



Place-Based Policies for America's Innovation Economy



About the National League of Cities

The National League of Cities (NLC) is the voice of America's cities, towns and villages, representing more than 200 million people. NLC works to strengthen local leadership, influence federal policy and drive innovative solutions.

NLC's Center for City Solutions provides research and analysis on key topics and trends important to cities and creative solutions to improve the quality of life in communities.

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Foreword

The U.S. economy has changed dramatically over the last several decades. In 1970, more than one in four jobs were in manufacturing. Today, that number is less than 10 percent. The implications of deindustrialization are many, but one understated consequence is the multidecade decline in the global competitiveness of many cities, towns and villages.

Some believe today's innovation-driven economy is too competitive for most U.S. cities to participate. I simply don't agree. Every local community can compete and thrive in the new economy.

However, it will take time and significant, long-term investment. And, it will take the federal government playing a considerable role by increasing the amount of resources available to cities to improve their competitive position and changing the way those resources are allocated. That means targeting funding based on local economic needs.

This "place-based" approach is the only way to ensure American prosperity is shared not just among coastal technology hubs but everywhere in between. In "**Place-Based Policies for America's Innovation Economy**," the National League of Cities makes the case for long-term investment in American communities and outlines a strategy to improve local economic outcomes.

The global economy has dealt a heavy blow to many places. Together, we can change that trajectory and ensure the innovation economy benefits every city, town and village.

Sincerely,



Clarence E. Anthony
CEO and Executive Director
National League of Cities



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Together, we can change that trajectory
and ensure the innovation economy
benefits every city, town and village.

Executive Summary

A triumph of the 20th century was the convergence of regional economies.

During the nation's industrial heyday — post World War II through the 1970s — almost every region had a place in the global economy. Cities and towns across the country created goods and services that rivaled those of their fiercest foreign competitors, and this competitive platform breathed life into struggling cities and regions. For example, average income in the Southeast rose from 50 percent of the national average in 1930 to 86 percent by 1980.¹ Nationwide, geographic disparities in unemployment and wage rates smoothed, which led to a generation of increased economic equality.²

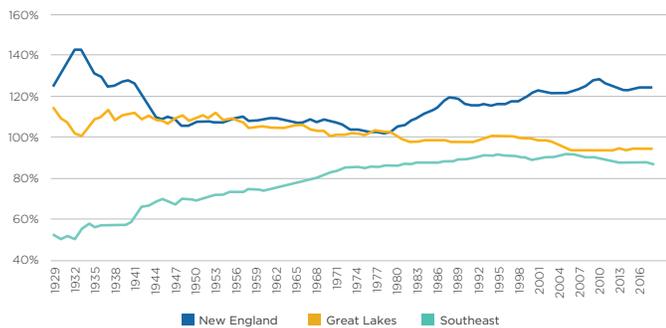
Beginning in the 1980s, however, the march of regional convergence ended,³ and in the years since, geographic inequality has increased dramatically. Median income in the richest 25 percent of counties is more than twice as high as in the bottom 25 percent, where poverty rates are also three times higher.⁴ And the cross-region consistency in unemployment rates that defined much of the last century has also collapsed: In 2018, unemployment rates in the poorest counties were twice those of the wealthiest, a sign that things will get worse before they get better.

What happened? Economists such as Larry Summers have identified a host of factors that have slowed regional convergence, including declining geographic mobility, as workers move far less than in the past; increasingly inelastic housing supplies in high-income areas, brought on by local zoning and other restrictions; a growing number of cities with high rates of working-age adults not working; and technological change that rewards workers with specific skills.⁵

But underlying many of these explanations is a more fundamental problem: the decline in the global competitiveness of many local economies.

For much of the 20th century, America dominated global markets in all forms of economic activity, including manufacturing, wholesale trade, marketing, energy, global services and natural resource extraction. In this environment cities and regions had the freedom to carve out a competitive platform that fit their needs. Some built cars, others dug for oil and some attracted tourists. But what most places had in common was that they were succeeding.

Figure A. Per Capita Income by Region, as a Percent of the National Average, 1929-2018



Source: Bureau of Economic Analysis, author's calculations.

Today, global, technological, and market forces have largely eliminated the relevance of many historical regional economic strategies and isolated countless cities. The expansion of global competitors both from low-cost countries as well as high wage, innovation-driven economies has squeezed communities relying on manufacturing, transportation and other sectors. New energy and information technology platforms have been a boon to a few places, but also constitute an existential risk for many more. And market trends like industry concentration — where fewer firms make up a larger share of most sectors — have exaggerated a “winner take all” economic reality.

U.S. cities, regions and states need to align their short- and moderate-term economic strengths to these long-run macroeconomic realities. In other words, they need to focus on what the

United States can still be the best in the world at, and the federal government needs to provide the necessary resources for their success.

America's competitive advantage is innovation. It will never be the cheapest or most conveniently located producer, but few rival the United States' ability to create new technology, new and improved products and services, and new businesses.

The U.S. economy as a whole is extraordinarily well positioned to lead in new, innovative technologies that are shaping the world and driving international markets. For example, 36 of the top 50 global universities are in the United States. But too few cities and towns are currently participating in the global innovation economy. Just as the ability for any place to reach billions of consumers has become more realistic, access to venture capital, high-skilled workers, and entrepreneurial mentors has become more geographically concentrated on the coasts.

Innovation tends to be both highly concentrated and reliant on tight proximity. It happens in physical places, and it is impossible to separate it from geography. But that is exactly what federal economic policies have historically done: The United States has been playing an inherently spatial game with an outmoded and misaligned a-spatial toolkit.

A Place-Based Approach for the Innovation Economy

The United States needs a new economic framework that places the long-run competitiveness of local economies at the center of federal policymaking. Currently, federal entrepreneurship and R&D policy is largely agnostic as to place. Instead, a subsection of federal policy should focus on where economic resources are being allocated and coordinate and concentrate multiple lines of investment from an array of agencies into targeted cities and regions. These geographically- focused initiatives are often referred to as “place-based” policies.

The Opportunity Zone designation created in the 2018 Tax Cuts and Jobs Act is an example of a place-based policy. Under the program, investors can direct unrealized capital gains into designated low-income and distressed census tracts. The program holds the potential to become one of the largest federal strategies to direct resources to specific places, though other place-based policies have been created on smaller scales, such as Empowerment Zones and the New Market Tax Credit, with limited catalytic impact.

