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FROM MANAGING DECLINE TO BUILDING THE FUTURE

COULD A HEARTLAND VISA HELP STRUGGLING REGIONS?

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Key findings

- U.S. population growth has fallen to 80-year lows. The country now adds approximately 900,000 fewer people each year than it did in the early 2000s.
- The last decade marks the first time in the past century that the United States has experienced low population growth and low prime working age growth on a sustained basis at the same time.
- Uneven population growth is leaving more places behind. 86% of counties now grow more slowly than the nation as a whole, up from 64% in the 1990s.
- In total, 61 million Americans live in counties with stagnant or shrinking populations and 38 million live in the 41% of U.S. counties experiencing rates of demographic decline similar to Japan's.
- 80% of U.S. counties, home to 149 million Americans, lost prime working age adults from 2007 to 2017, and 65% will again over the next decade.
- By 2037, two-thirds of U.S. counties will contain fewer prime working age adults than they did in 1997, even though the country will add 24.1 million prime working age adults and 98.8 million people in total over that same period.
- Population decline affects communities in every state. Half of U.S. states lost prime working age adults from 2007-2017. 43% of counties in the average state lost population in that same time period, and 76% lost prime working age adults.
- Shrinking places are also aging the most rapidly. By 2027, 26% of the population in the fastest shrinking counties will be 65 and older compared to 20% nationwide.
- Population loss is hitting many places with already weak socioeconomic foundations. The share of the adult population with at least a bachelor's degree in the bottom decile of population loss is half that in the top decile of population growth. Educational attainment in the fastest shrinking counties is on average equivalent to that of Mexico today or the United States in 1978.
- Population loss itself perpetuates economic decline. Its deleterious effects on housing markets, local government finances, productivity, and dynamism make it harder for communities to bounce back. For example, this analysis found that a 1 percentage point decline in a county's population growth rate is associated with a 2-3 percentage point decline in its startup rate over the past decade.

The idea

Current skilled immigration policy largely benefits populous, booming metro areas but fails most heartland communities. A new program of place-based visas—let's call them Heartland Visas—could become a powerful economic development tool for communities facing the consequences of demographic stagnation, but not content to simply manage decline. The visas would constitute a new, additive, and voluntary pathway for skilled immigrants to come to the United States. Eligible communities would opt-in to hosting visa holders, who would provide a much-needed injection of human capital and entrepreneurial vitality into parts of the country that retain considerable economic potential.

Introduction

Parts of the United States count among the richest, most educated economies in the world, while others struggle with a variety of socioeconomic problems. This has been true throughout U.S. history, but today diverging economic fortunes are exacerbated by a new era of demographic challenges. Population growth has slowed, the number of prime working age people (25-54) is stagnating, and the country is aging rapidly. These trends have raised concerns that the United States will soon face the serious demographic problems that Japan and parts of Western Europe have confronted in recent decades. The truth is, for many parts of the country, including much of the heartland, those challenges have already arrived. Over the last decade, Japan's population shrank by 1% and its prime working age population shrank by 4.4%. Across the United States, 41% of counties, with a population of 38 million, have declined by this much or more over the last decade.

Across the United States, 41% of counties, totaling 38 million people, have experienced rates of demographic decline similar to Japan's.

The demographic challenges facing large parts of the country are not benign. Demographic decline and population loss are not just symptoms of place-based economic decline, they are direct causes of it. As this report will document, demographic decline leads to a variety of economic problems. Population loss reverberates through housing markets and municipal finances. Low-growth places have weaker labor markets and suffer from less economic dynamism. What's more, these trends are set to deepen over the next decade.

What is the appropriate policy response to such developments, and how can the federal government, in particular, be supportive of communities not content to accept decline as destiny?

This report will explore one potential tool the federal government could put at the disposal of communities experiencing demographic decline: a new visa that would connect skilled immigrants to communities that want and need them. The new visas would bolster the local human capital base and help unlock the latent potential of the country's struggling regions. Such a policy would be strengthened by complementary initiatives to upskill and retrain long-standing residents as well. Yet this report lays out the case for why more skilled people in sheer numerical

terms are needed to spark durable turnarounds and counteract the economic drag of population decline itself. Skilled immigrants, who are typically young, well-educated, entrepreneurial, and innovative, can meaningfully enhance local efforts to kickstart the process of economic revitalization.

This report starts by unpacking the demographic challenges that struggling places are facing today and in the future. Then it will explore how demographic decline seriously exacerbates economic problems through three main channels: the housing market, fiscal effects, and economic dynamism. Finally, we discuss how skilled immigration might be able to offset and reverse those challenges before presenting a rough outline for a place-based visa policy.

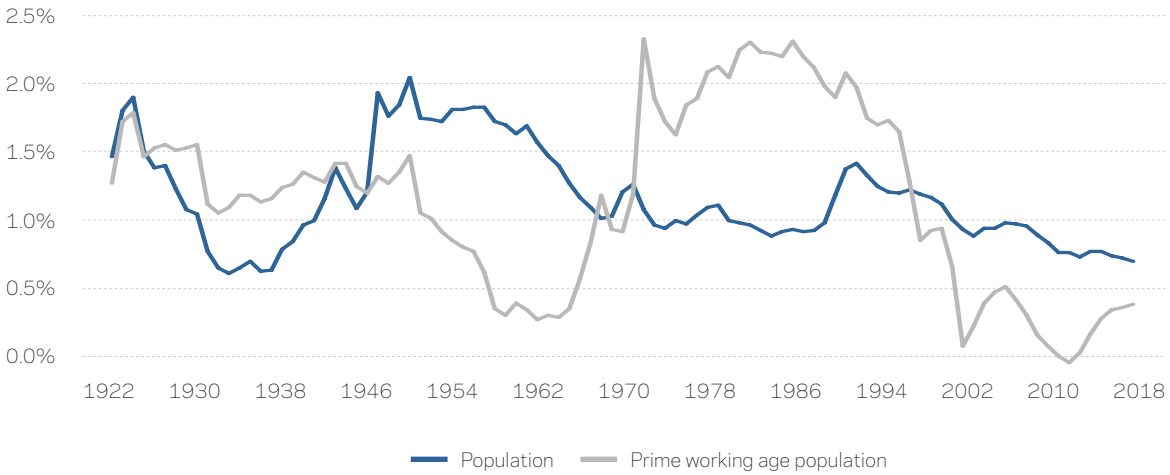
Population loss economics

Demographic headwinds have pushed U.S. population growth over the last decade to its slowest pace since the Great Depression. Fewer births, mostly flat immigration rates, and an aging population have left net growth at 0.7% on average annually over the last decade, compared to a 1% or higher average over the last 30, 50, and 100 years. This slowdown translates into roughly 900,000 fewer new Americans each year. The most recent data is no better, with 2018 marking the slowest rate of population growth in the United States in over 80 years.

The last decade marks the first time in the past century that the United States has experienced low population growth and low prime working age growth on a sustained basis at the same time.

The aging of the baby boomers out of their prime working years means that growth in the number of Americans ages 25 to 54 has slowed even more sharply than the overall population, settling in at 0.4% in 2018. While the United States has experienced low population growth and low prime working age growth in the past, the last decade is the first time in the past century that both have occurred on a sustained basis at the same time. These low-growth conditions are set to persist for the foreseeable future.

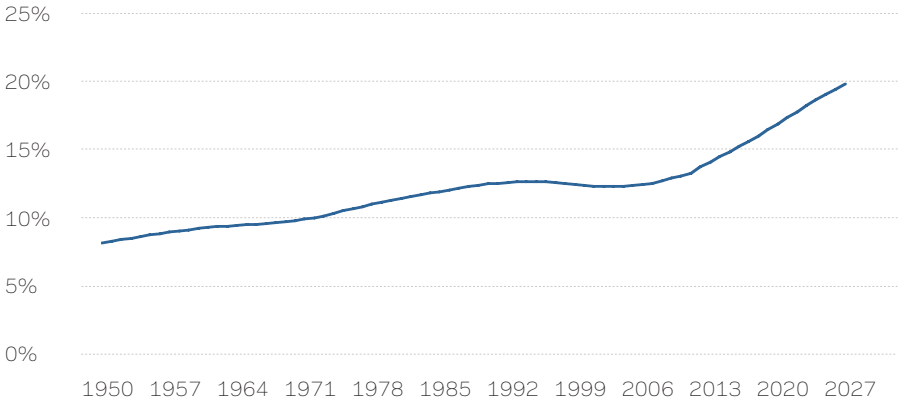
U.S. population and prime working age population, % change from the year prior



Source: U.S. Census Bureau, Moody's Analytics

Compounding these negative population growth trends is the rapid aging of the population that has pushed the senior share to historic heights. The percent of the population age 65 and over is projected to shoot up from 13% in 2007 to 20% in 2027.

Share of U.S. population age 65 and over



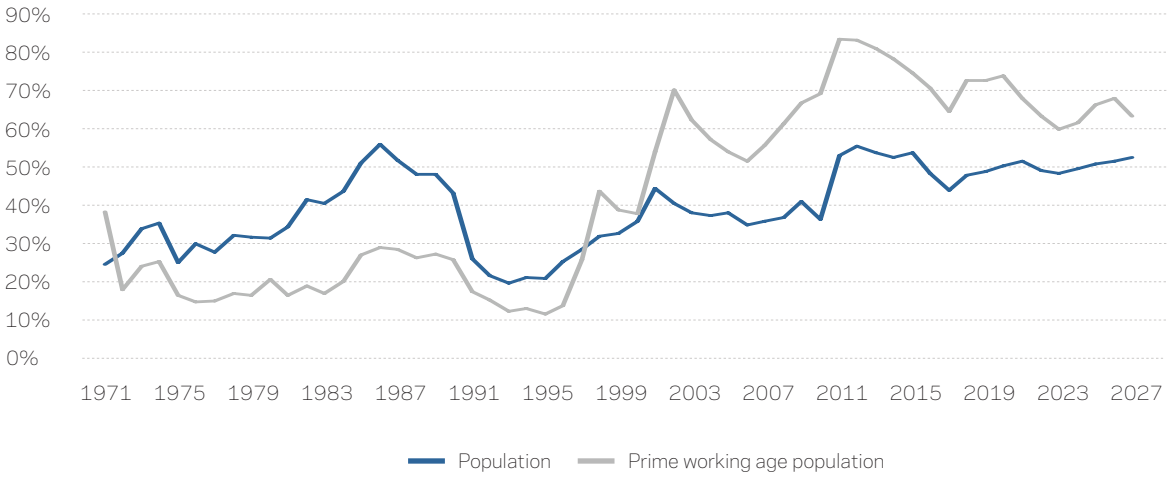
The U.S. share of the population 65 and older has already doubled since 1950.

Current forecasts expect it to increase to one-fifth of total population within a decade, close to what Germany is today.

Source: U.S. Census Bureau, Moody's Analytics

These demographic challenges are not distributed evenly across the United States. Instead, some parts of the country are still adding people at a healthy pace, while others are losing them, sometimes at a dramatic rate. The recent slowdown in U.S. population growth thus understates the problem in many places. Even as the national growth rate has decelerated, the share of all counties falling below it has increased steadily from 64% from 1990 to 2000, to 73% from 2000 to 2010, to 86% from 2010 to 2017. About half of U.S. counties are now losing population outright each year—an historically high proportion. Over 50 million people, or 15% of the U.S. population, live in counties that have shrunk over the past decade, and another 11 million live in counties with largely flat populations.[1]

Share of counties losing population annually

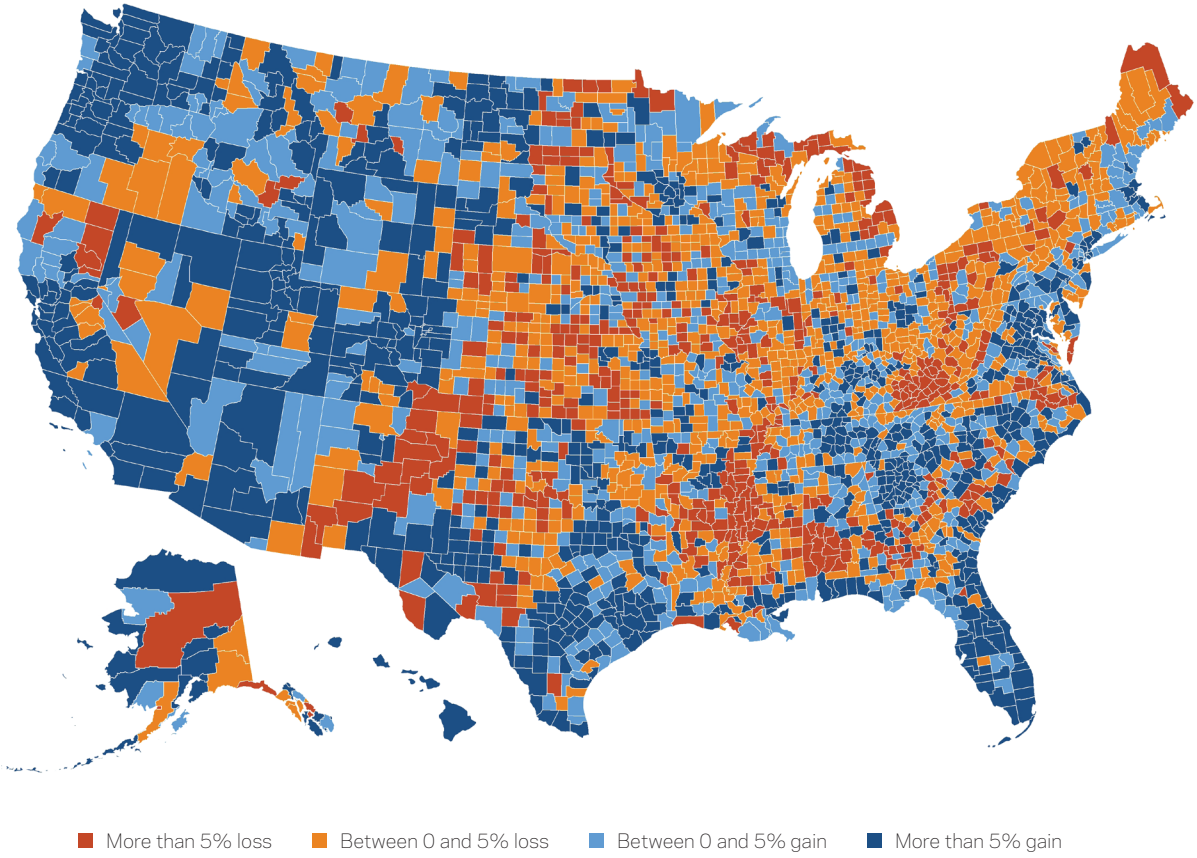


Source: U.S. Census Bureau, Moody's Analytics

1. We define flat as 0.1% per year annual growth on average over the decade.

Population loss affects every state. Declining population is more prevalent in particular regions, specifically the Northeast and Midwest, but 43% of counties in the average state are shrinking. In only four states did no counties lose residents over the past decade: Delaware, DC, Hawaii, and Washington. At the other end of the spectrum, 80% of counties in Illinois and West Virginia lost population. See Appendix Table 1 for data on all states.

