THE OHIO STATE UNIVERSITY

C. William Swank Program in Rural-Urban Policy

Rural Success Stories and Economic Prosperity: The Case of Holmes County and Mercer County, Ohio

Seung-Hun Chung
The School of Industrial and Labor Relations, Cornell University

Sowon Kim
Department of Agricultural, Environmental, and Development Economics, The Ohio State University

Mark Partridge, Swank Chair in Rural-Urban Policy
Department of Agricultural, Environmental and Development Economics, The Ohio State University

Swank Program in Rural-Urban Policy

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Mark Partridge is the Swank Chair of Rural-Urban Policy at The Ohio State University. Professor Partridge is former co-editor of the *Journal of Regional Science* and is the Co-Editor of the *Springer Briefs in Regional Science* as well as serves on the editorial boards of seven journals including *Papers in Regional Science and Annals of Regional Science.* He has published nearly 200 peer-reviewed scholarly papers, scores of other reports, and coauthored the book *The Geography of American Poverty: Is there a Role for Place-Based Policy?* His research has been rated the highest-ranked in the world in regional science. He has consulted with organizations and governments around the world and served on a National Academy of Sciences panel on defining rural areas. Professor Partridge has received research funding from many sources including the Appalachian Regional Commission, Brookings Institution, European Commission, Infrastructure Canada, Lincoln Institute of Land Policy, Ohio River Valley Research Institute, U.S. National Science Foundation, U.S. National Oceanic and Atmospheric Administration, U.S. Department of Agriculture, Social Science and Humanities Research Council of Canada, and World Bank.

Dr. Partridge's research includes investigating rural-urban interdependence, economic development, inequality and poverty, and regional growth and development policy. Professor Partridge has won numerous awards for his research and professional service. Dr. Partridge served as President of the Southern Regional Science Association; is Fellow of the Southern Regional Science Association and Fellow of the Regional Science Association International; was Chair of the North American Regional Science Council; was President of the North American Regional Science Council and is past-President of the Regional Science Association International. *E-mail: partridge.27@osu.edu*

Seung-Hun Chung is a Research & Policy Development Associate in the School of Indistrial and Labor Relations at Cornell University. He previously served as the Swank Program Postdoctoral Researcher in Agricultural, Environmental, and Development Economics at The Ohio State University. He is actively involved with the OSU Swank Program. His research interests encompass a range of topics including rural and urban economic development, as well as regional demographics. He has presented his research on regional development at several conferences of the North American Regional Science Council and other Economic academic conference.
E-mail: chung.627@osu.edu

Sowon Kim is a Ph.D. candidate in Agricultural, Environmental, and Development Economics at The Ohio State University, concurrently serving as the Research Associate for C. William Swank Program in Rural-Urban Policy. Her research interests encompass urban, rural, and regional economics, real estate economics, and public economics. Her current projects focus on analyzing household and developer location choices within U.S. housing markets in response to policy interventions, innovation, and climate change. She has presented her work at several conferences, including the North American Regional Science Council Conference, the Urban Economics Association Meeting, and numerous others. *E-mail: kim.7139@osu.edu*

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Led by Professor Mark Partridge, the Swank Program combines innovative approaches in economic development, planning, advanced statistical research, and geographical information systems to create products that can be used by the academic community, stakeholders, policymakers, communities, students, agriculture, and the public. In turn, the Swank Program will help inform and facilitate teaching and student research at Ohio State and elsewhere.

The Swank Program conducts and supports research, teaching, and outreach within the OSU College of Food, Agricultural, and Environmental Sciences; the Ohio Agricultural Research and Development Center; and The Ohio State University Extension.

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Preface

Why do some rural communities thrive while seemingly otherwise similar rural communities lag behind? This report attempts to answer this question by examining two rural-Ohio success stories: Holmes and Mercer Counties. Both counties fared considerably better than their neighbors, as well as better than the average rural Ohio and rural U.S. counties. They have succeeded despite facing a litany of structural disadvantages that would generally indicate that they would struggle. What is different in both cases is that they have relied on their own assets. They are not engaged in traditional economic development strategies of tax incentives aimed at luring large individual firms headquartered elsewhere.

While the two counties' strategies differ to some degree, they provide an excellent case study of overcoming barriers and succeeding against stiff odds. What we hope to provide is a manual for rural communities to engage in evidence-based successful economic development strategies, rather than continuing to rely on the same failed strategies and hoping for different outcomes.

The report is comprehensive and will hopefully become a reference for those who want a thorough understanding of the key points. For those who do not want to examine the entire report, we strived to make it readable. Specifically, we urge those readers to look at the Executive Summary, Introduction, and the lessons learned in the Conclusion. Among the multiple sections, there is a key standalone section on small businesses for those interested in understanding the important role of small-business-led development and ways to spark startups and small businesses in general. There is another key standalone section on developing effective economic development policies at the local, state, and federal levels for governments and associated nonprofits. To simplify the report's content, each section begins with a list of key findings.

We thank Jared Ebbing—Mercer County Community/Economic-Development Director; Mark Leininger—Executive Director, Holmes County Economic Development Council, Inc.; and Arnie Oliver—Holmes County Planning Director for their generous time in explaining economic development strategy in their respective counties. The authors are responsible for all the contents and errors. The views stated here are those of the authors and are not necessarily those of The Ohio State University and Cornell University.