But the majority of place-based policies either incentivize real estate investment or subsidize existing low- and moderate-skilled jobs. At the same time, they depend on alterations to the federal tax code to effect change. But the tax code's ability to nurture the creating of long-term competitiveness is extremely limited (though perhaps a start). As such, these policies do not address the fundamental competitiveness of

these places or their ability to participate in the global, innovation-driven economy.⁶

On the one hand, the majority of resources at agencies tasked with regional economic development and small-business support do not go towards local innovation capacity or entrepreneurship, and therefore do not address the fundamental competitiveness of distressed regions. On the other hand, the departments tasked with overseeing the nation's research and innovation infrastructure have radically few policies, practices or resources targeting specific geographies.

To improve the long-run competitiveness of distressed cities and regions, the federal government should:

Reimagine the Economic Development Administration (EDA) as the federal entity focused on local economies

Cities, states and regions need a central federal agency for resources that support their local economies. At the same time, federal agencies should consider where their resources are being allocated. **The EDA should become the federal clearinghouse for place-based policies through new authority and the redirection of new and existing resources to identify and strategically bundle cross-agency investments to local economies.** A number of steps would significantly improve the EDA's ability to support local economies:

- **Create an Office of Place-Based Policies** to channel new and existing federal resources.
- **Improve federal data collection on the geographic overlap of existing federal investments** to coordinate and assess how different parts of the federal government are supporting particular places.
- **Develop a Place-Based Scorecard for federal agencies** to measure and incentivize the relevancy to local economies.
- **Establish a Place-Based Innovation Fund** to provide resources to grow the innovative capacity of specific place (similar to, but much larger than, EDA’s Office of Innovation and Entrepreneurship).
- **Identify federal facilities located near economic clusters** to align existing investments with local economies.

Regionalize the impact of federal research and development (R&D)

The federal government invests tens of billions of dollars every year in local economies across the country, but agencies are not incentivized to pay attention to the innovative capacity of the cities, towns and regions where these investments are being made. In order to ensure that communities across the country can participate in the innovation-based, global economy, the federal government needs to adopt and expand place-based policies within research agencies.

There are three areas where federal R&D could better align with regional economies: basic research, commercialization, and entrepreneurship.

Bringing to ground the impact of basic research

To improve the local impact of basic research, the federal government should:

- **Expand basic research funding that focuses on building regional capacity** to ensure more communities are positioned to lead in new, global technologies.
- **Fund a regional “Valley of Death” grant** to improve the translation of research to economic activity.
- **Create small-scale grants for mapping of local research around cross-cutting technologies** to ensure federal R&D investments are reasonably coordinated based on their deployment locations

Spinning out the benefits of research

To increase the market relevance of research, the federal government should:

- **Establish a regional innovation voucher program** to provide small businesses with technical consultancies.
- **Increase the number of large-scale, multi-institution funding opportunities** to incentivize local public, private, and civic partnerships around large-scale, applied research.

- **Measure and evaluate economic development impact** to better understand which labs and agencies are providing the most value to their regions.
- **Build “microlabs”** to help co-locate firms and researchers.

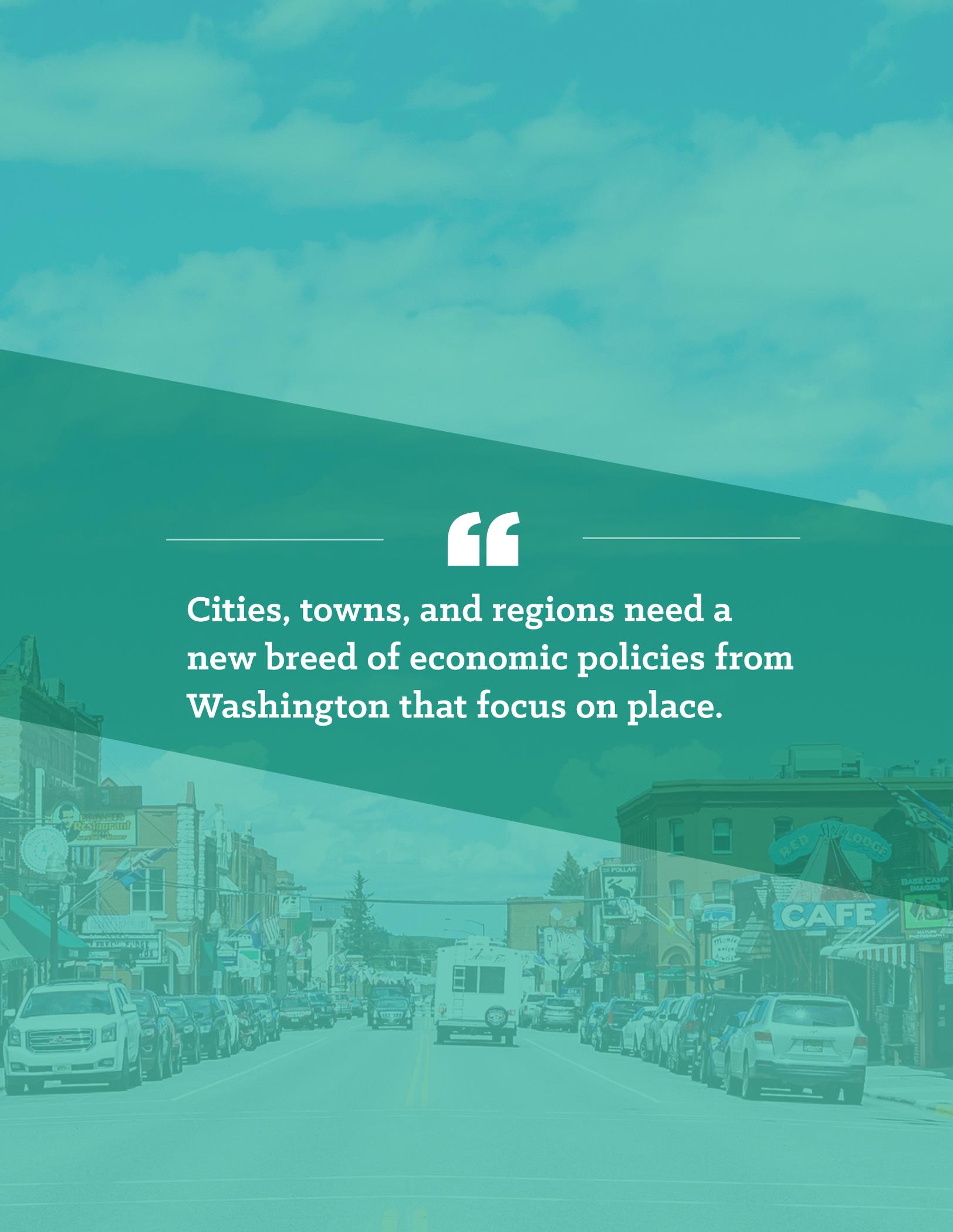
Building local entrepreneurship ecosystems

To improve the local climate for entrepreneurship, the federal government should:

- **Create an Entrepreneurs Extension Partnership** based on the Manufacturing Extension Partnership but for young firms poised to grow.
- **Establish an Office of Entrepreneurship within the Small Business Administration** that exclusively focuses on new businesses capable of growing.
- **Launch a network of non-equity based, “revenue first” accelerators** to overcome the existing geographic concentration of venture capital.

