more even distribution of industries (low concentration) based on the share of employment in given industries.

FIGURE 9A.

Vitality Index by Quintile of Industry Concentration, 1980 and 2016

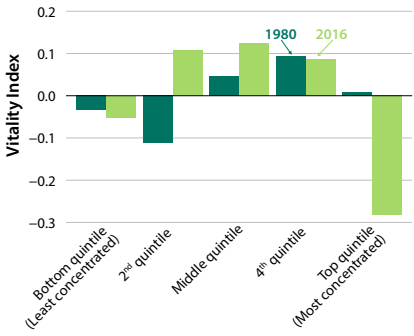
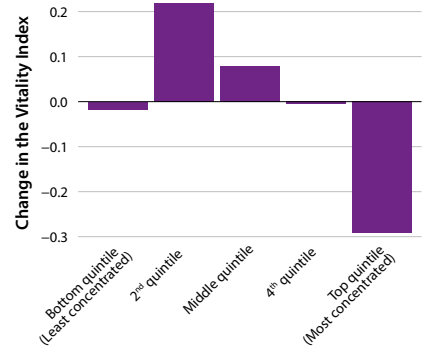


FIGURE 9B.

Change in the Vitality Index by Quintile of Industry Concentration, 1980–2016



Source: 1980 Decennial Census and ACS (Census 1980, 2012–16); IHME 1980–2014; authors' calculations.

Note: Quintiles are set based on 1980 industry concentration. The Vitality Index is weighted by county population in each year. Industry concentration is calculated using a Herfindahl-Hirschman Index of industry employment shares.

THE HAMILTON PROJECT
BROOKINGS

Figures 9a and 9b show the level of and change in vitality by quintiles of industrial employment concentration.[14] In 1980 there was not much of a discernable relationship between county vitality and the concentration of workers in a given industry, with all five quintiles grouped relatively close to each other, and none much more than 0.1 standard deviations from the national average of vitality. In contrast, those counties that had been highly concentrated in terms of employment in 1980 did not fare well by 2016. Those counties experienced the largest decline, and now have substantially lower vitality scores, on average.

THE MANUFACTURING SHARE OF EMPLOYMENT

The decline in vitality for counties with more industry concentration may be related to trends in manufacturing: areas that were dependent on the manufacturing sector in 1980 did not fare well throughout the process of deindustrialization that has taken place throughout the late 20th century. For example, the United States lost about 850,000 jobs in the steel and auto industries from 1977 to 1987, with large volumes of subsequent out-migration from struggling places (as cited in Feyrer, Sacerdote, and Stern 2007). The share of manufacturing in employment in 2000 was also correlated with employment declines in the 2000s—in other words, employment did not completely reallocate to other sectors after manufacturing employment losses (Charles, Hurst, and Schwartz 2018).

Consequently, figures 10a and 10b focus on the manufacturing employment share, giving a sense of how manufacturing-dependent counties have fared relative to others. The results are striking: in 1980 the places with more manufacturing employment generally scored higher in vitality; by 2016 the counties most dependent on manufacturing in 1980 scored the lowest. Furthermore, when controlling for population density, educational attainment, and industry concentration, a higher share of manufacturing employment is correlated with a higher vitality score in both 1980 and 2016, but having high manufacturing dependency in 1980 is one of the strongest predictors of a decline in vitality over time.

The two most commonly cited causes of deindustrialization and the shrinking share of employment in manufacturing are U.S. trade policy and technology. One common formulation of the trade argument is that a combination of rising foreign competition—most importantly from China—and certain U.S. trade policy decisions have put pressure on domestic U.S. manufacturing, resulting in job losses in that sector (Asquith et al. 2017). The technology explanation is that, over the past four decades, technologies like computerization and other forms of task automation have entered the workplace en masse, with different effects in different sectors

(Autor, Dorn, and Hanson 2015). According to this explanation, while the service sector experienced job polarization, manufacturing underwent large-scale automation in ways that have increased labor productivity and reduced the need for labor in manufacturing. Most economists agree that the loss in manufacturing employment is the result of some combination of the two (Fort, Pierce, and Schott 2018).

Areas with more manufacturing clearly suffered from adverse trade and technological shocks, but they also may have suffered from underinvestment in human capital. Goldin and Katz (2009) find that places with more manufacturing activity invested less in education because the opportunity cost was too high: workers' time was better spent supplying labor than acquiring more education. Indeed, counties with more manufacturing employment in 1980 tended to have a smaller fraction of college-educated individuals. As discussed in the next section, this became a problem for counties once manufacturing employment contracted and the labor market advantage of a college education became much larger.

EDUCATIONAL ATTAINMENT

The past few decades have seen a dramatic increase in the gains that flow from higher educational attainment. From 1980 to 2017 the wage advantage

FIGURE 10A.

Vitality Index by Quintile of Manufacturing Employment Share, 1980 and 2016

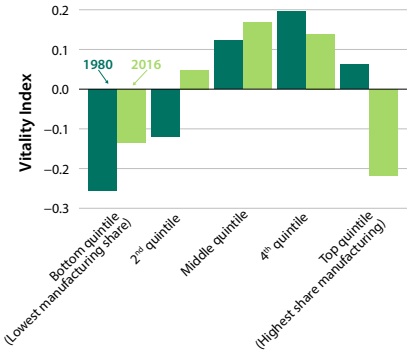
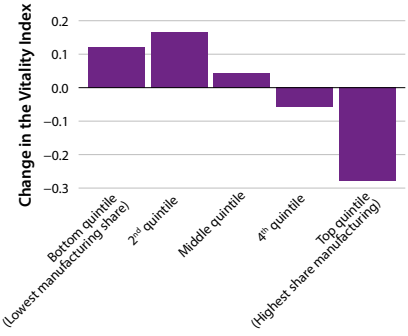


FIGURE 10B.

Change in the Vitality Index by Quintile of Manufacturing Employment Share, 1980–2016



Source: 1980 Decennial Census and ACS (Census 1980, 2012–16); IHME 1980–2014; authors' calculations.

Note: Quintiles are set based on 1980 manufacturing employment share. The Vitality Index is weighted by county population in each year.

THE HAMILTON PROJECT BROOKINGS

of a bachelor's degree over a high school diploma more than doubled, rising from 32 percent to 67 percent for full-time, prime-age workers (BLS 1980–2017; authors' calculations). Households headed by an individual with a college degree have a median family net worth more than 4 times larger than that of families headed by individuals with only a high school diploma, and almost 13 times larger than that of families with heads who have less than a high school diploma (Survey of Consumer Finances [Board of Governors of the Federal Reserve System 2016]; authors' calculations). Places with many college graduates benefited accordingly; a county's average level of educational attainment (both in terms of high school and college completion) is the strongest predictor of vitality that we find in our analysis.

Figure 11a shows that Vitaliy Index scores are lower for counties with a higher share of individuals who have less than a high school education; conversely, figure 11b shows that counties with a higher share of college-educated people are substantially more successful. The magnitude of the association is worth emphasizing. Counties with the highest share of individuals without a high school diploma were a full standard deviation below the average county in 1980 and almost two standard deviations

FIGURE 11A.

Vitality Index by Quintile of Less than High School Attainment, 1980 and 2016

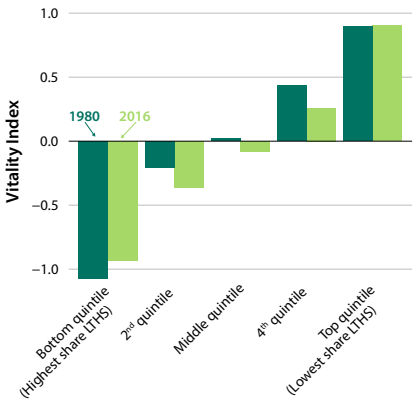
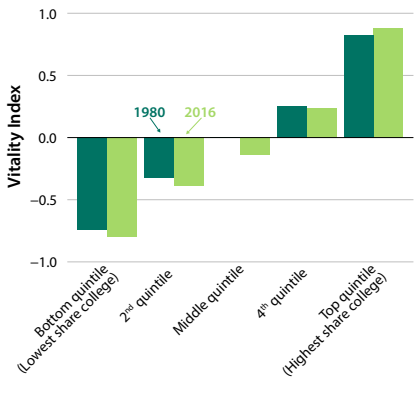


FIGURE 11B.

Vitality Index by Quintile of College Attainment, 1980 and 2016



Source: 1980 Decennial Census and ACS (Census 1980, 2012–16); IHME 1980–2014; authors' calculations.

Note: In 1980 college attainment is assumed for those with four or more years of college education. Quintiles are set based on 1980 educational attainment. The Vitality Index is weighted by county population in each year. LTHS refers to less than high school.

THE HAMILTON PROJECT
BROOKINGS

below those in the top quintile of high school graduates. This difference in vitality is roughly four times the difference in vitality between the top and bottom quintiles of rural population share, and is also a much larger difference than for other measures we examine. When examining the share of the population that has a bachelor's degree, the association with vitality has grown slightly, with the lowest college attainment counties seeing their Vitality Index decline and those counties with the highest share of college graduates in 1980 seeing a further increase in their Vitality Index.[15]

College attainment directly benefits graduates, but it also generates positive spillovers that likely improve county vitality. Workers without college degrees experience stronger salary gains if they live in cities with faster growth in the number of residents with a college degree relative to cities where college attainment has stagnated (Moretti 2004). A city's level of educational attainment is also important for future wage and housing price growth (Glaeser and Saiz 2004).

The relationship between vitality and education demonstrated in figures 11a and 11b is consistent with evidence from Giannone (2018), who finds that skill-biased technical change—innovations that disproportionately benefit skilled workers—can explain to some extent both regional divergence since the 1980s and cross-city wage differentials.

Given its relevance to counties' success, it is important to track changes over time in how the educated population is distributed across the country. Two patterns are immediately apparent. First, counties with high fractions of people in 1980 who had not graduated high school generally were able to catch up in terms of high school graduation with counties that had lower such fractions: in other words, we observe convergence at the bottom of the educational attainment distribution (see figure 12a). It is worth noting, though, that this improvement came with only a small improvement in relative vitality. These counties have closed the gap to some degree, but still lag the rest of the country in terms of the share without a high school diploma. It might be that as more and more work requires a minimum of a high school diploma, having 20 percent of the population without one today may be effectively as damaging as having 50 percent of the population without one in 1980. Second, counties with low fractions of people in 1980 who had received four-year college degrees experienced only small increases in that fraction through 2016, while counties that already had a higher share of college graduates made even more gains (see figure 12b). In other words, we observe divergence at the top of the educational attainment distribution: more-educated places have tended to become even more educated over time.[16] This is consistent with the slight intensification of the

FIGURE 12A.

Levels and Growth of Less than High School Attainment by County, 1980–2016

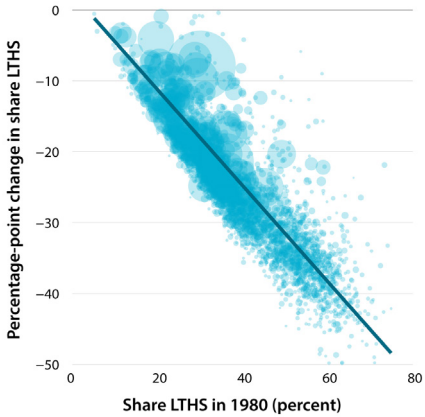
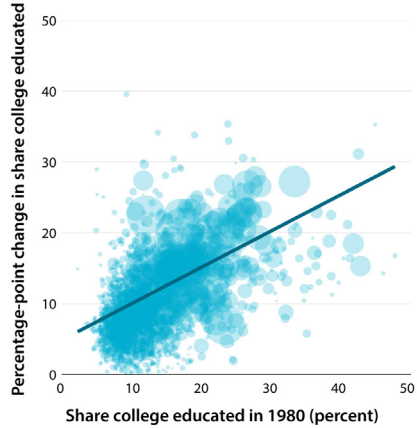


FIGURE 12B.

Levels and Growth of College Attainment by County, 1980–2016



Source: 1980 Decennial Census and ACS (Census 1980, 2012–16); authors' calculations.
Note: In 1980 college attainment is assumed for those with four or more years of college education. LTHS refers to less than high school. Bubble size is proportional to county population in 1980.

THE HAMILTON PROJECT BROOKINGS

association between vitality and share of the population with a bachelor's degree in 1980.

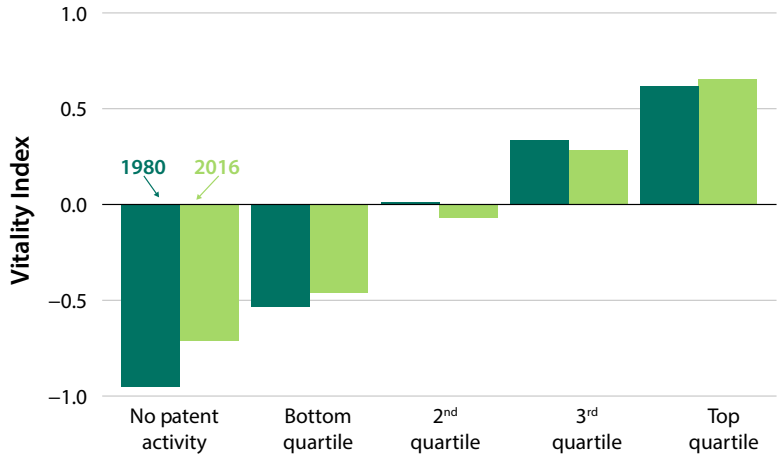
INNOVATION AND PATENTING

Closely related to educational attainment is the local volume of innovative activity, as proxied by the number of patents generated within counties. There are large regional disparities in innovative activity across the country (Chatterji, Glaeser, and Kerr 2014). In 1975 almost half of all counties had no patent activity at all. Moreover, patenting is highly concentrated in metropolitan areas and near research universities (Shambaugh, Nunn, and Portman 2017).

Figure 13 relates county per capita patenting activity in 1975 (the closest year of available data to our baseline year of 1980) to vitality in 1980 and 2016. The relationship is similar in the two years: counties with more per capita patents have higher vitality scores. This association is consistent with the emphasis on local innovative activity in Moretti (2012).

FIGURE 13.

Vitality Index by Quartile of Innovative Activity, 1975



Source: 1980 Decennial Census, ACS (Census 1980, 2012–16); IHME 1980–2014; Petralia, Balland, and Rigby 2016; authors' calculations.

Note: The Vitality Index is weighted by county population in each year. Quartiles are set based on 1975 patent activity.

THE HAMILTON PROJECT BROOKINGS

What Keeps Struggling Communities from Catching Up?

DISPARITIES IN STATE REVENUE CAPACITY

As explained previously, there has been little to no economic convergence since 1980. One factor that can reinforce differences in economic outcomes across places is the quality of investments in local public goods. State and local governments that are struggling may have difficulty paying for such investments, which in turn limits economic opportunity for residents. In addition, places with more-limited resources will likely be less resilient in the face of negative shocks related to trade, technology, and other factors.

We therefore document states' capacity to raise revenue, as well as the gap between revenue capacity—i.e., the potential revenue that a state could access—and actual state revenues. We refer to this latter concept as states' revenue effort because higher values indicate that a state is choosing to raise more of its potential tax revenue through some combination of higher tax rates and a broader taxable base. In this way we distinguish between, (a) the resources that a state could potentially access for public investments, and (b) the actual policy choices that determine whether a state raises much or little revenue.

One commonly used measure of potential revenue is the U.S. Treasury Department's (Treasury's) estimates of Total Taxable Resources (TTR). For any given state, TTR is the sum of all potentially taxable income flows, including capital gains, for example, but excluding social insurance contributions (Treasury 2002). Figure 14a shows the distribution of TTR per capita by state in 2015. Some states have considerably more resources available to tax: for example, Connecticut and North Dakota have relatively high potential taxable resources at over $87,500 and $79,000 per person, respectively—higher than the United States average of $62,300 (Treasury 2017). States in the Northeast and on the West Coast tend to have greater per capita revenue capacity, whereas states in the South generally have less. Many of the Plains states also have high TTR per capita, although much of their recent increase in capacity is likely attributable to oil and gas extraction.[17]

The revenues that states choose to raise are distributed somewhat differently across the United States. Figure 14b depicts an index of states' revenue effort—the ratio of a state's total tax revenue per capita to its TTR per capita—relative to the national average. Whereas states like Texas and New Hampshire have above-average revenue capacity, they have very low revenue effort. By contrast, a state like Arkansas has low taxable resources, but chooses to tax a relatively large portion of those resources. States like New York and California, which have relatively high potential revenue, also have high revenue effort. On average, despite the higher revenue effort in some places with low revenue capacity, low-vitality counties are in places with fewer resources to spend, meaning reduced public goods, education spending, social support spending, and other investments that help lift counties or individuals out of challenging circumstances.

DECREASING MIGRATION

Migration has historically been an important mechanism by which labor markets equalize incomes across regions, as well as an important driver of wage growth (Ganong and Shoag 2017; Nakamura, Sigurdsson, and Steinsson 2017). In recent years, however, geographic mobility has declined (Molloy, Smith, and Wozniak 2011; Molloy et al. 2016; Shambaugh, Nunn, and Liu 2018). Figure 15 depicts the decline in both intercounty and interstate migration.[18]

It is not fully clear what is driving this decrease in migration. Ganong and Shoag (2017) point to increasing housing costs that make it difficult for low-skilled workers to move to more-productive places.[19] Other research suggests that increasing occupational homogeneity across states has made it less necessary to move in order to access better employment opportunities

FIGURE 14A.

Total Taxable Resources per Capita by State

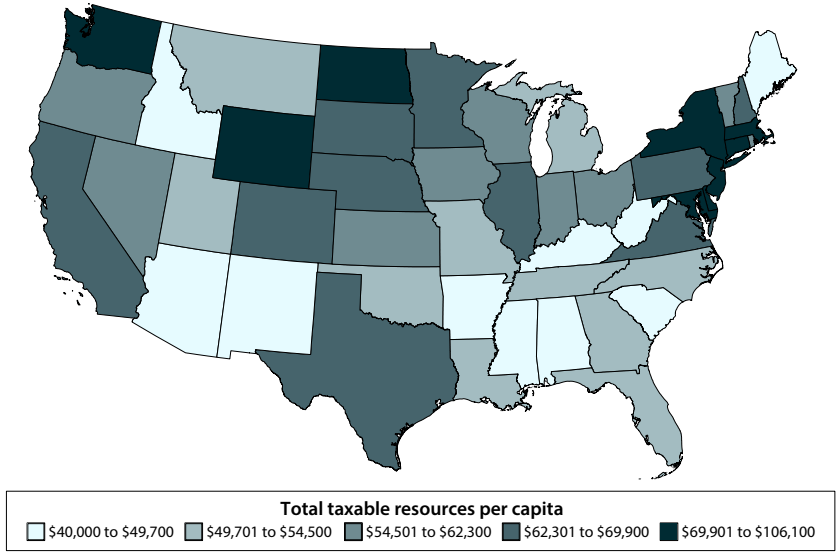
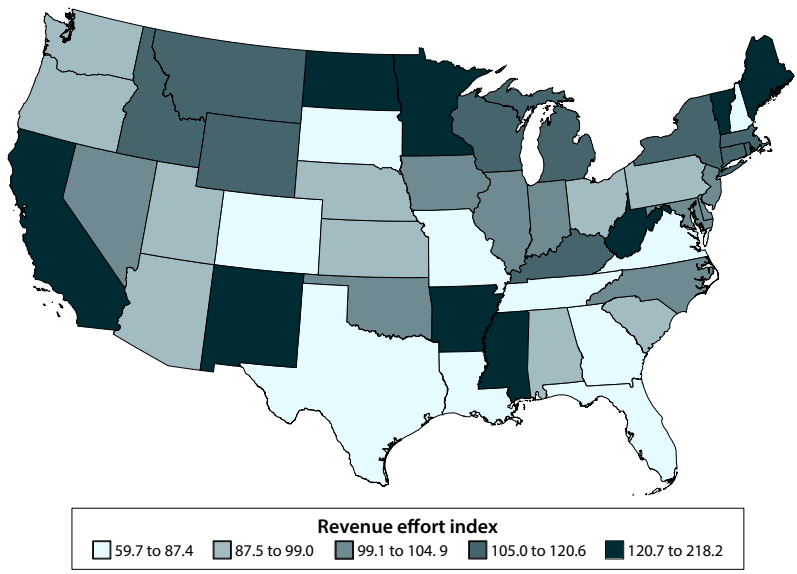


FIGURE 14B.

Revenue Effort by State



Source: Census 2015; Treasury 2017; authors' calculations.

Note: Total taxable revenue is shown for the most recent year of data, which is 2015. The index of revenue effort is the ratio of the per capita tax revenues to the per capita total taxable resources. It is indexed to the population-weighted national average.

THE HAMILTON PROJECT
BROOKINGS

BOX 2.

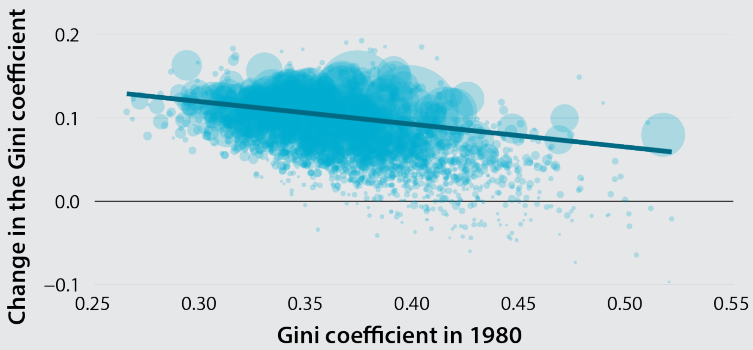
Looking *within* Counties at Income Inequality and Poverty

Income inequality for the nation as a whole is high and rising. The Gini coefficient—a statistical measure of income inequality—in the United States rose from 0.40 in 1980 to 0.48 in 2016 (Census 2017). Some of this inequality is associated with disparities across geographic areas of the kind previously discussed in this paper, but there are also important disparities within counties.

In fact, not only has the United States overall seen an increase in inequality, but also counties across the United States have tended to become more unequal over time: the median county Gini coefficient has risen from 0.36 in 1980 to 0.46 in 2016.[20] However, internal inequality has risen most quickly for counties that were initially the most egalitarian, as shown in box figure 1.

BOX FIGURE 1.

Level and Growth of Income Inequality by County, 1980–2016



Source: 1980 Decennial Census and ACS (Census 1980, 2012–16); authors' calculations.
Note: Bubble size is proportional to county population in 1980.

THE HAMILTON PROJECT BROOKINGS

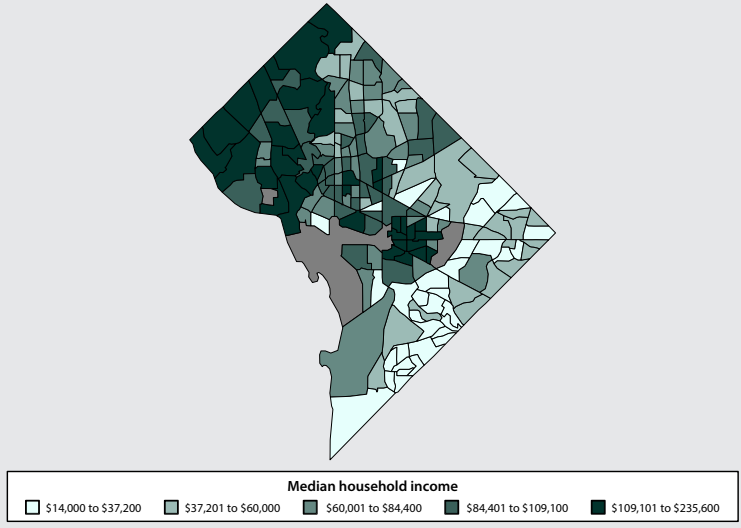
Turning to county poverty rates, there is a large gap between the lowest quintile of county poverty (8 percent) and the highest quintile (23 percent) in 2016. These rates have converged somewhat since 1980. Poverty rates have gone up in the areas that

previously had low poverty, while some high-poverty counties saw a decrease.[21]

The fact that poverty has gone up in previously low-poverty counties, or for that matter the fact that the poverty rate is still on average 8 percent in the lowest-poverty counties, underscores that being in a successful place does not eliminate the likelihood of being in poverty. A considerable number of very-low-income individuals live in counties that are doing well overall: 7 percent of extreme poverty Census tracts—tracts with a poverty rate of at least 40 percent—are in counties in the top quintile of median household income.

BOX FIGURE 2.

Median Household Income in the District of Columbia, by Census Tract



Source: ACS (Census 2012–16).

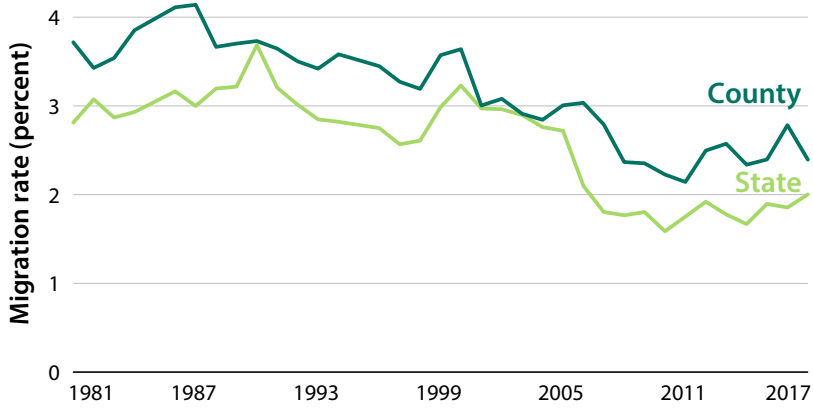
THE HAMILTON PROJECT
BROOKINGS

To take one example, the District of Columbia has experienced a sizable improvement in vitality from 1980 to 2016, moving from the second to fourth quintile of vitality. With a median household income in 2016 of $73,000, which is well above the national average, the District of Columbia nonetheless contains 20 extreme poverty

Census tracts and a concentrated poverty rate—the share of poor people living in extreme poverty Census tracts—of 22 percent. Box figure 2 shows median household income by Census tract within the District, illustrating the stark divides that exist within the nation's capital. In the next chapter of this volume, Bradley Hardy, Trevon Logan, and John Parman examine the interaction between racial and geographic disparities, which is a particularly important part of the story in the District of Columbia.

FIGURE 15.

Prime-Age Migration Rates across Counties and States, 1981–2017



Source: Current Population Survey Annual Social and Economic Supplement (BLS 1981–2017); authors' calculations.

Note: Data are restricted to respondents ages 25–54. Data are interpolated for 1985 and 1995.

THE HAMILTON PROJECT BROOKINGS

(Kaplan and Schulhofer-Wohl 2017). In addition, Molloy, Smith, and Wozniak (2014) find that the returns to switching jobs have decreased over time.

Though decreased migration rates could be a cause for concern in their own right, low and falling mobility could also play a role both in exacerbating economic disparities between places and in slowing the rate of convergence. Moreover, falling migration rates could raise the returns to place-based policies, making it less likely that subsidies intended for local residents are

instead captured by those who initially lived outside the target location, or by landowners in the struggling location (Kline and Moretti 2014). In fact, the positive association between county vitality and net prime-age migration into a county has weakened over time. This relationship is affected somewhat by house prices: when controlling for house prices in 2016, the relationship between migration and vitality strengthens, but house values do not change the relationship between vitality and migration in 1980 (authors' calculations; not shown). This suggests that house prices might matter more for migration today than they did in the past as high housing prices in high vitality areas dissuade in-migration.

There is also evidence that people are not necessarily moving from low- to high-vitality counties. In fact, looking at migration data from 2015 to 2016, more than a third of people moving from a low-vitality county moved to a different low-vitality county, while just 13 percent moved to a high-vitality county. In contrast, the bulk of people moving to high-vitality counties were coming from relatively high-vitality counties (see table 3). The limited extent of movement from struggling to thriving places may be an additional reason to take place-based policies more seriously today than in the past. Places are not converging quickly in economic outcomes, and people are often not moving to thriving places.

TABLE 3.

County-to-County Migration by Quintile of Vitality Index in 2016

Origin \ Destination	1 (lowest)	2	3	4	5 (highest)
1 (lowest)	34%	22%	13%	18%	13%
2	18%	21%	23%	24%	15%
3	11%	24%	19%	21%	24%
4	12%	19%	17%	25%	27%
5 (highest)	7%	11%	17%	25%	39%

Source: Internal Revenue Service Statistics of Income (IRS 2015–16); ACS (Census 2012–16); IHME 1980–2014; authors' calculations.

Note: Percentages are probabilities of migration to a particular destination quintile for a given origin quintile. The Vitality Index is weighted by 2016 county population. Migration data consist of gross outflows from a county. Migration for a particular county origin-destination pair is observed only if at least 20 individuals moved from the origin to the destination over 2015–16.

Conclusion

The wide gaps in economic outcomes across places are striking: for example, prime-age labor force participation is 83 percent in the top quintile of counties but only 67 percent in the bottom quintile. At both the regional and county levels, convergence in income and overall vitality has slowed, making it less likely for struggling places to catch up to the rest of the country. Furthermore, the parts of the country with the most college graduates were already more successful in 1980 and have increased their lead in both education and economic vitality.

Along with the diminished geographic mobility of individuals, slowing convergence can make gaps across places more-permanent impediments to economic opportunity. Rather than a single economy offering broadly similar chances for advancement, the United States appears to be more a collection of disconnected economies with vastly different opportunities for economic advancement. Compounding this problem is a federal system that makes very different investments in local public goods depending on the resources of particular state and local governments.

It is therefore important to examine both the gaps across places and the characteristics of a place that have been associated with success or struggle. The analysis in this chapter underscores the complicated overlap of gaps across places: differences across regions, states, and counties are all substantial, as are differences within counties. This analysis affirms the central role of education in facilitating economic success, and also highlights the challenges that rural, manufacturing-intense, or highly undiversified regions face. Finding appropriate remedies in public policy will require a careful analysis of all of these patterns.

Acknowledgments

We are grateful to Benjamin Austin, Lauren Bauer, David Dreyer, Gabriel Ehrlich, Joy Fox, Kriston McIntosh, Mark Muro, Daniel Shoag, Jeff Smith, Mark Steitz, and Ben Williams for insightful comments. We would also like to thank Ben Delsman for his contributions to all aspects of this chapter and Patrick Liu, Jimmy O'Donnell, and Yared Lingo for excellent research assistance.

Endnotes

1. As documented in Chetty et al. (2014), an individual's location of birth is also closely tied to their chances of increasing their economic standing. For example, in the bottom quintile of county upward mobility, a child born to parents in the 25th percentile of the income distribution reach, on average, the 36th percentile of the income distribution by the time they are 30. If born in the top quintile of county mobility, that same child would reach the 48th percentile of the income

distribution.

2. We calculated 2016 vitality using data from the 2012–16 five-year ACS published tables. Any reference to 2016 vitality is based on data from this five-year time span.
3. It would be reasonable to adjust median household income for cost of living, but we opted to not do this for two reasons. First, cost-of-living estimates that are comparable across places are not available for 1980. Second, cost of living may vary for reasons that are directly related to the county vitality we seek to measure. For example, a place with stronger labor demand or better local public goods could attract in-migration that contributes to higher housing prices. Finally, cost of living may reflect the amenity value of a place, and not simply inflated prices for the same goods and services.
4. In an unreported analysis, we incorporated rates of business formation into our vitality measure; however, it made only a negligible contribution to the measure, which is perhaps due in part to its being driven by shifts in population rather than differences in business dynamism.
5. Change in vitality, however, can be calculated only for counties that existed in both periods, and for counties for which data exist on all the Vitality Index components.
6. The maps used throughout this chapter are Value-by-Alpha, or VBA, maps. For more information on VBA maps, see Roth, Woodruff, and Johnson (2011).
7. The index and the break points on the maps are constructed to be weighted by population. An equal number of people live in both yellow and blue areas, even if there is not an equal amount of yellow and blue land area.
8. Amior and Manning (2018) find that the persistence in joblessness in the face of migration can be attributed to persistence in labor demand shocks.
9. Parilla and Muro (2017) find that in terms of productivity, convergence across metro areas continued until the early 2000's, but was slowing down towards the end of the 20th century and has ended in the last 10 to 15 years.
10. We conduct a related analysis that examines convergence in vitality scores: If a place in 1980 is initially one standard deviation below the national mean of vitality, how many standard deviations of increase can we expect by 2016? The results of this analysis are in keeping with those focused on household income, although they have a somewhat different interpretation. When using a modified Vitality Index—which, for reasons of data availability, excludes life expectancy and incorporates the 16+ rather than 25- to 54-year-old employment-to-population ratio—we find strong convergence from 1960 to 1980, with weaker convergence from 1980 to 2016. In other words, the counties with low vitality are less likely to catch up to counties that are better off in the recent period than they were from 1960 to 1980.
11. Quintiles of rural population fraction are calculated as of 1980 and maintained through 2016. Population density and the percent of population that lives in a rural area of the county are highly negatively correlated, such that each is essentially the inverse of the other.
12. Here and in similar subsequent figures, we assign counties to bins (usually quintiles) based on initial-year values (in this case, 1980 values of rural population fraction) and then hold those assignments fixed when examining values in later years. In other words, counties remain within their initial bins.
13. One alternative possibility is that specialized places with employment concentrated in a small set of industries would benefit from enhanced agglomeration effects. However, there is some evidence that spillovers operate between industries, limiting the value of this type of industrial specialization (Glaeser et al. 1992).
14. We also constructed this figure while adjusting for industry mix (not shown). The most important differences made by this adjustment are (a) the least concentrated counties in 1980 score lower in vitality, and (b) the most concentrated counties in 2016 score somewhat higher.
15. While certainly correlated, the less-than-high-school share and college-educated share are distinct. Only roughly 50 percent of the counties in the highest quintile for college attainment are also in the quintile with the lowest share of individuals without a high school diploma.
16. Berry and Glaser (2005) document divergence in college attainment at the metropolitan area level from 1990 to 2000 and find that it is mainly driven by shifts in labor demand associated with the increasing wage premium for skilled people working in skilled cities.
17. Weighted based on county population in 1980 and 2016, respectively.

18. Counties that saw a decrease in poverty account for only 15 percent of the nation's population.
19. TTR is connected to vitality since both include a measure for income of a place. As such, county vitality is highly correlated with a state's TTR. This means that the lowest-vitality counties are often in the states that have the most limited resources to combat the problems in these counties.
20. Some of the decline in migration rate between 2000 and 2010 is likely due to a change in Census imputation procedure (Kaplan and Schulhofer-Wohl 2011).
21. Some have contended that barriers to migration to more-productive places may benefit less-productive places, if not workers themselves (Hsieh and Moretti, forthcoming).

References

Abraham, Katharine G., and Melissa S. Kearney. 2018. "Explaining the Decline in the U.S. Employment-to-Population Ratio: A Review of the Evidence." Working Paper 24333, National Bureau of Economic Research, Cambridge, MA.

Acemoglu, Daron. 1997. "Training and Innovation in an Imperfect Labour Market." *Review of Economic Studies* 64 (3): 445–64.

Amior, Michael, and Alan Manning. 2018. "The Persistence of Local Joblessness." *American Economic Review* 108 (7): 1942–70.

Andersson, Martin, Johan Klaesson, and Johan P. Larsson. 2014. "The Sources of the Urban Wage Premium by Worker Skills: Spatial Sorting or Agglomeration Economies?" *Papers in Regional Science* 93 (4): 703–25.

Asquith, Brian, Sanjana Goswami, David Neumark, and Antonio Rodriguez-Lopez. 2017. "U.S. Job Flows and the China Shock." Working Paper 24080, National Bureau of Economic Research, Cambridge, MA.

Austin, Benjamin, Edward Glaeser, and Lawrence Summers. Forthcoming. "Saving the Heartland: Place-based Policies in 21st Century America." *Brookings Papers on Economic Activity* (forthcoming).

Autor, David H., David Dorn, and Gordon H. Hanson. 2013. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States." *American Economic Review* 103 (6): 2121–68.

———. 2015. "Untangling Trade and Technology: Evidence from Local Labour Markets." *Economic Journal* 125 (May): 621–46.

Barro, Robert J. and Xavier Sala-I-Martin. 1991. "Convergence across States and Regions." *Brookings Papers on Economic Activity* 1991 (1): 107–82.

Berry, Christopher R., and Edward L. Glaser. 2005. "The Divergence of Human Capital Levels across Cities." *Papers in Regional Science* 84 (3) 407–44.

Blanchard, Olivier, and Lawrence Katz. 1992. "Regional Evolutions." *Brookings Papers on Economic Activity* 1992 (1): 1–75.

Bleakley, Hoyt, and Jeffrey Lin. 2012. "Thick-market Effects and Churning in the Labor Market: Evidence from U.S. cities." *Journal of Urban Economics* 72 (2–3): 87–103.

Board of Governors of the Federal Reserve System. 2016. "Survey of Consumer Finances." Board of Governors of the Federal Reserve System, Washington, DC.

Bureau of Labor Statistics (BLS). 1980–2017. "Current Population Survey, Merged Outgoing Rotation Group." Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC. Retrieved from Center for Economic and Policy Research. 2017. CPS ORG Uniform Extracts, Version 2.3. Washington, DC.

———. 1981–2017. "Current Population Survey, Annual Social and Economic Supplement." Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC. Retrieved from IPUMS–CPS, University of Minnesota.

———. 2000–2010. "Labor Force Statistics from the Current Population Survey: Employment-Population Ratio—25–54 yrs, Series Id: LNS12300060." Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC.

Charles, Kerwin, Erik Hurst, and Mariel Schwartz. 2018. "The Transformation of Manufacturing and the Decline in U.S. Employment." Working Paper 24468, National Bureau of Economic Research, Cambridge, MA.

Chatterji, Aaron, Edward L. Glaeser, and William R. Kerr. 2014. "Clusters of Entrepreneurship and Innovation." In *Innovation Policy and the Economy*, vol. 14, edited by Josh Lerner and Scott Stern, 129–66. Chicago, IL: University of Chicago Press.

Chetty, Raj, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez. 2014. "Where Is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States." *Quarterly Journal of Economics* 129 (4): 1553–623.

Economic Innovation Group. 2017. "The 2017 Distressed Communities Index." Report. Economic Innovation Group, Washington DC.

Feyrer, James, Bruce Sacerdote, and Ariel Dora Stern. 2007. "Did the Rust Belt Become Shiny? A Study of Cities and Counties That Lost Steel and Auto Jobs in the 1980s." *Brookings-Wharton Papers on Urban Affairs* (2007): 41–102.

Flippen, Alan. 2014, June 26. "Where Are the Hardest Places to Live in the U.S.?" *The New York Times*.

Fort, Teresa C., Justin R. Pierce, and Peter K. Schott. 2018. "New Perspectives on the Decline of U.S. Manufacturing Employment." *Journal of Economic Perspectives* 32 (2, Spring): 47–72.

Ganong, Peter, and Daniel W. Shoag. 2017. "Why Has Regional Income Convergence in the U.S. Declined?" *Journal of Urban Economics* 102 (November): 76–90.

Giannone, Elisa. 2018, June. "Skill-Biased Technical Change and Regional Convergence." Unpublished manuscript.

Glaeser, Edward L., Hedi D. Kallal, José A. Scheinkman, and Andrei Shleifer. 1992. "Growth in Cities." *Journal of Political Economy* 100 (6): 1126–52.

Glaeser, Edward L., and Albert Saiz. 2004. "The Rise of the Skilled City." *Brookings-Wharton Papers on Urban Affairs* (2004): 47–105.

Goldin, Claudia, and Lawrence Katz. 2009. *The Race between Education and Technology*. Cambridge, MA: Belknap Press of Harvard University Press.

Helsley, Robert, and William Strange. 1990. "Matching and Agglomeration Economies in a System of Cities." *Regional Science and Urban Economics* 20 (2): 189–212.

Hsieh, Chang-Tai, and Enrico Moretti. Forthcoming. "Housing Constraints and Spatial Misallocation." *American Economic Journal: Macroeconomics* (forthcoming).

Institute for Health Metrics and Evaluation (IHME). 1980–2014. "United States Life Expectancy and Age-specific Mortality Risk by County." Institute for Health Metrics and Evaluation (IHME), Seattle, WA.

Internal Revenue Service (IRS). 2015–16. "Statistics of Income (SOI) Tax Stats, Migration Data 2015–2016." Internal Revenue Service, Washington, DC.

Kaplan, Greg, and Sam Schulhofer-Wohl. 2011. "A Sharp Drop in Interstate Migration? Not Really New Data Procedures Led to Misperception of Dramatic Decline in U.S. Population Mobility." Economic Policy Paper 11-2, Federal Reserve Bank of Minneapolis, MN.

———. 2017. "Understanding the Long-Run Decline in Interstate Migration." *International Economic Review* 58 (1): 57–94.

Klepper, Steven. 2010. "The Origin and Growth of Industry Clusters: The Making of Silicon Valley and Detroit." *Journal of Urban Economics* 67 (1): 15–32.

Kline, Patrick M., and Enrico Moretti. 2013. "Place Based Policies with Unemployment." *American Economic Review: Papers & Proceedings* 103 (3): 238–43.

———. 2014. "People, Places, and Public Policy: Some Simple Welfare Economics of Local Economic Development Programs." *Annual Review of Economics* 6: 629–62.

Lafkis, Chris, and Emily Fazio. "U.S. Regional Diversity, Volatility and Vitality." Moody's Analytics, West Chester, PA.

Marshall, Alfred. 1920. *Principles of Economics*. New York: Macmillan.

McAuliffe, Terry. 2014. "Virginia Gov. Terry McAuliffe's speech to the Joint Assembly." As prepared for delivery on Monday, January 13, in Richmond.

Molloy, Raven, Christopher L. Smith, and Abigail Wozniak. 2011. "Internal Migration in the United States." *Journal of Economic Perspectives 25* (3): 173–96.

———. 2014. "Declining Migration within the U.S.: The Role of the Labor Market." Working Paper 20065, National Bureau of Economic Research, Cambridge, MA.

Molloy, Raven, Riccardo Trezzi, Christopher L. Smith, and Abigail Wozniak. 2016. "Understanding Declining Fluidity in the U.S. Labor Market." *Brookings Papers on Economic Activity 2016* (Spring): 183–259.

Moretti, Enrico. 2004. "Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data." *Journal of Econometrics* 121 (1–2): 175–212.

———. 2011. "Local Labor Markets." In *Handbook of Labor Economics*, vol. 4B, edited by Orley Ashenfelter and David Card, 1237–313. Amsterdam, Netherlands: Elsevier.

———. 2012. *The New Geography of Jobs*. Boston, MA: Mariner Books.

Nakamura, Emi, Jósef Sigurdsson, Jón Steinsson. 2017. "The Gift of Moving: Intergenerational Consequences of a Mobility Shock." Working Paper 22392, National Bureau of Economic Research, Cambridge, MA.

Ohanian, Lee E. 2014. "Competition and the Decline of the Rust Belt." Economic Policy Paper 14-6. Federal Reserve Bank of Minneapolis, MN.

Parilla, Joseph, and Mark Muro. 2017. "Understanding U.S. Productivity Trends from the Bottom-Up." Metropolitan Policy Program, Brookings Institution, Washington, DC.

Petralia, Sergio, Pierre-Alexandre Balland, and David L. Rigby. 2016. "HistPat Dataset." Harvard Dataverse, V7. (https://doi.org/10.7910/DVN/BPC15W, UNF:6:SkhjKyxH+iaUyZThUS/J2g==).

Rappaport, Jordan. 2012. "Why Does Unemployment Differ Persistently across Metro Areas?" *Economic Review—Federal Reserve Bank of Kansas City* 2012 (2): 1–31.

Rotemberg, Julio, and Garth Saloner. 2000. "Competition and Human Capital Accumulation: A Theory of Interregional Specialization and Trade." *Regional Science and Urban Economics* 30 (4): 373–404.

Roth, Robert E., Andrew W. Woodruff, and Zachary F. Johnson. 2011. "Value-by-alpha Maps: An Alternative Technique to the Cartogram." *Cartographic Journal* 47 (2): 130–40.

Shambaugh, Jay, Ryan Nunn, and Patrick Liu. 2018. "How Declining Dynamism Affects Wages." In *Revitalizing Wage Growth: Policies to Get American Workers a Raise*, edited by Jay Shambaugh and Ryan Nunn. Washintgon, DC: The Hamilton Project.

Shambaugh, Jay, Ryan Nunn, and Becca Portman. 2017, December. "Eleven Facts about Innovation and Patents." Economic Facts, The Hamilton Project, Brookings Institution, Washington, DC.

Shearer, Chad, Isha Shah, Alec Friedhoff, and Alan Berube. 2018. "Metro Monitor." Metropolitan Policy Program, Brookings Institution, Washington, DC.

Time. 2015. "Pittsburgh: The Comeback." Video. YouTube.

U.S. Bureau of Economic Analysis (BEA). 1929–2018. "Per Capita Personal Income in the United States BEA Regions." U.S. Bureau of Economic Analysis, Suitland, MD. Retrieved from FRED, Federal Reserve Bank of St. Louis, , St. Louis, MO.

———. 2017. "Per Capita Personal Income in the New England and Southeast BEA Regions [BEANEPCPI and BEASEPCPI]." U.S. Bureau of Economic Analysis, Suitland, MD. Retrieved from FRED, Federal Reserve Bank of St. Louis.

U.S. Census Bureau (Census). 1960. "1960 Decennial Census." Retrieved from ICPSR County Data Books, University of Michigan. U.S. Census Bureau, Suitland, MD.

———. 1980. "1980 Decennial Census." Prepared by Social Explorer. U.S. Census Bureau, Suitland, MD.

———. 2012–16. "American Community Survey." U.S. Census Bureau, Suitland, MD. Prepared by Social Explorer.

———. 2015. "2015 Annual Survey of State Government Tax Collections Category Table." U.S. Census Bureau, Suitland, MD.

———. 2017. "Table H-4. Gini Ratios for Households, by Race and Hispanic Origin of Householder." U.S. Census Bureau, Suitland, MD.

U.S. Department of the Treasury (Treasury). 2002. "Treasury Methodology for Estimating Total Taxable Resources (TTR)." U.S. Department of the Treasury, Washington, DC.

———. 2017. "Total Taxable Resources Estimates." U.S. Department of the Treasury, Washington, DC.

Wheeler, Christopher H. 2008. "Local Market Scale and the Pattern of Job Changes among Young Men." *Regional Science and Urban Economics* 38 (2): 101–18.

The Historical Role of Race and Policy for Regional Inequality

Bradley L. Hardy, *American University*
Trevon D. Logan, *The Ohio State University*
John Parman, *College of William & Mary*

Abstract

Contemporary racial inequality can be thought of as the product of a long historical process with at least two reinforcing sets of policies: First are the policies governing the spatial distribution of the black population, and second are the policies that had a disparate impact on black individuals because of their locations. Understanding current black–white gaps in income, wealth, and education requires understanding the complex relationship between regional inequality, race, and policies at the local, state, and national levels. In this chapter we outline the ways that the spatial distribution of the black population has evolved over time and the ways that spatial distribution has interacted with policy to, at times, reduce and exacerbate levels of inequality. Recognizing the ways that past policies explicitly stymied black economic mobility and how current policies have explicitly or inadvertently done the same provides a basis for understanding how to craft future policies to reduce racial inequalities. Furthermore, recognizing the interconnection of discrimination and the spatial distribution of the black population is important for understanding certain components of regional and spatial inequality.

Introduction

Understanding the relationship between racial inequality and regional inequality requires recognizing just how different the spatial distribution of the black population is from that of the general population in the United States. Figure 1 depicts the distribution of the black population in the United States, showing the black population share at the county level. Given that these are population shares, the uneven distribution in figure 1

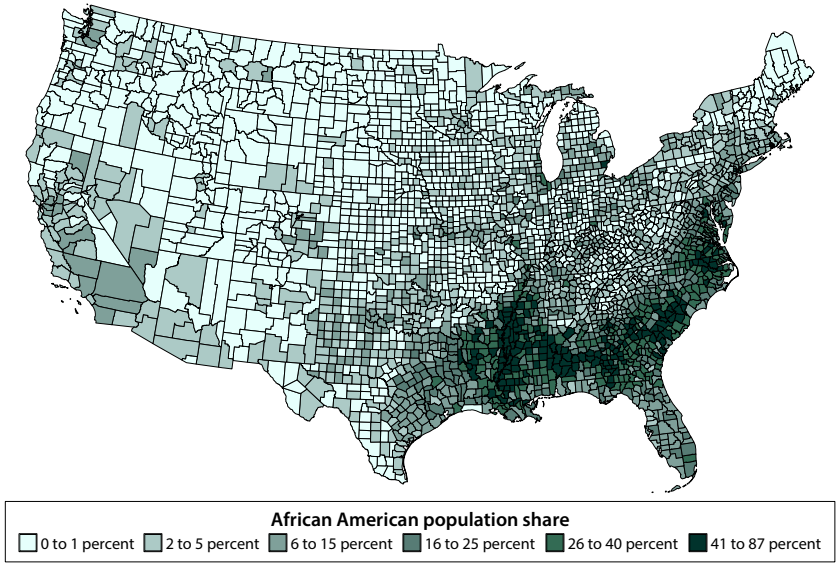
is not driven by population densities. Black households are far more likely to live in the South or in urban areas in the Midwest relative to the general population and far less likely to live in the West.

The spatial distribution of the black population highlights two important facts when thinking about racial inequality. First, the modern distribution of the black population is still closely related to the historical distribution of the black population. The counties with disproportionately high black population shares today are the same counties that had large black populations before the Civil War. This fact underscores the notion that historical conditions may exert an influence on black outcomes today. Understanding modern links between regional inequality and spatial inequality requires understanding how slavery, Reconstruction, and Jim Crow shaped the geographic and economic mobility of black Americans.

The second issue raised is that the disproportionate concentration of black households in the South and urban counties of the Midwest suggest that any economic shocks to these regions, or long-standing differences in economic conditions between these regions and others, will disproportionately affect the black population and therefore impact levels of racial inequality. Most

FIGURE 1.

Distribution of the Black Population in the United States, 2010



Source: U.S. Census Bureau (Census) 2010b.
Note: Darker shades indicate counties with higher black population shares.

THE HAMILTON PROJECT
BROOKINGS

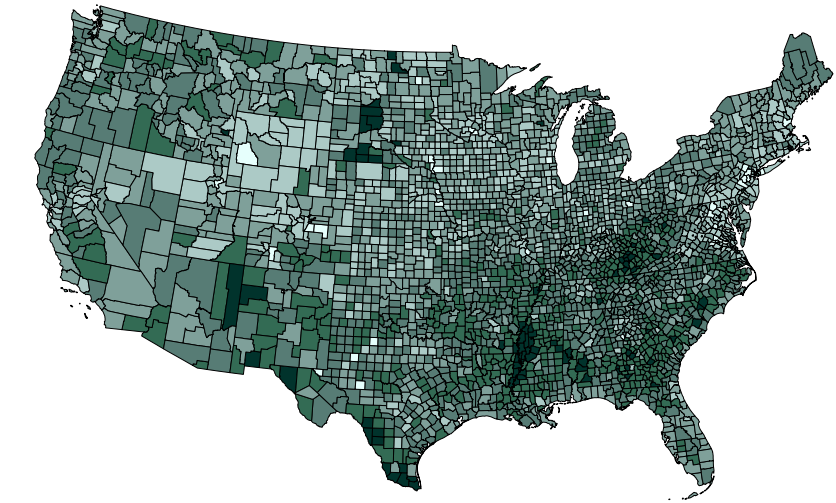
notably, the distribution in figure 1 bears similarities to the geographic distribution of poverty shown in figure 2.

While the two distributions do not perfectly overlap, it is clear that the concentrations of poverty in the Deep South tend to overlap with the counties with high black population shares. Even more striking is the similarity between the black population distribution and a map of economic mobility. Figure 3 depicts a particularly useful measure of black intergenerational income mobility from Chetty et al. (2018). The map depicts the mean income rank of black children growing up in a household at the 25th income percentile. Under complete economic mobility, the expected income rank of the child will simply be the mean income rank for the population, the 50th percentile. If there is no mobility, the expected income rank of the child will be that of their parents, the 25th percentile in this case.

Here we see a striking relationship between the spatial distribution of the black population and the economic mobility of that population. Areas with large black population shares are the areas where black individuals experience particularly low levels of economic mobility, with black children born into below-median-income families tending to remain below

FIGURE 2.

Share of Individuals in Poverty, 2010



Source: American Community Survey (Census 2010a).

Note: Data are restricted to the population for whom poverty status is determined.

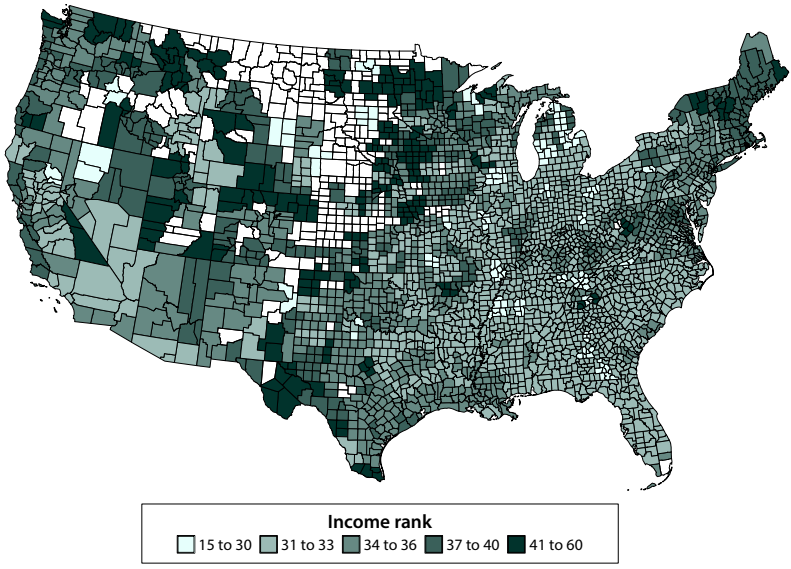
THE HAMILTON PROJECT BROOKINGS

the median income. In counties with a majority black population, a black child born to parents in the 25th income percentile achieves a mean income rank of only 32, barely any movement up the income ladder, while white children from the same counties achieve a mean income rank of 43. Not only do black households tend to live in regions with low incomes, but these regions also experience lower levels of economic mobility, potentially exacerbating regional inequality from one generation to the next. For every 10 percentage point–increase in the black population share, the expected mean income rank of children drops by 0.7 percentage points. What makes matters worse is that these regional inequalities seem to disproportionately harm black households. Figure 4 shows the same mean income rank for black children from figure 3 relative to the equivalent measure for white children. In nearly all areas of the country this difference is negative—suggesting that black children growing up in the 25th income percentile reach much lower rungs on the income ladder relative to white children growing up at the same income level in the same commuting zone.

Figures 1 through 4 suggest three different relationships between race, inequality, and mobility. Regions in the North and West with small black

FIGURE 3.

Mean Income Rank for Black Children Growing Up in a Household at the 25th Income Percentile



Source: Chetty et al. 2018.

Note: Data are calculated at the commuting zone level. The data include children born between 1978 and 1983. Areas are white if data are not available.

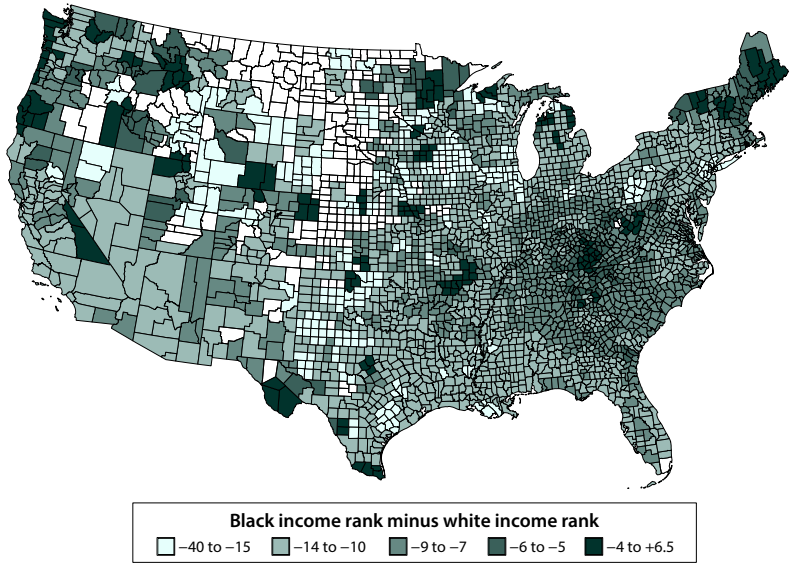
THE HAMILTON PROJECT BROOKINGS

populations exhibit levels of mobility for black individuals that are higher and comparable to those of white individuals. Regions with high black population shares in the South have levels of mobility for black individuals that tend to be substantially lower than the levels for white individuals. Finally, regions with low black population shares in the South have higher levels of black mobility that, as in the North and West, are close to those of white individuals. However, these regions of the South have lower mobility rates overall for both white and black residents.

Focusing on these broad differences across regions ignores another important dimension of spatial inequality: differences within regions across cities, suburbs, and rural areas. Figure 5 shows the distribution of the white and black U.S. populations by the type of metropolitan area present in the county. The black population is more concentrated in the central counties of large metropolitan areas relative to the white population. The white population has higher concentrations in smaller metropolitan areas and in rural (noncore) counties. These black–white differences vary across regions. In the South white and black households are roughly equally likely to live in metropolitan areas: 83 percent of white individuals and 86 percent

FIGURE 4.

Black Intergenerational Income Mobility Relative to White Intergenerational Income Mobility



Source: Chetty et al. 2018.

Note: The data show the mean income rank for black children growing up in the 25th income percentile minus the mean income rank for white children growing up in the 25th income percentile. Areas are white if data are not available.

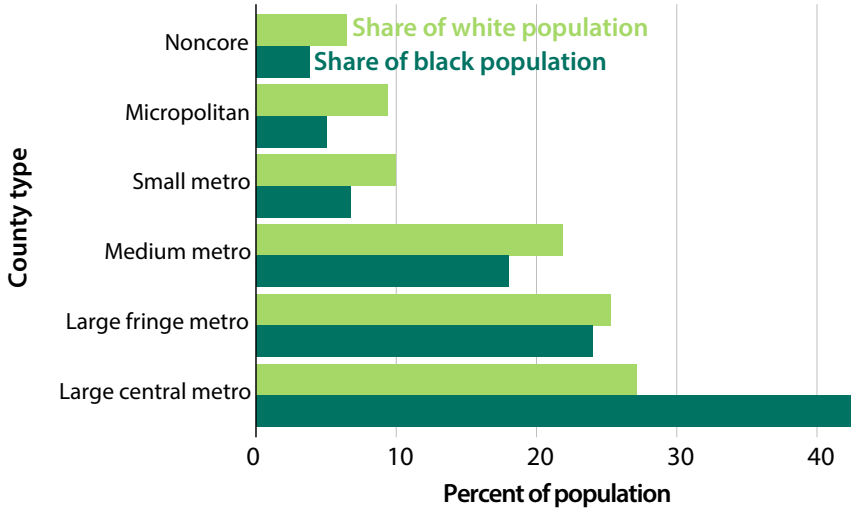
THE HAMILTON PROJECT BROOKINGS

of black individuals live in metropolitan areas. However, the Northeast and Midwest regions present stark differences in the locations of white and black households. Metropolitan areas contain 96 percent of the black population in the Midwest and 99 percent of the black population in the Northeast. These shares are far lower for the white population, particularly in the Midwest where only 75 percent of the white population lives in metropolitan areas.[1]

This difference in location within regions makes it inevitable that policies that differentially affect urban and rural areas will have disparate effects by race. A recent example of this is the proposed Medicaid work requirement in Michigan. The original version of Michigan Senate Bill 897 exempted individuals from this work requirement conditional on residing in a county with an unemployment rate above 8.5 percent. The spatial distribution of the white and black populations of Michigan meant that this exemption would have racially disparate impacts; given that poor white individuals disproportionately live in rural areas and black individuals live in urban areas, the higher unemployment rates in rural counties would

FIGURE 5.

Distribution of Black and White Populations by County Type



Source: Census 2017.

Note: County types are defined by the size of the corresponding metropolitan statistical area (MSA). "Large central metro" refers to central counties of MSAs with a population of 1 million or more. "Large fringe metro" refers to fringe counties of MSAs with a population of 1 million or more. "Medium metro" refers to MSAs with a population between 250,000 and 999,999. "Small metro" refers to MSAs with a population between 50,000 and 249,999. "Micropolitan" refers to counties with an urban center with a population between 10,000 and 49,999. "Noncore" refers to areas without an urban center with a population of at least 10,000.

THE HAMILTON PROJECT BROOKINGS

disproportionately exempt white Medicaid recipients from the work requirement within the bill.

Although—after considerable negative press—the exemption was dropped from the final version of the work requirement bill, this incident reveals the complex interplay between policy, inequality across space, and inequality between races. Even if a policy like the unemployment rate exemption in the Michigan bill is crafted without discriminatory intent, it can nonetheless increase racial inequality. In the following sections we explore how policy has shaped the geographic and economic mobility of the black population over the past century and a half, drawing from the large literatures on regional inequality and racial discrimination that have all too often been treated in isolation from one another.

The Historical Evolution of Black–White Gaps in Access to Opportunity

EMANCIPATION AND THE CONSTRAINTS OF JIM CROW

The end of the Civil War in 1865 marked an end to the starkest form of institutionalized discrimination but left a black population that, while free from legal bondage, faced considerable economic hardship. Immediately after the abolition of slavery, the black population found itself disadvantaged both by general regional inequality and by racial discrimination. The geographic distribution of slavery and constraints on the mobility of free blacks in the antebellum period resulted in large concentrations of the black population in the cotton-growing regions of the South at the time of emancipation, an area that corresponds quite closely to the areas in figure 1 with high black population shares today. As of 1880, 90 percent of the black population still lived in the South and 87 percent of the black population lived in a rural area.[2] In contrast, only 24 percent of the white population lived in the South, and 72 percent of the white population lived in rural areas. This meant that black individuals were disproportionately affected by constraints on economic opportunity in the rural South. Over the second half of the 19th century, incomes in the South and the North diverged significantly, with average income in the South only half of the national average by 1900 (see Kim and Margo 2004 for extensive discussion of historical trends in regional income patterns). The destruction caused by the Civil War and the emergence of northern manufacturing while the southern economy remained predominantly agricultural contributed to these trends.

The black population therefore found itself in a region with far less economic opportunity than the rest of the nation. More importantly, that economic opportunity was further restricted by individual and institutionalized racism and political disenfranchisement. Discrimination in hiring by employers and intimidation of black workers through violence placed black workers at a direct disadvantage in the labor market. This discrimination can be seen at its worst in the relationship between lynching and economic conditions. Mob violence against southern blacks was higher when the price of cotton was declining and inflationary pressures were rising, making the economic conditions of white agricultural workers more precarious (Beck and Tolnay 1990). This violence also extended to attacks on economically successful black communities, most infamously with the destruction of the Greenwood community during the Tulsa race riot in 1921. Beyond labor markets, blacks also faced discrimination in credit markets, for example the discrimination in merchant credit documented by Olney (1998).[3]

Compounding this discrimination by individuals was the state-sanctioned segregation brought about through Jim Crow laws. This segregation impacted every aspect of life. Most directly related to black economic opportunity is the impact of Jim Crow on education. Segregated schools led to inferior educational opportunities for black children relative to white children, with black schools routinely underfunded relative to white schools (Baker 2016; Carruthers and Wanamaker 2013; Margo 1982). With segregated schools, hospitals, and other facilities, black individuals living in the same cities and towns as white individuals had access to far fewer resources.

Part of what enabled this discrimination in economic and social spheres of life were discriminatory restrictions on the right to vote. Despite large black populations in the South at the start of the 20th century, that population had no political power due to disenfranchisement and voter intimidation. Without the power of the ballot box, black Southerners remained subjected to overtly racist policies constraining their economic opportunities.

THE GREAT MIGRATION AND RISING RESIDENTIAL SEGREGATION

Given the severe constraints on economic opportunity in the South and large gaps in average incomes between the North and South, a natural response was migration from the South to the cities of the North. The Great Migration led to a substantial redistribution of the black population from the South to the urban areas of the Northeast and Midwest. One quarter of the black men born in the South who were between the ages of 30 and 40

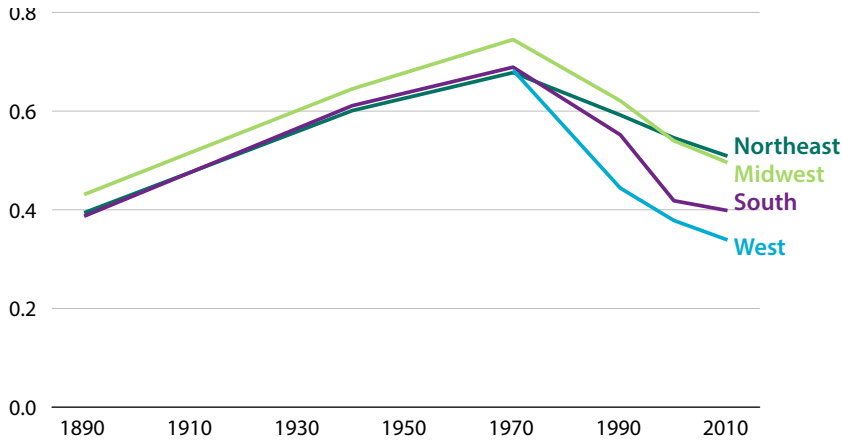
lived outside the South by 1930 (Collins and Wanamaker 2014). This exodus of the black population would continue through the 1960s. This migration drew from both rural and urban areas of the South and significantly reduced the national black–white income gap (Collins and Wanamaker).

However, despite the gains for black workers from migrating across regions, economic opportunities remained limited by both individual racism and institutional discrimination, particularly in terms of residential location. As the black population moved North and into urban areas in search of economic opportunity, white households were moving as well. Neighborhoods were becoming increasingly segregated, with black households becoming concentrated in city centers while white households moved out to the suburbs. Cutler, Glaeser, and Vigdor (1999) describe this as the rise of the American ghetto, a period of marked increase in residential segregation in cities from the late 1800s through 1970. Figure 6 reproduces their estimates of the index of dissimilarity in American cities from 1890 through 2010, with a higher number representing more segregation.