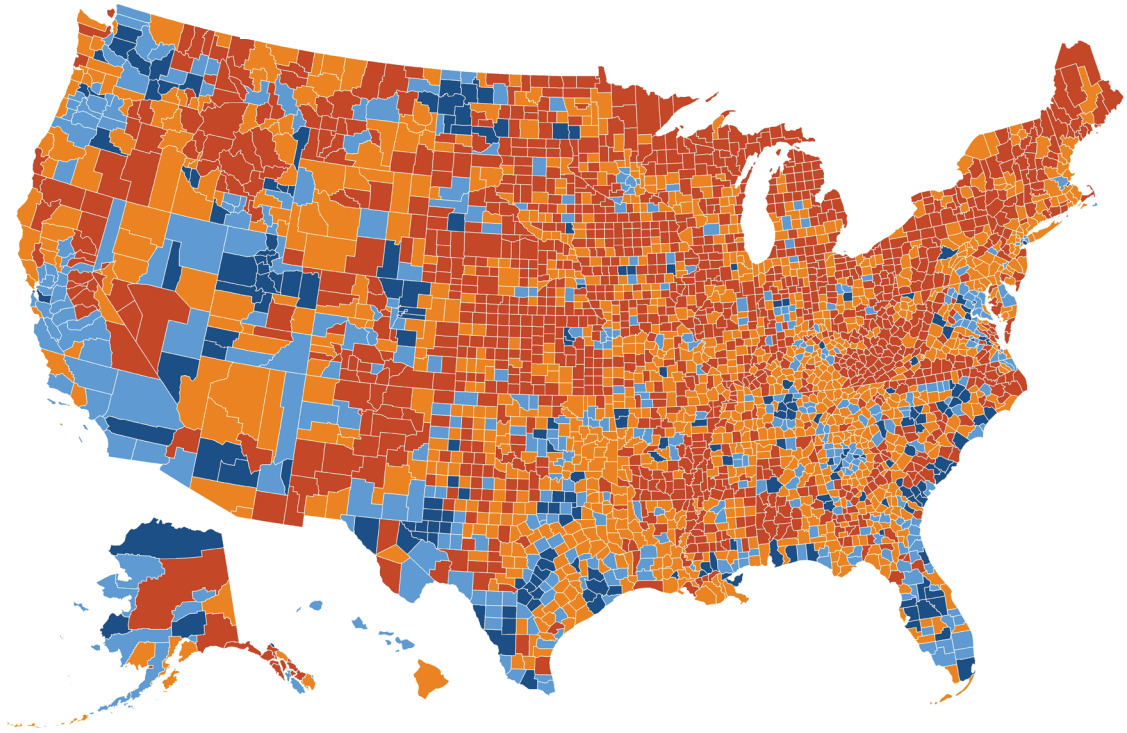
County population change from 2007-2017



Source: U.S. Census Bureau, Moody's Analytics

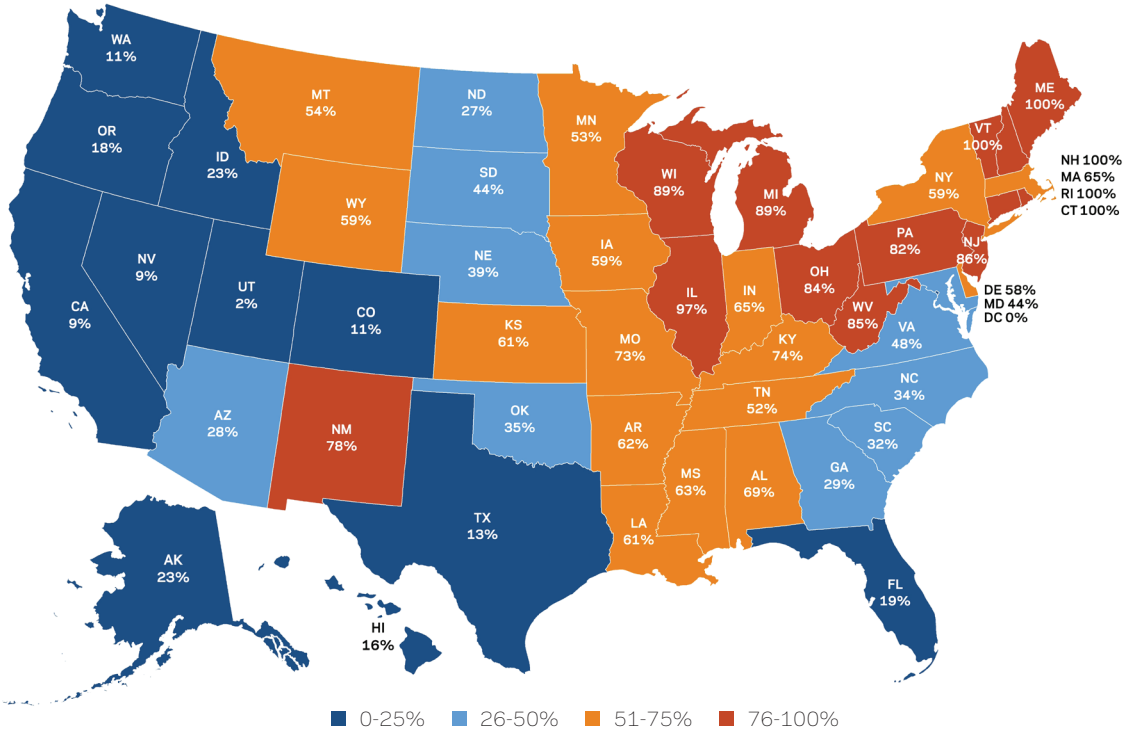
The story for prime working age population is even more dramatic, with 80% of counties losing population ages 25 to 54 over the last decade. Together these counties were home to 149 million Americans in 2017. The proportion of counties losing prime working age population annually has been well above historic highs since 2000, where Moody's Analytics forecasts it to remain into the next decade. These projections mean that, by 2037, 67% of U.S. counties will contain fewer prime working age adults than they did in 1997, even though the United States as a whole will add 24.1 million prime working age adults and 98.8 million people in total over that same period.

Prime working age population change by county 2007 to 2017



More than 10% loss Between 0 and 10% loss Between 0 and 10% gain More than 10% gain

Share of 2017 population living in a county that lost prime working age population 2007-2017



0-25% 26-50% 51-75% 76-100%

Source: U.S. Census Bureau, Moody's Analytics

In the average state, three-quarters of counties have shed prime working age adults over the past decade. In five northeastern states, prime working age population is shrinking in every county: Vermont, Maine, Connecticut, Rhode Island, and New Hampshire. Underscoring just how much of the country is impacted by the demographic drag now setting in across the American economy, a majority of the population in 28 states lives in a county that lost prime working age adults between 2010 and 2017. Western states appear by far the most resilient in the face of these trends.

By 2037, two-thirds of U.S. counties will contain fewer prime working age adults than they did in 1997.

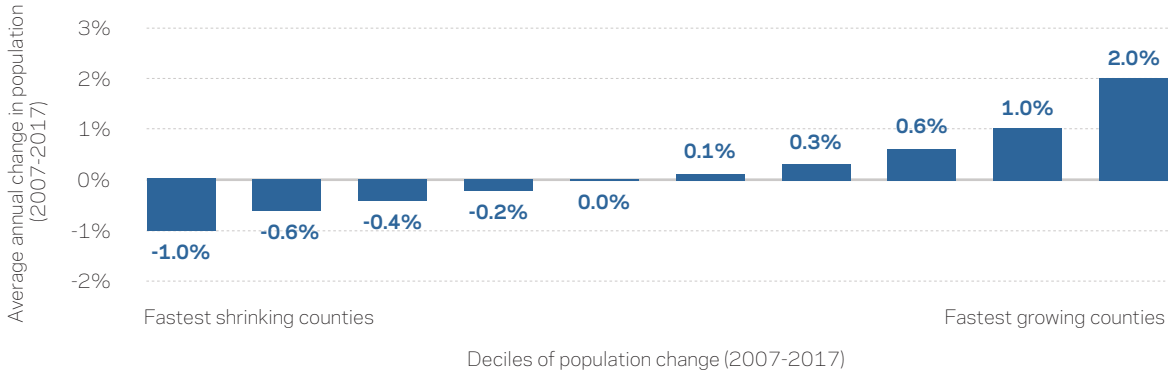
To examine the challenges that accompany demographic decline, it is useful to divide the more than 3,000 U.S. counties into deciles based on their population growth over the last decade. This allows us to compare, for example, the 10% of counties that are growing most quickly to the 10% that are shrinking most quickly across a range of socioeconomic factors. In general, the results show that a lack of population growth is consistently accompanied by worse economic, social, and demographic outcomes.

Just under half of U.S. counties (48%) lost population over the decade to 2017. Translated across deciles, this means that the bottom four deciles capture counties that are losing population, the fifth decile captures those on either cusp of flat population growth, and all counties in the remaining top five deciles are gaining population. The bottom 10% of counties lost on average 1% of their population per year between 2007 and 2017, while the top 10% grew on average by 2%. The same decile groupings, combined with Moody's Analytics forecasts, suggest that the next decade will look similar, with today's population losers continuing to decline and today's gainers continuing to grow.

Places with the most population loss are struggling with even sharper declines in the prime working age population. Looking at the same deciles used above, we can see that the 10% of counties suffering from the greatest overall population losses also experienced the steepest declines in prime working age population. These counties saw their prime working age population shrink by 2% a year over the past decade. In contrast, the counties with the fastest growing population saw prime working age growth of over 1% a year. Again, Moody's Analytics forecasts suggest that these trends will continue over the coming decade.[2]

2. Moody's Analytics uses both a top-down and bottom-up approach to forecasting population growth. County and metro area population growth is a function of historical growth, a cohort-based model using births, deaths, and net-migration, and the state population forecast. The state forecast, in turn, is a function of historical growth, a cohort-based model using births, deaths, and net-migration, and the U.S. population forecast.

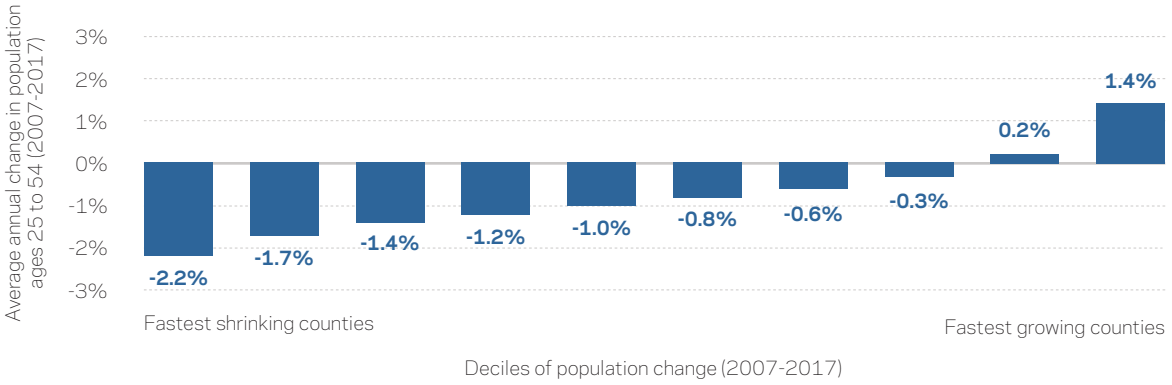
Half of U.S. counties lost population over the last decade



Source: U.S. Census Bureau, Moody's Analytics

Beyond those that are shrinking outright, there are hundreds of counties where total population is largely flat but the prime working age population is falling quickly. For example, even counties in the sixth decile for overall population growth are losing prime working age residents at a rapid clip, averaging 0.8% per year over the last decade and a projected 0.3% over the next. An even larger share of these places are populous urban counties. Among the 30 million people living in this decile, more than half live in counties of 300,000 people or more—places such as Cook County, IL (Chicago), Shelby County, TN (Memphis), or Providence County, RI (Providence).