Looking forward

Increasingly, where workers live dictates what economic options they have, and these regional disparities in economic opportunity are pulling America apart. Traditional policies are no longer sufficient to address the emergence of geographic inequality. Cities, towns, and regions need a new breed of economic policies from Washington that focus on place. But to be effective, place-based policies must be directed toward improving the long-run competitiveness of local economies. A good starting point is to reorient a share of federal research and economic development efforts to local economies.



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Cities, towns, and regions need a new breed of economic policies from Washington that focus on place.

Introduction

Economic policymakers have long relied on the belief that there is one, national economy. As such, economic priorities revolve around broad concepts such as Gross Domestic Product, the national trade deficit, median income, and inequality — measures against which we are muddling along or simply failing. For example, productivity growth is on a long march downward, while inequality is growing at a feverish rate.

This paper argues that a fundamentally missing piece of federal research and economic policy is a focus on the innovation and entrepreneurial capacity of specific places.

America is a collection of hundreds of local economies, which, while interconnected, exist in physical places and experience unique challenges. Today, the country is fractured between places

that are thriving in technology-driven global markets and those that are struggling to stay afloat.

The problem is not with our macroeconomic goals, but with the unit of analysis. The vast majority of economic and social policies focus on supporting people, institutions, and firms, not places. Most popular federal programs, such as the Housing Choice Voucher Program and lending through the Small Business Administration, are concerned with whom the recipients are and not where they are located.

However, in order to tackle the growing geographic gap between those who are thriving in the modern, innovation-driven economy, and those who are falling behind, we need a specific federal approach that focuses the where investments are being made. These interventions,



called place-based policies, flip the traditional logic and put local economies at the center of economic policy.

Traditionally, economists have been skeptical about place-based policies, for three reasons. First, the policies often are seen as inefficient. If the ultimate goal is to help the underprivileged, the thinking goes, why target specific areas with high concentrations of poverty, versus simply targeting low-income individuals? In other words, by supporting a specific at-need population, a broad approach will help regions with a disproportionate share of that population. Second, place-based policies are seen as blunt tools that are susceptible to abuse. Focusing on specific geographies runs the risk of resources going to unintended activities. For example, the current debate on Opportunity Zones—potentially the country's largest place-based

intervention—centers around whether investment will predominately go to projects that would have happened anyway.

These concerns relate to the efficiency and structure of place-based policies. But the most important reason why many economists disregard them is because, until recently, they simply were not necessary. For most of the 20th century, regional economies grew and shrank in relation to one another, essentially “autocorrecting” long-run regional inequality. That is no longer the case.



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The Growth of Geographic Inequality

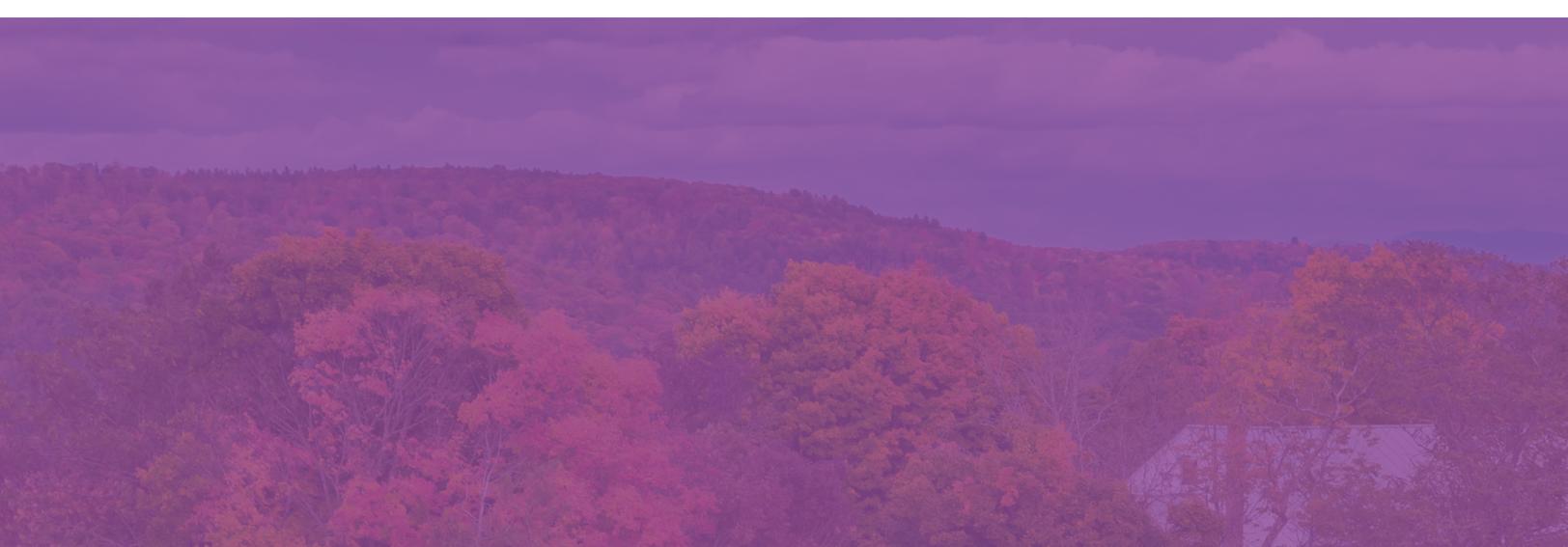
A little known triumph of the 20th century was the convergence of regional economies. From the late 19th century through the 1980s, poorer areas gained on their richer neighbors, creating greater geographic equality.⁷ During the nation's industrial heyday, workers moved with greater frequency than today from low- to high-wage regions, reducing the demand for labor in the latter and increasing it in the former. As a result, over time geographic disparities in unemployment and wage rates smoothed.⁸

For example, average income in the Southeast rose from 50 percent of the national average in 1930 to 86 percent by 1980, while wages in New England fell from 130 percent of the national average to 100 percent (Figure 1).⁹ Shambaugh and Nunn found that regional average income in 1960 was negatively correlated with the rate of growth by 1980 — meaning the poorer the place, the faster it was likely to catch up.¹⁰ Many economic historians mark middle half of the

20th century as a success story for the American worker, and much of that success is directly attributable to the success of towns and cities across the country.