This rise in segregation can be attributed in part to the movement of white households to the suburbs in order to avoid living in mixed-race neighborhoods. In this sense, the discriminatory preferences of white households fundamentally altered the spatial distribution of cities and their

FIGURE 6.

Index of Dissimilarity for U.S. Cities, 1890–2010



Source: Cutler, Glaeser, and Vigdor 1999; Glaeser and Vigdor 2012; authors' calculations.

Note: Data for 1890–1990 are from Cutler, Glaeser, and Vigdor (1999). Data for 2000–10 are from Glaeser and Vigdor (2012). The index of dissimilarity measures how even the distributions of white and black households are across Census tracts in a city. Under complete segregation, the index is equal to one. Under complete integration, the measure is equal to zero.

THE HAMILTON PROJECT BROOKINGS

surrounding areas in response to black migration. Card, Mas, and Rothstein (2008) demonstrate the presence of tipping points, critical black population shares typically between 5 and 20 percent, at which white households flee the city. They show that regional variation in racial tolerance influenced these tipping dynamics, with cities that are more racially tolerant having higher tipping points. Boustan (2010) demonstrates that each black arrival in a city led to 2.7 white departures. In an example of the unintended impacts of federal policy on racial inequality, Baum-Snow (2007) finds that the construction of limited-access highways facilitated (and partially subsidized) this suburbanization and consequently its differential impact on black and white urban residents.[4] While the contribution of highways to white flight might have been unintentional, other aspects of highway planning were more overtly discriminatory. The routing of highways was at times intended to spare white communities while isolating or even destroying minority communities through eminent domain. A stark example of this is the impact of the interstate highway construction on Birmingham, Alabama (Connerly 2002).

Suburbanization had dramatic impacts on racial inequality. Two very different mechanisms are of particular importance. First, with the movement of white households away from city centers, jobs also moved away from city centers. This created conditions for spatial mismatch, in which black households in the city center became increasingly isolated from employment opportunities (e.g., Holzer 1991). In an interesting study of spatial mismatch, Boustan and Margo (2009) find that as employment opportunities moved away from city centers, black employment rose in postal work. Unlike other employers, it was not feasible to relocate central mail-processing facilities. This rise in postal employment for black individuals is therefore evidence of the decline in other employment opportunities as a consequence of white flight.[5]

The second important mechanism is the funding of school districts. If wealthier households move away from urban school districts, the local tax revenue associated with those households moves with them. The result is inequality in school quality across districts, which translates into inequality in economic opportunity. Here we have another example of a policy, in this case decentralized school funding, that is seemingly race neutral as written but that can generate racial inequality in practice. The differences in funding across school districts are a critical component in explaining achievement gaps between students in suburban communities and those in urban or rural communities (Roscigno, Tomaskovic-Devey, and Crowley 2006). Although differences in school funding by race were driven by explicit race-funding formulas during Jim Crow in the South,

these differences persist because of the residential segregation of the black community. We expand on the discussion of school spending inequality later in the paper.

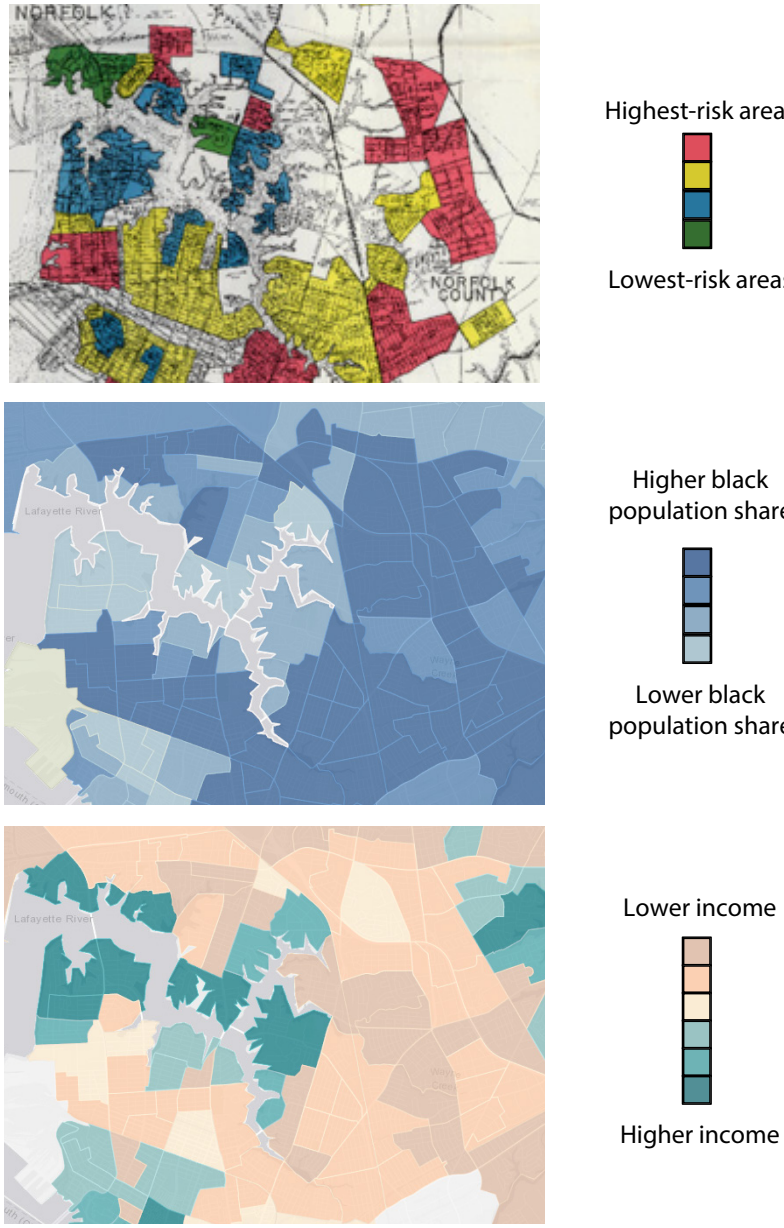
The relocation of white households to the suburbs and the concentration of black households in city centers is not simply the product of households' preferences: it was aided by institutional discrimination that made it possible to formally exclude black households from white neighborhoods. Through the first half of the 20th century, black families could be excluded from neighborhoods through the use of racial covenants included in deeds. These racial covenants were ruled unenforceable by the Supreme Court's *Shelley v. Kraemer* decision in 1948. However, racial restrictions were often still written into deeds until it became illegal to do so in 1968 with the passage of the Fair Housing Act. Restrictive covenants became an effective means to use the courts to enforce residential segregation throughout much of the development of American cities and suburbs.

Federal housing policy also contributed to the segregation of American cities by linking bank lending policies to the underlying racial distributions of neighborhoods. When the Home Owners' Loan Corporation (HOLC) generated so-called residential security maps—that indicated the perceived risk level of real estate investments in particular areas and that were used to assist in the underwriting of home loans in the 1930s—they explicitly considered the racial composition of neighborhoods and the trends in that racial composition, with residents who were black or recent immigrants considered less desirable than white residents. Tying loan risk to the racial composition of neighborhoods helped white households to secure home loans in segregated neighborhoods while reducing the willingness of banks to lend in minority neighborhoods. This access to credit presented an additional barrier to the economic development of minority neighborhoods with long-run consequences. As an illustrative example, the top panel in figure 7 shows the HOLC residential redlining maps for Norfolk, Virginia. The green areas represent the lowest-risk areas for home loans, followed by blue, yellow, and finally red areas, which represent the redlined highest-risk areas. The middle panel of figure 7 shows the racial and spatial distribution in the present and the lower panel shows the present-day income distribution.

What becomes clear is that the areas that were redlined in the 1930s remain disproportionately poor and disproportionately black today. This pattern is supported more generally by recent work from Aaronson, Hartley, and Mazumder (2017) finding that redlining neighborhoods in the 1930s HOLC maps caused long-run declines in home ownership, house values, and

FIGURE 7.

Redlining and Modern Outcomes in Norfolk, Virginia



Source: Finn n.d.

Note: The top figure is the HOLC residential security map from the 1930s. The middle figure shows the current black population share by neighborhood, with deeper shades of blue representing higher black population shares. The bottom figure shows current median household income by neighborhood with dark green representing the highest incomes and pale orange representing the lower incomes.

credit scores relative to higher-graded neighborhoods. These residential security maps provide an example of federal policy that was implemented to stabilize the housing market in the wake of the Great Depression, having long-run impacts on spatial and racial inequalities in urban areas.

THE CIVIL RIGHTS MOVEMENT AND REMAINING HURDLES

Throughout the Jim Crow era, racial inequality was maintained through individual discrimination on the part of homeowners, lenders, and employers, as well as through laws and policies that implicitly, and at many times explicitly, constrained the geographic and economic mobility of the black population. The civil rights movement was in part a response to these issues and made great strides in ending many of the discriminatory aspects of federal, state and local policies. In 1954 *Brown v. Board* overturned the separate-but-equal doctrine and began the process of school desegregation. Then the 1960s ushered in several major pieces of legislation aimed at eliminating both the institutional discrimination faced by black individuals and discrimination by individuals in economic interactions. The Civil Rights Act of 1964 banned discrimination and segregation on the basis of race in schools, workplaces, and public accommodations. The Voting Rights Act of 1965 aimed to reverse the disenfranchisement of black individuals. The Fair Housing Act of 1968 made discrimination in the sale or rental of housing on the basis of race or any other protected class illegal. These acts were substantial steps forward in terms of eliminating the systematic discrimination that perpetuated racial inequality. However, they could not entirely eliminate the constraints on black economic opportunity.

Black individuals still face significant impediments to upward economic mobility, with many of those impediments tied to spatial inequalities. The local funding of schools limits the extent to which the desegregation of schools can equalize schooling resources across races. As long as residential segregation leads to an uneven distribution of black and white students across school districts, local school financing will lead to an uneven distribution of schooling resources by race in spite of *Brown v. Board*.

Despite the Voting Rights Act, the voting power of the black population is diminished by political boundaries that minimize the influence of the black vote and voter identification laws that disproportionately impact black voters. Since Reconstruction, Southern states have elected only 56 black politicians to the House of Representatives. Despite the concentration of black households in the South shown in figure 1, the South has elected only one black senator since Reconstruction (and elected only two black senators during Reconstruction).[6] This lack of black representation is in

part the product of spatial inequalities. Gerrymandering can reduce the impact of the black vote. Perhaps more importantly, though, the residential concentration of the black population resulting from more than a century of segregation has diminished the strength of the black vote for federal office.

Finally, despite the Civil Rights Act and the Fair Housing Act, discrimination by private parties remains a significant constraint on black economic mobility. Audit studies based on résumés identical in terms of qualifications but differing only on race reveal that black job seekers are less likely to receive callbacks for interviews than white job seekers (Bertrand and Mullainathan 2004). Black home buyers continue to face discriminatory behavior on the part of real estate agents and lenders (Page 1995). While these types of discrimination may no longer be legally permissible, it remains difficult to eliminate the negative impacts of the individual biases and statistical discrimination faced by black individuals that contribute to racial inequality. Given the spatial concentration of the black population, this discrimination contributes to spatial inequality as well.

Welfare, Education, and Criminal Justice Policies

We build on our initial overview of historical segregation and discrimination and highlight studies that examine the role and importance of race within welfare, education, and criminal justice policies in America. Each of these governmental functions is central to the promotion of economic development and well-being by providing social insurance and protection from poverty and unemployment spells, human capital development via education and training, and protection of property rights and neighborhoods, respectively. Our review characterizes a society in which access to these functions excluded black and other non-white Americans. This exclusion from full protection through the nation's social safety net, education, and criminal justice programs coincided with broad exclusion from neighborhoods and labor market opportunities (described in earlier sections). Importantly, we highlight that both historically and today, blacks and other minority citizens have had constrained, underfunded, or sanctioned access to government services and benefits—and that access varies across space.

WELFARE PROGRAMS AND POLICIES

Administration of the nation's welfare safety net features a remarkable level of local control when compared to other large economies. The American system of fiscal federalism devolves authority and decision-making with

respect to policy decisions and policy implementation (e.g., Johnston 2008). As such, policy priorities at the federal level—for example, lowering poverty and food insecurity or promoting access to basic health services—are implemented at the state and local levels using federal resources. Welfare programs, broadly conceived, include the nation's cash assistance, food assistance, health insurance, and public housing subsidies. As we describe below, several studies find that race looms as an important predictor of social safety net access, and that, like race, these policies vary across place.

The design of America's social welfare state was influenced heavily by English poor laws and poor houses, as described by Johnson (2010), Johnston (2008), Ziliak (2016), and others. Throughout the early to middle 20th century, welfare was typically viewed as a mechanism to provide direct aid for the elderly and the disabled, and for families left destitute by the untimely death of a male head of household—in an era in which women were largely out of the labor force, excluding home production. Notably, the systems that would ultimately develop to provide insurance from poverty at the federal level, including the Aid to Families with Dependent Children program, were not initially conceived to be universal. These and related programs excluded black and other non-white families from participation implicitly throughout the early to mid-1900s by excluding domestic and agriculture workers. Additionally, local governments in many states including those in the Southeast considered race as a factor when determining eligibility for aid (e.g., Hero 2003; Johnson 2010).

A point of inflection in the nation's antipoverty efforts occurred during the 1960s Great Society expansion of social insurance and antipoverty programs (Hoynes, Schanzenbach, and Almond 2016), coincident with major policy changes aimed at achieving racial equality in labor markets and access to educational opportunities. Not until these expansions, which included a range of programs targeted universally at poor Americans—including health insurance, food stamps, cash welfare, and housing assistance—were black and other non-white Americans able to participate in the nation's safety net programs in a significant manner. Crucially, throughout the 1960s efforts were under way within the federal government to promote an expansive and aggressive employment program targeted at America's urban areas, in which many minority males faced staggeringly high unemployment rates. Many of these efforts, which occurred during the Kennedy and Johnson administrations, were ultimately jettisoned due, in part, to the political dangers associated with promoting an economic stimulus program perceived as overly generous to black, urban neighborhoods and residents (Bailey and Duquette 2014; Russell 2003).

Contemporary Evidence

Contemporary evidence shows that decentralized fiscal federalism—which provides for state and local autonomy—can disproportionately harm blacks and other non-white groups within the welfare system (e.g., Schram et al. 2009).

A body of contemporary ethnographic and quantitative studies find that black participants are more likely—holding other factors constant—to be sanctioned and removed from welfare programs for violations. These sanctions can span benefit reductions to removal from the case load altogether. Some of the evidence suggests that the mechanisms driving this higher likelihood of sanctioning include caseworkers' negative views of racial group–specific traits. Some studies exploit experimental designs that use variation in how identical events and actions are perceived differentially, depending on the race of the client (e.g., Bonds 2006; Kalil, Seefeldt, and Wang 2002; Schram et al. 2009; Watkins-Hayes 2009). Researchers have documented an increasingly disciplinary approach to the administration of welfare throughout the 2000s that is directly related to race (Schram et al.). Recent work examining contemporary race and welfare policy suggests that, even after controlling for a range of political and socioeconomic factors, states with a higher proportion of black residents overall as well as those on the welfare case load provide less cash assistance—both in terms of the generosity of cash payments and in the share of the state's block grant (e.g., Hahn et al. 2017; Hardy and Samudra 2018). Additionally, state welfare policy choices may have lowered educational attainment among recipient adults in the late 1990s (Covington and Spriggs 2004).

What Mechanisms Influence This Differential Treatment? Underlying Theories of Poverty, Pathology, and Race

A core disagreement among poverty scholars and policymakers concerns why people and families are poor or near poverty in the first place. Darity et al. (2012) categorizes explanations for poverty as either structuralist or individualist. While neither perspective requires the explicit consideration of race, noteworthy poverty scholars and policymakers very often weave race within these perspectives. Broadly speaking, the individualist perspective puts more weight on individual choice, behavior, and agency. Among others, Mead (2007, 2014) and Murray (1984) emphasize the role of personal behavioral deficiencies and the importance of a stronger, paternalistic government to enforce desirable behavioral norms—work participation, punctuality, and so-called healthy habits—particularly among black males (Schram et al. 2009; Soss, Fording, and Schram 2011). These and related arguments falling within an individualist perspective,

which argue for policy interventions that target pathological behavior such as limited work effort and criminal behavior, have often been couched as being responsive to the behavioral pathologies attributed to blacks. In the early to middle 20th century an extreme version of this world view led some state policymakers to adopt eugenics, carrying out state-sponsored sterilization (Price and Darity 2010).

The pattern of disproportionate sanctioning is consistent with images of welfare use that tend to package negative images of the poor, such as laziness, promiscuity, and criminality, with blackness (Fording, Soss, and Schram 2011; Hancock 2004; Wacquant 2009). This theme of punishment and race is explored by Wacquant, who argues that modes of punishment across criminal justice (which we discuss in the section on education programs and policies) and welfare policy are in fact interconnected.

Structuralist perspectives tend to put more weight on the role of historical discrimination, public policies that have been and continue to be exclusionary, labor market conditions, and access to economic resources (e.g., Hardy, Smeeding, and Ziliak 2018). These explanations tend to emphasize racial differences in access to economic mobility-enhancing resources such as labor markets, high-quality schools, wealth accumulation, and neighborhood amenities (e.g., Galster et al. 2007). Ultimately, the aforementioned punitive policy sanctions and racial inequality in the safety net can be traced, in part, to theories of poverty's origins that support the imposition of limits on welfare generosity, and on the assumption that generosity promotes negative pathologies by reducing work effort and initiative.

EDUCATION PROGRAMS AND POLICIES

While social safety net programs provide an income floor and insurance from poverty, perhaps the most universally accepted pathway for upward economic mobility in the United States is via education and training; many antipoverty strategies lean heavily on early educational interventions (e.g., Duncan, Ludwig, and Magnuson 2007; Heckman 2011). Troubling racial disparities in primary and secondary educational outcomes, driven in part by inequality in the allocation of financial resources and higher-quality teachers across K–12 education, worsen these labor market conditions. Here, we briefly summarize a small sample of the work examining disparities in early, primary, and secondary education. Such disparities have potentially serious consequences for black and non-white students before they enter the labor market. In turn, education and human capital will continue to be important predictors of economic inequality and opportunity, because the

set of skills needed to move up the economic ladder in many occupations increasingly requires postsecondary training (e.g., Autor 2014).

Many research studies examining educational access and equity focus on test scores and understanding black–white differences. Family income may explain much of the observed test score gap since it points to the broad role of family resources (e.g., Brooks-Gunn and Duncan 1997; Ladd 2012; Rothstein and Wozny 2013). Prior work in this space has also pointed to a range of explanations, including innate ability (Herrnstein and Murray 1994) as well as attitudes and cultural norms (e.g., Cook and Ludwig 1998; Fordham and Ogbu 1986; Murray 1984; Steele and Aronson 1998). Importantly, because the focus here is on actionable, policy-relevant factors, there is compelling evidence to suggest that black–white test score gaps are driven by blacks' attendance at lower-quality schools, as measured by characteristics including teachers' credentials, teacher–student ratios, and school safety (Fryar and Levitt 2004).

In contrast to earlier work (e.g., Coleman et al. 1966; Hanushek 2003), contemporary evidence on the link between school spending and student-level outcomes shows that school spending positively impacts the aforementioned measures of school quality, and also positively impacts earnings and lowers poverty in adulthood (Jackson, Johnson, and Persico 2016; Lafortune, Rothstein, and Schanzenbach 2018). Local school spending is positively associated with family incomes and property values, helping to produce disparities between and within school districts. The measured impacts of school spending are largest for low-income students, and the potential mechanisms driving this link include lower student–teacher and student–adult ratios, increased instructional time, and higher teacher compensation levels (Jackson, Johnson, and Persico). School spending is largely a state and local investment; the federal government provides less than 10 percent of resources for schools (Chingos and Blagg 2017). Thus, it is worth highlighting that school spending in low-income districts and in districts with high shares of minority students varies widely across the nation, though, on average, school districts situated in the poorest areas of the country receive roughly $1,000 less per student than school districts with relatively low poverty. Underlying this average difference are a number of states (23 in 2018) in which high- and low-poverty school districts receive roughly similar funding, and a few where the poorest districts receive substantially less. This spending inequality may be worse after adjusting to consider the higher costs that high-poverty school districts face—a 40 percent adjustment in the study cited here (Morgan and Amerikaner 2018). District-level spending inequality is even larger for high- versus low-minority-share school districts than it is for high- versus low-poverty school districts (Morgan and Amerikaner). Given that many experts argue

for educational investments as a cornerstone of successful local economic development strategies (e.g., Bartik 2018), state and local spending inequality that disadvantages high-poverty-share and high-minority-share school districts is a challenge for place-based economic policy proposals.

Segregated schools that are majority–minority are more likely situated on the low end of the local school spending distribution, though such local-level inequities are at times reversed or at least partially mitigated via state and federal funds (Chingos and Blagg 2017). Still, where the money is spent—whether via the components of school spending that improve outcomes, such as lower teacher–student ratios, higher teacher compensation, and added instructional time—might explain some of the large negative association between segregated schools and educational outcomes (e.g., Mickelson 2001). Such patterns of racial and socioeconomic segregation appear to be worsening over time (e.g., Murray 2013; Putnam 2016), and differences in metropolitan-level 20th-century segregation have been shown to have serious socioeconomic consequences, contributing to black–white poverty gaps between cities (Ananat 2011). Integrated suburban schools have their own challenges, reproducing segregation via course tracking patterns that pool minority students in segregated, weaker classes relative to white students (Darity and Jolla 2009; Diamond 2006).

Minority students in primary, secondary, and postsecondary educational settings could also benefit from same-race teachers—of which there are a paucity. Specifically, exposure to same-race teachers is associated with reduced disciplinary sanctions, a lower likelihood of dropping out of high school, and a higher likelihood of matriculating to college. This could reflect both the benefits of exposure to a black teacher, or a minimization of the costs of exposure to teachers who bring conscious and unconscious biases about other race students' ability (e.g., Dee 2004, 2005; Fairlie, Hoffmann, and Oreopoulos 2014; Gershenson et al. 2017).

Our main takeaways are to note that (1) the administration of and investment in primary and secondary education varies nationwide, (2) such spending—which tends to be greater in low-poverty and low-minority-share neighborhoods—shapes the inputs that then impact student outcomes; and (3) black and minority students, who themselves are disproportionately low income, are more likely to be impacted by such variation.

INCARCERATION PROGRAMS AND POLICIES

In order to begin characterizing how policies and structures have impacted minority citizens' economic opportunity, we must consider how criminal justice and incarceration policies have operated to harm black and other

non-white Americans. These impacts can be considered separately as well as jointly alongside other public policies, especially those centered on providing human services and safety net supports (Wacquant 2009). Here, as we did in the previous sections, we aim to provide a very brief snapshot of evidence in what is an expansive area of research.

America's incarcerated population since at least the early 1970s are disproportionately poor and minority; they rarely possess more than a high school diploma and have a low probability of upward economic mobility. Incarceration is a disproportionately male phenomenon, and even more disproportionately affects black men with a high school diploma or less. The costs of incarceration are borne not only by these men, but by their children and families as well (Western and Pettit 2010). Historically, blacks have been incarcerated at a higher rate than whites since statistics were collected in the late 1800s. Perhaps contrary to perceptions of regional racial animus, blacks have been and continue to be incarcerated at even higher rates in the northern United States compared to the southern United States, and the migration of blacks out of the South during the Jim Crow era seemingly accelerated this regional disparity. Remarkably, the risk of incarceration for a black male born in the 1975–79 cohort is roughly 27 percent overall, and almost 70 percent for those without a high school diploma. This in turn has devastating consequences for employment when the formerly incarcerated return to the labor market, since employers are reluctant to hire formerly incarcerated persons; this is especially so for black job applicants (Pager 2003; Western and Pettit 2010).

Scholars have also studied some of the costs of incarceration that accrue to families and communities. To focus on a few, Cox and Wallace (2016) document that families in which an adult parent is incarcerated face higher levels of food insecurity by a range of 4 to 15 points. Food insecurity, in turn, has been associated with lowered educational performance in school (Cook and Frank 2008; Frongillo, Jyoti, and Jones 2006; Jyoti, Frongillo, and Jones 2005). Similarly, Geller and Franklin (2014) examine the link between incarceration and housing insecurity, finding that partner incarceration strongly predicts negative housing-related events, ranging from relatively low-risk occurrences such as a missed payment, to more serious cases in which an eviction or a period of homelessness results (Geller and Franklin). Incarceration harms both the incarcerated and their families, which then raises economic vulnerability—making these families more reliant on the safety net. Children in such families must then cope, and they bring this array of home environmental conditions into the classroom.

Local police play a role in driving incarceration rate patterns, and designers of place-based policies might also consider evidence that, in experimental settings, black citizens are associated by police officers with a higher degree of criminality (e.g., Eberhardt et al. 2004). Differential, harsher treatment by police, in turn, has a range of impacts on the degree to which the police are deemed as legitimate or trustworthy within minority communities. The risk of exposure to police-involved lethal force is statistically significantly higher for black men relative to white and Latino men, and these disparities vary across the United States (Edwards, Esposito, and Lee 2018). The resulting diminished legitimacy potentially degrades community safety, promotes hostile citizen–police interactions, impedes citizen cooperation during investigations, and perhaps diminishes overall confidence in governmental institutions—since the police often are citizens' primary mode of contact with local government (Tyler, Goff, and Maccoun 2015; Wilkins and Wenger 2015).

Conclusion

In order to consider how place-based policies might promote economic mobility and well-being, it is important to consider how an array of historical and contemporary government decisions and policies have historically harmed black and other non-white Americans; such actions promote racial and place-based inequality. In addition to strong moral claims to taking up such considerations, there are also efficiency gains from doing so. Black and minority residents are overrepresented in the very communities where many place-based policies are being proposed, and a substantial share have therefore been subjected to some or all of the government policies we described here, as well as others we do not touch on. Although it is difficult to model and identify a causal impact of structural racism and discrimination, we aim to provide a brief synthesis of policies and choices occurring at all levels of government that have had deleterious consequences for black and other minority individuals, families, and communities. The policy choices, like the people they impact, are not randomly distributed across the country. As a result, these policy choices influence regional differences in educational attainment, family income, housing, poverty, health status, and employment, among other outcomes.

While the majority of historical discriminatory policies are off the books, social science evidence has shed light on the ways in which state and local governments—wielding substantial authority within our decentralized form of government—have enacted an array of contemporary policies that impose harm on black and other minority communities, in some instances unintentionally so. The results of this can be observed, in part, by looking

at how neighborhoods have evolved over the past 40 years. Neighborhoods with a significant share of blacks in America's major cities have lagged white neighborhoods on key socioeconomic indicators since at least the 1970s, including earnings, poverty, educational attainment, and employment (Casey and Hardy 2018). These gaps in neighborhood amenities and neighborhood quality persist into the 2000s.

Place-based public policies will operate against these headwinds, and should be designed accordingly. Western and Pettit (2010), whom we reference earlier in the paper, argue that a broad definition of safety is inclusive of family stability, economic well-being, and good health. These are well-established conditions for economic growth, and successful place-based policies should consider how structural racial inequality has negatively impacted local residents on these and related margins. Such policies can help individuals, families, and neighborhoods thrive by improving depressed communities, which in turn helps to drive the overall success of cities and regions.

Acknowledgments

We thank Constance Lindsay for providing helpful background and feedback on our discussion of education policy.

Endnotes

1. All calculations are based on county-level population estimates by Census (2017). "Metropolitan" here refers to all metropolitan areas, including large central, large fringe, medium, and small metro areas.
2. Authors' calculations based on the 1880 Federal Population Census (Census 1880).
3. See Dymski (2006) for a general overview of the theory and empirical evidence for racial discrimination in credit and housing markets.
4. Increasing residential segregation was not strictly a product of white flight as black migrants left the South and settled in northern cities. Recent work by Logan and Parman (2017) that measures segregation in rural areas as well as urban areas demonstrates that rural segregation was rising between 1880 and 1940 at the same time that urban segregation was rising, both in the North and in the South. Segregation rose both in the counties black migrants moved to and in the counties they left, suggesting that residential sorting by race was a very general phenomenon in the first half of the 20th century.
5. It is important to note that public sector employment for black individuals is not strictly a story of white flight and spatial mismatch. Black public sector employment is also a function of black political power in urban areas in the latter part of the 20th century (Eisinger 1982).
6. These numbers are based on authors' calculations using the list of black representatives and senators by Congress, 1870 to the present, compiled by the Office of the Historian for the U.S. House of Representatives (U.S. House of Representatives n.d.). Note that Tim Scott of South Carolina, having served in both the House and the Senate, is counted both in the 56 representatives and as the one senator.

References

Aaronson, Daniel, Daniel Hartley, and Bhashkar Mazumder. 2017. "The Effects of the 1930s HOLC 'Redlining' Maps." Working Paper 2017-12, Federal Reserve Bank of Chicago, Chicago, IL.

Ananat, Elizabeth Oltmans. 2011. "The Wrong Side(s) of the Tracks: The Causal Effects of Racial Segregation on Urban Poverty and Inequality." *American Economic Journal: Applied Economics* 3 (2): 34–66.

Autor, David. 2014. "Skills, Education, and the Rise of Earnings Inequality among the 'Other 99 Percent.'" *Science* 344 (6186): 843–51.

Bailey, Martha J., and Nicolas J. Duquette. 2014. "How Johnson Fought the War on Poverty: The Economics and Politics of Funding at the Office of Economic Opportunity." *Journal of Economic History* 74 (2): 351–88.

Baker, Richard. 2016, January. "Finding the Fat: The Relative Impact of Budget Fluctuations on African-American Schools." Unpublished manuscript.

Bartik, Timothy J. 2018. "Who Benefits from Economic Development Incentives? How Incentive Effects on Local Incomes and the Income Distribution Vary with Different Assumptions about Incentive Policy and the Local Economy." Technical Report 18-934, Upjohn Institute, Kalamazoo, MI.

Baum-Snow, Nathaniel. 2007. "Did Highways Cause Suburbanization?" *Quarterly Journal of Economics* 122 (7): 775–805.

Beck, Elwood M., and Stewart E. Tolnay. 1990. "The Killing Fields of the Deep South: The Market for Cotton and the Lynching of Blacks, 1882–1930." *American Sociological Review* 55 (4): 526–39.

Bertrand, Marianne, and Sendhil Mullainathan. 2004. "Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination." *American Economic Review* 94 (4): 991–1013.

Bonds, Michael. 2006. "The Continuing Significance of Race: A Case Study of the Impact of Welfare Reform." *Journal of African American Studies* 9 (4): 18–31.

Boustan, Leah Platt. 2010. "Was Postwar Suburbanization 'White Flight'? Evidence from the Black Migration." *Quarterly Journal of Economics* 125 (1): 417–43.

Boustan, Leah Platt, and Robert A. Margo. 2009. "Race, Segregation, and Postal Employment: New Evidence on Spatial Mismatch." *Journal of Urban Economics* 65 (1): 1–10.

Brooks-Gunn, Jeanne, and Greg J. Duncan. 1997. "The Effects of Poverty on Children." *The Future of Children* 7 (2): 55–71.

Card, David, Alexandre Mas, and Jesse Rothstein. 2008. "Tipping and the Dynamics of Segregation." *Quarterly Journal of Economics* 123 (1): 177–218.

Carruthers, Celeste K., and Marianne H. Wanamaker. 2013. "Closing the Gap? The Effect of Private Philanthropy on the Provision of African-American Schooling in the U.S. South." *Journal of Public Economics* 101: 53–67.

Casey, Marcus, and Bradley Hardy. 2018. "The Evolution of Black Neighborhoods Since Kerner." *Russell Sage Journal of the Social Sciences* 4 (6): 185–205.

Chetty, Raj, Nathaniel Hendren, Maggie Jones, and Sonya Porter. 2018. "Race and Economic Opportunity in the United States: An Intergenerational Perspective." Working Paper 24441, National Bureau of Economic Research, Cambridge, MA.

Chingos, Matthew M., and Kristin Blagg. 2017. "Do Poor Kids Get Their Fair Share of School Funding?" Urban Institute, Washington, DC.

Civil Rights Act of 1964, Pub. L. 88-352, 78 Stat. § 241 (1964).

Coleman, James S., Ernest Q. Campbell, Carol J. Hobson, James McPartland, Alexander M. Mood, Frederic D. Weinfeld, and Robert L. York. 1966. "Equality of Educational Opportunity." Report OE-38001, National Center for Educational Statistics, Washington, DC.

Collins, William J., and Marianne H. Wanamaker. 2014. "Selection and Economic Gains in the Great Migration of African Americans: New Evidence from Linked Census Data." *American Economic Journal: Applied Economics* 6 (1): 220–52.

Connerly, Charles E. 2002. "From Racial Zoning to Community Empowerment: The Interstate Highway System and the African American Community in Birmingham, Alabama." *Journal of Planning Education and Research* 22 (2): 99–114.

Cook, John T., and Deborah A. Frank. 2008. "Food Security, Poverty, and Human Development in the United States." *Annals of the New York Academy of Sciences* 1136 (1): 193–209.

Cook, Philip J., and Jens Ludwig. 1998. "The Burden of 'Acting White': Do Black Adolescents Disparage Academic Achievement?" In *The Black–White Test Score Gap*, edited by Christopher Jencks and Meredith Phillips, 375–400. Washington, DC: Brookings Institution Press.

Covington, Kenya L., and William E. Spriggs. 2004. "Negative Effects of State Welfare Policy on Recipient College Enrollment." *Review of Black Political Economy* 32 (2): 7–26.

Cox, Robynn, and Sally Wallace. 2016. "Identifying the Link Between Food Security and Incarceration." *Southern Economic Journal* 82 (4): 1062–77.

Cutler, David M., Edward L. Glaeser, and Jacob L. Vigdor. 1999. "The Rise and Decline of the American Ghetto." *Journal of Political Economy* 107 (3): 455–506.

Darity, William A. Jr., and Alicia Jolla. 2009. "Desegregated Schools with Segregated Education." In *The Integration Debate: Futures for American Cities,* edited by Chester Hartman and Gregory Squires, 99–117. London, UK: Routledge.

Darity, William A. Jr., Mary Lopez, Olugbenga Ajilore, and Leslie Wallace. 2012. "Antipoverty Policy." In *The Oxford Handbook of the Economics of Poverty,* edited by Philip N. Jefferson. Oxford, UK: Oxford University Press.

Dee, Thomas S. 2004. "Teachers, Race, and Student Achievement in a Randomized Experiment." *Review of Economics and Statistics* 86 (1): 195–210.

———. 2005. "A Teacher Like Me: Does Race, Ethnicity, or Gender Matter?" *American Economic Review* 95 (2): 158–65.

Diamond, John B. 2006. "Still Separate and Unequal: Examining Race, Opportunity, and School Achievement in 'Integrated' Suburbs." *Journal of Negro Education* 75 (3): 495–505.

Duncan, Greg, Jens Ludwig, and Katherine A. Magnuson. 2007. "Reducing Poverty Through Preschool Interventions." *The Future of Children* 17 (2): 143–60

Dymski, Gary A. 2006. "Discrimination in the Credit and Housing Markets: Findings and Challenges." In *Handbook on the Economics of Discrimination,* edited by William M. Rodgers III, 215–59. Cheltenham, UK: Edward Elgar.

Eberhardt, Jennifer L., Phillip Atiba Goff, Valerie J. Purdie, and Paul G. Davies. 2004. "Seeing Black: Race, Crime, and Visual Processing." *Journal of Personality and Social Psychology* 87 (6): 876–93.

Edwards, Frank, Michael H. Esposito, and Hedwig Lee. 2018. "Risk of Police-Involved Death by Race/Ethnicity and Place, United States, 2012–2018." *American Journal of Public Health* 108 (9): 1241–48.

Eisinger, Peter K. 1982. "Black Employment in Municipal Jobs: The Impact of Black Political Power." *American Political Science Review* 76 (2): 380–92.

Fair Housing Act (Title VIII of the Civil Rights Act of 1968), 42 U.S.C. 3601–19.

Fairlie, Robert W., Florian Hoffmann, and Philip Oreopoulos. 2014. "A Community College Instructor Like Me: Race and Ethnicity Interactions in the Classroom." *American Economic Review* 104 (8): 2567–91.

Finn, Johnny. n.d. "Redlining in Virginia." Online mapping tool. (http://cnu.maps.arcgis.com/apps/View/index.html?appid=909e8528cd3a4df190756596dcf5d693).

Fordham, Signithia, and John U. Ogbu. 1986. "Black Students' School Success: Coping with the 'Burden of "Acting White."'" *Urban Review* 18 (3): 176–206.

Fording, Richard C., Joe Soss, and Sanford F. Schram. 2011. "Race and the Local Politics of Punishment in the New World of Welfare." *American Journal of Sociology* 116 (5): 1610–57.

Frongillo, Edward A., Diana F. Jyoti, and Sonya J. Jones. 2006. "Food Stamp Program Participation Is Associated with Better Academic Learning Among School Children." *Journal of Nutrition* 136 (4): 1077–80.

Fryar, Roland G., and Steven D. Levitt. 2004. "Understanding the Black–White Test Score Gap in the First Two Years of School." *Review of Economics and Statistics* 86 (2): 447–64.

Galster, George, Dave E. Marcotte, Marv Mandell, Hal Wolman, and Nancy Augustine. 2007. "The Influence of Neighborhood Poverty During Childhood on Fertility, Education, and Earnings Outcomes." *Journal of Housing Studies* 22 (5): 723–51.

Geller, Amanda, and Allyson Walker Franklin. 2014. "Paternal Incarceration and the Housing Security of Urban Mothers." *Journal of Marriage and Family* 76 (2): 411–27.

Gershenson, Seth, Cassandra Hart, Constance Lindsay, and Nicholas W. Papageorge. 2017. "The Long-Run Impacts of Same-Race Teachers." Working Paper 10630, Institute of Labor Economics (IZA), Bonn, Germany.

Hahn, Heather, Laudan Aron, Cary Lou, Eleanor Pratt, and Adaeze Okoli. 2017. "Why Does Cash Welfare Depend on Where You Live? How and Why State TANF Programs Vary." Research Report, Urban Institute, Washington, DC.

Hancock, Ange-Marie. 2004. *The Politics of Disgust: The Public Identity of the Welfare Queen*. New York, NY: New York University Press.

Hanushek, Eric A. 2003. "The Failure of Input-Based Schooling Policies." *Economic Journal* 113 (485): F64–98.

Hardy, Bradley L., Timothy Smeeding, and James P. Ziliak. 2018. "The Changing Safety Net for Low-Income Parents and Their Children: Structural or Cyclical Changes in Income Support Policy?" *Demography* 55 (1): 189–221.

Heckman, James. 2011. "The Economics of Inequality: The Value of Early Childhood Education." *American Educator* 35 (1): 31–35, 47.

Herrnstein, Richard J., and Charles Murray. 1994. *The Bell Curve: The Reshaping of American Life by Difference in Intelligence.* New York, NY: The Free Press.

Hero, Rodney E. 2003. "Racial/Ethnic Diversity and States' Public Policies." In *Race and the Politics of Welfare Reform,* edited by Sanford F. Schram, Joe Soss, and Richard C. Fording, 298–319. Ann Arbor, MI: University of Michigan Press.

Holzer, Harry J. 1991. "The Spatial Mismatch Hypothesis: What Has the Evidence Shown?" *Urban Studies* 28 (1): 105–22.

Hoynes, Hilary, Diane Whitmore Schanzenbach, and Douglas Almond. 2016. "Long-run Impacts of Childhood Access to the Safety Net." *American Economic Review* 106 (4): 903–34.

Jackson, C. Kirabo, Rucker C. Johnson, and Claudia Persico. 2016. "The Effects of School Spending on Educational and Economic Outcomes: Evidence from School Finance Reforms." *Quarterly Journal of Economics* 131 (1): 157–218.

Johnson, Vanessa D. 2010. "Impact of Race and Welfare Reform on African American Single Mothers' Access to Higher Education." *Journal of Black Studies* 40 (6): 1041–51.

Johnston, Jocelyn. 2008. "Welfare Reform: A Devolutionary Success." In *Intergovernmental Management for the Twenty-First Century*, edited by Timothy J. Conlan and Paul L. Posner, 124–56. Washington, DC: Brookings Institution Press.

Jyoti, Diana F., Edward A. Frongillo, and Sonya J. Jones. 2005. "Food Insecurity Affects School Children's Academic Performance, Weight Gain, and Social Skills." *Journal of Nutrition* 135 (12): 2831–39.

Kalil, Ariel, Kristin S. Seefeldt, and Hui-Chen Wang. 2002. "Sanctions and Material Hardship Under TANF." *Social Service Review* 76 (4): 642–62.

Kim, Sukkoo, and Robert A. Margo. 2004. "Historical Perspectives on U.S. Economic Geography." In *Handbook of Regional and Urban Economics*, vol. 4, edited by J. Vernon Henderson and Jean-François Thisse, 2981–3019. Amsterdam, Netherlands: Elsevier.

Ladd, Helen F. 2012. "Education and Poverty: Confronting the Evidence." *Journal of Policy Analysis and Management* 31 (2): 203–27.

Lafortune, Julien, Jesse Rothstein, and Diane Whitmore Schanzenbach. 2018. "School Finance Reform and the Distribution of Student Achievement." *American Economic Journal: Applied Economics* 10 (2): 1–26.

Logan, Trevon D., and John M. Parman. 2017. "The National Rise in Residential Segregation." *Journal of Economic History* 77 (1): 127–70.

Margo, Robert A. 1982. "Race Differences in Public School Expenditures: Disfranchisement and School Finance in Louisiana, 1890–1910." *Social Science History* 6 (1): 9–34.

Mead, Lawrence M. 2007. "Toward a Mandatory Work Policy for Men." *The Future of Children* 17 (2): 43–72.

———. 2014. "Authority and Morality Build Character." In *Essay Series on Character and Opportunity,* 39–41. Washington, DC: Brookings Institution Press.

Mickelson, Roslyn Arlin. 2001. "Subverting Swann: First-And Second-Generation Segregation in the Charlotte-Mecklenburg Schools." *American Educational Research Journal* 38 (2): 215–52.

Morgan, Ivy, and Ary Amerikaner. 2018. "Funding Gaps 2018: An Analysis of School Funding Equity Across the U.S. and Within Each State." The Education Trust, Washington, DC.

Murray, Charles. 1984. *Losing Ground: American Social Policy, 1950–1980.* New York, NY: Basic Books.

———. 2013. *Coming Apart: The State of White America, 1960–2010*. New York, NY: Random House Digital.

Olney, Martha L. 1998. "When Your Word Is Not Enough: Race, Collateral, and Household Credit." *Journal of Economic History* 58 (2): 408–31.

Page, Marianne. 1995. "Racial and Ethnic Discrimination in Urban Housing Markets: Evidence from a Recent Audit Study." *Journal of Urban Economics* 38 (2): 183–206.

Pager, Devah. 2003. "The Mark of a Criminal Record." *American Journal of Sociology* 108 (5): 937–75.

Price, Gregory N., and William A. Darity Jr. 2010. "The Economics of Race and Eugenic Sterilization in North Carolina, 1958–1968." *Economics & Human Biology* 8 (2): 261–72.

Putnam, Robert D. 2016. *Our Kids: The American Dream in Crisis*. New York, NY: Simon and Schuster.

Roscigno, Vincent J., Donald Tomaskovic-Devey, and Martha Crowley. 2006. "Education and the Inequalities of Place." *Social Forces* 84 (4): 2121–45.

Rothstein, Jesse, and Nathan Wozny. 2013. "Permanent Income and the Black-White Test Score Gap." *Journal of Human Resources* 48 (3): 509–44.

Russell, Judith. 2003. *Economics, Bureaucracy, and Race: How Keynesians Misguided the War on Poverty*. New York, NY: Columbia University Press.

Schram, Sanford F., Joe Soss, Richard C. Fording, and Linda Houser. 2009. "Deciding to Discipline: Race, Choice, and Punishment at the Frontlines of Welfare Reform." *American Sociological Review* 74 (9): 398–422.

Soss, Joe, Richard Fording, and Sanford F. Schram. 2011. "The Organization Of Discipline: From Performance Management to Perversity and Punishment." *Journal of Public Administration Research and Theory* 21 (Suppl. 2): i203–i232.

Steele, Claude M., and Joshua Aronson. 1998. "Stereotype Threat and the Test Performance of Academically Successful African Americans." In *The Black–White Test Score Gap*, edited by Christopher Jencks and Meredith Phillips, 401–27. Washington, DC: Brookings Institution Press.

Tyler, Tom R., Phillip Atiba Goff, and Robert J. Maccoun. 2015. "The Impact of Psychological Science on Policing in the United States: Procedural Justice, Legitimacy, and Effective Law Enforcement." *Psychological Science in the Public Interest* 16 (3): 75–109.

U.S. Census Bureau. (Census). 1880. "Decennial Census of Population and Housing." U.S. Census Bureau, Suitland, MD.

———. 2010a. "American Community Survey." U.S. Census Bureau, Suitland, MD.

———. 2010b. "Decennial Census of Population and Housing." U.S. Census Bureau, Suitland, MD.

———. 2017. "Decennial Census of Population and Housing." U.S. Census Bureau, Suitland, MD.

U.S. House of Representatives. n.d. "Black-American Representatives and Senators by Congress, 1870–Present." Office of the Historian, Office of Art & Archives, U.S. House of Representatives, Washington, DC.

Voting Rights Act of 1965, Pub. L. 89-110, 79 Stat. 437 (1965).

Wacquant, Loïc. 2009. *Punishing the Poor: The Neoliberal Government of Social Insecurity.* Durham, NC: Duke University Press.

Watkins-Hayes, Celeste. 2009. *The New Welfare Bureaucrats: Entanglements of Race, Class, And Policy Reform*. Chicago, IL: University of Chicago Press.

Western, Bruce, and Becky Pettit. 2010. "Incarceration & Social Inequality." *Daedalus*: *Journal of the American Academy of Arts and Sciences* 139 (3): 8–19.

Wilkins, Vicky M., and Jeffrey B. Wenger. 2015. "Street-Level Bureaucrats and Client Interaction in a Just World." In *Understanding Street-Level Bureaucracy,* edited by Peter Hupe, Michael Hill, and Aurélien Buffat, 79–96. Bristol, UK: Policy Press.

Ziliak, James P. 2016. "Temporary Assistance for Needy Families." In *Economics of Means-Tested Transfer Programs in the United States,* Vol. 1, edited by Robert Moffitt, 303–94. Cambridge, MA: National Bureau of Economic Research and University of Chicago Press.

Rebuilding Communities Job Subsidies

David Neumark, *University of California, Irvine*

Abstract

Poverty remains a persistent problem in many areas in the United States. Existing place-based policies—especially enterprise zones—have generally failed to provide benefits to the least advantaged. Drawing on lessons from the often-negative findings on effects of past place-based policies, but preserving the potential advantage of policies that try to improve economic outcomes in specific areas, I propose a new place-based policy—Rebuilding Communities Job Subsidies, or RCJS—to encourage job and income growth in areas of economic disadvantage. RCJS targets neighborhoods classified as extremely poor, and low-income workers in those neighborhoods, with a period of fully subsidized jobs to build skills and improve and revitalize areas of extreme poverty, to be followed by partially subsidized private sector jobs.

Introduction

Poverty remains a persistent problem in many areas in the United States. There are numerous challenges to job creation in disadvantaged areas—urban or otherwise—that can include low skills, inadequate and decaying infrastructure, crime, and other ills. Even jobs that might be created are likely to be low-wage, low-skill jobs, and hence may do relatively little to attract workers or raise incomes. Policymakers have tried repeatedly to encourage job creation, especially in urban areas—relying first and foremost on enterprise zones. But these policies to create jobs, raise incomes, and reduce poverty in disadvantaged urban areas have generally failed, especially in providing benefits to the least advantaged.

Consequently, I am proposing a new place-based policy that I call Rebuilding Communities Job Subsidies, or RCJS, to encourage job and income growth in disadvantaged areas. RCJS retains the goal of trying to

incentivize the creation of jobs in disadvantaged areas for residents of those disadvantaged areas. However, RCJS takes a significantly different approach from past place-based policies, and focuses on creating high-wage jobs and improving disadvantaged areas to lay the groundwork for future economic development. It includes the following core elements:

- RCJS will offer jobs lasting up to 18 months, fully subsidized by the federal government, with the possibility of cost sharing with state or local governments.
- The jobs must have the potential to quickly build skills that lead to good jobs in the private sector. Financial support will be provided for training to support building these skills.
- RCJS jobs will contribute to revitalizing and improving the disadvantaged areas where the jobs are subsidized.
- RCJS jobs will be administered by local nonprofits, in partnership with local employers and community groups, and perhaps larger nonprofits based elsewhere. Together these groups can identify local needs that the subsidized jobs will help address and skill-building jobs that are more likely to lead to higher-wage private sector jobs.
- After the initial 18-month phase, local nonprofits will help workers transition to private sector jobs, which RCJS will subsidize at a 50 percent rate for another 18 months. Continued employer eligibility for subsidies for new employees will depend on retention of workers placed earlier. Continued nonprofit eligibility for RCJS funds will depend on successful placements of workers in private sector jobs, and on private sector job retention.
- Eligibility for RCJS subsidies will be restricted to economically disadvantaged areas, defined as areas encompassing four to six U.S. Census Bureau (Census) tracts in which, on average, 40 percent or more of individuals are below the poverty line (i.e., the definition of extreme poverty). Within the targeted areas RCJS job subsidies will be limited to workers in families below 150 percent of the poverty line if the hired individual is already employed and 100 percent of the poverty line if the individual is not employed. Workers eligible for the subsidies must initially reside in the targeted areas.
- RCJS will not be restricted to urban areas. However, the structure of RCJS makes it more likely that it will be applied to urban areas.

The Challenge

CONCENTRATED POVERTY AND JOBLESSNESS

Significant areas of the United States, including many U.S. cities, have persistently high poverty rates, high unemployment rates, and low employment rates. Focusing first on cities, poverty rates are somewhat higher in the nation's smaller cities: in 2016 the poverty rate was 16.1 percent in cities of less than 200,000 versus 13.1 percent in cities of more than 1 million. Moreover, in recent data poverty has fallen somewhat more in cities than it has in suburbs (Berube and Murray 2017).

Many U.S. cities continue to have large concentrations of poor people in extremely poor areas; on this metric, trends in many areas are in the opposite direction from that for urban poverty overall. For example, Kneebone, Nadeau, and Berube (2011) define Census tracts as being in extreme poverty if the poverty rate is 40 percent or higher, and define the concentrated poverty rate as the share of poor people living in Census tracts that meet the extreme poverty definition. They find that concentrated poverty rose sharply in metropolitan areas in the Midwest over the 2000s, as well as in metropolitan areas in the South. (Note that a metropolitan area can include both the primary city and its suburbs.) While extreme poverty and concentrated poverty rose more in suburban areas in this period, concentrated poverty remains much higher in primary city areas than in the suburbs.

Based on the most recent data from the American Community Survey (ACS) for 2012–16, the concentrated poverty rate for the nation as a whole is 13.3 percent, with 6.2 million people, out of the nation's more than 46 million people below the poverty line, living in the more than 4,000 extremely poor Census tracts. Table 1 shows that the concentrated poverty rate is high throughout the country and at different city sizes. The concentrated poverty rate is higher for the top 100 largest metropolitan areas than it is for the country as a whole, and higher yet for the next 100 metropolitan areas. In general, concentrated poverty is particularly high in the Northeast and Midwest and somewhat lower in the South and West. However, for the top 101–200 cities concentrated poverty in the South is also high (17.9 percent).

Figures 1 and 2 provide more detail, mapping the top 100 and next 100 most populous metro areas, respectively, and shading them by quintile of the concentrated poverty rate: the darker the shading, the higher the concentrated poverty rate. In figure 1, for example, we see top 100 metro areas in the highest quintile of concentrated poverty in upstate New York,

Wisconsin, central California, and Mississippi, among others. And in figure 2, for the top 101–200 metro areas, the top quintile includes cities in Michigan, Pennsylvania, Georgia, Florida, and Texas, among others.

Poverty in the United States is both an urban and a rural phenomenon. Indeed, poverty is slightly higher in rural areas (16.5 percent) than in metropolitan areas (14.8 percent).[1] However, nearly 90 percent of extreme poverty Census tracts are in metropolitan areas, and concentrated poverty (i.e., the clustering of the poor in extremely poor neighborhoods) is much higher in urban areas—14 percent in metropolitan Census tracts compared to 10 percent in micropolitan tracts, and only 5 percent in small-town and rural tracts.[2]

TABLE 1.

Concentrated Poverty in the United States and in Metro Areas, by Region

	Number of extreme poverty tracts	Poor population in extreme poverty tracts (thousands)	Concentrated poverty rate
United States	**4,084**	**6,222**	**13.3%**
Northeast	685	1,083	15.1%
Midwest	1,187	1,459	15.6%
South	1,562	2,431	12.6%
West	650	1,249	11.2%
Top 100 Metro Areas	**3,096**	**4,115**	**14.0%**
Northeast	574	939	16.5%
Midwest	830	979	19.1%
South	813	1,300	12.1%
West	470	904	11.3%
Top 101–200 Metro Areas	**622**	**924**	**17.0%**
Northeast	64	81	16.1%
Midwest	151	189	18.9%
South	335	499	17.9%
West	72	156	13.6%

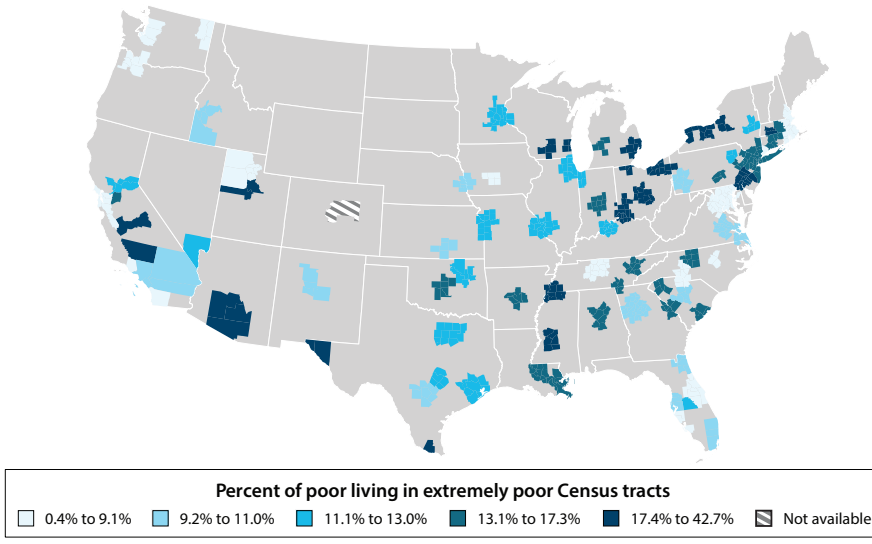
Source: ACS (Census 2012–16); author's calculations.

Notes: Metro area ranking based on 2012 population. Extreme poverty Census tracts are defined as tracts with a poverty rate of at least 40 percent. Concentrated poverty rate is the share of poor population within a region living in extremely poor Census tracts. Definitions are based on Kneebone, Nadeau, and Berube (2011).

THE HAMILTON PROJECT BROOKINGS

FIGURE 1.

Concentrated Poverty Rates, Top 100 Metro Areas



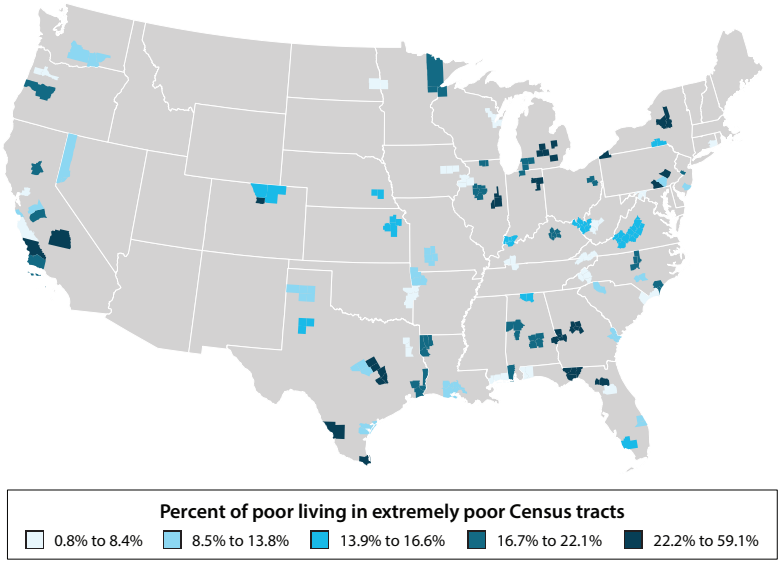
Source: ACS (Census 2012–16); author's calculations.

Note: Metro area ranking based on 2012 population. Light gray areas are not in the top 100 metro areas.

THE HAMILTON PROJECT BROOKINGS

FIGURE 2.

Concentrated Poverty Rates, Top 101–200 Metro Areas



Source: ACS (Census 2012–16); author's calculations.

Note: Metro area ranking based on 2012 population. Light gray areas are not in the top 101–200 metro areas.

THE HAMILTON PROJECT BROOKINGS

Residents of extremely poor neighborhoods differ from residents of other neighborhoods in terms of a number of characteristics, including minority status, as shown in table 2. In the nation as a whole, 61 percent of residents of extremely poor neighborhoods have a high school education or less, versus 41 percent for the total population. The share of households headed by women with children is more than twice as high as for the total population. And—most importantly with respect to the proposal developed in this chapter—joblessness is high. Among prime-age (25–54 years old) men, the nonemployment rate (including unemployed and those not in the labor force) was 37 percent for residents of extremely poor neighborhoods compared to 19 percent in the nation overall. Table 3 shows that these figures are similar for the nation's top 100 most populous metropolitan areas. These facts about neighborhoods with concentrated poverty and characteristics of their residents are related, of course. For example, Abraham and Kearney (2018) have documented the prevalence of low employment and low wages and wage growth among less-skilled men,

TABLE 2.

Neighborhood Characteristics of Extreme Poverty Census Tracts in the United States

	Extreme poverty tracts	All tracts
Unemployment rate	15.3%	7.4%
Prime-age nonemployment rate	41%	24%
Prime-age male nonemployment rate	37%	19%
Single mother households	16%	7%
Race and ethnicity		
White	47%	73%
Black	35%	13%
Asian	4%	5%
Hispanic	29%	17%
High school education or less	**61%**	**41%**
Male	63%	42%
Female	59%	39%

Source: ACS (Census 2012–16); author's calculations.

Note: Unemployment and labor force variables are based on a weighted average by Census tract labor force. Other estimates are based on a weighted average by Census tract population. Extreme poverty Census tracts are defined as tracts with a poverty rate of at least 40 percent, based on definitions from Kneebone, Nadeau, and Berube (2011). White, black, and Asian refer to reported single race. Hispanic includes all races.

THE HAMILTON PROJECT BROOKINGS

TABLE 3.

Neighborhood Characteristics of Extreme Poverty Census Tracts in the Top 100 Metropolitan Areas

	Extreme poverty tracts	All tracts
Unemployment rate	15.9%	7.4%
Prime-age nonemployment rate	41%	23%
Prime-age male nonemployment rate	36%	17%
Single mother households	17%	7%
Race and ethnicity		
White	41%	69%
Black	38%	14%
Asian	4%	7%
Hispanic	34%	20%
High school education or less	**62%**	**38%**
Male	65%	39%
Female	61%	37%

Source: ACS (Census 2012–16); author's calculations.

Note: Metro area ranking based on 2012 population. Unemployment and labor force variables are based on a weighted average by Census tract labor force. Other estimates are based on a weighted average by Census tract population. Extreme poverty Census tracts are defined as tracts with a poverty rate of at least 40 percent, based on definitions from Kneebone, Nadeau, and Berube (2011). White, black, and Asian refer to reported single race. Hispanic includes all races.

THE HAMILTON PROJECT BROOKINGS

who—as just noted—are strongly overrepresented in areas of concentrated poverty.

UNDERSTANDING JOBLESSNESS IN NEIGHBORHOODS WITH CONCENTRATED POVERTY

The focus of my proposal is on reducing overall poverty, extreme poverty, and concentrated poverty through increased employment. Nevertheless, part of the motivation for the proposal is also to address the underlying problems that contribute to low employment and continuing neighborhood poverty and disadvantage.

In the context of neighborhoods with many poor and minority residents, a long-standing theory of low employment is spatial mismatch. The spatial mismatch hypothesis—as applied to the United States—argues that the lower employment rate of disadvantaged minorities in urban cores is in part attributable to there being fewer available jobs per worker in these areas (Ihlanfeldt and Sjoquist 1998, 851). Spatial mismatch can emerge because of the exit of jobs from these areas with the changing industrial

structure (Wilson 1987), and can persist because of residential segregation attributable at least in part to discrimination in housing markets.[3] Researchers have hypothesized that spatial mismatch can be exacerbated by inadequate transportation from urban cores to suburban jobs (Gobillon, Selod, and Zenou 2007; Kain 1968).

The segregation of disadvantaged groups into areas with fewer jobs, in addition to inadequate transportation to jobs in other places, implies that wages, minus any commuting costs, are more likely to be below the wages at which individuals would be willing to work. This means that fewer residents of such areas would choose to work, especially among the less-skilled for whom commuting costs represent a larger share of earnings. Spatial mismatch can be reinforced by discrimination against minorities—both by customers and employers—and inadequate information about jobs in other areas (Ihlanfeldt and Sjoquist 1998). Together, these factors suggest that increasing employment in neighborhoods with many disadvantaged residents will probably require creating jobs in those same neighborhoods.

But research by Hellerstein, Neumark, and McInerney (2008) suggests that this may not be enough. The authors note that racial and ethnic discrimination in hiring can generate evidence that appears consistent with spatial mismatch but that is not fundamentally due to scarcity of jobs where minorities live. Instead, they find support for an explanation they call racial mismatch. Specifically, black job density (the ratio of local jobs held by black workers to black residents) is strongly positively related to black employment, whereas white job density (the ratio of local jobs held by white workers to black residents) is not. This evidence indicates that the spatial distribution of jobs alone is not a critical determinant of black urban employment; the racial dimension in hiring must also be taken into account.[4] In other words, even if there is a high black population in areas that are dense in jobs, they might not be able to access these jobs due to discrimination and/or racially segregated labor market networks. One implication is that hiring incentives intended to reduce poverty by spurring job creation in disadvantaged minority areas should incentivize hiring of *local* residents. Simply bringing jobs to these areas might not be enough.

Longer-term changes in labor supply and labor demand as well as in institutions that support wages at the low end of the distribution also play an important role in joblessness in areas with many poor residents. Lower demand for less-skilled workers has been attributed to skill-biased technological change and trade (see citations to the evidence in Abraham and Kearney 2018). And a good deal of research points to the role of weakened unions and lower minimum wages in contributing to lower wages for less-skilled workers (e.g., DiNardo, Fortin, and Lemieux 1995),

which can in turn lead to negative labor supply responses (see Juhn 1992 for earlier evidence, and Moffitt 2012 for more-recent evidence). Of course, had unions or minimum wages done more to prop up wages of less-skilled workers, labor demand for these workers would presumably have been lower.

Finally, other factors may discourage job creation in disadvantaged areas. The exit of more-affluent customers, perhaps in part due to crime, blight, and decaying infrastructure, can reduce demand for the products or services of some kinds of businesses (Alwitt and Donley 1997), and make it hard to attract higher-skilled workers. Higher costs for labor, insurance, rents, and loss/theft can deter business and job creation (Hammel 1991; Porter 1995). In my view, these factors have been underemphasized in discussions of job creation policies for neighborhoods with high concentrations of poverty.

EVIDENCE FROM PLACE-BASED POLICIES

A review of the evidence on impacts of key place-based policies—including enterprise zones, empowerment zones, and enterprise communities, among others—suggests a few core lessons that inform the proposal in this chapter.[5] This section reviews the evidence and highlights certain lessons:

- Labor market networks are often segregated by location and race (see box 1), increasing the importance of hiring *residents* of low-income areas.
- Hiring credits alone would tend to reallocate jobs across places rather than create new jobs—in other words, they generate negative spillovers for other places.
- Migration into enterprise zones, among other factors, can redirect benefits away from the low-income residents who are the intended beneficiaries of the policy.

A critical factor in explaining urban concentrations of poverty and disadvantage is that labor demand is likely to be low in poor, urban areas. Consequently, policymakers have adopted policies to boost labor demand in these areas.

Policies that target geographic areas are termed place-based policies because they create criteria for policy eligibility based on location characteristics, such as the poverty rate in a Census tract. In contrast, people-based policies try to help the disadvantaged without regard to where they live or how concentrated they are residentially; examples include welfare and working tax credits (such as the Earned Income Tax Credit [EITC] in the United States).

BOX 1.

The Role of Labor Market Networks

Researchers studying enterprise zones have been particularly interested in understanding the factors that may amplify the effects of boosting labor demand in an area. One such factor may be labor market networks. In network models, employment of some residents increases the flow of information about job opportunities to other residents. Networks can also increase the flow of information about workers to employers. Both of these effects reduce the cost of worker-firm matching and increase employment (e.g., Montgomery 1991). Networks often have a spatial dimension, such as connecting neighbors and employers in the same Census tract or neighborhood (Bayer, Ross, and Topa 2008; Hellerstein, Kutzbach, and Neumark 2014; Hellerstein, McInerney, and Neumark 2011).