Executive Summary and Key Findings

Key Report Findings

- **Between 2010 and 2020, U.S. rural areas as a whole experienced a population decline for the first time.**
- **Two Ohio counties—Holmes and Mercer—are exceptions. Both surpassed their neighbors, as well as the rest of rural Ohio and the rural U.S. in terms of population growth.**
- **Holmes and Mercer counties face structural challenges that would normally lead to weak economic performance. For example, both are relatively remote from urban centers (by distance), especially Holmes County. Similarly, they lack a larger urban center that more typically anchors faster-growing regions—e.g., a city with population of at least 250,000 often has sufficient scale for consistent job creation and possesses attractive amenities.**
- **Making their performance more impressive is that both Holmes and Mercer Counties rely heavily on relatively slow-growing industries such as manufacturing and agriculture—that is, achieving growth when the "pie is shrinking" is quite challenging.**
- **Holmes County also has below-average educational attainment, which puts it at a disadvantage in attracting fast-growing, high-wage industries.**
- **Neither county aggressively uses tax incentives to attract large outside firms, which is usually the hallmark of local economic development policy.**
- **Faster population growth in Holmes and Mercer Counties signals that a combination of "good" things is happening. Otherwise, people (on net) would not have voluntarily relocated there. Thus, population is a good metric for measuring local success.**
- **Population growth indicates that the community experienced a combination of (1) improved economic fundamentals that increased the number of jobs (or wages) or (2) enhanced household quality-of-life (QoL). The first route requires policies that increase firm profits, labor demand, and worker productivity, such as reduced business taxes. The second requires policies that enhance recreational opportunities, a clean environment, and cultural amenities.**
- **Job creation in both counties disproportionately relies on small firms, which we describe in this report as leading to a bigger bang and more positive spillovers than large firms.**
- **When decomposing U.S. total job growth, economists find that newly created jobs in small firms and/or startups are disproportionately associated with faster job growth than equal-sized job creation in bigger or older firms—i.e., peer-**

reviewed research shows that each job created in a small/new firm is associated with creating nearly two other jobs elsewhere in the local economy, while each job created in a large firm is associated with only about one-half of an additional job elsewhere.

- **Some reasons for small/new firms having a bigger *local* bang are that they tend to be more labor intensive, profits remain local, new firms are disproportionately more innovative, and their supply chains are less likely to be globalized and typically more reliant on local sources.**
- **Holmes County's economic engine follows more firm-based policies, while Mercer County employs more QoL initiatives to attract the population.**
- **Holmes County's entrepreneurship is supported by its culture and *laissez-faire* policies that reduce regulatory barriers for small/new firms.**
- **Mercer County has an effective seed-grant and loan program to encourage startups and expansion of existing businesses. The final section describes the Centralia, Washington model of local development, which also works to create demand for products provided by small businesses, further stimulating their success.**
- **Both counties actively facilitate better job matches between local employers and workers. Mercer County, in particular, facilitates relationships between local educational institutions, government agencies, and the business community.**
- **Holmes County's large Amish population enhances its entrepreneurial culture. The Amish community is also a source for local tourist demand.**
- **The features of Amish culture that provide local economic advantages can be replicated elsewhere.**
- **High rates of cross-county rural commuting indicate that economic development extends beyond individual communities and occurs in broader regions. Thus, rural communities should cooperate regionally in economic development because a win for one county in creating jobs spills over and creates opportunities for commuters in neighboring communities.**
- **Regional cooperation also helps rural communities enhance their critical mass and capture economies-of-scale to lower the cost of public service delivery.**
- **State and federal governments can enhance rural local-government capacity in economic development planning and grant writing to obtain funding.**

Executive Summary

In the 2010-to-2020-decade, rural America lost its population for the first time (Davis et al., 2022). The causes include fewer births, more deaths from an aging population, and net-out migration to urban areas (Johnson, 2022). The population growth rate in all U.S. nonmetro counties was -0.8%, while that in Ohio rural counties was -3.6%.[1] The number of rural counties with growth has also decreased compared with that in the previous decade. Only 33% of U.S. rural counties gained population from 2010 to 2020, compared with 53% between 2000 and 2010 (Johnson, 2022).

Among shrinking rural counties, Holmes and Mercer Counties in Ohio remain rare exceptions, experiencing population growth rates of 4.4 and 4.2%, respectively, from 2010 to 2020. Their success was not due to their location in the rapidly growing parts of Ohio. **Panels A and B of Table 1** respectively report 2010-2022 population growth for Holmes and Mercer Counties and their neighbors, showing that in both cases, Holmes and Mercer exceed all their neighbors' growth.

It is especially telling that for both Holmes and Mercer Counties, three out of four of their neighbors had a greater population in 2010, which should have given those counties an edge because a greater population offers advantages for economic growth.[2] In addition, **Column 4 of Table 1** shows whether these counties are part of larger urbanized labor markets, which also offers added benefits through urban commuting opportunities. Note that in most cases, Holmes and Mercer's neighbors are part of either a metropolitan area (MSA) or a consolidated statistical area (CSA), which means those counties have sufficient commuting with larger urban centers to officially be part of their labor market.[3] Yet, they still lagged the population growth of Holmes and Mercer Counties.

Both Holmes and Mercer Counties exceed others in per-capita personal income growth rates. Holmes County's per-capita income was 16% higher than the Ohio rural county average and 8.6% higher than the rural U.S. average. Mercer County was also 16.3% above the nonmetro U.S. average. Considering Holmes and Mercer County's remote location and being in a state with relatively weak economic performance, their steady

[1] This report interchangeably uses "rural" and "nonmetro" following the statistical definition of nonmetropolitan by the U.S. Office of Management and Budget (see **Box 1**).
[2] See **Column 3 of Table 1** for 2010 county population. The county's name is bolded if its population is larger than Holmes County in Panel A or Mercer County in Panel B.
[3] **Box 1** provides the definitions of MSAs and CSAs.

population and income growth leads us to inquire about their underlying reasons for success and **what lessons can be learned from them to inform rural economic-development strategies.**

Holmes and Mercer Counties have various characteristics that contribute to enhanced firm competitiveness and/or quality-of-life (QoL). Unlike many other Ohio communities, they rely neither on tax incentives nor subsidies to attract large employers. Instead, they focus on utilizing their own assets to foster growth from *within*. Following the premise that individuals "vote with their feet" to places that yield the highest utility or satisfaction (Tiebout, 1956), we examine the two counties' characteristics, including socioeconomic structure, natural amenities, transportation accessibility, housing affordability, industry composition, and social connectedness.

Holmes and Mercer Counties are highly manufacturing-dependent with a relatively high share of small businesses, including farm and nonfarm proprietors. In 2021, 50% of Holmes and 37% of Mercer County's employment were from businesses with less than 50 employees, which was much higher than the nonmetro Ohio average of 31% (see **Figure 10**).[4]

Small businesses and startups *especially* promote long-term growth. *Net-job* and GDP growth in the U.S. rely heavily on small businesses and newly established firms (e.g., Neumark et al., 2011; Haltiwanger, 2013). In other words, small businesses have a greater *net impact* on job creation than medium and large businesses do, as they create disproportionately more *(net)* jobs. Small businesses are especially important in rural economies because modest consumer demand in rural communities (owing to the small population) means that local businesses are generally small.