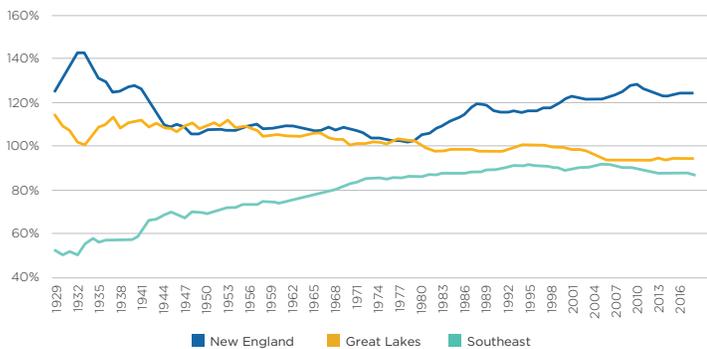
For economists, regional convergence suggested that there was no need to focus resources on particular places, because the natural redistribution of workers and capital across the country would correct the problem. While this logic may have made sense in the past, it doesn't today.

Beginning in the 1980s regional convergence began to slow and by the end of the century the trend had begun to reverse.¹¹ In fact, after 1980, the relationship Shambaugh and Nunn found between a region's low starting position and its fast growth rate completely evaporated, as poorer regions began to drift further behind their better-off neighbors.



In the subsequent decades, geographic inequality has increased dramatically. Median income in the richest 25 percent of counties is more than twice as high as in the bottom 25 percent, where poverty rates are also three times higher.¹² And the cross-regional consistency in unemployment rates that defined much of the last century has also collapsed—in 2018 unemployment rates in the poorest counties were twice those in the wealthiest.¹³ This may be a sign that things will get worse before they get better.

Figure 1. Per Capita Income by Region, as a Percent of the National Average, 1929-2018



Source: Bureau of Economic Analysis, author's calculations.

What happened? Summers et al. have identified a host of factors that have slowed regional convergence, including declining geographic mobility, as workers move far less than in the past; increasingly inelastic housing supplies in high-income areas, brought on by local zoning and other restrictions; a growing number of cities with high rates of working-age adults not working; and technological change that rewards workers with specific skills.¹⁴ And of course, the multi-decade decline of U.S. manufacturing, and overall cross-sector market concentration, has hollowed out regional economies across the Midwest Mid-Atlantic and the Northeast.

Clearly the natural economic laws that govern the spatial economy no longer function unencumbered. Today, policymakers at all levels of government need to reconsider policies that target places.



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The Role of Place-Based Strategies

While place-based strategies are still outliers in mainstream economic policy, the connection between geographic proximity and economic outcomes has been studied extensively. Almost a hundred years ago Alfred Marshall suggested that workers and firms in close proximity to one another would reap additional benefits compared to those at greater distances.¹⁵ Why? Because of “agglomeration effects”: dense labor markets make it easier for workers and employers to efficiently match skills to jobs; the presence of many complementary firms entices industry-specific service providers (e.g., venture capitalists, specialized accountants) who support the entire region; and knowledge exchange — a requisite to innovation — is more pronounced across short distances.

But even if we agree that there is a need for place-based policies to support cities and regions that are falling behind, what types of economic policies should policymakers adopt? Place-based policies come in number of forms, ranging from incentives for jobs and external capital to whole-cloth redistribution.

Place-Based Employment Incentives

Historically the most popular place-based strategies have aimed at improving local labor markets. For example, both the Empowerment Zone program and the Enterprise Community program, enacted at the federal level in 1993 and in many states thereafter, provided tax credits and block grants for employers to hire workers

in disadvantaged areas. In total both programs allocated over \$850 million to states and employers.¹⁶

In a review of the research on the Empowerment Zone and Enterprise Community programs, Bernstein found mixed results.¹⁷ In an evaluation of Maryland's Enterprise Zone program, the Government Accountability Office found that, while employment did increase in the zones, participating businesses said that the program was not a significant reason for hiring new workers.¹⁸ A study by Papke of Indiana's zones found that, while unemployment fell by 19 percent, the value of personal property declined by 13 percent.¹⁹

Place-Based Capital Attraction Incentives

Others argue that while encouraging employers to hire workers in disadvantaged places is important, what is more crucial is incentivizing external capital to flow in. For example, the New Market Tax Credit provides individual and institutional investors with a 39 percent credit against their federal tax liability for the provision of loans, investments and even financial counseling in distressed areas. The credit is incrementally claimed over a seven-year period: five percent in each of the first three years and six percent for each of the following four, with the goal of incentivizing patient capital.

A study by the Urban Institute found that 64 percent of projects analyzed would not have happened without the New Market Tax Credit

(though only half of respondents indicated that the credit was a deciding factor), suggesting that the credit may have been more effective than employment incentives like Empowerment Zones. The study also found that every \$53 in tax incentives was met with an additional \$47 of investments from other sources.²⁰

The Opportunity Zone program established under the 2018 Tax Cuts and Jobs Act is expected to attract over \$100 billion in private-sector investment, which would make it the country's largest-ever place-based tax incentive. To date, all 50 states, D.C., and the territories have designated over 8,700 opportunity zones, in which investors can deploy unrealized capital gains into physical property or local businesses. However, as the current regulations stand (as of September 2019), the majority of cash will funnel to real estate and not local businesses.

From a return-on-investment perspective, programs that allow unrestricted investment in disadvantaged communities seem to be more effective than those with highly structured employment incentives. However, given that both the New Market Tax Credit and Opportunity Zones predominately translate into investment in real estate, a more important question with regard to their effectiveness is, how significant is real estate to the long-term vitality of poor regions?