The potential amplification of local hiring impacts can be particularly important given that residential segregation by race or ethnicity can interact with racially or ethnically stratified labor market networks, making it particularly hard to, for example, boost hiring of black workers in disadvantaged areas.[6] Hellerstein, McInerney, and Neumark (2011) present evidence of racial stratification of labor market networks that suggests white residents are more likely to share information about jobs with white neighbors than with black neighbors (or more likely to refer a white neighbor than a black neighbor for a job). There is other evidence consistent with ethnically stratified networks that further emphasizes the importance of local hiring.[7] As a striking example, Kasinitz and Rosenberg (1996) study the Red Hook section of Brooklyn, an area that at the time was characterized by high unemployment and a large population of low-income black residents, and to some extent Hispanic residents, but with a large number of local jobs in the shipping industry. They found that many local employers hired workers almost exclusively from candidates outside Red Hook, recruiting employees via social networks within specific (non-black) ethnic groups.[8]

Place-based policies do not have to target disadvantaged areas. One example would be government assistance to subsidize the creation of an industry cluster in some area of natural advantage (e.g., natural resources or the presence of a university). A second example would be efforts to revitalize a downtown area through real estate development incentives. The standard arguments considered in the urban economics literature to justify this type of place-based policy typically have the following form: government policy can encourage development in a particular place, thereby increasing efficiency through so-called agglomeration externalities that arise when economic activities occur in close proximity.

However, place-based policies, at least in the United States, usually refer to policies targeting disadvantaged areas, and that is the definition used in this chapter.[9] The most prominent place-based policy in the United States is enterprise zones, which seek to create jobs in or near areas where poor people live and job prospects are weak. Given that I am focusing (although not exclusively) on urban poverty and disadvantage, and that my RCJS proposal is based on both criticisms of and lessons learned from enterprise zone programs, the discussion in this section focuses on enterprise zones.

Neumark and Simpson (2015) further distinguish between direct and indirect place-based policies. Direct forms of place-based policies seek to increase economic activity and strengthen labor markets where disadvantaged people currently live, whereas indirect policies instead seek to increase the access that disadvantaged people have to locations where labor markets are stronger. Enterprise zones can be viewed as direct place-based policies since they typically create incentives for hiring and other economic activity in or near areas where disadvantaged people live.

The Gautreaux and Moving to Opportunity (MTO) programs in the United States (as well as transportation-based policies intended to increase access to jobs outside the areas where the disadvantaged tend to reside) are examples of indirect policies.[10] The evidence from Gautreaux and MTO allows us to test behavioral hypotheses about the effects of growing up in different kinds of neighborhoods. However, I do not view Gautreaux and MTO as feasible urban policies for the simple reason that they cannot be implemented on a large scale. It is probably infeasible to successfully encourage massive numbers of poor people to move out of urban areas with high poverty. Even in the event that this were accomplished, the effects of the policy when implemented broadly could be far different from what the experimental evidence has found.

In contrast, other policies motivated by spatial mismatch concerns could in principle be taken to larger scale. For example, if there is a dearth of jobs for

low-skilled workers in urban areas with concentrated poverty but strong demand for such workers in outlying suburban areas, then investments in transportation infrastructure that make urban-to-suburban commuting more feasible could substantially raise employment in urban areas with high poverty rates.[11] However, the evidence regarding labor market networks

BOX 2.

Enterprise Zones and Related Policies in the United States

Enterprise zones and related policies are intended to increase employment and generate local economic growth and development in disadvantaged areas. The general term "enterprise zone" is often used to refer to a number of different state and federal policies, but the more-specific designations are defined below.

- **State enterprise zones** existed in 40 separate state programs as of 2008 (Ham et al. 2011). These programs vary in terms of budgets, the number of zones in each state, targeting, and the benefits available, but business hiring credits typically featured prominently.[13]
- **Federal empowerment zones and enterprise communities** were authorized in 1993, allowing local governments to submit proposals for zones made up of relatively poor, high-unemployment Census tracts. Far more enterprise communities—which have much less generous benefits—were created than were empowerment zones.[14]
- **New Markets Tax Credit (NMTC) program** provides individuals and corporations with federal tax credits for investments in economically distressed communities. The program was established as part of the Community Renewal Tax Relief Act of 2000.
- **Opportunity zones** were created by the Tax Cut and Jobs Act of 2017, allowing investors to reduce their capital gains tax burden by investing in designated opportunity zones. Zones were selected by the Treasury Secretary in April 2018 from a pool of localities nominated by the states.

and racial mismatch described above suggests that the effectiveness of such policies could be substantially limited by racial and ethnic discrimination in hiring. Moreover, commuting costs—including time—could still pose substantial barriers for low-wage workers.[12]

Policies such as enterprise zone programs—which create incentives for the creation of jobs (and other investments) in neighborhoods with concentrated disadvantage—have the potential to create jobs where disadvantaged people live and can plausibly be taken to very large scale. Perhaps reflecting this potential, enterprise zone programs have been used extensively in the United States, at both the federal and state levels (see box 2 for more details).[15]

Weak Evidence for Positive Impacts of Enterprise Zones

The problem that prompts my RCJS proposal is that most enterprise zone programs have failed to deliver the goods—creating jobs and raising incomes for the least-advantaged people in neighborhoods with high concentrations of low-income residents. In part to make the case that we need to consider different place-based policies, but also to draw lessons from the existing research, in this subsection I provide a fairly comprehensive review of this evidence, with a focus on the U.S. experience (see box 3 for a summary).[16]

Although most of the existing research focuses on estimating the effects of place-based policies on residents and/or areas, some also tries to assess effects on welfare. One key question regarding welfare effects is whether the intervention largely reallocates economic activity from one place to another, or instead generates gains in output (e.g., because of agglomeration effects). Of course, even pure reallocation can be a legitimate policy goal. A second issue is whether policy that targets specific places creates distortions to capital and labor mobility, lowering efficiency by reducing incentives of firms or individuals to move to more-productive locations (Glaeser and Gottlieb 2008). Economic theory suggests that the consequences of place-based policies for economic welfare depend on whether the policy generates benefits for the targeted area—including newcomers—and more specifically for those originally resident in the targeted areas. As Crane and Manville (2008) emphasize, jobs that are created may go to nonpoor residents or migrants, and gains from land prices seem unlikely to accrue to the poor.[17] These considerations imply that evaluations should look beyond evidence of effects on local employment to effects on local unemployment, transitions of local residents into jobs, and changes in commuting patterns, as well as effects on rents and house prices, to help assess who gains from these policies.[18]

BOX 3.

Summary: Weak Evidence for Positive Impacts of Enterprise Zones

On net, the weight of evidence is that the hiring credits in enterprise zones have had limited if any positive impact, especially on poor households. Research on three specific state programs (California, Florida, and Texas) concludes that two of them generate no employment effects, and the third (on Texas) finds positive effects concentrated on lower-paying jobs. One study looking at numerous states also finds some positive employment effects, but they do not appear to be tied in any way to hiring credits. Thus, evidence on whether these state programs created jobs is mixed, although a stronger case can be made that, if they did create jobs, it was not because of the hiring credits highlighted in many state enterprise zone programs. There is little reliable evidence that state enterprise zones reduced poverty or helped low-income families generally.

Evidence from analyses of the U.S. federal Empowerment Zones Program is also mixed. One study finds strong effects on job growth, whereas another suggests that if we fully account for differences between zones and other places there is no evidence of beneficial effects. Moreover, if there are benefits, they appear to accrue to higher-income households. If one concludes that the federal program was beneficial, it seems plausible that the large block grants associated with empowerment zones played an important role, although verifying that would be challenging, given the small number of affected zones; these grants may have done more to increase the attractiveness of zones to higher-income people.

The evidence on spillovers is also mixed, with some studies suggesting negative spillovers that offset program benefits. There might be reasons policymakers want to relocate economic activity to some areas even if this is solely at the expense of other areas. But clearly the case for place-based policies is harder to make if this is what happens, especially for relocation over small areas.

A key challenge in estimating effects of enterprise zone programs is that selection of geographic areas for the programs occurred on the basis of unobserved area characteristics, which may differ from those of comparison places. In other words, policymakers do not choose areas at random, but rather do so on the basis of characteristics such as past or expected job growth. This non-random selection requires that researchers choose control areas carefully to make statistical comparisons.[19]

A second problem in studying the effects of place-based policies is spillover effects between areas. Evidence that enterprise zone designation led to job growth might be regarded quite differently depending on whether the zone created new jobs on net, or whether employers moved from one area to another to take advantage of enterprise zone credits. The latter would imply negative spillovers on areas outside the enterprise zones.[20] Although negative spillovers do not necessarily imply that a program has failed, they do reduce the social benefits of the policy. There can also be positive spillovers. For example, an enterprise zone might increase traffic or income in a geographic area, spurring demand and hence job growth in nearby areas; these positive spillovers could bias the estimated effect of enterprise zones on employment toward zero when comparing enterprise zones to neighboring areas that were also positively affected.[21]

With these issues and challenges in mind, I now turn to an overview of empirical results from the enterprise zone literature. The results from early generation studies of enterprise zones varied widely. Many studies failed to find employment effects of enterprise zones, although some of the work (e.g., O'Keefe 2004; research reviewed in Wilder and Rubin 1996) found positive employment effects, at least in the short run. More-recent overviews of the literature conclude that it is difficult to find evidence of positive employment effects of enterprise zones (Elvery 2009; Ham et al. 2011; Lynch and Zax 2011). However, in the past decade or so many studies of enterprise zones have made creative use of both data and econometric methods to try to provide more-rigorous evidence on the effects of enterprise zones. This literature is summarized in appendix table 1.

Studying the California enterprise zone program, Neumark and Kolko (2010) find estimates that are small, statistically insignificant, and negative as often as they are positive, even when correcting for the causal issues outlined above and accounting for overlap among other redevelopment programs. The null effects do not appear to be driven by positive spillovers mentioned above, since the evidence is similar using larger control rings.

Elvery (2009) focuses on the effects of enterprise zones in California and Florida, designated in the mid-1980s, on employment of zone residents in

the 1986–90 period. He finds no evidence of positive effects of enterprise zones on employment; indeed, his point estimates are always negative, ranging from about −0.4 to −2.6 percentage points (though not statistically significant). Freedman's (2013) analysis of the Texas enterprise zone program exploits the fact that Census block groups were automatically designated as enterprise zones based on whether the poverty rate in the 2000 Census was equal to 20 percent or greater. Comparing locations near the 20 percent cutoff, he estimates effects on annual resident employment growth of 1 to 2 percent, which are fairly large when accumulated over a number of years. These employment effects are concentrated in jobs paying less than $40,000. However, when he accounts for the possibility of negative spillovers, very few of the employment estimates are significant, and in some cases the positive effects on resident employment become smaller or even negative. This is consistent with the positive findings being driven by relocation of jobs between nearby areas.

Freedman (2013) also finds a statistically significant 11 percent increase in median housing values in block groups near the 20 percent poverty threshold, as well as a 4 percent decline in the share of housing units that are vacant. At the same time, the data indicate no change in median household income. One interpretation is that the main effect of enterprise zone designation seems to have been an increase in land value—a finding that arises in other studies, some of which suggest that this might be a principal effect of enterprise zones (e.g., Hanson 2009).[22]

Ham et al. (2011) study both state and federal programs. Their state-level analysis looks separately at California, Florida, Massachusetts, New York, Ohio, and Oregon, as well as an aggregation of seven other states that have relatively few tracts in zones. Enterprise zone benefits vary widely across these states; for example, there are very large hiring credits in California and Florida, and negligible or no hiring credits in Ohio and Oregon. The results Ham et al. report for the combined (average) effect of state enterprise zones and for the two types of federal zones are almost always strong and positive. Particularly striking are their estimated effects on poverty reduction—a key goal of these programs. Some of their estimates are extraordinarily large, such as an increase in employment of around 34 percent from federal empowerment zones, and a reduction in the poverty rate of 20.3 percentage points from federal enterprise communities. Large positive effects of enterprise communities are especially surprising given that other researchers regard enterprise community benefits as inconsequential relative to empowerment zone benefits (Busso, Gregory, and Kline 2013; Hanson and Rohlin 2013).[23]

The large benefits of enterprise zones that Ham et al. (2011) estimate are outliers in the enterprise zone literature, as appendix table 1 makes clear. Furthermore, a reexamination of this evidence casts serious doubt on the findings (Neumark and Young 2017). The large poverty reductions that they attribute to state enterprise zones are driven almost entirely by a data error. And their estimated effects of federal empowerment zones and enterprise communities appear to be overstated because treated zones are not comparable with comparison locations; accounting for this reduces the estimated impacts of empowerment zones and suggests that their estimated positive effects of enterprise communities are spurious.

Busso, Gregory, and Kline (2013) study the effect of federal empowerment zones, comparing outcomes in the six urban communities that were awarded empowerment zones with the full range of benefits and credits to matched tracts of rejected zone applicant areas as well as to areas that would eventually be designated as empowerment zones.[24] For nearly all of the cities in which zones were rejected, enterprise community status was awarded instead; these areas did not receive major block grants and had no dedicated hiring credits. The authors focus on the estimated impact of empowerment zones designated in 1993 on changes over the 1990s, finding that empowerment zone designation appears to generate substantial job growth—between 12 and 21 percent. Moreover, the authors find that there were increases in jobs in the zone held by residents (17.6 percent), but less evidence of such effects for nonresidents (6.4 percent, not significant). The Census data also point to large increases in non-zone employment of zone residents (12.3 percent, not significant). The fairly large estimated employment effects for zone residents working outside the zone suggest that the effects on zone employment are not fully attributable to the hiring credit. The block grants were substantial, and there is some evidence—although Busso, Gregory, and Kline note that it is far from rigorous—that the block grants, or something else about the zones, may have attracted large amounts of outside private capital.[25] This could have boosted employment of nonresidents in the zone, and perhaps, through spillovers, employment of zone residents outside the zone. If in fact the block grants played a major role, this might help square the results of Busso, Gregory, and Kline with other weak evidence of effects of enterprise zones on job growth.[26]

Other studies of the impact of federal empowerment zones lead to less-favorable conclusions. Hanson (2009) finds that selection into the program is based on unobserved improvements in economic conditions, biasing other studies toward estimating positive effects.[27] After taking this into account, he finds no significant effects on employment.

Careful accounting for negative spillovers is also important for understanding the impacts of place-based policies. Hanson and Rohlin (2013) attempt to directly estimate the spillover effects of federal empowerment zones on nearby or similar areas—effects that could be negative or positive. They identify tracts that are similar to the empowerment zones—in terms of either geography or economic characteristics—and compare changes from before and after zone designation for the close tracts to what happened in tracts that were close—on the same measure—to the rejected applicants in other cities (which became enterprise communities). The evidence points to negative spillover effects on establishment counts and employment. Hanson and Rohlin (2013) suggest that empowerment zones are, to a first-order approximation, simply reallocating economic activity among similar areas.

Yet another concern is that positive average effects of empowerment zones may mask distributional effects that are much less favorable to the disadvantaged. Reynolds and Rohlin (2015) conclude that the zones were advantageous to high-skilled, high-income people who, to some extent, likely moved into empowerment zones because the program made these areas more attractive. In contrast, the zones were neutral or even harmful to the impoverished residents of these zones. They find that the effects on median household income and poverty were small and statistically insignificant.[28] Thus, these results present a more-negative portrait of federal empowerment zones as failing to deliver on the goal of helping low-income families than the evidence presented in Busso, Gregory, and Kline (2013) and Ham et al. (2011).[29]

Enterprise zone programs vary in the level and nature of tax credits and other incentives, as well as in other forms of assistance available to zone businesses. This heterogeneity across programs limits how much one can generalize from the study of a single program, and heterogeneous effects could help explain why the extensive research literature on the employment effects of enterprise zones is not unanimous in the conclusions it reaches. For example, Wilder and Rubin (1996) concluded that enterprise zones were more effective when tax incentives were "complemented by more traditional supports for economic development (e.g., technical assistance, location/site analysis, special staffing)" (478). And more-recent evidence in Kolko and Neumark (2010), which supplements their analysis of California enterprise zones with a survey of enterprise zone administrators, finds, among other results, that enterprise zones have a more-favorable effect on employment in zones where managers report doing more marketing and outreach activities. One implication of these findings is that the overall evidence from the research literature on enterprise zones may be somewhat

too pessimistic, and that it might be possible to find ways to make enterprise zones more effective at creating jobs.

However, it is very hard to make the case that the research establishes the effectiveness of enterprise zones in terms of job creation, poverty reduction, or welfare gains. At the same time, there is an obvious appeal in using place-based policies to try to improve socioeconomic conditions in neighborhoods that have concentrated disadvantage. These lessons inform my proposal, which tries to combine some of the potential benefits of encouraging job creation in neighborhoods with many disadvantaged residents, but differs from enterprise zones in ways that are likely to prove more beneficial to these neighborhoods.

Opportunity Zones Unlikely to Ameliorate Concentrated Poverty

Despite the unconvincing track record on enterprise zones, the Trump administration recently revealed a new version of place-based policies, designating opportunity zones in 18 states, as part of the Tax Cuts and Jobs Act of 2017. While intended to spur job creation, and targeted at disadvantaged Census tracts, opportunity zone incentives are directed at investors in property, allowing deferral or avoidance of federal taxes on capital gains in investments in these zones (U.S. Department of the Treasury 2018).

Past research may provide some insight into the potential effects of such a policy. Freedman (2012) examined the federal New Markets Tax Credit program, which has some parallels to the opportunity zone program in its focus on real estate development, although it also subsidizes capital investments for businesses through loans or preferential interest rates. For the period studied (2002–09), the NMTC provided $26 billion in tax credits to investors making capital investments mainly in businesses located in moderately low-income neighborhoods, defined as tracts that had median family incomes below 80 percent of the state's median income, based on metro status, in the 2000 census. Freedman reports that around 70 percent of the funds went to commercial real estate development, and most of the rest went to business development, mainly as loans to firms.[30]

The evidence suggests that there is a jump in NMTC investment just below the tract-level median family income eligibility threshold—about $1 million more in NMTC investment than similar tracts that do not qualify, and about 0.05 additional businesses receiving investment. Given that these amounts seem fairly small, it may be more plausible to believe that the effects Freedman (2012) finds flow more from the real estate development side of the NMTC. Freedman finds a modest poverty-reduction effect,

which he characterizes as limited and costly, with a cost of about $23,500 to lift one person out of poverty. At the same time, he also finds some evidence consistent with compositional changes, with a few of the estimates indicating increases in household turnover of about 0.75 percentage points. Such displacement effects could imply even higher costs to reduce poverty. However, unlike some of the work on enterprise zones, Freedman does not find evidence of an effect on median housing values, with estimates very close to zero, which is less consistent with a compositional change toward higher-income, higher-skilled people.[31] Given the potential compositional shifts, the difficulty of understanding how such small amounts could have much impact, and the small impacts that occurred even if we rule out compositional changes, it is hard to attribute much success to the NMTC program. This likely does not bode well for the success of the new Opportunity Zones program.

The Proposal

There are many reasons for policymakers to be interested in improving employment opportunities in urban areas that have concentrated disadvantage. As discussed in the introduction to this volume, these include reasons of efficiency and equity. Successful policies could increase the tax base, reduce crime, improve outcomes for children, spur human capital investment, and generate positive externalities for other city residents.

Although the benefits of improving socioeconomic circumstances in neighborhoods with high concentrations of poverty will accrue to many city residents, such benefits will likely accrue in particular to nonpoor members of minority groups, who tend to cluster residentially in poor areas.[32] Research suggests that living in poverty areas creates extra hardships for the poor and nonpoor alike, owing to less private sector investment, higher crime, weaker labor market networks, and worse health, as well as decaying infrastructure and lack of quality physical public goods (Dempsey 2008; Schilling and Logan 2008; Wiewel and Persky 1994; Wilson 2008).[33]

Finally, recent research indicates that policies that deliver gains in employment and income in disadvantaged areas may have important short- and long-term positive spillovers for places. Shorter-term spillovers can arise from network effects that generate positive multipliers from local hiring (e.g., Hellerstein, McInerney, and Neumark 2011; Piil Damm 2014). Chetty et al. (2014) show that the disadvantage of neighborhoods can have lasting impacts on the next generation. I am therefore proposing a new approach to creating job growth in areas with high concentrations of disadvantage, which I call Rebuilding Communities Job Subsidies, or

RCJS. RCJS retains the goal of trying to incentivize the creation of jobs in urban and other areas of concentrated disadvantage for residents of those disadvantaged areas (defined as sets of Census tracts). But it represents a significantly different approach from enterprise zone programs. RCJS is characterized by the following core elements.

First, RCJS will subsidize jobs in two phases. In the first phase, lasting up to 18 months, RCJS jobs will be fully subsidized by the federal government, with the possibility of cost sharing with state or local governments; workers in these jobs generally will be deployed by local nonprofits. In the second phase workers will transition to private sector jobs. These jobs will be subsidized at a 50 percent rate by the federal government for the first $30,000 of annual earnings—again, with the possibility of cost sharing with state or local governments—for an additional 18 months, on the condition that these jobs require some of the skills that workers develop in the initial period. Private sector employers claiming RCJS do not need to be located in the target areas, although workers must initially reside in those areas. Employer eligibility for subsidies for new employees will be terminated if the retention rate of prior employees hired under RCJS falls below 50 percent within one year of the end of the subsidies.[34] Continued eligibility of nonprofits for RCJS funds will depend on successful placements of workers in private sector jobs, and the same retention criterion.

Second, RCJS jobs in the first phase must contribute to revitalizing and improving the areas of concentrated disadvantage where the jobs are subsidized.

Third, RCJS jobs in the first phase must be administered by local nonprofits, in partnerships with local employer and community groups, with the optional support of larger nonprofits based elsewhere. Together, these groups will identify local needs that the subsidized jobs help address and structure subsidized jobs such that they quickly build skills and effectively lead to successful private sector job placements. Financial support will be provided for training to support building these skills.

Fourth, RCJS job subsidies will be limited to workers in families below 150 percent of the poverty line if the hired individual is already employed, and 100 percent of the poverty line if the individual is not employed. And eligibility for RCJS subsidies will be restricted to areas that are substantially disadvantaged, defined as areas encompassing four to six Census tracts in which, on average, 40 percent or more of individuals are below the poverty line (the definition of extreme poverty). RCJS is not restricted to urban areas. However, the structure of RCJS makes it more likely that it will be applied to urban areas.

Fifth, RCJS should be administered by the U.S. Department of Housing and Urban Development (HUD), which has administered federal enterprise zone programs. HUD would establish a competitive application process, soliciting proposals from the types of nonprofits outlined in the proposal, and choosing potential treatment areas based on two criteria: expected success at leading participants to higher-paying private sector jobs, and improvement of the targeted area via the jobs subsidized in the first phase of the subsidies. Program administrators might also want to give preference to applications that include cost sharing by state or local governments, although this should receive little weight to maintain the broadest availability of RCJS in places with little fiscal capacity.

RATIONALES FOR CORE ELEMENTS OF RCJS

The two-phase structure of RCJS—initial, fully-subsidized jobs with local nonprofits, followed by partial subsidies of private sector jobs—is intended to accomplish two goals: first, to create a strong incentive for a fast ramp-up in job creation; and, second, to induce the transition of workers in these subsidized jobs into higher-paid jobs in the private sector. With regard to job creation, there is evidence from past guaranteed/subsidized jobs programs (e.g., the TANF Emergency Fund during the Great Recession) that take-up of generous subsidies could be large and fast, and could lead to some positive post-program effects (see the discussion below). The subsidies then phase out over time, contributing to the goal of increased economic self-sufficiency. RCJS is intended to be complementary with other policies, such as the EITC, which provide ongoing work subsidies (to workers, rather than to employers) for workers in lower-income families.

Improving Neighborhoods

The focus on improving neighborhoods is intended to encourage the creation of jobs that, in addition to helping workers and their families, also increase the productive potential and quality of life in the targeted areas. We know from existing research that there are deeper problems in urban areas that simple hiring credits, even if effective, are unlikely to address. These problems are often related to poor infrastructure such as parks and schools, safety, side effects of depopulation such as vacant lots and abandoned homes, and a need for tutors or health-care providers. (See, e.g., Dempsey 2008; Schilling and Logan 2008; Wiewel and Persky 1994; Wilson 2008). The focus on neighborhood improvement also reflects the concern that place-based policies lead largely to reallocation, rather than creation, of economic activity.

There is no way to guarantee that a neighborhood that improves because of a policy intervention such as RCJS (or any other place-based policy) will not generate some relocation of economic activity or displacement of the most-disadvantaged residents. However, by generating actual physical (or human capital) improvements, RCJS can do more than simply reallocate jobs and people, making it more likely that the program will, on net, result in improvements to disadvantaged areas and skill increases among the residents of those areas. Unfortunately, we as yet know very little about whether place-based policies lead to sustained growth in jobs and income after subsidies end. There is evidence of a long-term benefit from the Tennessee Valley Authority (Kline and Moretti 2014a), although the applicability of this evidence to much smaller-scale place-based policies is questionable. Nonetheless, it seems reasonable to presume that focusing job creation under RCJS on jobs that improve neighborhoods is more likely than simple hiring credits to generate positive spillovers that can help spur job creation and business investment over the longer term.

The focus on work that will improve neighborhoods can also lead to the creation of jobs that can prepare workers for higher-skilled jobs, such as construction and skilled trades, education, and health care. For example, subsidized nonprofit and subsequent private sector jobs could entail improvement of schools, parks, or other public infrastructure, or working in community health centers or larger medical enterprises. We know that there are some higher-paying jobs in these sectors, and there is ample anecdotal and survey evidence of strong demand for these middle-skill jobs that do not require a college education, but do require skills that take time to acquire.[35] Indeed, a past Hamilton Project proposal (Holzer 2011) called for enhanced workforce development systems to help move workers into these and other middle-skill jobs, relying on both community colleges and private employers to help create career pathways. In neighborhoods where RCJS is implemented, the two ideas can be highly complementary.

Skill Building: The Roles of Nonprofit and For-profit Employers

The requirement that jobs subsidized under RCJS must have the potential to quickly build skills that lead to good jobs in the private sector is intended to better support individual and family economic self-sufficiency. This strategy contrasts with the bias toward the creation of low-wage, higher-turnover jobs in current and past enterprise zone programs.[36] For example, federal empowerment zones offered a credit of 20 percent of a worker's wages, up to a maximum $3,000 (at $15,000 in wages paid), thereby providing the largest relative subsidy to the lowest-wage and hence lowest-skilled workers. Similarly, California's program paid up to 50 percent of wages up

to 150 percent of the minimum wage. In both cases the credit declined over the employee's tenure, potentially leading to excessive job churn. Moreover, the hiring incentives offered under these and other programs are in no way tied to the creation of skills that can lead to higher-paying jobs.

The requirement that RCJS jobs must be administered by local nonprofits, in partnerships with local employer and community groups, is intended to reinforce the revitalization/improvement goals of the policy. In addition, this requirement should lead to the development of subsidized jobs that are more likely to yield successful private sector job placements using the skills acquired. Local nonprofits, local businesses, and community members are more likely than outsiders to know the unique challenges and needs in the areas in which they work. And local businesses, perhaps in conjunction with community colleges, can help to identify the most promising local jobs for which to train participants. There is also scope to partner with larger nonprofits based elsewhere, which may be able to provide infrastructure and expertise drawn from their prior experiences.

The RCJS proposal also takes account of racial mismatch and local—possibly racially stratified—labor market networks. RCJS focuses on helping disadvantaged residents in targeted areas; it imposes income targeting and residence requirements for eligibility, as well as the explicit goal of improving the targeted areas. Moreover, the involvement of local nonprofits and community organizations should channel efforts in ways that most help local residents. Furthermore, the involvement of local nonprofits might make it more likely that local programs are structured to deliver more benefits to low-income residents of the community rather than landowners and higher-income newcomers.

The suggested rules regarding job retention criteria for private sector employers to remain eligible for partial RCJS subsidies are intended to incentivize the creation of longer-term jobs, and reduce the incentive of employers to churn employees—replacing unsubsidized employees with subsidized employees to extract greater benefits from the subsidy program. The possibility of churning workers to take advantage of hiring credits is a long-standing concern (see, e.g., Bishop and Haveman 1978), and Neumark and Grijalva (2017) find evidence of job churning under countercyclical hiring credits. Similarly, making continued eligibility of nonprofits for RCJS funds dependent on successful placements of workers in private sector jobs is intended to incentivize effective training and good job placements. In addition to providing incentives, these requirements will make RCJS a more attractive program to nonprofit and for-profit employers that can

achieve strong labor market outcomes for many participants, and a less attractive program for those that cannot.

Focusing on Concentrated Poverty

The targeting of RCJS subsidies aims to achieve two objectives: supporting low-income families and leading to jobs that pay well above the minimum wage. The requirement that workers eligible for RCJS subsidies initially live in the targeted areas is meant to maximize impact on disadvantaged areas. However, so as not to impede mobility—especially when taking private sector jobs—moving out of the targeted area will not end eligibility for the subsidy. Moreover, employed workers are eligible, albeit at a higher family income threshold, so that individuals already employed in low-wage jobs can still be eligible for RCJS.

The criterion for eligibility of geographic areas—four to six Census tracts in which, on average, 40 percent or more of individuals are below the poverty line—is intended to achieve two goals. First, it targets RCJS to the neediest areas; second, it focuses RCJS incentives on areas that are relatively compact, but not so small as to limit opportunities for training and job opportunities or to unduly constrain the efforts of local nonprofits.

Finally, the emphasis in much of my discussion on urban areas is not intended to ignore or deny the importance of rural poverty. However, the focus of RCJS on not only creating jobs, but also improving infrastructure and other elements of neighborhoods with concentrated disadvantage, makes it likely that the program will yield the most benefits in urban areas.

WHY A PLACE-BASED POLICY?

Given that past enterprise zone programs have generally been unsuccessful, why propose a new place-based policy? Concentrated poverty and disadvantage remain serious concerns that may be amenable to policy solutions. There are a number of potential rationales for place-based policies, as discussed in Neumark and Simpson (2015) and more recently in Austin, Glaeser, and Summers (forthcoming), with reference to much broader geographic areas of the United States. We do not have solid evidence on all of these, but I believe there is a strong case for continuing to try to develop effective place-based policies, targeting areas of concentrated disadvantage, to use as part of our policy approach to reducing poverty—and urban poverty in particular.

Market imperfections that have been highlighted in the labor economics literature help to justify the kind of antipoverty, place-based policy proposed

here.[37] One type, discussed earlier, is spatial and racial mismatch. These hypotheses imply that place-based incentives need to focus on jobs for local residents, which is the case with RCJS. A second rationale for place-based policies is positive externalities stemming from network effects, whereby employment of residents can help other residents find jobs. Again, RCJS incorporates this perspective, incentivizing jobs for local residents, which existing research (e.g., Hellerstein, McInerney, and Neumark 2011) suggests is necessary to reach the disadvantaged residents of some areas—especially minorities. Finally, consistent with evidence on the spatial mismatch hypothesis, Bound and Holzer (2000) show that less-skilled workers are less likely than high-skilled workers to move in response to local labor demand shocks. This provides another reason for policymakers to focus on spurring job creation in areas where low-income workers live.

EVIDENCE ON THE POTENTIAL EFFECTIVENESS OF RCJS

I am not aware of a policy closely similar to RCJS that has been tried in the past. However, there is evidence from research on existing or past programs that provide empirical support for some elements of the proposal, or that can address potential criticisms.

Hiring Credits

Evaluations of the effectiveness of enterprise zones have been disappointing, as are the generally negative findings from past research about the effects of general hiring credits used to boost labor demand, especially hiring credits targeting the disadvantaged.[38]

The poor track record of these kinds of hiring credits is often attributed to stigmatization of those eligible for the credits. Eligibility of workers for targeted hiring credits can provide information to employers that they have been unsuccessful in the labor market, leading employers to regard eligible workers as risky or as less productive, offsetting the potential impact of the hiring credit (Dickert-Conlin and Holtz-Eakin 2000; Katz 1998). The problem may be particularly severe for narrowly targeted hiring credits (e.g., Burtless 1985).

RCJS has the potential for similar risks, but stigmatization is less likely to be a problem. RCJS does not target workers based on factors that necessarily indicate past employment difficulties, such as long-duration unemployment, welfare receipt, a criminal record, and so on. Rather, its targeting is based on residence in a neighborhood with concentrated disadvantage, as well as low family income. These criteria can be correlated with individual characteristics that might be negative signals to employers.

However, potential employers will likely understand that low income, and interest in RCJS subsidies, is in part a reflection of place, not people. That is, an employer looking at a worker's eligibility for RCJS would rationally attribute at least part of the worker's eligibility to factors beyond the worker's control, making it less likely that eligibility would stigmatize the worker.

The argument has some parallels to arguments I made in Neumark (2013) about the likelihood of more-positive effects of hiring credits enacted in response to severe economic downturns. I argued that a hiring credit focused on nonemployment related to the business cycle is less likely to result in eligible workers being stigmatized, because eligibility for such a hiring credit based on current unemployment or labor force nonparticipation might not send employers much of a bad signal. Earlier evidence consistent with this argument comes from Katz's (1998) analysis of the federal New Jobs Tax Credit (NJTC), which was intended to help spur recovery after the recession in the 1970s. The NJTC was noncategorical rather than targeting specific groups. Katz finds that a "temporary, noncategorical, incremental employment subsidy" (31) such as the NJTC has some potential for creating job growth. Neumark and Grijalva (2017) present more-recent evidence based on state-level hiring credits, many of which were enacted as countercyclical tools during and after the Great Recession. They find that some specific types of hiring credits enacted during the Great Recession succeeded in boosting employment, including credits targeting the unemployed. Heaton (2012) provides additional evidence of positive employment effects for hiring credits adopted during (or just before) the Great Recession, examining the 2007 expansion of the Work Opportunities Tax Credits (WOTC) for veterans entitled to compensation for a service-connected disability.[39]

Kroft, Lange, and Notowidigdo (2013) provide evidence that is particularly relevant to geographic variation in labor market strength. In a hiring field experiment, they find that, although callback rates are lower for long-term unemployed workers, the stigmatizing effect of a long unemployment spell is less strong when the labor market is weak. Of course, RCJS is not a countercyclical hiring credit. But as with countercyclical hiring credits, the greater role of circumstances as opposed to individual characteristics in determining eligibility for RCJS could reduce stigma and hence boost the benefits of the program.

Subsidized Wages

Wage subsidies have also been the subject of useful recent research.[40] The American Recovery and Reinvestment Act (ARRA) of 2009 included a $5 billion Temporary Assistance for Needy Families (TANF) Emergency Fund, under which states could get substantial reimbursement for subsidizing jobs. States were not limited to creating subsidized jobs programs for families receiving TANF, and many chose a broader target population, using a higher income threshold, extending the program to the long-term unemployed, and so on (Farrell et al. 2011).[41]

The evidence shows that the program overall resulted in a large number of job placements: there were approximately 260,000 placements of low-income parents and youth in subsidized jobs during 2009 and 2010 (Warland, Young, and Lower-Basch n.d.), half of these representing summer jobs for youths (Farrell et al. 2011).[42] In addition, evidence from surveys of participating employers points to strong support for these programs (Roder and Elliott 2013), and Lower-Basch (2011) reports that states found more employers willing to hire the target population than they could accommodate. The large level of placements, if nothing else, suggests that RCJS could expect a strong response to its heavily subsidized jobs, in contrast to the experience of low take-up for other hiring credit programs (Hamersma 2003), often attributed to both administrative costs and stigma.

The stigma associated with these wage subsidies might have been lower because of their adoption following a severe recession, when many people were unemployed because of negative demand shocks (paralleling the argument for hiring credits targeting the unemployed), and because eligibility for Emergency Fund subsidies was broad compared to earlier credits narrowly targeting the disadvantaged. For example, some states set eligibility based on family income at or even above 200 percent of the poverty line (Pavetti, Schott, and Lower-Basch 2011). In addition, subsidies of 100 percent might have allayed employer concerns about worker quality since they could terminate the worker without having incurred any direct wage costs. Also, in some cases the employer of record was a nonprofit intermediary or workforce agency, protecting firms from adverse impacts on their unemployment insurance (UI) tax rating and other legal liability when workers exit (Lower-Basch 2011). This provides further support for the RCJS model of relying on nonprofits in the first phase of job subsidies.

Did these wage subsidies lead to job creation, or did they just create windfalls? One type of evidence, which should be taken with a grain of salt, comes from surveys of employers or program administrators. Pavetti, Schott, and Lower-Basch (2011) report that administrators of subsidized

employment programs surveyed by telephone claimed that the subsidies helped some small businesses expand. Roder and Elliott (2013) conducted a telephone survey of employers who took part in job subsidy programs in three states, and report that 63 percent said they created new positions to hire the subsidized workers.

Turning to the question of post-program effects, many descriptions of TANF Emergency Fund job subsidy programs note a high degree of placement in unsubsidized jobs after program completion. Lower-Basch (2011) notes that several states and counties reported "retention rates ranging from 10 to 50 percent" (10), and describes a Boston program in which 46 percent of graduates obtained unsubsidized employment after the program ended. However, this evidence does not compare experiences of participants and nonparticipants, and is unlikely to reveal a causal impact of the program.

More compelling evidence comes from studies of two TANF Emergency Fund programs. A study of the Florida Back to Work Program, using state UI records, finds higher earnings and employment for participants, including the long-term unemployed, than for eligible nonparticipants in the four quarters after the program ended (Roder and Elliott 2013).[43] Similar results were obtained for the program in Los Angeles County that included paid work experience that subsidized nonprofit or public sector jobs, as well as an on-the-job training program that subsidized jobs with private employers who agreed to hire participants after an initial two-month trial period (see Glosser, Barden, and Williams 2016). A randomized evaluation study found that, one year after assignment to the program, employment was substantially higher in the two treated groups than in a control group, and was highest for those in the paid work experience.

Lower-Basch (2011) suggests that these more-positive conclusions compared to the research on effects of past hiring credits targeting the disadvantaged may be attributable to the discretionary nature of the TANF Emergency Fund job subsidy programs, in which administrating agencies were "able to select both employers and workers to participate" (2). In contrast, programs such as WOTC were available to any employer who hires from the targeted population and files the required paperwork. Some of these potential advantages of the TANF Emergency Fund job subsidies might also apply to RCJS.[44]

There are a few past programs with some features that are similar to RCJS.[45] Box 4 describes these programs and appendix table 2 (online only) provides a summary.

BOX 4.

Past Programs That Share Features with RCJS

The Neighborhood Jobs Initiative (NJI) was targeted at neighborhoods in four cities from 1998 to 2001. It included three types of employment services: employment-related services such as training and counseling; increasing knowledge about programs that create work incentives, such as the EITC, TANF earnings disregards, and child-care subsidies; and community support for work, such as working with community-based organizations to create employment programs. The NJI was funded by nonprofits, with technical assistance from MDRC and the Urban Institute. Although there was no formal quantitative evaluation of this program, NJI sites set out to bring neighborhood employment up to employment levels of the surrounding area, with a focus on both job quality and retention, typically on a five-year timeline. By the time of the final MDRC report, data show that the Fort Worth and Chicago sites were on track to meet their goals. MDRC found that programs were more appropriate for neighborhoods with a more-stable population—those without too much movement in and out of the community—where residents are in the neighborhood long enough to benefit from the programs (Molina and Howard 2003).

Phase I of the Earn + Learn program ran from 2011 to 2013; it was a subsidized jobs and training program, targeting minority males aged 18–24, formerly incarcerated individuals, and chronically unemployed adults in Detroit, Flint, and Saginaw.[46] Paralleling RCJS, Earn + Learn had some training and employment opportunities focused on removing urban blight, with about 10 percent of placements in construction but also a good number—25 percent—in manufacturing (see Schultz Patel 2015). One focus of the program, partnering with the Detroit Training Center, trained students in both traditional demolition as well as deconstruction.[47] Earn + Learn was funded by foundations, and state and local governments. There was some evaluation based on observational data and interviews, with some indication of participants moving into unsubsidized jobs, but no evidence based on comparison groups.[48]

The New York City Parks Opportunity Program (POP), which has run from 1994 to the present, is a transitional jobs program

focused on cleaning and maintaining city parks, funded by the city government. Participants receive six-month placements in parks maintenance and operations, where they receive training in basic skills such as forestry, security, or horticulture, as well as training in soft skills and general skills such as computer literacy and English as a second language. The focus on improving urban infrastructure has parallels to RCJS. However, POP has quite different targeting, focusing on welfare recipients who have reached their five-year benefit limit. In addition, training in fields such as forestry or horticulture might be less productive if there are few private sector jobs requiring these skills. The program has placed over 11,000 trainees into full-time positions since 1994, and ratings of park sites are reported to have improved significantly, although the report notes recent increases in crime (see Council of the City of New York 2017).

New Hope for Families and Children was run in two inner-city neighborhoods in Milwaukee. For adult residents of eligible neighborhoods, New Hope offered community service–based full-time jobs at local nonprofits, personalized job search and employment assistance, and monthly earnings supplements, along with subsidized health insurance and child care. Within the targeted neighborhoods, participants had to have household incomes below 150 percent of the poverty line and be willing and able to work at least 30 hours per week. Funding came from foundations, companies, and state and federal sources. Similar to RCJS, local nonprofits played an important role, and some community-service jobs were in construction and property maintenance.

Unlike the other programs discussed in this box, New Hope was evaluated with a rigorous random assignment design. The program shows positive long-term effects on earnings, employment, marriage, mental health, and child achievement and behavior, although there was some fade out. Only about a third of participants in subsidized jobs did not transition to an unsubsidized job (see Center on Poverty and Inequality 2016; Miller et al. 2008).

More recently, Chicago CRED (Creating Real Economic Destiny; 2017) has provided transitional jobs and support services to

men in the south and west sides of Chicago who are at high risk of experiencing gun violence. The program uses a street-level recruitment strategy to identify men who are at the highest risk of being shooters or being shot. Chicago CRED provides transitional jobs, training, and support services for participants; after graduating from the program, participants are placed into permanent, full-time jobs with private employers, with whom the program has built relationships. The transitional jobs share the RCJS feature of revitalizing the communities where participants live, and can include interior home demolition, conservation, and city beautification.

INCORPORATING AN EVALUATION COMPONENT

It is always useful to evaluate program effects, but even more so in the context of RCJS, given the unimpressive track record of past place-based policies. Thus, funding for RCJS should include support for evaluation, and initial implementation should be limited to what is needed to learn about program effects, with a more scaled-up approach dependent on evaluation outcomes.

To obtain the most rigorous evidence, two levels of randomization are needed. First, given that one of the key goals of RCJS is to impact neighborhoods, there has to be randomization across sites. Local organizations should develop proposals for RCJS funding. Program administrators should select twice as many sites for implementation as can be funded under the allocated budget, and then randomly select half of these sites for implementation. It might also be ideal to do the randomization within states and (if possible) within metropolitan areas, so that a within-state or within-city design can be used to control for other unobservables that could be correlated with selection into the program.

Some neighborhood-level data can be obtained from public sources, such as tract-level poverty rates, although ACS data regarding this and other variables are only publicly available in five-year roll-ups. Ideally, a research partner would be identified that can access confidential ACS data at a Census Research Data Center, enabling that partner to study data at the tract level at an annual frequency. Other tract-level measures, such as crime, business openings, and so on, are also important, and the research partner might need to develop or use other data sources on some of these

(such as the National Establishment Time Series, and crime reports) to fully evaluate the RCJS program.

It is also important to assess the effects of RCJS on individuals, in addition to communities. This level of the analysis requires randomization of access to subsidized RCJS jobs across individuals and within the selected sites. Local program administrators should select a number of applicants that is double the allocated number of subsidized jobs, and then randomize those selected to treatment and control groups. For analysing labor market outcomes for these two groups, state UI records are ideal, so I propose that data cooperation agreements with state agencies be a requirement for program selection.[49] Absent this requirement, data collection on individuals randomized to treatment and control groups would be much more difficult.[50]

In addition to this experimental analysis, it is possible to gain insights from qualitative research on implementation via interviews with program administrators and other stakeholders, as well as from quantitative research that captures variation in implementation across sites. Such implementation variation is often important in similar programs, and this evidence can help researchers to interpret the experimental results, providing lessons for future implementation should policymakers decide to scale up the program.[51]

COST ESTIMATES

A serious implementation and evaluation of the RCJS program could be done at a moderate expense. In this section I provide a rough estimate of costs.

The program is scalable, with the overall cost depending on both the number of implementation sites and the number of participants at each site. I begin with an estimated cost per worker and per site, and then suggest a reasonable scale and the implied overall cost.

Suppose workers are hired at a wage of $10, which is $2.75 more than the current federal minimum wage. (Of course, in states or cities with a higher minimum wage, the wage would have to be accordingly higher.) Accounting for other labor-related costs and the likelihood of implementation in some areas with higher minimum wages, assume a cost of $30,000 per worker per year for labor costs in Phase 1. It is difficult to estimate costs for training and other services, but I assume this is another $15,000 over the life of the period of full subsidies, implying a labor cost of $60,000 per worker for the Phase 1 full 18-month subsidy period. The subsidy amount in Phase 2

depends on the average private sector wage paid to participants. Assuming that only the first $30,000 of wages per year are subsidized, the 50 percent subsidy over an additional 18 months adds $22,500 in cost per worker, for a total per-worker estimated cost over three years of $82,500.

The number of sites and the number of jobs per site are the other key factors in calculating the cost. I assume an average of 50 local jobs per site, which seems small enough to be feasible but large enough to have an impact on the local area. Given that recent data show the average number of employed persons per extreme poverty tract is 1,591, these 50 jobs would represent about a 3.1 percent increase in jobs held by residents, although there could be some crowd-out of other employment. With 50 jobs per site, the per-site cost is $4.125 million. Finally, suppose 100 sites are funded. As shown in table 1, there are about 4,100 extreme poverty Census tracts in the United States. Thus, 100 sites of around five tracts each would cover about 12 percent of extreme poverty tracts. Furthermore, not all extreme poverty tracts would qualify for RCJS, whether due to absence of participating nonprofits or other considerations. Thus, this experimental phase would cover a sizable share of potentially eligible tracts, while keeping costs at a reasonable level until the evaluation can provide policymakers with more information on effectiveness. This evaluation design would lead to 100 treatment and 100 control areas for the site-level analysis, and approximately 5,000 treated individuals and 5,000 control individuals in the person-level analysis. The total program cost would be $412.5 million.

Finally, as a rough estimate, a serious evaluation of the program could cost about $2.5 million, bringing the total cost to $415 million.

This may seem like a large cost for a program that, at the upper limit, would be expected to create 5,000 jobs—though these jobs would last for three years under the two phases of subsidies and hopefully longer, given the design. However, the experiences of other programs suggest that this cost is not inordinately high. The federal Empowerment Zone Program studied by Busso, Gregory, and Kline (2013) cost approximately $641 million. Their program estimates (table 10 of their paper) imply 6,928 net jobs created in the treated zones, which is comparable to the calculations in this chapter.[52]

It is also important to note that the per-job cost is not out of line with other costs associated with hiring credit programs focused on the unemployed. Neumark (2013) reviews a number of other studies and suggests that costs per job created under such programs, for what are generally much shorter durations, range from $9,100 to $75,000. Note that the actual credit available for such programs is typically much less. However, windfalls to employers for hiring that would have occurred absent the credit tend to

drive up the cost substantially (Neumark and Grijalva 2017), whereas RCJS seems less likely to produce employer windfalls.

On the benefit side, recall that RCJS aims to go beyond simply adding jobs, and will produce a meaningful impact on the community. That is, in the first 18 months the newly employed workers would be engaging in work to improve the community in a number of ways. So, the money is also purchasing improved public goods for the selected sites.

Of course, policymakers could well decide to reduce the wage subsidies—say to 50 percent during Phase 1 and 25 percent during Phase 2—which would cut the wage-subsidy costs of the program in half. This would probably reduce take-up; it is not clear how the jobs would otherwise be financed, particularly during Phase 1. To resolve some of this uncertainty, the evaluation could incorporate different subsidy levels to help gauge how impacts fall off with the subsidy level and whether lower subsidies have as high a benefit-to-cost ratio.

Note that these cost figures can be used to approximate the cost of extending the RCJS program to encompass all eligible locations. At the upper limit, retaining a figure of 50 jobs per site, the cost would be roughly 8.3 times the previous estimate of $412.5 million, or $3.4 billion. Of course, spending is unlikely to reach this high, because not all extreme poverty tracts would meet eligibility criteria, including the presence of nonprofits in a position to effectively use RCJS incentives. The ongoing costs of RCJS could be incurred annually—if a new cohort of workers were started in each year—or once every three years, if one cohort is funded at a time. Either way, RCJS holds the promise of delivering economic benefits to the nation's neighborhoods that have the highest concentrations of poor residents. It does so at a cost that is small relative to other social assistance programs, and that has the potential benefit of leading to longer-term gains in earnings by building skills and improving disadvantaged areas, rather than simply providing safety net support.

Questions and Concerns

1. Will RCJS confer benefits on its intended beneficiaries—residents of selected neighborhoods?

It is true that even if we just focus on redistribution, which should be easier to accomplish than net increases in jobs, urban economics highlights the potential complexities arising from mobility of people and capital. As discussed in Moretti (2010), a place-based job subsidy will result in higher wages unless labor supply is infinitely elastic. If labor is mobile, some workers will move to the subsidized area, and as long as housing supply is not infinitely elastic, housing prices and rents will increase, offsetting at least some of the gains to the original residents. Of course, some people in the targeted areas may own property, and for them the increase in housing prices is a gain. In the extreme case of perfect mobility of labor, the only effect of the policy is to increase land prices. This is a concern given that landowners are not the target population for place-based policies.

However, other than unlikely knife-edge cases—such as infinitely elastic labor supply that implies no wage increases, or perfect mobility that undoes all gains from place-based policies—mobility probably will only partly undermine the effects of redistributive place-based policies, and, conversely, these policies will provide some benefits to the disadvantaged residents of the targeted areas.[53] The potential mobility and land-price effects, as noted earlier, underlie Crane and Manville's (2008) idea of trying to create institutional arrangements that make it more likely that the intended beneficiaries benefit. As noted above, this idea is built into the RCJS proposal.

2. Is it necessary to offer 100 percent job subsidies in the first phase?

One can clearly question whether it is necessary to offer 100 percent job subsidies in the first phase, rather than some smaller subsidy. I embrace this dimension of the proposal for two reasons. First, RCJS is intended to have a strong effect on employment, and to create spillovers that could help improve disadvantaged areas. For that reason, trying to induce as much take-up as possible—which includes local nonprofits and related organizations creating ways to use workers under RCJS—is inherently valuable.

Second, this element of RCJS dovetails at least partially with calls for guaranteed jobs in the United States, as a response to low wages and low employment among the least-skilled workers. This is an idea that has been embraced by prominent Democrats, including Cory Booker, Kirsten Gillibrand, and Bernie Sanders—all three of whom might run for president

in 2020.[54] Two of the key rationales for guaranteed jobs programs are, first, to create jobs, and, second, to provide a wage floor with which other employers will have to compete. This is not the place to delve into a full discussion of the merits of a guaranteed jobs program, but there are clear limitations of a national proposal: the prohibitive cost, the potential creation of jobs that do nothing to build skills and prepare people for private sector jobs, and the open-ended nature of the commitment of the government to paying or subsidizing wages.[55] Although some might argue that these criticisms do not undermine the case for a guaranteed jobs program,[56] it simply seems infeasible that proposals with such pitfalls will attract sufficient political support. In contrast, RCJS has elements of a guaranteed jobs program that could make it more palatable to policymakers who are likely to be more skeptical of government job creation efforts: it targets a limited number of disadvantaged areas, based in part on a competitive process that chooses promising deployment of RCJS support; it seeks to improve these areas, and it aims at transitions of participants into higher-wage, private sector employment.[57]

3. Will hiring credits create windfalls for employers?

Another potential problem with hiring credits is that they could create windfalls for employers, leading to credit payments for jobs that would have been created regardless, whereas an effective program should provide incentives for employers to create jobs they would not otherwise have created. Such problems may be particularly urgent for low-skilled or disadvantaged workers, who have high turnover. However, this seems less likely to be a concern in the kinds of areas the RCJS targets, which tend to have low labor demand. Moreover, the particular structure of RCJS—using nonprofits to engage workers in jobs that improve areas of extreme and concentrated poverty—makes it even more likely that the program would create jobs that would not otherwise have been created.

Conclusion

The RCJS proposal is intended as a proactive policy to address poverty in areas of extreme poverty. RCJS retains the geographic targeting of prior place-based policies such as enterprise zones, but with a very different structure, and different incentives, that are intended to increase positive impacts on residents of the targeted areas. Specifically, RCJS emphasizes building skills that can lead to higher-paying private sector jobs, and improving the disadvantaged areas to which program benefits are targeted. I believe that RCJS offers the potential for substantial improvements in economic conditions in areas where our nation's poorest residents live.

APPENDIX TABLE 1.

Summary of U.S. Evidence on Enterprise Zones

Study	Program	Results
Neumark and Kolko (2010)	California enterprise zones	No significant evidence of employment effects measured at establishments in zones: estimates range from –1.7 to +1.8 percent (levels), with large confidence intervals (≈ –8 to +6 percent); no evidence of spillovers.
Kolko and Neumark (2010)	California enterprise zones	Zones more involved with marketing and outreach exhibited positive employment effects; zones focused on tax credits exhibited negative effects.
Elvery (2009)	California and Florida enterprise zones	No evidence of positive employment effects on zone residents: estimates for California range from –0.4 to –2.6 percent; for Florida from –1 to –4 percent.
Freedman (2013)	Texas enterprise zones	Positive effect on employment growth among zone residents (1–2 percent per year, sometimes significant); employment effects concentrated in jobs paying less than $40,000 annually, and in construction, manufacturing, retail, and wholesale; positive effects on job growth among zone employers (3–8 percent per year, rarely significant). Negative and insignificant effects on share black and with income below the poverty line. Significant negative effect on vacancy rate (–4 percent). Significant positive effect on median home value (10.7 percent).
Ham et al. (2011)	State enterprise zones, federal empowerment zones, federal enterprise communities	State programs, significant positive impacts on: unemployment rate (–1.6 percentage points; poverty rate (–6.1 percentage points); average wage and salary income (≈1.6 percent); employment (≈3.7 percent).[a] Empowerment zones, significant positive impacts on: unemployment rate (–8.7 percentage points); poverty rate (–8.8 percentage points); average wage and salary income (≈20.6 percent); employment (≈34.2 percent). Enterprise communities, significant positive impacts on: unemployment rate (–2.6 percentage points); poverty rate (–20.3 percentage points); fraction of households with wage and salary income (4.9 percentage points); average wage and salary income (≈12.7 percent); employment (≈10.7 percent). Positive but insignificant spillovers on neighboring Census tracts.

[a] Approximate percent changes are calculated by dividing their estimates of effects on levels by values in zones reported for 1990.

APPENDIX TABLE 1. (CONTINUED)

Summary of U.S. Evidence on Enterprise Zones

Study	Program	Results
Neumark and Young (2017)	State enterprise zones, federal empowerment zones, federal enterprise communities	Large poverty reductions from state programs reported in Ham et al. (2011) result from data error. Strong positive effects of federal empowerment zones reported in Ham et al. (2011) overstated because of selection into zones, and beneficial effects of enterprise communities likely spurious.
Busso, Gregory, and Kline (2013)	Federal empowerment zones	Positive and significant effects on job growth in Longitudinal Business Database (12–21 percent), likely concentrated among births, and existing establishments with > 5 employees. Positive and significant effects on employment in Census data (12–19 percent); magnitudes generally larger for employment in zone of zone residents (15–17 percent) than non-zone residents (6–16 percent). Positive generally significant weekly wage effects on zone residents employed in zone (8–13 percent); magnitudes smaller for zone residents generally (3–5 percent and usually insignificant) and nonresidents working in zone (≈0 percent). No effects on rents, population, or vacancy rates, large significant positive effects on house values (28–37 percent).
Hanson (2009)	Federal empowerment zones	OLS estimates: positive significant effect on employment rate (2 percentage points); negative significant effect on poverty rate (–2 percentage points). IV estimates: No effect on employment rate (0 percentage points); insignificant positive effect on poverty rate (2 percentage points).
Hanson and Rohlin (2013)	Federal empowerment zones	Negative spillovers on Census tracts that are geographically or economically close to zone tracts: generally significant effects on number of establishments (–15.2 to –36.5); negative, sometimes significant effects on employment (–52 to –1,223, but many estimates in the range –300 to –600); negative spillovers roughly offset the positive effects in directly treated areas. Estimates of program effects based on comparison of the actual zone tracts to those that are close (using the same definitions) yield positive effects of about the same magnitude as the negative spillover effects.

APPENDIX TABLE 1. (CONTINUED)

Summary of U.S. Evidence on Enterprise Zones

Study	Program	Results
Reynolds and Rohlin (2015)	Federal empowerment zones	Positive significant effects on mean household income (11 percent), but not on median household income (one-tenth as large). No significant effect on poverty rate (–1 percentage point); significant increase in proportion of households below one-half of poverty line (1.1 percentage points) and in households more than twice the poverty line (1.9 percentage points), coupled with significant reductions in households in between. Significant increase in share of households with income < $10,000 and above $100,000. Other results point to higher-skilled, higher-income people moving in: increases in proportion of households more than twice the poverty line in areas of zone with above-median poverty rate initially, and increases in proportion below one half of poverty line in areas of zone with below-median poverty initially; increases in housing values for houses valued at $100,000 or higher, extending above $300,000.

Note: Most of this table comes from Neumark and Simpson (2015), although it has been updated to include more-recent studies.

THE HAMILTON PROJECT
BROOKINGS

Acknowledgments

I am very grateful to Jana Parsons for outstanding research assistance, and to comments and feedback from Harry Holzer, and from many participants in a roundtable discussion of this proposal at Brookings.

The views expressed are my own, and do not necessarily reflect the views of The Hamilton Project or the Brookings Institution.

Endnotes

1. Based on the U.S. Department of Agriculture Economic Research Service's Rural–Urban Commuting Area Codes (grouped into four categories in which core, high-commuting, and low-commuting areas for metropolitan, micropolitan, and small-town areas are collapsed together), poverty is actually the highest in micropolitan areas (18.3 percent) and small-town areas (18.2 percent).
2. Micropolitan areas are defined as those areas with primary cities of between 10,000 and 50,000 residents.
3. Gobillon, Selod, and Zenou (2007) review theoretical models and hypotheses regarding spatial mismatch.
4. Hellerstein, McInerney, and Neumark (2010) find similar evidence for Hispanic employment.
5. Much of the discussion in this section draws from Neumark and Simpson (2015).
6. The potential for network effects to enhance the effects of job creation policies in poor areas might counter some of the criticisms of place-based policies, such as the argument that these policies

discourage the migration of the disadvantaged to areas with better economic opportunities, and that many of the benefits may go to commuters and new residents who have the skills to take advantage of newly created employment opportunities (Glaeser 2007). On the other hand, network effects could diminish the effects of some kinds of place-based policies. For example, a policy that leads employers to relocate to an area could do little to boost employment opportunities of local residents if the employees of the relocating companies are not networked to local residents.

7. Indeed, labor market networks that are stratified by race or ethnicity could help explain the racial mismatch evidence presented in Hellerstein, McInerney, and Neumark (2010) and Hellerstein, Neumark, and McInerney (2008).
8. Peer or neighborhood effects can also imply externalities between individuals (see Topa and Zenou 2015). For example, the presence of nonemployed residents might lead other residents to remain nonemployed by changing norms of behavior (Wilson 1987); conversely, creating some employment can have virtuous effects on others.
9. Ladd (1994) introduces the clarifying label of place-based people strategies to refer to policies that are geographically targeted, but with the intent and structure of helping disadvantaged residents in the targeted areas. RCJS is probably best viewed as belonging to this category since it targets lower-income residents of low-income areas.
10. For summaries of the Gautreaux and MTO programs, and reviews of findings, see, e.g., Chetty, Hendren, and Katz (2016), Duncan and Zuberi (2006), Ludwig et al. (2013), and Rosenbaum and Zuberi (2010).
11. Blumenberg (2004) discusses the difficulty of urban-to-suburban (reverse) commuting.
12. Holzer, Quigley, and Raphael (2003) find mixed evidence on hiring of minorities from an expansion of mass transit in the San Francisco Bay Area to more-outlying areas (making reverse commuting easier).
13. As an example, California's enterprise zones (discontinued in 2013) were intended to be areas with job-creation potential that were near (or overlapping with) federally designated targeted employment areas (TEAs); TEAs are Census tracts where more than half the population earned less than 80 percent of median area income. The most significant benefit provided within California enterprise zones was a hiring credit to businesses. Potentially undermining, in part, the distributional goals of the programs, a worker living in a TEA qualified for the hiring credit regardless of their characteristics.
14. Spending on the federal enterprise zone program through 2000 totaled nearly $400 million in block grants and $200 million in employment credits, with federal expenditures for the first six years of the program estimated at about $850 per zone resident. Enterprise communities had grants of just under $3 million, versus $100 million ($40 million) for the initial urban (rural) empowerment zones (U.S. Government Accountability Office 2006), and no dedicated hiring credits. In 2000 an additional program (renewal communities), with related but different criteria, was established, offering a hiring credit and other benefits. See Community Renewal Tax Relief Act of 2000.
15. Bartik (2004) notes that earlier related programs focusing on distressed communities include urban renewal in the 1940s and 1950s, model cities during the War on Poverty, and community block development grants.
16. Kline and Moretti (2014b) provide a largely theoretical discussion of the welfare economics of local economic development programs. Evidence from other countries is discussed in Neumark and Simpson (2015).
17. At the same time, Crane and Manville (2008) suggest that it may be possible to create institutional arrangements so that the increase in land values is captured by the public and redistributed, to some extent, to the intended beneficiaries. They refer to Community Based Agreements specifying, for example, that developers who capture the higher land values devote resources to higher wages, affordable housing, social services, etc.
18. That said, the relationship between empirical findings and welfare implications is complex. Busso, Gregory, and Kline (2013) point out that, in a standard model, a larger employment response can imply greater deadweight loss from distortions in behavior, whereas when labor is immobile—and hence there is less scope for employment increases in targeted areas—the welfare gains are more likely to accrue to residents (workers, specifically), rather than property owners. Alternatively, as Kline and Moretti (2014b) point out, when there are labor market frictions that generate spatial

heterogeneity in unemployment, place-based policies such as hiring subsidies in certain locations can increase employment (lower unemployment) in the targeted area and increase welfare, in which case the focus on job creation might be better aligned with effects on welfare.

19. One approach is to identify control areas that are similar to the enterprise zones but where enterprise zone policies did not apply, matching treated and control areas based on similarity of residential and employment characteristics (e.g., Elvery 2009; O'Keefe 2004). Alternatively, control areas can be chosen based on geographic proximity—on the assumption that economic conditions and other relevant policies are very similar in nearby areas. For example, Billings (2009) uses a spatial discontinuity model, looking at employment growth in Colorado's enterprise zones within a quarter mile of the zone boundary and using the area outside the zones within a quarter mile of the zone boundary as the control group. And Neumark and Kolko (2010) use detailed geographic information system (GIS) maps of California's enterprise zones to pick out very narrow control rings (1,000 feet wide) around the zones. An alternative approach is to use areas that were targeted for enterprise zone designation, but where enterprise zones were either not created or were created at a future date; these control areas are likely to be more similar on the unmeasured variables associated with enterprise zone designation (Busso, Gregory, and Kline 2013; Neumark and Kolko 2010). Yet another approach is to deal more explicitly with the endogenous selection of areas for zone designation. For example, Hanson (2009) compares employment outcomes in federal empowerment zones with unsuccessful applicant areas. But he also instruments for zone applicant success based on the political influence of the zone's congressional representative.
20. As an example, earlier research on U.K. enterprise zones found that between 50 and 80 percent of enterprise zone businesses had relocated into the zones, prompting the British government to phase out the program (Papke 1993).
21. One way to garner evidence on spillover effects is to posit differences across control areas in the likelihood of these effects arising. For example, positive spillovers are probably confined to a very narrow geographic area near enterprise zone boundaries. Neumark and Kolko (2010) therefore compare results using a 2,500-foot control ring instead of a 1,000-foot control ring, to see if the estimates of employment effects are stronger using the larger ring in which positive spillovers should be less apparent. Similarly, they revert to the 1,000-foot control ring but exclude a 100-foot buffer (in any direction) from the enterprise zone boundary. These approaches are probably less useful in ruling out negative spillovers, since such spillovers may also come from farther away, with employers making longer-distance moves to take advantage of zone benefits.
22. Evidence of effects of enterprise zones on commercial property values might be more compelling. Burnes (2012) provides evidence of capitalization of enterprise zone benefits in California into commercial real estate prices
23. The cross-state variation in estimated effects is also hard to interpret. The estimated employment effect for California is small and negative, whereas only for Ohio is there a significant positive effect. Yet California had a huge hiring credit, whereas Ohio's was only $300. And Oregon, which has the second-largest point estimate for the employment effect, had no hiring credit. Ham et al. (2011) do estimate a large employment effect for Florida (not statistically significant), and Florida has a large hiring credit, yet Elvery's (2009) estimates for Florida for the previous decade are consistently negative.
24. Busso, Gregory, and Kline (2013) do not address overlap between federal and state enterprise zone programs. They also argue that spillovers are unlikely to affect their estimates because most rejected and future zones are in different cities.
25. The large block grants were for purposes such as business assistance, infrastructure investment, and training programs. As examples, according to Rich and Stoker (2007) some of the top priorities across the empowerment zones were business development (Atlanta); workforce development (Baltimore, including career and family support centers and customized training to recruit and train zone residents for specific jobs); human services (Chicago, including a health and wellness center); human services (Detroit, including an innovation fund to support community programs to stabilize families); business development (New York, including a loan fund targeting small businesses, and large grants for a General Motors Auto Center and the Harlem USA Retail and Entertainment Complex); and business development (Philadelphia).
26. One could imagine a place-based policy proposal somewhat different from mine—one that tries

to leverage what may have been the positive effects of the large block grants in the Empowerment Zone Program. But, at this point, my view is that it is difficult to determine what kinds of block grants worked and why. (Rich and Stoker 2010 suggest that block grants might have been the most promising feature of the empowerment zones, but also emphasize that other features, such as local governance structures, likely impacted whether these block grants were effective.) Moreover, the distributional effects of empowerment zones may not have been beneficial.