Tsvetkova et al. (2019) further finds a given level of job creation in small and new firms indirectly create more than twice as many total jobs compared to equal-sized job creation at existing larger businesses. This follows from indirect effects such as enhanced demand for inputs in the local supply-chain, as well as additional local spending from the newly employed workers (e.g., more demand at local grocery stores and restaurants.) Moreover, unlike (say) a multinational corporation with equity owners around the world, most profits remain local, providing another boost to the local economy. Hence, it is not surprising that communities with a greater employment share in small businesses grow faster than those

[4] The U.S. nonmetro average share of total employment from businesses with fewer than 50 employees was 42.1 %.

that are more reliant on medium- and large-sized businesses (Komarek and Loveridge, (2014; 2015). Indeed, Holmes County nonfarm self-employment's share of personal income is 32%, more than double the nonmetro Ohio average (14%) and the nonmetro U.S. average (13%) (see **Figure 11**). Rural nonfarm entrepreneurial activities are also important for small- and medium-sized farm households, which typically rely on off-farm work for a large share of their household income (Thurik et al., 2008; Vogel, 2012).

The benefits of small-business-led (and startup) growth for Holmes and Mercer Counties are observed in terms of faster population and job growth. Moreover, unlike the case of large employers that may shut down or relocate, it is unlikely that all small employers will close after an adverse economic event, which provides local communities with more resilience to withstand and recover from adverse events. For example, Holmes and Mercer County experienced relatively small GDP declines in 2020 of -0.4% and -1.9%, respectively, compared to the nonmetro Ohio average of -3.0% and the nonmetro U.S. average of -4.7%.[5]

Social connectedness supports small-sized entrepreneurship in Holmes County by providing valuable information to owners about potential markets, and leads to finding available workers (e.g., Deller et al., 2018; Isserman et al., 2009). Churches and other religious organizations are key avenues for facilitating social connectedness. Indeed, Holmes County is home to one of the world's largest Amish communities (Young Center for Anabaptist and Pietist Studies, 2021), accounting for 41% of the county's population, compared to 0.51% for Ohio and 0.08% for the U.S. population (Social Explorer – Religion 2010 (RCMS)).[6]

Mercer County residents agree that the county possesses a high QoL and economic opportunities. For example, Homan (2014)'s 2011 survey of eight northwest Ohio counties found that Mercer County fared very well in terms of QoL and perceptions of its economy. Mercer County also enhances its local human capital by focusing on young adults, motivating them to acquire necessary skills, and educating them about high-demand local careers. The career training center, located near Mercer County's Wright State University-Lake campus, is a notable success. Additional networking between anchor institutions such

[5] Computed using U.S. Bureau of Economic Analysis (BEA) data.

[6] Religious adherents comprise 68% of the Holmes County population vs. 44% in Ohio and 49% for the U.S. (see **Figure 12**).

as Mercer Health, schools including the Wright State's Regional Campus, and other community services also plays a pivotal role.

The restricted housing supply, however, hinders the potential growth of both counties. Although their population is growing, housing construction has stagnated (see **Figure 13**). The restricted housing supply and lack of affordable quality housing limit in-migration, constraining the labor supply for local firms. Relatively low rental rates, compared to the value of housing, provide developers with less incentive to build multifamily units.

Overall, Holmes and Mercer County's success reflects their relative advantages from a vigorous small-business community, entrepreneurship, QoL, and social connectedness. Their achievements offer valuable lessons for other rural communities because their relative advantages are home-grown, and they do not rely on luring major outside employers or capturing state and federal aid.

Figure 1. Amish Farm in Ohio

Introduction

Rural America is typically portrayed as a picture of economic decline, with an aging population that is either stagnating or shrinking. Elsewhere, rural America is described as facing social crises including escalating mortality rates from opioid epidemics. Yet, this dreary picture of lumping all rural America together overlooks its vast heterogeneity. Many rural communities are prosperous, while others hold realistic potential for growth by relying on *homegrown* solutions of nurturing small businesses and/or enhancing amenities and QoL for local households.

Startups and self-employment contribute disproportionately to rural jobs and productivity growth (Rupasingha and Goetz, 2012). However, rural entrepreneurs face significant hurdles in getting their businesses off ground. They may struggle to find local support businesses such as accountants or lawyers. A sparse rural population means that they have a smaller market for their products, a thinner labor pool to draw from, and fewer opportunities to network with other business owners. (Partridge, 2020; Sablik, 2022).

The key lesson of this report is that successful rural growth is usually homegrown by using local assets. Hoping large outside firms can be successfully lured to your community is typically unrealistic, and even when it occurs (usually with expensive tax incentives), it can have many unintended consequences. Indeed, a Center for Budget Policy and Policy Priorities (CBPP) report notes that 87% of the median US state's new jobs are from homegrown startups or net-growth of existing firms headquartered in the state. This is in contrast to the fact that only about 3% of the median state's job growth arises from relocating jobs from other states, with the remaining (roughly) 10% of the median state's job growth arising from the first branch of a firm headquartered in another state or from job growth due to new branches of firms headquartered in other states but already had prior in-state branches. Regarding the latter, more than half of the job growth from out-of-state headquartered firms establishing new branches comes from firms with existing branches in the state. Ohio's job growth follows this pattern.[7]

This report examines two successful rural-Ohio case studies: Holmes and Mercer

[7] The CBPP reports show that about 87% of Ohio's job growth is typically homegrown, with about 9% from firms headquartered elsewhere adding additional branches, 2% from firms headquartered outside Ohio establishing their first branch, and 2% from the relocation of jobs from other states.

Counties. Note that both counties lack the normal ingredients that are thought to produce economic growth. Yet, we find that both success stories provide lessons for rural communities in how to be prosperous with "homegrown" assets while not engaging in wishful thinking hoping that some big outside firm will locate in their town or that massive government largess will "save" their community.