Prime working age population is declining even faster and in more places

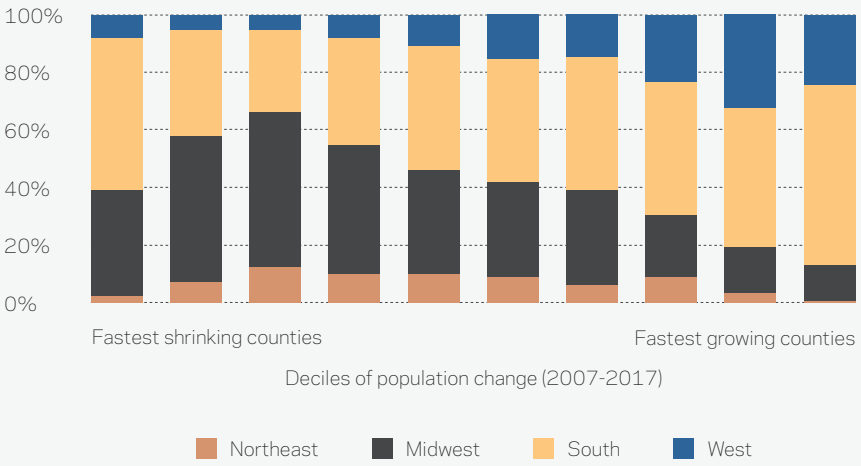


Source: U.S. Census Bureau, Moody's Analytics

As Box 1 highlights, shrinking counties are generally more rural and have smaller populations than those that are growing. As a result, 6 million people live in the bottom 10% of counties, while 94.5 million live in the top 10%. However, several large, urban counties land in the bottom 30% as well, including Wayne County, MI (Detroit), Cuyahoga County, OH (Cleveland), and St. Louis city, MO (St Louis). The skewed distribution means that only 6% of counties (84 in total) account for 41% of the population in shrinking places. For further context, Appendix Table 2 contains a list of metro areas that lost population over the past decade, including places as diverse as Anniston, AL; Carson City, NV; and Pittsburgh, PA.

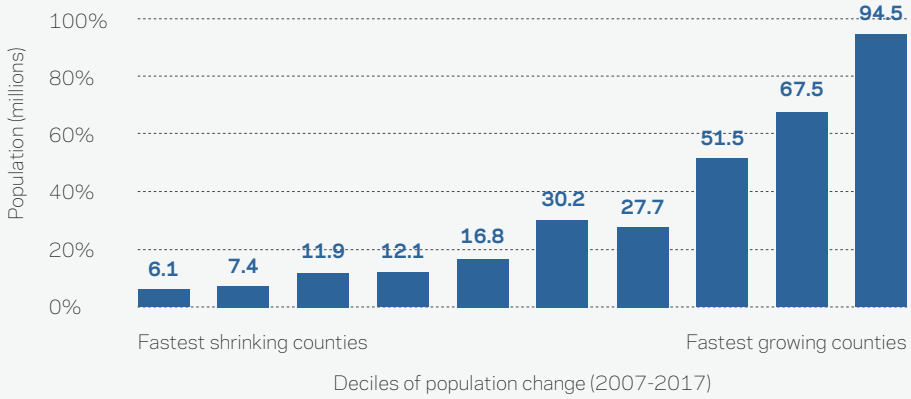
Box 1: Contextualizing the deciles of population change

Regional distribution of counties across population change deciles



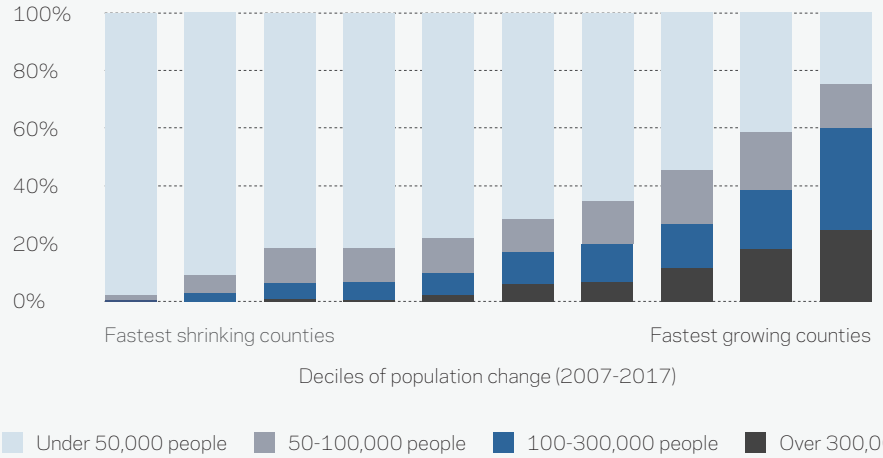
Western and Southern counties clearly dominate the top deciles of population growth. The South stands out for its large number of counties at both ends of the distribution. A modest number of Midwestern counties are growing strongly, but most skew toward population decline. Northeastern counties are disproportionately likely to be stagnating. Yet, there are exceptions to these general rules in every region.

Total population of county population change deciles



Given the composition of each decile, it is not surprising that the fastest growing group of U.S. counties is also the most populous with 94.5 million residents. At the other end of the spectrum, 6.1 million Americans live in the most rapidly depopulating counties, fewer than in any other decile.

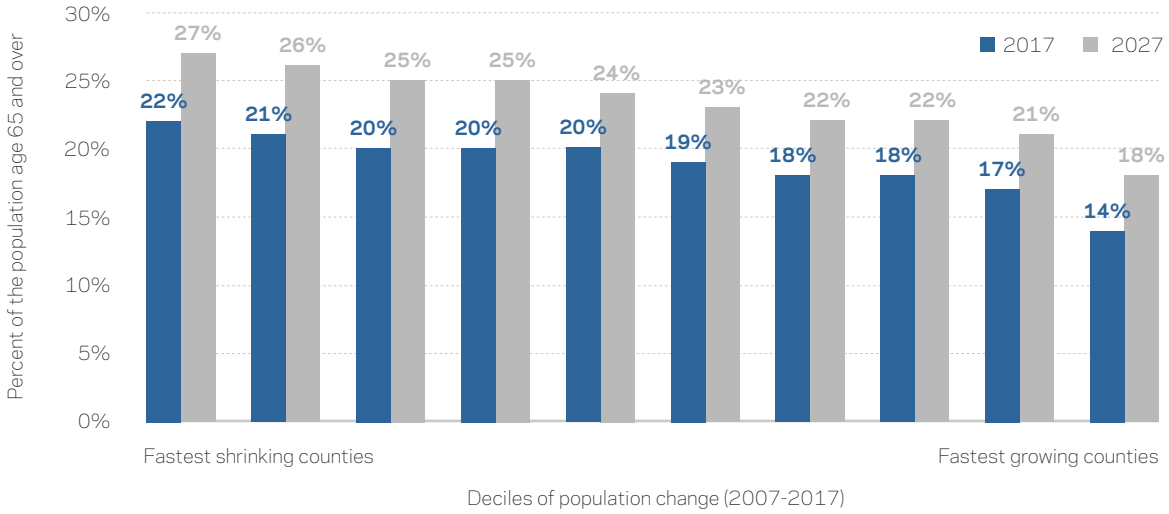
Population size distribution of counties across population change deciles



Small-population counties—those with fewer than 50,000 residents—account for 68% of all American counties, and they are far more likely to be declining than growing. Counties with between 100,000 and 300,000 residents are most prevalent in the top quintile. Reflecting the inherent economic advantages of large population centers today, more counties with over 300,000 residents can be found in the top two deciles than in the bottom eight combined.

Aging compounds the demographic challenges facing low-growth counties. Counties in the bottom decile were as old in 2017 as the rapidly-greying country itself will be in 2035. By 2027, more than 1 in every 5 residents in the bottom two deciles of counties will be 65 and over. By contrast, fast-growing counties are meaningfully younger than the country as a whole, with 12% of their population 65 and up compared to 16% nationally. These disparities are expected to persist into the future.

Low-growth places are farthest down the aging curve



Source: U.S. Census Bureau, Moody's Analytics

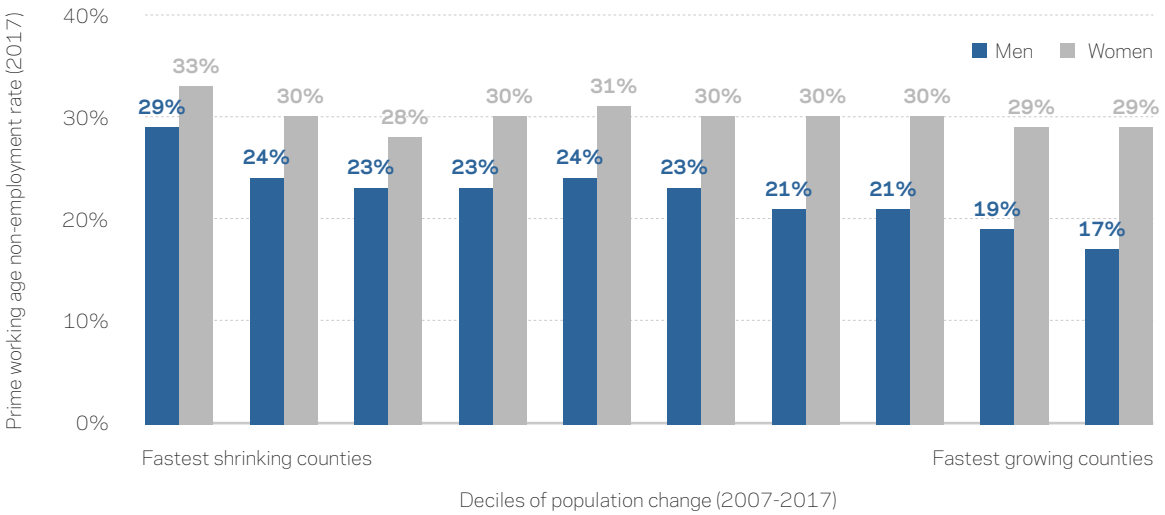
Employment and education gaps are widening

Low-growth places lag far behind their peers both demographically and socioeconomically. Notably, as population growth falls, employment rates deteriorate especially quickly for men in their prime working years of ages 25 to 54. In the fastest shrinking counties, 29% of prime working age men did not hold jobs between 2013 and 2017, compared to 17% in the fastest growing (top decile) counties. For comparison, the 12 percentage point gap between these two groups of counties is significantly larger than the 7 percentage point increase in non-employment the United States experienced during the Great Recession.

Population loss is not itself inherently negative, and indeed it can provide a healthy valve for economic adjustment. The movement of people across the United States historically has been an important force for equalizing economic opportunity among different parts of the country. Traditionally, people tended to move from poorer places towards richer and more productive ones. This process helped to generate convergence in incomes and living standards, as it made labor scarcer and boosted wages in shrinking places and made labor more abundant in growing ones. However, in recent decades migration-driven convergence has stalled, dragged down by a variety of forces that have kept many Americans stuck in place.[3]

3. Ganong and Shoag, 2017.

Prime working age employment is especially depressed in low-growth areas



Source: U.S. Census Bureau, Moody's Analytics

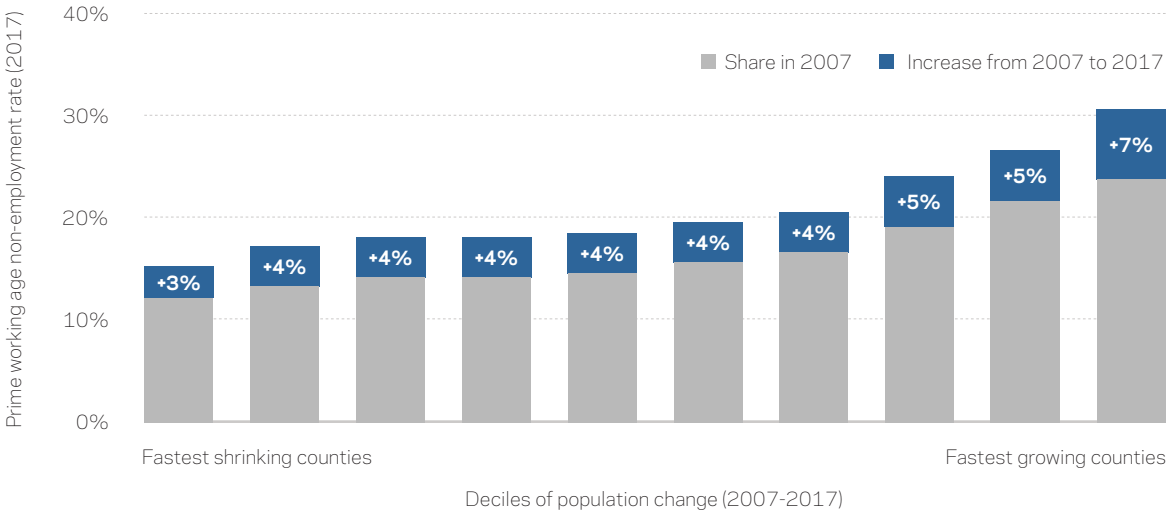
One important reason that convergence has stalled is that migration out of struggling places has become skill-biased. While both low-skilled and high-skilled households used to move towards opportunity, today it is predominantly the high-skilled who leave economically struggling places and the low-skilled who stay behind.[4] Fully 3.7% of Americans with a bachelor's degree or higher move to a new county in any given year, compared to only 2.6% of high school graduates. Someone with a professional or graduate degree is twice as likely to move states as a high school graduate.[5] As a result, migration leaves struggling places falling farther behind the rest of the country in terms of educational attainment.

Educational attainment in the fastest shrinking counties is equivalent to that of the United States in 1978 and close to that of Mexico today.

In the fastest shrinking counties, the share of the adult population at least 25 years of age with a bachelor's or higher is 15.8%, half the share in the top-performing decile. Educational attainment in the fastest shrinking counties is equivalent to that of the United States in 1978—four decades ago—and close to that of Mexico today. What is more, the education gap between shrinking and growing counties is widening. In the fastest shrinking counties, educational attainment has increased about half as quickly over the past decade as in the fastest growing counties. For every one college graduate that the fastest shrinking counties add, the fastest growing add two.