27. Hanson (2009) instruments for zone designation using representation of the areas encompassing the proposed zones on the powerful U.S. House Committee on Ways and Means, which he posits will affect zone selection but not be correlated with unobserved economic conditions (for which he presents some evidence). The estimates without instrumenting indicate that empowerment zone designation increased employment significantly, by 2 percentage points, and reduced poverty significantly, also by 2 percentage points. However, the instrumental variable (IV) estimates indicate no effect on employment and a positive but insignificant effect on poverty.
28. When the authors look at effects across bins of the household income distribution, the only sizable (and significant) increase occurs for households earning at least $100,000 in income—which is unlikely to be directly attributable to empowerment zone incentives since the hiring credit represents a much larger percentage of pay for low-wage workers—as well as an increase in the share of households with income of less than $10,000. They also present evidence of increases in the share of people with higher education (i.e., some college or more), consistent, perhaps, with inflows of higher-skilled people into the areas designated as empowerment zones. Finally, when they break up the zones into tracts with initially above- versus below-median poverty rates, they find that the positive income effects (at $100,000 or above) occur solely in the lower-poverty tracts, whereas there is evidence (though not quite statistically significant) that the increase in the share of households with less than $10,000 in income occurs in the higher-poverty tracts. The authors' conclusions differ from those of Freedman (2013), who suggests, "Texas' EZ Program had a positive effect on communities, but one that was largely confined to households in the lower end of the income distribution" (340). However, this is not based on as comprehensive a distributional analysis as in Reynolds and Rohlin (2015), but rather seems to derive from evidence of the positive effects discussed earlier, coupled with no effect on median income in the ACS data.
29. Appendix table 1 does not provide a comprehensive review of all research on U.S. enterprise zones, which is burgeoning. It covers what I view as the main studies that use compelling research designs or are cited frequently. There are some other recent studies not included in appendix table 1: Zhang (2015) studies the effects of enterprise zones in one city (Louisville), and finds positive effects on manufacturing and services employment, albeit with a questionable IV strategy based on only preintervention neighborhood characteristics. Smith (2015) studies federal empowerment zones and renewal communities created in the 2000s, in California and Tennessee, using a propensity score–matching estimator and data from the National Establishment Time Series. There were two different treatments—hiring credits and economic development grants—available in different periods in the empowerment zones, but only hiring credits in the renewal communities. Across the four empowerment zones and five renewal communities he studied (separately), his results sometimes point to a positive aggregate impact of the hiring credit on the level of jobs, but generally not on the trend. For empowerment zones, he does not find an effect of grants on the level or trend.
30. NMTC funds are channeled through community development entities (CDEs), often banks or financial institutions, that have to meet several criteria, including serving or providing capital to low-income communities and people. The tax credits flow to investors that make equity investments in the CDEs.
31. Concluding that the program reduced poverty is also problematic because there is no statistical evidence of employment effects from the Longitudinal Employer–Household Dynamics data (from Census). The point estimates are positive but have standard errors three times as large, and compositional shifts could also lead to higher employment.
32. ACS data from 2010 indicate that 50.4 percent of black residents, 44.1 percent of Hispanic residents, but only 20.3 percent of white residents live in areas where the poverty rate is 20 percent or higher (see Bishaw 2014 for more descriptive evidence). At the same time, poverty rate differences between these groups are much smaller (see Macartney, Bishaw, and Fontenot 2013). Thus, a far greater share of nonpoor black residents live in high-poverty areas than do nonpoor white residents.

33. See the summary of the evidence in Erickson et al. (2008).
34. There might be an allowance made for a lower retention rate if a recession hits in the intervening period.
35. See, e.g., *The Wall Street Journal* (2017), National Association of Home Builders (2017), and Lagasse (2018). See Accenture, BurningGlass, and Harvard Business School (2014) and Chanmugam, Smith, and Worrell (2014) for survey evidence.
36. There is some evidence consistent with a bias toward lower-paying jobs, although the evidence is mixed. Freedman (2013) reports employment effects are concentrated in jobs paying less than $40,000 and distributed among manufacturing and construction as well as wholesale and retail trade. Billings (2009) finds effects in construction, manufacturing, wholesale trade, and services. Hanson and Rohlin (2011), studying effects on new establishments, find that the retail and service sectors benefited the most from empowerment zone hiring credits. I am not aware of evidence regarding tenure of jobs created because of hiring credits.
37. There is also an equity motivation for place-based policies to try to redistribute jobs and income to places where jobs are scarce and incomes are low—and ideally, of course, to create more jobs and raise income in the aggregate. Austin, Glaeser, and Summers (forthcoming) invoke this spatial equity argument to argue for targeted employment credits in broad areas of the country where joblessness is high. They also suggest that this argument is reinforced by the potentially higher marginal returns to reducing economic disadvantage in areas of concentrated disadvantage, referring to high distress areas. As they note, they find some evidence for the "perfectly unsurprising view that you can reduce non-employment more in places where non-employment is currently high" (4).
38. Much of this discussion of hiring credits comes from Neumark (2013). The general negative assessment of hiring credits is echoed in standard labor economics textbooks (e.g., Borjas 2010; Ehrenberg and Smith 2009).
39. Part of the reason for more-positive conclusions than for hiring credits with narrowly targeted hiring incentives might be related to an absence of stigma, and perhaps even positive attributions, for veterans.
40. Much of this discussion draws on Neumark (2016a).
41. States could be reimbursed for increased welfare-related spending in one of three areas, up to 80 percent of a cap for each state; one of the areas of spending was subsidized jobs. Lower-Basch (2011) reports that spending on wage subsidy programs under the TANF Emergency Fund totaled $1.32 billion. There was some additional funding (an extra $1 billion under ARRA) via Community Services Block Grants that could be used for these programs.
42. Recent research has tried to provide evidence on the effects of the programs, although much of it faces challenges in drawing causal inferences. It seems most natural to evaluate subsidized jobs programs, such as training programs, based on post-participation effects on employment and earnings. However, Pavetti, Schott, and Lower-Basch (2011) argue that countercyclical programs intended to keep people working during a downturn should be evaluated based on the number of unemployed people placed in jobs, regardless of how long-term the effects are because, for example, these jobs might be viewed as a substitute for going on unemployment insurance (UI). In the context of RCJS, one might substitute other kinds of public assistance programs for UI as the alternative to a paying job.
43. They also report consistent evidence from an employer survey, in which 76 percent indicated that they retained at least one subsidized worker after the subsidy period ended, and overall that 37 percent of workers were retained.
44. There is a longer-standing history of transitional jobs programs in the United States; see Bloom (2010). These programs are somewhat different because they focus explicitly on the hard to employ (e.g., welfare recipients or the previously incarcerated). Two recent evaluations described in Bloom do not find long-term effects on employment or earnings. In my view, the hard-to-employ focus of these programs makes the findings less applicable to RCJS, but I do include a large-scale evaluation as part of my proposal, recognizing that it is an open empirical question whether RCJS will work, and that evaluation can also help refine the program to strengthen the features that deliver benefits.
45. There is, of course, a vast literature on jobs programs and training programs, which I do not review here. My focus is on programs with features shared with RCJS (such as a neighborhood focus, working with community-based organizations, or an urban improvement goal). Even so, I do not

claim to have assembled an exhaustive list of programs that meet this criterion.

46. Some of this information is based on personal communication with Mac Elabad, senior manager, Workforce Federal Programs at Southwest Solutions (June 2018).
47. This prepared the workforce for the increased demand for blight removal in Detroit; in the wake of Detroit's depopulation, nearly 85,000 blighted structures and vacant lots were identified for removal or further evaluation. See Detroit Training Center (n.d.) and Blight Removal Task Force (n.d.).
48. Apparently Phases II and III of the program dropped employment subsidies, because employers were ending jobs when the subsidies stopped. This kind of behavior may help rationalize the provision of RCJS that ties subsidies to retention.
49. For examples of this kind of data used in research, see Dague, DeLeire, and Leininger (2017) and Mendenhall, DeLuca, and Duncan (2006).
50. It would also be possible to use IRS data, as in Gelber, Isen, and Kessler (2016), although these data are annual, not quarterly.
51. There are numerous examples from the Jobs Plus Program, including Kato et al. (2003) and Riccio (1999).
52. They report that block grants totaled $386 million, hiring credits $200 million, and other tax credits $55 million. However, one important difference is that Busso, Gregory, and Kline provide estimates of the increase in net jobs. The net job gains from implementing RCJS could be smaller than gross gains if there is crowding out of other employment the participants would otherwise take, although there could be other jobs created if the neighborhood improvement is effective.
53. Nonetheless, the welfare effects can be other than intended. For example, if we rule out perfect mobility of labor and assume that some people have geographic preferences for location, then it is only the marginal workers for whom utility is equated across locations. However, in this case who gains from the policy could have little to do with the intended effects. Inframarginal workers in the target area gain and those in the other areas (that are taxed) lose, while marginal workers are unaffected. Depending on who these inframarginal workers are, the redistributive effects in terms of welfare might or might not be what policymakers intended.
54. See Matthews 2018 and an explicit proposal in Paul et al. (2018).
55. For alternative views, see Collander (2016) and Neumark (2016b).
56. For example, Collander (2016) sees nothing wrong with guaranteed jobs that dig and fill up holes, since he views the main merits of the proposal as providing a wage floor at which people can be employed
57. One other point emphasized in Austin, Glaeser, and Summers (forthcoming) is that subsidizing employers rather than workers (via the EITC, for example) can be more effective in the presence of binding minimum wages—which are increasingly prevalent given the many states and even cities that have adopted historically high minimum wages. Worker subsidies work by reducing market wages, which can be constrained by minimum wages; see Neumark and Wascher (2011) for evidence on minimum wage–EITC interactions.

References

Abraham, Katharine G., and Melissa S. Kearney. 2018. "Explaining the Decline in U.S. Employment-to-Population Ratio: A Review of the Evidence." Working Paper 24333, National Bureau of Economic Research, Cambridge, MA.

Accenture, BurningGlass, and Harvard Business School. 2014. "Bridge the Gap: Rebuilding America's Middle Skills." Harvard Business School, Cambridge, MA.

Alwitt, Linda F., and Thomas D. Donley. 1997. "Retail Stores in Poor Urban Neighborhoods." *Journal of Consumer Affairs* 31 (1): 139–64.

American Recovery and Reinvestment Act of 2009 (ARRA) Pub. L. 111–5 (2009).

Austin, Benjamin, Edward Glaeser, and Lawrence Summers. Forthcoming. "Saving the Heartland: Place-based Policies in 21st Century America." *Brookings Papers on Economic Activity* (forthcoming).

Bartik, Timothy J. 2004. "Economic Development." In *Management Policies in Local Government Finance,* 5th ed., edited by Richard J. Aronson and Eli Schwartz, 355–90. Washington, DC: International City/County Management Association.

Bayer, Patrick, Stephen L. Ross, and Giorgio Topa. 2008. "Place of Work and Place of Residence: Informal Hiring Networks and Labor Market Outcomes." *Journal of Political Economy* 116 (6): 1150–96.

Berube, Alan, and Cecile Murray. 2017. "Three Charts Showing You Poverty in the U.S. Cities and Metro Areas." Metropolitan Policy Program, Brookings Institution, Washington, DC.

Billings, Stephen. 2009. "Do Enterprise Zones Work? An Analysis at the Borders." *Public Finance Review* 37 (1): 68–93.

Bishaw, Alemayahu. 2014. "Changes in Areas with Concentrated Poverty: 2000 to 2010." American Community Survey Report ACS-27. U.S. Census Bureau, Suitland, MD.

Bishop, John, and Robert Haveman. 1978. "Targeted Employment Subsidies: Issues of Structure and Design." Special Report Series SR 24, Institute for Research and Poverty, University of Wisconsin–Madison, Madison, WI.

Blight Removal Task Force. n.d. (http://jack-seanson.github.io/taskforce/know/).

Bloom, Howard. 2010. "Transitional Jobs: Background, Program Models, and Evaluation Evidence." MDRC, New York, NY.

Blumenberg, Evelyn. 2004. "En-gendering Effective Planning: Spatial Mismatch, Low-Income Women, and Transportation Policy." *Journal of the American Planning Association* 70 (3): 269–81.

Borjas, George. 2010. *Labor Economics,* 5th ed. New York: McGraw-Hill.

Bound, John, and Harry J. Holzer. 2000. "Demand Shifts, Population Adjustments, and Labor Market Outcomes During the 1980s." *Journal of Labor Economics* 18 (1): 20–54.

Burnes, Daria. 2012. "An Empirical Analysis of the Capitalization of Enterprise Zone Tax Incentives into Commercial Property Values." Unpublished manuscript.

Burtless, Gary. 1985. "Are Targeted Wage Subsidies Harmful? Evidence from a Wage Voucher Experiment." *Industrial and Labor Relations Review* 39 (1): 105–14.

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

Center on Poverty and Inequality. 2016. "Lessons Learned from 40 Years of Subsidized Employment Programs: A Framework, Review of Models, and Recommendations for Helping Disadvantaged Workers." Georgetown Law, Washington, DC.

Chanmugam, Ravi, David Smith, and Laila Worrell. 2014. "Finding the Middle: How Businesses Can Manage the Talent Pipeline to Close the Middle-Skills Employment Gap." Accenture LLP, Dublin, Ireland.

Chetty, Raj, Nathaniel Hendren, and Lawrence F. 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.

Chetty, Raj, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez. 2014. "Where Is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States." *Quarterly Journal of Economics* 129 (4): 1553–622.

Chicago CRED. 2017, October. "15 CRED Participants Overcome Odds to Graduate from High School." Chicago CRED, Chicago, IL.

Collander, David. 2016. "A Minimum Guaranteed Jobs Proposal." *Eastern Economic Journal* 42 (4): 666–69.

Community Renewal Tax Relief Act of 2000. P.L. 106-554, 114 Stat. 2763A-587.

Council of the City of New York. 2017, March 21. "Report of the Finance Division on the Fiscal 2018 Preliminary Budget and the Fiscal 2017 Preliminary Mayor's Management Report for the Department of Parks and Recreation." Department of Parks and Recreation, New York. (http://council.nyc.gov/budget/wp-content/uploads/sites/54/2017/03/846-DPR.pdf).

Crane, Randall, and Michael Manville. 2008. "People or Place? Revisiting the Who versus the Where of Urban Development." Land Lines, Lincoln Institute of Land Policy, Cambridge, MA.

Dague, Laura, Thomas DeLeire, and Lindsey Leininger. 2017. "The Effect of Public Insurance Coverage for Childless Adults on Labor Supply." *American Economic Journal: Economic Policy* 9 (2): 124–54.

Dempsey, Nicola. 2008. "Quality of the Built Environment in Urban Neighborhoods." *Planning, Practice & Research* 23 (2): 249–64.

Detroit Training Center. n.d. (https://detroittrainingcenter.squarespace.com/blight-removal).

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, 262–94. New York: Russell Sage Foundation.

DiNardo, John, Nicole M. Fortin, and Thomas Lemieux. 1995. "Labor Market Institutions and the Distribution of Wages, 1973–1992: A Semiparametric Approach." *Econometrica* 64 (5): 1001–44.

Duncan, Greg J., and Anita Zuberi. 2006. "Mobility Lessons from Gautreaux and Moving to Opportunity." *Northwestern Journal of Law and Social Policy* 1: 110–26.

Ehrenberg, Ronald G., and Robert S. Smith. 2009. *Modern Labor Economics,* 10th ed. Boston: Pearson Education.

Elvery, Joel. 2009. "The Impact of Enterprise Zones on Residential Employment: An Evaluation of the Enterprise Zone Programs of California and Florida." *Economic Development Quarterly* 23 (1): 44–59.

Erickson, David, Carolina Reid, Lisa Nelson, Anne O'Shaughnessy, and Alan Berube, eds. 2008. "The Enduring Challenge of Concentrated Poverty in America: Case Studies from Communities Across the U.S." Brookings Institution, Washington, DC.

Farrell, Mary, Sam Elkin, Joseph Broadus, and Dan Bloom. 2011. "Subsidizing Employment Opportunities for Low-Income Families: A Review of State Employment Programs Created through the TANF Emergency Fund." Report 2011–38, Office of Planning, Research, and Evaluation Administration for Children and Families, U.S. Department of Health and Human Services, Washington, DC.

Freedman, Matthew. 2012. "Teaching New Markets Old Tricks: The Effects of Subsidized Investment on Low-Income Neighborhoods." *Journal of Public Economics* 96 (11–12): 1000–14.

———. 2013. "Targeted Business Incentives and Local Labor Markets." *Journal of Human Resources* 48 (2): 311–44.

Gelber, Alexander, Adam Isen, and Judd B. Kessler. 2016. "The Effects of Youth Employment: Evidence from New York City Lotteries." *Quarterly Journal of Economics* 131 (1): 423–60.

Glaeser, Edward L. 2007. "The Economics Approach to Cities." Working Paper 13696, National Bureau of Economic Research, Cambridge, MA.

Glaeser, Edward L., and Joshua D. Gottlieb. 2008. "The Economics of Place-Making Policies." *Brookings Papers on Economic Activity* (Spring): 155–239.

Glosser, Asaph, Bret Barden, and Sonya Williams. 2016. "Testing Two Subsidized Employment Approaches for Recipients of Temporary Assistance for Needy Families: Implementation and Early Impacts of the Los Angeles County Transitional Subsidized Employment Program." OPRE Report 2016-77, Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, Washington, DC.

Gobillon, Laurent, Harris Selod, and Yves Zenou. 2007. "The Mechanisms of Spatial Mismatch." *Urban Studies* 44 (12): 2401–27.

Ham, John, Charles Swenson, Ayşe İmrohoroğlu, and Heonjae Song. 2011. "Government Programs Can Improve Local Labor Markets: Evidence from State Enterprise Zones, Federal Empowerment Zones and Federal Enterprise Communities." *Journal of Public Economics* 95 (7–8): 779–97.

Hamersma, Sarah. 2003. "The Work Opportunity and Welfare-to-Work Tax Credits: Participation Rates among Eligible Workers." *National Tax Journal* 56 (4): 725–38.

Hammel, Frank. 1991. "A Reason to Cheer." *Supermarket Business* 73 (July): 43–50.

Hanson, Andrew. 2009. "Local Employment, Poverty, and Property Value Effects of Geographically-Targeted Tax Incentives: An Instrumental Variables Approach." *Regional Science and Urban Economics* 39 (6): 721–731.

Hanson, Andrew, and Shawn Rohlin. 2011. "Do Location-Based Tax Incentives Attract New Business Establishments?" *Journal of Regional Science* 51 (3): 427–49.

———. 2013. "Do Spatially Targeted Redevelopment Programs Spillover?" *Regional Science and Urban Economics* 43 (1): 86–100.

Heaton, Paul. 2012. "The Effects of Hiring Tax Credits on Employment of Disabled Veterans." RAND National Defense Research Institute Occasional Paper, RAND, Santa Monica, CA.

Hellerstein, Judith K., Mark J. Kutzbach, and David Neumark. 2014. "Do Labor Market Networks Have an Important Spatial Dimension?" *Journal of Urban Economics* 79: 39–58.

Hellerstein, Judith K., Melissa McInerney, and David Neumark. 2010. "Spatial Mismatch, Immigrant Networks, and Hispanic Employment in the United States." *Les Annales d'Economie et de Statistique* (Annals of Economics and Statistics) (99–100): 141–67.

———. 2011. "Neighbors and Co-workers: The Importance of Residential Labor Market Networks." *Journal of Labor Economics* 29 (4): 659–95.

Hellerstein, Judith K., David Neumark, and Melissa McInerney. 2008. "Spatial Mismatch vs. Racial Mismatch?" *Journal of Urban Economics* 64 (2): 467–79.

Holzer, Harry J. 2011. "Raising Job Quality and Skills for American Workers: Creating More-Effective Education and Workforce Development Systems in the United States." Policy Proposal 2011–10, The Hamilton Project, Brookings Institution, Washington, DC.

Holzer, Harry J., John M. Quigley, and Steven Raphael. 2003. "Public Transit and the Spatial Distribution of Minority Employment: Evidence from a Natural Experiment." *Journal of Policy Analysis and Management* 22 (3): 415–41.

Ihlanfeldt, Keith R., and David L. Sjoquist. 1998. "The Spatial Mismatch Hypothesis: A Review of Recent Studies and Their Implications for Welfare Reform." *Housing Policy Debate* 9 (4): 849–92.

Juhn, Chinhui. 1992. "Decline of Male Labor Market Participation: The Role of Declining Market Opportunities." *Quarterly Journal of Economics* 107 (1): 79–121.

Kain, John. 1968. "Housing Segregation, Negro Employment, and Metropolitan Decentralization." *Quarterly Journal of Economics* 82 (2): 175–97.

Kasinitz, Philip, and Jan Rosenberg. 1996. "Missing the Connection: Social Isolation and Employment on the Brooklyn Waterfront." *Social Forces* 43 (2): 180–96.

Kato, Linda Yuriko, with Stan L. Bowie, Alissa Gardenhire, Linda Kaljee, Edward B. Liebow, Jennifer Miller, Gabrielle O'Malley, and Elinor Robinson. 2003. "Jobs-Plus Site-by-Site: Key Features of Mature Employment Programs in Seven Public Housing Communities." MDRC, New York, NY.

Katz, Lawrence F. 1998. "Wage Subsidies for the Disadvantaged." In *Generating Jobs: How to Increase Labor Demand for Less-Skilled Workers*, edited by Richard B. Freeman and Peter Gottschalk, 21–53. New York: Russell Sage Foundation.

Kline, Patrick, and Enrico Moretti. 2014a. "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.

———. 2014b. "People, Places, and Public Policy: Some Simple Welfare Economics of Local Economic Development Programs." *Annual Review of Economics* 6: 629–62.

Kneebone, Elizabeth, Carey Nadeau, and Alan Berube. 2011. "The Re-Emergence of Concentrated Poverty: Metropolitan Trends in the 2000s." Metropolitan Policy Program, Brookings Institution, Washington, DC.

Kolko, Jed, and David Neumark. 2010. "Do *Some* Enterprise Zones Create Jobs?" *Journal of Policy Analysis and Management* 29 (1): 5–38.

Kroft, Kory, Fabian Lange, and Matthew J. Notowidigdo. 2013. "Duration Dependence and Labor Market Conditions: Evidence from a Field Experiment." *Quarterly Journal of Economics* 128 (3): 1123–67.

Ladd, Helen F. 1994. "Spatially Targeted Economic Development Strategies: Do They Work?" *Cityscape: A Journal of Policy Development and Research* 1 (1): 193–218.

Lagasse, Jeff. 2018, February 20. "Healthcare Dominates List of Toughest Jobs to Fill in 2018." *Healthcare Finance*.

Los Angeles (LA) County Department of Public Social Services. 2011. "Fact Sheet: Los Angeles County's Subsidized Jobs Initiative: Creating Thousands of Jobs in Partnership with Employers." Los Angeles County Department of Public Social Services, Los Angeles.

Lower-Basch, Elizabeth. 2011. "Rethinking Work Opportunity: From Tax Credits to Subsidized Placements." CLASP, Washington, DC.

Ludwig, Jens, Jeffrey B. Liebman, Jeffrey R. Kling, Greg J. Duncan, Lawrence F. Katz, Ronald C. Kessler, and Lisa Sanbonmatsu. 2013. "What Can We Learn about Neighborhood Effects from the Moving to Opportunity Experiment?" *American Journal of Sociology* 114 (1): 144–88.

Lynch, Devon, and Jeffrey S. Zax. 2011. "Incidence and Substitution in Enterprise Zone Programs." *Public Finance Review* 39 (2): 226–55.

Macartney, Suzanne, Alemayahu Bishaw, and Kayla Fontenot. 2013. "Poverty Rates for Selected Detailed Race and Hispanic Groups by State and Place: 2007–2011." American Community Survey Briefs ACS/BR 11-17, U.S. Census Bureau, Suitland, MD.

Matthews, Dylan. 2018, April 27. "4 Big Questions about Job Guarantees." *Vox*.

Mendenhall, Ruby, Stefanie DeLuca, and Greg Duncan. 2006. "Neighborhood Resources, Racial Segregation, and Economic Mobility: Results from the Gautreaux Program." *Social Science Research* 35 (4): 892–923.

Miller, Cynthia, Aletha C. Huston, Greg J. Duncan, Vonnie C. McLoyd, and Thomas S. Weisner. 2008. "New Hope for the Working Poor: Effects After Eight Years for Families and Children." MDRC, New York, NY.

Moffitt, Robert A. 2012. "The Reversal of the Employment-to-Population Ratio in the 2000s: Facts and Explanations." *Brookings Papers on Economic Activity* 43 (Fall): 201–64.

Molina, Frieda, and Craig Howard. 2003. "Final Report on the Neighborhood Jobs Initiative: Lessons and Implications for Future Community Employment Initiatives." MDRC, New York, NY.

Montgomery, James D. 1991. "Social Networks and Labor-Market Outcomes: Toward an Economic Analysis." *American Economic Review* 81 (5): 1408–18.

Moretti, Enrico. 2010. "Local Labor Markets." In *Handbook of Labor Economics,* Vol. 4B, edited by Orley Ashenfelter and David Card, 1237–313. Amsterdam, Netherlands: Elsevier.

National Association of Home Builders. 2017. "Top Concern for Builders Remains Unchanged in 2017." *NAHBNow* (blog), *National Association of Home Builders,* January 26.

Neumark, David. 2013. "Spurring Job Creation in Response to Severe Recessions: Reconsidering Hiring Credits." *Journal of Policy Analysis & Management* 32 (1): 142–71.

———. 2016a. "Policy Levers to Increase Jobs and Increase Income from Work after the Great Recession." *IZA Journal of Labor Policy* 5:6 (online).

———. 2016b. "Response" (to "A Minimum Guaranteed Jobs Proposal"). *Eastern Economic Journal* 42 (4): 670–73.

Neumark, David, and Diego Grijalva. 2017. "The Employment Effects of State Hiring Credits." *ILR Review* 70 (5): 1111–45.

Neumark, David, and Jed Kolko. 2010. "Do Enterprise Zones Create Jobs? Evidence from California's Enterprise Zone Program." *Journal of Urban Economics* 68 (1): 1–19.

Neumark, David, and Helen Simpson. 2015. "Place-Based Policies." In *Handbook of Regional and Urban Economics,* vol. 5, edited by Giles Duranton, Vernon Henderson, and William Strange, 1197–287. Amsterdam, Netherlands: Elsevier.

Neumark, David, and William L. Wascher. 2011. "Does a Higher Minimum Wage Enhance the Effectiveness of the Earned Income Tax Credit?" *Industrial and Labor Relations Review* 64 (4): 712–46.

Neumark, David, and Timothy Young. 2017. "Government Programs Can Improve Local Labor Markets, But Do They? A Re-Analysis of Ham, Swenson, Imrohoroğlu, and Song (2011)." Discussion Paper 11168, Institute of Labor Economics (IZA), Bonn, Germany.

New York City Council Finance Division. 2017. "Report of the Finance Division for the Department of Parks and Recreation." Department of Parks and Recreation, New York.

O'Keefe, Suzanne. 2004. "Job Creation in California's Enterprise Zones: A Comparison Using a Propensity Score Matching Model." *Journal of Urban Economics* 55 (1): 131–50.

Papke, Leslie. 1993. "What Do We Know about Enterprise Zones?" *Tax Policy and the Economy* 7: 37–72.

Paul, Mark, William Darity Jr., Darrick Hamilton, and Khaing Zaw. 2018. "A Path to Ending Poverty by Way of Ending Unemployment: A Federal Job Guarantee." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 4 (3): 44–63.

Pavetti, LaDonna, Liz Schott, and Elizabeth Lower-Basch. 2011. "Creating Subsidized Employment Opportunities for Low-Income Parents." Center on Budget and Policy Priorities and CLASP, Washington, DC.

Piil Damm, Anna. 2014. "Neighborhood Quality and Labor Market Outcomes: Evidence from Quasi-Random Neighborhood Assignment of Immigrants." *Journal of Urban Economics* 79: 139–66.

Porter, Michael E. 1995. "The Competitive Advantage of the Inner City." *Harvard Business Review* 73 (May–June): 55–71.

Reynolds, C. Lockwood, and Shawn Rohlin. 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.

Riccio, James A. 1999. "Mobilizing Public Housing Communities for Work: Origins and Early Accomplishments of the Jobs-Plus Demonstration." MDRC, New York, NY.

Rich, Michael J., and Robert P. Stoker. 2007, June. "Governance and Urban Revitalization: Lessons from Urban Empowerment Zones Initiatives." Unpublished manuscript. (https://www.researchgate.net/publication/265080125_Governance_and_Urban_Revitalization_Lessons_from_the_Urban_Empowerment_Zones_Initiative.)

Rich, Michael J., and Robert P. Stoker. 2010. "Rethinking Empowerment: Evidence from Local Empowerment Zone Programs." *Urban Affairs Review* 45 (6): 775–96.

Roder, Anne, and Mark Elliott. 2013. "Stimulating Opportunity: An Evaluation of ARRA-funded Subsidized Employment Programs." Economic Mobility Corporation, New York, NY.

Rosenbaum, James, and Anita Zuberi. 2010. "Comparing Residential Mobility Programs: Design Elements, Neighborhood Placements, and Outcomes in MTO and *Gautreaux*." *Housing Policy Debate* 20 (1): 27–41.

Schilling, Joseph, and Jonathan Logan. 2008. "Greening the Rust Belt: A Green Infrastructure Model for Right Sizing America's Shrinking Cities." *Journal of the American Planning Association* 74 (4): 451–66.

Schultz Patel, Margaret. 2015. "Michigan Earn and Learn: An Impact, Outcome, & Implementation Evaluation of a Transitional Job and Training Program." Social Impact Research Center, Chicago, IL.

Schwartz, Anne. 2004, April 20. "Parks Opportunity Program." *Gotham Gazette*.

Smith, Richard. 2015. "Empowerment for Whom? The Impact of Community Renewal Tax Incentives on Jobs and Businesses." *Urban Studies* 52 (4): 702–20.

Tax Cut and Jobs Act of 2017 Pub.L. 115–97, Stat.131 Stat. 2054.

Topa, Giorgio, and Yves Zenou. 2015. "Neighborhood and Network Effects." In *Handbook of Regional and Urban Economics,* vol. 5, edited by Giles Duranton, Vernon Henderson, and William Strange, 561–624. Amsterdam, Netherlands: Elsevier.

U.S. Government Accountability Office. 2006. "Empowerment Zone and Enterprise Community Program." U.S. Government Accountability Office, Washington, DC.

U.S. Census Bureau (Census). 2012–16. "American Community Survey." U.S. Census Bureau, Suitland, MD. Retrieved from American FactFinder.

U.S. Department of the Treasury. 2018, April 9. "Press Release: Treasury, IRS Announce First Round of Opportunity Zones Designations for 18 States." U.S. Department of the Treasury, Washington, DC.

The Wall Street Journal. 2017, March 29. "America's Growing Labor Shortage: Lack of Workers in Ag and Construction is Hurting the Economy." *The Wall Street Journal*.

Warland, Chris, Melissa Young, and Elizabeth Lower-Basch. n.d. "Innovative City and State Funding Approaches to Supporting Subsidized Employment and Transitional Jobs." National Transitional Jobs Network and CLASP, Washington, DC.

Wiewel, Wim, and Joseph Persky. 1994. "Urban Productivity and the Neighborhoods: The Case for a Federal Neighborhood Strategy." *Environment and Planning C: Government and Policy* 12: 473–83.

Wilder, Margaret G., and Barry M. Rubin. 1996. "Rhetoric Versus Reality: A Review of Studies on State Enterprise Zone Programs." *Journal of the American Planning Association* 62 (4): 472–92.

Wilson, William J. 1987. *The Truly Disadvantaged*. Chicago: University of Chicago Press.

———. 2008. "The Political and Economic Forces Shaping Concentrated Poverty." *Political Science Quarterly* 123 (4): 555–71.

Workforce Investment Act of 1998 (WIA): Pub.L. 105-220, 112 Stat. 936, 1998.

Zhang, Sumei. 2015. "Impacts of Enterprise Zone Policy on Industry Growth: New Evidence from the Louisville Program." *Economic Development Quarterly* 29 (4): 347–62.

Harnessing the U.S. Intergovernmental Grant System for Place-Based Assistance in Recession and Recovery

Tracy Gordon, *Urban-Brookings Tax Policy Center*

Abstract

American places are pulling apart from one another—economically, socially, and politically. Declining regional income convergence, increasing geographic concentration of joblessness, and an increasing awareness of the social costs of long-term joblessness and economic isolation have led many economists to question their traditional skepticism of policies that aim to revitalize distressed areas. Arguments in this vein typically focus on evaluating past programs and identifying conditions under which place-based assistance can be effective. Often overlooked in these discussions, however, is that the federal government already injects about $700 billion annually (3.5 percent of GDP) into state and local economies through intergovernmental grants. This chapter examines how the federal government could adapt the existing grant apparatus to perform better as a shock absorber in recession and an economic equalizer in recovery. After reviewing the existing system, it proposes changes to help federal grants offset differences in underlying state fiscal capacity and respond more quickly to regional economic downturns and national recessions.

Introduction

America's regions are pulling apart from one another—economically, socially, and politically. While globally connected metropolitan areas prosper, small- and mid-size cities are often left behind (Badger 2017). Places without diversified economies, colleges and universities, or new immigrants are especially at risk (Austin 2017).

Economists have traditionally taken a dim view of place-based policies (Glaeser and Gottleib 2008). However, recent evidence suggests that well-designed strategies can be effective (Austin, Glaeser, and Summers, forthcoming; Busso, Gregory, and Kline 2013). Many economists are

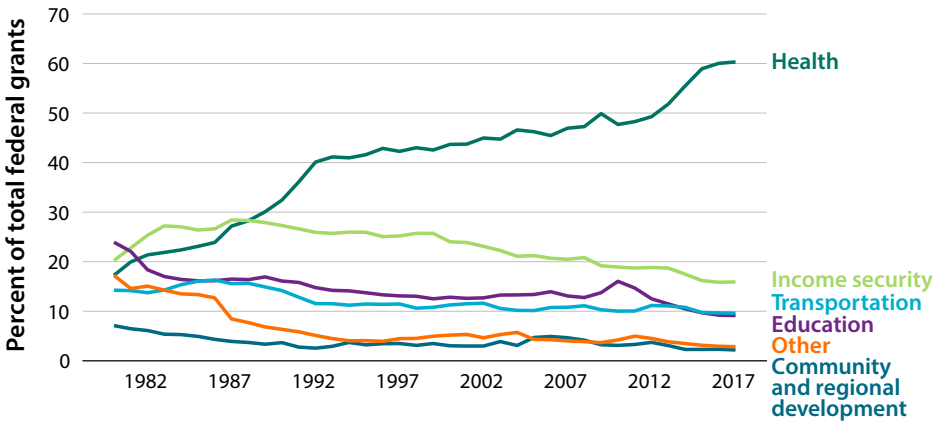
also recognizing that the social costs of protracted regional decline and individual joblessness may necessitate reexamining the traditional view (Avent 2016).

Often overlooked in these arguments is that the federal government already injects about $700 billion (3.5 percent of GDP) into state and local economies annually through intergovernmental grants. To be sure, every dollar of federal government spending occurs somewhere, and not every expenditure is a place-based investment. Nevertheless, it may be possible to leverage existing federal grant programs to help revitalize distressed areas and expand economic opportunity for residents.[1]

This chapter explores what it would take for the U.S. federal grant system to respond better to long-term regional economic decline and short-term economic shocks including recessions. After a review of intergovernmental grants, including why they exist, how they work, and how they have evolved over time, it discusses critiques of the existing system and proposals to modify it. It concludes with an evaluation of potential obstacles to these proposals and how such obstacles might be overcome.

FIGURE 1.

Federal Grants to State and Local Governments by Category, 1980–2017



Source: Office of Management and Budget (OMB) 2018b.

Note: Each category represents the share of total federal funds allocated to that sector.

THE HAMILTON PROJECT
BROOKINGS

Background

The federal government spends roughly $700 billion a year on state and local government grants, equivalent to about $1 of every $5 in federal outlays (Office of Management and Budget [OMB] 2018a). Nearly two-thirds of these expenditures are for health-related programs, including Medicaid (figure 1). However, the federal government also operates major state and local grant programs in transportation, education, housing, and social services (table 1).

TABLE 1.

Federal Outlays on the Largest State and Local Grant Programs

Medicaid & Children's Health Insurance Program	390,906	417,508	423,457
Federal-aid highways	42,498	42,592	43,782
Child nutrition programs	22,445	24,019	23,486
Tenant-based rental assistance	20,584	20,748	19,902
Education for the disadvantaged	16,186	16,276	16,011
Temporary Assistance to Needy Families	15,972	16,328	15,353
Special education	12,479	12,845	12,759
Children and families services programs	10,232	11,673	10,587
Transit formula grants	9,460	9,786	9,985
Foster care and adoption assistance	7,712	8,267	8,615

Source: OMB 2018c.

Note: This table omits disaster relief funds (an estimated $20 billion in fiscal year 2018 outlays) because outlays vary depending on extreme weather events and other natural disasters. It combines Medicaid and the Children's Health Insurance Program (CHIP) into one entry because states may administer their programs as an expansion of Medicaid, as a program entirely separate from Medicaid, or as a combination of both approaches. Data are for fiscal years.

TYPES OF FEDERAL GRANTS

Federal grants can take one of three basic forms.[2] First, categorical grants restrict funding to specific programs or activities, and the federal government awards them by formula or through a competitive application process. For example, the Better Utilizing Investments to Leverage Development (BUILD) program will award $1.5 billion in fiscal year 2018 for road, bridge, transit, port, and intermodal transportation projects to improve economic competitiveness among other selection criteria.[3]

The second form is the block grant. Similar to many categorical grants, block grants are allocated on a formula basis. However, while they restrict funding to a broad set of goals, block grants allow states and localities broad discretion in how they will meet those goals. For example, in 1996 the Personal Responsibility and Work Opportunity Reconciliation Act replaced Aid to Families with Dependent Children (AFDC) and other programs geared to low-income families with children with the block grant Temporary Assistance for Needy Families (TANF).[4]

The third major type of federal grant, unrestricted revenue sharing, has only a short history in the United States in contrast to other federalist countries such as Australia, Canada, and Switzerland. The closest U.S. approximation to these types of grants, General Revenue Sharing, lasted from 1972 to 1981 for states and 1972 to 1986 for localities (Maguire 2003).[5] The official justification for the end of general revenue sharing was that the federal government had "no revenue to share" (Sawicky 2001, 3). However, the program had long generated controversy among Democrats who viewed it as a smoke screen for diverting federal funds away from cities, and Republicans who viewed it as big government (Dilger 2018).

Beyond direct grants, the federal government subsidizes states and localities through the tax code, allowing federal individual income taxpayers to deduct state and local property taxes plus income or sales taxes and to exclude municipal bond interest payments from their taxable income. These subsidies had an estimated value of $137 billion in foregone federal revenue in fiscal year 2017. The 2017 Tax Cuts and Jobs Act (TCJA) capped the state and local tax deduction, substantially limiting its value to high-income taxpayers (Sammartino, Stallworth, and Weiner 2018).

Other federal dollars flow into local areas through low-interest loans and contracts for services provided. For example, the Environmental Protection Agency provides grants to states for water and sewerage improvements. States use these grants to establish revolving loan funds that localities access at subsidized interest rates for local infrastructure improvements.

The presence of a military base or other large federal employer can also produce community economic benefits.

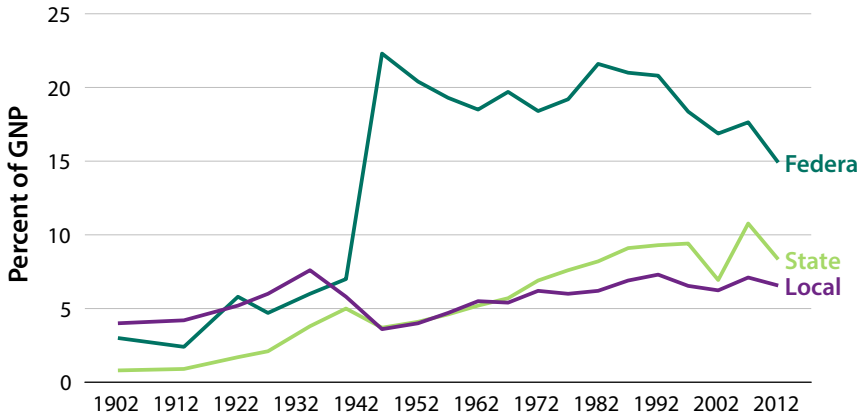
HOW THE USE OF FEDERAL GRANTS HAS CHANGED OVER TIME

Before the early 20th century, with the exception of land grants, the federal government distributed few resources to state and local governments, reflecting its limited role. For most of American history, states and localities were the de facto public sector, collecting twice as much revenue as the federal government and bearing primary responsibility for all functions except national defense, foreign relations, courts, and the postal service (figure 2).

That relationship shifted during the Great Depression and World War II. The federal government introduced new spending programs like Social Security and grew its military using revenue from new sources such as income taxes enabled by the 16th Amendment to the U.S. Constitution, ratified in 1913. Even as it expanded, however, the federal government relied on states and localities to administer many public programs, especially in infrastructure and public welfare. From 1933 to 1940 federal grants to state

FIGURE 2.

Federal, State, and Local Government Revenues, 1902–2012



Source: For years before 1977, data are from Wallis 2000, table 1. For 1977 onward, data are from U.S. Bureau of Economic Analysis (BEA) 2018a; Urban-Brookings Tax Policy Center 1977–2014.

Note: State and local revenues are locally generated or "own-source" revenues, excluding federal funds.

THE HAMILTON PROJECT
BROOKINGS

and local governments grew from a negligible share of the federal budget to 9 percent of total outlays (Wallis 2000).[6]

Many grants from this period, such as the Federal Emergency Relief Act of 1933, were intended to provide relief from the Great Depression to state and local governments and to individuals. Although they ended in the 1940s, these programs established precedents for federal involvement with state and local governments in areas of national concern and for the use of mathematical formulas including economic and fiscal variables in distributing federal assistance (Advisory Commission on Intergovernmental Relations [ACIR] 1978a; Dilger 2018; Wallis 2010).

After World War II the federal government turned its grant-making attention to economic development, with programs in airport construction (1946), urban renewal (1949), and urban planning (1954). The largest and most enduring legacy of this era were the grants to build the interstate highway system after passage of the Federal-Aid Highway Act of 1956. Overall, this period, when intergovernmental tensions were low and state and local governments had significant latitude on how to spend funds, is generally known as one of cooperative federalism.

The next major phase of federal–state–local relations, sparked by President Johnson's War on Poverty, ran from 1960 to 1968. In 1965 two new major grant programs, Medicaid and Title I of the Elementary and Secondary Education Act, were both established as matching grants wherein the federal government reimbursed states for their own expenditures based on a formula reflecting measures of need. However, most programs established during this period had minimal matching requirements to encourage maximum participation in programs reflecting national goals (Dilger 2018).

Most grants created during this period were also categorical, or restricted to narrowly defined purposes (such as combating illiteracy, controlling crime, or fixing substandard housing) with strings attached. By one estimate, 204 categorical programs were created during the Great Society, including 109 in 1965 alone (ACIR 1978a). Hence, this phase is known as one of creative or coercive federalism.

The pendulum swung in the other direction after President Richard Nixon's election in 1968. The Nixon administration sought to combine 129 federal grants across six functional categories into six "special revenue sharing programs" or block grants (Dilger 2018). Ultimately only two block grants—the Comprehensive Employment and Training Assistance Block Grant and the Community Development Block Grant (CDBG)—as well as the General Revenue Sharing program became law, however.

In the 1980s President Reagan and Congress continued the consolidation trend through the Omnibus Budget and Reconciliation Act of 1981, and federal grants-in-aid declined in real per capita terms. However, subsequent block grants, and a so-called swap and turnback proposal to give states full responsibility for AFDC in exchange for the federal government's assuming all of Medicaid, never gained traction. By the end of the 1980s the number of federal grants escalated again (Dilger 2018).

The 1990s brought major changes to the structure of intergovernmental transfers, including the block granting of the country's main cash welfare program, AFDC, as noted earlier. In the 2000s the federal government flexed its muscles again, instituting new accountability requirements in education—such as the No Child Left Behind Act—as well as the REAL ID Act. In addition to significantly expanding Medicaid, the Patient Protection and Affordable Care Act (ACA) authorized or amended 71 federal categorical grants to state and local governments (Dilger 2018).

The Trump administration has charted a different vision of federalism, calling for the elimination of CDBG, the Low Income Home Energy Assistance Program (LIHEAP), the Community Services Block Grant, certain secondary and postsecondary education grants, and the TIGER grant program. However, the most recent two-year federal discretionary spending bill actually increases funding for these programs. Looking across administrations, members of both political parties have found it difficult to eliminate grant programs due to opposition from governors and other constituencies as well as their own ambivalence about losing federal control when moving from categorical to block grants.

REASONS FOR FEDERAL GRANTS

The promise of federal grants is that they allow for the best of centralized and decentralized government. Scholars have long noted that the U.S. faces a "vertical fiscal imbalance" (Bird 2005). The federal government has an easier time raising revenue because it is more difficult than at the state or local level for individuals and businesses to evade taxes through migration. However, states and localities often have an advantage in spending because they can use local information about preferences and costs to tailor policies to their own circumstances.

The problem is that when making spending decisions states and localities do not consider spillovers, or benefits and costs to neighboring areas and the rest of the country (Oates 1972). Commonly associated with capital investments in roads, bridges, and other infrastructure, spillovers may also exist for state and local government human capital investments, for

example in K–12 education, especially if these investments affect national economic growth and mobility (Chetty at al. 2014).

The main vehicle for addressing spillovers is the matching grant, whereby the federal government makes it cheaper for states and localities to spend on a given function by matching each dollar in proportion to benefits flowing to nonresidents (Gramlich 1993). In theory, these grants should be open-ended rather than capped if the spillovers themselves are not limited (Break 1980).

Another consideration is equity or fairness. Some states and localities may start out with less income, wealth, and other resources to tax. Alternatively, they may have populations that are older, sicker, more geographically dispersed, or otherwise more expensive to serve at a given level of quality. These places may provide an unacceptably low level of so-called merit goods, or goods that society deems important for a healthy and productive life (Musgrave 1959). In theory, an unrestricted transfer is the preferred tool to address equity considerations, and conditional block grants can encourage spending on specific government functions.

In practice, however, grant design often does not correspond to the principles just described. Grants are typically capped rather than open ended, programs addressing the same spillover may have different matching rates, and matching rates are often too high, converting what should be a subsidy for spending with positive spillovers into an income support grant (Gramlich 1993).

Many of these design flaws stem from politics, including the difficulty of targeting federal dollars or limiting them to where they will be most effective. For example, the 1960s' Model Cities Program started by identifying roughly a half dozen cities for intensive federal investment. However, within a few years the final number grew to 150 cities and the program also had a mixed track record (Haar 1975).[7]

Other problems in grant design reflect a continual tug-of-war between the federal government and states and localities about the purposes for which money will be spent. Federal policymakers who have done the difficult work of raising revenue are often loath to give states and localities control over how to spend it. One solution is requiring recipients to continue their own previous spending levels (so-called maintenance-of-effort, or MOE, rules). However, despite these and other rules, states and localities often exercise considerable discretion, including substituting federal dollars for their own spending.[8]

The Challenge

In broad terms, the U.S. intergovernmental grant system reflects an appropriate division of labor among different levels of government. Looking a bit deeper, however, the existing intergovernmental grant system falls short in both static and dynamic terms. In the static sense, federal grants do a poor job responding to divergent regional economic and fiscal fortunes. In a dynamic sense, federal grants are not as responsive as they could be to regional effects of economic shocks or recessions.

Starting with the static issue of state differences, in addition to history, climate, geography, and political representation, states differ in their ability to raise revenue and to spend on services, including public goods that affect national economic growth and opportunity for residents. One method for measuring these state differences, the Representative Revenue/Expenditure System (RRS/RES), was developed by the Advisory Commission on Intergovernmental Relations (ACIR) in an attempt to better direct federal aid.9

Importantly, fiscal capacity as measured by the RRS/RES ignores actual policy choices made by state and local elected officials. It reflects only the background conditions that constrain policy and are out of the hands of political decision makers. For example, fiscal capacity does not consider whether a state has chosen to enact sales tax but only the level of personal consumption in a state.[10] Similarly, it does not depend on whether a state has chosen to construct a particularly generous or limited social safety net.

Fiscal capacity is defined as the difference between what a state and its local governments could raise in revenue if they taxed at nationally representative rates and what they would spend if they reached national average spending levels adjusted for their own labor costs and program workloads (e.g., the number of school-aged children or low-income and elderly residents).[11]

Gordon, Auxier, and Iselin (2016) assessed state fiscal capacity in fiscal year 2012. They found that nearly all states faced gaps between revenue capacity and expenditure need. More than half of all states continued to have gaps even after taking account of federal grants (see figure 3).[12]

The reason for this disconnect is that most federal grant programs (with the important exceptions of Title I education grants and Medicaid) are not explicitly linked to measures of state income or need. For example, many grant programs rely on population as a basis for distributing aid. Together with hold harmless provisions (which prevent reductions in allocations to a jurisdiction), caps, small-state minimums, and other floors and

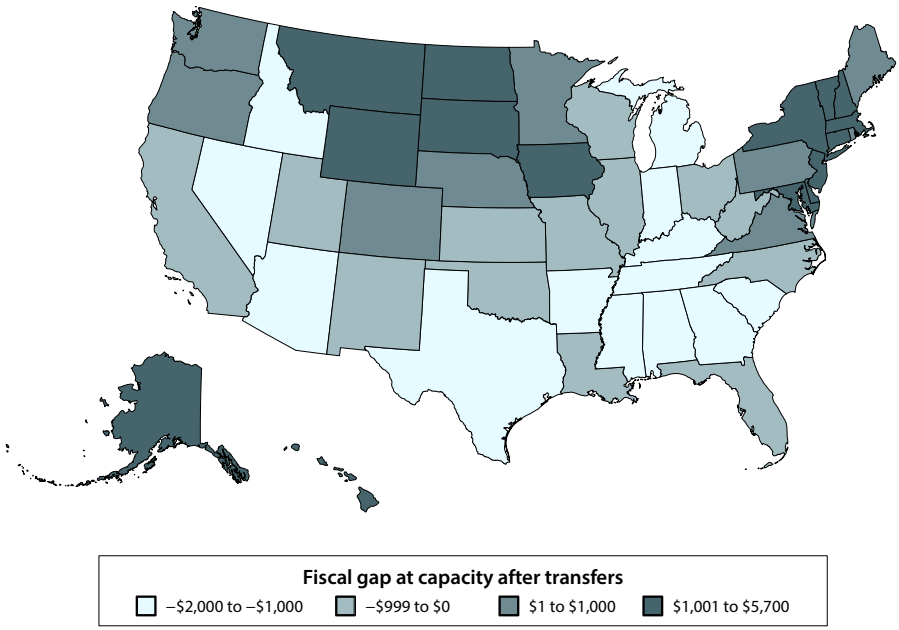
ceilings, this can limit responsiveness to local economic conditions (U.S. Government Accountability Office [GAO] 2009a).

In addition, matching rates and MOE requirements ensure that states receiving federal funds demonstrate at least a minimal level of revenue effort (or actual tax and fee collections) regardless of their underlying capacity. As discussed below, these requirements exist for a reason but they limit or reverse federal grants' equalizing role.

In a dynamic sense, federal grants respond to recessions as more people become eligible for public programs when they lose employment and income. However, grants do not automatically respond to pressures on state and local government budgets, which arise because of balanced budget requirements and other limits on borrowing.[13] Moreover, states and localities bear primary responsibility for many services, such as public assistance and job training, for which demands rise when state revenues decline (Heller and Pechman 1967).

FIGURE 3.

State Fiscal Gaps at Capacity after Federal Transfers



Source: Gordon, Auxier, and Iselin 2016.

Note: Gap at capacity after transfers equals a state's revenue capacity plus federal transfers minus expenditure need. A negative number indicates that expenditure need exceeds revenue capacity plus transfers, whereas a positive number suggests the opposite.

THE HAMILTON PROJECT
BROOKINGS

State tax hikes and spending cuts can be harmful in a recession because they risk derailing a recovery. Economists have long noted the potential for such "fiscal perversity," blaming it for prolonging the Great Depression and Japan's Lost Decade of the 1990s, among other episodes (Brown 1956; Hansen and Perloff 1944; Kuttner and Posen 2001). A related concern is state and local fiscal austerity in regional downturns, such as the oil price shocks of the late 1970s. These regional downturns might not be highly or even positively correlated with each other or national economic conditions (Gramlich 1987).

Recognizing these concerns, in the 1970s federal policymakers experimented with various forms of countercyclical state and local fiscal assistance starting with the Local Public Works Capital Development and Investment Act of 1976 (LPW) and continuing through to extensions to the Comprehensive Employment and Training Act of 1973 (CETA) and the Antirecession Fiscal Assistance program (ARFA).[14] However, aid was often poorly targeted, slow to arrive, and not spent quickly (ACIR 1978b).

Countercyclical fiscal assistance then fell out of favor until the early 2000s, when the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA) appropriated $10 billion in one-time, population-based grants to states as well as $10 billion in additional Medicaid funds through a temporary increase in the federal matching rate. This aid was also criticized for slow delivery and grants that failed to reflect current economic conditions or underlying state fiscal capacity (GAO 2004).

The American Recovery and Reinvestment Act of 2009 (the Recovery Act) was the next major experiment, directing nearly $280 billion to the nation's state and local governments. In all, nearly half of every Recovery Act dollar spent would flow through state capitols, city halls, county seats, school districts, and other local entities.[15] The Recovery Act also made substantial resources available to states and localities as general fiscal relief, or with few federal strings attached (see table 2). Most independent evaluations have found that the Recovery Act's state and local aid helped stimulate job creation and economic growth although estimate magnitudes vary (see box 1).

TABLE 2.

Federal Outlays for Recovery Act Provisions Affecting State and Local Governments, 2009–19

Flexible fiscal relief								
State Fiscal Relief (Medicaid FMAP)	33.9	43.9	11.8	0.1	0.0	0.0	0.3	90.0
State Fiscal Stabilization Fund (SFSF)	6.5	28.4	16.1	2.4	0.3	0.0	0.0	53.6
Other non-infrastructure purposes								
Education (beyond SFSF)	2.0	13.3	11.8	1.6	0.2	0.0	0.0	28.9
Economic recovery payments, TANF, and child support	14.9	2.1	0.7	0.2	0.0	0.0	0.0	18.0
Unemployment compensation	17.0	20.5	0.5	0.3	0.1	0.1	0.8	39.2
State and local law enforcement	0.4	0.8	0.6	0.4	0.6	0.0	0.0	2.8
Infrastructure								
Highway construction and other transportation	5.0	9.4	8.8	7.0	6.1	5.4	6.4	48.1
Clean water and drinking water revolving fund	0.2	1.4	1.8	1.2	0.6	0.3	0.3	5.8
Public housing capital fund	0.1	1.2	1.2	0.8	0.6	0.0	0.0	4.0
Total	**80.0**	**121.0**	**53.2**	**14.0**	**8.4**	**6.0**	**7.7**	**290.4**

Source: Congressional Budget Office (CBO) 2009b.

Note: "Education (beyond SFSF)" includes funds for facilities modernization, renovation, repair, other education, and other, as classified by the CBO. Data are for fiscal years. FMAP refers to the federal Medicaid assistance percentage.

BOX 1.

Effects of the Recovery Act's State and Local Fiscal Assistance

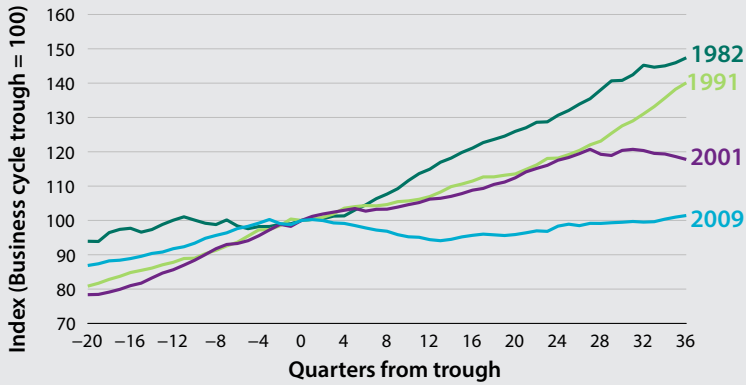
Early assessments of the Recovery Act's state and local fiscal relief found no net stimulus, whether examining government spending that counted toward GDP (consumption and gross investment) or total spending (including transfer payments, interest payments, subsidies, and other expenses) (Aizenman and Pasricha 2010, 2011; Cogan and Taylor 2012).

However, these assessments were based on time-series data. During the Great Recession states experienced their worst revenue declines on record. State and local government purchases have still not recovered (see box figure 1). Under these circumstances, it is difficult to develop an appropriate baseline from historical trends, particularly starting in the mid-1990s, when the economy and state revenues were booming.

Later studies that exploited cross-sectional variation in the timing of fiscal relief payments found significant job and output gains. For example, Wilson (2012) detected positive employment effects at a

BOX FIGURE 1.

Real State and Local Government Purchases for Selected Business Cycles



Source: BEA 1977–2014, BEA 2018b, Federal Reserve Bank of St. Louis 1977–2014.
Note: Dollar values are deflated using the CPI-U deflator.

THE HAMILTON PROJECT
BROOKINGS

cost of $125,000 per job. He also found that overall employment gains leveled off after March 2010. Chodorow-Reich et al. (2012) found that $100,000 of formula-based Medicaid grants led to 3.8 job-years. Carlino and Inman (2016) found positive effects from "welfare aid" including enhanced Medicaid transfers.

The Proposal

This chapter documents the need for a system of federal grants that is better targeted to economic need and more responsive to national and regional economic downturns.[16] In this section, I explore opportunities for reconfiguring policy to better address these problems, proposing concrete steps that would help lagging areas and their workers.

To be clear, addressing cyclical and structural (i.e., long-run) declines are distinct policy goals. Indeed, the GAO has emphasized that a prototype formula it developed to boost grants in a recession should not be thought of as a response to structural decline (GAO 2011c). In practice, however, it can be difficult to avoid conflating the two purposes. For example, a critique of 1970s anti-recessionary fiscal assistance was that funds went to places already experiencing low growth prior to the start of the recession (GAO 1977).

Another tension is between economic and fiscal stabilization. Economic theory and evidence suggest that if the goal is jumpstarting the economy, stimulus should go to people and businesses most affected by the downturn. If the goal is helping states and localities smooth out budget cycles, funds should be allocated more flexibly so that states are able to allocate their own resources as needed.[17] Fiscal and economic stabilization also follow different time profiles because of lags in state budget processes (GAO 2011a).[18]

However, it is worth noting that fiscal stabilization can support economic stabilization. Even the expectation of budget support can help states and localities avoid disrupting services to businesses and residents as well as avoiding layoffs, tax hikes, and other potentially harmful economic actions. Many states reported these uses of flexible Recovery Act funds (GAO 2009b).

Regardless of the goal, any proposal for enhanced federal assistance to states and localities must address several basic design questions. These include:

- whether to use a new or existing program,
- whether the program should be mandatory or discretionary for federal budget purposes,
- whether to commit additional resources or reallocate existing funds (perhaps through better targeting), and
- whether aid should be automatic (based on a pre-determined formula) or discretionary (requiring congressional action).

Given the difficulty of designing and implementing a new program, federal policymakers should restrict attention to adjusting existing grants. The federal government currently operates roughly 1,300 state and local grant programs (Dilger 2018). Many are small and narrowly focused, making them unsuitable candidates for adjustment.

However, several large grant programs rely on formulas that leave considerable room for improvement, whether the goal is addressing cyclical or structural distress.

The choice of mandatory or discretionary programs affects whether funding is capped or open-ended. If total funds are capped, responding to places in need will require diverting resources from other grantees unless a contingency fund has already been established as with TANF and LIHEAP. Of course, an open-ended program would use federal resources in ways that may be difficult to project.

Federal budget commitments are ultimately political questions. However, if the goal of policy is to respond to economic shocks in a timely manner, programs should be automatic (i.e., mandatory) and not discretionary. Ample evidence confirms the importance of automatic stabilizers generally (Council of Economic Advisers [CEA] 2014; Follette and Lutz 2010; McKay and Reis 2016). Had a larger fraction of federal assistance to states come in the form of automatic stabilizers during the Great Recession, the country could have avoided some of the fiscal drag that states and localities exerted on economic growth through 2012 (Gordon 2012).

Beyond these basic design questions, policymakers will want to consider more-specific issues including:

- **Timing,** or when aid is triggered on and off
  - Should thresholds be set at the national, regional, or state level?
  - Should thresholds be defined in absolute or relative terms?

  - If relative, should thresholds be based on a previous level, average, or potential value?
  - Should a jurisdiction's economic activity be measured at a single point in time or over a sustained period?
- **Targeting,** or who gets what
  - Should aid be directed to places hardest hit or most likely to recover?
  - Should it go to states, localities, or both?
  - Once triggered, should aid remain constant or be proportional to local circumstances such as the speed and severity of decline?
  - Should aid be capped or open ended?
- How to ensure **federal objectives** are met
  - When federal dollars are directed to a particular state activity, should the federal government try to limit state substitution of federal dollars for its own spending on that activity? If so, how?
  - Should the federal government encourage spending on specific populations and sectors of the economy? If grants go to states, should the federal government encourage spending in specific localities?
  - How can the federal government limit gaming (i.e., state and local governments taking on more economic or fiscal risk because they know that federal dollars will be available in the event of a setback)?

Bearing these questions in mind, policymakers should do the following:

ADJUST MAJOR GRANT PROGRAM FORMULAS TO MAKE THEM MORE RESPONSIVE TO LOCAL ECONOMIC CONDITIONS

Medicaid is the single largest grant program to states and therefore a strong candidate for adjustment to help places and people that are struggling. Numerous evaluations have found fault with the formula used to calculate the federal government's funding share, or federal medical assistance percentage (FMAP).[19] Notably, the FMAP overlooks important differences in state need, fiscal capacity, and costs of providing medical care (GAO 1983, 2003, 2013).

To better reflect state differences in the need for program services, the federal government should incorporate state poverty rates into its matching formula. It could also use poverty rates weighted to reflect the proportion of low-income state residents who are elderly and therefore are more-intensive

BOX 2.

Measuring State Fiscal Capacity

More straightforward and potentially less controversial measures of fiscal capacity include gross state product (GSP) and personal income. Whereas state personal income captures all income received by state residents (e.g., wages, salaries, interest payments), GSP refers to all income produced in a state (e.g., corporate income produced in-state but received by residents of other states). In a closed economy, the two measures would be equivalent. However, states are far from closed economies. Indeed, a state's ability to export or shift tax burdens to nonresidents is part of its revenue capacity.

Total taxable resources (TTR) is an amalgam of state personal income and GSP that aims to capture all income flows that could in principle be taxed by a state. TTR is currently used to allocate block grants administered by the Substance Abuse and Mental Health Services Administration (SAMHSA). TTR sums all income flows produced in a state, adding income from out of state such as dividends or federal transfer payments, and subtracting certain indirect federal taxes and contributions to social insurance programs that are not considered to be taxable by states (Compson and Navratil 1997; Sawicky 1986).

Currently, TTR is only available with a considerable lag; calculations for 2016 will not be available until the fall of 2018 (U.S. Department of the Treasury [Treasury] 2017). It may be possible to speed up production of the series given that it relies heavily on GSP, which is measured with less of a lag. However, because states' ranking in terms of TTR is substantially different from that for GSP or for personal income, it would be controversial to change this measure (appendix table 1).

users of the health-care system and more expensive for Medicaid to cover (GAO 2003, 2013).[20]

To capture the costs of providing medical care, the federal government should also include an index for labor and other input costs in the FMAP.[21] For example, GAO (2003) notes that the District of Columbia and Connecticut had similar per capita incomes in that year, but the District

had twice as many residents living in poverty. In addition, health-care costs were 10 percent higher in the District than in Connecticut.[22]

Beyond need and cost, Medicaid should reflect state differences in fiscal capacity. The RRS/RES method described above is one way to capture these differences. However, it is computationally intensive and requires analyst judgment, for example to determine the relationship between demographics and program costs. States may object to those evaluations as well as using national average effective tax rates and per capita spending as benchmarks, given that states may have very different fiscal preferences. It might therefore be preferable to take a simpler approach, as described in box 2.

Beyond Medicaid, federal policymakers should revisit other funding formulas as well. Federal highway grants, for example, have frequently drawn criticism for awarding funds based on highway lane miles, vehicle miles traveled, population, and tax payments to the federal Highway Trust rather than measures of need and performance (CBO 2016; Cooper and Griffith 2012; Puentes 2008). Title I education, SAMHSA, and CDBG formulas have also been targeted for improvement in ways that could help states and localities facing structural economic decline (GAO 2005; Jabine, Louis, and Schirm 2001).

MAKE MEDICAID'S ANTI-RECESSIONARY ROLE PERMANENT

Federal policymakers have relied on Medicaid to distribute enhanced state and local aid after the past two recessions and in natural disasters such as Hurricane Katrina (Mitchell 2018).

The Recovery Act made three temporary changes to Medicaid: it instituted an across-the-board 6.2 percent increase in the matching rate for federal Medicaid funds (the FMAP); it held states harmless from planned FMAP reductions due to previous personal income growth; and it provided states an additional increment in funds linked to local unemployment rates.

After the 2001 recession, the Jobs and Growth Tax Relief Reconciliation Act of 2003 authorized $10 billion in spending for a temporary increase in the FMAP and included a hold harmless prohibition against normal decreases in matching rates based on improvements in state personal income per capita. In addition, JGTRRA appropriated $10 billion in one-time, population-based grants to states.