Holmes County lags behind the typical measures of potential economic-development capacity. Millersburg, its county seat and largest town, has barely 3,000 residents, meaning that it lacks a traditional urban anchor to promote growth. Probably it is necessary to have a city with at least 25,000 people (it may be as high as 250,000 population) to serve as a viable urban hub with adequate services for businesses and for household QoL. According to U.S. Census Bureau data, Holmes County's average educational attainment is quite low—e.g., 42.4% of its residents over the age of 25 did not have a high school diploma or equivalent, while its 11.1% college-educated share is about one-third the Ohio and U.S. average.[8] Thus, Holmes County will not be attractive to high-tech firms or firms with high needs for an educated workforce, although this is unlikely to be a problem.

Another potential drawback for Holmes County is its lack of affordable high-speed Internet or adequate devices to access the Internet. Only 69% of Holmes County households have access to a home computer, and only 62% have an internet subscription.[9] As described in a prior OSU Policy Brief (Genetin, Messenger, Partridge, and Chung, 2022), rural areas generally have less broadband access, and rural broadband speeds tend to be far below those in urban areas. Broadband shortcomings could negatively weigh both rural firms and household QoL.[10]

In an interview, Arnie Oliver, Holmes County's Planning Director, described how spotty Internet-connectedness makes the county less appealing to certain businesses requiring high-quality broadband or households with high Internet demands—e.g., for remote work, education, streaming, or gaming). Nonetheless, despite these and other challenges,

[8] The U.S. share of adults over 25-years old with less than high school education is 10.9%, and the share with at least a bachelor's degree is 34.3%. The corresponding Ohio shares are 8.6% and 30.4%, respectively. The data source is U.S. Census Bureau quick facts at https://www.census.gov/quickfacts/fact/table/US/PST045222. Also see USDA ERS - County Typology Codes for more information. *To be sure, formal education is a good proxy for overall human capital, but knowledge can be acquired through less formal education and self-teaching.*

[9] The corresponding U.S. computer and Internet subscription shares are 94% and 88.3%, respectively, with Ohio shares being 92.8% and 87.6%, respectively.

[10] Genetin et al. (2022) note that rural areas lag urban areas in affordable-high-speed Internet because low population densities make it difficult for Internet service providers (ISPs) to earn a reasonable rate of return. Holmes County is further challenged by its hilly geography that makes wireless Internet services more difficult to provide. Of course, its high Amish population share likely plays an additional role in low Internet adoption.

Holmes County has grown significantly faster than other rural Ohio and U.S. counties, showing how an obviously disadvantaged area in the traditional sense can still prosper. Between 1980 and 2020, the population growth rate was 50.3% for Holmes County, 10.9% for Mercer, 3.6% for Ohio nonmetro, and 12.1% for U.S. nonmetro. (Source: U.S. Census Bureau; BEA).[11]

Without major highways, close metropolitan areas, or major universities, Holmes County's success is remarkable (Caniglia, 2019). The county has few large businesses but boasts numerous small businesses in manufacturing and farming (Caniglia, 2019 and **Figure 10** for firm-size statistics). Approximately 32% of Holmes County's personal income comes from the earnings of the *nonfarm self-employed*, or more than three times the US nonmetro rate (BEA, See **Figure 11**). Later, we explain that one challenge for further economic development in Holmes County is the lack of affordable housing.

Mercer County has also been more successful than comparable Ohio counties, especially over the last 15 years. Akin to Holmes, Mercer County successfully maintained a growing economy based on a high concentration of manufacturing and small businesses. Another important factor driving Mercer County's success is its active efforts to improve the local QoL. In particular, it has successfully improved the local workforce by linking local schools and students with potential employers and community services.

Our analysis of the success factors driving Holmes and Mercer Counties suggests the following implications for successful homegrown development: **First**, rural communities should shift their focus from attracting big businesses to creating a supportive environment that encourages entrepreneurship and small-business development. **Second**, enhancing QoL to attract families who desire rural lifestyles, particularly those with children. This can be achieved through investment in public schools, providing greenspaces and a clean environment, and having an attractive-looking community—i.e., think about a downtown area with amenities like microbreweries. **Third**, build social connectivity and networks for the local business community to access markets and obtain a quality workforce. Anchor institutions, such as hospitals, community colleges, and K-12 schools, can play key roles in establishing partnerships. They can also provide internships that give students hands-on experience in starting and running businesses, as well as working in existing businesses.

[11] The corresponding Ohio and U.S. 1980-2020 metropolitan population growth rates are 10.7% and 53.2%.

The remainder of this report is organized as follows. The next section explains how rural success is defined and provides a basic background for Holmes and Mercer Counties. The following section explores the socioeconomic characteristics of these two counties. The next section investigates small-business-driven growth, and the subsequent section examines how growth can be supported by improving human capital and QoL. The following section describes how higher-level governments can improve local economic development. The final section summarizes our lessons.

Figure 2. Grand Lake St. Marys in Mercer County

Box 1: Defining "Rural"

The concept of rural areas has been developed from various perspectives, including contrasts with urban areas, demographics, land use, economic and social activity, and shared social and cultural identities (Vodden et al. 2023). While acknowledging the value of each perspective, this report follows objective statistical approaches to define rural regions based on organically formed economic regions that have been molded by the region's households and businesses. For economic development, using an economic basis to define rural areas is most relevant for government policymakers. The main point is that, while a place may look rural with bucolic farms and a rolling landscape, its economy may be urban because of its high economic connectivity with nearby urban areas in terms of economic patterns through commuting and shopping.

Rural and urban regions are typically defined by defining metropolitan areas as urban and nonmetropolitan areas as rural. Although imperfect, the definition of metropolitan/nonmetropolitan areas reflects self-formed areas based on economic connectivity. The Federal Office of Management and Budget (OMB) defines metro and nonmetro areas based on a county's access to urban labor markets. Metropolitan areas are broad labor-market areas that include either central counties with one or more urbanized areas (cities) that are densely settled with 50,000 or more people, or outlying counties that are economically tied to the core counties. Economic ties are measured by commuting, as measured by more than 25% of a county's workforce commuting to central urban counties (reverse urban to rural commuting is also counted, but rural to urban commuting is primarily dominant).

Nonmetro counties are outside the boundaries of the metro areas. Nonmetro counties are further subdivided into two types: 1) Micropolitan (micro) areas, which are nonmetro labor-market areas centered on urban clusters of 10,000-49,999 persons and defined using the same criteria used to define metro areas. 2) All remaining counties, which are often labeled "noncore" counties because they are not part of "core-based" metro or micro areas (USDA ERS - What is Rural?).