4. Ganong and Shoag, 2017.
5. Analysis of Census Bureau Geographical Mobility Data for 2017 to 2018.

High-growth counties are compounding their initial human capital advantages



Source: U.S. Census Bureau, Moody's Analytics

Alarmingly, in some struggling parts of the country, educational attainment is headed in the wrong direction entirely. In total, 13% of U.S. counties home to 6.1 million Americans, saw the number of adults with at least a bachelor's degree fall from 2010 to 2017.

In sum, the economics of demographic decline are already affecting many American communities. Places that are losing population demonstrate worse outcomes along a variety of demographic and socioeconomic factors. These trends are likely to worsen as affected communities fall farther behind over the next decade. In the following sections, we will review how these demographic challenges reverberate even further through the economy via three main channels: the housing market, local government finances, and dynamism.

Population loss hurts housing markets

One of the ways in which population growth and loss affects local economies is through the housing market. These effects can be significant, and, as we will see, imply that losing population is far less benign than many economists and policymakers typically assume.[6]

The relationship between population growth and housing demand is clear. More people means more demand for housing, and fewer people means less demand. However, there is an important difference in how housing markets react to growing versus shrinking populations. The demand for additional housing created by population growth can be accommodated through new construction, but when population shrinks housing is rarely torn down, and when it is, only after long periods of vacancy and depreciation. As a result, a shrinking population will lead to falling prices and a deteriorating, vacancy-plagued housing stock that may take generations to clear.

On the surface, it may be unclear why falling house prices are undesirable. Cheaper housing is good for first-time home buyers and renters, but bad for homeowners. One might therefore suspect that falling house prices are a wash when it comes to the overall economic effect. However, there are four important reasons why falling house prices attributed to a lack of demand can cause serious economic problems in struggling places: negative wealth effects, low construction activity, vacant housing, and strained local government finances.

The wealth effect

Housing represents a source of wealth for more than half of U.S. households. As such, a $100 decline in housing value leads on average to a $5 to $10 decline in spending, as households perceive the depreciation as a decline in wealth and cut back on their spending.[7] Falling house prices thus ripple through the local economy as homeowners spend less on local goods and services. These negative wealth effects are three times larger for low-income homeowners, who predominate in struggling communities, than for high-income ones.

6. An exception is economist Greg Howard, whose 2018 paper found that a 1% decrease in population via migration increases the unemployment rate by 0.1 percentage points in the first year and by 0.25 percentage points over the next four years, and that this occurs mainly via the housing market.
7. Mian, Rao, Sufi, 2013.

In addition, the costs of lost housing wealth extend well beyond consumption. Housing wealth represents an important source of borrowing for those looking to start new businesses. When housing wealth declines, home equity for would-be entrepreneurs evaporates. Recent research suggests that the loss of home equity from the housing bust has had a significant effect on the startup rate by reducing the access to credit to invest in new businesses.[8] As discussed below, fewer startups create a variety of spillover problems for the local economy, making this effect of lost housing wealth important.

The construction effect

The second problem with falling house prices is that it reduces the incentive to both build new homes and maintain existing ones. When house prices fall far enough, large swathes of the existing housing stock can become worth less than it would cost to retrofit or replace with new construction. In Trumbull County, OH (-0.7% annual population growth from 2007 to 2017), for example, the median sale price of a single-family home was $67,962 in 2017. In Genesee County, MI, home of Flint, (-0.7%) the median single-family home value was only $84,716 The simple economics of home construction and refurbishment in such markets will frequently not pan out. Unsurprisingly, there is a strong empirical relationship between population growth and the share of housing stock that is worth less than the replacement costs.[10]

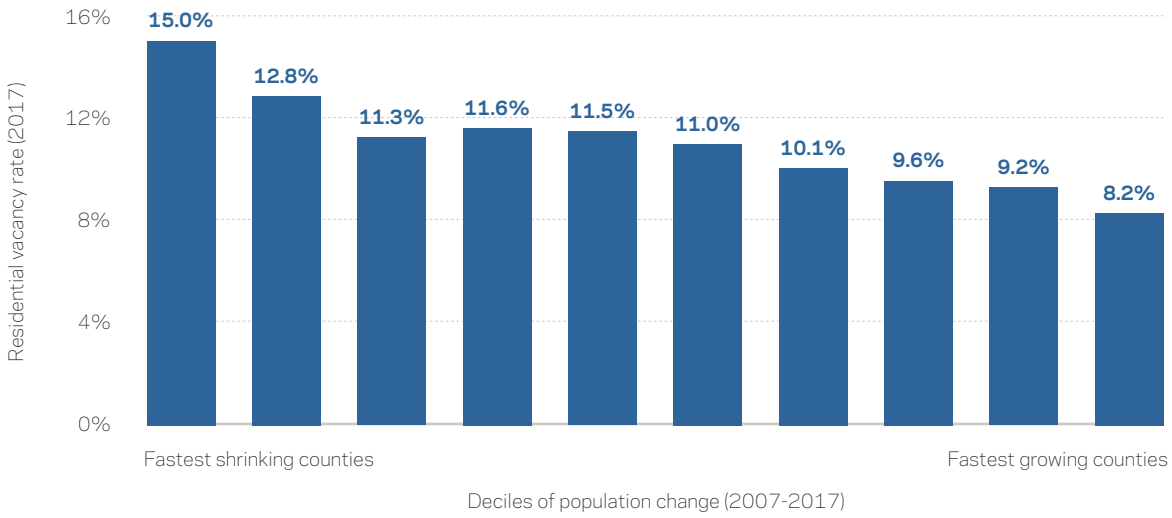
As new-builds and renovations fall off, employment opportunities for construction workers also disappear. While parts of the country with strong local economies and low unemployment rates can adapt relatively easily to modest declines in construction employment, displaced construction workers struggle to find work in places with already weak labor markets. In contrast, expanding construction employment in these areas could provide jobs for workers who have been laid off from declining local blue-collar industries, such as manufacturing and mining.[11] At almost $28 an hour, construction jobs offer 22% higher average wages than the typical non-supervisory production job. Rekindling housing market demand above the replacement threshold would provide an immediate stimulus for the construction sector and its potential workforce.

The vacancy effect

The third problem with falling house prices is that properties are more likely to remain vacant and abandoned. Indeed, among the 10% most rapidly shrinking counties, the average residential vacancy rate is 15%, nearly double that of the fastest growing counties. Population growth over the last decade is strongly and statistically significantly related to the residential rate at the county level.[12] A regression analysis shows that a 1 percentage point decrease in average annual population growth is associated with a 1.9 percentage point increase in the vacancy rate. Moreover, the effects are asymmetrical: falling population has a four-times greater impact on vacancy rates than a growing population.

8. Davis and Haltiwanger, 2019.
9. CoreLogic and Moody's Analytics.
10. Glaeser and Gyourko, 2005.
11. Kofi, Hurst, and Notowidigdo, 2016.
12. Using the 2013-2017 American Community Survey.

Housing vacancy is commonplace in low-growth counties



Source: U.S. Census Bureau, Moody's Analytics

Vacancies are problematic for a variety of reasons. Signs of blighted property, such as broken windows, trash dumping, overgrowth and squatting, are more prevalent in areas with a significant number of vacant homes. This blighted property can make a neighborhood less desirable and lead to an increase in crime, thus depressing prices of occupied homes.[13] These negative spillovers are especially large in densely populated neighborhoods with low property values.[14]

The fiscal effect

Finally, poor housing demand has serious fiscal consequences for state and local governments. First and foremost, falling prices and vacant homes mean lower property tax revenues. Across the United States, 1.5% of state and 73% of local government tax revenues come from property taxes, meaning a declining housing market can cause serious fiscal strain.

In addition, many local governments incur costs related to vacant properties including lawn maintenance, boarding up and securing, and demolition. A study from the Government Accountability Office found that boarding up and securing a vacant property costs local governments between $233 and $1,400 per vacant property and demolition costs between $4,000 and $40,000.[15] In addition, local governments can face extra costs related to public safety and fire hazards created by vacant properties, as well as the administrative and legal costs to process them. These costs accumulate for shrinking places. In Detroit, for example, 14,500 homes have been demolished in recent years at a cost of $175 million,[16] and the city still has 22,000 abandoned homes that it plans to demolish, board up, or rehabilitate.[17] The fiscal effects of population loss are multifaceted and go beyond the housing market, however. We turn to that broader discussion next.

13. See Gerardi et al., 2015.
14. Anenburg and Kung, 2014.
15. Government Accountability Office, 2011.
16. Chad Livengood, "Detroit Land Bank farms out demolition bid scoring to PwC," Crain's Detroit Business, July 27, 2018.
17. Dana Afana, "Detroit aims to fix, demolish or board up 22,000 abandoned homes by end of 2019," M Live, March 7, 2018.

Population loss erodes local government finances

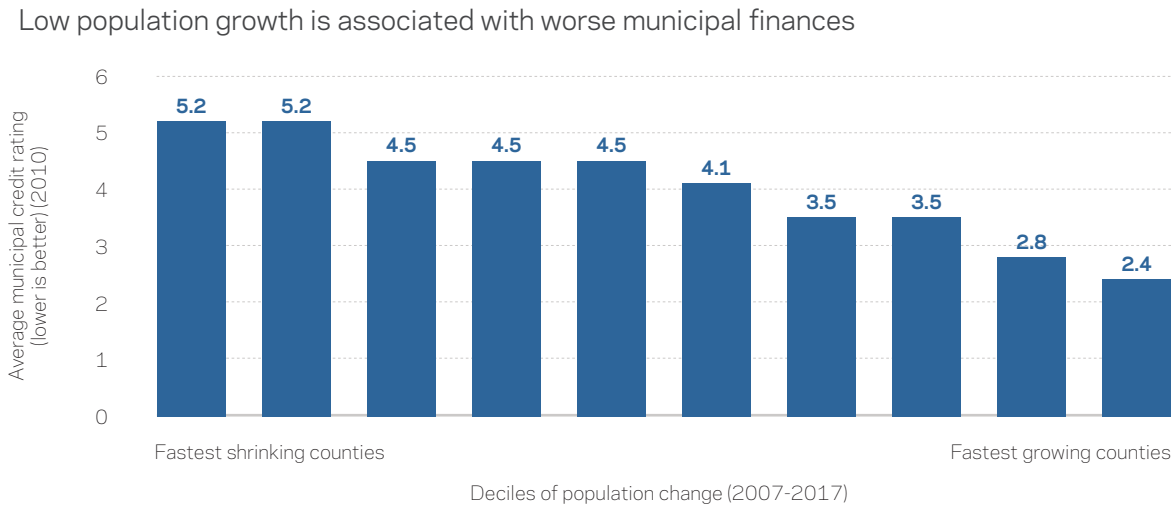
When population declines, state and local governments collect less tax revenue, but they also spend less. On net, however, population loss often leads to fiscal problems. On the revenue side, the story is clear. Overall tax revenues in low-growth places are weakened by a declining number of prime working age adults, a high proportion of seniors, and a declining number of households. Property taxes, sales taxes, and income taxes are all negatively affected. As noted above, when an excess of housing relative to the size of the population leads to falling house prices, property tax revenues fall alongside. When properties are vacant due to foreclosure or abandonment, local governments collect even less. An aging population can be a fiscal drag too, as senior households tend to have lower taxable incomes, spend less on goods that generate revenue from sales tax, and often receive property tax exemptions. Income taxes fall when the prime working age population shrinks and highly-educated, wealthier people leave.

Property, sales, and income tax receipts in low-growth places are all weakened by prime working age population loss, aging, and declining numbers of households.

Declining revenues would not be an issue if they were offset entirely by declining costs. However, while some costs will decline as state and local governments serve a smaller population, in general revenues fall faster. Pension liabilities are one example of a cost that does not adjust with population. Governments make a variety of other investments that are impossible or slow to reverse in things like infrastructure, too. Even as population falls, cities must pay to maintain water, energy, road, and transit infrastructure built to serve a greater number of people. The associated fixed costs mean that declining population translates into higher costs per remaining resident. Even when infrastructure can be scaled back in theory, the economic and political costs of doing so are often significant. For example, decommissioning roads can reduce maintenance costs over time but also involves significant upfront capital costs and may prompt backlashes from affected residents.[18]

Perhaps nowhere have the consequences of a shrinking population manifested themselves more clearly than in the city of Detroit, where the population has declined by 1.2 million people over the last half century, leaving over 20 square miles essentially

18. Hornbeeko and Schwarz, 2009.
19. Kate Davidson, "Detroit has tons of vacant land. But forty square miles?" Michigan Radio, April 18, 2012.



Source: U.S. Census Bureau, Moody's Analytics

abandoned.[19] Despite the dramatic scale of the population loss, the city has struggled with the politically unpopular decision of scaling back services in sparsely populated areas. "It's politically difficult to pick winners and losers, which neighborhoods are viable and which should go back to God," as the director of the city's Water and Sewage Department put it.[20] The fiscal challenges of shrinking are part of the reason why Detroit has poor public services despite the highest property taxes among major cities in the country.

In addition to case studies like Detroit, we can look to municipal bond ratings to confirm that a lack of population growth is bad for local government finances. Using a dataset of 665 county general obligation bond ratings, we can see that county fiscal health has been strongly correlated with population growth over the last decade. Counties in the lowest 10% of population growth are 2 points worse on the Moody's Analytics muni ratings scale than those in the top 10%. This is the equivalent of moving from an Aa2 muni rating to an A1, which is consistent with a probability of default over 30 years two-times higher in shrinking areas, 5.9% compared to 2.2%. This translates to approximately 30 basis points in added borrowing costs.