Proponents of policies that incentivize investments in real estate argue that these disadvantaged areas are suffering through a depreciation spiral, where the lack of investment

today begets future investment and directing investment to physical infrastructure will translate into other forms of investment in human capital, jobs, and beyond. Opponents claim that place-based policies that exclusively incentivize real estate will do just that while underinvesting in critical activities like education, firm creation, or workforce training. And while physical capital is no doubt needed, it is less important than resources to improve the underlying competitiveness of these communities. Indeed, the Opportunity Zones program was originally meant to attract outside capital into businesses within the zones, on the grounds that the best way to improve the long-term growth of these neighborhoods is to create a new class of local entrepreneurs.

Place-Based Direct Payments Policies

A more direct, albeit costly, version of place-based policies is one that directly subsidizes workers and families in poor areas. Proponents of direct payments argue that globalization and technological change have made certain places completely uncompetitive, and thus we should just subsidize the existence of people living in these areas. Place-based incentives for employment and capital are grounded in the belief that disadvantaged areas simply need a jumpstart, either by way of new jobs or new capital. Policies that support direct payments should also have some ultimate goal to kickstart these economies by providing opportunities for residents, not just subsidies.

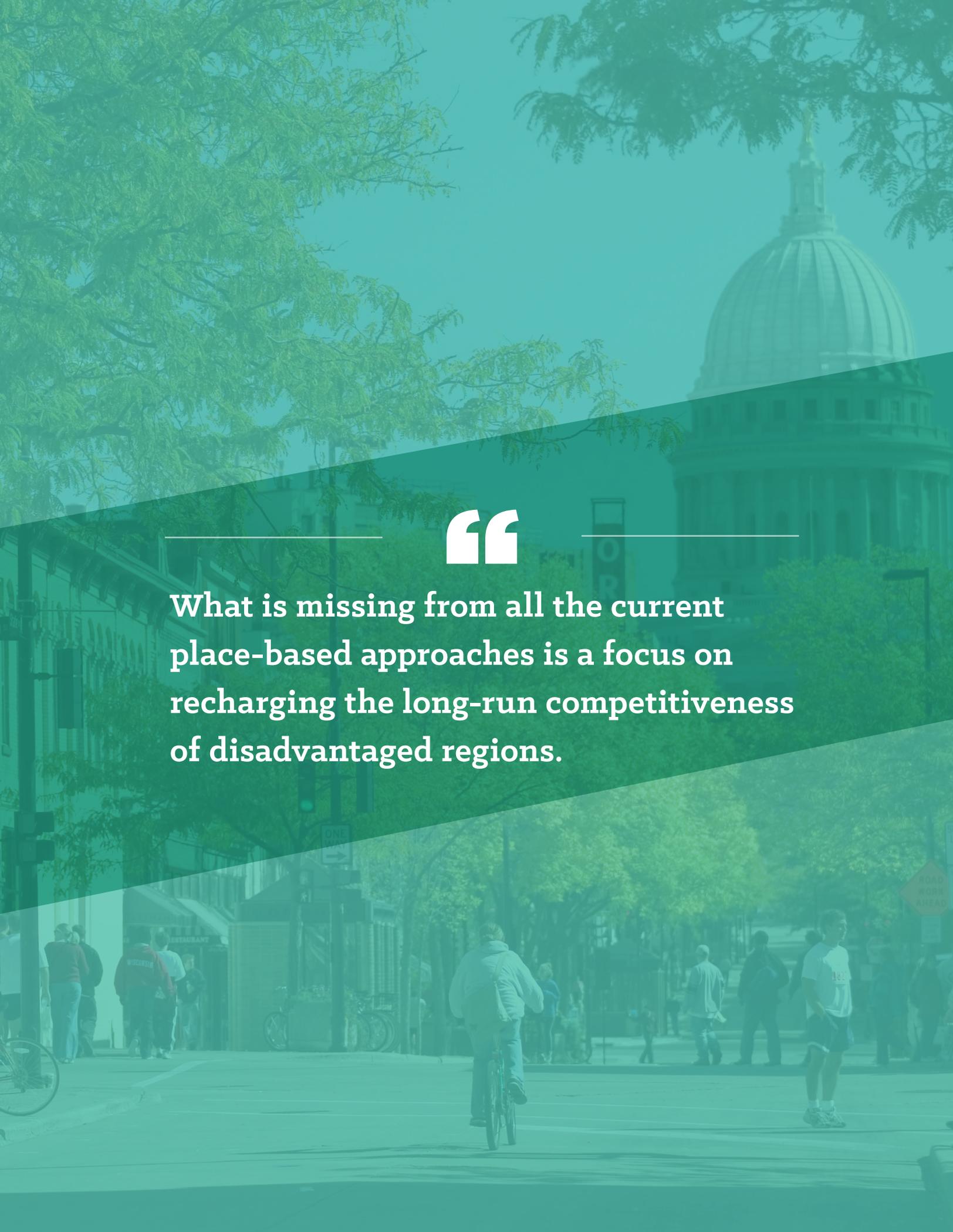
Summers et al. argue, regional redistribution strategies that are decoupled from employment support lead to significant unintended social consequences associated with high concentrations of adults not working, even though incomes are higher. These consequences include higher incarceration rates, systemic mental and physical health issues, etc.²¹

In any case, even if policymakers agreed that the right answer is to essentially give up on these places and subsidize their existence, the cost of doing so would likely be prohibitive.

Shortcomings of Traditional Place-Based Policies

What is missing from all the current place-based approaches is a focus on recharging the long-run competitiveness of disadvantaged regions.

The underlying assumption in both jobs and investment incentives is that the fundamental reason these places are poor is that employers aren't hiring enough workers or that there is too little investment in infrastructure. But in the knowledge economy, connecting people to low wage, low opportunity, jobs in local servicing sectors or increasing the stock or quality of residential or commercial buildings is not a good strategy to help these regions succeed in the long run. Rather, these places need to re-engage with the global economy: They need better and more relevantly skilled workers, young and fast-growing businesses in globally significant sectors, and strong partnerships with local academic institutions that breed talent and technology.



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What is missing from all the current place-based approaches is a focus on recharging the long-run competitiveness of disadvantaged regions.