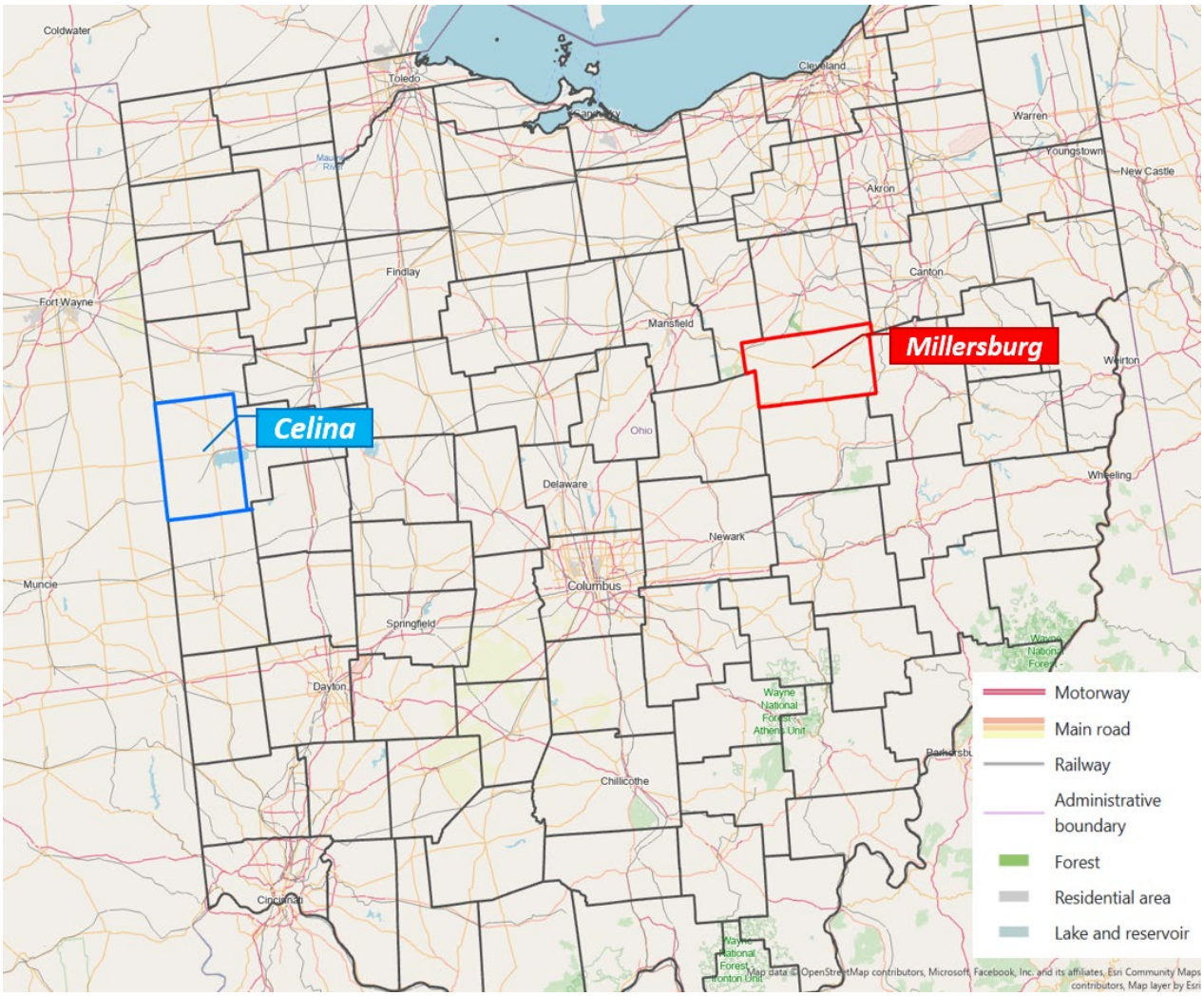
Based on this definition, Holmes County is considered a nonmetro area. Mercer County is also nonmetro, but given that Celina has over 10,000 people, it is defined as the Celina Micropolitan Statistical Area. No nearby county has sufficient cross-county commuting with Mercer County to be included in the Celina micropolitan area. Hereinafter, we use 'rural' interchangeably with 'nonmetropolitan.'

Basic Background on Holmes and Mercer Counties

Key Findings

- **The 2010-to-2020 decade was the first in which rural America experienced population decline.**
- **Two successful Ohio exceptions are Holmes and Mercer Counties.**
- **The population growth of these two counties is accompanied by income growth that outperforms the nonmetro Ohio and nonmetro U.S. averages.**

Figure 3. Holmes County and Mercer County in Ohio



Notes: Holmes County is marked with a red boundary. Millersburg, with a population of 3,165 as of 2022, is the largest town in Holmes County (www.biggestuscities.com). Mercer County is denoted by a blue boundary. Its largest city is Celina with a 2022 population of 10,881 (U.S. Census Bureau).
Sources: This map was created by the authors using ArcGIS with the U.S. Census Bureau data and OpenStreetMap.

Box 2: Identifying "Successful" Rural Communities

Following Tiebout (1956), we assume that people "vote with their feet" and pick their residence as the location that provides the highest satisfaction or utility. These places may be rich in natural amenities, jobs, or combinations. ***If a place is adding a population, something must be going right in terms of a combination of economic opportunities and QoL.*** A location with a declining population suffers from the net effects of a weak economy or QoL, which provide lower satisfaction than other alternatives. ***Thus, population growth reflects all the elements that affect a community's appeal.***

People migrate to places that best serve their needs, striking a balance among income, housing costs, and amenities (e.g., Rapapport 2008). Regions with greater economic productivity or higher profits face increased labor demand and wages. Locales with higher QoL attract households, shifting labor supply curve out, which increases employment and pushes wages lower—e.g., picture rapidly growing rural Rocky Mountain population growth even where there are generally lower wages and limited economic opportunities (see McGranahan, 1998; Johnson, 2012; Weinstein et al., 2022 for more discussion). The intersection of the local labor demand and labor supply curves determines a locale's wage and employment levels (and, in turn, population). In other words, **both** *labor demand* driven by business fundamentals and *labor supply* driven by household desires for QoL play independent roles in determining the local economic outcomes.