Using the same sample, we find that average population growth over the previous decade is statistically significantly associated with better ratings.[21] Specifically, a regression analysis shows that a 2.3 percentage point decline in average population growth would result in a single notch downgrading. However, here again population loss has a much larger effect than population growth. When a county is shrinking, it only takes a decline of 0.6 percentage points in the rate of population growth to add up to a downgrade. Using the USDA's measure of county-level amenities as an instrumental variable provides further evidence that the relationship documented here is causal: in other words, population loss does indeed appear to cause a deterioration in a city's fiscal health.[22]

20. Joel Kurth, "Detroit studying whether to shut water in underpopulated neighborhoods," Bridge, October 24, 2018.
21. All of the 665 county bond ratings are as of 2010. This marked a unique year where many county bond ratings were rated for regulatory reasons. Focusing on 2010 thus provides a large sample that was rated on an apples-to-apples basis. Other models using data from multiple years produce consistent results.
22. See for example, Rappaport, 2009. The effect is statistically significant and even larger than in the simple regression.

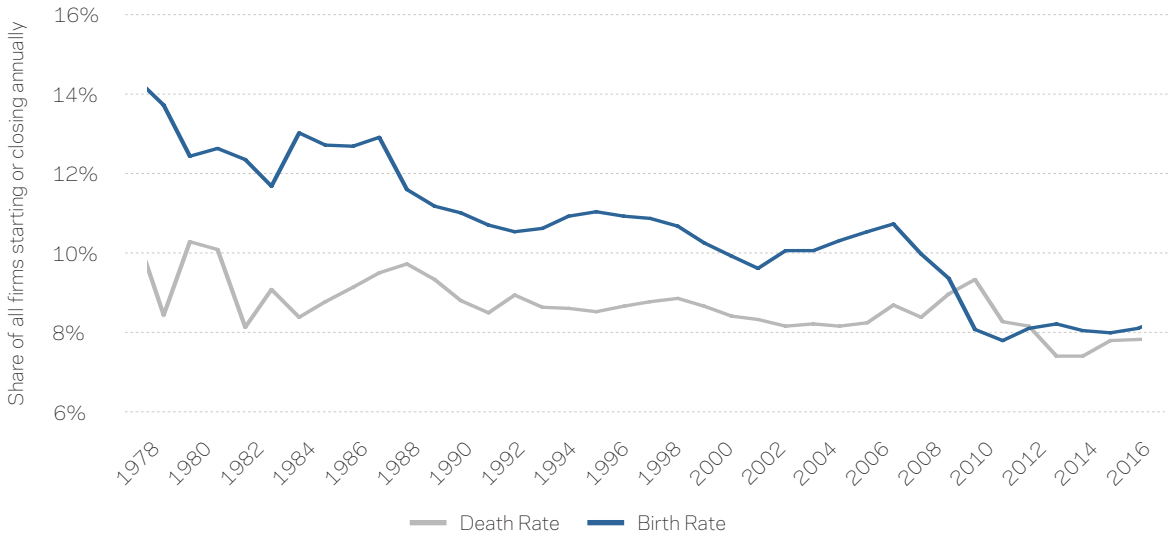
Population loss reduces dynamism

The housing market and fiscal effects of demographic decline are just the tip of the iceberg. An emerging literature in economics also warns that demographics affect the economy in deep, important, and causal ways. We now turn to how low or negative population growth, an aging population, and a lack of human capital all drive down productivity, dynamism, and employment.

The startup connection

Economists increasingly understand that population growth is an important driver of the very health of an economy, not just its size. Population growth stokes demand, it provides new and fast-growing firms with needed labor, and it eases the piloting of new business models as companies compete for new customers, not only over existing ones.

The firm startup (birth) rate languishes near all-time lows



Source: U.S. Census Bureau

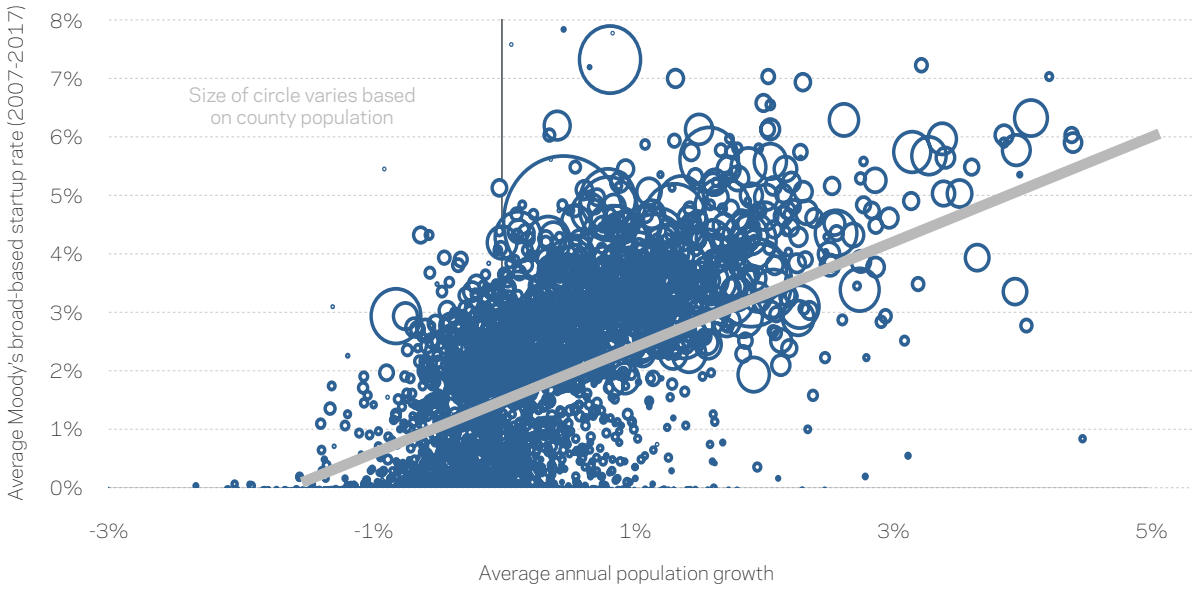
It is thus telling that the U.S. startup rate has declined in tandem with the deceleration of U.S. population growth. The various causes of the falling startup rate are not yet fully understood, but population dynamics clearly contribute.[23] Research

23. See Litan and Hathaway, 2014. For recent analysis and broader implications, see Hopenhayn, Neira, and Singhania, 2018.

shows that startups are especially responsive in taking advantage of both the new demand and the new labor supply embodied in population growth.[24] A growing population thus facilitates the steady emergence of new firms in an area, while population loss discourages new firms from forming.

The theory is intuitive, but more importantly the relationship between the startup rate and population growth is clear in the data. At the county level, we utilize Moody's Analytics broad-based startup rate measure to show that the average startup rate over the past decade is strongly related to population growth over the same period.[25] A 1 percentage point increase in average annual population growth is associated with a 1 percentage point increase in the startup rate, all else equal.[26] Importantly, this relationship is likely causal. Using metro-to-metro migration[27] and long lags of a state's fertility rate,[28] past research has demonstrated that growth in local population and, in particular, the prime working age population, drives startup rates.

Population growth supports business starts at the county level



Source: U.S. Census Bureau, Moody's Analytics

In addition to this growing body of research, we find further support for the causal relationship using the USDA natural amenities instrument from above. This more rigorous model estimates that a 1 percentage point decline in annual population growth from 2007 to 2017 caused a county's startup rate to decline by a statistically significant 2 to 3 percentage points over the period.

24. See Adelino, Ma, Robinson, 2017 and Karahan, Pugsley, and Sahin, 2016.
25. Moody's Analytics broad based startup rate (BBSR) is based on estimates of the share of employment that is in new firms for 14 industries at the county level using the Census Bureau's Quarterly Workforce Indicators data, which covers the near universe of private sector employers. The BBSR is equal to the median startup rate across these industries. This measure improves on existing startup rate measures by capturing broad-based entrepreneurship and by avoiding being driven by one potentially fast-growing industry.
26. First documented by Litan and Hathaway, 2014. Using population weighted regression, the relationship varies between 1.1 and 0.9 depending on which population weights are used.
27. Ozimek and Wurm, 2017.
28. Karahan, Pugsley, and Sahin, 2016.

Startups matter because they are such important catalysts for maintaining a dynamic local and national economy. New firms are important sources of innovation, productivity growth, and job growth.[29] In general, a 1 percentage point decline in the startup rate leads to a 1 to 2 percentage point decline in local annual productivity growth, which is crucial for wage growth in the long run.[30] A low startup rate also leaves a local economy with bigger, older firms that pay a lower share of their income to workers. Indeed, recent research suggests that a declining population is one of the main reason why the labor share of income has declined in recent decades.[31] In sum, population loss appears to kick off a cycle through which the very dynamism that keeps the economy healthy at both the national and regional scales winds down.

The aging and productivity connection

The U.S. population is older than it has ever been, and it will only get older over the next few decades. While this has well-known effects on state, local, and federal government coffers, a worrying thread of new research suggests that an aging workforce has significant direct impacts on the economy that go well beyond public sector finances. In fact, the evidence suggests the aging of the population is one of the primary factors holding back productivity growth, meaning that places with older workers will be less productive and wages will be lower than in places with younger populations.

The negative effect of population aging on productivity is somewhat counterintuitive. After all, older workers have more experience and typically earn higher pay, and as a result we might expect an older workforce to be more productive. But recent research suggests that large contingents of older workers may create negative spillovers that reduce productivity at the firm level. The relationship between an older workforce and lower pay and productivity has been found across a variety of datasets, including matched employer-employee administrative data from the payroll company ADP, and is robust to state, industry, and even firm fixed effects.[32]

Population loss appears to kick off a cycle through which the very dynamism that keeps the economy healthy at both the national and regional scales winds down.

While more evidence on why older workers hold back productivity is needed to be conclusive, it appears that the effect is due to the higher costs of embracing technological change when the workforce is older. Consider a firm looking to upgrade to a new software package that will increase productivity but requires extensive training. The costs of training a young worker on this software can be paid back by higher productivity over the worker's long remaining career. However, training a worker on the verge of retirement will leave little time to recoup the costs of training. Thus, even if young workers and old workers are equally capable of learning new ways to do business, it will be less profitable for the company to take on such an investment when a large

29. Decker, Haltiwanger, Jarmin, and Miranda, 2014.
30. Alon, Berger, Dent, and Pugsley, 2018.
31. Hopenhayn, Neira, and Singhania, 2018.
32. Ozimek, DeAntonio, and Zandi, 2018. For additional research using U.S. states, see Maestas, Mullen, and Powell, 2016. The senior share is defined as the percent of workers who are age 65 and up.

share of the workforce is older. Additionally, younger workers may be more adept at learning new technologies and ways of doing business, and thus training costs are maybe higher with an older workforce. The relationship remains even when controlling for job growth, which means that more productive industries are not just seeing a younger workforce because they are hiring faster.

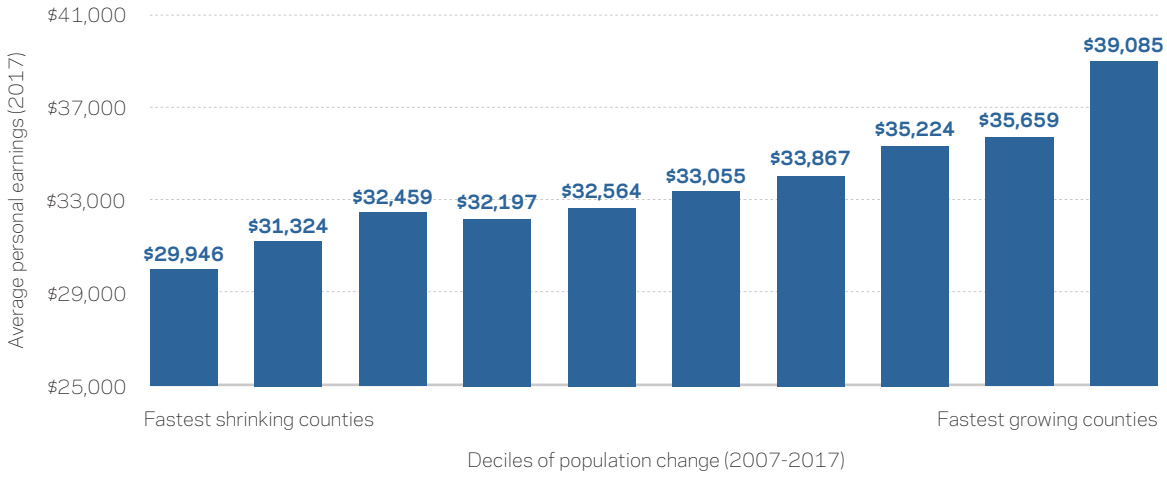
The productivity-dampening effect of an older workforce translates into lower wages for others as well. The effect holds across different branches of the same firm: workers in locations with older colleagues are less productive and earn less than co-workers in other offices with younger colleagues. The impact is larger in industries with more skilled workers—exactly where one would expect productivity-enhancing technologies to be most important and consistent with the hypothesis that older workers reduce productivity growth by blocking, slowing, or reducing the returns to the adoption of new technologies.

Overall, the Moody's Analytics analysis suggests that a 1 percentage point increase in the share of the workforce age 65 and up reduces productivity by between 1 and 3 percentage points. These estimates imply that the aging of the workforce can explain between one-quarter and three-quarters of the productivity slowdown over the past decade or so. Given that struggling places have significantly older populations, this research offers one more partial explanation for why they are falling behind in myriad respects.

The human capital connection

Shrinking and slow-growing counties tend to have less educated residents than fast-growing ones, and the gap has widened over the past decade. This divergence has broad implications because higher educational attainment helps individuals and families achieve a variety of better life outcomes, ranging from better pay and greater labor force attachment to improved health. Furthermore, human capital generates a variety of positive spillover effects across a spectrum of social measures for communities.