Place-Based Strategies Have Ignored Innovation and Entrepreneurship

One reason advocates for place-based strategies have focused on labor markets and infrastructure is that even the poorest places have these assets. It's true that the hardest-hit communities at least have some employers and buildings, but not every place has the assets needed to succeed in the global, innovation economy. Innovation-based economies have an ecosystem with a mixture of entrepreneurs, firms that are competitive enough to export goods and services outside the region, and research institutions that produce both technology and high-skilled workers. Most place-based policies have focused on neighborhoods and cities that are so poor they don't have these resources—which is one reason they are poor. But if we shift the focus toward places with legitimate innovation capacity, won't we be leaving the most vulnerable places behind? Such an outcome is unlikely, for three reasons.

First, while there are many small and rural towns and deeply impoverished neighborhoods without a starting position in the innovation economy, a global orientation doesn't necessarily mean coming up with the next Uber. It's worth remembering that the innovation economy of the mid-20th century was concentrated in manufacturing. Steelmakers, automotive suppliers, and forges that peppered the country represented export-oriented production. Today, a service-oriented economy that provides backend support for global firms or small advanced manufacturing shops clustered locally but fully integrated into global supply chains can offer a

path to economic security for neglected towns and neighborhoods.

Second, while we need short-term redistribution policies — unemployment insurance, temporary jobs, nutrition and health care support — for those places in need now, we also need moderate- and long-term strategies in place for the future. Place-based approaches that focus on community competitiveness and not just community revitalization will help these regions thrive in the global economy.

Third, the barriers between disadvantaged, asset-poor neighborhoods and the neighborhoods in a city with global firms, research institutions and startups are not as set as is often perceived.

“Placemaking” gurus argue that poor neighborhoods are islands. What they mean is that the benefits of the broader city are not migrating to residents in these areas. That's an important point, but how hyperlocal policies often play out is to be reductionist to the point of absurdity. Often, place-making advocates assume that economic activity that occurs outside the target neighborhood is irrelevant and that any activity within it is seismic. But the economic evidence suggests that simply isn't true.

A recent National Bureau of Economic Research study found that a one percent increase in local productivity leads to twice as high an increase in purchasing power for lower-wage workers as for higher-skilled workers.²² Moretti found that a one percentage point increase in the supply of college graduates raises high school dropouts'

wages by 1.9 percent, high school graduates' wages by 1.6 percent, and college graduates' wages by 0.4 percent.²³ Even pure scientific activity is associated with broad-based economic prosperity. For example, Hausman found that, for each new university patent awarded, 15 additional jobs are created within the city.²⁴

In other words, neighborhoods never exist in isolation from their broader economic engines. Poor neighborhoods in growing and competitive cities and poor cities in growing and competitive metropolitan areas fair better than their peers. Regional growth is by no means a panacea to the woes of poor neighborhoods, but at the same time creating investment incentives for physical infrastructure in poor neighborhoods without some line of sight to broader competitiveness begs the question, when the initial growth bump from construction and other investment wears

off, won't we need to do the same thing all over again?

The uncomfortable truth is that, to grow the broad competitiveness of cities and regions, we sometimes need place-based investments in neighborhoods that are relatively well off. As the next section highlights, while poor areas can benefit from the spillovers from extremely productive adjacent neighborhoods, innovation itself tends to be both highly concentrated and reliant on tight proximity. In other words, the goal should not be to spread innovation activities evenly across a region or to invest solely in areas without those assets. Instead, place-based policies should aim to ensure that local innovation resources are running at full capacity and that policies are in place to ensure that the region as a whole benefits — particularly the most vulnerable neighborhoods.

The Economics of Place-Based Innovation Policies

Investment in the innovation economy is a perfect fit with a place-based approach because few economic activities benefit more from geographic proximity than do “knowledge spillovers.”²⁵

Knowledge spillovers are the formal and informal ways workers, entrepreneurs, investors and inventors learn from one another outside of a market transaction.²⁶ For example, if an entrepreneur learns about a new software purchasing program from a network architect at a local technology meetup, the entrepreneur gains value beyond what he or she has actually paid for. This form of non-market benefit is referred to as a “positive externality.”

Research shows that the value of proximity for firms and workers in sharing ideas is attenuated extremely quickly by distance. For example, Rosenthal and Strange found that, for software

companies, the spillover benefits are 10 times greater when firms are within one mile of each other than they are between two and five miles, and by 10 miles there are no more within-city localization benefits.²⁷ Similarly, Arzaghi and Henderson, in a study of ad agencies in Manhattan, found that benefits from networking with nearby firms are strongest when firms are within zero to 250 meters but decline by 80 percent when the firms are 500 meters apart.²⁸

The reason proximity is so vital to knowledge exchange is that information is not easily codified and transmitted over distances.²⁹ For example, workers learn new ideas from fellow workers, entrepreneurs learn from nearby mentors, and venture capital firms are more likely to invest in a company they can observe.³⁰ There is no instruction manual for the ideas shared and knowledge gained in these interactions, and their benefit exists through personal communication.



As Tassey describes it, “because much of the knowledge underlying emerging technologies is tacit in nature, co-location synergies are critical.”³¹

These knowledge spillovers are particularly relevant to research-based companies because these companies’ competitive advantage is knowledge, not widgets. Carlino found that R&D activity is far more concentrated than employment, and R&D labs themselves are highly concentrated — research labs in over one third of manufacturing industries see co-location benefits at less than a quarter mile.³² Similar findings exist in Europe; Capello and Lenzi analyzed 262 regions in the European Union and found that the economic returns to new knowledge are highly spatial and concentrated among high-growth, innovative firms.³³

Another reason proximity is vital to knowledge exchange is that entrepreneurs — from new restaurant owners to tech startups — are

significantly more likely to succeed if they are close to other new firms and support systems. Research shows that young firms rely on others to validate their ideas when they do not have points of comparison in the market. To overcome the “liability of newness,” novel ideas must be informally endorsed by a mix of investors, customers and other entrepreneurs.³⁴

The ability to test ideas is particularly important for technology and creative startups. Roxley found that, in stable, traditional markets, new entrants rely on established institutions like banks to validate their products, but in highly dynamic sectors many positively performing firms are associated with many different points of validation.³⁵ Similarly, Elfring and Hulsink found that, in the software and biotech industries, startups in regions without an ecosystem of firms and support services are significantly more likely to fail.³⁶



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Place-Based Policy Recommendations for America's Innovation Economy

Despite the strong agglomeration effects offered by an innovation economy, there are few examples of place-based innovation policies at the federal level.

States, on the other hand, have tried a host of place-based innovation policies, primarily in the form of “cluster strategies,” which aim to identify and support particular technological and industry strengths such as advanced manufacturing or specific areas of the life sciences. However, given the evidence of the extreme proximity required for innovation spillovers, statewide initiatives are often too broad. Also, given the political convenience of allocating new resources widely, state policies often end up spreading investment across the entire state, instead of in the particular places it can be most effective.