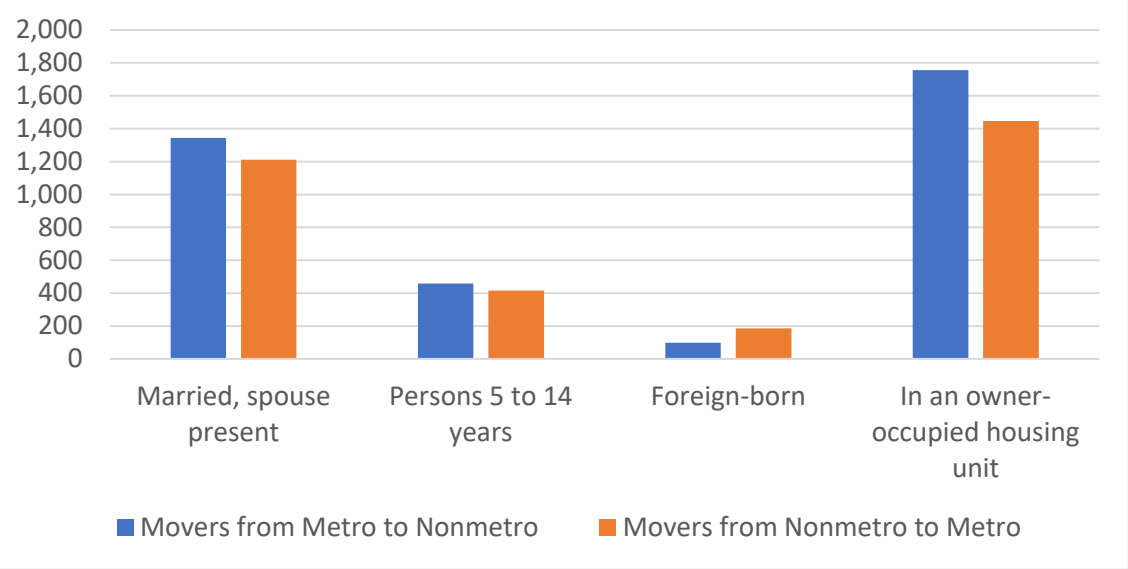
Economists have observed that some households *may* prioritize higher income and economic opportunities over amenities and QoL, whereas others *may* be willing to trade off lower income and fewer economic opportunities in exchange for better amenities and QoL. For example, when the effects of low QoL dominate positive economic opportunities, even places with high wages may lose population, whereas places with low wages may still attract the population if their QoL is sufficiently high. Urban areas offer single young adults more economic opportunities but also ample recreational opportunities, such as a vibrant nightlife. On the other hand, families headed by parents in their thirties with young children may have higher satisfaction in places with better outdoor recreation opportunities as well as less crime, pollution, and congestion—i.e., a rural lifestyle. These family types are most likely to remain in rural communities or be attracted to relocation *from* urban areas, whereas young adults are more prone to remain

or relocate to urban areas.

Policymakers and the public have fixated on (say) reducing taxes to attract firms and improve economic opportunities. Yet, they too often forget the role of QoL in attracting people. For instance, good schools are also high on the list for new families in selecting their residence, showing that thinking about schools as simple tools to teach workforce skills overlooks more important elements that schools provide for attracting families (Marré and Rupasingha, 2019)—i.e., families with children may prefer to live in a "nice" region even though its wages are lower or it has higher housing prices.[12]

Figure 4 shows the U.S. migration patterns between urban and rural areas from 2015 to 2020. Being married, having children, and being homeowners are (on-net) associated with being more attracted to rural areas. The point is that even though rural America typically loses population to urban areas, there are certain demographic groups where that doesn't apply. Thus, a successful rural economic policy could arise from effectively targeting the specific needs of these groups—usually married families with young children.

Figure 4. U.S. Mobility by Mover Characteristics (2015 to 2020)



Note: Numbers in thousands.
Source: U.S. Census Bureau, Current Population Survey, 2020 Annual Social and Economic Supplement.

[12] These two mechanisms provide a conceptual basis for examining the causes of a local area's performance. Specifically, if a growing community experiences both higher wages from increased labor demand and rising housing prices from new residents attracted by strong economic conditions, then positive firm profitability/productivity effects dominate household QoL effects. However, if the growing community experiences falling wages and rising home prices, the labor supply increases, indicating that QoL effects are the main driver.

Holmes County Context

Holmes County is situated halfway between Cleveland and Columbus in northeastern Ohio. The U.S. Census Bureau estimates that Holmes County's population equaled 44,390 in 2022. It has one of the highest concentrations of Amish residents in the world (Young Center for Anabaptist and Pietist Studies, 2021). Amish members account for 41% of its population vs. 0.5% for Ohio and 0.08% for the U.S. (Social Explorer – Religion 2010 (RCMS)). Holmes County's Amish history is described in **Box 3**.

Holmes County was settled by Amish in 1808. It was officially formed in 1824 from portions of Coshocton, Tuscarawas, and Wayne Counties. Its geography is characterized by rolling hills, fertile farmland, and scenic landscapes. The bucolic landscape is enhanced by a picturesque countryside mixed with forests, farms, dotted charming towns, and covered bridges, which attract visitors far and wide. Covering approximately 423 sq. miles (1,096 sq. km), it offers a mix of rural landscapes and small communities. Millersburg, the largest town in Holmes County, has only 3,158 residents, according to the 2018-2022 American Community Survey.

Its history is strongly influenced by its Amish and small-agriculture roots. Towne (2019) describes how the prevailing 19th-century culture was dominated by conservative "Jeffersonian/Jacksonian" yeoman farmers. Holmes County was an Ohio Democratic Party stronghold, which continued until the late 1940s when it shifted to Republican dominance.

The county's residents initially supported the Civil War, but the swing towards an anti-slavery war rationale with the Emancipation Proclamation adjusted local views (Towne, 2019). Declining support intensified as Union efforts relied more on seeming arbitrary confiscations, military arrests, and censorship, as well as the introduction of "greenbacks" and passage of a federal income tax to fund the war. Tensions reached a zenith with the enactment of the military draft in 1863 and the arrest of the former Ohio Congressman Clement Vallandigham after an anti-war speech. Becoming one of the most historic events in Holmes County lore, tensions led to a brief armed uprising against the draft that sometimes included over 1,000 participants in hostilities against federal authorities and Union troops. The minority Amish and Mennonite populations, who were conscientious objectors of the war, did not participate (Towne, 2019).