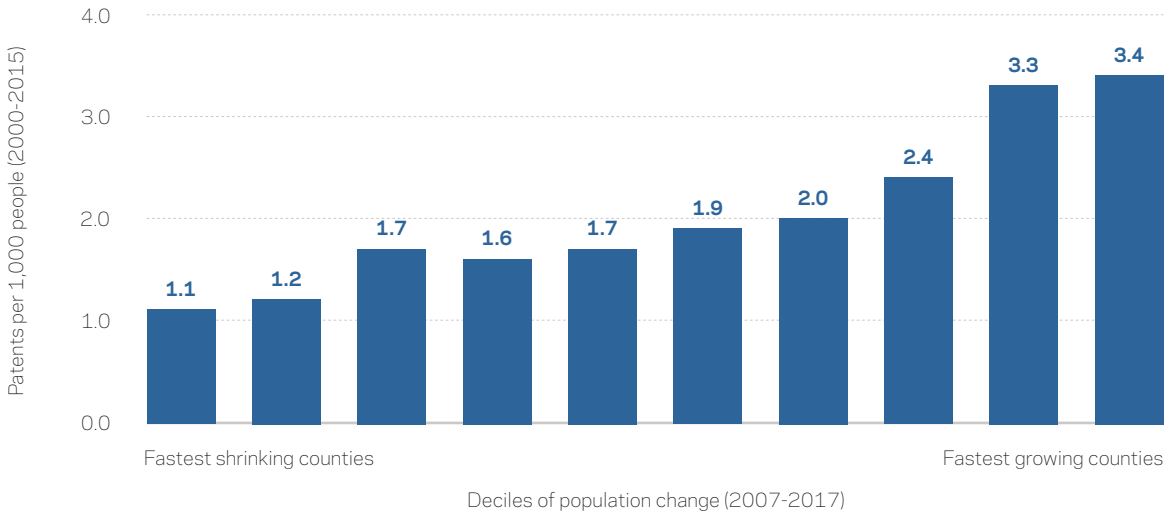
Average earnings are more than $9,000 lower in low-growth places



Source: Census Bureau, Moody's Analytics

The direct benefits of education for individuals and communities are obvious. Education provides the credentials and training for higher paying careers with greater productivity and better long-run prospects. But higher education is also a proxy for a wide variety of other factors, broadly known as human capital. This includes raw intelligence as well as other abilities and skills, such as teamwork, literacy, and conscientiousness. When present, these factors all contribute to an overall higher level of productivity and innovativeness in individuals, communities, and countries. Lower levels of human capital may explain why shrinking places also patent at one-third the rate of the fastest growing places. Given their greater productivity and innovativeness, counties with a higher share of skilled workers also post higher average earnings: earnings in the fastest-growing decile of counties are 30% higher on average than in the fastest-shrinking decile.

Low-growth counties patent at one-third the rate of their high-growth peers



Source: USPTO, Census Bureau, Moody's Analytics

Places with low levels of human capital miss out on important spillovers present in areas with a more skilled workforce. Having lots of skilled people boosts everyone else's productivity. One reason is that places and firms with many skilled workers are more likely to embrace new technologies first. This is why "new jobs" that did not exist a decade earlier tend to show up first in the most highly-educated cities.[33]

In addition, skilled coworkers help to raise the productivity of those around them. In this way human capital functions similarly to regular capital. Just as a computer raises a worker's productivity, so does a skilled coworker.[34] Such workers also boost productivity by driving knowledge flows, as interactions among skilled people lead to the natural sharing of ideas and new collaborations. This effect may seem a bit nebulous, but it has been recognized by economists since 1890, when Alfred Marshall wrote that in cities "The mysteries of the trade become no mysteries; but are as it were in the air."[35]

33. Lin, 2011.
34. Moretti, 2012.
35. Avent, 2016.

As economist Enrico Moretti writes, "The presence of many college-educated residents changes the local economy in profound ways, affecting both the kinds of jobs available and the productivity of all workers."[36] This is why, he notes, high school graduates living in the most educated cities in the United States often make more than college graduates in the least educated cities. Looking at a variety of quasi-experimental evidence, Moretti concludes that a 1 percentage point increase in the supply of college graduates causes wages for low-skilled workers to go up by 1.6% to 1.9%, and skilled workers by 0.4%.

High school graduates living in the most educated cities in the United States often make more than college graduates in the least educated cities.

The effects of human capital on the labor market are important, but they are not the end of the story. Economist Garrett Jones lays out some of the additional ways in which places benefit from having an educated populace, including higher savings rates, greater cooperation, better governance, and more effective business.[37] And growing up around adults with high human capital, high social capital, and inventive propensities matters for children. Skilled individuals provide role models, networks, and mentors, and have significant effects on lifetime earnings. This fortifies places with high average levels of human capital and the people who live in them. Conversely, low average human capital handicaps struggling places and their residents today and into the future.

*

And yet, despite these socioeconomic challenges, many declining counties still have strong economic foundations. Nearly one in five counties that lost residents on net between 2007 and 2017 have median household incomes comparable to or higher than the national level.[38] As a group, these declining counties still generate 11% of GDP—nearly equivalent to Canada's GDP. One in five are part of metropolitan areas. And together they are home to 9.2 million children who deserve access to economic opportunity. Surely it is a worthy goal to seek policy levers to help these communities build bridges to future prosperity.

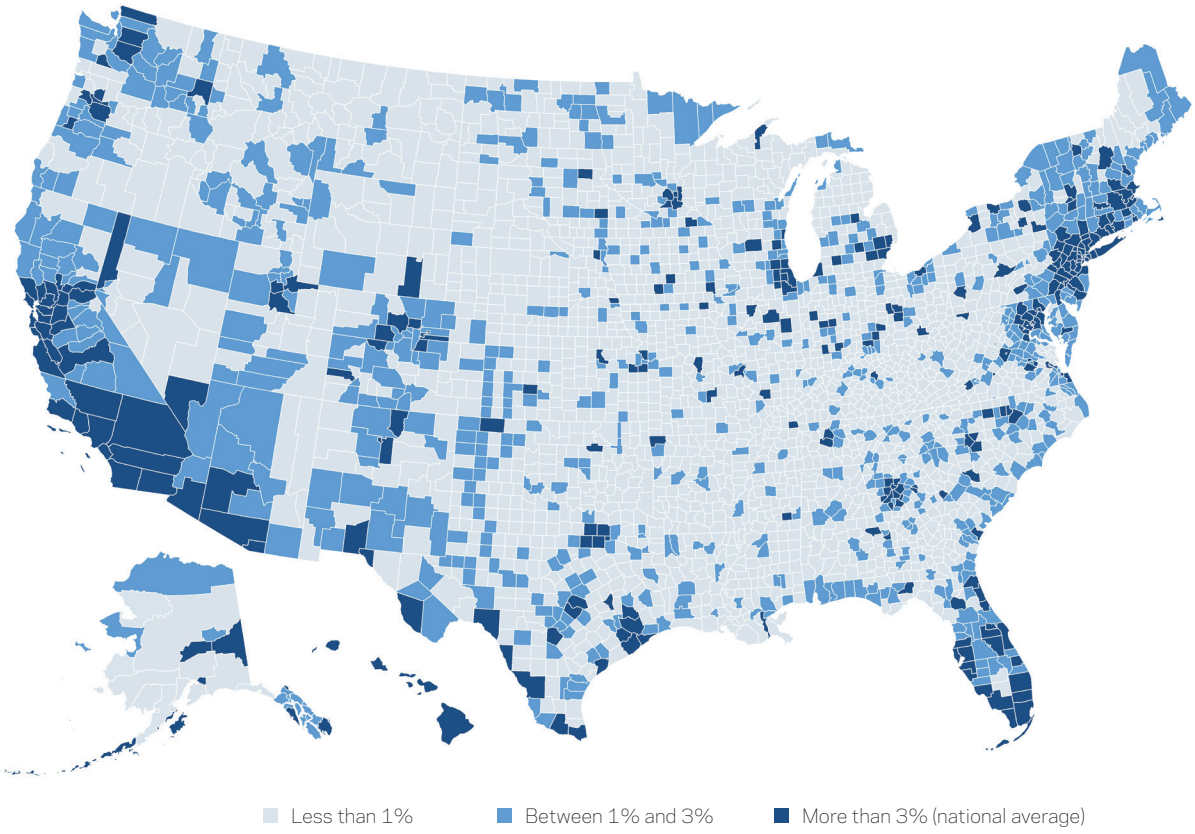
36. Moretti, 2012.
37. See Jones, 2015. For other examples of the importance of social spillovers, Chetty and Hendren (2018) show that where someone grows up has profound effects on later life outcomes. Growing up in a one standard deviation "better county" for upward mobility causes later life income to increase by 10%. Importantly, their research demonstrates that income segregation is an important determinant of how good a place is for upward mobility, demonstrating that growing up near higher income families creates positive peer effects for low-income children. Bell et al (2017) also demonstrate that growing up near more inventors makes a child much more likely to be an inventor when they grow up.
38. "Comparable to" defined as within $5,000 of the national median, which was $57,652 in 2017.

Could better skilled immigration policy help?

There are few policy options to address seismic demographic changes and the socioeconomic problems they cause. One is available and can have a direct impact: immigration. Could a better federal skilled immigration policy be harnessed as an economic development tool for rekindling opportunity in left-behind places? We now turn to exploring this provocative question.

To be sure, a host of complementary longer-term policies are needed to rebalance the map of U.S. prosperity, including ones that address the human capital of the domestic workforce and immigrants already here. Yet, the data presented here outline a clear *supply* problem for struggling places—one that upskilling efforts or training programs alone would do little to address.

Skilled (bachelor's degree-holding) foreign-born workers share of the 25+ population by county, 2017



Source: U.S. Census Bureau, Moody's Analytics

Skilled immigration is an important driver of overall U.S. productivity growth. However, it currently serves to increase the regional disparities highlighted above: the fastest-growing decile of counties has proportionally more skilled immigrants than the slowest-growing one by a factor of eight. What is more, the 20 most populous U.S. counties currently contain 37% of the country's skilled immigrants compared to only 19% of the country's total population. Thus, the flow of human capital from abroad is one more way in which struggling, shrinking parts of the country are falling further behind. In contrast and as complement to existing policy, a new place-based visas (PBVs) program that encouraged foreign talent to locate in struggling corners of the heartland for a period of time would help to spread the benefits of skilled immigration across the country.

Let's examine how human capital inflows from abroad might counteract the profound demographic challenges that shrinking communities face in their housing markets, municipal finances, entrepreneurial ecosystems, and labor markets.

Bolster housing markets

The potential for skilled immigrants to boost local housing markets is clear. Notably, economist Albert Saiz (2007) found a 1% increase in population from immigration causes housing rents and house prices in U.S. cities to rise commensurately, by 1%. In places currently experiencing low or weak population growth, such a boost to the housing market from an increase in skilled immigration would provide a welcome stimulus.

These housing market effects illustrate an important point that economists, who tend to emphasize the effects of skilled immigration on productivity growth in large, dense, educated cities like San Francisco and New York City, often miss. In many high productivity cities, housing markets are crowded and expensive, and the addition of new housing supply is constrained by already dense development and/or restrictive zoning. For example, half of the cities in Trulia's top 10 U.S. markets with the lowest housing supply elasticity contain 15% of the country's immigrants with graduate degrees.[39] More broadly, the 5% of counties with the highest home prices have over half of the country's skilled immigrants, and 90% of skilled immigrants live in the top one-third of counties with the highest housing prices.[40]

The 20 most populous U.S. counties currently contain 37% of the country's skilled immigrants, but only 19% of the country's total population.

Because cities with the most expensive housing markets tend to also be the most productive areas, national-level productivity is likely enhanced when a skilled immigrant moves to them. However, these cities are also where a marginal skilled immigrant is most likely to crowd an existing native out of the housing market. To overgeneralize a bit, a new immigrant moving to San Francisco means someone else has to move out. In contrast, a new immigrant to Akron means one more vacant

39. Ralph McLaughlin, "Is Your Town Building Enough Housing?" Trulia, July 19, 2016.
40. Moody's analysis of American Community Survey data.

housing unit is filled. Immigration into low-growth places involves none of the crowd out and all of the upside benefits to the housing market, local government finances, and dynamism discussed earlier in this report. As immigrant talent re-stimulates regional economies, the productivity differential is likely to fall, and regardless, aggregate welfare arguments for creating a new, additional talent pipeline to struggling regions are compelling.

Improve local government finances

The evidence is clear that population loss harms state and local government finances. Therefore, it stands to reason that skilled immigration would benefit public coffers. The most comprehensive analysis of the effects of skilled immigrants on state and local fiscal conditions produced by the National Academy of Sciences (NAS) provides evidence of such a benefit. According to the study, every skilled immigrant with a bachelor's degree adds a net of $105,000 to the fiscal balance of state and local governments over a 75-year period. Immigrants with a graduate degree add $200,002.[41]

The short-run impacts are also relevant to governments, however, and there is good reason to suspect that both the immediate and longer-lead fiscal benefits of skilled immigration will be even greater for low-growth places. One reason, as discussed above, is that places with declining populations have fixed costs to cover. The NAS report does not estimate separate effects for declining versus growing communities, but it does acknowledge the difference, noting:

> *"For some communities, especially those facing declining populations, the influx of new immigrants can help lower their fixed costs. Indeed, for some costs, notably capital expenditures, bond repayments, and public pension obligations, the benefits of the government spending may have been received by earlier generations so having a larger population to pay off these debts benefits the existing population."*

An additional reason that the NAS estimate is likely conservative is that adding new students is less costly in areas with low population growth and ample excess capacity. This is consequential because, as the NAS report shows, educating the children of immigrants is a significant part of the cost to state and local governments. The bottom 80% of counties lost school-aged children from 2007 to 2017, and the bottom 40% of counties lost 10% or more, leaving declining and low-growth places primed to welcome new immigrant students.[42]

Finally, the effects of skilled immigration estimated in the NAS report do not include the positive fiscal boost from indirect effects discussed elsewhere in this report, including higher house prices, lower vacancies, greater productivity, and more human capital spillovers.