The Recovery Act worked faster than JGTRRA. Aid started to flow in the first quarter of 2009, retroactive to six months earlier (GAO 2011b). With

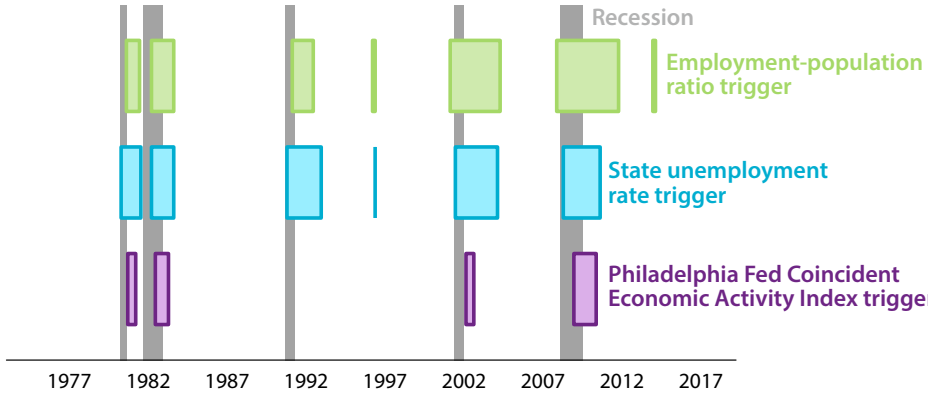
JGTRRA, the aid did not start until after the recession was already over (GAO 2004, 2006), in part because of delays in enacting the legislation, but also because the 2001 recession was relatively brief. The Recovery Act was also better targeted to places in need, although unemployment was a better indicator of Medicaid enrollment pressures than the across-the-board FMAP increase or hold harmless provision (GAO 2011b).

Given the importance of timeliness and the delays in JGTRRA compared to the Recovery Act, federal policymakers should make Medicaid's anti-recessionary role permanent. Triggers could be based on any number of timely state-level economic indicators (table 3). Figure 4 shows how three triggers—adapted from GAO (2006, 2011b, 2011c); Bernstein and Spielberg (2016); and Mattoon, Haleco-Meyer, and Foster (2010)—would have operated during past business cycles.

The first trigger is based on sustained decreases in the employment-to-population ratio (EPOP).[23] It would trigger on for the entire country (although benefits to states would vary based on local conditions) after at least 26 states experienced four months of declines in the EPOP (based on a moving average calculated over three months and compared to the same period one year earlier). It would trigger off for the entire country when the number of states experiencing sustained employment decreases fell below 26.

FIGURE 4.

Length of Federal Assistance Triggers by Business Cycle, 1977–2017



Source: BLS 1976–2017, 1976–2018; Federal Reserve Bank of Philadelphia 1979–2017; Federal Reserve Bank of St. Louis 1979–2017.

THE HAMILTON PROJECT
BROOKINGS

The second trigger follows the same rule but uses increases in the unemployment rate instead of declines in the EPOP.

A third trigger suggested by Mattoon, Haleco-Meyer, and Foster (2010)—the Federal Reserve Bank of Philadelphia State Coincident Indicators—turns off more quickly once recessions end and failed to turn on in the early 1990s.

There are clear tradeoffs in the design of triggers: for example, starting aid too quickly when economic conditions do not warrant it, versus failing to start aid or ending it too quickly when states are still feeling the effects of a downturn. To balance these tradeoffs as well as budgetary considerations, policymakers could adjust the number of states in the threshold to start

TABLE 3.

Selected Indicators for Timing or Targeting Federal Assistance to States

Coincident index	Federal Reserve Bank of Philadelphia	Monthly
Employment	Bureau of Labor Statistics (BLS) State and Metro Area Employment, Hours, and Earnings (SAE)	Monthly
	BLS Local Area Unemployment Statistics (LAUS)	Monthly
	BLS Quarterly Census of Employment and Wages (QCEW)	Monthly
Hourly earnings	BLS SAE	Monthly
Housing units authorized by building permits	U.S. Census Bureau	Monthly
Personal income	U.S. Bureau of Economic Analysis (BEA)	Quarterly
Unemployment	BLS LAUS	Monthly
Unemployment rate	BLS LAUS	Monthly
Wages and salaries	BEA	Quarterly
	BLS QCEW	Quarterly
Weekly hours	BLS SAE	Monthly

Source: GAO (2011a), table 3.

assistance or the number of months with a sustained decrease in economic conditions.

Policymakers may also want to consider allowing aid to start flowing to individual states based on local economic conditions. Despite some trade-offs in terms of data quality, state-level triggers might be preferable to national ones for cushioning state- or region-specific shocks.[24]

Once triggered, aid could be targeted based on the severity of the recession, using an across-the-board metric, or based on population. GAO (2011c) developed a prototype formula that would direct aid to states based on their change in unemployment and reductions in wages and salaries. GAO finds that its prototype would have been more timely than the Recovery Act, providing assistance from January 2008 (just after the Great Recession began) to September 2011, compared to the Recovery Act's October 2008 (retroactive) to June 2011. The prototype also would have removed support for states more gradually compared to the Recovery Act's or JGTRRA's fiscal cliffs.[25]

Depending on the timeframe, federal highway grants may be another good candidate for restructuring to address regional economic decline. As CBO (2009a) and others have noted, inherent lags in project development typically make infrastructure less than ideal stimulus.[26] However, if a downturn is long enough, infrastructure becomes more attractive as a stimulus in addition to providing long-term benefits to residents and economic activity (Austin, Glaeser, and Summers, forthcoming; Busso, Gregory, and Kline 2013).

As with the Recovery Act, the federal government could attach conditions for states to spend infrastructure funds quickly and emphasize "state of good repair" improvements over system expansion (Lew and Pocari 2018).[27] Before the next downturn, the federal government could provide additional funds for states to maintain five-year capital improvement plans and a list of projects that, if not shovel ready, at least would have passed minimal cost-benefit criteria (CBO 2016).[28]

CONSIDER LOANS, GRANT ADVANCES, OR A NATIONAL RAINY-DAY FUND

Several authors, including Galle and Stark (2012), GAO (2006), and Mattoon (2004) have proposed creating an ongoing countercyclical assistance fund modeled after the unemployment insurance (UI) program.[29] The fund could take the form of a new federal rainy-day account (RDA), federal subsidies to state RDAs, or loans and grant advances.

Under the Mattoon (2004) proposal, after an initial state and/or federal capitalization, states would pay into a national RDA in good years and draw down their reserves in bad years. Their repayments would be experience-rated (as with employer contributions to the UI system) in the sense that states' contributions would be larger if a more-volatile tax system made subsequent withdrawals more likely.

As with state RDAs, withdrawals would be limited to specific circumstances such as negative revenue growth, negative personal income growth, or unemployment increases of more than 1 percentage point.[30]

A national RDA with standard contribution and withdrawal rules may also help overcome incentive problems with existing state RDAs. Namely, states tend not to accumulate large enough RDAs.[31] They may also set up too many procedural hurdles to access saved funds, such as obtaining supermajority legislative approval and finding a way to repay funds quickly, even within the same fiscal year (Mattoon 2004). As a result of these obstacles and uncertainty about the pace of economic recovery, some states such as South Dakota and Vermont never drew down their reserves during the downturn (McNichol 2013). Furthermore, many states turned to refilling their rainy-day funds while unemployment rates were still high, perhaps because of overly stringent rules governing these accounts, rather than waiting for stronger economic circumstances.

Questions and Concerns

1. Will your proposal weaken state and local budget discipline?

With any proposal to increase federal aid in recession or recovery, an overarching concern is the set of incentives this produces for state and local policymakers. In the past, concerns about incentives have been so strong that they have led to further pathologies in the federal grants system. For example, MOE requirements—intended to ensure that federal funds are spent on desired objectives—are one reason for the low correlation between grants and state fiscal capacity. Furthermore, with the notable exception of Medicaid, most matching grants are capped rather than open-ended, but capped grants can limit the extent to which state and local positive spillovers are taken into account by policymakers, even as they limit federal budget exposure.[32]

The General Revenue Sharing program further illustrates tensions in grant design. It relied on a complicated two-tiered aid formula that directed aid to both states and localities, attempting to equalize differences in fiscal capacity, or per capita income, while also rewarding their revenue effort

or dollars collected. It is not difficult to see how these goals could work at cross purposes. As economist George Break would later write, "The implied diversity of purpose became an inherent problem for the new program since it could hardly be expected to satisfy all expectations at once" (Break 1980, 145). The General Revenue Sharing program also illustrates the difficulty of targeting local areas within states (Maguire 2003).

Consequently, this proposal argues for targeting aid based on measures such as unemployment that are easily observed and difficult to manipulate (i.e., tagging, as in Akerlof 1978), thereby mitigating these problems of state moral hazard. It also focuses on measures of fiscal capacity, like Total Taxable Resources, that are not manipulable by states. These and other aspects of the proposal's design help to minimize any unintended negative effects on state and local budget discipline. The key is to choose a measure that is not easily politically manipulated or that creates incentives for poor policy choices, including decisions to rely on overly volatile revenue sources. Otherwise, governors could alter their tax systems to attract more federal aid.

2. How can federal aid be effectively targeted to places with high levels of need?

In addition to the targeting considerations outlined in the proposal, a complementary approach is to require extensive reporting to discourage jurisdictions that are not truly needy from applying. Although intended to ensure program transparency, the Recovery Act may unintentionally have mimicked these so-called ordeal mechanisms (Nichols and Zeckhauser 1982) by requiring all recipients to file quarterly reports on their use of funds and jobs created. It further mandated that a Recovery Accountability Transparency Board review all agency reports, conduct audits and reviews, and release the underlying data through a website (which became Recovery.gov).[33]

Relatedly, relying on existing formulas has the advantage of expediency but also reinforces traditional donor versus recipient state roles (Boyd and Dadayan 2017). An alternative for political expediency, although worse from a targeting perspective, is simple per capita grants as under JGTRRA.

Conclusion

This chapter has argued that the federal grant apparatus is often overlooked when considering ways to help places in crisis due to long-term structural decline or short-term cyclical swings in the economy. To address growing regional disparities in economic growth and the impact of recessions,

existing programs could be reconfigured to better support places that are struggling. In particular, federal policymakers might want to consider changing the formula for Medicaid or other programs to make the grants better targeted to lagging states, making countercyclical enhancements to the Medicaid program permanent, and creating a new countercyclical fund that states could draw on during downturns. In all cases, funds should be targeted based on characteristics not subject to political manipulation or gaming. These targets would be based on unemployment and/or other labor market conditions—as well as measures of fiscal capacity—thereby helping to equalize the resources available for communities to invest in local public goods and provide economic opportunity for their residents.

APPENDIX TABLE 1.

Gross Domestic Product, Personal Income, and Total Taxable Resources Per Capita, by State

District of Columbia	180,900	1	73,800	1	106,100	1
North Dakota	74,500	2	55,600	9	79,300	6
Delaware	74,000	3	47,100	23	81,700	4
New York	73,600	4	58,300	5	82,200	3
Massachusetts	72,200	5	62,800	3	81,000	5
Alaska	71,100	6	56,500	6	74,200	9
Connecticut	70,500	7	68,200	2	87,600	2
Wyoming	67,400	8	56,300	7	77,700	7
California	64,300	9	54,700	10	69,800	12
Washington	63,400	10	53,100	12	70,100	11
New Jersey	62,900	11	60,100	4	76,800	8
Nebraska	61,300	12	49,600	19	65,600	16
Maryland	60,900	13	56,200	8	72,700	10
Illinois	60,500	14	50,700	16	67,100	14
Minnesota	59,500	15	51,100	15	65,200	17
Texas	58,700	16	46,800	25	63,000	19
Colorado	58,000	17	52,000	14	63,600	18
Iowa	57,900	18	45,800	27	62,000	22
Hawaii	57,400	19	48,800	21	59,700	25
Virginia	57,300	20	52,200	13	66,000	15
New Hampshire	56,500	21	54,500	11	68,600	13
Pennsylvania	55,500	22	49,800	17	62,600	20
South Dakota	55,300	23	47,900	22	62,300	21

APPENDIX TABLE 1. (CONTINUED)

Gross Domestic Product, Personal Income, and Total Taxable Resources Per Capita, by State

Oregon	53,800	24	44,400	29	59,000	26
Rhode Island	53,200	25	49,700	18	62,000	23
Wisconsin	52,700	26	46,000	26	58,400	27
Ohio	52,700	27	43,800	31	56,800	28
Kansas	52,200	28	47,000	24	60,300	24
Louisiana	51,800	29	42,800	35	54,100	33
Indiana	50,400	30	41,900	39	55,800	31
Utah	50,100	31	39,800	42	53,400	36
North Carolina	50,000	32	41,400	40	53,600	35
Georgia	49,600	33	41,000	41	53,100	38
Nevada	49,300	34	43,100	32	56,000	30
Oklahoma	48,600	35	44,000	30	53,200	37
Vermont	48,500	36	49,000	20	56,300	29
Tennessee	48,100	37	42,200	38	51,700	40
Missouri	48,000	38	42,400	37	54,200	32
Michigan	47,400	39	43,100	33	52,700	39
Montana	44,900	40	42,600	36	50,500	41
New Mexico	44,700	41	37,900	49	48,200	43
Florida	44,000	42	45,400	28	54,000	34
Kentucky	43,200	43	38,500	47	47,900	44
Arizona	43,100	44	39,700	43	47,400	45
Maine	43,100	45	42,900	34	48,600	42
South Carolina	41,500	46	38,800	46	46,400	46
Alabama	41,200	47	38,200	48	45,700	50
Arkansas	40,000	48	39,100	44	46,100	47
Idaho	39,800	49	38,900	45	45,800	48
West Virginia	39,500	50	36,600	50	45,800	49
Mississippi	35,600	51	34,800	51	40,100	51
United States	**56,100**		**48,900**		**62,300**	

Source: BEA 2016a, 2016b; U.S. Census Bureau 2015; Treasury 2017.

Note: Data are for 2015. States are in descending order of GDP per capita.

Acknowledgments

I am grateful to Robert Dinkelmeyer, Marcia Howard, Nathan Jensen, Shoshana Lew, Richard Mattoon, Donald Marron, Kim Rueben, Michelle Sager, and Max Sawicky in addition to participants in a Hamilton Project authors conference and Ryan Nunn and Jay Shambaugh of The Hamilton Project for their extremely helpful comments. Erin Huffer of The Urban Institute provided excellent research assistance. All remaining errors are my own.

Endnotes

1. For example, the Promise Zone program, launched in 2013, awards preferences for certain competitive federal grants to places experiencing high poverty, among other requirements. Designated zones also receive technical assistance and help navigating federal programs. Tax incentives proposed by the Obama administration were never approved by Congress. See OMB (2016).
2. For more information, see CBO (2013) and GAO (2012).
3. BUILD replaced the Transportation Investment Generating Economic Recovery (TIGER) program created by the American Recovery and Reinvestment Act of 2009 (the Recovery Act). Since 2009 the TIGER grant program has provided a combined $5.1 billion to 421 projects in all 50 states, the District of Columbia, Puerto Rico, Guam, the Virgin Islands, and tribal communities. See U.S. Department of Transportation (2018).
4. Under the 1996 welfare reform law, states have broad discretion on how to spend federal TANF funds as long as they are meeting one of four program goals: (1) providing assistance to needy families so that children may be cared for in their own homes or in the homes of relatives; (2) promoting job preparation, work, and marriage among needy parents; (3) preventing and reducing the incidence of out-of-wedlock pregnancies; and (4) encouraging the formation and maintenance of two-parent families. Nationally, the preponderance of TANF is spent on noncash assistance, which is less targeted to the lowest-income recipients and less responsive to economic downturns. See Bitler and Hoynes (2016).
5. The federal government also experimented with revenue sharing in 1803 and 1837 (Break 1980).
6. See also Wallis and Oates (1998) for a discussion of how federalism evolved during the New Deal.
7. It remains to be seen how the newest economic development program created through the TCJA, Opportunity Zones, will fare on this criterion (e.g., Looney 2018; Theodos 2018).
8. See, for example, Gramlich and Galper (1973), who found that $1.00 of unrestricted federal aid stimulated $0.36 in state and local spending, $0.28 in lower state and local taxes, and $0.36 in higher fund balances or saving. However, other research has found evidence that federal dollars stimulate more than the expected state and local spending response. Some early flypaper effect research might have mistook matching as lump sum grants or overlooked MOE requirements. Other explanations include tacit understandings between federal appropriators and grant recipients about how recipients will respond to federal money (Chernick 1979; Knight 2002).
9. Established by the 86th U.S. Congress, the ACIR was a "permanent, bipartisan body of 26 members, to give continuing study to the relationship among local, state, and national levels of government." Among its statutory responsibilities were to "provide a forum for discussing the administration and coordination of Federal grant and other programs requiring intergovernmental cooperation" (Advisory Commission on Intergovernmental Relations Act of 1959). For more information on this method, see ACIR (1962, 1971, 1982), Tannenwald (1999), Tannenwald and Turner (2006), Yilmaz and Zahradnik (2008), Yilmaz et al. (2007).

10. To take one example, Washington State derived about a quarter of its total state and local revenue from sales taxes in 2012 (and a similar portion today), while its neighbor Oregon (along with Alaska, Delaware, Montana, and New Hampshire) collected no general sales taxes. The RRS/RES also cannot capture differences in tax administration capabilities, efficiency of public service provision, or the ability to export tax burdens to nonresidents.
11. Labor costs are typically measured using a regression framework or wage index assessing what all employers—public and private—in a state must pay to attract workers of a given education and experience level. This approach separates background conditions such as regional costs of living from policy choices about what to pay public sector workers. See Gordon, Auxier, and Iselin (2016, appendix C).
12. This calculation does not include the taxes paid to the federal government by state residents. Thus, even though a state like New York received transfers that more than offset its fiscal gap in 2012, this does not mean it was a net recipient of federal money overall, because the taxes paid by New York residents more than offset the federal transfers. See Boyd and Dadayan (2017) for discussion of net contributions and draws on the federal budget. High-income states also benefit the most from federal tax deductions and exemptions (such as those for home mortgage interest, charitable contributions and the previously uncapped SALT deduction) accruing to high-income tax payers (Sammartino 2017). However, these benefits may help offset another problem in the federal tax code, the penalty workers living in high-productivity areas pay because taxes are not indexed for regional costs of living (Albouy 2009).
13. Although details of these rules vary considerably and affect their stringency, most states are constitutionally or statutorily bound to balance their budgets each year (Rueben and Randall 2017).
14. In all, Congress appropriated $14.5 billion for countercyclical fiscal assistance from November 1975 to March 1978 (ACIR 1978b). See also ACIR (1978b), GAO (1977; 2011a, 34–37, appendix III).
15. The Recovery Act created individual earnings Promise Zone tax credits, expanded business tax incentives, and launched federal initiatives in high speed rail, health information technology, and an energy smart grid. At its peak (2009–12) it provided a fiscal impulse of $700 billion; this figure excludes the alternative minimum tax (AMT) patch best thought of as continuation of long-standing policy. See CBO (2009a).
16. This chapter does not consider technical assistance and other temporary measures to help a specific community after a natural disaster or financial crisis as in Detroit or Puerto Rico most recently.
17. This was the intent of the Recovery Act's state and local fiscal relief (Grunwald 2013).
18. Most states start their fiscal year on July 1st, so in mid-2009, for example, spending levels would have been set in the summer of the previous year although many states were forced to reopen their budgets mid-year to close gaps due to revenue shortfalls (e.g., McNichol 2012).
19. The FMAP is a declining function of state per capita personal income:

$$FMAP = 1.00 - 0.45 \times \left(\frac{StatePCI}{U.S.PCI}\right)^2$$

The FMAP formula's 0.45 term ensures that the average state receives a federal match of 55 percent. Squaring the personal income term amplifies the effect of falling above or below national average income (so that lower-income states receive even higher matches and higher-income states even lower ones, subject to the statutory limits above).
20. A simulation by Miller and Schneider (2004) suggests that shifting to this kind of measure would increase FMAPs in some relatively wealthy states with high poverty populations while reducing matching rates in states with smaller populations living in poverty. It would also increase federal budgetary commitments, although this could be paid for by reducing statutory minimums on FMAP rates.
21. See Gordon, Auxier, and Iselin (2016, appendix C) for one approach.
22. The District of Columbia also receives special federal matching rates set in statute that gives it higher matching rates than they would have otherwise received based on per capita income (PCI).
23. Unlike the unemployment rates, the EPOP reflects both unemployed and discouraged workers (i.e.,

those who have stopped searching for work) because the denominator is total population rather than the labor force.

24. Mattoon, Haleco-Meyer, and Foster (2010) experimented with three national triggers:
    - Excess unemployment (a 1 percentage point–increase from most recent trough turns on aid; aid turns off when the national rate falls by more than 1 percentage point).
    - Sales tax revenues (when a four quarter moving–average falls by more than 5 percent, aid turns on; when the average returns to previous levels aid turns off).
    - Philadelphia Reserve Bank State Coincident Indicators (a 0.1 percentage point–drop in month over month log of index turns aid on; when the log of national index is back to 0 aid turns off).
25. GAO's consideration of these issues preceded the ACA and consequently does not account for states' more recent Medicaid expansions.
26. This criticism was less apt in the Great Recession given its protracted nature, however this may not have been apparent at the outset. For example, in January 2008 the CBO noted an output gap was emerging but suggested that it would close by 2011 after reaching a maximum of 2 percent of GDP in 2008. By January 2009 the CBO estimated that the output gap would hit 7 percent of GDP and not close until 2014 (CBO 2008, 2009a).
27. As noted in McGuire et al. (2014, 43), most Recovery Act transportation funds were distributed according to procedures of established federal highway, transit, and airport grant programs. This meant that highway grants were based on highway lane miles, vehicle miles, population, and that tax payments to the federal Highway Trust Fund are attributable to highway users in the state. Transit grants considered population; population density; and transit vehicle miles, passenger miles, and route miles. However, some discretionary funds (e.g., TIGER and $750 million in an existing discretionary transit capital grant program) were awarded to projects judged capable of spending additional funds quickly.
28. Many, but not all, states maintain five-year capital improvement plans (National Association of State Budget Officers 2014).
29. UI is a joint federal–state program. The federal government funds state UI program administrative costs and part of the costs of the federal–state extended benefits program by levying a 6 percent payroll tax, known as the Federal Unemployment Tax Act (FUTA) tax, on the first $7,000 of covered workers' earnings. Employers can claim credits against 5.4 percentage points of FUTA taxes if they operate in states where unemployment programs meet federal standards, reducing the effective FUTA tax rate to 0.6 percent, or a maximum of $42 per worker. Federal standards for state UI programs are broad. States must levy their own payroll taxes on a base of at least $7,000 per worker and use experience rating to impose higher tax rates on firms that lay off more workers. Also, states must impose maximum payroll tax rates of at least 5.4 percent and must deposit tax proceeds into a reserve account or trust fund held for that state by the Treasury and used solely to pay UI benefits (Vroman and Woodbury 2014).
30. See, e.g., Rueben and Randall (2017).
31. A generally accepted, although rarely substantiated, rule of thumb for state and local governments is that budget reserves and rainy-day funds should constitute roughly 5 percent of prior year spending. More savings may be desirable from an insurance point of view, but accumulating large surpluses also poses political challenges, as evidenced by California's voters demand for property tax reduction in the early 1970s, an effort that culminated in Proposition 13.
32. An important exception to Medicaid's open-ended structure is in U.S. territories such as Puerto Rico where federal funds are typically capped although the cap was temporarily waived by the Recovery Act and ensuring federal action (Medicaid and CHIP Payment and Access Commission [MACPAC] 2018).
33. Agency inspectors general were further instructed to review "any concerns raised by the public about specific investments using funds made available" and relay findings to agency heads (Title XV, Sections 1514 and 1515). In addition, the Comptroller General (head of the GAO) was to conduct bimonthly reviews on the use of funds by selected states and localities (Title IX, Sections 901 and 902), and the CBO and GAO had to comment on the recipient reports (Title XV, Section 1512 (c)) (Title XV, Sections 1521–1528).

References

Advisory Commission on Intergovernmental Relations Act of 1959, Pub. L. 86-380, 73 Stat. 703 (1959).

Advisory Commission on Intergovernmental Relations (ACIR). 1962. "Measures of State and Local Fiscal Capacity and Tax Effort." Advisory Commission on Intergovernmental Relations, Washington, DC.

———. 1971. "Measuring the Fiscal Capacity and Effort of State and Local Areas." Advisory Commission on Intergovernmental Relations, Washington, DC.

———. 1978a. "Categorical Grants: Their Role and Design." Advisory Commission on Intergovernmental Relations, Washington, DC.

———. 1978b. "Countercyclical Aid and Economic Stabilization." Advisory Commission on Intergovernmental Relations, Washington, DC.

———. 1982. "Tax Capacity of the Fifty States: Methodology and Estimates." Report M-134, Advisory Commission on Intergovernmental Relations, Washington, DC.

Aizenman, Joshua, and Gurnain Kaur Pasricha. 2010. "On the Ease of Overstating the Fiscal Stimulus in the U.S., 2008–9." Working Paper 15784, National Bureau of Economic Research, Cambridge, MA.

———. 2011. "The Net Fiscal Expenditure Stimulus in the U.S., 2008–9: Less than What You Might Think, and Less than the Fiscal Stimuli of Most OECD Countries." *The Economists' Voice* 8 (2): 1–6.

Akerlof, George A. 1978. "The Economics of 'Tagging' as Applied to the Optimal Income Tax, Welfare Programs, and Manpower Planning." *American Economic Review* 68 (1): 8–19.

Albouy, David. 2009. "The Unequal Geographic Burden of Federal Taxation." *Journal of Political Economy* 117 (4): 635–67.

Austin, Benjamin, Edward Glaeser and Lawrence H. Summers. Forthcoming. "Saving the Heartland: Place-based Policies in 21st Century America." *Brookings Papers on Economic Activity* (forthcoming).

Austin, John C. 2017, December 20. "Tale of Two Rust Belts: Higher Education Is Driving Rust Belt Revival but Risks Abound." *The Avenue* (blog), Brookings Institution, Washington, DC.

Avent, Ryan. 2016, December 15. "Place-Based Economic Policies as a Response to Populism." *The Economist*.

Badger, Emily. 2017, December 22. "What Happens When the Richest U.S. Cities Turn to the World?" *The New York Times*.

Bernstein, Jared, and Ben Spielberg. 2016. "Preparing for the Next Recession: Lessons from the American Recovery and Reinvestment Act." Center for Budget and Policy Priorities, Washington, DC.

Bird, Richard M. 2005. "Fiscal Federalism." In *Encyclopedia of Taxation and Tax Policy, Second Edition*, edited by Joseph J. Cordes, Robert D. Ebel, and Jane G. Gravelle, 146–48. Washington, DC: Urban Institute.

Bitler, Marianne, and Hilary Hoynes. 2016. "Strengthening Temporary Assistance for Needy Families." Policy Proposal 2014-04, The Hamilton Project, Brookings Institution, Washington, DC.

Boyd, Donald J., and Lucy Dadayan. 2017, October 1. "Who Subsidizes Whom? The State and Local Tax Deduction Compared with State Balances of Payments." Rockefeller Institute of Government (blog), Albany, NY.

Break, George F. 1980. *Financing Government in a Federal System.* Washington, DC: Brookings Institution Press.

Brown, E. Cary. 1956. "Fiscal Policy in the 1930s: A Reappraisal." *American Economic Review* 46 (5): 857–79.

Bureau of Labor Statistics (BLS). 1976–2017. "States and Selected Areas: Employment Status of the Civilian Noninstitutional Population, 1976 to 2017 Annual Averages." Local Area Unemployment Statistics, Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC.

———. 1976–2018. "Unemployment Rate: January 1976 to July 2018". Local Area Unemployment Statistics, Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC.

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

Carlino, Gerald, and Robert P. Inman. 2016. "Fiscal Stimulus in Economic Unions: What Role for States?" *Tax Policy and the Economy* 30 (1): 1–50.

Chernick, Howard A. 1979. "An Economic Model of the Distribution of Project Grants." In *Fiscal Federalism and Grants-in-Aid*, edited by Peter M. Mieszkowski and William H. Oakland, 81–103. Washington, DC: Urban Institute.

Chetty, Raj, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez. 2014. "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States." *Quarterly Journal of Economics* 129 (4): 1553–623.

Chodorow-Reich, Gabriel, Laura Feiveson, Zachary Liscow, and William Gui Woolston. 2012. "Does State Fiscal Relief During Recessions Increase Employment? Evidence from the American Recovery and Reinvestment Act." *American Economic Journal: Economic Policy* 4 (3): 118–45.

Cogan, John. F., and John B. Taylor. 2012. "What the Government Purchases Multiplier Actually Multiplied in the 2009 Stimulus Package." In *Government Policies and the Delayed Economic Recovery*, edited by Lee Ohanian and John Taylor, 85–114. Stanford, CA: Hoover Institution Press.

Compson, Michael, and John Navratil. 1997. "An Improved Method for Estimating the Total Taxable Resources of the States." Research Paper 9702, Office of Economic Policy, U.S. Department of the Treasury, Washington, DC.

Congressional Budget Office (CBO). 2008. "The Budget and Economic Outlook: Fiscal Years 2008 to 2018." Congressional Budget Office, Washington, DC.

———. 2009a. "The Budget and Economic Outlook: Fiscal Years 2009 to 2019." Congressional Budget Office, Washington, DC.

———. 2009b, February 13. "Estimated Cost of H.R. 1, The American Recovery and Reinvestment Act of 2009 as Posted on the Website of the House Committee on Rules." Congressional Budget Office, Washington, DC.

———. 2013. "Federal Grants to State and Local Governments." Congressional Budget Office, Washington, DC.

———. 2016. "Approaches to Making Federal Highway Spending More Productive." Congressional Budget Office, Washington, DC.

Cooper, Donna, and John Griffith. 2012. "Highway Robbery: How Congress Put Politics Before Need in Federal Highway and Transit Funding." Center for American Progress, Washington, DC.

Council of Economic Advisers (CEA). 2014. "The Economic Impact of the American Recovery and Reinvestment Act Five Years Later: A Final Report to Congress." Council of Economic Advisers, White House, Washington, DC.

Dilger, Robert J. 2018. "Federal Grants to State and Local Governments: A Historical Perspective on Contemporary Issues." Report R40638, Congressional Research Service, Washington, DC.

Federal Reserve Bank of Philadelphia. 1979–2018. "State Coincident Indexes." Regional Economic Data, Federal Reserve Bank of Philadelphia, Philadelphia, PA.

Federal Reserve Bank of St. Louis. 1947–2018. "NBER based Recession Indicators for the United States from the Period following the Peak through the Trough." FRED Economic Data, Federal Reserve Bank of St. Louis, St. Louis, MO.

Follette, Glenn, and Byron Lutz. 2010. "Fiscal Policy in the United States: Automatic Stabilizers, Discretionary Fiscal Policy Actions, and the Economy." Finance and Economics Discussion Series Paper 2010-43, Federal Reserve Board, Washington, DC.

Galle, Brian, and Kirk J. Stark. 2012. "Beyond Bailouts: Federal Tools for Preventing State Budget Crises." *Indiana Law Journal* 87 (2): 599–644.

Glaeser, Edward, and Joshua D. Gottlieb. 2008. "The Economics of Place-Making Policies." *Brookings Papers on Economic Activity* 39 (1): 155–253.

Gordon, Tracy. 2012, December 31. "State and Local Budgets and the Great Recession." Brookings Institution, Washington, DC.

Gordon, Tracy, Richard Auxier, and John Iselin. 2016. "Assessing Fiscal Capacities of States a Representative Revenue System–Representative Expenditure System Approach, Fiscal Year 2012." Urban Institute, Washington, DC.

Gramlich, Edward M. 1987. "Subnational Fiscal Policy." In *Perspectives on Local Public Finance and Public Policy*, edited by John M. Quigley, 3–27. Greenwich, CT: JAI Press.

———. 1993. "A Policymaker's Guide to Fiscal Decentralization." *National Tax Journal* 46 (2): 229–35.

Gramlich, Edward M. and Harvey Galper. 1973. "State and Local Fiscal Behavior and Federal Grant Policy." *Brookings Papers on Economic Activity* 1: 15–65.

Grunwald, Michael. 2013. *The New New Deal: The Hidden Story of Change in the Obama Era*. New York, NY: Simon & Schuster.

Haar, Charles M. 1975. *Between the Idea and the Reality: A Study in the Origin, Fate, and Legacy of the Model Cities Program*. New York, NY: Little, Brown and Company.

Hansen, Alvin H., and Harvey S. Perloff. 1944. *State and Local Finance in the National Economy.* New York, NY: W. Norton & Co.

Heller, Walter W., and Joseph A. Pechman. 1967. "Questions and Answers on Revenue Sharing." In *Revenue Sharing and Its Alternatives: What Future for Fiscal Federalism?*, U.S. Joint Economic Committee, 111–17. Washington, DC: U.S. Government Printing Office.

Jabine, Thomas B., Thomas A. Louis, and Allen L. Schirm. 2001. "Case Studies." In *Choosing the Right Formula: Initial Report*. Washington, DC: The National Academies Press.

Knight, Brian. 2002. "Parochial Interests and the Centralized Provision of Local Public Goods: Evidence from Congressional Voting on Transportation Projects." *Journal of Public Economics* 88: 845–66.

Kuttner, Kenneth N., and Adam S. Posen. 2001. "The Great Recession: Lessons for Macroeconomic Policy from Japan." *Brookings Papers on Economic Activity* 32: 93–186.

Lew, Shoshana, and John Pocari. 2018, February 22. "Eight Years Later: What the Recovery Act Taught Us about Investing in Transportation." *The Avenue* (blog), Brookings Institution, Washington, DC.

Looney, Adam. 2018. "The Early Results of States' Opportunity Zones are Promising, but There's Still Room for Improvement." Brookings Institution, Washington, DC.

Maguire, Steven. 2003. "General Revenue Sharing: Background and Analysis," Congressional Research Service, Washington, DC.

Mattoon, Richard. 2004. "Creating a National State Rainy Day Fund: A Modest Proposal to Improve Future State Fiscal Performance." Available at SSRN online.

Mattoon, Richard, Vanessa Haleco-Meyer, and Taft Foster. 2010. "Improving the Impact of Federal Aid to the States." *Economic Perspectives* 34 (3): 66-82.

McGuire, Therese J., Jay Alexander, William D. Dupor, Randall W. Eberts, Ronald L. Epstein, Andrew Haughwout, Benjamin F. Jones, Nancy Richardson, and Jay C. Shambaugh. 2014. *Transportation Investments in Response to Economic Downturns.* Washington, DC: National Academies Press.

McKay, Alisdair, and Ricardo Reis. 2016. "Optimal Automatic Stabilizers." Working Paper 22359, National Bureau of Economic Research, Cambridge, MA.

McNichol, Elizabeth. 2012. "Out of Balance: Cuts in Services Have Been States Primary Response to Budget Gaps, Harming the Nation's Economy." Center for Budget and Policy Priorities, Washington, DC.

———. 2013. "2013 Is a Good Year to Repair (If Not Replenish) State Rainy Day Funds." Center on Budget and Policy Priorities, Washington, DC.

Medicaid and CHIP Payment and Access Commission (MACPAC). 2018. "Medicaid and CHIP in the Territories." Fact Sheet, Medicaid and CHIP Payment and Access Commission, Washington, DC.

Miller, Vic, and Andy Schneider. 2004. "The Medicaid Matching Formula: Policy Considerations and Options for Modification." AARP Public Policy Institute, Washington, DC.

Mitchell, Alison. 2018. "Medicaid's Federal Medical Assistance Percentage (FMAP)." CRS Report R43847, Congressional Research Service, Washington, DC.

Musgrave, Richard A. 1959. *Theory of Public Finance: A Study in Public Economy.* New York, NY: McGraw-Hill.

National Association of State Budget Officers. 2014. "Capital Budgeting in the States." National Association of State Budget Officers, Washington, DC.

Nichols, Albert L., and Richard J. Zeckhauser. 1982. "Targeting Transfers through Restrictions on Recipients." *American Economic Review* 72 (2): 372–77.

Oates, Wallace E. 1972. *Fiscal Federalism.* New York, NY: Harcourt Brace Jovanovich.

Office of Management and Budget (OMB). 2016. "Prioritizing Federal Investments in Promise Zones." Memorandum M-16-23, Office of Management and Budget, Washington, DC.

———. 2018a. "Table 12.1—Summary Comparison of Total Outlays for Grants to State and Local Governments: 1940–2023 (in Current Dollars, as Percentages of Total Outlays, as Percentages of GDP, and in Constant (FY 2009) Dollars)." Historical Tables, Office of Management and Budget, Washington, DC.

———. 2018b. "Table 12.2. Total Outlays for Grants to State and Local Governments, by Function and Fund Group: 1940–2023." Historical Tables, Office of Management and Budget, Washington, DC.

———. 2018c. "Table 12.3. Total Outlays for Grants to State and Local Governments, by Function, Agency, and Program: 1940–2019." Historical Tables, Office of Management and Budget, Washington, DC.

Puentes, Robert. 2008. "A Bridge to Somewhere: Rethinking American Transportation for the 21st Century." Metropolitan Policy Program, Brookings Institution, Washington, DC.

Rueben, Kim S., and Megan Randall. 2017. "Budget Stabilization Funds: How States Save for a Rainy Day." Urban Institute, Washington, DC.

Sammartino, Frank. 2017. "How Would Repeal of the State and Local Tax Deduction Affect Taxpayers Who Pay the AMT?" Urban-Brookings Tax Policy Center, Urban Institute and Brookings Institution, Washington, DC.

Sammartino, Frank, Philip Stallworth, and David Weiner. 2018. "The Effect of the TCJA Individual Income Tax Provisions across Income Groups and across the States," Urban-Brookings Tax Policy Center, Urban Institute and Brookings Institution, Washington, DC.

Sawicky, Max B. 1986. "The 'Total Taxable Resources' Definition of State Revenue-Raising Ability." In *Federal-State-Local Fiscal Relations: Technical Papers* 1: 63–94. Washington, DC: U.S. Department of the Treasury.

———. 2001. "An Idea Whose Time Has Returned: Anti-Recession Fiscal Assistance for State and Local Governments." Briefing Paper 116, Economic Policy Institute, Washington, DC.

Tannenwald, Robert. 1999. "Fiscal Disparity among the States Revisited." *New England Economic Review (*July/August): 3–26.

Tannenwald, Robert, and Nicholas Turner. 2006. "Interstate Fiscal Disparity in State Fiscal Year 1999." Public Policy Discussion Paper 04-9, Federal Reserve Bank of Boston, Boston, MA.

Theodos, Brett. 2018, March 27. "A Little-Publicized Incentive in the New Tax Law Could Become America's Largest Economic Development Program." *TaxVox* (blog). Urban-Brookings Tax Policy Center, Urban Institute and Brookings Institution, Washington, DC.

Urban-Brookings Tax Policy Center. 1977–2014. "State & Local Government Finance Data Query System." Data from U.S. Census Bureau, Annual Survey of State and Local Government Finances, Government Finances, vol. 4, and Census of Governments.

U.S. Bureau of Economic Analysis (BEA). 1947–2018. "State and Local Consumption Expenditures & Gross Investment." U.S. Bureau of Economic Analysis, Suitland, MD. Retrieved from FRED Economic Data, Federal Reserve Bank of St. Louis, St. Louis, MO.

———. 2016a. "Gross Domestic Product (GDP) by State (Millions of Current Dollars)." Bureau of Economic Analysis, Suitland, MD.

———. 2016b. "Table SA1. Personal Income Summary, Personal Income, Population, Per Capita Personal Income." Bureau of Economic Analysis, Suitland, MD.

———. 2018a. "Table 1.7.5. Relation of Gross Domestic Product, Gross National Product, Net National Product, National Income, and Personal Income (Millions of Dollars)." Bureau of Economic Analysis, Suitland, MD.

———. 2018b. "Table 1.1.7. Percent Change From Preceding Period in Prices for Gross Domestic Product (Percent)" Bureau of Economic Analysis, Suitland, MD.

U.S. Census Bureau (Census). 2015. "Table 1. Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2017." U.S. Census Bureau, Suitland, MD.

U.S. Department of Transportation. 2018. "U.S. Department of Transportation Launches BUILD Transportation Program, Announces $1.5 Billion Notice of Funding Opportunity." U.S. Department of Transportation, Washington, DC.

U.S. Department of the Treasury. 2017. "Total Taxable Resources Estimates." U.S. Department of the Treasury, Washington, DC.

U.S. Government Accountability Office (GAO). 1977. "Antirecession Assistance: An Evaluation." Report PAD-78-20, Government Accountability Office, Washington, DC.

———. 1983. "Changing Medicaid Formula Can Improve Distribution of Funds to States." Government Accountability Office, Washington, DC.

———. 2003. "Medicaid Formula: Differences in Funding Ability among States Often Are Widened." Government Accountability Office, Washington, DC.

———. 2004. "Federal Assistance: Temporary State Fiscal Relief." Government Accountability Office, Washington, DC.

———. 2005. "Community Development Block Grant Formula: Targeting Assistance to High-Need Communities Could Be Enhanced." Government Accountability Office, Washington, DC.

———. 2006. "Medicaid: Strategies to Help States Address Increased Expenditures during Economic Down Downturns." Government Accountability Office, Washington, DC.

———. 2009a. "Formula Grants: Funding for the Largest Federal Assistance Programs Is Based on Census-Related Data and Other Factors." Government Accountability Office, Washington, DC.

———. 2009b. "Recovery Act: States' and Localities' Current and Planned Uses of Funds While Facing Fiscal Stresses." Government Accountability Office, Washington, DC.

———. 2011a. "State and Local Governments: Knowledge of Past Recessions Can Inform Future Federal Fiscal Assistance." Government Accountability Office, Washington, DC.

———. 2011b. "Medicaid: Improving Responsiveness of Federal Assistance to States during Economic Downturns." Government Accountability Office, Washington, DC.

———. 2011c. "Medicaid: Prototype Formula Would Provide Automatic, Targeted Assistance to States during Economic Down Downturns." Government Accountability Office, Washington, DC.

———. 2012. "Grants to State and Local Governments: An Overview of Federal Funding Levels and Selected Challenges." Washington, DC: Government Accountability Office.

———. 2013. "Alternative Measures Could Be Used to Allocate Funding More Equitably." Government Accountability Office, Washington, DC.

Vroman, Wayne, and Stephen A. Woodbury. 2014. "Financing Unemployment Insurance." *National Tax Journal* 67 (1): 253–68.

Wallis, John J. 2000. "American Government Finance in the Long Run: 1790 to 1990." *Journal of Economic Perspectives* 14 (1): 61–82.

———. 2010. "Lessons from the Political Economy of the New Deal." *Oxford Review of Economic Policy* 26 (3): 442–62.

Wallis, John J., and Wallace E. Oates. 1998. "The Impact of the New Deal on American Federalism." In *The Defining Moment: The Great Depression and the American Economy in the Twentieth Century,* edited by Michael D. Bordo, Claudia Goldin, and Eugene N. White, 155–80. Chicago, IL: University of Chicago Press.

Wilson, Daniel J. 2012. "Fiscal Spending Jobs Multipliers: Evidence from the 2009 American Recovery and Reinvestment Act." *American Economic Journal: Economic Policy* 4 (3): 251–82.

Yilmaz, Yesim, and Robert Zahradnik. 2008. "Measuring the Fiscal Capacity of the District of Columbia: A Comparison of Revenue Raising Capacity and Expenditure Need—Fiscal Year 2005." Office of Revenue Analysis, DC Tax Revision Commission, Washington, DC.

Yilmaz, Yesim, Sonya Hoo, Matthew Nagowski, Kim Rueben, and Robert Tannenwald. 2007. "Fiscal Disparities across States, FY 2002." Urban-Brookings Tax Policy Center, Urban Institute and Brookings Institution, Washington, DC.

Extending the Reach of Research Universities

A Proposal for Productivity Growth in Lagging Communities

E. Jason Baron, *Florida State University*
Shawn Kantor, *Florida State University and the National Bureau of Economic Research*
Alexander Whalley, *University of Calgary and the National Bureau of Economic Research*

Abstract

In contrast to the observed convergence in incomes between high- and low-income areas throughout much of the 20th century, recent decades have seen an increased clustering of economic activity that has led to diverging fortunes of different places. This phenomenon has revived interest in place-based policies that seek to revitalize lagging communities. Perhaps due to the widely held perception that high-tech clusters around the United States owe much of their success to neighboring universities, establishing research universities in lagging communities is increasingly being considered as a potential place-based policy. Our policy proposal seeks to shed light on the potential role of research universities as anchor institutions for local economic development. After carefully analyzing data and reviewing the literature, we propose that instead of establishing a new research university, lagging communities should focus on transferring productivity-enhancing knowledge to their local employers from existing research universities near their regions. To help achieve this goal, we propose a regionally targeted expansion of the 1988 Manufacturing Extension Partnership program that would encompass a broader range of sectors.

Introduction

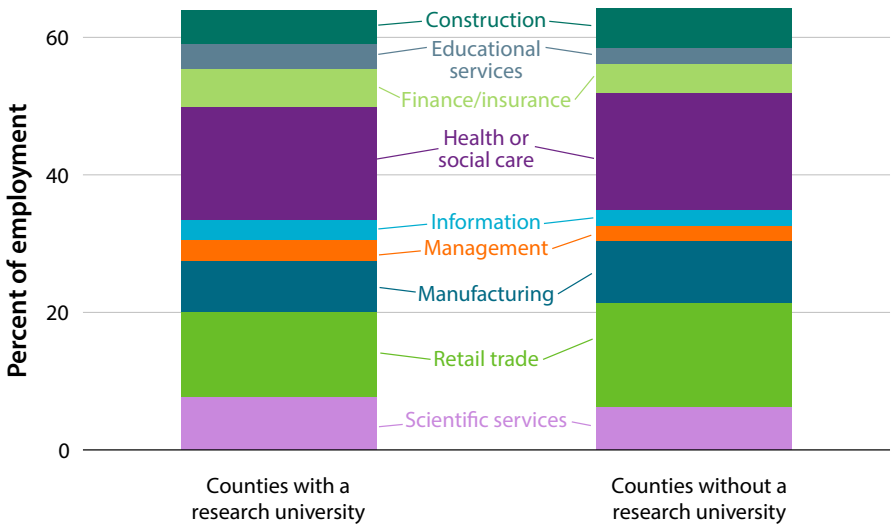
Throughout the past three decades the U.S. labor market has undergone remarkable structural changes. The replacement of manufacturing as the economy's engine of growth with the knowledge-based economy has

shifted the geographic distribution of income. Today, many cities with once-thriving manufacturing clusters suffer from significant income and population declines, while other cities, particularly those with innovation hubs, enjoy economic prosperity.

In contrast to the convergence in incomes between high- and low-income areas throughout much of the 20th century, recent decades have seen an increased clustering of economic activity that has led to diverging fortunes of different places. This increasing geographic clustering of economic activity has spurred interest in place-based policies that seek to revitalize lagging communities (Austin, Glaeser, and Summers, forthcoming). Perhaps due to the widely held perception that high-tech clusters such as California's Silicon Valley, Massachusetts's Route 128 corridor, and North Carolina's Research Triangle owe much of their success to neighboring universities, expanding higher education activity in struggling communities is

FIGURE 1.

Share of County Employment, by Selected Industries and Presence of Research University



Source: County Business Patterns (CBP; U.S. Census Bureau [Census] 2017).

Note: Data are for 2015. Figure shows the relationship between higher education activity and a county's employment industry mix. Specifically, it presents the share of employment in various industries separately for counties with a research university (defined as a doctoral university with "highest research activity," "higher research activity," or "moderate research activity" designation in the 2015 Carnegie Classification) and counties without one. Industry employment shares do not sum to 100 percent because only selected industries are shown.

THE HAMILTON PROJECT BROOKINGS

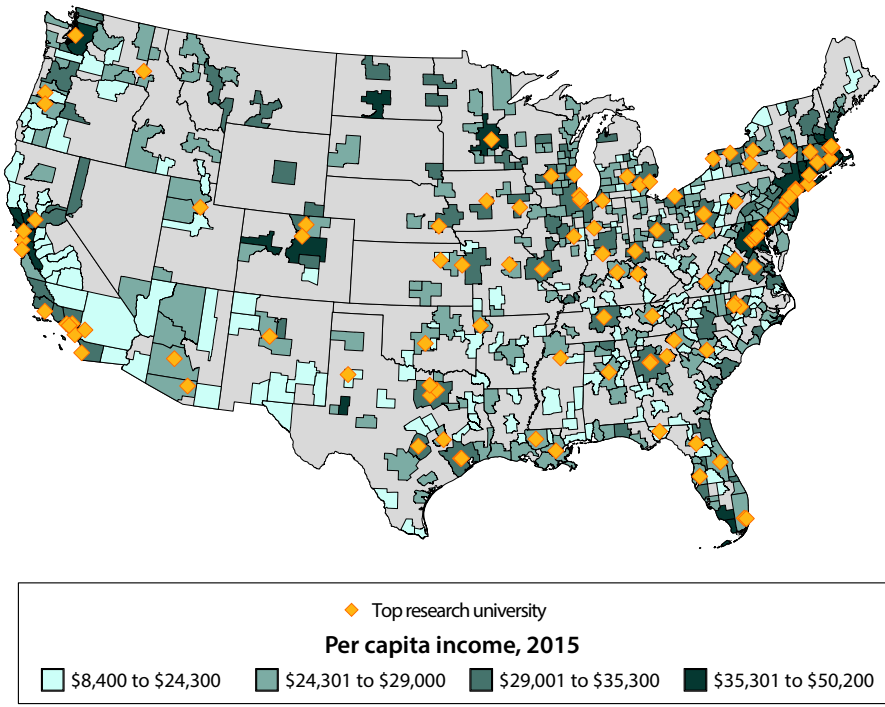
increasingly being considered as a potential place-based policy that could spur economic growth in these areas.

In spite of this perception, however, the data suggest that the establishment of a research university may not be sufficient to transform a local economy. For instance, figure 1 presents the industry composition of employment for counties with and without a research university. Industry employment shares in the two types of counties are remarkably similar, suggesting little relationship between the presence of a research university and a county's composition of employment.

Is it perhaps a matter of having a top research university? Figure 2 shows the per capita incomes of metropolitan areas with and without a top research university. The map demonstrates that having a top research university in the area is not sufficient for economic prosperity. Even though many

FIGURE 2.

Top Research Universities and Per Capita Income, by Metropolitan Area



Source: IPUMS NHGIS (Manson et al. 2017).

Note: The map shows the per capita income of metropolitan areas with and without a top research university (defined as a doctoral university with the "highest research activity" designation in the 2015 Carnegie Classification).

THE HAMILTON PROJECT BROOKINGS

metropolitan areas with top research universities enjoy high levels of per capita income, many other metropolitan areas such as Bloomington, IN (home to Indiana University), Lansing-East Lansing, MI (home to Michigan State University), and Eugene, OR (home to University of Oregon) do not.

While suggestive, one must be cautious when interpreting these simple correlations. Colleges and universities are not randomly assigned across the country, which makes it difficult to estimate their causal impact. For instance, colleges and universities may be strategically located and resourced in places where demand for them is high. Alternatively, policymakers might have increased higher education expenditures in economically depressed areas with the aim of revitalizing these communities.

Consequently, a closer examination of the causal relationship between university activity and local economic development is warranted; this examination constitutes the goal of ongoing and future research. By carefully analyzing data and summarizing the empirical literature, this policy proposal seeks to shed light on the potential role of higher education as a place-based policy for local economic development.

We document three main findings. First, universities' ability to affect their local economies solely through the supply of college graduates is limited. Second, the main channel by which universities can affect their local economies is through highly localized knowledge spillovers. Third, the literature provides little evidence that establishing a new university in the 21st century is sufficient to revitalize a lagging community and transform its economy. To help revive struggling regions, using existing nearby universities could be a far more cost-effective policy tool.

Based on our findings, we propose that instead of establishing new research universities, lagging communities should focus on transferring productivity-enhancing knowledge to their local employers from existing research universities near their regions. To help achieve this goal, we propose a regionally targeted expansion of the 1988 Manufacturing Extension Partnership (MEP) program that would encompass a broader range of sectors. We propose that MEP centers change their focus from demand-driven one-time solutions (i.e., consulting services) to long-lasting community partnerships whereby universities work with regional MEP centers to communicate and transfer cutting-edge knowledge to local firms.

The Challenge

HUMAN CAPITAL AND ECONOMIC GROWTH

In order to examine whether expanding higher education in lagging communities can help spur economic development in these areas, one must first understand the reasons for the observed spatial divergence in the economic success of many areas. While these reasons remain a subject of debate, it is generally accepted that the increased sorting of high-skilled workers into select areas has been a key contributor to spatial income inequality (Austin, Glaeser, and Summers, forthcoming; Berry and Glaeser 2005; Glaeser 2012; Glaeser and Saiz 2004; Moretti 2012).

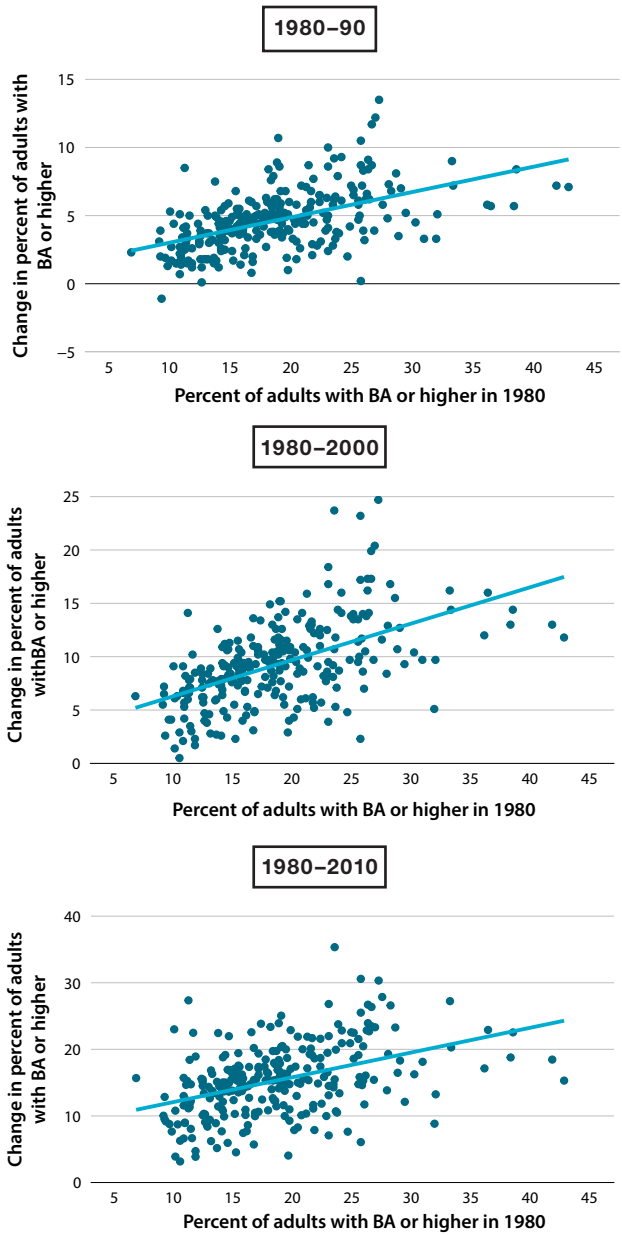
As illustrated in figure 3, counties with a larger share of college-educated workers in 1980 have continued to become more educated over time, while counties with a low initial share of college-educated workers have found it difficult to catch up and attract new high-skilled workers to their areas.[1] Economists often attribute part of the increased spatial sorting of high-skilled workers to the role of so-called agglomeration forces in the innovation sector. High-tech companies, for instance, tend to locate in places with other high-tech companies and a high-skilled population. Labor markets with an abundance of job options, the presence of an entrepreneurial ecosystem with specialized service providers such as venture capitalists and start-up lawyers, and highly localized knowledge spillovers all incentivize new high-skilled workers and start-ups in the innovation industry to locate in places with a preexisting innovation hub (Moretti 2012). Knowledge spillovers are particularly important: firms in close proximity to innovators and knowledge creators can benefit from their neighbors through a variety of both formal (e.g., access to presentations at universities) and informal (e.g., incidental conversations between employees of different firms) channels.

As Glaeser points out, successful cities have been able to "create a virtuous cycle in which employers are attracted by the large pool of potential employees and workers are drawn by the abundance of potential employers" (Glaeser 2012, 25). This means that places with an initial stock of innovative activity and highly educated workers will continue to attract other workers with similar levels of education, while places with low initial levels of human capital might find it difficult to attract new start-ups and high-skilled workers.

The increased spatial concentration of high-skilled workers is key for understanding the lack of convergence in economic success across places. Tech companies are increasingly looking to locate in areas with a highly educated population. For instance, according to the *Wall Street Journal,*

FIGURE 3.

Levels and Growth of College Attainment, by County



Source: American Community Survey (ACS; Census 1980–2016).

Note: Figures show the increased spatial concentration of highly educated workers in recent decades. Counties with a larger share of college-educated workers in 1980 have continued to become more educated over time, while counties with a low initial share of college-educated workers have disproportionately not been able to attract new highly educated workers. The sample includes only counties with populations greater than 250,000. Line represents linear fit. BA refers to bachelor's degree.

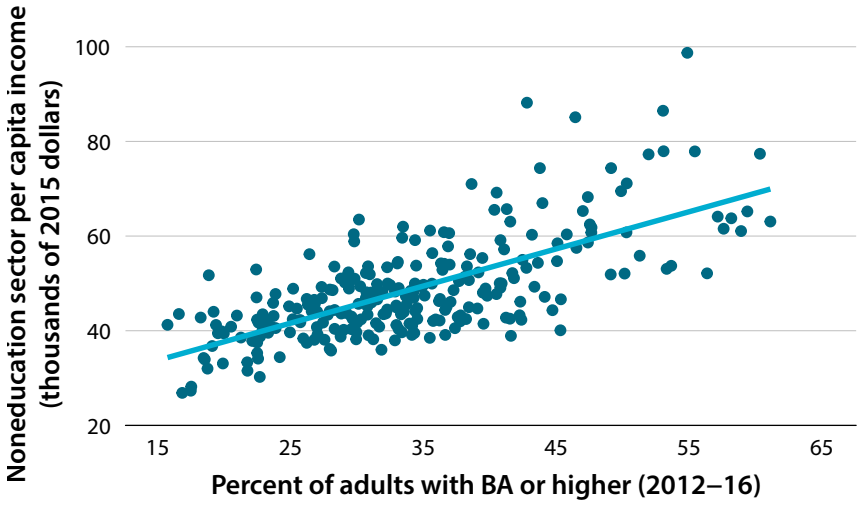
THE HAMILTON PROJECT
BROOKINGS

Amazon recently visited more than half of the cities on its list of 20 finalists to host its new headquarters. People familiar with the visits have highlighted Amazon's focus on each city's talent and level of education when making its decision. The *Journal* reports that Amazon's economic development team is particularly concerned with how much talent the company can attract to the area, and examines data such as the city's average ACT and SAT scores. Therefore, instead of trying to lure Amazon with fancy hotels and private planes, cities "are attempting to be creative by bringing in university officials, younger people and professionals who can speak to talent and growth in the area" (Stevens, Mahtani, and Raice 2018).

It is now widely understood that, in a knowledge-based economy, the amount of human capital (or level of education) within a region is the best predictor of its economic prosperity (Gennaioli et al. 2013, 2014; Henderson 2007). Figure 4 shows a clear positive relationship between a county's average share of adults with a bachelor's degree or higher (from 2012 to 2016) and its noneducation labor income in 2015. Furthermore, areas with high human capital levels have in previous decades experienced increases

FIGURE 4.

Noneducation Sector Income, by Share with Bachelor's Degree



Source: ACS and CBP (Census 2012–16; 2017).

Note: Noneducation sector income data are for 2015. Figure shows the relationship between human capital and noneducation labor income. Specifically, it presents a scatter plot and a linear fit of the relationship between a county's share of adults with a bachelor's degree or higher and its associated noneducation labor income. The figure provides suggestive evidence of a positive relationship between a county's human capital stock and its economic success. Line represents linear fit. BA refers to bachelor's degree.

THE HAMILTON PROJECT
BROOKINGS

in population and wages, while areas with less human capital have suffered significant declines (Glaeser and Saiz 2004).

The observed relationship between economic prosperity and human capital is in fact causal. Numerous studies have documented a causal private return to education (Angrist and Krueger 1991; Ashenfelter and Krueger 1994; Oreopoulos and Petronijevic 2013).[2] By extension, when the stock of highly educated workers in a region increases, one might expect aggregate income in the region to increase as well. Furthermore, the social return to education has been found to be even larger than the sum of its private returns. Moretti (2004) estimates college education spillovers and concludes that an increase in the supply of college graduates in an area also raises the wages of high school dropouts, high school graduates, and other college graduates through human capital externalities. Moreover, Glaeser (2005) shows that larger amounts of human capital have allowed cities such as Boston to achieve long-run economic growth by reinventing themselves in periods of economic crisis and decline. An increase in human capital within a region has also been found to induce subsequent employment growth. Shapiro (2006) estimates that a 10 percent increase in the share of residents who are college-educated leads to an increase in employment growth of roughly 1.7 percent. Finally, increases in education have been shown to lead to other social benefits such as reduced crime. Thus, locations with a more-educated population may enjoy higher wages, lower crime rates and unemployment, and better amenities, which together further attract other highly educated workers (Lochner and Moretti 2004; Shapiro 2006). All of these points indicate that, in an innovation-driven economy, the stock of human capital in a region is key to its success, and that any successful place-based policy must lead to an increase in the stock of local human capital, whether directly or indirectly.

HIGHER EDUCATION AND HUMAN CAPITAL

The positive relationship between human capital and economic success, as well as the perception that high-tech clusters such as California's Silicon Valley, Massachusetts's Route 128 corridor, and North Carolina's Research Triangle owe much of their success to neighboring universities, has spurred interest in higher education among local governments. Can the expansion of higher education in struggling communities increase the stock of human capital in their regions and therefore generate economic prosperity? In this section, we examine the relevant empirical literature and conclude that universities have only a very limited ability to directly impact their regions' supplies of human capital. However, by increasing demand for skilled

labor through localized knowledge spillovers, colleges and universities can contribute to the economic success of their local economies.

SUMMARY OF FINDINGS

As the U.S. economy continues to shift away from the production of goods to the production of knowledge and ideas, the amount of human capital in a region will continue to be key to its success. Therefore, a crucial consideration for place-based policies that seek to revitalize lagging communities is whether they lead to an increase in the area's stock of human capital. Our research summary provides evidence that, through knowledge spillovers arising from increases in university research spending, a higher education institution can bolster its region's economy by increasing the demand for local human capital. However, universities are not panaceas and are most beneficial as complements to a preexisting industrial ecosystem.

Three main findings are most important to describe. First, the ability of universities to affect their local economies solely through the supply of college graduates is limited. College-educated workers are highly mobile and are more likely to migrate than their less-educated peers.

Second, the main channel by which universities can affect their local economies is through highly localized knowledge spillovers that make existing nearby firms more productive and attract new firms to the area. These knowledge spillovers, however, are not broad-based. Spillovers from universities to the local economy are strongest for industries that rely on innovation and technical training more heavily, and that share a labor market with universities. Therefore, areas with preexisting clusters and a large concentration in high-tech employment are more likely to enjoy knowledge spillovers than are areas with higher employment concentrations in low-skilled industries.

Third, the literature provides little evidence that establishing a new university in the 21st century is sufficient to revitalize a lagging community and transform its economy. Using existing nearby universities might be far more cost-effective in many cases to revive struggling regions.

Supply of Human Capital

In theory, universities can influence the stock of human capital in a region by increasing both the supply of and the demand for college graduates (Abel and Deitz 2012). At first glance, it may seem obvious that colleges and universities directly increase the supply of college graduates in their regions. After all, one of the key roles of a university is that of an educational

institution. However, a closer look at the literature reveals that the impact of universities on the supply of college graduates in a region could be small for certain areas. For instance, if a region's local labor market is not robust enough to create job opportunities for newly minted graduates, alumni might not be incentivized to remain in the area.

College-educated workers are highly mobile and more likely than their less-educated peers to migrate in search of better jobs (Bound et al. 2004; Faggian and McCann 2009; Moretti and Wilson 2014; Wozniak 2010). Therefore, areas with strong local labor markets may both retain their graduates and attract graduates from other locations, while regions with less-robust labor markets may struggle to retain their graduates.

Figure 5 shows the importance of migration in the market for high-skilled individuals. In some counties, such as Santa Clara County (home of Stanford University), significantly more high-skilled individuals (those who hold a bachelor's degree or higher) enter the local labor market than the number of high-skilled individuals that the county's universities produce. On the other hand, areas such as Dane County (home of the University of Wisconsin–Madison) produce far more high-skilled workers than they receive. For instance, from 1990 to 2000 the University of Wisconsin–Madison granted roughly 83,000 higher education degrees. However, over this same period, Dane County experienced a net gain of only 32,000 high-skilled individuals. In fact, during this same period only 37 percent of counties in our sample—comprising urban counties with at least one research university—experienced higher influx of high-skilled workers than the number of higher-education degrees they awarded.

Indeed, research by Abel and Deitz (2012) shows that there is no statistically significant relationship between an area's production and its stock of human capital, which further confirms the important role of migration in the market for high-skilled workers. Thus, universities acting solely as educational institutions could fail to induce a significant increase in the stock of human capital in their regions. College graduates migrate to the best opportunities.[3]

Demand for Human Capital

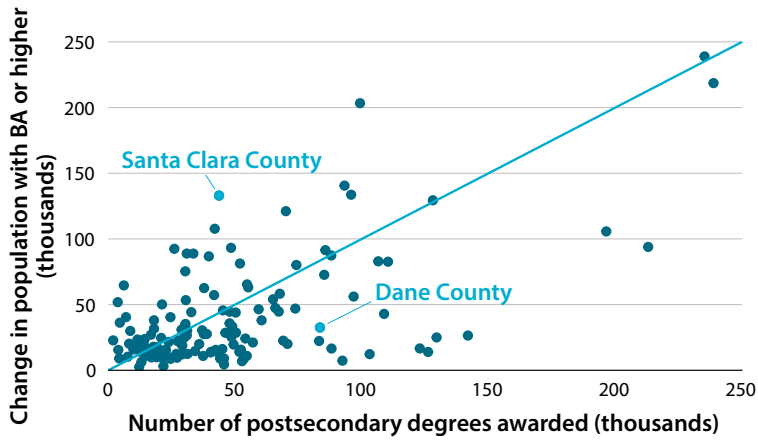
While it may not be possible to substantially increase local human capital directly through postsecondary instruction, colleges and universities can increase the stock of human capital in their regions through alternative channels. Particularly, increases in research activities at universities can raise the stock of local human capital by increasing the demand for human capital.