Contemporary Holmes County has a deficient highway network without close access to multiple-lane highways. Its roads are narrow and winding, and are often shared with

Amish carriages. The main routes are US 62 and Ohio Routes 39 and 60, whose “primitive” nature makes commuting and transporting goods challenging. The roads are suitable for leisure tours but not for most other uses. For example, the distances from Millersburg, the county’s largest town, to the nearest Interstates I-71 and I-77 are 36 and 25 miles, respectively, on relatively low-quality two-lane roads. The closest regional airport, Akron-Canton Regional Airport, is 56 miles away, taking approximately 66 minutes, according to Google Maps, to reach by car.

Mr. Oliver, Holmes County’s Planning Director, noted that the lack of highway infrastructure hinders its growth and development. Narrow windy roads and a lack of buggy lanes for Amish residents can produce treacherous conditions. Poor highways inhibit the county’s emerging tourism industry and hinder the transportation of inputs and final products. Yet, the major adverse impact of outdated highways may be how they limit commuting inflows for labor-scarce Holmes County firms. Thus, more state and federal infrastructure investment in the Holmes County region is necessary. This would clearly boost Holmes County’s prosperity **and** *lift the economies of Holmes County’s neighbors* due to their large commuting outflows to Holmes employers. Thus, while Holmes County’s economy has largely overcome its limited access to divided highways, the absence of such infrastructure restricts future economic expansion.

Box 3: Amish history

Amish immigrants began arriving in Ohio, including Holmes County, in 1808. They were drawn by the prospect of acquiring farmland that was distant from larger urban areas to provide some isolation from a broader society (Nolt, 1992). Holmes County provided ideal conditions for establishing a thriving agricultural community. Its fertile soil and access to water make it desirable for farming purposes. Over the 19th and 20th centuries, Holmes County's Amish community grew steadily through natural increases and influxes from other regions attracted by the community's commitment to traditional Amish culture (Hurst & McConnell, 2010).

By 2010, Holmes County's Amish population was estimated to be over 17,000, or 41% of the county's population (Social Explorer - Religion 2010 (RCMS)). The county's demographics have a profound effect on its local economy. Increasing farmland prices and limitations on the amount of quality farmland have constrained the expansion of agriculture in the Amish community and Holmes County. This led to the diversification into tourism and manufacturing, which created job opportunities such as producing Amish-made furniture. The county's share of Amish employment in agriculture decreased from 48% in 1973 to 21% in 1997, wherein its share in manufacturing secondary- and primary-wood increased from 16% to 34% over the period (Lowery & Noble 2000). A typical Amish furniture manufacturer in Holmes County operates on a very small scale with a median of about 4.0 employees (Bumgardner et al., 2008)[13].

Mercer County Context

Mercer County is west of I-75, near the Indiana border. Mercer County's population in 2022 was 42,348. Celina is the county's largest city, with a population of 10,881 (ACS). Mercer is home to Grand Lake St. Marys, a 21-square-mile lake that extends across its eastern border into adjacent Auglaize County. The lake is a regional recreational destination. Yet, in the last couple of decades, its health has been damaged by (mainly) agricultural runoff, which had led to the emergence of dangerous levels of algal microcystin toxins, posing a public health threat. For example, in 2010, the lake experienced significant algal blooms

[13] 80% of U.S. furniture manufacturers had fewer than 20 employees in 2008. (Source: Census Bureau, County Business Pattern: 2008)

and the Ohio Environmental Protection Agency closed all recreational activities (Overcash et al., 2014). Although improved nutrient management and other farm practices have improved the lake's watershed,[14] occasional public health advisories limit its use.[15]

Mercer County was founded in 1820 and named in honor of General Hugh Mercer, an American Revolutionary War hero. It shares borders with Auglaize, Darke, Shelby, and Van Wert counties. Early settlers hailed from English, Irish, and French backgrounds and predominantly engaged in farming. In the late 1880s, oil was discovered in the St. Marys area sparking an oil boom. The county's lone city, Celina, which was established in 1834, serves as the county seat.[16] The county encompasses a mix of rural landscapes, farms, small towns, and Grand Lake St. Marys, offering a blend of scenery and community charms.

Mercer County's primary transportation link is I-75, a major North-South U.S. freight route, about 15 miles east via Ohio 29 and US 33. I-75 provides access to larger cities such as Toledo, Dayton, and Cincinnati. US 33 is a primary highway that runs southeast to northwest through the county, connecting with US 27, another primary highway, and providing a link to Fort Wayne, Indiana. The R.J. Corman Railroad passes through Celina and connects with Norfolk Southern Railroad, facilitating access to Muncie, Indiana. However, according to the U.S. Bureau of Transportation Statistics (BTS), only 46% of Mercer County's population has interstate access via two bus stops (Rural Access to Intercity Transportation (bts.gov)).[17] This indicates that accessibility remains a challenge in some aspects of the county.

Rural Income and Population Dynamics

On average, America's rural counties have experienced low population growth over the last five decades, with a small rebound in the 1990s (**Figure 5**). The rapid decline in the 10-year population growth rate from 11.9% between 1970 and 1980 to 1.1% in the next decade was driven by the 1980s' farm crisis. A reinforcing trend is that federal farm

[14] Ohio 2023 Water Quality Status Report released - Ohio Farm Bureau (ofbf.org)
[15] Ohio Department of Natural Resources issues water quality warnings at Grand Lake St. Marys - LimaOhio.com.
[16] Source: History – Mercer County Connect
[17] The BTS estimates the percentage of a county's rural population with access to scheduled-commercial air, intercity buses, and intercity rail services. They also account for the percentage of rural residents living within 75 miles of a large airport or 25 miles from any other airport with scheduled commercial services, as well as intercity bus stops and intercity rail facilities (Geospatial Application and Map Gallery | Bureau of Transportation Statistics (bts.gov)).

programs generally disproportionately benefit large-scale farms, reducing agricultural labor demand (Goetz and Devertin, 1996).