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41. National Academy of Sciences, 2017. This section benefited from comments and discussion from Kim Rueben, Ryan Edwards, Dan White, and Pia Orrenius.
42. School districts incur a variety of fixed costs that do not adjust to falling enrollment, including administrative functions, capital expenditures, and legacy costs such as debt service, pensions, and retiree healthcare benefits. Even adjustments to variable expenses such as the number of teachers will typically only occur with a lag. Therefore, and in contrast to crowded areas, adding new students in places that have been losing population should be neutral at worst to balance sheets thanks to the excess capacity of school districts.

Rekindle dynamism

An emerging body of evidence suggests that skilled immigrants in particular are likely to boost dynamism not only by increasing population growth, slowing aging, and increasing human capital, but also because of several factors unique to them. Skilled immigrants tend to be highly inventive, productive themselves, and productivity-inducing in others. Immigrants represent 18% of global patent-filers in the United States, are inventors or co-inventors of about 25% of all technologies developed in the United States, and account for 33% of all U.S. Nobel Prizes.[43] As a result, according to one estimate, skilled immigrants generated 30% to 50% of total U.S. productivity growth between 1990 and 2010.[44]

Immigrants are also highly entrepreneurial, and as such their effect on the local startup rate will be significantly larger than that of normal native population growth. Around one out of four entrepreneurs in the United States is an immigrant, and the share is even greater for founders of high-growth firms backed by venture capital. As a result, around 35% to 40% of all new U.S. firms have at least one immigrant founder and 43% of Fortune 500 companies were founded by either immigrants or the children of immigrants.[45]

Around one out of four entrepreneurs in the United States is an immigrant.

In that vein, there is growing recognition across public and private sectors about the need to promote the "rise of the rest." If we want capital markets to support startup activity in the heartland, we need human capital to flow there too. Human capital attracts investment capital in a process that becomes self-reinforcing. Businesses will likely respond to fortified pools of heartland talent by favorably changing their location decisions. And we now have new tools—for example Opportunity Zones—that encourage investors to seek out promising startups in traditionally underserved locales, many of which face the demographic headwinds being described here.

In addition, immigrants can help boost dynamism by fostering connections to global trade. When immigrants from a specific country settle in a part of the United States, research has demonstrated that it facilitates trade with that country. Migrant networks promote trade by reducing information costs, thanks to immigrants' knowledge of their home country's opportunities, laws, and customs. In particular, immigrants can help when trading with developing countries with a variety of bureaucratic and legal hurdles.[46] Export industries help boost local output, and because exporting firms tend to be more productive, they will also likely increase local productivity growth. Shrinking places—many of which have been on the wrong side of globalization for too long—and the companies that still call them home may benefit disproportionately from such boosts to their global connectedness. Overall, the link between demographics and dynamism is strong. The connection between skilled immigration and dynamism is even stronger still.

43. Kerr, 2018.
44. Peri, Shih, and Sparber, 2015.
45. Kerr and Kerr, 2016; Kerr, 2018; Center for American Entrepreneurship, 2017.
46. Parsons and Vézina, 2014.

Strengthen local labor markets

The possible effect of increased immigration on the wages and employment of existing native-born workers is a common concern. Simple supply and demand would seem to suggest that the increase in labor supply from more immigrants would lower wages for everyone else. Compounding that concern in places struggling with population loss is the worry that lower wages would induce more existing residents to leave, with skilled immigrants simply displacing skilled natives one for one. However, this focus on the competitive effects of immigration is both too narrow and too pessimistic.

First, it is important to recognize that while immigrants do represent a new labor supply, they also represent much more, as discussed in this report: new demand for goods, services, and homes; productivity enhancement; entrepreneurship; and tax revenue. Skilled workers regardless of origin are generally complementary to other workers, both skilled and unskilled.[47] One recent study on employment rates found that immigrants boosted the labor force outcomes of native-born workers even in regions unused to large immigrant flows.[48] Most estimates of the effects of immigration in general and skilled immigration in particular on wages often do not take into account these wider dynamics[49]

In addition, when examining the effects of immigration on workers, it is important to ask: compared to what? In many parts of the country, the effects of skilled immigration must be compared to a counterfactual of demographic decline that ripples through the economy in the variety of damaging ways analyzed here. Existing, backwards-looking estimates of the effects of immigration will generally not capture the benefits of offsetting demographic decline because skilled immigrants today disproportionately locate in crowded, booming metro areas, and not in struggling places.

Yet even accepting these wider benefits, one might still ask what jobs skilled immigrants will do in places where the economy is shrinking. To shine some light on the question, we can look at the occupations of the skilled immigrants in struggling places today.[50] The results broadly show that skilled immigrants find careers with healthy growth prospects and high pay, even in shrinking places. The top occupation for skilled immigrants is physicians and surgeons, who make up 7.4% of skilled immigrants in low-growth places, while registered nurses are third place at 4.4%. The high prevalence of medical doctors likely reflects in part the rural J1 visa waiver that allows foreign-born doctors to work in rural areas that suffer from an inadequate supply of healthcare workers. A variety of STEM occupations also rank at the top of the list, including software developers, computer scientists, mechanical engineers, physical scientists, and engineers.

47. Moretti, 2012.
48. Edwards and Liu, 2018.
49. In particular, many studies focus on the effects of relative wages within a place. This means that they ask how has skilled immigration affected wage growth of one group of workers in a place relative to wage growth for another group of workers in that same place. For example, the common approach is to evaluate whether immigration caused wages for skilled workers increase faster or slower than they did for low-skilled workers. By design, these comparisons of wages for one group relative to another do not capture the wider positive effects that skilled immigration has on everyone's wage growth in that place as they transform the economy in a variety of ways. See Dustmann, Schönberg, and Stuhler, 2016.
50. Occupation data come from American Community Survey microdata looking at immigrants who live in county-groups that are shrinking.

Table 1: What skilled immigrants do now

Top 15 skilled immigrant occupations in low growth places, 2012-2016, % of total

Rank	Occupation	Median pay	Percent
1	Physicians and surgeons	$152,070	7.4%
2	Postsecondary teachers	$50,630	6.0%
3	Registered nurses	$60,830	4.4%
4	Managers	$86,000	3.8%
5	Software developers	$87,090	3.4%
6	Elementary and middle school teachers	$46,000	3.1%
7	Computer scientists and systems analysts	$73,180	2.5%
8	Supervisors of sales workers	$41,570	2.5%
9	Accountants and auditors	$52,000	2.5%
10	Mechanical engineers	$88,000	1.5%
11	Physical scientists	$54,680	1.3%
12	Chief executives public administration officials	$105,310	1.2%
13	Management analysts	$80,000	1.2%
14	Engineers	$86,170	1.2%
15	Secretaries and administrative assistants	$30,380	1.1%
	Top 15 total		**43.2%**

While healthcare and STEM careers represent plausible sources of new jobs for skilled immigrants, it is important to not assume that skilled immigrants would only be able to find work in places and occupations where policymakers can identify specific shortages ahead of time. This is a misleading way to look at labor markets and job creation. For one thing, as skilled immigrants move to struggling places, new firms will arise and new job opportunities will be created. One reason is that skilled immigrants are highly entrepreneurial, and will themselves create new companies that hire both existing residents and other skilled immigrants. In addition, the evidence reviewed above has shown that when population increases, new jobs and new firms are created in response. This is not what we would expect if jobs are only created when there are pre-existing shortages. Instead, it shows that employers create new opportunities in response to newly available workers.

That identifiable and pre-existing shortages are not necessary for job growth is broadly accepted elsewhere in economics and public policy. We do not ask policymakers to limit college degrees to be the occupations where we can first identify shortages. Nor are we generally concerned about whether the millions of new college graduates every year will find gainful employment. This is because the fundamental process of job creation is decentralized, organic, and self-correcting.

Indeed, by taking a free market approach, PBVs will be particularly suited to this kind of unguided, dynamic, and not centrally planned job creation. Today, skilled immigrants seeking to come to the United States on H-1B visas can only do so if they can first find jobs that pay the existing prevailing wage in the local labor market. Employer sponsorship and wage mandates inhibit labor markets in a variety of ways. Foremost, they effectively limit the ability of local firms to compete for immigrant workers. The compliance burden often leaves only the largest firms in a position to afford sponsorship, or it results in entire business models forming around navigating the visa system. New or small businesses struggle to access the potential pool of talent.

Even native workers who compete directly with immigrants are likely to see non-wage benefits resulting from stronger housing markets, lower taxes, more dynamism, higher productivity, and the other positive spillovers that immigrants provide. While this may seem overly optimistic, it is worth noting that skilled workers today are overwhelmingly migrating to places where there are more skilled workers and migrating away from places with fewer of them. If having few competitors in the labor market were the primary determinant of wages and well-being, we would expect the opposite to be occurring, with skilled workers fleeing to places with little competition.

Place-based visas: A new tool for the heartland?

While existing policy levers can do little to address the formidable and immediate challenges of demographic decline, immigrants in general and skilled immigrants in particular have the potential to help. Simply granting visas to more skilled immigrants through existing pathways would do little for struggling places, however, since the vast majority of skilled immigrants entering the U.S. with employer-based visas are channeled to high wage, economically healthy, fast-growing cities. In 2013, for example, one fourth of all H-1B applications were from companies based in only three metro areas, and half of them were from just nine metro areas.[51] However, this distribution does not imply that immigrants are unwilling to locate in metro and non-metro areas outside of the traditional destinations. Indeed, in several Midwestern cities and metro areas, immigration is already helping to mitigate population loss.[52]

PBVs would open a new channel for more such matches to be made between skilled immigrants and places wishing to attract more human capital. PBVs would not limit where immigrants can travel to or visit within the United States, but would simply require their residence and place of work be somewhere within a specific geography. While a detailed policy proposal is beyond the scope of this report, we sketch an outline for a possible framework built upon the need case laid out above.

Legislative history and examples

PBV policies of various kinds have been proposed in the United States and enacted in other countries. A review of them is instructive for understanding where the proposal we advance fits among precedents and for evaluating the chances of legislative and operational success.

Most notably in the United States, in 2017 Senator Ron Johnson (R-WI) introduced the State-Sponsored Visa Pilot Program Act (S. 1040), which would have instituted a state-based visa system. The bill proposed allocating up to 500,000 visas annually to the 50 states and Washington, DC, with 5,000 per state as a baseline and the rest allocated in proportion to population. This proposal would be a temporary working visa, with the goal of taking a more federalist approach to immigration. The policy would allow states to sponsor foreign workers, investors, and entrepreneurs, and determine themselves the criteria used.

51. Ruiz and Wilson, 2015. The best estimates on the geographic distribution of H-1B holders come from a 2015 Brookings Institution analysis of the location of employers applying to sponsor visas. Not every application gets approved, of course, and many successful sponsors are consulting companies that employ visa holders at different sites across the United States.
52. Paral, 2017.

Under the Johnson bill, immigrants would be required to live and work in the state that sponsored them. One way the bill incentivizes compliance is via the renewal option: those wishing to renew their visas after three years would have to prove they are residing and working in the state that sponsored them. Another mechanism is via the yearly allocation of visas. The bill would punish states that were found to have a significant percentage of their sponsored workers working in other states and potentially even suspend them from the program.

Another notable proposal came from former Michigan Governor Rick Snyder, who viewed immigration as a potentially vital tool to help address his state's deep social and economic challenges and requested the Obama administration allocate 50,000 visas to allow more skilled immigrants to settle in Detroit. PBVs have also been explored by think tanks and academics, including by researchers affiliated with the Migration Policy Institute and the Cato Institute.[53]

Both Canada and Australia, two immigrant-friendly countries frequently lauded for having economically astute immigration regimes, have PBVs. Through Canada's Provincial Nominee Program (PNP), the provinces and territories nominate immigrants who intend to settle in the province. The PNP, which offers a path to permanent residency, is Canada's second-largest source of economic migrants and accounts for nearly one-fifth of the country's total immigration each year. From 2010 to 2015, the PNP admitted a quarter of a million immigrants to Canada, 0.7% of the Canadian population. Provinces are allowed to develop their own criteria for selecting immigrants, and 70% work in skilled occupations.

Both Canada and Australia, two immigrant-friendly countries frequently lauded for having economically astute immigration regimes, have place-based visas.

The IRCC, the Canadian government department responsible for immigration, conducted an evaluation of the program in 2017 and found that it was succeeding. The report stated that "The program spreads the benefits of immigration beyond major cities and helps fill local employment gaps." Indeed, in this respect the program is quite successful: prior to the PNP program, 87% of economic immigrants settled in Ontario, British Columbia, and Quebec. From 2010-2015, in contrast, 76% of PNP admitted immigrants intended to settle outside of those provinces. The program has no long-term residency requirements and no ongoing enforcement, yet 84% of those admitted to Canada through the PNP from 2002 to 2014 remained in their nominating province in 2014. Retention rates vary, yet even in remote and tiny Prince Edward Island, with a population of 150,000, the retention rate was 27%. In the most sparsely populated province, Newfoundland and Labrador, the retention rate was 57%.

Australia has multiple regional immigration visas, which bring in about one-third of the country's skills-based immigrants. The Skilled Regional Provisional Visa is a temporary, four-year, points-based, skilled visa that allows a state, territory, or

53. See Tobocman, 2014 and Fuller and Rust, 2014.

family member to sponsor an immigrant. Those sponsored by a state or territory must live in the sponsoring area, and only low-growth places qualify. Each state and territory has a list of qualified occupations and other requirements. After two years immigrants can then apply for permanent residency, which allows them to live and work anywhere.