States and cities should continue to explore smart technology clusters that improve the local climate for innovation. However, at the federal level, a new suite of place-based innovation policies is needed. Cluster initiatives don't always align well with how the federal government already invests in innovation because they usually incentivize activity at the production end of the innovation process and not at the R&D end, where the federal government spends most its resources. Indeed, the federal government invests over \$160 billion annually in R&D at universities, nonprofit research labs, academic hospitals and national laboratories across the country. State and local governments, on the other hand, fund a relatively trivial amount of R&D. For example, in 2018, for every \$1 of state and local investment

in R&D the federal government invested \$98.³⁷ Thus, production- and workforce-oriented cluster strategies make sense for mayors and governors who have little ability to direct R&D spending, but for federal policymakers, who have significant R&D authority, two broad strategies are needed to leverage federal research expenditures to improve local economic conditions.

First, there needs to be a centralized administrative arm to coordinate, filter, and evaluate federal resources based on where investments are being made and where they are not. Currently, no agency in the federal government is tasked with pulling together the array of national resources meant to focus on specific cities, towns and rural regions. Also, there is no centralized effort to measure or identify which agencies consider location as a criterion for grant making.

Second, federal R&D agencies (the National Institutes of Health, the Department of Defense, the Department of Agriculture, the Department of Energy, the National Science Foundation, and NASA) currently pay short shrift to the local impact of their investments. However, each agency has tools that if recalibrated to focus on place could dramatically improve the local impact of R&D without sacrificing the scientific missions of the agencies.

What follows is a series of recommendations for carrying out these strategies.

Reimagine the Economic Development Administration (EDA) as the federal entity focused on local economies

Cities, states and regions need a central federal agency for resources that support their local economies. At the same time, federal agencies should consider where their resources are being allocated.

The EDA is the only federal office solely focused on economic development, and through its five regional offices across the country it tries to respond to the needs of regional economies.

The EDA should become the federal clearinghouse for place-based policies through new authority and the redirection of new and existing resources to identify and strategically bundle cross-agency investments to local economies. A number of steps would significantly improve the EDA's ability to accomplish this task:

- **Create an Office of Place-Based Policies.** The new office would have the resources and authority to oversee, analyze and support cross-agency collaboration to better allocate federal resources to targeted places.
- **Improve federal data collection on the geographic overlap of existing federal investments.** This effort would be similar to the tracking by the Small Business Administration of its investments in minority- and veteran-owned businesses.

- **Develop a Place-Based Scorecard for federal agencies, including R&D mission agencies.** The scorecard would measure and grade how well each federal agency considers the geographic footprint of its investments when making grant and other resource decisions.
- **Established a Place-Based Innovation Fund.** The fund would identify different classes of places, such as rural regions, at-risk urban neighborhoods and low-income suburban corridors, and invest in strategies unique to these places.
- **Identify federal facilities located near economic clusters.** Some research and other federal facilities are better positioned to support regional economic development than others based on their proximity to the private sector. The EDA should identify and score federal research facilities that are geographically near clusters of relevant firms, and these scores would be taken into consideration for applied research grants.

Expanding EDA's Office

OF INNOVATION AND ENTREPRENEURSHIP

The Office of Innovation and Entrepreneurship leads EDA's Regional Innovation Strategies (RIS) Program, one of the few place-based innovation programs within the federal government. RIS awards two types of grants: The i6 Challenge is designed to support organizations, programs, and partnerships that help translate research and intellectual property into new jobs and businesses. Second, the Seed Fund Support Program provides funding for technical assistance to regions to create equity-based seed funds to invest in regionally-based startups with a potential to be high growth.

RIS does two important things that are missing from most federal programs. First, they require a direct connection between research and technology to economic outcomes. Second, they allocate resources based on how strong a fit the applicant is for the regional economy instead of solely focusing on one research team, startup, or idea (like most federal R&D funding).

Despite the importance of the model, Congress has only allocated \$21 million to the RIS programs, which is absurdly underfunded for a \$20 trillion economy. Also, Congress should increase RIS' capacity to better understand which grantees were successful and which were not, improving both the grant making process but more importantly, support lessons learned for other communities.

Regionalizing the Impact of Federal Research and Development

What happens outside the lab matters, both for scientific outcomes and for local economies.

The federal government invests tens of billions of dollars every year in local economies across the country, but agencies are not incentivized to pay attention to the cities, towns and regions in which these investments are being made. In order to ensure that communities across the country can participate in the innovation-based, global economy, the federal government needs

to adopt and expand place-based policies within research agencies.

There are three areas where federal R&D could better align with regional economies: basic research, commercialization and entrepreneurship.



Place-Based Opportunities

AT THE DEPARTMENTS OF DEFENSE AND ENERGY
AND THE NATIONAL INSTITUTES OF HEALTH

The Departments of Defense (DoD) and Energy (DoE) and the National Institutes of Health (NIH) are the three largest R&D funding agencies, together representing over \$100 billion in federal research expenditure. While each has national missions, they also have existing structures that position them well for place-based strategies.

DoD, through its own efforts and those that flow from partnerships and procurement, consumes technology to meet its mission objectives. No other federal agency has such a quasi-fiduciary relationship with the commercial outcomes of its own R&D funding, and DoD can better solve battlefield challenges by taking greater advantage of regional clusters of knowledge flows, specialized workers, and dense supply chains.

NIH, by contrast, invests almost all of its R&D funds externally through competitive grants to over 8,000 entities. No other federal research agency, with the possible exception of DoD, works with as many external partners in as many places. Its geographically diverse portfolio is ideally suited for blending regional economic development with its primary mission of improving health.

DoE invests heavily in its 17 national laboratories around the country. Few are located in dense regional technology clusters and cities, but these labs could bring the frontiers of science to market more quickly by strategically locating and linking parts of their core competencies in the vicinity of large and small firms, venture capitalists, and research institutions.