If innovative ideas and technology resulting from university research spending spill over to the private sector, then the productivity of nearby firms may increase, thereby improving the local economy (Kantor and Whalley 2014). Furthermore, if these knowledge spillovers are mostly present for firms relatively close to the university, new innovative firms that wish to gain access to these ideas could be drawn to the area (Hausman 2017), increasing the demand for local human capital.

The argument that university research can increase the demand for human capital, however, relies on the assumption that knowledge spillovers are highly localized, and it is not immediately clear that this is the case. After all, the basic research in which university faculty and staff are engaged is often disseminated broadly. While research is produced locally, it is available for anyone in the world to adopt when it is published online in scholarly journals. Furthermore, declines in communication and transportation costs in recent decades have lowered the cost of information transfer, which should reduce the incentive for a firm to locate near a university solely for the purpose of gaining access to its research (Glaeser and Ponzetto 2010).

FIGURE 5.

Local Labor Market Flows of College-Educated Adults by Number of Postsecondary Degrees Awarded, 1990–2000



Source: Integrated Postsecondary Education Data System (National Center for Education Statistics 1980–2000); ACS (Census 1980–2016).

Note: Figure shows the relationship between a county's production of higher education degrees and its flow of high-skilled individuals. A high-skilled individual is defined as someone who holds a bachelor's degree or higher. The county's number of higher education degrees awarded between 1990 and 2000 was interpolated by multiplying the total number of bachelor's, master's, and doctoral degrees awarded in 1999–2000 by 10. Line represents 45 degree angle. BA refers to bachelor's degree.

THE HAMILTON PROJECT BROOKINGS

Yet the observed geographic concentration of economic activity seems to indicate that proximity to knowledge does matter. In fact, as described previously, economists often highlight the role that knowledge spillovers play in contributing to the increasing returns of geographic density (Henderson 2007). Proximity to knowledge seems to be particularly important in the innovation industry. As Moretti explains, "In the world of innovation, productivity and creativity can outweigh labor and real estate costs." Thus, agglomeration forces, including knowledge spillovers, "ultimately determine the location of innovative workers and companies and therefore shape the future of entire communities" (Moretti 2012, 124).

That geographic proximity to knowledge is crucial in the innovation industry could be an indication of the importance of face-to-face contact and the human factor in the transmission of tacit, informal knowledge (Glaeser 2012; Rocco 1998).[4] Adams (2002) finds that knowledge spillovers from universities are much more localized than industrial spillovers. According to Adams, "Firms go to nearby universities for advice, research, and students. In contrast, industrial interactions take place over a greater distance and occur selectively" (254). Highlighting the aforementioned paradox that universities generate public knowledge that seems to benefit local firms disproportionately, Adams explains that it is precisely the nature of open science that incentivizes firms to locate near universities. Firms need to "go to local universities to obtain information that is reasonably current and not proprietary. This increases the localization of academic spillovers" (Adams 2002, 274). Similarly, Yusuf (2008) explains that universities often act as hubs that connect the creators and users of path-breaking knowledge that can set the stage for future economic prosperity.

There is a large empirical literature confirming the existence of highly localized spillovers of university research on outcomes such as patenting (Aghion et al. 2009; Andersson, Quigley, and Wilhelmsson 2009; Jaffe 1989; Jaffe, Trajtenberg, and Henderson 1993), technological innovation (Acs, Audretsch, and Feldman 1992; Anselin, Varga, and Acs 1997; Audretsch and Feldman 1996; Jaffe 1989), business start-ups (Abramovsky, Harrison, and Simpson 2007; Audretsch, Lehmann, and Warning 2005; Bania, Eberts, and Fogarty 1993; Woodward, Figueiredo, and Guimaraes 2006), and employment growth (Hausman 2017). This literature has shown the importance of academic research to the development of specific local industries, such as pharmaceuticals or electrical and electronic equipment. Furthermore, it has shown that the productivity gains stemming from knowledge spillovers of academic research are indeed highly localized and that they translate into higher local human capital levels (Abel and Deitz 2012).

Less studied, however, has been the extent to which these localized university knowledge spillovers actually translate into broad-based regional economic development. Kantor and Whalley (2014) address this question directly by examining the impact of increases in university expenditures on local noneducation labor income. As mentioned before, the main empirical challenge in estimating the impact that universities have on their local economies is that university activity is not randomly assigned: universities might be more likely to locate and expand in places that are (for unrelated reasons) on a stronger or weaker economic growth trajectory.

To deal with this econometric challenge, Kantor and Whalley (2014) exploit a natural experiment. Specifically, the authors consider significant and sudden changes, or shocks, to universities' endowment levels that are caused by fluctuations in stock market values. Universities typically spend a constant fraction of the market value of their endowments every year. Therefore, sudden shocks to the stock market determine how much a university will be able to spend from its endowment in any given year. Given that shocks to stock market returns occur at the national or international level and that prior levels of university endowments are not affected by future economic activity in the university's county, we can use these shocks to examine random variation in university expenditures on research and other activities.

Taking this approach, Kantor and Whalley (2014) find that increases in university research activity result in productivity spillovers to other industries. The estimates indicate that a $1.00 increase in university spending generates an $0.89 increase in noneducation labor income in the county in which the university is located. The results further show that this effect persists for at least five years, which suggests that the impact of research expenditures goes beyond a short-run boost to local labor demand.

While the average spillover effect is rather modest, the authors further investigate whether the magnitude of the effect varies with the intensity of university research or the strength of economic links between universities and local industries. Knowledge spillovers are found to be significantly larger for universities that have a greater focus on research, for industries that share a labor market with universities, and for industries that use knowledge more intensively.

These findings are in line with previous research showing that knowledge spillovers tend to be concentrated in particular industries such as pharmaceuticals or electronics, and are not broad-based (Jaffe 1989). In the models estimating the spillover effect over five years, the estimates indicate that firms in industries that are technologically closer to university

research, in the sense that they share a labor market with higher education and are more likely to cite university patents, enjoy a spillover that is double that of the typical firm.[5]

Using an alternative econometric strategy, Hausman (2017) arrives at a similar conclusion. Specifically, the author investigates whether an increase in university innovation leads to local economic growth. Hausman finds that the passage of the Bayh-Dole Act in 1980, which incentivized universities to commercialize new innovations, resulted in wage and employment growth for communities near the universities, and specifically for those industries that were more closely related to the technological strengths of the nearby university.

Hausman (2017) finds that large numbers of small unit firms entered the university area, possibly as a result of spin-offs from new university ideas. However, she finds that most of the employment gains came from new establishments of existing firms in university-related industries.

Hausman's findings suggest that highly localized university knowledge spillovers may not only make existing firms in the area more productive, but may also attract new firms wanting to gain access to these spillovers. Altogether, research has shown that universities can affect the stock of local human capital and spur economic development in their communities as long as they focus on academic research in areas that are relevant to local industry.

ALTERNATIVE CHANNELS

In addition to its effect on local economic development through the human capital channel, a university can contribute to its local economy directly through increased employment and consumption. As with any large employer, universities create a substantial number of jobs and bring consumer spending into the local economy.

Higher education institutions can bring new dollars into their local economies through two channels: export-based production (bringing in students and research funding from outside its local area) and import substitution (bringing in students from its own metropolitan area who would have gone to school outside the area). Income brought into the local labor market by universities will in turn be re-spent by the local industries on local suppliers or retailers, resulting in a fiscal multiplier effect of the initial infusion of money (Bartik and Erickcek 2008; Blackwell, Cobb, and Weinberg 2002; Siegfried, Sanderson, and McHenry 2007).

ESTABLISHING A UNIVERSITY VS. EXPANDING RESEARCH ACTIVITY

Most of the research to date has focused on the effect of expanding higher education activity, through either research expenditures or increases in degree production. This research is less informative regarding the effects of opening a new university. Furthermore, the literature has primarily focused on metropolitan areas and urban counties, and not on rural areas. The effects of higher education expansions can be quite different in these latter areas, particularly since university knowledge spillovers are larger when research is focused in areas relevant to industry fundamentals (Kantor and Whalley 2014).

The example of the University of California, Merced (UC Merced) is informative. UC Merced is the first American research university built in the 21st century (2005 marked the year of its official grand opening), and it provides an excellent opportunity to test whether establishing a new university in a relatively small and less-educated local economy can bring economic prosperity to the region.

A recent study by Lee (forthcoming) finds that the university has generated only a modest impact on the local economy by increasing local employment. Job creation was large for the service sector, but was not significant for either the manufacturing or high-skilled sectors, leading the author to conclude that the establishment of a new university in the 21st century is likely insufficient to yield robust agglomeration economies. The opening of UC Merced did induce a local labor demand shock, which resulted in the fiscal multiplier effects described earlier. However, at least in the short run the university has not generated the knowledge spillovers required to induce a meaningful increase in its region's stock of human capital.[6]

Lee (2018) explains that his findings are consistent with the findings of Kantor and Whalley (2014): although Kantor and Whalley find evidence of localized spillovers from university activity, the effects are larger in those industries that use knowledge more intensively. Given that the initial industrial composition in Merced was not concentrated in high-tech industries, workers in neighboring firms might not have benefited as much from the opening of a research university.

Varga (2000) arrives at a similar conclusion, finding that proximity is not sufficient for technology transfer to occur. Johns Hopkins University and Cornell University are noted as two examples of important research universities that have nonetheless not led to substantial clusters of high-tech economic activity. Varga finds that concentration in high-tech employment

is the most important factor promoting localized knowledge spillovers, and that a critical mass of agglomeration is needed if one is to expect substantial university knowledge spillovers. Similarly, Aghion et al. (2009) show that exogenous increases in research university activity have a greater impact on economic growth for states that are closer to the technological frontier because potential beneficiaries of such education migrate to frontier states. As the authors put it, "Massachusetts, California, or New Jersey may benefit more from an investment in Mississippi's research universities than Mississippi does" (39). All of these findings suggest that the effect of establishing a research university in areas without a preexisting innovation cluster and without the "right" industrial composition may be small.

The results obtained by Lee (2018) and Bonander et al. (2016) differ from those of Liu (2015), who documents long-lasting spillovers on manufacturing productivity following the establishment of land-grant colleges in the late 19th century.[7] There are three plausible explanations for these differing conclusions. First, in contrast to the market for higher education in the late 19th century, today this market is extremely saturated. There are hundreds of universities in the United States competing for new students every year and accreditation is difficult to obtain. Second, in contrast to the late 19th century, geographic mobility is much higher today (Ferrie 1997). Third, as previously mentioned, agglomeration forces play a far more important role in the modern innovation industry than they do in manufacturing. Attracting high-skilled workers and high-tech start-ups to Merced, for example, might be a difficult task in today's economy due to the advantages that areas with preexisting clusters already provide.

Overall, the current literature suggests that establishing a new university in the 21st century is not sufficient to generate a self-sustaining cluster. Nevertheless, once a cluster has started, a university can play a key role in fostering it by becoming part of a larger ecosystem and spilling knowledge to nearby firms.[8]

The Proposal

Based on these three main findings, we propose that instead of establishing new research universities, lagging communities should focus on transferring productivity-enhancing knowledge to their local employers from existing research universities located near their regions. Such knowledge could increase the productivity of firms in these communities and eventually lead to an increase in the demand for local human capital, a key determinant of economic prosperity.

To help lagging communities transfer knowledge from universities to their local firms, we propose a regionally focused expansion of the MEP program (described in box 1). Targeting left-behind regions where joblessness has been particularly pronounced—and employment responses to increases in labor demand may be more elastic (Austin, Glaeser, and Summers, forthcoming)—could raise the effectiveness of our proposed MEP expansion. In order to receive the targeted employment area designation, a location must experience an employment-to-population ratio in the bottom 20 percent of U.S. counties, averaged over the previous five years.

The U.S. Department of Commerce would solicit applications from postsecondary institutions and from state or local governments applying either on behalf of their postsecondary institutions or for the purpose of establishing MEP branch offices in targeted areas. These applications would be competitively evaluated on the basis of the following criteria: the potential to support economic activity in depressed areas, the degree of coordination planned between universities and MEP regional centers, and (relatedly) the extent to which the applicants plan to feature universities and university basic research at the center of their activities.

On the research side of the partnership, the Department of Commerce grants would support work conducted at research universities that has the potential to enhance economic activity in targeted areas. The universities themselves would not need to be located in targeted areas.

On the business side of the partnership, the Department of Commerce grants would be available to fund a combination of discounted MEP services for businesses operating in those areas and establishment of new MEP branch offices in these communities. These offices would help local businesses to benefit from the work being done on (potentially distant) university campuses.

We advocate a change of focus for the modified MEP, shifting toward a role as knowledge diffusers of breakthrough university research. While applied and demand-driven services can benefit local firms in the short run, the transfer of university tacit knowledge related to more basic research is likely to yield longer-term and more-significant increases in firm productivity. This redirected focus requires that research universities, whose mission includes the creation and dissemination of knowledge, reposition themselves at the center of MEP partnerships.

Even though we can find examples of MEP centers where universities already play a major role in knowledge transfer, more often centers simply ask faculty at nearby universities for demand-driven one-time solutions.

BOX 1.

The Manufacturing Extension Partnership

Initiatives focusing on outreach and knowledge diffusion from universities to the local private sector have been in place since the early 20th century and provide a model of what could be done for the digital economy of the 21st century. Seaman Knapp, the founder of the agricultural extension movement in the United States, captured the importance of outreach and demonstration itself on successful knowledge diffusion: "What a man hears, he may doubt; what he sees, he may possibly doubt; but what he does himself, he cannot doubt" (Knapp quoted in Sanders 2010).

An example of a current outreach initiative is manufacturing extension, which seeks to improve the productivity of small- and medium-size manufacturing firms. While there have been many such extension initiatives, the MEP, created in 1988, has proven particularly successful at providing information on modern production techniques to local manufacturing firms. The MEP program focuses on the diffusion and adoption of new knowledge and technology among small- and medium-size manufacturing firms.

The MEP is a national network administered by the National Institute of Standards and Technology of the U.S. Department of Commerce. The network includes MEP centers in all 50 states and Puerto Rico, with these centers often having multiple affiliate offices within a state. Each center is a public–private partnership structured either as a separate nonprofit corporation or as part of existing organizations such as state agencies, economic development groups, or universities. Centers are funded by a combination of contributions from federal, state, and local governments, as well as industry contributions and fees generated from the services provided to client firms.

Each MEP center works directly with local manufacturing firms to provide face-to-face, individually-tailored technical and business assistance. Services range from expert advice on process improvements and applications of information technology, to employee training and marketing. Additionally, centers inform local firms of recent innovations and breakthroughs generated

in public entities such as universities or other government laboratories, and help client firms adopt these new technologies.

While some services are provided by in-house staff, centers often act as hubs for manufacturers, connecting them with private consultants, trade associations, faculty and scientists at local universities and other research laboratories, government agencies, and many other entities that seek to help clients become more productive in an increasingly competitive international marketplace. Client services are often provided for subsidized fees.

(Box 2 describes notable examples of existing public–private partnerships centered around universities.) Long-lasting center–university partnerships where universities work with centers to share frontier knowledge with local firms are likely to yield significantly higher returns. In order to encourage these relationships, we propose that the expansion includes grants to fund doctoral or postdoctoral students who would work through MEP regional centers to translate the basic research undertaken at the university and find practical applications for such research in firms in struggling communities.

Unlike the current MEP, our proposal would encompass a broad array of academic fields and industrial sectors. Any academic work that is useful for private economic activity would be within the scope of the proposal. For example, a business school with faculty conducting research on management practices would be able to share its work with firms, as would engineering and physics faculty researching new materials science.

However, university knowledge spillovers tend to be concentrated in industries that rely more heavily on innovation and technical training. A common feature of firms in these industries is their reliance on the collection and processing of new data. Therefore, we propose that data science methods—a new general purpose technology that is emerging due to dramatic cost reductions in the collection, storage, and processing of data—be a natural focus of our proposal. In particular, firms in lagging areas can apply data science knowledge to smart manufacturing. Universities have substantial data expertise across a wide range of disciplines and are well poised to lead the charge in transferring this knowledge to local firms through regional MEP centers.

Universities require large fixed costs and establishing a leading research university in a crowded higher education market can take many decades.

BOX 2.

University-Centered Public–Private Partnerships

A notable example is the collaboration between the Georgia Institute of Technology and the Georgia Manufacturing Extension Partnership. Examples of other successful university-centered partnerships outside the scope of MEP regional centers include the University of Southern California's role in the Advanced Manufacturing Partnership for Southern California (AMP SoCal).

AMP SoCal deserves particular attention, and we view its structure as a model for our proposal. AMP SoCal is a collaboration of government, academia, and industry that aims to strengthen the industrial ecosystem for aerospace and defense (A&D) manufacturers in Southern California. Importantly for our proposal, the University of Southern California leads the AMP SoCal effort through its Center for Economic Development.

In contrast to a relationship that is focused solely on demand-driven one-time solutions, AMP SoCal seeks to engender a long-lasting collaborative partnership with the goal of transforming Southern California's industrial ecosystem. For instance, in addition to red carpet services that deliver business assistance ranging from training resources to consulting services, AMP SoCal assembles innovation forums and workshops for the A&D industry in Southern California. These workshops seek to increase interactions between universities involved in AMP SoCal and innovators at small- and medium-size manufacturing firms. At the workshops, university leaders inform A&D firms of federal R&D funding opportunities as well as the newest available productivity-enhancing technologies.

Additionally, as mentioned above, the main benefit to a local economy from a research university arises from knowledge spillovers of frontier research conducted at the university. Our proposal is based on the idea that a focus on university knowledge diffusion, as opposed to the creation of a new higher education institution, would be a far more cost-effective way of transferring knowledge to firms in lagging communities.

The transfer of tacit knowledge from universities to local industries is an important channel through which policymakers can pursue local economic

development. While policymakers and scholars have focused on more-formal channels of technology transfer such as patenting, licensing, and the commercialization of university inventions, the role of knowledge-related collaboration between academic researchers and nonacademic entities has been largely ignored (Perkmann et al. 2013).

This collaboration can be particularly valuable given that universities have a comparative advantage in basic research, with firms' comparative advantage in applied research. Moreover, effective collaboration in formal technology transfer can be difficult given that the primary motivation for academic scientists to work with industry is often to further their own research agendas rather than to commercialize their knowledge (D'Este and Perkmann 2011). For instance, engagement with industry allows faculty members to gain access to new research ideas, data, and funding (Boardman and Ponomariov 2009).

From the firm perspective, informal technology transfer is often far more valuable to their R&D success than other forms of codified knowledge. Analyzing data from the Carnegie Mellon Survey on industrial R&D, Cohen, Nelson, and Walsh (2002) find that the key channels through which useful information moves from universities to industrial R&D facilities include published papers and reports, public conferences, meetings, consulting services, and informal information exchange. The absence of patents and other intellectual property from this list could be partially due to the fact that informal technology transfer is largely insulated from these collaboration barriers, whereas formal technology transfer channels may lead to conflicts over intellectual property between universities and private firms.

In the aftermath of the Bayh-Dole Act, many universities established a technology transfer office that supports the commercialization of university inventions and facilitates the licensing of intellectual property to private firms (Siegel, Waldman, and Link 2003). Although the presence of formal technology transfer structures is positively related to commercialization, these mechanisms have been less adept at fostering informal technology transfer (Perkmann et al. 2013). Therefore, whereas previous policies have sought to assign direct entrepreneurial responsibilities to universities, we view the transfer of tacit knowledge to local firms as a more promising local economic development tool and one that is more consistent with the comparative advantage of universities.

Knowledge diffusion from universities to firms in lagging communities that do not have a research university is not easy. This proposal has emphasized the highly localized nature of university knowledge spillovers

that often depend on face-to-face interaction and the human factor for the transmission of tacit knowledge. Fortunately, these challenges have long been recognized by policymakers.

EVIDENCE ON MANUFACTURING EXTENSION SERVICES

Recent research shows expanding manufacturing extension in this way could be a promising place-based policy. Bartik (2018) examines the success of various public policies aimed at revitalizing manufacturing-intensive communities that have been left behind by technological advancement and globalization. The author concludes that while wage subsidies, business tax cuts, and other business tax incentives are relatively expensive per job created, high-quality customized services such as manufacturing extension initiatives—aimed at increasing the productivity of existing firms—have proven more successful.

Bartik (2018) provides compelling evidence from the literature that manufacturing extension services have been successful at increasing the productivity of client firms. For instance, Jarmin (1999) estimates the impact of manufacturing extension on firm productivity. Matching data from eight manufacturing extension centers in two states to plant-level data from the U.S. Census Bureau's Longitudinal Research Database, the author finds that manufacturing extension clients enjoyed between 3.4 percent and 16 percent higher growth in labor productivity between 1987 and 1992 than similar non-client firms.

According to Bartik (2018), these estimates suggest that manufacturing extension services would be at least five times more cost-effective than other policies such as business tax incentives in inducing firms to create, expand, and retain jobs in a location. While there is no silver bullet for local economic development, the success of previous manufacturing extension initiatives, as well as the documented importance of university tacit knowledge to firm productivity, make our proposal an appealing and cost-effective way of helping revitalize lagging communities.

EVALUATING THE PROPOSAL

We believe that accountability and continuous program monitoring are keys to the success of our proposal. Therefore, we propose that a rigorous program evaluation be built into the MEP expansion. Successful program evaluation must address two main challenges.

First, it is necessary to accurately and empirically measure outcomes of interest at the firm level. We propose using firm-level wages and total

employment as the outcomes of interest. Matching worker–firm data such as from the Longitudinal Employer–Household Dynamics (LEHD) program to data collected by regional MEP centers on client firms can be used to track the impacts of the program. Restricted-use LEHD data includes job-level quarterly earnings history data, person-level demographic data, establishment-level firm characteristics, and establishment-level Quarterly Workforce Indicators such as employment, job creation, earnings, and other measures of employment flows. Tracking these variables would be valuable for understanding the full range of impacts of the proposal.

Second, it is necessary to compare the productivity of participant firms to the productivity of comparable nonparticipants. Random assignment of targeted manufacturing extension services would yield the most reliable results. We propose that the expansion of extension services be first rolled out on a small scale and in a conditionally randomly assigned manner. Conditional on being in one of the lagging communities that this proposal seeks to help revitalize, firms treated by the program expansion should be randomly selected at first. While this means that some firms in need of help would not initially receive extension services, random assignment would ensure that our program evaluation captures the causal effect of the expansion by comparing treated firms to carefully selected control firms. Furthermore, this initial evaluation would give policymakers information about whether the program is achieving its intended goals before dramatically expanding it.

Questions and Concerns

1. Will increased productivity of firms in lagging communities have benefits for residents?

Expanding the role of university extension is intended to raise the productivity of firms in lagging communities. In turn, this increased productivity will benefit local residents (Hornbeck and Moretti 2018). Hornbeck and Moretti conclude that increases in an area's productivity gains in manufacturing lead to substantial local increases in employment and average earnings. Furthermore, the authors document a decrease in local inequality: increases in productivity raise the earnings of local less-skilled workers more than the earnings of relatively higher-skilled local workers. The differential effect on earnings is partially due to the lower geographic mobility of less-skilled workers. Based on these findings, we expect that our extension proposal might disproportionately benefit less-skilled workers in lagging communities who are less geographically mobile.

2. What effects would your proposal have at the national level?

The discussion in this chapter has focused on the effects of an expansion in higher education on a regional labor market. Efficiency of these policies from the point of view of the aggregate economy is far more complicated and is outside the scope of this chapter. However, one must consider whether an expansion in manufacturing extension services to less-productive areas could be detrimental to the nation as a whole. For instance, since high-skilled people achieve their greatest productivity when working near similarly productive and skilled people, even if a place-based extension policy were successful at bringing a cluster of firms to a lagging community, aggregate productivity could be lower as a result. Even in that scenario, the policy could be desirable if policymakers have a sufficiently strong preference for supporting economic activity in distressed places.

3. The policy proposal focuses on research universities, but is there a role for other segments of the higher education system?

Left-behind communities often experience skills gaps in industries such as manufacturing. Expanding access to vocational training and apprenticeship programs to workers from disadvantaged backgrounds through community colleges could thus prove beneficial for local economic development, considering that individuals in this group have lower rates of geographic mobility.

For instance, sector-based vocational training programs have been found to be successful at raising the employment rates and wages of participants (McConnell, Perez-Johnson, and Berk 2014). These programs focus on a particular industry (e.g., manufacturing) and bring together training providers (e.g., community colleges) and employers with the goal of developing training programs tailored to specific job opportunities. The program uses data collected from employers in order to identify the skills that employers need.

Evaluations of sector-based training programs have yielded positive results. In an in-depth study of the impact of three sector-based training programs, Maguire et al. (2010) estimate that participants earned roughly 18 percent more over the two years after they participated in the program than similar workers who did not enroll in the program. Similarly, participants were significantly more likely to find employment and obtain higher-wage jobs than similar nonparticipants. While these results are encouraging, understanding whether training programs through community colleges and other technical schools could result in broad-based regional economic development represents an important question for future research.

Acknowledgments

The authors are grateful to Ryan Nunn, Jay Shambaugh, Stephen Smith, and the participants of the Hamilton Project Authors' Conference for their helpful insights and suggestions. The views expressed in this paper are those solely of the authors and do not represent those of the Brookings Institution, the National Bureau of Economic Research, Florida State University, or the University of Calgary.

Endnotes

1. Nunn, Parsons, and Shambaugh (2018) also document this relationship earlier in this volume. This relationship has also been shown to hold at the metropolitan area level (Berry and Glaeser 2005).
2. These studies typically find that each additional year of education leads to roughly an 8 percent increase in earnings.
3. It is important to note that while there may not be a statistically significant relationship between an area's production and stock of human capital due to the role of migration in the market for high-skilled individuals, it has been shown that opening new two- and four-year colleges in a county does lead to an increase in college attendance among that county's residents (Currie and Moretti 2003).
4. According to Glaeser, "A wealth of research confirms the importance of face-to-face contact. One experiment performed by two researchers at the University of Michigan challenged groups of six students to play a game in which everyone could earn money by cooperating. One set of groups met for ten minutes face-to-face to discuss strategy before playing. Another set of groups had thirty minutes for electronic interaction. The groups that met in person cooperated well and earned more money. The groups that had only connected electronically fell apart, as members put their personal gains ahead of the group's needs. This finding resonates well with many other experiments, which have shown that face-to-face contact leads to more trust, generosity, and cooperation than any other sort of interaction" (Glaeser 2012, 34–35).
5. Studies of agglomeration spillovers in manufacturing have similarly found that the magnitude of the spillover is related to input and output linkages as well as the pooling of labor markets (Ellison, Glaeser, and Kerr 2010; Greenstone, Hornbeck, and Moretti 2010).
6. Similarly, Bonander et al. (2016) find small or no effects on the regional economy of granting research university status to three former university colleges in Sweden in 1999. Specifically, just as with the establishment of the University of California, Merced, the authors find robust evidence that the transition to research university status increased both the number of awarded doctoral degrees and the number of professors in the region. However, they find no evidence that the intervention had an effect on outcomes such as local patent applications, firm start-ups, regional GDP per capita, or employee compensation during the 13-year follow-up period.
7. Similarly, Moretti (2004) shows that areas that received land-grant colleges in the late 19th century continue to have more-educated workforces to this day.
8. See Bercovitz and Feldman (2006) for related discussion.

References

Abel, Jaison R., and Richard Deitz. 2012. "Do Colleges and Universities Increase Their Region's Human Capital?" *Journal of Economic Geography* 12 (3): 667–91.

Abramovsky, Laura, Rupert Harrison, and Helen Simpson. 2007. "University Research and the Location of Business R&D." *Economic Journal* 117 (519): C114–41.

Acs, Zoltan J., David B. Audretsch, and Maryann P. Feldman. 1992. "Real Effects of Academic Research: Comment." *American Economic Review* 82 (1): 363–67.

Adams, James D. 2002. "Comparative Localization of Academic and Industrial Spillovers." *Journal of Economic Geography* 2 (3): 253–78.

Aghion, Philippe, Leah Boustan, Caroline Hoxby, and Jerome Vandenbussche. 2009, March. "The Causal Impact of Education on Economic Growth: Evidence from U.S." Unpublished manuscript, Harvard University, Cambridge, MA.

Andersson, Roland, John M. Quigley, and Mats Wilhelmsson. 2009. "Urbanization, Productivity, and Innovation: Evidence from Investment in Higher Education." *Journal of Urban Economics* 66 (1): 2–15.

Angrist, Joshua D., and Alan B. Krueger. 1991. "Does Compulsory School Attendance Affect Schooling and Earnings?" *Quarterly Journal of Economics* 106 (4): 979–1014.

Anselin, Luc, Attila Varga, and Zoltan J. Acs. 1997. "Local Geographic Spillovers between University Research and High Technology Innovations." *Journal of Urban Economics* 42 (3): 422–48.

Ashenfelter, Orley, and Alan Krueger. 1994. "Estimates of the Economic Return to Schooling from a New Sample of Twins." *American Economic Review* 84 (5): 1157–73.

Audretsch, David B., and Maryann P. Feldman. 1996. "R&D Spillovers and the Geography of Innovation and Production." *American Economic Review* 86 (3): 630–40.

Audretsch, David B., Erik E. Lehmann, and Susanne Warning. 2005. "University Spillovers and New Firm Location." *Research Policy* 34 (7): 1113–22.

Austin, Benjamin, Edward L. Glaeser, and Lawrence H. Summers. Forthcoming. "Saving the Heartland: Place-Based Policies in 21st Century America." *Brookings Papers on Economic Activity* (forthcoming).

Bania, Neil, Randall W. Eberts, and Michael S. Fogarty. 1993. "Universities and the Startup of New Companies: Can We Generalize from Route 128 and Silicon Valley?" *Review of Economics and Statistics* 75 (4): 761–66.

Bartik, Timothy J. 2018. "What Works to Help Manufacturing-Intensive Local Economies?" Technical Report 18-035, Upjohn Institute for Employment Research, Kalamazoo, MI.

Bartik, Timothy J., and George Erickcek. 2008. "The Local Economic Impact of 'Eds & Meds': How Policies to Expand Universities and Hospitals Affect Metropolitan Economies." Metropolitan Policy Program, Brookings Institution, Washington, DC.

Bayh-Dole Act of 1980, Pub.L. 96-517, 94 Stat. 3015 (1980).

Bercovitz, Janet, and Maryann Feldman. 2006. "Entrepreneurial Universities and Technology Transfer: A Conceptual Framework for Understanding Knowledge-Based Economic Development." *Journal of Technology Transfer* 31 (1): 175–88.

Berry, Christopher R., and Edward. L. Glaeser. 2005. "The Divergence of Human Capital Levels Across Cities." *Papers in Regional Science* 84 (3): 407–44.

Blackwell, Melanie, Steven Cobb, and David Weinberg. 2002. "The Economic Impact of Educational Institutions: Issues and Methodology." *Economic Development Quarterly* 16 (1): 88–95.

Boardman, P. Craig, and Branco L. Ponomariov. 2009. "University Researchers Working with Private Companies." *Technovation* 29 (2): 142–53.

Bonander, Carl, Niklas Jakobsson, Federico Podestà, and Mikael Svenson. 2016. "Universities as Engines for Regional Growth? Using the Synthetic Control Method to Analyze the Effects of Research Universities." *Regional Science and Urban Economics* 60: 198–207.

Bound, John, Jeffrey Groen, Gabor Kezdi, and Sarah Turner. 2004. "Trade in University Training: Cross-State Variation in the Production and Stock of College-Educated Labor." *Journal of Econometrics* 121 (1–2): 143–73.

Cohen, Wesley M., Richard R. Nelson, and John P. Walsh. 2002. "Links and Impacts: The Influence of Public Research on Industrial R&D." *Management Science* 48 (1): 1–23.

Currie, Janet, and Enrico Moretti. 2003. "Mother's Education and the Intergenerational Transmission of Human Capital: Evidence from College Openings." *Quarterly Journal of Economics* 118 (4): 1495–532.

D'Este, Pablo, and Markus Perkmann. 2011. "Why Do Academics Engage With Industry? The Entrepreneurial University and Individual Motivations." *Journal of Technology Transfer* 36 (3): 316–39.

Ellison, Glenn, Edward L. Glaeser, and William R. Kerr. 2010. "What Causes Industry Agglomeration? Evidence from Coagglomeration Patterns." *American Economic Review* 100 (3): 1195–213.

Ferrie, Joseph P. 1997. "Long-Term Perspectives on Geographic and Economic Mobility, 1800–1900." Paper prepared for American Economic Association Meetings, session on Labor Market Changes: Past and Present, January 5, 1988 in Chicago, IL.

Faggian, Alessandra, and Philip McCann. 2009. "Universities, Agglomerations and Graduate Human Capital Mobility." *Journal of Economic and Social Geography* 100 (2): 210–23.

Gennaioli, Nicola, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer. 2013. "Human Capital and Regional Development." *Quarterly Journal of Economics* 128 (1): 105–64.

———. 2014. "Growth in Regions." *Journal of Economic Growth* 19 (3): 259–309.

Glaeser, Edward L. 2005. "Reinventing Boston: 1630–2003." *Journal of Economic Geography* 5 (2): 119–53.

———. 2012. *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*. London, UK: Penguin.

Glaeser, Edward L., and Giacomo A. M. Ponzetto. 2010. "Did the Death of Distance Hurt Detroit and Help New York?" In *Agglomeration Economics,* edited by Edward Glaeser, 303–37. Chicago, IL: University of Chicago Press.

Glaeser, Edward L., and Albert Saiz. 2004. "The Rise of the Skilled City." *Brookings-Wharton Papers on Urban Affairs* 5: 47–94.

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): 536–98.

Hausman, Naomi. 2017. "University Innovation, Local Economic Growth, and Entrepreneurship." Discussion Paper 17.05, Hebrew University of Jerusalem, Jerusalem, Israel.

Henderson, J. Vernon. 2007. "Understanding Knowledge Spillovers." *Regional Science and Urban Economics* 37 (4): 497–508.

Hornbeck, Richard, and Enrico Moretti. 2018. "Who Benefits from Productivity Growth? Direct and Indirect Effects of Local TFP Growth on Wages, Rents, and Inequality." Working Paper 24661, National Bureau of Economic Research, Cambridge, MA.

Jaffe, Adam B. 1989. "Real Effects of Academic Research." *American Economic Review* 79 (5): 957–70.

Jaffe, Adam B., Manuel Trajtenberg, and Rebecca Henderson. 1993. "Geographic Localization of Knowledge Spillovers as Evidenced by Patent Citations." *Quarterly Journal of Economics* 108 (3): 577–98.

Jarmin, Ronald S. 1999. "Evaluating the Impact of Manufacturing Extension on Productivity Growth." *Journal of Policy Analysis and Management* 18 (1): 99–119.

Kantor, Shawn, and Alexander Whalley. 2014. "Knowledge Spillovers from Research Universities: Evidence from Endowment Value Shocks." *Review of Economics and Statistics* 96 (1): 171–88.

Lee, Jongkwan. Forthcoming. "The Local Economic Impact of a Large Research University: Evidence from UC Merced." *Economic Inquiry* (forthcoming).

Liu, Shimeng. 2015. "Spillovers from Universities: Evidence from the Land-Grant Program." *Journal of Urban Economics* 87: 25–41.

Lochner, Lance, and Enrico Moretti. 2004. "The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports." *American Economic Review* 94 (1): 155–89.

Maguire, Sheila, Joshua Freely, Carol Clymer, Maureen Conway, and Deena Schwartz. 2010. "Tuning in to Local Labor Markets: Findings from the Sectoral Employment Impact Study." Public/Private Ventures, Philadelphia, PA.

Manson, Steven, Jonathan Schroeder, David Van Riper, and Steven Ruggles. 2017. "IPUMS National Historical Geographic Information System: Version 12.0 [Database]." University of Minnesota, Minneapolis, MN.

McConnell, Sheena, Irma Perez-Johnson, and Jillian Berk. 2014. "Providing Disadvantaged Workers with Skills to Succeed in the Labor Market." In *Policies to Address Poverty in America*, edited by Melissa Kearney and Benjamin Harris, 97–105. Washington, DC: Brookings Institution.

Moretti, Enrico. 2004. "Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data." *Journal of Econometrics* 121 (1–2): 175–212.

———. 2012. *The New Geography of Jobs*. Boston, MA: Houghton Mifflin Harcourt.

Moretti, Enrico, and Daniel J. Wilson. 2014. "State Incentives for Innovation, Star Scientists and Jobs: Evidence from Biotech." *Journal of Urban Economics* 79: 20–38.

National Center for Education Statistics. 1980–2000. "Integrated Postsecondary Education Database System." Institute of Education Sciences, National Center for Education Statistics, Washington, DC.

Nunn, Ryan, Jana Parsons, and Jay Shambaugh. 2018. "The Geography of Prosperity." In *Place-Based Policies for Shared Economic Growth*, edited by Jay Shambaugh and Ryan Nunn, 11–42. Washington, DC: The Hamilton Project.

Oreopoulos, Philip, and Uros Petronijevic. 2013. "Making College Worth It: A Review of Research on the Returns to Higher Education." *The Future of Children* 23 (1): 41–65

Perkmann, Markus, Valentina Tartari, Maureen Mckelvey, Erkko Autio, Anders Broström, Pablo D'Este, Ricardo Fini, Aldo Geuna, Rosa Grimaldi, Alan Hughes, et al. 2013. "Academic Engagement and Commercialisation: A Review of the Literature on University–Industry Relations." *Research Policy* 42 (2): 423–42.

Rocco, Elena. 1998. "Trust Breaks Down in Electronic Contexts but Can Be Repaired by Some Initial Face-to-Face Contact." Proceedings of the CHI 1998 Conference on Human Factors in Computing Systems, 496–502. New York, NY: ACM.

Sanders, C. 2010. "Experiential Learning Philosophy Applied to Extension." *Journal of the NACAA* 3 (1): online.

Shapiro, Jesse M. 2006. "Smart Cities: Quality of Life, Productivity, and the Growth Effects of Human Capital." *Review of Economics and Statistics* 88 (2): 324–35.

Siegel, Donald S., David Waldman, and Albert Link. 2003. "Assessing the Impact of Organizational Practices on the Relative Productivity of University Technology Transfer Offices: An Exploratory Study." *Research Policy* 32 (1): 27–48.

Siegfried, John J., Allen R. Sanderson, and Peter McHenry. 2007. "The Economic Impact of Colleges and Universities." *Economics of Education Review* 26 (5): 546–58.

Stevens, Laura, Shibani Mahtani, and Shayndi Raice. 2018, April 2. "Rules of Engagement: How Cities Are Courting Amazon's New Headquarters." *Wall Street Journal.*

U.S. Census Bureau. 2017. "2015 County Business Patterns." U.S. Census Bureau, Suitland, MD.

———. 1980–2016. "American Community Survey." U.S. Census Bureau, Suitland, MD. Retrieved from U.S. Department of Agriculture, Washington, DC.

Varga, Attila. 2000. "Local Academic Knowledge Transfers and the Concentration of Economic Activity." *Journal of Regional Science* 40 (2): 289–309.

Woodward, Douglas, Octávio Figueiredo, and Paulo Guimaraes. 2006. "Beyond the Silicon Valley: University R&D and High-Technology Location." *Journal of Urban Economics* 60 (1): 15–32.

Wozniak, Abigail. 2010. "Are College Graduates More Responsive to Distant Labor Market Opportunities?" *Journal of Human Resources* 45 (4): 944–70.

Yusuf, Shahid. 2008. "Intermediating Knowledge Exchange between Universities and Businesses." *Research Policy* 37 (8): 1167–74.

Development Economics Meets the Challenges of Lagging U.S. Areas

Applications to Education, Health and Nutrition, Behavior, and Infrastructure

Stephen C. Smith, *The George Washington University*

Abstract

This chapter examines the development economics evidence base for insights into policy reforms that would benefit struggling areas in the United States. My focus is on improving education, physical and mental health, infrastructure, and institutions. First, consistent with findings on education policy effectiveness, I propose raising the legal minimum dropout age (prospectively to 19), providing better information about the benefits of completing high school, supporting targeted paraprofessional tutoring, and providing family financial incentives for attending school and graduating from high school. Second, to improve health outcomes in struggling areas, the focus is using and building on existing effective health and nutrition programs and services, identifying ways to include more families who are eligible for but not participating in these programs. Moreover, the recent development and behavioral economics evidence base has extended our understanding of the psychological, cognitive, and economic behavioral lives of the poor; the literature highlights the ways that poverty can impede cognitive functioning, with implications for policies to uplift lagging U.S. areas. Third, a review of evidence on the benefits of improving lagging rural and urban area transportation infrastructure points to the likely benefits of improved connectivity for lagging U.S. areas: reversing the legacy of past discriminatory policies, encouraging sector-based clusters, and extending access to high-speed internet. Finally, the chapter highlights the relevance of some cross-cutting themes in development economics, including the high returns to reliable household microdata and the importance of improving institutions to enable more inclusive, substantial, and lasting progress.

Introduction

The United States has an urgent need to design and implement effective economic development policies for chronically lagging and struggling areas. Large parts of the country (including many rural areas), a number of recently declining suburban areas, and many inner cities all fall within this category due to their relatively low average incomes and lagging social indicators.

Development economics research has made substantial progress in the past two decades, with innovative analysis and a growing rigorous evidence base. The field has proceeded almost independently from the U.S. economic policy analysis literature, but it is often relevant to the United States in its ways of framing and analyzing evidence and institutions. In this proposal, research findings from the development economics literature are brought to bear on U.S. policy problems.

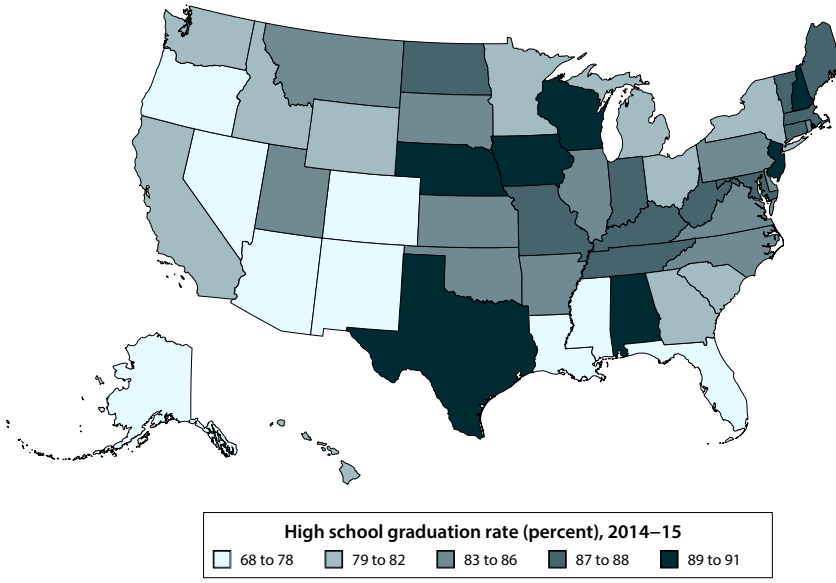
Sustained catch-up by lagging areas depends on building human capital for the rising generation. This proposal emphasizes that much can be accomplished by first delivering on already-available schooling, and encouraging greater participation in programs of assistance for basic nutrition and health.

I begin by addressing challenges and findings for improving education in lagging areas. A central focus for basic education is to drastically reduce the high school dropout rate, reaching a much higher graduation rate while improving school attendance and learning (figure 1). Consistent with findings on program effectiveness in the development economics literature, this chapter focuses on the high potential benefits of a four-pronged approach: (1) raising the legal minimum dropout age to age 19; (2) carrying out programs to provide better information about the benefits of staying in school and completing high school; (3) supporting systematic targeted paraprofessional tutoring; and (4) providing family financial incentives to stay in school and to graduate from high school.

The next section addresses challenges and findings for improving health outcomes, particularly for youths, in lagging areas. It focuses on basic health and nutrition, identifying ways to include many more families in lagging areas who are already eligible but are currently underusing—or not using—effective programs and services available to them, including the Supplemental Nutrition Assistance Program (SNAP; formerly Food Stamps), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), the Children's Health Insurance Program (CHIP), and Medicaid. The developing country evidence base makes clear that

FIGURE 1.

Adjusted Cohort Graduation Rate, by State



Source: National Center for Education Statistics (NCES) 2017a.

Note: The adjusted cohort graduation rate is the share of students within a cohort that graduate in four years with a regular high school diploma. This cohort is adjusted both to include students who transfer in during subsequent years and to exclude students who leave the cohort for acceptable reasons. The 2014–15 graduation rate for the District of Columbia is 68.5 percent. The overall U.S. graduation rate is 83.2 percent.

THE HAMILTON PROJECT BROOKINGS

under a wide variety of circumstances and settings, participation in health and nutrition activities for children can be effectively incentivized with conditional cash transfers (CCTs) or cash-plus (transfers plus counseling and connections to services), along with improved information and focused attention to special circumstances of minority populations. Accordingly—while acknowledging the need for expanded eligibility cutoffs as well as additional health and nutrition programs—the paper focuses on encouraging the widest possible use of programs such as SNAP and Medicaid among eligible families who do not participate for various reasons.

This section also examines the recent development economics research on the cognitive burden and mental health problems of the poor, and potential implications and applications for policy. Research shows poverty can impede cognitive functioning, from attention and self-discipline to depression and anxiety. Policy and programs can take account of the cognitive tax of poverty, though—from simplifying forms and establishing advantageous timing for enrollments and other decisions, to providing reminders and offering self-commitment devices.

The next section turns to evidence on the benefits of improving lagging rural and urban area transportation infrastructure, pointing to the need for research on improved connectivity for lagging U.S. areas. The potential role of encouraging sector-based clusters is another proposed research priority. Following the development literature, attention should be paid to coordination problems and the complementarity between public and private investments. It is also important to extend high-speed internet to more homes in lagging areas.

The last section addresses two major, cross-cutting themes in development economics: the high returns to the collection and dissemination of complete, detailed, reliable micro data, and the importance of improving institutions to enable more-inclusive, more-substantial, and longer-lasting progress. Development economics research has emphasized deep-rooted, chronic policy implementation problems; an overarching theme is the quality of institutions, particularly the extent to which they are inclusive or extractive, and the roots of inequality. Findings on institutional quality are reviewed for insights into improving national capacity to substantially and sustainably lift our lagging regions, and perhaps to make more economic and social progress nationally.

The policy recommendations in this chapter have strong individual value, but would be best evaluated and considered together as a mutually reinforcing and integrated package. However, it is important to acknowledge that findings from developing country contexts and locations were obtained in a particular local context, and may not always have direct relevance for U.S. programs. Instead, I argue that the research often indicates important questions for further study in the United States, and provides useful stimulus for new ways of thinking about addressing our own challenges. In each case I propose experiments to determine what program approaches and implementations are likely to work best.

Improving Secondary Education Outcomes

Sustained catch-up by lagging areas depends on the rising generation. Compared with other developed countries, one of the glaring problems for the United States is the fraction of young people who do not complete high school. A high school diploma can be a lifeline for those who would otherwise not complete high school, leading to a significantly higher likelihood of stable employment, a healthier and longer life, a family, and a better chance to stay out of prison. To achieve this better life, strong financial and compulsory education incentives, improved information

about the benefits of education, targeted tutoring as needed, and packaged financial incentives proposals are foundational.

This section discusses some key challenges, examines what we can learn from the development economics literature evidence base on schooling and nutrition, and then draws on that literature to develop policy proposals and policy research priorities.

I propose an integrated package for finishing high school based on evidence from development economics research: raising the legal minimum dropout age to 19; providing specific, useful, and easily understandable information about the financial and other benefits of graduating from high school; systematically targeting special tutoring; and packaging financial incentives proposals. Because conditions differ across lagging areas, there is no single solution, but development economics research suggests that solutions can be found even in the most difficult of circumstances.

ACHIEVING LARGE REDUCTIONS IN THE HIGH SCHOOL DROPOUT RATE AND IMPROVING LEARNING

A recent OECD report on high-school graduation rates ranked the United States a dismal 21st among the 26 countries examined. In the United States the dropout rate is higher than average in inner cities and in lagging counties, and higher for black and Hispanic students than for white students (see table 1).

In developing countries school dropout is generally understood to result from one or more demand and supply-side factors. Families face financial constraints that can mean an inability to afford school costs, if

TABLE 1.

Dropout Rates, by Gender and Race

2015	6.3	5.0	6.4	9.9	5.4	4.1	6.5	8.4
2014	7.1	5.7	7.1	11.8	5.9	4.8	7.7	9.3
2013	7.2	5.5	8.2	12.6	6.3	4.7	6.6	10.8
2012	7.3	4.8	8.1	13.9	5.9	3.8	7.0	11.3
2011	7.7	5.4	8.3	14.6	6.5	4.6	6.4	12.4
2010	8.5	5.9	9.5	17.3	6.3	4.2	6.7	12.8

Source: NCES 2017b.

Note: The dropout rates shown are status dropout rates, which represent the percentage of 16- to 24-year-olds who are not enrolled in school and who have not completed a high school program, regardless of when they left school.

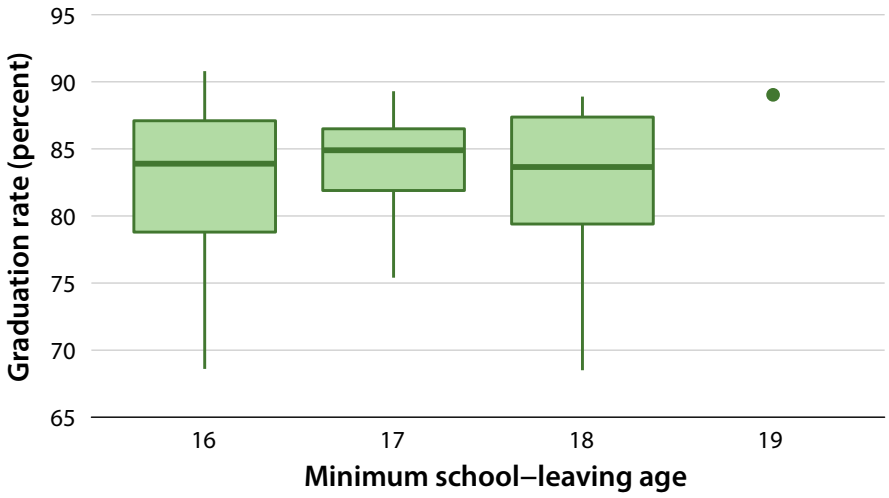
not the necessity of child labor. Children, especially girls, have household responsibilities that interfere with schooling, such as caring for younger siblings and collecting water. In addition, households' perceived returns of schooling can be below actual labor market returns. On the supply side, there are often no accessible and nearby schools. Moreover, the quality of education is often poor, either due to limited teaching ability of instructors or to high rates of teacher absenteeism from class.

In the United States schooling is compulsory until at least age 16, although 30 states have higher minimums, with a high of 19 in Texas and 18 in California and several other states (National Center of Education Statistics [NCES] 2018). In many developing countries the minimum school-leaving age is lower, although there are important exceptions—the age is 17 in Brazil and 18 in Mexico.

Before reviewing the evidence, it should be emphasized that it is not necessarily straightforward to infer the causal impact of attendance laws on graduation rates. A key reason is that policy is endogenous: for example, states particularly worried about their dropout rates, such as West Virginia and Mississippi, might raise their minimum dropout age to 17, while states

FIGURE 2.

Relation between Minimum School-leaving Age and High School Graduation Rates



Source: NCES 2017a, 2018.

Note: Graduation rates are adjusted cohort graduation rates, which represent the share of students within a cohort that graduate in four years with a regular high school diploma. This cohort is adjusted both to include students who transfer in during subsequent years and to exclude students who leave the cohort for acceptable reasons. The boxes span the 25th and 75th percentile of the graduation rates by minimum school-leaving age, while the thick horizontal lines indicate the median. The vertical lines represent the full range of the data. There is only one state (Texas) whose minimum school-leaving age is 19.

THE HAMILTON PROJECT BROOKINGS

with high graduation rates such as Indiana, Iowa, and Massachusetts, might perceive no pressing need to raise the minimum above their traditional age 16.

Indeed, figure 2 shows a positive but statistically insignificant pattern in the relation between U.S. state minimum school-leaving ages and high school graduation rates. What such statistical associations cannot show is what the graduation rates—or attendance rates pregraduation—would have looked like in the absence of these laws, nor why these laws were passed in the first place. Controlling for other variables in a standard regression framework is helpful, but does not address the basic statistical problem: policy reflects the conditions under which it was formulated.

The recent evidence from developing countries supports the conclusion (as do findings from some developed countries; see table 2 and box 1) that compulsory schooling laws play a significant role not only in increasing attendance, but also in graduation rates. These laws also lead to a wide range of other positive individual and social benefits.

Studies from developing countries on compulsory schooling can be divided into two categories. The first examines the direct impact of minimum dropout policy on schooling outcomes. The second investigates impacts on nonschool outcomes, including crime, fertility, domestic violence, happiness, and well-being.

Impacts on Educational Attainment

Caner et al. (2016) examine the impacts of Turkey's Compulsory Schooling Law (CSL), which raised the compulsory years of schooling of those born after 1986 from five to eight years of schooling. The authors use the variation in exposure to the CSL across cohorts (i.e., students born later were required to attend more years of schooling) and estimated that the dropout rate through eight years of the postreform cohorts were 25–30 percentage points lower than the dropout rates of prereform cohorts. Similarly, Kırdar, Dayioğlu, and Koç (2015) find Turkey's CSL policy had large spillover effects on postcompulsory schooling; it also equalized educational attainment of urban and rural children. In particular, they estimate that completed years of schooling (by age 17) increased by 1.5 years for rural women. Furthermore, the urban–rural gap in the completed years of schooling at age 17 fell by 0.5 years for men and by 0.7 to 0.8 years for women.[1]

Evidence similar to the results from Turkey has been found for China, where a nine-year compulsory education policy was introduced in 1986. Fang et al. (2012) use the difference in timing of implementation of the policy across

TABLE 2.

OECD Compulsory Schooling Requirements and Graduation Rates

Austria	15	It is mandatory for pupils in Austria to complete nine years of school: four years in elementary school, four years in a school for lower secondary education or grammar school, and one year of upper secondary schooling. Students start primary school at age 6, so the minimum age is 15.	90
Canada	16 (18 in few provinces)	Education is compulsory up to the age of 16 in every province in Canada except for Manitoba, Ontario, and New Brunswick, where the compulsory age is 18, or as soon as a high school diploma has been achieved.	88
Chile	17	Primary (6–13) and secondary schooling (14–17) is compulsory.	90
Denmark	16	Education is compulsory for children below age 15 or 16, but it is not necessary to attend public school.	92
Finland	16	Nine years of basic schooling in a comprehensive school (7–16 years).	99
Germany	16	Children aged three to six may attend kindergarten. After that, school is compulsory for nine or ten years.	87
Hungary	16	All children in Hungary from age 6 to 16 are obliged to attend compulsory education.	86
Israel	18	Compulsory education from kindergarten through 12th grade. Minimum age: 18 years.	92
Korea	15	Primary and middle school is compulsory. Minimum age: 15 years.	93
Italy	15	Education in Italy is compulsory from 6 to 16 years of age.	92
Japan	15	Nine years of basic compulsory education.	98
Latvia	16	General basic education. Minimum age: 16 years.	86
Netherlands	18	Compulsory schooling (5–18 years). Minimum age: 18 years.	93
New Zealand	16	Schooling is compulsory from age 6 to 16. Minimum age: 16 years.	95
Poland	17	Nine years of basic education. Starting age was seven years but was raised to eight years through a recent amendment. Minimum age: 17 years	88
Portugal	18	Education in Portugal is free and compulsory until the age of 18, when students complete the 12th grade.	89
Slovenia	15	Compulsory schooling (6–15 years). Minimum age: 15 years.	92
USA	16 (with limited exceptions)		83
OECD average			**86**

Source: OECD 2017.

provinces to estimate impacts on educational attainment. Their results indicated that the law raised overall educational attainment in China by about 0.8 years of schooling. Xiao and Zhao (2017) conclude that exposure to the law was positively associated not only with individual educational attainment, but also with cognitive achievement in early adulthood. The laws also had a sustained long-run impact, given that the reform had a positive effect on educational attainment even in postcompulsory school years.[2]

In Taiwan the compulsory education requirement was increased in 1968 from six to nine years. Using this reform as a natural experiment, Sphor (2003) identified an upward shift relative to preexisting trends of more than 0.4 years of education for males and 0.25 years for females in the first six cohorts affected by the newly compulsory junior high schooling.

Impacts on Non-Schooling Outcomes

Research on increasing compulsory schooling requirements in developing countries has found substantial impacts on several outcomes aside from educational attainment. Güneş (2016) used variation in the exposure to Turkey's CSL across cohorts and across provinces, finding that primary school completion (eight years) caused a reduction in teenage fertility by 0.37 births and the incidence of teenage childbearing by approximately 28 percentage points. The results of the paper show that female education had heterogeneous effects, reducing teenage fertility more in provinces with lower population density and a higher share of agricultural activity. Güneş also finds positive impacts on child health. Research on the effect of increased compulsory education in Taiwan find that it led to a substantial reduction in child mortality (Chao et al. 2010).

Özer, Fidrmuc, and Eryurt (2017) estimate the impact of maternal education on childhood immunization, using differences in Turkey's CSL implementation across regions as instruments for schooling of mothers in Turkey. Their results show that additional schooling for mothers increased the probability of completing the full course of DPT and Hepatitis B vaccinations for their children. They also find that education increased women's age at first marriage and birth, while significantly affecting women's tendency to oppose spousal violence against women and gender discrimination. However, Erten and Keskin (2018) find that increased education among rural women led to an increase in self-reported experience of psychological violence and financial control behavior, but no changes in physical violence, partner characteristics, or women's attitudes toward such violence.

BOX 1.

Evidence from Advanced Economies

In the United States compulsory schooling laws have been found to positively influence a range of outcomes, including progress through high school, wealth, health, probability of voting, criminal behavior, life satisfaction, fertility, and education of offspring (e.g., Hjalmarsson, Holmlund, and Lindquist 2015; Lochner and Moretti 2004; Moussa 2017; Oreopoulos 2007).

In a recent study using student-level administrative data from New York City Public Schools, Moussa (2017) finds that an additional year of compulsory attendance increases the probability of progressing to 11th and 12th grades by 9 to 12 percent, and the probability of graduating from high school by 9 to 14 percent.[3] The study focuses on 9th- and 10th-grade cohorts and exploits the interaction between the school start-age cutoff and compulsory attendance age requirement to identify the effect of compulsory schooling.

Lochner and Moretti (2004) estimate the effect of education on participation in criminal activity using changes in state compulsory schooling laws over time, finding that schooling significantly reduces the probability of arrest and incarceration.[4] Moreover, the authors estimate net social savings from crime reduction among men associated with high school graduation at approximately 14 to 26 percent of the private returns to students. These findings are confirmed by Bell and Machin (2016), who find strong and consistent negative effects on crime from stricter compulsory schooling laws.

Hjalmarsson, Holmlund and Lindquist (2015) examine the causal effect of educational attainment on conviction and incarceration using Sweden's compulsory schooling reform as an instrument for years of schooling, and find a significant negative effect of schooling on male convictions and incarceration; an additional year of schooling was estimated to decrease the likelihood of conviction by 6.7 percent and incarceration by 15.5 percent.

Oreopoulos (2007) uses changes in minimum school-leaving age laws in Britain, Canada, Ireland, and the United States as

natural experiments to estimate lifetime gains to remaining in school for students who would otherwise drop out. He concludes, "Lifetime wealth increases by about 15 percent with an extra year of compulsory schooling" (2213). He also finds that an extra year of compulsory schooling improves health outcomes, self-reported life satisfaction, and happiness. His results suggest that, at the time they drop out, adolescents are ignoring or heavily discounting the future consequences. Although gains are large for those affected, and laws are worthwhile for this outcome alone, Oreopoulos finds that a majority of dropouts are not affected due to a lack of enforcement.

In Argentina a 1993 law implemented an increase in the minimum compulsory schooling period from seven to ten years. Exploiting the staggered implementation of the law, Alzúa and Velázquez (2017) find a negative effect of education on teenage fertility rates, operating through two complementary channels: a human capital effect (one additional year of schooling causes a decline of 30 births per 1,000 women), and a weaker effect of current enrollment (a 1 percentage point–rise in the enrollment rate leads to 3 fewer births per 1,000 women).

The Policy Approach

- **Raise the minimum age** for those not yet having completed schooling for compulsory school attendance. Because compliance is likely to be a continued problem (Oreopoulos 2007; Whitehurst and Whitfield 2012), raising the mandatory schooling age would be complementary with the other initiatives for enhanced incentives and information recommended in the following sections.[5] These include a combination of financial initiatives (such as conditional cash transfers), informational interventions (improved information on the returns to schooling), and perhaps appropriate nudges, in addition to expanded efforts to improve the equality of schooling.[6] Increased attention in U.S. education policy to combatting chronic absenteeism over the last decade may be an effective complement to raising school age laws, reducing some of the noncompliance concerns.

Care must be taken when monitoring the implementation of truancy enforcement to ensure that it is not done in a discriminatory manner. There have been allegations that the Dallas Independent School District has enforced Texas's currently unique dropout age of 19 years more stringently

for African American youths, and that this created a differential pipeline into the criminal justice system.[7] However, if implemented appropriately, the increased policy focus on lowering chronic absenteeism—as discussed in Bauer et al. (2018)—is likely to enhance the effectiveness of raising the minimum age for compulsory school attendance.

ACTIVELY SHARING SPECIFIC INFORMATION ON BENEFITS OF SCHOOLING WITH STUDENTS AND FAMILIES

With imperfect information, research suggests that students and/or parents could systematically underestimate the returns to education, or discount these returns in response to uncertainty they have about these returns and what they mean for them.[8] This might matter for students' decisions about dropping out and the hours they spend studying.

In the United States today there is much more segregation by income and education than in the past, such that students from a poorly educated family are now less likely to come into contact with highly educated families (Putnam 2015). Accordingly, some students and families might have a greater need for information about postsecondary options.

In addition to encouraging more time in school and preventing students from dropping out, programs to improve information for students and parents about the returns to schooling may incentivize students to learn more in school, and parents to support and push students to do so. Providing detailed and accurate information would entail expanding the collection and analysis of data about specific benefits of schooling, for the purpose of publicizing and sharing the most relevant information directly with students and families.

The recent development economics literature includes informative studies that find that providing information about the benefits of education to students has positive impacts on the amount of time that students spend in school, as well as the amount that they learn.

Providing information to parents and students might lead to lower dropout rates. In Serbia a primary-level remedial education program was aimed at improving the attendance of students of Roma descent (a minority ethnic group). Battaglia and Lebedinski (2017) use the phased-in implementation of the program to estimate that parents from treated schools were 12.3 percentage points more likely to expect their sons to complete secondary school. These parents also increased their estimate of the return to their sons' education by almost 9.4 percent for boys and 10 percent for girls.[9] In Madagascar evidence from a randomized controlled trial (RCT) evaluation

showed that providing additional information on the returns to schooling resulted in a 0.2 standard deviation improvement in test scores (Nguyen 2008).

In the Dominican Republic, 8th-grade boys from randomly selected schools were provided information on returns to schooling that had been estimated from earnings data (Jensen 2010). The boys were followed for the next four years; those receiving this information completed about 0.20–0.35 more years of schooling on average. However, there was no effect for the poorest students. Jensen interprets these results as suggesting that financial limitations (or other features of poverty) are binding constraints on the school-leaving decision for the poorest students, even if there is a demand for schooling on the part of students and families.[10] Consistent with this view, Kaufmann (2014) surveys Mexican students and finds that "poor individuals require higher expected returns to be induced to attend college than individuals from rich families," even though their estimated returns are high, and that "a sizeable fraction of poor individuals would change their decision in response to a reduction in direct costs" (585–86). An implication is that credit constraints also play a significant role, though it does not address whether estimates are below actual returns.

Evidence from China tells a different story. Loyalka et al. (2013) studied an intervention for 7th graders in the Hebei and Shannxi Provinces of rural China that included 45-minute counseling sessions on earnings associated with different levels of schooling. However, the authors did not find significant effects on the dropout rate or test scores for China. They argue that students from low-quality schools, on receiving this information, concluded that spending more time on schooling would not yield higher returns. Strikingly, in a more-intensive intervention, four 45-minute career-counseling sessions were given to students. In this case, the authors find a significant negative effect on time spent in school. Their interpretation is that upon receiving additional information on entry requirements for postsecondary education, students from low-quality schools reduced their expectations or aspirations for success. It is possible that part of the difference is explained by the fact that China is not a market economy, and that there may be a wider belief that decisions are not made on the basis of merit. In any case, we should not expect uniform results in every context; this is a reason for emphasizing active experimentation.

Paying or otherwise rewarding students for performance may also lead to improvement in the accuracy of students' estimates of returns to schooling. Sequeira, Spinnewijn, and Xu (2016) study the impact of receiving high school fellowships in India—essentially, financial recognition for schooling

effort—and estimate that receipt of an award is associated with a 0.74 standard deviation increase in the student's perceived mean earnings of an additional year of schooling, as well as a significant decrease in the perceived variance of those earnings. Parents of fellowship students also reported higher perceived returns to education.

The Policy Approach

- **Provide information on effects of schooling** for junior and senior high school students, partially targeted to lagging areas. This information would cover not only expected impacts on earnings, but also other outcomes ranging from types of jobs, to life expectancy, to the estimated likelihoods of incarceration.[11] For example, if students (and their parents) know that a high school diploma leads to a much lower risk of incarceration, this might raise their expectation of the returns to schooling. The research findings described suggest that students and parents may have erroneously low estimates of lifetime income and other benefits of schooling, and that programs providing information and encouragement for students not to drop out using concrete, specific information could be cost-effective. Some of the information may provide more motivation to parents than to some students; it is therefore desirable to make the information as salient as possible to both, and perhaps also to peers.
- **Implement a systematic, funded program to provide information** to lagging rural areas and inner-city parents of young children about the lifetime benefits of positive parenting, including reading to and engaging with their child.[12]

This provision of information is related to the ongoing roles of counselors and social workers in the schools. Clearly, such initiatives would work with those most knowledgeable about the students and local context. The information interventions may be especially important to the degree that an increase in the minimum dropout age cannot be legislated, or would be incompletely enforced. They are proposed as a complement to the other recommended education programs in this chapter, including the tutoring and other incentives proposed in the following sections.