In addition, the Regional Sponsored Migrant Scheme is an employer-sponsored, skills-based visa that allows Australian employers outside of the five major cities and capital district to hire immigrants to address worker shortages. Regional certifying bodies (RCBs) must confirm the market salary and also the unavailability of local labor for the applying position. RCBs are either state or territory government agencies, local chambers of commerce, or regional development bodies. Finally, Australia's points-based skilled visa also awards points to immigrant students who have studied and lived in parts of country with low population growth.

Key principles for a Heartland Visa

The exact outlines of a potential PBV scheme targeted to the needs of heartland communities are to be determined, but the data presented here suggest the architecture of the program should be anchored in a number of key principles.

- Communities should only be eligible for PBVs if they "opt in" on a voluntary basis.
- PBVs should be targeted to places confronting chronic population stagnation or loss as a means of boosting economic dynamism and fiscal stability. PBVs would help stagnant areas build on existing strengths while seeding new ones. And they would be instrumental in putting underutilized local assets back to productive use.
- PBVs should be additive to top-line national skilled immigration quotas. PBVs should represent a new door through which human capital can enter the United States and contribute to the economy.
- PBVs should be designed to serve as a catalyst for parts of the country currently underserved by existing programs, such as the H-1B.
- Rather than being tied to a single employer, PBV holders should be allowed to compete on the open labor market to maximize their availability to startups and small businesses that may struggle with the administrative burden of H-1Bs.
- PBVs should be contingent on visa holders finding and maintaining a job or starting a business in an eligible area within a reasonable period of time.
- PBVs should provide a path to permanent residency and only restrict where visa holders can live and work for a period of time. During that time they would build social networks and put down roots in their host communities but, once granted permanent residency, visa holders could move where they please within the United States. The prospect of permanent residency and full mobility should provide an extremely strong incentive for compliance.

- The program should be designed to minimize skill mismatches and supply shocks to labor markets or occupational categories that could have outsized wage-depressing effects.
- PBVs should be accompanied by additional federal and state resources to smooth assimilation and job finding.
- PBVs should not crowd out other skilled visa holders in the process. The scheme would therefore need to be accompanied by a commensurate increase to the green card cap if it is truly to be additive to national growth and well-being.

Beyond these key features, policymakers would have a number of parameters to consider in order to establish a fully-fledged and operational Heartland Visas scheme. Honing in on the right geographic scale is essential for maximizing the economic impact hoped for here. Choose too narrowly and visa holders may not be able to find suitable employment. Choose too broadly and the effects on target labor and housing markets may be diluted. The number of visas on offer is another critical question. Each community opting in should be able to welcome enough visa holders to meaningfully improve its economic trajectory, while not overwhelming the local community's ability to integrate newcomers. Duration—the period of time for which the visa is valid, subject to renewal, and before visa holders become eligible for permanent residency—is another core issue, as is enforcement. Whether skilled immigrants already in the United States and familiar with the country's culture and work habits might be eligible to transfer from an H1-B or student visa, for example, onto a Heartland Visa should also be considered. Whether a startup visa—long a dream of many immigrant advocates and economic development stakeholders—could be incorporated into this program is another important question.

Whether a startup visa—long a dream of many immigrant advocates and economic development stakeholders—could be incorporated into this program is another important question.

How likely are Heartland Visas to achieve their stated goals of improving the economic dynamism and fiscal health of parts of the country currently experiencing population decline? Their effectiveness would be enhanced by supportive public, private, and non-profit programs to rapidly "on-board" newcomers to living, working, and finding a job in the United States—and to prepare host communities. The double opt-in nature of the proposal should mitigate against any mismatches that could undermine outcomes. Both the visa holder and the locality have to "match," and both have an interest in ensuring that gainful employment is found quickly.

Even with effective matching and the dual opt-in nature of the proposal, we are clear-eyed about the hard and sometimes uncomfortable work that opting-in communities would be taking on. Even communities eager to embrace visa holders will run into obstacles in the integration process, and welcoming communities are not created

by diktat. Yet from Salt Lake County to Dayton, and cities across Iowa, communities are stepping forward already and affirmatively declaring themselves open to new neighbors from abroad.[54] They want to build local economies that stand the test of time, and they want hard-working, entrepreneurial people to join them. They're willing to be challenged. The Welcoming America network vividly evidences the large number of heartland initiatives that have sprung up in recent years to welcome and integrate immigrant workers and their families. Such initiatives testify to the likely zeal with which many communities would embrace this new economic development tool and approach the task of integration. And they also testify to the impressive foundation of civic and organizational capacity that already exists and could be expanded upon in many of the same parts of the country that would be eligible for Heartland Visas.[55]

54. Salt Lake County and the City of Dayton have both been designated "Certified Welcoming" after going through a comprehensive community audit process conducted by Welcoming America. See also B.A. Morelli, "Iowa Business Leaders Call for Immigration Reform," The Gazette, February 26, 2019, and "Utah Business Leaders Unite to Reaffirm Support for Principles of Utah Compact on Immigration," New American Economy, March 21, 2019.

55. Singer, 2012 catalogs an impressive listing of local initiatives to build up the skills of their immigrant populations.

Conclusion

The analysis presented here demonstrates that demographic decline is now widespread across the United States, and also illuminates the many ways in which population loss itself causes further economic decline. Understanding the true costs and consequences of demographic decline, and the potential for skilled immigrants to mitigate them, should inform the national discussion about what to do for struggling places.

The rationales for place-based visas are compelling. Rarely do emptying places empty fully, and many once-thriving places retain the potential to thrive again. Skilled immigration brings unmistakable benefits to the national economy, yet our current system exacerbates regional disparities by concentrating skilled visa holders in already-thriving places. Place-based visas would create a new pathway for skilled immigrants to intentionally connect with heartland communities facing chronically slow or negative population growth in a way that our current employer-based programs do not. If this policy succeeds alongside related policy measures aimed at revitalizing local economies, communities that today export their home-grown talent may once again be able to retain it.

This proposal does not assume that every declining community will benefit via skilled immigration, nor does it deny that some demographic changes are necessary adjustments in the long run. Instead it aims to provide a powerful new tool for communities not content to simply manage decline. Indeed, being a magnet for skilled and entrepreneurial people the world over is one of the greatest advantages a nation can possess. It is time to fully capitalize on this advantage in pursuit of a more inclusive geography of economic growth and opportunity.

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Appendix Table 1: States ranked by % of population in prime working age shrinking counties

State	% of counties shrinking	% of pop in shrinking counties	% of counties prime working age shrinking	% of pop in prime working age shrinking counties
U.S. Total	48%	15%	80%	46%
VT	79%	62%	100%	100%
ME	69%	47%	100%	100%
RI	60%	32%	100%	100%
CT	50%	20%	100%	100%
NH	30%	11%	100%	100%
IL	80%	25%	97%	97%
MI	72%	50%	95%	89%
WI	50%	17%	97%	89%
NJ	43%	23%	90%	86%
WV	80%	74%	95%	85%
OH	68%	52%	93%	84%
PA	63%	28%	94%	82%
NM	58%	13%	82%	78%
KY	49%	24%	89%	74%
MO	57%	37%	90%	73%
AL	54%	26%	84%	69%
IN	57%	31%	87%	65%
MA	21%	6%	79%	65%
MS	74%	51%	83%	63%
AR	67%	30%	87%	62%
KS	76%	26%	92%	61%
LA	56%	24%	78%	61%
IA	70%	34%	92%	59%
NY	68%	16%	94%	59%
WY	22%	7%	83%	59%
DE	0%	0%	33%	58%
MT	25%	6%	84%	54%
MN	52%	12%	89%	53%
TN	25%	9%	78%	52%
VA	48%	21%	80%	48%
SD	44%	13%	85%	44%
MD	29%	14%	71%	44%
NE	69%	21%	94%	39%
OK	45%	17%	73%	35%
NC	37%	12%	70%	34%
SC	43%	12%	72%	32%
GA	38%	11%	71%	29%
AZ	13%	2%	60%	28%
ND	47%	15%	70%	27%
AK	31%	5%	55%	23%
ID	18%	3%	66%	23%

State	% of counties shrinking	% of pop in shrinking counties	% of counties prime working age shrinking	% of pop in prime working age shrinking counties
FL	12%	1%	45%	19%
OR	17%	2%	61%	18%
HI	0%	0%	33%	16%
TX	30%	3%	62%	13%
CO	28%	2%	72%	11%
WA	0%	0%	54%	11%
CA	24%	1%	52%	9%
NV	35%	5%	65%	9%
UT	7%	1%	31%	2%
DC	0%	0%	0%	0%

Appendix Table 2: Shrinking and low growth metro areas

Metro Name	Population change, 2007 to 2017, average annual %	Population 2017, ths.
Pine Bluff, AR	-1.13%	91.0
Johnstown, PA	-0.88%	133.1
Detroit-Dearborn-Livonia, MI	-0.80%	1,753.6
Flint, MI	-0.72%	407.4
Youngstown-Warren-Boardman, OH-PA	-0.60%	541.9
Charleston, WV	-0.58%	214.4
Weirton-Steubenville, WV-OH	-0.57%	118.3
Saginaw, MI	-0.57%	191.9
Danville, IL	-0.54%	77.9
Mansfield, OH	-0.52%	120.6
Wheeling, WV-OH	-0.51%	141.3
Beckley, WV	-0.49%	118.5
Decatur, IL	-0.46%	105.8
Ocean City, NJ	-0.43%	93.6
Pittsfield, MA	-0.43%	126.3
Binghamton, NY	-0.41%	242.2
Springfield, OH	-0.38%	134.6
Albany, GA	-0.38%	151.4
Bay City, MI	-0.37%	104.2
Elmira, NY	-0.35%	85.6
Lima, OH	-0.33%	103.2
Cumberland, MD-WV	-0.31%	98.8
Jackson, MI	-0.29%	158.6
Altoona, PA	-0.29%	123.5
Sierra Vista-Douglas, AZ	-0.27%	124.8
Rockford, IL	-0.27%	338.3
Battle Creek, MI	-0.25%	134.1
Monroe, MI	-0.25%	149.6
Williamsport, PA	-0.23%	113.8
Barnstable Town, MA	-0.23%	213.4
Glens Falls, NY	-0.21%	126.2
Niles-Benton Harbor, MI	-0.20%	154.3
Rocky Mount, NC	-0.20%	146.7
Huntington-Ashland, WV-KY-OH	-0.19%	356.5
Kingston, NY	-0.19%	179.4
Utica-Rome, NY	-0.18%	293.6
Muncie, IN	-0.18%	115.2
Kankakee, IL	-0.17%	109.6
Kokomo, IN	-0.17%	82.4
Toledo, OH	-0.16%	603.7
Cleveland-Elyria, OH	-0.16%	2,058.8
Parkersburg-Vienna, WV	-0.15%	90.9
Canton-Massillon, OH	-0.15%	399.9

Metro Name	Population change, 2007 to 2017, average annual %	Population 2017, ths.
Erie, PA	-0.15%	274.5
Anniston-Oxford-Jacksonville, AL	-0.13%	114.7
Vineland-Bridgeton, NJ	-0.13%	152.5
Terre Haute, IN	-0.12%	170.0
Gadsden, AL	-0.11%	102.8
Pittsburgh, PA	-0.11%	2,333.4
Carson City, NV	-0.10%	54.7
Atlantic City-Hammonton, NJ	-0.09%	269.9
Scranton--Wilkes-Barre--Hazleton, PA	-0.08%	555.4
Watertown-Fort Drum, NY	-0.08%	114.2
Michigan City-La Porte, IN	-0.07%	110.0
Macon-Bibb, GA	-0.07%	228.9
Norwich-New London, CT	-0.06%	269.0
Peoria, IL	-0.05%	372.4
Midland, MI	-0.02%	83.4
Hanford-Corcoran, CA	-0.02%	150.1
Syracuse, NY	-0.02%	654.8
Bangor, ME	-0.02%	152.0
Bloomsburg-Berwick, PA	-0.01%	84.2
Lewiston-Auburn, ME	-0.01%	107.7
Buffalo-Cheektowaga-Niagara Falls, NY	-0.01%	1,136.9
Kingsport-Bristol-Bristol, TN-VA	0.00%	306.7
Muskegon, MI	0.00%	173.7
Akron, OH	0.00%	703.5
Gary, IN	0.00%	701.6
Dutchess County-Putnam County, NY	0.00%	394.9
Sheboygan, WI	0.01%	115.3
Dayton, OH	0.02%	803.4
Wichita Falls, TX	0.04%	151.2
East Stroudsburg, PA	0.04%	168.0
Camden, NJ	0.05%	1,251.5
Rochester, NY	0.05%	1,077.9
Duluth, MN-WI	0.06%	278.8
Farmington, NM	0.06%	126.9
Carbondale-Marion, IL	0.07%	125.6
Decatur, AL	0.08%	151.9
Sumter, SC	0.08%	106.8
New Haven-Milford, CT	0.08%	860.4
Jackson, TN	0.09%	129.2
Racine, WI	0.09%	196.1
Springfield, IL	0.09%	208.7
South Bend-Mishawaka, IN-MI	0.10%	321.8
Hartford-West Hartford-East Hartford, CT	0.10%	1,210.3
Florence-Muscle Shoals, AL	0.10%	147.0

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About the Economic Innovation Group (EIG)

The Economic Innovation Group (EIG) is an ideas laboratory and advocacy organization whose mission is to advance solutions that empower entrepreneurs and investors to forge a more dynamic American economy. Headquartered in Washington, D.C., EIG convenes leading experts from the public and private sectors, develops original policy research, and works to advance creative legislative proposals that will bring new jobs, investment, and economic growth to communities across the nation.

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