Bringing to Ground the Impact of Basic Research

There is a popular misconception that basic research, on which the federal government spends \$38 billion a year, is devoid of market potential and therefore irrelevant to local economic development. While this is certainly true in some instances, it is not the case for many industries, such as biotechnology and advanced materials, in which discoveries in the laboratory are direct and immediate pre-cursors to new products and services. Moreover, the physical facilities needed for basic science are often directly useful for industry as well. For example, the national laboratory system earns billions in private contracts in 2018 for the rental use of laboratory equipment and researcher time. Finally, corporate research centers are beginning to move closer to basic research institutions as they unload their basic research capacity onto the public sector.³⁸

Since research occurs in close proximity to the private sector, the federal government should seek to improve the local impact of basic research by taking the following steps:



Expand basic research funding that focuses on building regional capacity.

The NIH's Centers of Biomedical Research Excellence (COBRE), which allocates research dollars to states that have historically underperformed in biotechnology yet have promising assets off of which to build, has been a critical component to build capacity in states like Oklahoma. Similar programs should be created in fields like health informatics and energy, where few states and regions are currently participating. What's important to avoid, however, is creating technology clusters where fundamental scientific strengths do not exist. The R&D agencies are uniquely capable of assessing the scientific assets of a particular region.



Fund a regional "Valley of Death" grant.

Basic science often relies on close proximity to potential applied and commercial partners to become economically relevant, and many cities and regions have basic, applied, and commercial institutions near each other. A small share of federal R&D dollars should be allocated to projects in regions that have a blend of facilities that have basic, applied, and development capabilities.



Create small-scale grants for mapping local research around cross-cutting technologies.

Many technologies implicate multiple academic disciplines, but most regions simply don't know what institutions are pursuing which areas of science.

Spinning Out the Benefits of Research

Commercialization, or the process of translating R&D into new products and services, is becoming a more important element of how the funding agencies measure their own success. However, most commercialization targets and programs do not measure or focus on commercial activity that occurs locally, even though the research on proximity and innovation clearly shows that it is easier to spin the benefits of research into economic outcomes when the lab and firm are in close proximity.

To increase the market relevance of research, the federal government should:

 **Establish a regional innovation voucher program.** The program would allocate grants to small- and medium-sized businesses to pay for technical consulting services at universities, nonprofit labs, and national labs

within a region. Currently several states, including Tennessee, Colorado, and Rhode Island, have innovation vouchers to create stronger regional connections between small businesses and research institutions.



Increase the number of large-scale, multi-institution funding opportunities. Cities and regions need large, mixed-sector applied research grants to bring industry, nonprofit labs, and universities together. NIH's Clinical and Translation Science Awards are a good example of both the effective size and scope of such grants. These grants reach in the tens of millions of dollars and require significant collaboration, usually among institutions that are all located within the same city. Similarly, the Coulter Foundation has offered grants to institutions to pull technologies from lab to market, involving multiple stakeholders along the way.





Measure and evaluate local economic development impact. Federal research agencies measure technology transfer from national laboratories, but those scores rank low on the list of measurements that agencies use to self-evaluate. Moreover, few agencies actually track the local impact of their research. Agencies should measure and focus on local commercialization.



Build “microlabs” to help co-locate firms and researchers. Many national labs and universities are located far from companies and entrepreneurs. While some schools have moved whole departments to be where the action is, such moves are timely and costly. Instead, research institutions should establish small labs and offices near downtowns and in places where firms and entrepreneurs cluster.



Fund and attract industry-focused “star” faculty. One of the best ways to improve the connection between universities and their

local economies is to hire noted faculty that pursue industry-focused research. The federal government should allocate resources on a competitive basis to encourage faculty members — particularly those currently working in non-U.S. universities — to relocate to regions with economic strengths that align with their research.



Provide technical and legal support to standardize industry-university partnerships across a city or region. Many cities have dozens of universities and research labs, all with their own rules, processes, and legal agreements for working with companies and each other. The federal government should provide small-dollar grants and technical support to help research institutions located near one another create shared language on agreements or, even better, adopt the same agreements, thereby significantly cutting down on the legal costs.



Cities and regions need large, mixed-sector applied research grants to bring industry, nonprofit labs, and universities together.



Building Local Entrepreneurial Ecosystems

New firms create the majority of new jobs within a community. And research by Guzman and Stern shows that one leading indicator of whether a startup will grow and become a jobs generator is whether the firm has a patent.³⁹ The implication is that science- and technology-based businesses are great economic generators for regions, but successful entrepreneurs need a host of services, ranging from access to capital and mentorship to help identifying their first customers. To address these needs, federal place-based policies must consider the full scope of entrepreneurial services within a region.

To improve the local climate for entrepreneurship, the federal government should:

- **Create an Entrepreneurs Extension Partnership.** Based on the Manufacturing Extension Partnership, a two-decade-old place-based program that connects small manufacturers to free and low-cost consulting services, a federal Entrepreneurs Extension Program could connect startups with the basic resources needed to create and grow their businesses locally.
- **Establish an Office of Entrepreneurship within the Small Business Administration (SBA).** Most of the SBA's resources go to older small businesses that tend not to grow, even though it's young, rather than small, businesses that represent the lion's

share of job creation within local economies. A new Office of Entrepreneurship would help local leaders identify startups that exhibit high growth potential and allocate regional resources to support entrepreneurial ecosystem development.

- **Launch a network of non-equity based, "revenue first" accelerators.** Over 80 percent of new businesses fall within a grey area where they are too risky for traditional banks and not risky enough for venture capitalists. At the same time, many cities have accelerators to support tech companies but no accelerators to support the city's industrial strengths (e.g., health care, manufacturing, food and retail, etc.) An underlying disconnect in the technology accelerator model is that it seeks an equity share in companies, in the same manner as do venture capitalists, even though many potential targets would be better served through different financing models, such as revenue-based financing. To connect young firms in industries that align with regional strengths, a network of federally-funded accelerators for non-equity-based firms should be established across the country.

Conclusion

Increasingly, where workers live dictates what economic options they have, yet regional disparities in economic opportunity are pulling workers down and pulling America apart. Traditional policies on either side of the political aisle are no longer sufficient to address the emergence of place-based inequality. Cities, towns and regions need a new breed of economic policies from Washington that focus on place, and, to be effective, these policies need to improve the long-run competitiveness of local economies. A good starting point is to reorient the work of federal research and economic development agencies toward seeding innovation and the competitive industry clusters of the future in more local economies.

Endnotes

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Cities have also pursued place-based innovation strategies, usually in partnership with local industry and academia. For example, many cities have identified and established economic development strategies for their innovation districts. Innovation districts are designated neighborhoods usually near research institutions and universities that concentrate students, researchers, and high-growth entrepreneurs. These districts have proven to be critical organizing platforms for local innovation.
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