ENHANCING LEARNING THROUGH PARAPROFESSIONAL TUTORS

Students face many problems that go beyond the immediate school experience. For example, some might face poverty traps in which low aspirations lead them to make low investments in their schooling, which in

turn reinforces poverty for the next generation.[13] However, there is evidence that informal tutoring systems, with ongoing monitoring and mentoring, can make a positive difference. Volunteer mentoring programs are found in many schools throughout the country. For example, the Obama administration launched its My Brother's Keeper initiative for young women and men of color in 2014 to coordinate activities as well as increase and disseminate knowledge about what works in the mentoring field. In Chicago, guidance programs for youths had strong effects in reducing school dropout and increasing graduation rates. They also led to decreased criminal behavior, total and violent crime arrests, and readmission to youth detention (Heller et al. 2017).

Banerjee et al. (2007) report on an RCT evaluation of a program in India in which 3rd- and 4th-grade students who were lagging in literacy and numeracy were tutored for about two hours a day by *balsakhis* (children's friends). These young people, usually women, were paraprofessionals who had finished secondary school but typically not beyond, and who lived in the same (often relatively deprived) areas as the children. In the program, an NGO (Pratham) assigned instructors to regular government schools to tutor 3rd- and 4th-grade students who had fallen behind. These *balsakhis* typically met with about 15 to 20 children in a special class during school hours for a couple of hours, teaching basic numeracy and literacy skills that students are normally expected to have learned in 1st and 2nd grades; instructors closely followed a curriculum developed for this purpose by the NGO. For preparation, the *balsakhis* attended a two-week training program at the beginning of the school year followed by regular refresher training. The program increased average test scores by a substantial amount (0.28 standard deviations after two years). The total program cost was very low, and mostly consisted of tutor pay, which was less than that of regular teachers. Results suggest the program was 12 to 16 times more cost-effective than hiring new teachers. Hundreds of thousands of students participated in this program, which was relatively easy to scale up.

Children in India also benefited from reading camps, in which trained village volunteers gave students intensive tutoring. Banerjee et al. (2010) find that children lagging in school who participated in the reading camps showed very strong improvement in reading skills.[14] (In principle, this could be accomplished by a paid paraprofessional when there are insufficient available trained volunteers.)

In Bangladesh the use of large numbers of continuously trained, closely supervised paraprofessionals is a hallmark of BRAC (originally known as the Bangladesh Rural Advancement Committee), one of the most celebrated

NGOs in the world. BRAC has employed paraprofessionals in its nonformal teaching and other activities for decades (Smillie 2009; Smith 2009). In this regard, it offers another developing country model.

The Policy Approach

- **Establish a paraprofessional tutor program**—analogous to India's Balsakhi Program though at a higher school level—to address a range of impediments to learning, including poverty traps caused by low aspirations.[15] The paraprofessionals would have regular training refreshers and be closely monitored by professionals; to allay concerns over risks of abuse, interactions would all be in public spaces. Programs of this type already exist in the United States in a variety of forms; research is needed to determine what is effective and feasible, and what can be scaled up to a nationwide initiative.
- **Experiment with alternative schooling arrangements**, analogous to nonformal schools, such as those run by nonprofits in developing countries (e.g., BRAC, Save the Children). One possibility is to adapt India's reading camps for conditions specific to lagging areas in the United States, altering the program to cover more-advanced subjects for high school students.

Note that the paraprofessional tutors would be a supplement—and not a substitute—for regular teachers, and could be integrated into existing programs such as Teach for America.

FINANCIAL INCENTIVES FOR AT-RISK STUDENTS AND THEIR FAMILIES

Absenteeism is a strong predictor of dropout. Chronic absenteeism (often corresponding to what is popularly known as truancy) has been described as a hidden educational crisis in the United States. The U.S. Department of Education reports that nearly 20 percent of students still enrolled in high school are chronically absent, with lagging areas such as Detroit having far higher absenteeism rates (U.S. Department of Education 2015–16).[16] Raising minimum dropout ages, mentoring, and providing targeted information will help improve attendance and graduation rates, but for many at-risk students in lagging areas these encouragements may still be insufficient to ultimately lead to high school graduation.

Combatting chronic absenteeism has recently become a more prominent policy goal in many states; it has been included in the metrics of success under the Every Student Succeeds Act of 2015 in most states (Bauer et al.

2018). Evidence from developing countries shows that modest conditional cash transfer (CCT) incentives can be highly effective.

The recent development economics literature includes informative studies of financial incentives for students to remain in school, and to learn more while in school. In recent years many developing countries have implemented cash transfer programs for families at the bottom of the income distribution. Some are unconditional transfers that are sometimes accompanied with social services and referrals; other transfers are conditional on meeting prespecified requirements, including school attendance, as well as health and nutrition checkups.

RCT studies have reported positive impacts on educational outcomes of cash transfer programs from a growing number of countries, including for Colombia (Attanasio, Fitzsimmons, and Gómez 2005), Ecuador (Schady et al. 2008), Jamaica (Stampini et al. 2018), Mexico (e.g., Behrman, Parker, and Todd 2011; Schultz 2004), Nicaragua (Maluccio and Flores 2004), and Pakistan (Chaudhury and Parajuli 2010).

Studying the impacts of PROGRESA—the first modern CCT program—Schultz (2004) estimates that the largest impacts were on the transition from primary to secondary school for boys (about 5–8 percentage points more likely) and for girls (about 8–10 percentage points more likely). Notably, the PROGRESA program used an escalating schedule of reinforcement, in which the size of the grant the family received increased as children progressed through successive grades (Rosenberg 2008). The purpose of this payment schedule was to compensate for the opportunity cost of sending children to school (Levy 2006), which included wages received from child labor that increased with the child's age.[17] Similarly, Attanasio et al. (2010) estimates that a Colombian CCT program increased school participation of youths that were 14–17 years old by 5–7 percentage points and of younger children by 1–3 percentage points. The largest estimated effects were in relatively urban parts of rural regions as compared to very rural areas. The authors conclude that the effects were primarily driven by reductions in child domestic work. Barrera-Osorio et al. (2011) find that postponing the cash transfer payments until the point when children reenroll in school leads to a greater impact on enrollment rate while retaining the same increase in attendance rate prior to reenrollment. The biggest gains were found for the poorest and most at-risk children. The students were not required to reenroll as a condition of receiving the funds, but the program disbursed cash at the time when education expenses were incurred. In a parallel experiment, lowering monthly cash transfers to families but paying the balance when and if a student graduated and enrolled in tertiary education had the desired effects: graduation and tertiary enrollment rose

BOX 2.

Evidence from U.S. Student Financial Incentives

Thus far, the evidence of effects of student financial incentives on student performance in the U.S. has been weak at best, though one reason may be the small size of the trials (Fryer 2011). Research in this area is ongoing, but to more closely parallel the developing country evidence, evidence on the impact of incentives for the family (parents or guardians) is needed. One RCT examining the impact of financial incentives for teachers in New York City found no effect on student outcomes including attendance, scores, or graduation. If anything, results suggest a negative effect on student achievement (Fryer 2013).

significantly. Notably, making payments contingent on graduation rather than attendance actually led to higher daily attendance than when the payments were made for attendance alone.

Results of cash transfer programs from a number of other countries are consistent with the previous findings, though effect magnitudes differ. Schady et al. (2008) estimate significant increases in Ecuadorean school enrollment of about 3–4 percentage points. Further effects on enrollment were significant only for households receiving conditional transfers (i.e., not for unconditional transfers). In Nicaragua, Maluccio and Flores (2004) estimate an average net increase in school enrollment of 13 percentage points, along with improvements in grade progression. Catubig and Villano (2017) also identify a quite small (about 1 percent) but positive and significant effect on Filipino school enrollment for participants of a cash transfer program. Unusually, evidence from Bangladesh suggests no effects of cash transfers on school attendance, though it identifies positive health impacts including reduced malnutrition and improved nutrition knowledge (Ferre and Sharif 2014).

Evidence of effects on other outcomes has been more mixed. Stampini et al. (2018) identify the impact of CCTs on learning outcomes and placement after school for Jamaican students. They report positive effects on test scores for boys, who scored 5.1 percent higher on the 6th grade achievement test than nonbeneficiaries and placed in higher-ranked secondary schools. However, no significant impacts for girls were identified. In the Philippines, a partial schooling subsidy for child education increased child labor, apparently because the cash transfer was insufficient to pay for all costs,

requiring children to earn the remainder (de Hoop et al., forthcoming). This example clearly demonstrates the importance of careful program design.

Turning from students and families to teachers, the evidence on the impact of financial incentives is quite mixed. In one of the most methodologically careful studies, Glewwe, Ilias, and Kremer (2010) conducted an RCT in Kenya on a program that rewarded primary school teachers on the basis of student test scores, scores that importantly included penalties for students who did not take the exams. Results show improvement of test scores on exams linked to the incentive scheme, but not on other unrelated exams.[18] Moreover, students did not retain the gains once the incentive program ended; this casts doubt on studies that examined only short-term improvements.[19] Evidence from the United States is similarly mixed (see box 2).

The Policy Approach

- **Implement and extend CCT and cash-plus programs** in lagging areas in the United States. Although there are of course small, local programs providing grants and funding guarantees for high school graduates from lagging areas to go to college, there are fewer incentives to encourage high school completion for those who are not (or do not think they are or could be) college-bound. Attaching incentives to intermediate milestones on the path to high school graduation would also be helpful, particularly to the extent that there are benefits to staying longer in school even without graduating. Incentives may be increased as successive milestones are passed.
- **Engage the private sector in CCT programs**, encouraging firms to offer entry-level jobs (or high consideration for jobs) to individuals who graduate but are not going on to college. The private sector is already quite active in a substantial number of charter schools (such as at Thurgood Marshall Academy in Washington, DC), but this engagement is often limited to or focused on potential future college opportunities, rather than on immediate employment. A graduate making use of such employment opportunities would not be making a decision to forgo college; the hope is that students who decide not to go to college may now decide to do so later, for which their high school diploma is of course a prerequisite.
- **Build on current early childhood interventions**, developing effective targeted programs in lagging areas. Doing so is likely to facilitate the adolescent-age interventions examined in more detail in this chapter

because it will improve student preparation when they arrive in middle and high school.

A note of caution: the choice of conditions and the consequences of not meeting the conditions need to be considered carefully in any type of conditional transfer. As examined in the section below on psychological and cognitive dimensions, living in poverty creates a high cognitive burden.

Taken together, the evidence base accumulated in development economics suggests a number of policy approaches that could be pursued in the United States, most notably: raising the minimum dropout age, providing specific information about the benefits of graduating high school, targeted special tutoring to improve outcomes, CCTs, and other incentives to encourage high school attendance and graduation. Not every approach would transfer directly to the U.S. context, but the evidence suggests that carefully monitored experiments and trials in these areas could be fruitful.

Raising Nutrition and Health for Lagging Areas: Addressing Physical Health, Mental Health, and Cognitive Challenges

It is critical to recognize and address the fact that, for many children and youths, improved nutrition and health care are also foundational for school success. There is much discussion about the insufficient coverage of programs for delivering basic nutrition and health to families in lagging areas. Many families in need remain ineligible for assistance, particularly in states that have not expanded their Medicaid coverage under the Patient Protection and Affordable Care Act (ACA) of 2010.

ENCOURAGING UTILIZATION OF EXISTING HEALTH AND NUTRITION PROGRAMS BY ELIGIBLE FAMILIES

Although eligibility requirements are stringent, existing programs of nutrition and health insurance for the poor are often unused or underused even by those who are eligible. Indeed, a significant number of parents of low-income U.S. children do not take full (if any) advantage of even the publicly funded health and nutrition assistance opportunities they do have (Kenney et al. 2011). This problem is likely to be particularly concentrated in lagging areas.[20]

Important examples of U.S. programs for improving health and nutrition are SNAP, WIC, CHIP, and (expanded) Medicaid. Extensive empirical evidence from the United States demonstrates that these programs make valuable investments, and that they pay for themselves over a lifetime.[21]

Another more general federal program, Temporary Assistance for Needy Families (TANF—sometimes known simply as welfare), provides general cash assistance that may of course be directed to health and nutrition, or vital expenditures including school clothes, supplies, and transportation.

Despite the success of public health programs such as Medicaid and CHIP at improving insurance among children from low-income families, Rudowitz et al. (2016) find that of the "32.3 million nonelderly people who remained uninsured as of 2015, an estimated 27 percent (8.8 million) are eligible for Medicaid or the Children's Health Insurance Program (CHIP)." About 77 percent of these people live in states that have expanded Medicaid. The study estimates that some 3.2 million uninsured children are Medicaid- or CHIP-eligible. Similar gaps exist for SNAP and WIC.[22]

A key policy concern is also retention among those enrolled at some point in these programs. Although available national estimates appear to predate the ACA, Sommers (2010) estimates that, in 2008, 26.8 percent of uninsured children had been enrolled in public insurance the previous year, with 21.7 percent formerly enrolled in Medicaid and 5.1 percent enrolled in CHIP.

Many low-income families seem to be unaware of these programs or how to enroll in them (Kenney et al. 2011). Additional identified reasons for program dropout and low retention include documentation and related concerns among immigrant parents of children born in the United States. In addition, states have faced widely varying budgetary constraints as they emerged from the Great Recession, with some states apparently making significantly less effort at enrollment outreach than others. This partially explains the state-to-state variation in program enrollment and retention rates.

Finally, it is worth mentioning that an estimated 2.2 million currently uninsured people are too poor to qualify for health insurance tax credits but remain ineligible for Medicaid because they live in a state that did not expand Medicaid as part of the ACA (Garfield, Damico, and Orgera 2018).

Cognizant of such enrollment and participation shortcomings, the American Academy of Pediatrics (AAP) issued a policy statement in 2014 including statistics on limited participation among those eligible, and making recommendations to increase their enrollment and retention in CHIP and other existing health programs (AAP 2014). It also called for program coverage expansion and improved funding. On the supply side, AAP recommendations included expanding the funding base of the CHIP program and maintaining contingency funds for states and regions that

have faced periodic budgetary constraints, particularly after the Great Recession. The AAP also recommended that all states be mandated to adopt automatic coverage for newborns and to design incentives to encourage continuous enrollment. They further recommended that CHIP enrollment and renewal procedures be streamlined to allow self-declared income, use passive renewal procedures, eliminate face-to-face renewal requirements, and improve communication with families regarding renewal procedures.[23] On the demand side, the AAP stressed that concerted efforts are necessary to raise awareness about these programs and their benefits among already-eligible families by developing outreach activities that are specific to local context. They recommended collaboration with community-based programs having strong relationships with local communities to help enroll uninsured patients.

Research has demonstrated very substantial economic benefits from successfully addressing undernutrition and health-care coverage deficiencies in developing countries (e.g., Alderman, Behrman, and Puett 2017). An important channel through which these economic benefits are generated is the effect of children's improved health on learning in school. For example, de-worming in Kenya decreased absenteeism by about one quarter (Miguel and Kremer 2004); students were still benefiting even a decade later, with more years of schooling completed, better jobs, and other outcomes (Baird et al. 2016).

Incentives can be quite effective at increasing nutrition and health service utilization rates—and thereby improving health—among eligible families. Developing country research indicates that families' knowledge of programs service and availability is limited and that outreach can be useful for raising utilization rates. In addition, CCT and cash-plus programs can increase the use of available health services and improve health outcomes (Ranganathan and Lagarde 2012). In different CCT programs, receiving cash has been made conditional on terms requiring that children get regular health checkups, that children's immunizations are up to date, that pregnant and breastfeeding women have regular health visits, and that mothers attend health education workshops or receive other health information. (Note that CCT interventions typically comprise multiple conditions and transfers, and it is difficult to attribute outcomes to a specific programmatic component.) Eligibility for other development programs are also sometimes conditional on health activities.[24]

The research on the impact of CCTs on health outcomes focuses on the role of the programs in overcoming financial, nonfinancial, and behavioral obstacles. In accessing health services, obstacles faced by families may

include direct costs (e.g., health goods and services that require payment), indirect costs (e.g., transportation costs), and other opportunity costs (e.g., loss of income-generating activities when spending time accessing health services). Most CCTs aim at overcoming one or more of these barriers to improve health outcomes of the target populations.

There is a substantial body of research showing that CCTs can help overcome these obstacles and improve the use of available preventive and curative health services, as illustrated by the following sample of research findings. In Mexico, under the pioneering and rigorously evaluated PROGRESA CCT program, participant families visited health facilities twice as frequently as nonbeneficiary control group families (Gertler 2000). A different CCT program in Nicaragua similarly increased the percentage of infants taken to public health facilities over the previous six months by 17.5 percent for all children, and 23.6 percent for children with special needs (Maluccio and Flores 2004). In Honduras and India CCT programs significantly increased the rate of antenatal care visits (Lim et al. 2010; Morris, Flores, et al. 2004). Finally, a CCT program in Chile led to a significant 4 to 6 percentage point–increase in the number of preventive health-care visits for children less than six years of age, albeit only in rural areas (Galasso 2011).

Impacts on health outcomes have generally been positive.[25] In Mexico children who are 0 to 35 months old in families receiving CCTs experienced a reduction in their illness rate of about 40 percent after two years of the program. Moreover, there were marked increases in mean hemoglobin, reductions in anemia prevalence, and lower incidence of stunting and obesity (Barham 2005; Berhman and Hoddinott 2005; Fernald, Gertler, and Neufeld 2008; Gertler 2004). Similar results were obtained in Nicaragua and Bangladesh (Ferre and Sharif 2014; Maluccio and Flores 2004).

CCTs have been found to help overcome nonfinancial as well as financial obstacles, including imperfect information and lack of understanding among potential participants of health and nutrition benefits (e.g., Fiszbein and Schady 2009; Gaarder, Glassman, and Todd 2010; Medlin and de Walque 2008).

Some interventions have used direct communication of relevant information to address problems such as the underestimation of returns to health services, without using CCTs.[26] However, simple information provision interventions are likely to break down under two common circumstances: when incorrect beliefs are self-reinforcing, and when individuals believe they have no need for information (especially when incorrect information has deep cultural roots). In such cases, a cash transfer conditional on receiving correct health information may be more effective. A key condition

in the successful CCT programs implemented in Brazil and Mexico included attendance at educational workshops for pregnant and lactating women. Health and education participation conditions have also been used for subsidized microfinance, which may yield benefits.[27] Finally, CCTs have been used to provide nudges toward healthy habits (Higgins 2010; Medlin and de Walque 2008; Thaler and Sunstein 2008). In a classic example of a simple nudge, there is some suggestive evidence that unconditional cash transfers (UCTs) can improve health outcomes simply by including words such as "health" or "nutrition" in the program titles.[28] The impact of user fees is another widely studied topic. In most cases, studies find that user fees have a large negative impact on the use of health services.[29]

While there is less evidence on UCTs than on CCTs, there are some promising initial findings. Research on the staggered implementation of a UCT in South Africa found that unconditional transfers given to women had a positive effect on child nutrition, with significant gains in height-for-age for treated children (Agüero, Carter, and Woolard 2007). Similarly, for a UCT in rural Ecuador, Paxson and Schady (2010) report evidence that treated children belonging to the poorest of households had an 18 percent improvement in combined cognitive and behavioral scores (receptive vocabulary, short-term and long-term memory, visual integration) and a 16 percent improvement in combined physical outcomes (hemoglobin, height, fine motor control), compared to control group children.[30]

The Policy Approach

- **Facilitate family participation** in existing health-care and nutrition-assistance programs like CHIP, Medicaid, and SNAP by
  - instituting automatic coverage for newborns;
  - designing CCT incentives to encourage continuous enrollment;[31]
  - streamlining CHIP enrollment and renewal procedures;
  - using passive renewal procedures and eliminating face-to-face renewal requirements;
  - rebranding some local programs to emphasize specific goals, even when there are no specific conditions for continued participation;
  - improving communication with families regarding renewal procedures, and by otherwise raising awareness about these programs and their benefits among eligible families; and
  - developing local context–specific outreach activities, including collaboration with community-based programs to enroll all eligible families.

- **Use RCTs to assess these initiatives**, including CCTs, to determine which is most effective in different U.S. contexts.

These proposals are not intended to suggest that the supply of education as well as health care is not also limited in lagging areas, nor that this is unimportant. There may be poor school quality, as well as limited numbers of doctors willing to accept Medicaid patients. The point is rather that while the supply of services matters, raising take-up of existing programs is also important; there is evidence that initiatives to achieve this goal have had favorable impacts in developing countries.

Still more can be done to improve the likelihood that eligible people in need will enroll—and have more effective outcomes for those already enrolled—by systematically incorporating lessons from recent research in behavioral economics, including insightful experiments in developing countries.

ADDRESSING THE PSYCHOLOGICAL AND COGNITIVE DIMENSIONS OF POVERTY

The recent development and behavioral economics evidence base has extended our understanding of the psychological, cognitive, and economic behavioral lives of the poor, with implications for lagging U.S. areas ranging from education to mental health policies.

In addition to physical health deprivations, lagging areas in the United States also struggle with negative cognitive and psychological implications of poverty, ranging from stress- and environmentally-linked deficits in cognitive skills, to lower noncognitive skills, to a greater incidence of mental illness (including substance abuse). Moreover, cognitive functions that can be directly impaired by specific stressors of poverty include focused internal and external attention, inhibitory control, cognitive flexibility, and planning.

Effects on noncognitive skill are just as important: A growing understanding of the role of these skills for life success has emerged from recent progress in economic research and policy analysis (Heckman and Kautz 2012; Heckman, Pinto, and Savelyev 2013; Heckman, Stixrud, and Urzua 2006). Noncognitive skills may be taught (or learned implicitly) in school, and they are likely formed at least as much in interactions with parents, peers, and the broader world. Poorer children gain fewer noncognitive skills, making it more difficult for them to function well in the job market and other social settings.

More broadly, poverty-related causes of stress can range from financial worries to persistent noise, air pollution, and short and disrupted sleep

(Patel et al. 2010). In turn, poor thinking and judgment can create or worsen poverty, thereby creating the potential for a vicious circle. These factors make it more difficult for people living in lagging areas to take actions to improve their conditions.

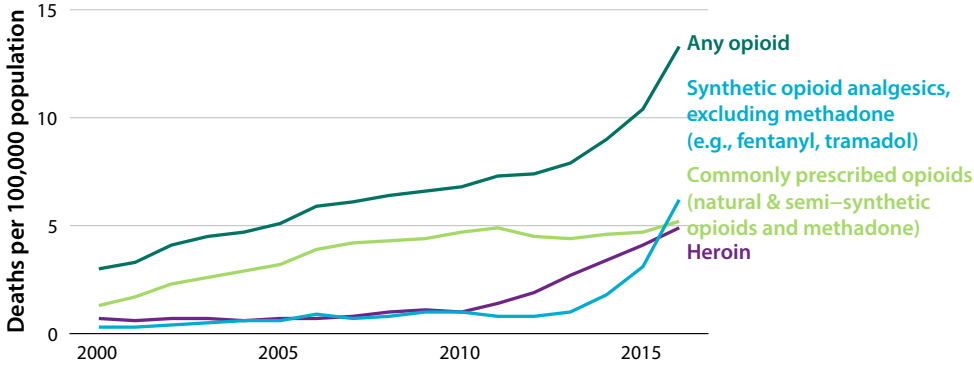
Substance abuse is a serious mental health disorder. By 2016 overdose deaths were five times higher than in 1999; an estimated 630,000 people died from drug overdoses between these two years. In 2016 about two thirds of the approximately 64,000 drug overdose deaths in America involved an opioid (Centers for Disease Control and Prevention [CDC] 2017). An increasing number of opioid deaths are attributed to fentanyl and other dangerous synthetics (see figure 3). A disproportionate fraction of these deaths occur in lagging rural counties and lower-income urban areas.

In the United States, as throughout the world, there is a strong relationship between poverty, depression, and anxiety (Patel 2000); this is a pronounced problem in lagging areas such as some Native American reservations (Costello et al. 2003).

The suicide rate in the United States has also risen significantly: in 2016 suicide was the second-highest cause of death through adolescence and young adulthood, and the fourth-highest cause of death among Americans age 35–54 (CDC 2016).[32] Rates of mental illness among youths are rising as well, although some of the reported increase could be due to better diagnosis.[33]

FIGURE 3.

Opioid Overdose Deaths, 2000–16



Source: CDC 2000–16.

THE HAMILTON PROJECT
BROOKINGS

Fortunately, much is being learned about these problems and issues, and some of the less well-known but insightful research has been conducted recently in the developing world.

Addressing the "Cognitive Tax" of Poverty

In recent years the development economics literature has focused much more research on the ways that poverty can impede cognitive functioning, from attention and self-discipline to mental depression and anxiety (see Mani et al. 2013; Mullainathan and Shafir 2013; Schilbach, Schofield, and Mullainathan 2016; and World Bank 2015). Impacts of low income and undernutrition are fairly well-established. Although more research is needed, there is also suggestive evidence that poverty can lead to cognition-impairing stressors including chronic pain (Case and Deaton 2015), exposure to chronic noise (Stansfeld et al. 2005), and potentially sleep deprivation and disruption (Dean, Schilbach, and Schofield 2018). In sum, living in poverty means paying cognitive costs that the nonpoor may be completely unaware of.

Being poor means having to focus more attention on urgent financial problems that require little or no attention by the affluent; these problems leave less cognitive capability (e.g., in memory or attentiveness) for other activities that would aid in breaking out of poverty (Mani et al. 2013). Examples of such activities include preventive health care, adherence to drug regimens, promptness for appointments, attentiveness to their children, management of family finances, and general worker productivity. Cognitive challenges tend to increase with stress. Field evidence from India shows that farmers perform at lower levels during periods of financial stress before harvests relative to after the harvest—approximately equivalent to an effect of 10 IQ points (Mani et al. 2013).

In an earlier section I examined the potentially beneficial effects of providing information to help children and parents make better schooling decisions (Battaglia and Lebedinski 2017). The new behavioral economics research on the cognitive burden of poverty is suggestive of ways that assistance (including by counselors) might improve the capacity of people to make good decisions in other ways. It underlines the importance of seeking to simplify forms and to help people fill them out, and of timing programs and activities intended to benefit the poor to when cognitive load is likely to be lower (Mani et al. 2013).

But other factors such as undernutrition also play significant roles in the cognitive problems of the poor. Though perhaps less severe in the United States, undernutrition and food insecurity still affect many U.S. children

and families: in 2017 17.0 percent of children lacked consistent access to sufficient nutrition (Coleman-Jensen et al. 2018).

Potential Impacts of Undernutrition

It is readily apparent that undernutrition decreases physical strength. Recently, evidence has grown that it also leads to decreased cognitive functioning including difficulties concentrating and thinking clearly, inattentiveness, less self-discipline in resisting temptation, and other limitations.[34]

In India an RCT examined the effects of providing additional calories for undernourished bicycle-rickshaw drivers (Schofield 2014). Work hours and earnings were recorded throughout the five-week study, and performance on physical and laboratory-based cognitive task tests were measured. Results showed that the rickshaw pullers given extra calories had more income and also significantly improved their performance on the cognitive tests by 12 percent. In addition, the authors found that study participants significantly reduced their discount rates for work effort. The bicycle-rickshaw drivers were given the opportunity to choose between taking a journey with a lighter load today or a heavier load tomorrow; both journeys earned the same payment received tomorrow. The nutrition-treated participants were a striking 25 percent more likely to choose the lighter journey today instead of delaying at the cost of a having a more difficult task tomorrow (Schilbach, Schofield, and Mullainathan 2016).

Impact of Cash Transfers on Psychological and Cognitive Dimensions of Poverty

Several RCT studies have demonstrated that reductions in poverty caused by cash transfers lead in turn to reduced stress and depression, and improved psychological well-being, in countries including Kenya (Haushofer and Shapiro 2016); Malawi (Baird, de Hoop, and Özler 2013); and Mexico (Fernald and Gunnar 2009; Ozer et al. 2011).

There is also a growing cash-plus literature showing that family cash transfer programs, coupled with complementary family services including psychosocial support home visits, can have wider beneficial effects on children and youths (Roelen et al. 2017). In poor South African households receiving cash transfers, adolescents who also received household visits by a home-based counselor reported fewer HIV risk-taking behaviors than those in cash-only households (Cluver 2014).

Another example of the importance of combining financial and psychological support comes from a Liberian study that examined the impact of cash and therapy on violence and other criminal activities. The research found that transferring a small amount of funds to criminally engaged men had a short-run positive effect in deterring violence and other criminal activities. Cognitive behavioral therapy also had a positive but time-limited effect, and a combination of the two interventions had a long-term effect (Blattman, Jamison, and Sheridan 2017).[35]

The Importance of Being Reminded

All people have cognitive limits; memory is imperfect, and everyone can benefit from being reminded of important things that may otherwise be forgotten and not attended to in a timely way (see, e.g., Thaler and Sunstein 2008). When individuals are subject to poverty and other stressors that can be found in lagging areas, their cognitive resources are more challenged. Recent developing country research has shown the benefits of sending reminders to the poor.

Adherence to medicine regimens is lower for the poor than for the nonpoor in every country, including the United States; this has been attributed to the cognitive burden of living in poverty. An example is the lower adherence to HIV/AIDS drug regimens: In Kenya patients were randomly selected to receive either daily or weekly cell phone reminders to take their HIV medications (Pop-Eleches et al. 2011). Patients who received weekly text (SMS) reminders had a 13 percentage point–increase in their adherence rates, defined as taking their medicines 90 percent of days, though daily reminders produced no effect.

Evidence from Bolivia, Peru, and the Philippines shows that reminders sent by text message can lead to increased savings (Karlan, Morten, and Zinman 2016). In particular, the reminders were effective when they included reference to specific future goals. The implication is that limitations in memory and recall (or focus) are part of the cause of low savings, and that reminding people of their future goals can change their current behavior. Similarly, significant effects have been identified for loan repayment reminders (Karlan et al. 2016).

Reminders can be implicit, rather than rely on personal contact or phone or text messages. In Kenya providing the poor with chlorine at the place where they collect water was more effective at increasing usage than providing it at their homes (Kremer et al. 2009).

Offering Self-Commitment Devices

People are often quite aware of their cognitive limitations, including how they get more challenged under stressful conditions. In these cases, many people choose to take part in self-commitment devices when they are available. Peoples' interest in taking part in these is itself evidence of the types of cognitive limits emphasized by behavioral economists.

In the Philippines there was a high take-up rate of a product enabling a commitment to increase savings by voluntarily giving up access to the funds until their savings goal was reached. The product was effective in increasing participants' savings rates (Ashraf, Karlan, and Yin 2006); this is both evidence of self-control problems and evidence of how people can be offered choices to help them to manage this limitation.

Study participants in Kenya did not increase savings when given access to savings accounts, but did when given access to rotating savings and credit associations (ROSCAs) (Dupas and Robinson 2013).[36] This suggests the importance of external self-commitment devices or related social pressure for achieving savings goals.

Analogously, nearly half of low-income workers in a study in India were willing to pay for a product providing incentives to remain sober; about a third of participants were willing to give up 10 percent or more of daily income to make a sobriety commitment (Schilbach, forthcoming). Again, this constitutes evidence that cognitive limitations are quite real, and also provides a hint at how they can be managed.

Family Mentoring and Child Development and Sponsorship

Important evidence comes from weekly home visits by community health workers in Jamaica that demonstrated to mothers how to play and interact with their children to promote cognitive and emotional development. Two decades later, children from families selected for the program earned 25 percent more income as adults compared with children in the control group (Gertler et al. 2014).

There is also evidence that international child sponsorship can have an impact on long-term outcomes (Wydick, Glewwe, and Rutledge 2017). In particular, Wydick, Glewwe, and Rutledge (2013) estimate that a child sponsorship program led to a 12 to 18 percentage point–increase in the rate of secondary school completion.[37] Moreover, adults in six countries who had been sponsored as children saw positive impacts not only on years of schooling, but also on adult employment and income.[38] Glewwe, Ross, and Wydick (2018) find that sponsorship improved psychological well-

being. Ross et al. (2018) find that child sponsorship led to substantial and statistically significant increases in self-esteem, optimism, and expected education in Indonesia, Kenya, and Mexico.

The Policy Approach

Clearly, one way to reduce the mental strain of poverty is to attack the existence of deprivation itself. That said, the evidence from development economics suggests policy approaches to dealing directly with the strain.

- **Encourage families to take full advantage of benefits**—including mental health benefits—to which they are already entitled in their current health-care programs. This can be prioritized in the same outreach efforts to bring new users into programs such as Medicaid. Medical professionals can receive further information and training on new findings in cognitive research as well as adolescent mental health.
- **Increase the accessibility of these programs.** Poor mental health conditions and lack of agency, as well as other impacts on cognitive bandwidth, likely explain why many of people do not sign up for these programs in the first place.[39] It will be important to take this into account when conducting outreach to sign up more participants, and then encourage them to make full and adequate use of these programs. This will probably require special training. For example, such an initiative could require building cognitive considerations into the design of and outreach for any policies and programs intended to benefit those living in poverty, applying a general approach that Thaler and Sunstein (2008) labeled choice architecture. In particular, it is important to make it easy for qualified families to learn about programs that could help them, select beneficial options, sign up, and then follow up and participate.
- **Support local mentorship programs,** including those that are informal and semiformal, for both youths and adults.
- **Pair cash transfers with other services.** The developing country evidence suggests that cash transfers—whether or not they are conditional on behaviors such as taking children for a health checkup—will often have a greater effect if they are combined with other services at the point of contact (Roelen et al. 2017). These cash-plus program services can help compensate for the so-called cognitive tax that results simply from being poor.

Improving Infrastructure in Lagging Areas

BETTER NETWORKS FOR PEOPLE, GOODS, AND INFORMATION

Good connections can help a region to thrive; a lack of connections reduces opportunities to catch up. For a problem as widely discussed in the United States as the crisis of transportation infrastructure, its severity and scope seem to have not fully registered. The infrastructure maintenance problem is widespread and increasingly dangerous. At the national level the American Society of Civil Engineers (ASCE) gave a nationwide infrastructure grade of a D+ in its 2017 Infrastructure Report Card. But lagging areas sometimes have particularly severe basic deficiencies.[40] In some cases, U.S. infrastructure deficiencies are significantly worse than developed country norms (ASCE 2017). Faster and safer travel time improves connections of lagging areas to jobs and to markets for current and potential products made in those areas. In lagging urban areas, better transportation may provide residents access to jobs that are physically out of reach. Though not ideal for some, no doubt many others would accept distant jobs if they were made accessible through improved public transportation and roads. In rural areas, better connections may make it possible to move into new economic activities, such as cultivating high-demand specialty agricultural products.

Some chronically lagging inner-city areas in the United States still suffer from past federal policies, of which the best-known example is redlining. Highways were placed with the conscious intent of segregating neighborhoods and weakening, if not completely removing, African American neighborhoods (Rothstein 2017). Planning was developed at the state and local levels, but was carried out with federal acquiescence; these were ways to get around desegregation rulings and were discussed as such (Rothstein). In cities including Los Angeles and Miami, highways were deliberately placed to eliminate African American areas (Rothstein).

Information infrastructure has been taking on ever-increasing importance. Many citizens in both urban and rural lagging areas still lack internet access, often because it is either unavailable or unaffordable. This impacts education, job search, and access to health and other vital information, as well as business development.

Development Economics Findings

The development economics literature suggests two main arguments for why physical infrastructure raises economic activity and incomes. First,

better infrastructure lowers the transport costs of trading goods and services with a wider market.[41] Second, roads or rails enable movement of factors of production (primarily meaning people). Better infrastructure may facilitate labor exiting an area to one in which income and other opportunities are greater. Part of the benefit of infrastructure may be the easier flow of information about outside opportunities. In addition, improved infrastructure may be needed to move larger capital goods. However, some of these production benefits may be limited in that roads also make it profitable to transport competing goods from outside regions, putting some existing firms out of business; of course, this might ultimately benefit consumers.

In developing countries the lagging areas generally have less connectivity than in developed countries. In part, this is simply the result of there being less economic activity to connect to or less demand for travel for recreational purposes. But there is evidence that building better transportation access can cause increased economic activity; on the other hand, there is also evidence of negative impacts on areas that are *not* connected to new transportation infrastructure (Redding and Turner 2015).

Having adequate infrastructure in the right places is an essential component of economic development. Many systematic analyses of a developing country's economic problems (such as growth diagnostics exercises) include findings of infrastructure deficiencies (Hausmann, Klinger, and Wagner 2008; Hausmann, Rodrik, and Velasco 2007; Rodrik 2003, 2007).[42] Governments in developing countries often fail to build infrastructure despite the need and opportunity, or they build the wrong infrastructure in the wrong places. But the most frequent problem is neglect of maintenance after construction is completed, whether built and funded by domestic government or with foreign participation or assistance.

Fiscal constraints are an often-stated reason for not building or maintaining infrastructure. This is a common refrain during debt crises, including the lost decade in Latin America of the 1980s and the (nearly) two lost decades in Africa of the 1980s and 1990s. Austerity remains the most common response to financial crises, particularly those associated with balance-of-payments problems, but it has not often led to the desired economic growth. One explanation comes from research in development economics that highlights the strong complementarities between public and private investment, implying that private investment is often not forthcoming without public investment.[43] However, in austerity programs public investment is generally one of the most quickly cut expenditures.

Proximity to new transportation infrastructure can confer large benefits. In the Industrial Revolution, railroad expansion took place at the same time as historically rapid economic growth in Japan, the United States, and Western Europe, though the causality is ambiguous. Using historical evidence, Donaldson and Hornbeck (2016) estimate that the total value of U.S. agricultural land would have been 60 percent lower without railroads.

In the context of developing countries, Ghani, Goswami, and Kerr (2013) estimate that districts in India located 5–10 kilometers away from the new Golden Quadrilateral highway system gained more productivity than districts 10–50 kilometers from the highway. Datta (2012) uses the same quadrilateral program as a natural experiment and concluded that the highway system led firms to enhance their efficiency by improving their supplier source and reducing necessary inventories.[44]

Donaldson (2018) presents strong evidence on the positive impacts of transportation on trade and economic development in India. Using archival district-level panel data, he estimates that colonial railroads reduced the cost of trading, narrowed regional price variations, increased trade volumes, and led to a 16 percent increase in real agricultural income (a proxy for economic development in a historically agrarian economy such as India).

Gunasekara, Anderson, and Lakshmanan (2008) estimate net benefits of improved infrastructure in Sri Lanka, investigating the magnitude of structural transformation at the firm and household levels resulting from a major highway project. The authors find that individual firm output increased by 70 percent, and that highway improvement induced firms near the highway to become more capital intensive, and firms farther away to become more labor intensive. At the household level, the highway project increased income and induced a shift away from land- and labor-intensive occupations, and toward skilled employment.[45]

Developing economies provide useful experiences of connecting previously isolated, hinterland areas to the core economy. One such example was studied by Blankespoor et al. (2018) with the building of the major Jamuna Bridge in Bangladesh. Manufacturing activity shifted from the isolated to the core region of the economy; these de-industrialization effects were most pronounced at an "intermediate distance from the bridge" (35). However, there was considerable other evidence of positive effects on economic activity, suggesting net economic benefits.[46]

Bosker and Garretsen (2012) also report evidence of benefits of improved connectivity in sub-Saharan Africa, with most of the impacts apparently

driven by access to other markets in the region.[47] Jedwab and Storeygard (2018) present evidence that the impact of transportation investments varies by context; specifically, effects of market access appear to be stronger for cities that are smaller, more remote, surrounded by poorer agricultural land, and less politically favored.[48]

Evidence from China suggests somewhat different conclusions. Banerjee, Duflo, and Qian (2012) examine the effect of historical access to transportation infrastructure on regional economic outcomes in China, concluding that proximity had positive—but quite small—impacts on per capita GDP, and no impact on per capita GDP growth. Faber (2014) examines the impact of China's National Trunk Highway System, taking advantage of incidental connections with peripheral counties that were otherwise similar to counties that were not connected. Faber finds negative impacts on connected peripheral counties, apparently due to reduced industrial output growth as investment shifted to larger connected cities.[49] However, a more positive lesson of research on China for lagging areas is the importance of industrial districts, or clusters.[50]

Past decisions about infrastructure that helped some regions (and possibly hurt others) may have effects lasting several decades or more. Jedwab and Moradi (2016) find persistence in the effects of colonial railroads in sub-Saharan Africa on economic development.

Lessons and Limitations of the Research

In recent years the development economics literature on infrastructure has made considerable progress.[51] Better data have been collected, and they have been analyzed using better identification strategies. Most studies of transportation projects have found strongly positive direct, local effects; however, their general equilibrium effects (i.e., taking account of spillover effects for areas and markets not directly affected by the infrastructure project) are still not well understood or measured. And transportation infrastructure can have different effects in different contexts; the reasons for this heterogeneity are not yet well understood. Moreover, transportation infrastructure is very costly, but there has been very little assessment of the net benefits of transportation projects in comparison with alternative investments, such as in education or health. Finally, the placement of infrastructure is very important—it can have substantial effects on the pattern of economic activity that can last for a century or more.

The Policy Approach

Considering the challenges and the developing country evidence base, researchers and policymakers should start with the following questions before proceeding to policy solutions:

- Are there lagging areas (rural or urban) that have been systematically bypassed?
- Are areas that were cut off in the past (but more recently connected) still experiencing lasting impacts?
    - To what extent were lagging areas intentionally discriminated against in the past, and what is the legacy of that discrimination? As one observer put it, not all lagging areas were created equal; some areas were intentionally created to lag, while others are unintentional victims of changing economic circumstances.[52]
    - Has infrastructure development artificially isolated parts of cities, as was the case with highways dividing or cutting off neighborhoods decades ago?
- Have some lagging areas lost benefits of connectivity when interstate highways or other key infrastructure bypassed them?
- Can more be done to reconnect these disconnected areas? What can we predict about impact?
- To what extent do the findings in the literature, which largely focuses on the impacts of creating new infrastructure, extend to investments in infrastructure maintenance?

A national, comparative study of cutoff urban areas is a prerequisite for a systematic policy approach. Some key topics for future research include complementarities among private investments, and complementarities between public and private investments.[53] For an example of how related coordination problems have likely constrained the prospects for a fuller recovery in Detroit, see the innovative analysis of Owens, Rossi-Hansberg, and Sarte (2018).

Relating the Development Economics Evidence to the U.S. Context

As has been discussed, there is much good news from the developing world: in recent years much has been learned about what works best in education and health, and the lessons have been put to effective practice. A broader lesson is not to overlook what we can learn from countries that are "off

the beaten track." The wealth of carefully collected data from developing countries can provide valuable ideas for designing and testing programs, making for more-effective, evidence-based policies in the United States. Moreover, we can recognize some systemic similarities between problems that U.S. lagging areas face and the deeper difficulties of the developing countries.

In addition, one specific lesson from research on developing countries is not to overlook the significance of the psychological dimensions of poverty; rather than add to pessimism, this can aid in finding new and effective ways to help remedy the conditions of the poor. There are also broader insights one can draw from development economics, notably the importance of data, institutions, and the distribution and impacts of poverty.

LIMITED DATA AVAILABILITY IN THE UNITED STATES

This chapter shows that rigorous research on programs and policies is quite often carried out in the developing world; given this fact, surely we can benefit from testing programs in the rollout phase, across different contexts and lagging area settings, and to seek continuous improvements throughout a program's life. The survey data collection experience in developing countries shows that much can be learned for crafting as well as testing new approaches that solve local chronic problems. Program research in developing countries can point out ideas that might be successfully adapted here, depending on rigorous research on what designs work best in what contexts.

The previous sections have reported the results of dozens of studies from 32 developing countries on programs to assist poor or otherwise deprived people that use large-scale household surveys.[54] These studies found a large number of causally meaningful as well as statistically significant results that informed this chapter. None of this could have been possible without funding to collect relevant household data. This includes large-scale multicountry household survey programs, such as the World Bank Living Standards Measurement Surveys and the USAID-funded Demographic and Health Surveys, each of which includes at least one survey round in more than 100 countries. Moreover, a large number of special purpose household datasets are carried out for targeted research and evaluation purposes. World Bank firm-level surveys have also been highly useful.

Some progress is being made using data that have already been collected; recently available administrative data, particularly from IRS and unemployment insurance records, has been used to study local areas (e.g., Chetty and Finkelstein 2013; Chetty et al. 2016). However, these data are

not widely available to researchers and have thus far been used only in limited ways.

In addition to making better use of existing data, it is necessary to collect improved household survey–level data and other microdata in the United States to improve our ability to address problems of lagging areas. The point in some cases is not national- or even state-level statistically representative data, but data collection targeted directly at the population in question in lagging regions; this would enable causal research for those populations, as has been done for developing country studies.

An example drawing from the earlier section on improving secondary education outcomes is to survey junior high and senior high school students as well as their parents and guardians to determine precisely what they think about employment, income, and other benefits of schooling to help inform outreach planning. These would be complemented with special surveys of teachers and social workers. There is much to be learned informally about the U.S. lagging area context by some in-depth discussions—as I did in developing this chapter—but there is no substitute for statistically reliable sampling. Nor is there a substitute for rigorously evaluating programs intended to address social problems.

INCLUSIVE VERSUS EXTRACTIVE INSTITUTIONS

The preceding sections have underlined that while the United States faces serious economic and social problems in lagging areas, there are also solutions that have helped in other parts of the world—including in some countries with far lower per capita incomes. These include solutions for essential development prerequisites for development such as education, health care, and nutrition.

In addition to its widespread use of experimental methods, another hallmark of the development economics research community is its application of institutional analysis in assessing the deeper roots of successful and unsuccessful development. A better understanding of institutional constraints may also assist in the United States when designing—and successfully implementing—policies that will be more effective among those that are feasible in practice.

Institutions are humanly devised constraints that shape interactions (or the rules of the game) in an economy, including formal rules embodied in constitutions, laws, contracts, and market regulations, in addition to informal rules reflected in norms of behavior and conduct, values, customs, and generally accepted ways of doing things.[57] The critical importance for

successful growth and economic development of good institutions in this sense has been well established by a large body of development economics research.

Institutions particularly conducive to growth provide broad-based incentives for making productive investments in contrast to incentives for investing in extraction (Acemoglu and Robinson 2005, 2012; Acemoglu, Johnson, and Robinson 2001). Extraction in this general sense refers primarily to extraction from people and from public resources.[58] Other key institutions provide for access to opportunities for the broad population (see box 3), constraints on the power of elites and of chief executives, protection from expropriation, and restriction of coercive, fraudulent, and anticompetitive behavior.[59]

BOX 3.

Education: Political Economy of the School Financing System

In most other rich, developed countries, national governments play the primary role in funding the public education system. In contrast, the federal government plays a much smaller role in the United States, with state and particularly local government largely financing their public school systems (Temin 2017). One consequence of this is high educational inequality: local communities in a better position to fund their school systems provide education that is as good as that in any other rich country. On the other hand, poorer communities spend less per student, and are likely to have poorer outcomes on average. The degree of educational inequality in the United States is unusual for rich countries, but it is much more common among developing countries.

Over time, educational inequality in the United States has become more deeply structural and actively transmitted across generations by an educated elite who often, but not always, coincide with those with the highest income and wealth (Currid-Halkett 2017; Putnam 2015). To help lagging areas, an essential step is to provide more educational funding. This will likely be difficult as voters in richer areas may oppose taxation that help schools in distant communities.[55] Enhanced targeted federal support for public education should play an important role in assisting lagging areas.

While this may not fully address educational inequality, and may be difficult to sustain politically, the structural funding problem would benefit greatly from more-active public discussion and policy experimentation.

High inequality (in wealth and educational attainment) and non-inclusive institutions are mutually reinforcing, as is made clear by a substantial body of evidence from development economics research. In particular, there is evidence that high inequality leads to low public educational investments and that this in turn perpetuates poor institutional quality as well as low incomes (e.g., Engerman and Sokolof 2002; see also Easterly 2007; Sokolof and Engerman 2000; Todaro and Smith 2014, 89–90). Similarly, Easterly (2003), Husain (1999), and other analysts have concluded that Pakistan's poor education and literacy performance may result from incentives of the elite to keep the poor from gaining too much education.

There is historical evidence of obstacles to public education with similar patterns in the United States, of which the Jim Crow South is the best-known example.[56] Whether anything analogous may be present in the United States today is a different question; the historical and international record suggests that it is important to examine this closely. In any case, addressing patterns of unequal educational opportunity is a clear priority for improving the prospects of lagging areas.

High income is associated with good institutions; some part of this association may be due to the ability of rich countries to afford these institutions. However, the empirical evidence is clear that good institutions are also a cause of higher growth and incomes (Acemoglu and Robinson 2005, 2012).

Finally, it is important to note that poor institutions make it difficult to address important complementarities, the resulting potential for multiple equilibria, and resolving coordination problems that make it very difficult to otherwise move to a better and preferred equilibrium. Owens, Rossi-Hansberg, and Sarte (2018) apply this approach insightfully to problems of renewal in Detroit.

Poor institutions at the national and local levels can constrain opportunities for improvement in lagging regions. We should not underestimate the importance of improving institutions to enable more inclusive, substantial, and lasting progress in the United States. Insufficiently inclusive institutions may be a factor explaining why some areas lag, and why some areas do so chronically.

THE DISTRIBUTION AND IMPACTS OF POVERTY

The U.S. Census Bureau (Census) reports that 40.6 million people were below the poverty line in 2016. The Census defines *severe* poverty as the fraction among those who are poor whose income is less than half their official poverty threshold (depending on their family size). In 2016, the most recent year with available data, this fraction reached 45.6 percent of the poor, the highest it has been for at least two decades (having been 39.5 percent in the baseline year of 1996). Thus while overall poverty has decreased in the past couple of years, falling almost to its pre–Great Recession levels (which was 12.5 percent in 2007), more of the poor find they have farther to go to climb out of poverty (Bialik 2017). The best poverty measures show that overall poverty in a country can worsen even when the fraction who are poor falls, if incomes fall enough for those who remain poor.[60]

A characteristic of developing countries is the high burden of poverty on children. The data show that this is also the case in the United States.[61] Moreover, the chance of upward economic and social mobility for the poor and near-poor children—not only climbing out of poverty but also reaching a toehold into the middle class—have fallen to levels lower than most other rich countries (Chetty et al. 2016; Davis and Mazumder 2017). This low rate of mobility in itself may have discouraging effects on aspirations.

Moreover, in the United States, as in developing countries, poverty is not spread out evenly among the population, but is found concentrated in regions. In less-developed countries this poverty is primarily in rural areas, but to some extent also in peri-urban areas such as extensive slums within or adjacent to cities. Poverty in developing countries usually affects some identifiable subgroups of the population more than others, including racial, ethnic, indigenous, caste, and religious groups—above and beyond regional differences. For example, in Brazil poverty is concentrated among blacks, who are generally descendants of former slaves.

Aside from inner cities and individual rural counties in many states, there are broader regions of high poverty in the United States. Native American and Alaskan Native reservations are a clear example. As noted earlier, many developing countries have severe regional inequalities. When governments

focus on them, they consider how disparities across regions can slow growth, sow political instability, and even give rise to violent conflict.[62]

Lessons from development economics suggest that addressing concentrated poverty is an important consideration when examining regional gaps. Other chapters in this volume consider the issue in more detail: Nunn, Parsons, and Shambaugh (2018) discusses the distribution of poverty across counties, Hardy, Logan, and Parman (2018) considers the interaction of poverty and the spatial concentration of the African American population, and Neumark (2018) considers the high concentration of poverty in areas within counties.

Questions and Concerns

1. The United States is very different from many of the countries discussed in this report. How relevant is that evidence to U.S. initiatives?

The goal of this chapter is to find inspiration for new ways to think about addressing challenges at home, as well as reasons to try specific types of program experiments. Many studies argue that findings from one context and location have external validity to other settings; that is not the argument here. But development economics research can point out ideas for effective programs that could be successfully adapted here, as a result of rigorous research on what designs work best in what contexts. In fact, a major finding of the chapter is that rigorous research on programs and policies is often done even in the developing world, and that we will benefit from testing programs in the rollout phase and across different contexts, seeking continuous improvements throughout a program's life.

2. Can these kinds of programs be conducted in a fiscally responsible manner?

The cost of these proposals need not be high, as some of the developing country evidence demonstrates. In fact, the evidence shows that many targeted programs of the type examined in this chapter can pay for themselves, if we take a long time horizon and consider benefits including the lifetime savings in health costs and productivity gains. Rigorous evaluation can go a long way toward ensuring that funds are used effectively. The programs can be implemented in the context of other cost-saving measures that rigorous evidence can reveal. And with evidence in place, the nonprofit sector might also help to implement the most effective programs.

Conclusion

This chapter has drawn from research on education, health, nutrition, behavior, and infrastructure in many developing countries to highlight programs and policies that appear to also have high potential for lagging areas in the United States.

Each approach points to an important area for which increased U.S. research and evidence would be particularly useful. I underline again that findings from developing country contexts and locations may have no direct, immediate, or specific application to the United States or any specific U.S. programs. But the relevance of the research and the indicative value of its findings should be clear for the goal of the chapter: to help identify good candidates for specific program and policy experiments here at home. It is hoped that these programs will provide useful stimuli for new ways of thinking about addressing local challenges. In each case, funding is proposed for experiments to determine what program approaches and implementations are likely to work best.

The present is an advantageous time for action. This is a period of unusually low and fast-declining unemployment rates. As of August 2018, at least a small dent is being made in the lower labor participation rate.[63] Similarly, at least in some areas wages for unskilled workers are at last showing signs of rising, albeit quite slowly. But over a much longer time horizon—the necessary perspective of development economics—recent developments have not altered long-term trends for lagging places. As in developing countries, an upswing of this kind is an opportunity to take steps to sustain inclusive growth over extended periods (Rodrik 2007).

This chapter was developed and written from the perspective of the development economics literature. Even for policy proposals discussed in this chapter that are not new to the U.S. policy discussion, this chapter aims to present new evidence, new ways of looking at problems and solutions, and new forms in which to carry out specific programs.

Acknowledgments

I began work on this project while in residence as Senior Fellow at the UNICEF Office of Research–Innocenti in Florence, Italy. I greatly appreciate the hospitality I was accorded there. I thank Jay Shambaugh, Ryan Nunn, Jacobus de Hoop, Chico Ferreira, Harry Hogshead, Remi Jedwab, and Bryan Stuart. I also thank participants at the Brookings Institution authors' conference, June 2018, for very helpful discussions and comments. Abhilasha Sahay provided excellent research assistance.

Endnotes

1. The paper's authors found no evidence of a narrowing gender gap; for urban areas the estimated gender gap in postcompulsory schooling actually increased.
2. Their point estimates suggest that one additional semester of reform exposure during ages 6–15 increases the probability of being enrolled in school by 8.5 percentage points and increases the years of schooling by 0.17 years at ages 17 to 22. Moreover, reform effects become greater in the longer term: one additional semester of exposure leads to a 0.46-year increase in completed schooling at ages 21–26. The positive effect results from an increase in the probability of finishing high school.
3. The magnitude of results varied, depending on the specification.
4. They argue convincingly that their findings reflect changes in criminal behavior, not in reduced probability of arrest or incarceration (conditional on criminal behavior).
5. Another threshold is the age through which secondary education must be provided free of charge. This varies greatly by state, from as low as 17 in Alabama to as high as 26 in Texas. Some states have no official minimum; for four states it is 19 or less, while in six states it is 22 or higher. The rationale for establishing such a threshold is unclear; no evidence has been identified that this discourages dropout. The contrast is striking with countries in Africa where the abolition of fees has led to celebrated instances of senior citizens returning to complete their primary education.
6. For a general overview of nudges and their policy application, see Thaler and Sunstein (2008). Beyond small nudges, some form of truancy enforcement might also help given that compliance problems are already a significant concern with existing minimum age laws. It is not clear how this could work in practice. But if enforcement could be carried out within a framework of providing for alternative school-hours settings, as in some child labor assistance programs, this might help.
7. I would like to thank a participant at the Brookings Institution authors' conference for suggesting this point.
8. Previous U.S. research has often relied on small samples; among these Dominitz and Manski (1996) find there is wide variation in estimates of returns; Rouse (2004) finds average expectations of impacts do not necessarily differ significantly between advantaged and less advantaged students. High school students often lack clear ideas about the benefits of further education or even how to think about it (Avery and Kane 2004). Students may perceive that returns do not apply to themselves; for example, they do not think that they could go to college. More research is needed on the impact of providing students with more-accurate information on earnings returns, and on the wide range of other benefits of schooling that have been identified in the research literature.
9. Conditional on completing secondary school, results on expected earnings are statistically significant for both boys and girls, although the expectation on completing school is significant only for boys.
10. The focus of Jensen's study is on perceived returns to education. The author conducted a household-based income survey across 1,500 households in nonrural areas, gathering information on education, employment, earnings, and background demographic and socioeconomic characteristics for all adult household members.
11. The information problem is complex. For African American and Hispanic students in the United States, Temin (2017, xvi, 41–42, citing Alexander 2010) suggests that the relatively high likelihood of being incarcerated that they observe may reduce the incentives for students to focus on and continue their education. However, many may not consider the lower likelihood of incarceration among those who graduate high school.
12. For U.S. evidence see Cunha et al. (2013), who find that if average beliefs of African American women matched the authors' objective estimates of the technology of skill formation, then such investments would increase on the order of 10 percent on average.
13. An introductory discussion of low aspirations traps is found in Banerjee and Duflo (2012).
14. Banerjee et al. (2010) use an instrumental variables estimate for this part of their research. Their results suggest, "The average child who could not read anything at baseline and attended the camp was 60 percentage points more likely to decipher letters after a year than a comparable child in a control village" (5).
15. Some well-reviewed NGO programs in developing countries operate with this purpose (Smith 2009).

16. A student is defined as chronically absent if they miss at least 10 percent of school days (U.S. Department of Education 2015–16). See also the Center for American Progress report on truancy (Ahmad and Miller 2015). The Brookings report is also insightful (Jacob and Lovett 2017).
17. After it was implemented, the PROGRESA program in Mexico also added a high school graduation reward consisting of a grant for college studies, housing, or starting an enterprise (Dubois, de Janvry, and Sadoulet 2012). The escalating reward design is similar to programs studied in the contingency management (CM) literature rooted in behavioral psychology. For example, the increase in payments as the child progresses through school can be compared with voucher-based CM treatments in which patients receive voucher amounts that increase with the duration of continuous abstinence from drug use (Higgins et al. 1991). In Malawi the CCT program used monetary vouchers as incentives to reinforce retrieval of HIV tests among rural individuals who underwent screening (Thornton 2008), a technique commonly used in most CM interventions to induce cessation of risky behaviors such as smoking, drug-abuse, and obesity.
18. This result sheds light on how agents strategically respond to specific components of the incentive scheme. Careful consideration thus needs to be given to the policy design.
19. The intervention did not significantly change teacher attendance but merely increased test preparation sessions; this could have been an important factor in the short-term duration of the gains.
20. There is a disproportionate concentration of the eligible but nonparticipating individuals in lagging areas; lagging areas have more people with low incomes, in addition to fewer social workers, and others who help with children in schools, per low income resident.
21. For a 2018 Hamilton Project blog making this point, see Bauer (2018). In the case of SNAP specifically, Hoynes, Schanzenbach, and Almond (2016) find large long-term benefits for children. More generally, early childhood investments can constitute high-return investments (Heckman et al. 2010).
22. The U.S. Department of Agriculture (USDA) estimates, "[As of 2014] 15 million people were eligible to receive benefits" from WIC in any given month, but that "of the 15 million, 55 percent, or just over 8 million people, were covered by the program" (USDA 2014). An earlier USDA study estimates that nearly 13 million individuals eligible for SNAP did not participate (Leftin 2010).
23. Among their other supply-side recommendations were to introduce performance bonuses and ensure adequate payment for practitioners who care for CHIP beneficiaries.
24. For example, microfinance has been made available subject to health lectures and infant checkups (Smith 2002).
25. In Brazil a critical lesson was learned regarding the design and communication of transfer conditions: there was a negative effect on weight-for-age scores among beneficiary children, attributed in part to misunderstanding of the eligibility criteria (Morris, Olinto, et al. 2004). At least some participating mothers were under the impression that having one malnourished child in the household was a precondition for continuous eligibility. A more encouraging lesson was learned from research on PROGRESA in Mexico: children too young to go to school at the time their families began to benefit from the program still showed positive impacts on their later schooling indicators, apparently an effect of the program's nutritional intervention (Behrman, Parker, and Todd 2009; Todd and Winters 2011).
26. For example, evidence from a randomized experiment in Kenya (Dupas 2011) shows that provision of information on the relative risk of HIV infection by partner age led to a 28 percent reduction in teenage pregnancy. Moreover, self-reported data on sexual behavior suggested substitution away from older (and hence riskier) partners and toward same-age partners. In a similar vein, Jalan and Somanthan (2008) use a randomized evaluation to show that informing households that their drinking water is contaminated increases the probability that they will begin purifying their water. In Bangladesh, households that were informed that their well water contained unsafe arsenic levels generally switched to a safer well (Madajewicz et al. 2007).
27. In general, the evidence on the impacts of stand-alone microfinance programs is ambiguous. MkNelly and Dunford (1999) find that microcredit services bundled with education in Bolivia are associated with improved anthropometrics including weight for height, as compared to the control group. MkNelly and Dunford (1998) find that microcredit in Ghana improved food security and that child weight-for-age and height-for-age were positively and significantly impacted, though

no significant impact was found for maternal nutritional status. Hamad and Fernald (2012) find longer microcredit participation in Peru associated with higher BMI, hemoglobin levels, and improved food security. Pitt et al. (2003) find that providing credit to women in Bangladesh significantly improved health outcomes of both boys and girls, but credit provided to men had no significant effects. On average, a 10 percent increase in credit provided to women led to an average increase of arm circumference of their daughter and son by 0.45 centimeters and 0.39 centimeters, respectively, though no impact was found on BMI. Smith (2002) examines effects of health tie-ins (akin to conditional) and credit-only (akin to unconditional) microcredit services in Ecuador and Honduras, and finds participation in both countries significantly increased subsequent health visits, with some effect on good health practices.

28. I would like to thank Jacobus de Hoop of the UNICEF Office for Research for pointing this out.
29. Burnham et al. (2004) find that the mean monthly number of new health-care visits increased by 53.3 percent after fees in Uganda were discontinued, while the increase was 27.3 percent among children under age 5. Immunizations, antenatal clinics, and family planning all increased, despite these services having always been free. Lagarde, Barroy, and Palmer (2012) find that removing user fees for primary health-care services in rural districts in Zambia and for children over five years old in Niger increased use of services by the targeted groups, though the impact of the policy change differed widely across districts. Evidence from Rwanda shows that removal of user fees led to 0.6 additional curative care visits per capita (Dhillon et al. 2012). Lagarde and Palmer (2008) review 16 studies on the effects of user charges on uptake of health services; their findings suggest that removing or reducing user fees increases the use of both curative and preventive services, though eliminating fees may negatively impact service quality. Meanwhile, increasing fees reduced the use of some curative services. Cohen and Dupas (2010) randomized the price at which prenatal clinics sell antimalarial bed nets to pregnant women in Kenya, finding that charging a price can dampen demand very considerably.
30. Other studies include research on the promising but complex Zimbabwe Harmonized Social Cash Transfer Program (HSCT), which targets ultra-poor and labor-constrained households. An RCT examining both conditional and unconditional components showed the program raised vaccination rates, albeit modestly (Robertson et al. 2013). (A caveat is that some of those without conditions apparently learned about and followed them, so this study's conclusions as a conditions versus cash analysis must be interpreted with caution.)
31. There is historical evidence that CCTs have been effective over the lifespan in the United States (Aizer et al. 2016). A CCT program would be similar to one preventing school dropouts, though in part targeted to different populations and ages, and may be best to keep separate. Note also that it is intended that any conditional transfers would be provided in addition to transfers available from existing programs such as TANF, in part because many of the poor may have difficulty achieving the targeted goals due to the "cognitive taxes" they face (detailed in the next section), among other reasons.
32. Suicide is the second-highest cause of death in all of the age ranges 10–14, 15–24, and 25–34, so this statistic is not the result of a concentration of the problem in just a narrow age range.
33. For current data see NIMH (2017).
34. References to this literature may be found in Dean, Schilbach, and Schofield (2018, §§3.1).
35. The study participants were studied for one year, so it is not clear if some study participants returned to criminality after that point.
36. ROSCAs represent a small, informal, and time-limited savings and loan association, lasting for at most a year. Each participant contributes the same amount of money into a pool at each regularly scheduled meeting; at each meeting one participant receives the full pool, using it for any purpose they choose (such as school fees, buying a sewing machine, paying off another debt, or financing a party). This system gives participants access to a sum of money faster than they could accumulate individually by saving at the rate of their ROSCA pooling amount. Among other things, this institution reduces the risks of spending on impulse (or family pressure) before the larger amount can be saved, and then it can be deployed immediately for the intended purpose.
37. For identification, the authors exploit a program rule that established a maximum age for participation when the program was introduced, comparing outcomes at just the border of this age group.

38. Relevant U.S. evidence includes Heckman, Pinto, and Savelyev (2013).
39. I would like to thank a participant at the Brookings Institution authors' conference for suggesting this point.
40. For the report card and further detailed state-by-state reports, see ASCE (2017). Note that the membership of the ASCE, founded 1852, includes some 150,000 "civil engineers in private practice, government, industry, and academia who are dedicated to advancing the science and profession of civil engineering" (1).
41. One of the effects could be an increase in land prices.
42. For an excellent example of inclusive growth diagnostics applied to Bangladesh that includes a key role for infrastructure, see USAID (2014).
43. Early 1990s three-gap models were perhaps the beginning of this literature. See Bacha (1990) and Taylor (1994).
44. Datta (2012) applies a difference-in-difference estimation strategy on World Bank Enterprise Surveys for India (2002 and 2005 rounds) to identify the effect of infrastructure quality on input inventory usage. He finds that firms in cities that were affected by the highway project faced a reduction in stock of input inventories of 6–12 days' worth of production. Furthermore, these treated firms were more likely to change their primary input supplier, indicative evidence on reoptimization of supplier choices, after establishment of better-quality highways. Finally, firms in treated cities also faced lower transportation obstacles to production, while firms in control cities reported no such change. For an overview of the analysis of household surveys, see Deaton (1997).
45. Shifts in capital–labor ratios represents a structural change in the production process. Interestingly, the authors' results suggest that the shift away from labor-intensive occupations also had the social benefit of children staying in school for an estimated two additional years.
46. These were proxied by increased population density, agricultural productivity, and night lights as observed by satellite.
47. Bosker and Garretsen (2012) examine whether economic geography can help explain differences in economic development between countries in sub-Saharan Africa. In doing so, they first construct yearly measures of market access over the period (1993–2009) for each sub-Saharan country, using manufacturing export data to estimate the impact of market access on GDP per worker. They find that market access is an important determinant of economic development, estimating that a 1 percent increase in a country's market access is associated with a 0.03 percent increase in its GDP per worker. Their analysis suggests that most of the impacts they identify are driven by access to other sub-Saharan markets.
48. Jedwab and Storeygard (2018) conclude that the positive effects are "driven primarily by access to domestic cities, and ports," which they in turn argue is suggestive of a role played by roads in providing "access to overseas markets" (4).
49. Interestingly, Chandra and Thompson (2000) conclude that the U.S. interstate highway system causes a shift of economic activity toward newly connected counties, away from unconnected ones. They find that there may even be no net positive benefit, but potentially increased inequality across regions.
50. In the economies of many countries, sector-based clusters (also called industrial districts) play prominent roles (Piore and Sable 1984; Porter 1990). This is clearly true in the United States for high-tech clusters, the most prominent example being Silicon Valley, but is also found in most urban areas; industrial districts in more-basic production sectors are also common in developing countries. China is perhaps the most important contemporary example (Fleisher et al. 2010; Huang, Zhang, and Zhu 2008; Long and Zhang 2011; Ruan and Zhang (2009). High school graduates—at least after attending community colleges—can learn basic technical skills such as routine lab work that are needed for many clusters to thrive. The potential role of encouraging sector-based clusters is another proposed research priority on infrastructure for lagging areas; this may build on area industrial extension services. See the chapter in this volume by Baron, Kantor, and Whalley (2018).
51. The summary perspective in this paragraph is based on discussions with Remi Jedwab of The George Washington University; he deserves credit for any insights, but is blameless for any misinterpretations.
52. I would like to thank a participant at the Brooking Institution authors' conference for suggesting this point.

53. Complementarity may lead to multiple equilibria, and consequently to the need for investment coordination. For a broad introduction to these topics see Todaro and Smith (2014, chap. 4).
54. Countries for which household datasets were used in studies reported or drawn on in this chapter include Argentina, Bangladesh, Bolivia, Brazil, Chile, China, Colombia, Dominican Republic, Ecuador, Ghana, Honduras, India, Indonesia, Jamaica, Kenya, Liberia, Madagascar, Malawi, Mexico, Nicaragua, Niger, Pakistan, Peru, Philippines, Rwanda, Serbia, South Africa, Sri Lanka, Turkey, Uganda, Zambia, and Zimbabwe. A few of the studies drew on data from multiple countries beyond those listed here.
55. It is possible that an implicit ethnic bias, along with a socioeconomic class bias, plays a role in this, as with some other policy disputes; this bias will not be easy to address (Currid-Halkett 2017).
56. See Wilkerson (2010). It may also be connected (at least preunionization) to regions with monopsony power in the North and Midwest.
57. This specific formulation is taken from Todaro and Smith (2014, 86), which is an expansion of definitions in the work of Douglass North (1990, 1991), and draws from Rodrik (2007) as well as Acemoglu and Robinson (2005, 2012).
58. Regarding extraction as literal mineral mining and drilling, the problem is related to the resource curse, or the natural resource trap (Collier 2010). Resource extraction–based economies tend to have very high inequality; inequality, especially inequality of opportunity, is associated with poor economic performance (see e.g., Ostry, Berg, and Tsangarides 2014). More informally, the resource curse ideas have been connected to coal and other mineral extraction in Appalachia (Griswold 2018).
59. In general, more than one set of institutions can achieve these features, but they share protective rules in common; see e.g., Rodrik (2007). The provision of basic social insurance and assurance of predictable macroeconomic stability is also sometimes included in key institutions.
60. One such measure is the squared poverty gap, known as P^2, used by USAID and the World Bank; an introductory presentation and discussion is found in Todaro and Smith (2014, chapter 5).
61. The UNICEF child-poverty report card found that U.S. child poverty increased by 2.1 percentage points to 32.2 percent between 2008 and 2012 (UNICEF 2017). In 2012, 24.2 million children were living in poverty, a net increase of 1.7 million from 2008. Among all newly poor children in the OECD and/or EU region, about one third are in the United States. In 2013, 15 percent of youth in the United States were not engaged in education, employment, or training—an increase of 3.0 percentage points since 2008, the highest increase among all OECD countries. Child poverty increased in 34 states from 2006 to 2011. The largest increases were in Hawaii, Idaho, Nevada, and New Mexico. However, in absolute terms, a large number of children fell into poverty in California (221,000), Florida (183,000), Georgia (140,000), and Illinois (133,000). On the other hand, Mississippi and North Dakota saw notable decreases. A wide range of additional data and references on child poverty are reported in Alston (2018).
62. For an overview of the connections between region- and identity-based inequality and conflict, see Todaro and Smith (2014, §§14.5).
63. Bureau of Labor Statistics (BLS) data show that the unemployment rate in the United States fell to 3.9 percent as of August 2018 (BLS 2018). In absolute terms, the number of unemployed workers has fallen to 6.2 million. On the other hand, the labor force participation rate has remained fairly stable at 62.7 percent.

References

Acemoglu, Daron, and James A. Robinson. 2005. *Economic Origins of Dictatorship and Democracy.* New York, NY: Cambridge University Press.

———. 2012. *Why Nations Fail: The Origins of Power, Prosperity, and Poverty.* New York, NY: Crown Publishing.

Acemoglu, Daron, Simon Johnson, and James A. Robinson. "The Colonial Origins of Comparative Development: An Empirical Investigation." *American Economic Review* 91 (2001): 1369–1401.

Agüero, Jorge M., Michael R. Carter, and Ingrid Woolard. 2007. "The Impact of Unconditional Cash Transfers on Nutrition: The South African Child Support Grant." Working Paper 39, International Poverty Centre, Brasilia, Brazil.

Ahmad, Farah Z., and Tiffany D. Miller. 2015, August 25. "The High Cost of Truancy." Center for American Progress, Washington, DC (blog).

Aizer, Anna, Shari Eli, Joseph Ferrie, and Adriana Lleras-Muney. 2016. "The Long-Run Impact of Cash Transfers to Poor Families." *American Economic Review* 106 (4): 935–71.

Alderman, Harold, Jere R. Behrman, and Chloe Puett. 2017. "Big Numbers about Small Children: Estimating the Economic Benefits of Addressing Undernutrition." *World Bank Research Observer* 32 (11): 107–25.

Alexander, Michelle. 2010. *The New Jim Crow: Mass Incarceration in the Age of Colorblindness*. New York, NY: The New Press.

Alston, Philip. 2018. "Report of the Special Rapporteur on Extreme Poverty and Human Rights on His Mission to the United States of America." Summary Report, United Nations Human Rights Council, Geneva, Switzerland.

Alzúa, María Laura, and Cecilia Velázquez. 2017. "The Effect of Education on Teenage Fertility: Causal Evidence for Argentina." *IZA Journal of Development and Migration* 7 (1): 1–23.

American Academy of Pediatrics (AAP). 2014. "Children's Health Insurance Program (CHIP): Accomplishments, Challenges, and Policy Recommendations." *Pediatrics* 133 (3): e784–93.

American Society of Civil Engineers (ASCE). 2017. "2017 Infrastructure Report Card: A Comprehensive Assessment of America's Infrastructure." American Civil Society of Civil Engineers, Reston, VA.

Ashraf, Nava, Dean Karlan, and Wesley Yin. 2006. "Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines." *Quarterly Journal of Economics* 121 (2): 635–72.

Attanasio, Orazio, Emla Fitzsimons, and Ana Gomez. 2005. "The Impact of a Conditional Education Subsidy on School Enrollment in Colombia." Centre for the Evaluation of Development Policies, Institute for Fiscal Studies, London, United Kingdom.

Attanasio, Orazio, Emla Fitzsimons, Ana Gomez, Marha Isabel Gutiérrez, Costas Meghir, and Alice Mesnard. 2010. "Children's Schooling and Work in the Presence of a Conditional Cash Transfer Program in Rural Colombia." *Economic Development and Cultural Change* 58 (2): 181–210.

Avery, Christopher, and Thomas J. Kane. 2004. "Student Perceptions of College Opportunities: The Boston COACH Program." In *College Choices: The Economics of Where to Go, When to Go, and How to Pay for It*, edited by Caroline M. Hoxby, 355–94. Chicago, IL: University of Chicago Press.

Bacha, Edmar L. 1990. "A Three-Gap Model of Foreign Transfers and the GDP Growth Rate in Developing Countries." *Journal of Development Economics* 32: 279–96.

Baird, Sarah, Joan Hamory Hicks, Michael Kremer, and Edward Miguel. 2016. "Worms at Work: Long-Run Impacts of a Child Health Investment." *Quarterly Journal of Economics* 131 (4): 1637–80.

Baird, Sarah, Jacobus de Hoop, and Berk Özler. 2013. "Income Shocks and Adolescent Mental Health." *Journal of Human Resources* 48 (2): 370–403.

Banerjee, Abhijit V., Rukmini Banerji, Esther Duflo, Rachel Glennerster, and Stuti Khemani. 2010. "Pitfalls of Participatory Programs: Evidence from a Randomized Evaluation in Education in India." *American Economic Journal: Economic Policy* 2 (1): 1–30.

Banerjee, Abhijit V., Shawn Cole, Esther Duflo, and Leigh Linden. 2007. "Remedying Education: Evidence from Two Randomized Experiments in India." *Quarterly Journal of Economics* 122 (3): 1235–64.

Banerjee, Abhijit, and Esther Duflo. 2012. *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*. New York, NY: Public Affairs.

Banerjee, Abhijit, Esther Duflo, and Nancy Qian. 2012. "On the Road: Access to Transportation Infrastructure and Economic Growth in China." Working Paper 17897, National Bureau of Economic Research, Cambridge, MA.

Barham, Tania. 2005. "Providing a Healthier Start to Life: The Impact of Conditional Cash Transfers on Infant Mortality." Available online at SSRN.

Baron, E. Jason, Shawn Kantor, and Alexander Whalley. 2018. "Extending the Reach of Research Universities: A Proposal for Productivity Growth in Lagging Communities." In *Place-Based Policies for Shared Economic Growth*, edited by Jay Shambaugh and Ryan Nunn, 157–84. Washington, DC: The Hamilton Project.

Barrera-Osorio, Felipe, Marianne Bertrand, Leigh L. Linden, and Francisco Perez-Calle. 2011. "Improving the Design of Conditional Transfer Programs: Evidence from a Randomized Education Experiment in Colombia." *American Economic Journal: Applied Economics* 3 (2): 167–95.

Battaglia, Marianna, and Lara Lebedinski. 2017. "The Curse of Low Expectations." *Economics of Transition* 25 (4): 681–721.

Bauer, Lauren. 2018, February. "Penny Wise and Pound Foolish: Proposed SNAP Budget Cuts Will Diminish Positive Outcomes." The Hamilton Project, Brookings Institution, Washington, DC (blog).

Bauer, Lauren, Patrick Liu, Diane Whitmore Schanzenbach, and Jay Shambaugh. 2018. "Reducing Chronic Absenteeism under the Every Student Succeeds Act." Strategy Paper, The Hamilton Project, Brookings Institution, Washington, DC.

Behrman, Jere R., and John Hoddinott. 2005. "Programme Evaluation with Unobserved Heterogeneity and Selective Implementation: The Mexican PROGRESA Impact on Child Nutrition." *Oxford Bulletin of Economics and Statistics* 67 (4): 547–69.

Behrman, Jere R., Susan W. Parker, and Petra E. Todd. 2009. "Schooling Impacts of Conditional Cash Transfers on Young Children: Evidence from Mexico." Economic Development and Cultural Change 57 (3): 439–77.

———. 2011. "Do Conditional Cash Transfers for Schooling Generate Lasting Benefits? A Five-Year Followup of PROGRESA/Oportunidades." Journal of Human Resources 46 (1): 93–122.

Bell, Brian, Rui Costa, and Stephen Machin. 2016. "Crime, Compulsory Schooling Laws and Education." *Economics of Education Review* 54: 214–26.

Bialik, Kristen. 2017, October 6. "Americans Deepest in Poverty Lost More Ground in 2016." Pew Research Center, Washington, DC (blog).

Blankespoor, Brian, M. Shahe Emran, Forhad Shilpi, and Lu Xu. 2018. "Bridge to Bigpush or Backwash? Market Integration, Reallocation, and Productivity Effects of Jamuna Bridge in Bangladesh." Policy Research Working Paper 8508, World Bank Group, Washington, DC.

Blattman, Christopher, Julian C. Jamison, and Margaret Sheridan. 2017. "Reducing Crime and Violence: Experimental Evidence from Cognitive Behavioral Therapy in Liberia." *American Economic Review* 107 (4): 1165–1206.

Bosker, Maarten, and Harry Garretsen. 2012. "Economic Geography and Economic Development in Sub-Saharan Africa." *World Bank Economic Review* 26 (3): 443–85.

Burnham, Gilbert M., George Pariyo, Edward Galiwango, and Fred Wabwire-Mangen. 2004. "Discontinuation of Cost Sharing in Uganda." *Bulletin of the World Health Organization* 82 (3): 187–95.

Bureau of Labor Statistics (BLS). 2018. "Current Population Survey." Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC.

Caner, Asena, Cahit Guven, Cagla Okten, and Seyhun Orcan Sakalli. 2016. "Gender Roles and the Education Gender Gap in Turkey." *Social Indicators Research* 129 (3): 1231–54.

Case, Anne, and Angus Deaton. 2015. "Rising Morbidity and Mortality in Midlife among White Non-Hispanic Americans in the 21st Century." *Proceedings of the National Academy of Sciences of the United States of America (PNAS)* 112 (49): 15078–83.

Catubig, Ma Cecilia Lemente, and Renato A. Villano. 2017. "Conditional Cash Transfer and School Outcomes: An Evaluation of the Pantawid Pamilyang Pilipino Program in Davao Oriental, Philippines." *Asian Economic Journal* 31 (4): 403–21.

Centers for Disease Control and Prevention [CDC]. 2000–16. "National Vital Statistics System, Mortality: Opioid Overdose Deaths—United States, 2000–2016." Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, Atlanta, GA.

———. 2016. "National Vital Statistics System: 10 Leading Causes of Death by Age Group, United States—2016." Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, Atlanta, GA.

———. 2017. "Opioid Overdose: Understanding the Epidemic." Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, Atlanta, GA.

Chandra, Amitabh, and Eric Thompson. 2000. "Does Public Infrastructure Affect Economic Activity? Evidence from the Rural Interstate Highway System." *Regional Science and Urban Economics* 30 (4): 457–90.

Chao, Shin-Yi, Jin-Tan Liu, Michael Grossman, and Ted Joyce. 2010. "Parental Education and Child Health: Evidence from a Natural Experiment in Taiwan." *American Economic Journal: Applied Economics* 2 (1): 33–61.

Chaudhury, Nazmul, and Dilip Parajuli. 2010. "Conditional Cash Transfers and Female Schooling: The Impact of the Female School Stipend Programme on Public School Enrolments in Punjab, Pakistan." *Applied Economics* 42 (28): 3565–83.

Chetty, Raj, and Amy Finkelstein. 2013. "Social Insurance: Connecting Theory to Data" In *Handbook of Public Economics*, vol. 5, edited by Alan J. Auerbach, Raj Chetty, Martin Feldstein, and Emmanuel Saez, 111–93. Amsterdam, Netherlands: Elsevier.

Chetty, Raj, David Grusky, Maximilian Hell, Nathaniel Hendren, Robert Manduca, and Jimmy Narang. 2017. "The Fading American Dream: Trends in Absolute Income Mobility Since 1940." *Science* 356 (6336): 398–406.

Cluver, Lucie D., F. Mark Orkin, Mark E. Boyes, and Lorraine Sherr. 2014. "Cash Plus Care: Social Protection Cumulatively Mitigates HIV-Risk Behavior among Adolescents in South Africa." *AIDS* 28 (Supplement 3): S389–97.

Cohen, Jessica, and Pascaline Dupas. 2010. "Free Distribution or Cost-Sharing? Evidence from a Randomized Malaria Prevention Experiment." *Quarterly Journal of Economics* 125 (1): 1–45.

Coleman-Jensen, Alisha, Matthew P. Rabbitt, Christian A. Gregory, and Anita Singh. 2018. "Household Food Security in the United States in 2017." Economic Research Report 256, Economic Research Service, U.S. Department of Agriculture, Washington, DC.

Collier, Paul. 2010. *The Plundered Planet: Why We Must—and How We Can—Manage Nature for Global Prosperity*. Oxford, United Kingdom: Oxford University Press.

Costello, E. Jane, Scott Compton, Gordon Keeler, and Adrian Angold. 2003. "Relationships Between Poverty and Psychopathology: A Natural Experiment." *Journal of the American Medical Association* 290 (15): 2023–29.

Cunha, Flávio, Irma Elo, and Jennifer Culhane. 2013. "Eliciting Maternal Subjective Expectations about the Technology of Cognitive Skill Formation." Working Paper 19144, National Bureau of Economic Research, Cambridge, MA.

Currid-Halkett, Elizabeth. 2017. *Sum of Small Things: A Theory of the Aspirational Class*. Princeton, NJ: Princeton University Press.

Davis, Jonathan, and Bhashkar Mazumder. 2017. "The Decline in Intergenerational Mobility after 1980." Working Paper 17-21, Opportunity & Inclusive Growth Institute, Federal Reserve Bank of Minneapolis, Minneapolis, MN.

de Hoop, Jacobus, Jed Friedman, Eeshani Kandpal, and Furio C. Rosati. Forthcoming. "Child Schooling and Child Work in the Presence of a Partial Education Subsidy." *Journal of Human Resources* (forthcoming).

Dean, Emma Boswell, Frank Schilbach, and Heather Schofield. 2018. "Poverty and Cognitive Function." In *The Economics of Asset Accumulation and Poverty Traps*, edited by Christopher B. Barrett, Michael R. Carter, and Jean-Paul Chavas. Chicago, IL: University of Chicago Press.

Deaton, Angus. 1997. *The Analysis of Household Surveys: A Microeconometric Approach to Development Policy*. Baltimore, MD: John Hopkins University Press.

Dhillon, Ranu S., Matthew H. Bonds, Max Fraden, Donald Ndahiro, and Josh Ruxin. 2012. "The Impact of Reducing Financial Barriers on Utilisation of a Primary Health Care Facility in Rwanda." *Global Public Health* 7 (1): 71–86.

Dominitz, Jeff, and Charles F. Manski. 1996. "Eliciting Student Expectations of the Return to Schooling." *Journal of Human Resources* 31 (1): 1–26.

Donaldson, Dave. 2018. "Railroads of the Raj: Estimating the Impact of Transportation Infrastructure." *American Economic Review* 108 (4–5): 899–934.

Donaldson, Dave, and Richard Hornbeck. 2016. "Railroads and American Economic Growth: A 'Market Access' Approach." *Quarterly Journal of Economics* 131 (2): 799–858.

Dubois, Pierre, Alain de Janvry, and Elizabeth Sadoulet. 2012. "Effects on School Enrollment and Performance of a Conditional Cash Transfer Program in Mexico." Journal of Labor Economics 30 (3): 555–89.

Dupas, Pascaline. 2011. "Do Teenagers Respond to HIV Risk Information? Evidence from a Field Experiment in Kenya." *American Economic Journal: Applied Economics* 3 (1): 1–34.

Dupas, Pascaline, and Jonathan Robinson. 2013. "Why Don't the Poor Save More? Evidence from Health Savings Experiments." *American Economic Review* 103 (4): 1138–71.

Datta, Saugato. 2012. "The Impact of Improved Highways on Indian Firms." *Journal of Development Economics* 99 (1): 46–57.

Easterly, William. 2003. "The Political Economy of Growth without Development: A Case Study of Pakistan." In *In Search of Prosperity: Analytic Narratives on Economic Growth*, edited by Dani Rodrik, 439–72. Princeton, NJ: Princeton University Press.

———. 2007. "Inequality Does Cause Underdevelopment: Insights from a New Instrument." *Journal of Development Economics* 84 (2): 755–76.

Engerman, Stanley L., and Kenneth L. Sokoloff. 2002. "Factor Endowments, Inequality, and Paths of Development among New World Economies." *Economia* 3 (1): 41–109.

Erten, Bilge, and Pinar Keskin. 2018. "For Better or for Worse?: Education and the Prevalence of Domestic Violence in Turkey." *American Economic Journal: Applied Economics* 10 (1): 64–105.

Every Student Succeeds Act (ESSA) of 2015, Pub. L. 114-95 (2015).

Faber, Benjamin. 2014. "Trade Integration, Market Size, and Industrialization: Evidence from China's National Trunk Highway System." *Review of Economic Studies* 81 (3): 1046–70.

Fang, Hai, Karen N. Eggleston, John A. Rizzo, Scott Rozelle, and Richard J. Zeckhauser. 2012. "The Returns to Education in China: Evidence from the 1986 Compulsory Education Law." Working Paper 18189, National Bureau of Economic Research, Cambridge, MA.

Fernald, Lia C.H., Paul J. Gertler, and Lynnette M. Neufeld. 2008. "Role of Cash in Conditional Cash Transfer Programmes for Child Health, Growth, and Development: An Analysis of Mexico's *Oportunidades*." *The Lancet* 371 (9615): P828–37.

Fernald, Lia C.H., and Megan R. Gunnar. 2009. "Poverty-Alleviation Program Participation and Salivary Cortisol in Very Low-Income Children." *Social Science & Medicine* 68 (12): 2180–89.

Ferré, Céline, and Iffath Sharif. 2014. "Can Conditional Cash Transfers Improve Education and Nutrition Outcomes for Poor Children in Bangladesh? Evidence from a Pilot Project." Policy Research Working Paper 7077, World Bank Group, Washington, DC.

Fiszbein, Ariel, and Norbert R. Schady. 2009. *Conditional Cash Transfers: Reducing Present and Future Poverty.* Washington, DC: The World Bank.

Fleisher, Belton, Dinghuan Hu, William McGuire, and Xiaobo Zhang. 2010. "The Evolution of an Industrial Cluster in China." *China Economic Review* 21 (3): 456–69.

Fryer, Roland G. 2011. "Financial Incentives and Student Achievement: Evidence from Randomized Trials." *Quarterly Journal of Economics* 126 (4): 1755–98.

———. 2013. "Teacher Incentives and Student Achievement: Evidence from New York City Public Schools." *Journal of Labor Economics* 31 (2): 373–407.

Gaarder, Marie M., Amanda Glassman, and Jessica E. Todd. 2010. "Conditional Cash Transfers and Health: Unpacking the Causal Chain." *Journal of Development Effectiveness* 2 (1): 6–50.

Galasso, Emanuela. 2011. "Alleviating Extreme Poverty in Chile: The Short Term Effects of Chile Solidario." *Estudios de Economía* 38 (1): 101–27.

Garfield, Rachel, Anthony Damico, and Kendal Orgera. 2018. "The Coverage Gap: Uninsured Poor Adults in States That Do Not Expand Medicaid." Issue Brief, Henry J. Kaiser Family Foundation, San Francisco, CA.

Gertler, Paul. 2000. "Final Report: The Impact of PROGRESA on Health." International Food Policy Research Institute, Washington, DC.

———. 2004. "Do Conditional Cash Transfers Improve Child Health? Evidence from PROGRESA's Control Randomized Experiment." *American Economic Review* 94 (2): 336–41.

Gertler, Paul, James Heckman, Rodrigo Pinto, Arianna Zanolini, Christel Vermeersch, Susan Walker, Susan M. Chang, and Sally Grantham-McGregor. 2014. "Labor Market Returns to an Early Childhood Stimulation Intervention in Jamaica." *Science* 344 (6187): 998–1001.

Ghani, Ejaz, Arti Grover Goswami, and William R. Kerr. 2016. "Highway to Success in India: The Impact of the Golden Quadrilateral Project for the Location and Performance of Manufacturing." *Economic Journal* 126 (591): 317–57.

Glewwe, Paul, Nauman Ilias, and Michael Kremer. 2010. "Teacher Incentives." *American Economic Journal: Applied Economics* 2 (3): 205–27.

Glewwe, Paul, Phillip H. Ross, and Bruce Wydick. 2018. "Developing Hope among Impoverished Children: Using Child Self-Portraits to Measure Poverty Program Impacts." *Journal of Human Resources* 53 (2): 330–55.

Griswold, Eliza. 2018, June 9. "The Resource Curse of Appalachia." *New York Times.*

Gunasekara, Kumudu, William P. Anderson, and T. R. Lakshmanan. 2008. "Highway-Induced Development: Evidence from Sri Lanka." *World Development* 36 (11): 2371–89.

Güneş, Pınar Mine. 2016. "The Impact of Female Education on Teenage Fertility: Evidence from Turkey." *The B.E. Journal of Economic Analysis and Policy* 16 (1): 259–88.

Hamad, Rita, and Lia C.H. Fernald. 2012. "Microcredit Participation and Nutrition Outcomes Among Women in Peru." *Journal of Epidemiology and Community Health* 66 (6): 1–7.

Hardy, Bradley L., Trevon D. Logan, and John Parman. 2018. "The Historical Role of Race and Policy for Regional Inequality." In *Place-Based Policies for Shared Economic Growth*, edited by Jay Shambaugh and Ryan Nunn, 43–70. Washington, DC: The Hamilton Project.

Haushofer, Johannes, and Jeremy Shapiro. 2016. "The Short-Term Impact of Unconditional Cash Transfers to the Poor: Experimental Evidence from Kenya." *Quarterly Journal of Economics* 131 (4): 1973–2042.

Hausmann, Ricardo, Bailey Klinger, and Rodrigo Wagner. 2008. "Doing Growth Diagnostics in Practice: A 'Mindbook.'" CID Working Paper 177, Center for International Development, Cambridge, MA.

Hausmann, Ricardo, Dani Rodrik, and Andrés Velasco. 2007. "Growth Diagnostics." In *One Economics, Many Recipes: Globalization, Institutions, and Economic Growth*, edited by Dani Rodrick, 56–84. Princeton, NJ: Princeton University Press.

Heckman, James J., and Tim Kautz. 2012. "Hard Evidence on Soft Skills." Labour Economics 19 (4): 451–64.

Heckman, James J., Seong Hyeok Moon, Rodrigo Pinto, Peter A. Savelyev, and Adam Yavitz. 2010. "The Rate of Return to the High/Scope Perry Preschool Program." *Journal of Public Economics* 94 (1–2): 114–28.

Heckman, James J., Rodrigo Pinto, and Peter Savelyev. 2013. "Understanding the Mechanisms through Which an Influential Early Childhood Program Boosted Adult Outcomes." *American Economic Review* 103 (6): 2052–86.

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 (3): 411–82.

Heller, Sara B., Anuj K. Shah, Jonathan Guryan, Jens Ludwig, Sendhil Mullainathan, and Harold A. Pollack. 2017. "Thinking, Fast and Slow? Some Field Experiments to Reduce Crime and Dropout in Chicago." *Quarterly Journal of Economics* 132 (1): 1–54.

Higgins, Stephen T. 2010. "Comments on Contingency Management and Conditional Cash Transfers." *Health Economics* 19 (10): 1255–58.

Higgins, Stephen T., John M. Roll, Conrad J. Wong, Jennifer W. Tidey, and Robert Dantona. 1999. "Clinic and Laboratory Studies on the Use of Incentives to Decrease Cocaine and Other Substance Use." In *Motivating Behavior Change among Illicit-Drug Abusers: Research on Contingency Management Interventions*, edited by Stephen T. Higgins and Kenneth Silverman, 35–56. Washington, DC: American Psychological Association.

Hjalmarsson, Randi, Helena Holmlund, and Matthew J. Lindquist. 2015. "The Effect of Education on Criminal Convictions and Incarceration: Causal Evidence from Micro-Data." *The Economic Journal* 125 (587): 1290–326.

Hoynes, Hilary, Diane Whitmore Schanzenbach, and Douglas Almond. 2016. "Long-Run Impacts of Childhood Access to the Safety Net." *American Economic Review* 106 (4): 903–34.

Huang, Zuhui, Xiaobo Zhang, and Yunwei Zhu. 2008. "The Role of Clustering in Rural Industrialization: A Case Study of Wenzhou's Footwear Industry." *China Economic Review* 19 (3): 409–20.

Husain, Ishrat. 1999. *Pakistan: The Economy of an Elitist State*. Oxford, United Kingdom: Oxford University Press.

Jacob, Brian A., and Kelly Lovett. 2017. "Chronic Absenteeism: An Old Problem in Search of New Answer." Brookings Institution, Washington, DC.

Jalan, Jyotsna, and E. Somanathan. 2008. "The Importance of Being Informed: Experimental Evidence on Demand for Environmental Quality." *Journal of Development Economics* 87 (1): 14–28.

Jedwab, Remi, and Alexander Moradi. 2016. "The Permanent Effects of Transportation Revolutions in Poor Countries: Evidence from Africa." *Review of Economics and Statistics* 98 (2): 268–84.

Jedwab, Remi, and Adam Storeygard. 2018, June. "The Average and Heterogeneous Effects of Transportation Investments: Evidence from sub-Saharan Africa 1960–2010." Unpublished manuscript.

Jensen, Robert. 2010. "The (Perceived) Returns to Education and the Demand for Schooling." *Quarterly Journal of Economics* 125 (2): 515–48.

Karlan, Dean, Margaret McConnell, Sendhil Mullainathan, and Jonathan Zinman. 2016. "Getting to the Top of Mind: How Reminders Increase Saving." *Management Science* 62 (12): 3393–411.

Karlan, Dean, Melanie Morten, and Jonathan Zinman. 2016. "A Personal Touch: Text Messaging for Loan Repayment." *Behavioral Science and Policy* 1 (2): 31–39.

Kaufmann, Katja Maria. 2014. "Understanding the Income Gradient in College Attendance in Mexico: The Role of Heterogeneity in Expected Returns to College." *Quantitative Economics* 5 (3): 583–630.

Kenney, Genevieve M., Matthew Buettgens, Jocelyn Guyer, and Martha Heberlein. 2011. "Improving Coverage for Children under Health Reform Will Require Maintaining Current Eligibility Standards for Medicaid and CHIP." *Health Affairs* 30 (12): 2371–81.

Kırdar, Murat G., Meltem Dayioğlu and İsmet Koç. 2015. "Does Longer Compulsory Education Equalize Schooling By Gender and Rural/Urban Residence?" *World Bank Economic Review* 30 (3): 549–79.

Kremer, Michael, Edward Miguel, Sendhil Mullainathan, Clair Null, and Alix Peterson Zwane. 2009, January. "Making Water Safe: Price, Persuasion, Peers, Promoters, or Product Design." Unpublished manuscript.

Lagarde, Mylene, and Natasha Palmer. 2008. "The Impact of User Fees on Health Service Utilization in Low-and Middle-Income Countries: How Strong Is the Evidence?" *Bulletin of the World Health Organization* 86 (11): 839–48.

Lagarde, Mylene, Helene Barroy, and Natasha Palmer. 2012. "Assessing the Effects of Removing User Fees in Zambia and Niger." *Journal of Health Services Research and Policy* 17 (1): 30–36.

Leftin, Joshua. 2010. "Trends in Supplemental Nutrition Assistance Program Participation Rates: 2001 to 2008." Food and Nutrition Service, United States Department of Agriculture, Washington, DC.

Levy, Santiago. 2006. *Progress Against Poverty: Sustaining Mexico's Progresa-Oportunidades Program*. Washington, DC: Brookings Institution Press.

Lim, Stephen S., Lalit Dandona, Joseph A. Hoisington, Spencer L. James, Margaret C. Hogan, and Emmanuela Gakidou. 2010. "India's Janani Suraksha Yojana, a Conditional Cash Transfer Programme to Increase Births in Health Facilities: An Impact Evaluation." *The Lancet* 375 (9730): P2009–23.

Lochner, Lance, and Enrico Moretti. 2004. "The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports." *American Economic Review* 94 (1): 155–89.

Long, Cheryl, and Xiaobo Zhang. 2011. "Cluster-Based Industrialization in China: Financing and Performance." *Journal of International Economics* 84 (1): 112–23.

Loyalka, Prashant, Chengfang Liu, Yingquan Song, Hongmei Yi, Xiaoting Huang, Jianguo Wei, Linxiu Zhang, Yaojiang Shi, James Chu, and Scott Rozelle. 2013. "Can Information and Counseling Help Students from Poor Rural Areas Go to High School? Evidence from China." *Journal of Comparative Economics* 41 (4): 1012–25.

Madajewicz, Malgosia, Alexander Pfaff, Alexander Van Geen, Joseph Graziano, Iftikhar Hussein, Hasina Momotaj, Roksana Sylvi, and Habibul Ahsan. 2007. "Can Information Alone Change Behavior? Response to Arsenic Contamination of Groundwater in Bangladesh." *Journal of Development Economics* 84 (2): 731–54.

Maluccio, John, and Rafael Flores. 2004. "Impact Evaluation of a Conditional Cash Transfer Program: The Nicaraguan Red de Protección Social." Research Report 141, International Food Policy Research Institute, Washington, DC.

Mani, Anandi, Sendhil Mullainathan, Eldar Shafir, and Jiaying Zhao. 2013. "Poverty Impedes Cognitive Function." *Science* 341 (6149): 976–80.

Medlin, Carol, and Damien de Walque. 2008. "Potential Applications of Conditional Cash Transfers for Prevention of Sexually Transmitted Infections and HIV in Sub-Saharan Africa." Policy Research Working Paper 4673, World Bank Group, Washington, DC.

Miguel, Edward, and Michael Kremer. 2004. "Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities." *Econometrica* 72 (1): 159–217.

MkNelly, Barbara, and Christopher Dunford. 1998. "Impact of Credit with Education on Mothers and Their Young Children's Nutrition: Lower Pra Rural Bank Credit with Education Program in Ghana." Research Paper 4, Freedom from Hunger, Davis, CA.

———. 1999. "Impact of Credit with Education on Mothers and Their Young Children's Nutrition: CRECER Credit with Education Program in Bolivia." Research Paper 5, Freedom from Hunger, Davis, CA.

Morris, Saul S., Rafael Flores, Pedro Olinto, and Juan Manuel Medina. 2004. "Monetary Incentives in Primary Health Care and Effects on Use and Coverage of Preventive Health Care Interventions in Rural Honduras: Cluster Randomised Trial." *The Lancet* 364 (9450): 2030–37.

Morris, Saul S., Pedro Olinto, Rafael Flores, Eduardo A. F. Nilson, and Ana C. Figueiro. 2004. "Conditional Cash Transfers Are Associated with a Small Reduction in the Rate of Weight Gain of Preschool Children in Northeast Brazil." *The Journal of Nutrition* 134 (9): 2336–41.

Moussa, Wael S. 2017. "Closer to the Finish Line? Compulsory Attendance, Grade Attainment, and High School Graduation." *Education Finance and Policy* 12 (1): 28–53.

Mullainathan, Sendhil, and Eldar Shafir. 2013. Scarcity: Why Having Too Little Means So Much. New York, NY: Henry Holt.

National Center for Education Statistics (NCES). 2017a. "Table 219.46. Public High School 4-Year Adjusted Cohort Graduation Rate (ACGR), by Selected Student Characteristics and State: 2010–11 through 2015–16." National Center for Education Statistics, U.S. Department of Education, Washington, DC.

———. 2017b. "Table 219.70. Percentage of High School Dropouts among Persons 16 to 24 Years Old (Status Dropout Rate), by Sex and Race/Ethnicity: Selected Years, 1960 through 2016." National Center for Education Statistics, U.S. Department of Education, Washington, DC.

———. 2018. "Table 5.1. Compulsory School Attendance Laws, Minimum and Maximum Age Limits for Required Free Education, by State: 2017." National Center for Education Statistics, U.S. Department of Education, Washington, DC.

National Institute of Mental Health (NIMH). 2017. "Statistics: Mental Illness." National Institute of Mental Health, National Institutes of Health, Bethesda, MD.

Neumark, David. 2018. "Rebuilding Communities Job Subsidies." In *Place-Based Policies for Shared Economic Growth,* edited by Jay Shambuagh and Ryan Nunn, 71–122. Washington, DC: The Hamilton Project.

Nguyen, Trang. 2008. "Information, Role Models and Perceived Returns to Education: Experimental Evidence from Madagascar." Job Market Paper, Massachusetts Institute of Technology, Cambridge, MA.

North, Douglass C. 1990. *Institutions, Institutional Change, and Economic Performance.* Cambridge, MA: Cambridge University Press.

–––. 1991. "Institutions." *Journal of Economic Perspectives* 5 (1): 97–112.

Nunn, Ryan, Jana Parsons, and Jay Shambuagh. 2018. "The Geography of Prosperity." In *Place-Based Policies for Shared Economic Growth,* edited by Jay Shambaugh and Ryan Nunn, 11–42. Washington, DC: The Hamilton Project.

Organisation for Economic Co-operation and Development (OECD). 2017. *Education at a Glance.* Paris, France: OECD Publishing.

Oreopoulos, Philip. 2007. "Do Dropouts Drop Out Too Soon? Wealth, Health and Happiness from Compulsory Schooling." *Journal of Public Economics* 91 (11–12): 2213–29.

Ostry, Jonathan D., Andrew Berg, and Charalambos G. Tsangarides. 2014. "Redistribution, Inequality, and Growth." Staff Discussion Note 14/02, International Monetary Fund, Washington, DC.

Owens, Raymond, Esteban Rossi-Hansberg, and Pierre-Daniel Sarte. 2018. "Rethinking Detroit." Institute Working Paper 11, Opportunity & Inclusive Growth Federal Reserve Bank of Minneapolis, Minneapolis, MN.

Ozer, Emily J., Lia C.H. Fernald, Ann Weber, Emily P. Flynn, and Tyler J. VanderWeele. 2011. "Does Alleviating Poverty Affect Mothers' Depressive Symptoms? A Quasi-Experimental Investigation of Mexico's *Oportunidades* Programme." *International Journal of Epidemiology* 40 (6): 1565–76.

Özer, Mustafa, Jan Fidrmuc, and Mehmet Ali Eryurt. 2017. "Does Maternal Education Affect Childhood Immunization Rates? Evidence from Turkey." CESifo Working Paper 6439. Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute, Munich, Germany.

Patel, Nirav P., Michael A Grandner, Dawei Xie, Charles C. Branas, and Nalaka Gooneratne. 2010. "'Sleep Disparity' in the Population: Poor Sleep Quality Is Strongly Associated with Poverty and Ethnicity." *BMC Public Health* 10: 475 (online).

Patel, Vikram, 2000. "Poverty, Inequality and Mental Health in Developing Countries." In *Poverty, Inequality and Health: An International Perspective*, edited by David Leon and Gill Walt. Oxford, United Kingdom: Oxford University Press.

Patient Protection and Affordable Care Act (ACA), Pub. L. 111-148, 124 Stat. 119 through 124 Stat. 1025 (2010)

Paxson, Christina, and Norbert Schady. 2010. "Does Money Matter? The Effects of Cash Transfers on Child Development in Rural Ecuador." *Economic Development and Cultural Change* 59 (1): 187–229.

Piore, Michael, and Charles Sabel. 1984. *The Second Industrial Divide*. New York, NY: Basic Books.

Pitt, Mark M., Shahidur R. Khandker, Omar Haider Chowdhury, and Daniel L. Millimet. 2003. "Credit Programs for the Poor and the Health Status of Children in Rural Bangladesh." *International Economic Review* 44 (1): 87–118.

Pop-Eleches, Cristian, Harsha Thirumurthy, James Habyarimana, Joshua Graff Zivin, Markus Goldstein, Damien de Walque, Leslie Mackeen, Jessica Haberer, John Sidle, Duncan Ngare, et al. 2011. "Mobile Phone Technologies Improve Adherence to Antiretroviral Treatment in Resource-Limited Settings: A Randomized Controlled Trial of Text Message Reminders." *AIDS* 25 (6): 825–34.

Porter, Michael. 1990. *The Competitive Advantage of Nations*. New York, NY: Free Press.

Putnam, Robert. 2015. *Our Kids*. New York, NY: Simon & Schuster.

Ranganathan, Meghna, and Mylene Lagarde. 2012. "Promoting Healthy Behaviors and Improving Health Outcomes in Low and Middle Income Countries: A Review of the Impact of Conditional Cash Transfer Programmes." *Preventive Medicine* 55 (Supplement 1): S95–105.

Redding, S. J., and Turner, M. A. 2015. "Transportation Costs and the Spatial Organization of Economic Activity." In *Handbook of Regional and Urban Economics*, vol. 5, edited by Giles Duranton, Vernon Henderson, and William Strange, 1339–98. Amsterdam, Netherlands: Elsevier.

Robertson, Laura, Phyllis Mushati, Jeffrey W. Eaton, Lovemore Dumba, Gideon Mavise, Jeremiah Makoni, Christina Schumacher, Tom Crea, Roeland Monasch, Lorraine Sherr, et al. 2013. "Effects of Unconditional and Conditional Cash Transfers on Child Health and Development in Zimbabwe: A Cluster-Randomised Trial." *The Lancet* 381 (9874): 1283–92.

Rodrik, Dani. 2003. *In Search of Prosperity: Analytic Narratives on Economic Growth*. Princeton, NJ: Princeton University Press.

———. 2007. *One Economics, Many Recipes: Globalization, Institutions, and Economic Growth*. Princeton, NJ: Princeton University Press.

Roelen, Keetie, Stephen Devereux, Abdul-Gafaru Abdulai, Bruno Martorano, Tia Palermo, and Luigi Peter Ragnoet. 2017. "How to Make 'Cash Plus' Work: Linking Cash Transfers to Services and Sectors." Innocenti Working Paper WP-2017-10, UNICEF Office of Research, UNICEF, Florence, Italy.

Rosenberg, Tina. 2008, December 19. "A Payoff Out of Poverty." *The New York Times*.

Ross, Phillip, Paul Glewwe, Daniel Prudencio, and Bruce Wydick. 2018, January. "Developing Educational and Vocational Aspirations through Child Sponsorship: Evidence from Kenya, Indonesia, and Mexico." Unpublished manuscript.

Rothstein, Richard. 2017. *The Color of Law.* New York, NY: Liveright.

Rouse, Cecilia Elena. 2004. "Low-Income Students and College Attendance: An Exploration of Income Expectations" *Social Science Quarterly* 85 (5): 1299–317.

Ruan, Jianqing, and Xiaobo Zhang. "Finance and Cluster-Based Industrial Development in China." *Economic Development and Cultural Change* 58 (1): 143–64.

Rudowitz, Robin, Samantha Artiga, Anthony Damico, and Rachel Garfield. 2016. "A Closer Look at the Remaining Uninsured Population Eligible for Medicaid and CHIP." Issue Brief, Henry J. Kaiser Family Foundation, San Francisco, CA.

Schady, Norbert, Maria Caridad Araujo, Ximena Peña, and Luis F. López-Calva. 2008. "Cash Transfers, Conditions, and School Enrollment in Ecuador." *Economía* 8 (2): 43–70.

Schilbach, Frank. Forthcoming. "Alcohol and Self-Control: A Field Experiment in India." *American Economic Review* (forthcoming).

Schilbach, Frank, Heather Schofield, and Sendhil Mullainathan. 2016. "The Psychological Lives of the Poor." *American Economic Review: Papers & Proceedings* 106 (5): 435–40.

Schofield, Heather. 2014. "The Economic Costs of Low Caloric Intake: Evidence from India." Job Market Paper, Harvard University, Cambridge, MA.

Schultz, T. Paul. 2004. "School Subsidies for the Poor: Evaluating the Mexican Progresa Poverty Program." *Journal of Development Economics* 74 (1): 199–250.

Sequeira, Sandra, Johannes Spinnewijn, and Guo Xu. 2016. "Rewarding Schooling Success and Perceived Returns to Education: Evidence from India." *Journal of Economic Behavior and Organization* 131 (A): 373–92.

Smillie, Ian. 2009. *Freedom from Want: The Remarkable Success Story of BRAC, the Global Grassroots Organization That's Winning the Fight Against Poverty.* Boulder, CO: Kumarian Press.

Smith, Stephen C. 2002. "Village Banking and Maternal and Child Health: Evidence from Ecuador and Honduras." *World Development* 30 (4) 707–23.

———. 2009. *Ending Global Poverty: A Guide to What Works.* New York, NY: Palgrave Macmillan.

Sokoloff, Kenneth L., and Stanley L. Engerman. 2000. "History Lessons: Institutions, Factor Endowments, and Paths of Development in the New World." *Journal of Economic Perspectives* 14 (3): 217–32.

Sommers, Benjamin D. 2010. "Enrolling Eligible Children in Medicaid and CHIP: A Research Update." *Health Affairs* 29 (7): 1350–55.

Spohr, Chris A. 2003. "Formal Schooling and Workforce Participation in a Rapidly Developing Economy: Evidence from 'Compulsory' Junior High School in Taiwan." *Journal of Development Economics* 70 (2): 291–327.

Stampini, Marco, Sofia Martinez-Cordova, Sebastian Insfran, and Donna Harris. 2018. "Do Conditional Cash Transfers Lead to Better Secondary Schools? Evidence from Jamaica's PATH." *World Development* 101 (C): 104–18.

Stansfeld, Stephen A., Birgitta Berglund, Charlotte Clark, Isabel Lopez-Barrio, Peter Fischer, Evy Öhrström, Mary M. Haines, Stuart Head, Staffan Hygge, Irene van Kamp, et al. 2005. "Aircraft and Road Traffic Noise and Children's Cognition and Health: A Cross-National Study." *The Lancet* 365 (9475): 1942–49.

Taylor, Lance. 1994. "Gap Models." *Journal of Development Economics* 45 (1): 17–34.

Temin, Peter. 2017. *The Vanishing Middle Class*. Cambridge, MA: MIT Press.

Thaler, Richard, and Cass Sunstein. 2008. *Nudge: Improving Decisions About Health, Wealth, and Happiness*. New Haven, CT: Yale University Press.

Thornton, Rebecca L. 2008. "The Demand for, and Impact of, Learning HIV Status." *American Economic Review* 98 (5): 1829–63.

Todaro, Michael P., and Stephen C. Smith. 2014. *Economic Development*. 12th ed. Boston, MA: Pearson/Addison-Wesley.

Todd, Jessica E., and Paul Winters. 2011. "The Effect of Early Interventions in Health and Nutrition on On-Time School Enrollment: Evidence from the Oportunidades Program in Rural Mexico." Economic Development and Cultural Change 59 (3): 549–81.

UNICEF Office of Research. 2014. "Children of the Recession: The Impact of the Economic Crisis on Child Well-being in Rich Countries." Innocenti Report Card 12, UNICEF, Florence, Italy.

U.S. Department of Agriculture (USDA). 2014. "Women, Infants and Children (WIC)." Food and Nutrition Service, U.S. Department of Agriculture, Washington, DC.

U.S. Department of Education. 2015–16. "2015–16 Civil Rights Data Collection (CRDC)." Office for Civil Rights, U.S. Department of Education, Washington, DC.

USAID. 2014, June. "Bangladesh Inclusive Growth Diagnostic." USAID, Washington, DC.

Whitehurst, Grover J., and Sarah Whitfield. 2012. "Compulsory School Attendance: What Research Says and What It Means for State Policy." Brown Center of Education Policy, Brookings Institution, Washington, DC.

Wilkerson, Isabel. 2010. *The Warmth of Other Suns: The Epic Story of America's Great Migration*. New York, NY: Vintage.

World Bank. 2015. World Development Report 2015: Mind, Society, and Behavior. Washington, DC: World Bank.

Wydick, Bruce, Paul Glewwe, and Laine Rutledge. 2013. "Does International Child Sponsorship Work? A Six-Country Study of Impacts on Adult Life Outcomes." *Journal of Political Economy* 121 (2): 393–426.

———. 2017. "Does Child Sponsorship Pay Off in Adulthood? An International Study of Impacts on Income and Wealth." *World Bank Economic Review* 31 (2): 434–58.

Xiao, Yun, Li Li, and Liqiu Zhao. 2017. "Education on the Cheap: The Long-Run Effects of a Free Compulsory Education Reform in Rural China." *Journal of Comparative Economics* 45 (3): 544–62.

About the Authors

E. Jason Baron

Ph.D. candidate in Economics, Florida State University

Jason Baron is a fourth-year Ph.D. candidate in the Department of Economics at Florida State University. His research fields include economic development, labor economics, and the economics of education. His dissertation examines the role that teachers' unions play in the public education system in the U.S. Specifically, it seeks to understand the effect of recent episodes of teacher deunionization on outcomes such as student achievement and new teacher supply.

Tracy Gordon

Senior Fellow, Urban-Brookings Tax Policy Center

Tracy Gordon is a senior fellow with the Urban-Brookings Tax Policy Center, where she researches and writes about fiscal challenges facing state and local governments, including budget tradeoffs, intergovernmental relations, and long-term sustainability. Before joining the Urban Institute, Gordon served as a senior economist with the White House Council of Economic Advisers. She was also a member of the District of Columbia Tax Revision Commission, a fellow at the Brookings Institution, an assistant professor at the Maryland School of Public Policy, and a fellow at the Public Policy Institute of California. Gordon has written extensively on state and local government finances, including taxes, budgeting, intergovernmental relations, municipal debt, and pensions. She has appeared in *The New York Times*, *The Wall Street Journal*, and *The Washington Post* as well as on CSPAN, Fox Business News, and NPR. Gordon holds a PhD in public policy with a concurrent MA in economics from the University of California, Berkeley.

Bradley L. Hardy

Associate Professor of Public Administration and Policy, American University; Nonresident Senior Fellow, Economic Studies, the Brookings Institution

Bradley Hardy is an Associate Professor of Public Administration and Policy at American University and a nonresident senior fellow in Economic Studies at the Brookings Institution. He also serves as a visiting scholar with the Center for Household Financial Stability at the Federal Reserve Bank of St. Louis. His research is focused on income volatility, intergenerational mobility, poverty policy, and socioeconomic outcomes. This work is largely focused on socioeconomically disadvantaged families.

Shawn Kantor

L. Charles Hilton Jr. Distinguished Professor of Economics, Florida State University

Dr. Shawn Kantor is the L. Charles Hilton Jr. Distinguished Professor of Economics and the Director of the L. Charles Hilton Jr. Center for the Study of Economic Prosperity and Individual Opportunity at Florida State University. He is a Research Associate of the National Bureau of Economic Research in Cambridge, MA. Prior to his appointment at Florida State University in 2015, Dr. Kantor was a Professor of Economics at the University of Arizona (1990–2004), a Founding Faculty member, Professor, and Chair of the Social Sciences & Management Division at the University of California, Merced (2004–12), and a Professor and Department Head of Economics at Rensselaer Polytechnic Institute (2012–15). He received his Ph.D. in Social Science from the California Institute of Technology.

Dr. Kantor's award-winning research explores how economic, political, and legal institutions interact to influence the process of economic development. His work has been extensively supported by external grant agencies, primarily the National Science Foundation. His current research examines how knowledge spillovers contribute to regional economic growth, both historically and today. The research seeks to understand how local knowledge production and its producers contribute to long-term regional growth. Past work has explored the transformation of property rights to land in the South after the Civil War, the origins of workers' compensation in the U.S., and the impact of New Deal spending on a variety of important economic and social outcomes.

Trevon D. Logan

Hazel C. Youngberg Trustees Distinguished Professor of Economics, The Ohio State University

Trevon D. Logan is the Hazel C. Youngberg Trustees Distinguished Professor of Economics at The Ohio State University and a Research Associate at the National Bureau of Economic Research. He has held visiting appointments at Princeton University's Center for Health and Well-Being and at the University of Michigan, where he was a Robert Wood Johnson Foundation Scholar in Health Policy Research. He is also an affiliate of the Initiative in Population Research, the Center for Human Resource Research, the Food Innovation Center, and the Criminal Justice Research Center at Ohio State. He currently serves on the editorial boards of Explorations in Economic History, Historical Methods and Demographic Research.

Professor Logan specializes in economic history, economic demography and applied microeconomics. His research in economic history concerns the development of living standards measures that can be used to directly asses the question of how the human condition has changed over time. He applies the techniques of contemporary living standard measurements to the past as a means of deriving consistent estimates of well-being over time. Most of his historical work uses historical household surveys, but also includes some new data to look at topics such as the returns to education in the early 20th century, the formation of tastes, and the allocation of resources within the household. He is currently extending his historical research agenda to include topics such as childhood health, mortality, morbidity, and racial disparities in health.

David Neumark

Distinguished Professor of Economics, University of California, Irvine; Director, Economic Self-Sufficiency Policy Research Institute

David Neumark is Distinguished Professor of Economics and Director of the Economic Self-Sufficiency Policy Research Institute (ESSPRI) at UCI. He has previously held positions at the Federal Reserve Board, the University of Pennsylvania, Michigan State University, and the Public Policy Institute of California, and is currently a visiting scholar at the Federal Reserve Bank of San Francisco, and a senior research fellow at the Workers Compensation Research Institute.

Neumark has made significant research contributions in numerous areas of labor economics that intersect with important public policy issues. These areas include labor market discrimination, the economics of the minimum wage, and the economics of aging and age discrimination, among others.

Neumark's current research agenda, as part of his activities as Director of ESSPRI, concern the long-run effects of alternative anti-poverty policies on earnings, income, poverty, and public assistance receipt (broadly defined, "economic self-sufficiency"). A good deal of this work focuses on the effectiveness of policies directed at disadvantaged neighborhoods, such as enterprise zones and other types of tax credit programs.

Ryan Nunn

Policy Director, The Hamilton Project; Fellow, Economic Studies, the Brookings Institution

Ryan Nunn is a fellow in Economic Studies at the Brookings Institution and policy director for The Hamilton Project. He was previously an economist in the Office of Economic Policy at the U.S. Department of the Treasury. At both The Hamilton Project and the Department of the Treasury, he has conducted work on a variety of topics including occupational licensing and non-compete policy. Nunn's research interests include labor economics and public finance, with a particular focus on labor market institutions. He received his doctorate in Public Policy and Economics from the University of Michigan, Ann Arbor.

John Parman

Paul R. Verkuil Term Distinguished Associate Professor of Economics, College of William & Mary

John M. Parman is the Paul R. Verkuil Term Distinguished Associate Professor of Economics at the College of William & Mary and a Faculty Research Fellow at the National Bureau of Economic Research. He is a faculty affiliate of the William & Mary Program in Public Policy and the Schroeder Center for Health Policy. His research focuses on using historical data to examine the relationships between health, education, household resource allocation and economic mobility. His research has been published in leading peer-reviewed economics journals and featured by media outlets including *The Washington Post*, *Vox,* and NPR.

Jana Parsons

Senior Research Assistant, The Hamilton Project

Jana Parsons is a Senior Research Assistant at The Hamilton Project. Previously she worked as a Research Economist at the Joint Economic Committee for Congress where she worked on health care, labor, and education policy. She also worked as a Research Economist at the White House Council of Economic Advisers under the Obama Administration

where she worked on technology and competition issues. Jana graduated with a B.A. in economics from Middlebury College in 2016.

Jay Shambaugh

Director, The Hamilton Project; Senior Fellow, Economic Studies, the Brookings Institution; Professor of Economics and International Affairs, Elliott School of International Affairs, The George Washington University

Jay Shambaugh is the director of The Hamilton Project and a senior fellow in Economic Studies at the Brookings Institution. He is also a Professor of Economics and International Affairs at the Elliott School of International Affairs at The George Washington University. He has spent two stints in public service. Most recently, he served as a Member of the White House Council of Economic Advisers (August 2015–January 2017) where he was involved in policy related to international economics, macroeconomics, competition policy, energy and environment policy, housing, finance, technology, as well as other issues. He also served as first Senior Economist for International Economics and then Chief Economist at the White House Council of Economic Advisers (2009–11).

Prior to joining the faculty at George Washington, Jay taught at Georgetown and Dartmouth. He is also a Research Associate at the National Bureau of Economic Research and has been a visiting scholar at the IMF. Jay received his PhD in economics from the University of California at Berkeley, MA from the Fletcher School at Tufts, and BA from Yale University.

Jay's area of research is macroeconomics and international economics. His work includes analysis of the interaction of exchange rate regimes with monetary policy, capital flows, and trade flows as well as studies of international reserves holdings, country balance sheet exchange rate exposure, the cross-country impact of fiscal policy, and the current crisis in the euro area. In addition to his book, *Exchange Rate Regimes in the Modern Era* (MIT Press, 2009), Jay has published in *The American Economic Review*, *The Quarterly Journal of Economics*, and other leading journals.

Stephen C. Smith

Professor of Economics and International Affairs, The George Washington University

Stephen C. Smith is professor of economics and international affairs at The George Washington University, and a research fellow of the Institute of Labor Economics (IZA). He recently completed a term as a UNICEF senior research fellow; and he has been a Fulbright Research Scholar, Jean Monnet Research Fellow, and Fulbright Senior Specialist, as well as visiting

fellow and then nonresident Senior Fellow at the Brookings Institution. Smith is coauthor with Michael Todaro of *Economic Development*, author of *Ending Global Poverty*, coeditor with Jennifer Brinkerhoff and Hildy Teegen of *NGOs and the Millennium Development Goals*, and author or coauthor of more than 100 other publications. Smith has done onsite research in developing countries including Bangladesh, China, Ecuador, India, Peru, Senegal, and Uganda. Smith is a member of the BRAC-USA Advisory Council, and has consulted for the World Bank, United Nations Development Program, International Labor Organization, and World Institute for Development Economics Research. He received his Ph.D. in economics from Cornell University.

Alexander Whalley

Associate Professor of Economics, University of Calgary

Alexander Whalley is an Associate Professor of Economics at the University of Calgary and a Lab Economist with the Creative Destruction Lab-Rockies. His research has examined how university technology affects regional growth, urban transit impacts air quality, and the effects of accountability structures on government performance. Professor Whalley has received financial support from the National Science Foundation, Social Sciences and Humanities Research Council, and the National Bureau of Economic Research for his research.

Whalley received his undergraduate degree from the University of Western Ontario, earned an M.A. in Economics from the University of British Columbia, and completed his doctorate in Economics from the University of Maryland, College Park.

THE HAMILTON PROJECT

ADVISORY COUNCIL

GEORGE A. AKERLOF
University Professor
Georgetown University

ROGER C. ALTMAN
Founder & Senior Chairman, Evercore

KAREN L. ANDERSON
Senior Director of Policy & Communications
Becker Friedman Institute for Research in Economics
The University of Chicago

ALAN S. BLINDER
Gordon S. Rentschler Memorial Professor of Economics & Public Affairs
Princeton University
Nonresident Senior Fellow
The Brookings Institution

ROBERT CUMBY
Professor of Economics
Georgetown University

STEVEN A. DENNING
Chairman, General Atlantic

JOHN M. DEUTCH
Institute Professor
Massachusetts Institute of Technology

CHRISTOPHER EDLEY, JR.
Co-President & Co-Founder
The Opportunity Institute

BLAIR W. EFFRON
Partner, Centerview Partners LLC

DOUGLAS W. ELMENDORF
Dean & Don K. Price Professor of Public Policy
Harvard Kennedy School

JUDY FEDER
Professor & Former Dean
McCourt School of Public Policy
Georgetown University

ROLAND FRYER
Henry Lee Professor of Economics
Harvard University

JASON FURMAN
Professor of the Practice of Economic Policy
Harvard Kennedy School
Senior Counselor
The Hamilton Project

MARK T. GALLOGLY
Cofounder & Managing Principal
Centerbridge Partners

TED GAYER
Executive Vice President
Vice President & Director, Economic Studies
Joseph A. Pechman Senior Fellow, Economic Studies
The Brookings Institution

TIMOTHY F. GEITHNER
President, Warburg Pincus

RICHARD GEPHARDT
President & Chief Executive Officer
Gephardt Group Government Affairs

ROBERT GREENSTEIN
Founder & President
Center on Budget and Policy Priorities

JOHN GRAY
President & Chief Operating Officer
Blackstone

MICHAEL GREENSTONE
Milton Friedman Professor in Economics & the College
Director of the Becker Friedman Institute for Research in Economics
Director of the Energy Policy Institute
University of Chicago

GLENN H. HUTCHINS
Co-founder, North Island

JAMES A. JOHNSON
Chairman, Johnson Capital Partners

LAWRENCE F. KATZ
Elisabeth Allison Professor of Economics
Harvard University

MELISSA S. KEARNEY
Professor of Economics
University of Maryland
Nonresident Senior Fellow
The Brookings Institution

LILI LYNTON
Founding Partner
Boulud Restaurant Group

HOWARD S. MARKS
Co-Chairman
Oaktree Capital Management, L.P.

MARK MCKINNON
Former Advisor to George W. Bush
Co-Founder, No Labels

ERIC MINDICH
Chief Executive Officer & Founder
Eton Park Capital Management

ALEX NAVAB
Former Head of Americas Private Equity
KKR
Founder, Navab Holdings

SUZANNE NORA JOHNSON
Former Vice Chairman
Goldman Sachs Group, Inc.

PETER ORSZAG
Vice Chairman & Global Co-Head of Healthcare, Lazard
Nonresident Senior Fellow
The Brookings Institution

RICHARD PERRY
Managing Partner & Chief Executive Officer
Perry Capital

PENNY PRITZKER
Chairman, PSP Partners

MEEGHAN PRUNTY
Managing Director, Blue Meridian Partners
Edna McConnell Clark Foundation

ROBERT D. REISCHAUER
Distinguished Institute Fellow & President Emeritus
Urban Institute

ALICE M. RIVLIN
Senior Fellow, Economic Studies
Center for Health Policy
The Brookings Institution

DAVID M. RUBENSTEIN
Co-Founder & Co-Executive Chairman
The Carlyle Group

ROBERT E. RUBIN
Former U.S. Treasury Secretary
Co-Chair Emeritus
Council on Foreign Relations

LESLIE B. SAMUELS
Senior Counsel
Cleary Gottlieb Steen & Hamilton LLP

SHERYL SANDBERG
Chief Operating Officer, Facebook

DIANE WHITMORE SCHANZENBACH
Margaret Walker Alexander Professor
Director
The Institute for Policy Research
Northwestern University
Nonresident Senior Fellow
The Brookings Institution

STEPHEN SCHERR
Chief Executive Officer
Goldman Sachs Bank USA

RALPH L. SCHLOSSTEIN
President & Chief Executive Officer, Evercore

ERIC SCHMIDT
Technical Advisor, Alphabet Inc.

ERIC SCHWARTZ
Chairman & CEO, 76 West Holdings

THOMAS F. STEYER
Business Leader & Philanthropist

LAWRENCE H. SUMMERS
Charles W. Eliot University Professor
Harvard University

LAURA D'ANDREA TYSON
Professor of Business Administration & Economics
Director
Institute for Business & Social Impact
Berkeley-Haas School of Business

JAY SHAMBAUGH
Director

THE HAMILTON PROJECT

Advancing Opportunity, Prosperity, and Growth

The Hamilton Project seeks to advance America's promise of opportunity, prosperity, and growth.

We believe that today's increasingly competitive global economy demands public policy ideas commensurate with the challenges of the 21st Century. The Project's economic strategy reflects a judgment that long-term prosperity is best achieved by fostering economic growth and broad participation in that growth, by enhancing individual economic security, and by embracing a role for effective government in making needed public investments.

Our strategy calls for combining public investment, a secure social safety net, and fiscal discipline. In that framework, the Project puts forward innovative proposals from leading economic thinkers — based on credible evidence and experience, not ideology or doctrine — to introduce new and effective policy options into the national debate.

The Project is named after Alexander Hamilton, the nation's first Treasury Secretary, who laid the foundation for the modern American economy. Hamilton stood for sound fiscal policy, believed that broad-based opportunity for advancement would drive American economic growth, and recognized that "prudent aids and encouragements on the part of government" are necessary to enhance and guide market forces. The guiding principles of the Project remain consistent with these views.

BROOKINGS





FOR A CENTURY, THE PROGRESS OUR NATION MADE

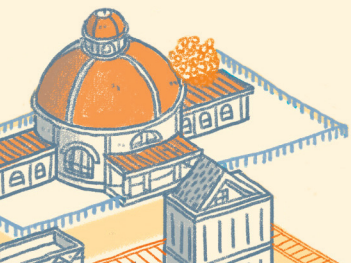
toward realizing broadly shared economic growth gave our economy much of its unparalleled strength. However, for the last several decades, that progress has seemed to stall. On critical measures such as household income, poverty, employment rates, and life expectancy, there exist yawning, persistent gaps between the best- and worst-performing communities. These conditions demand a reconsideration of place-based policies. The evidence-based proposals contained in this volume can help restore the conditions of inclusive growth that make it possible for individuals from any part of the country to benefit from economic opportunity.



CONTRIBUTORS

E. JASON BARON, Florida State University
TRACY GORDON, Urban-Brookings Tax Policy Center
BRADLEY L. HARDY, American University
SHAWN KANTOR, Florida State University
TREVON D. LOGAN, The Ohio State University
DAVID NEUMARK, University of California, Irvine
RYAN NUNN, The Hamilton Project and the Brookings Institution
JOHN PARMAN, College of William & Mary
JANA PARSONS, The Hamilton Project
STEPHEN C. SMITH, The George Washington University
JAY SHAMBAUGH, The Hamilton Project, the Brookings Institution, and The George Washington University
ALEXANDER WHALLEY, University of Calgary





THE HAMILTON PROJECT

BROOKINGS