The partial rural recovery in the 1990s benefited from high urban housing prices and crime, which pushed many urban residents to migrate to rural areas. Another factor is the long-standing retiree migration to rural counties with high natural amenities (Marré, 2020). U.S. rural population growth slowed after 2000, followed by the 2010-2020 decade having the first ever U.S. rural population loss of -0.7%. (Davis et al., 2022). The decade's population loss was due to fewer births, more deaths, and a net outmigration. Only 33% of U.S. rural counties gained population between 2010 and 2020, compared with 53% in the prior decade (Johnson, 2022).

Rural Ohio counties experienced similar population dynamics, although their population growth consistently lagged behind the rural U.S. average. Between 2010 and 2020, rural-Ohio overall lost 1.9% of its population, with the average rural-Ohio county losing 3.5% (the overall metro-Ohio population grew 3.3%).

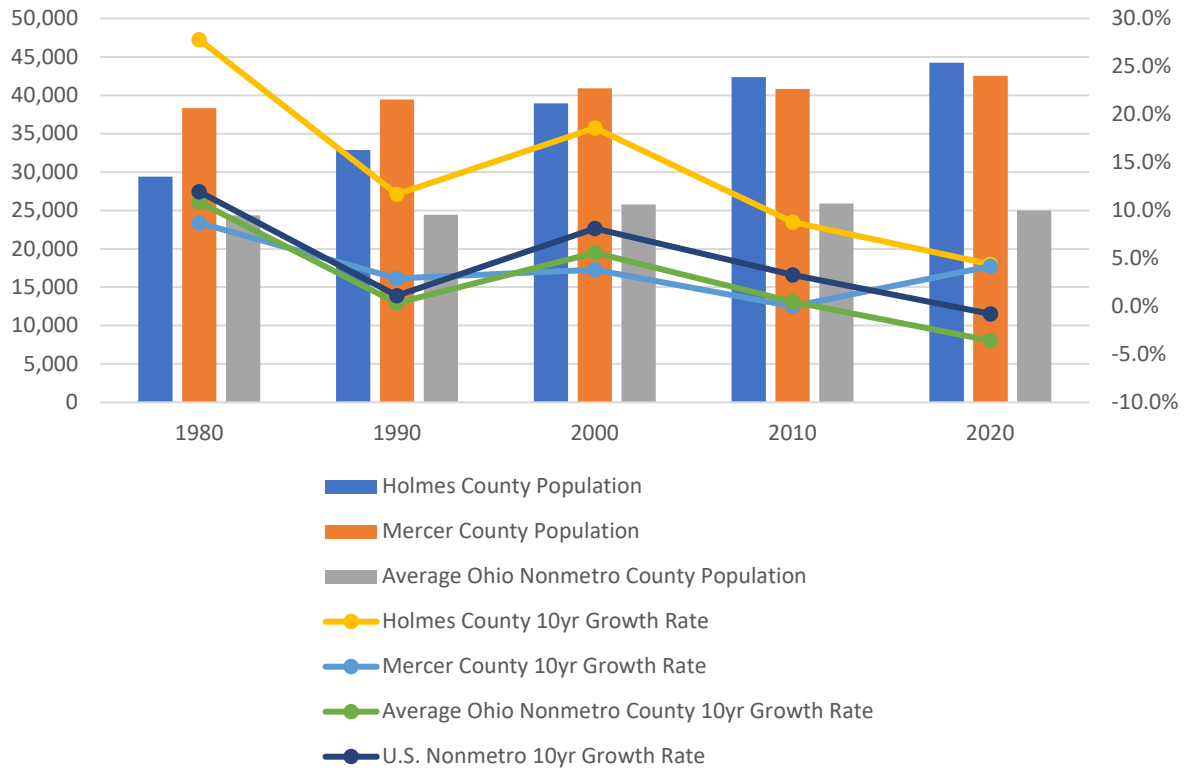
Since 2020, the Covid-19 Pandemic has made it difficult to determine trends. There has been some population outflow from urban areas to rural areas, with high-natural-amenity counties being the biggest benefactors.[18] Between 2021-2022, rural America **gained** a net of 18,000 migrants from metropolitan America; however, between 2020-2021, rural America lost a net of 215,000 migrants. The recent gains for rural America are encouraging, but one year does not make a trend. Yet, urban America continues to grow faster than rural America due to its faster natural population growth (via births and deaths) and the strong desire of international immigrants to reside in cities.[19]

Overall U.S. nonmetro population grew 0.1% between 2020 and 2022 vs. 0.4% in metro America. It is encouraging that rural areas are once again gaining population. The corresponding two-year rural and urban population growth rates for Ohio were -0.8% and -0.3%, respectively, which trail the overall nation.

[18] Of the 43 fastest growing US counties in terms of 2020-2022 population growth, 11 were nonmetropolitan, of which, only one was outside the Rocky Mountain region.

[19] Between 2020 and 2022, only 151,000 new international immigrants located in nonmetro America vs. 1.832 million in metropolitan areas.

Figure 5. 1980-2020 Population Dynamics for Selected Areas



Sources: U.S. Census Bureau; Bureau of Economic Analysis.

Mercer, and especially Holmes County, have generally gained population over the last five decades, providing a favorable comparison to the average Ohio and U.S. nonmetro counties. Holmes County's 1980-2020 population growth was 14-times faster than the overall Ohio nonmetro average and over 4-times faster than the U.S. nonmetro average. Holmes' growth was driven by natural growth rather than by typical net in-migration. The high natural growth rate of Holmes County is likely related to its large Amish population. Across all Amish subgroups, total fertility rates are over 5, or almost 250% higher than the stable natural population growth rate of about 2.1 (Troyer, 2022). Between 2010 and 2020, when the Ohio and U.S. nonmetro areas lost population, Holmes County grew by 4.4% or 8.0 percentage points faster than the Ohio nonmetro population and 5.2 percentage points faster than the U.S. nonmetro population.

Between 1980 and 2020, Mercer County's population grew about 3-times faster than that of nonmetro Ohio and slightly less than that of nonmetro America. Its population has grown in each decade, except for a 0.3% decline between 2000-2010, which relates to the closure of some of its major manufacturing firms in 1999. [Mercer trailed Ohio's nonmetro

population growth rate by one percentage point between 2000-2010.] In the 2010-2020 decade, however, it showed a relatively strong 4.2% population growth, which about equals Holmes County.

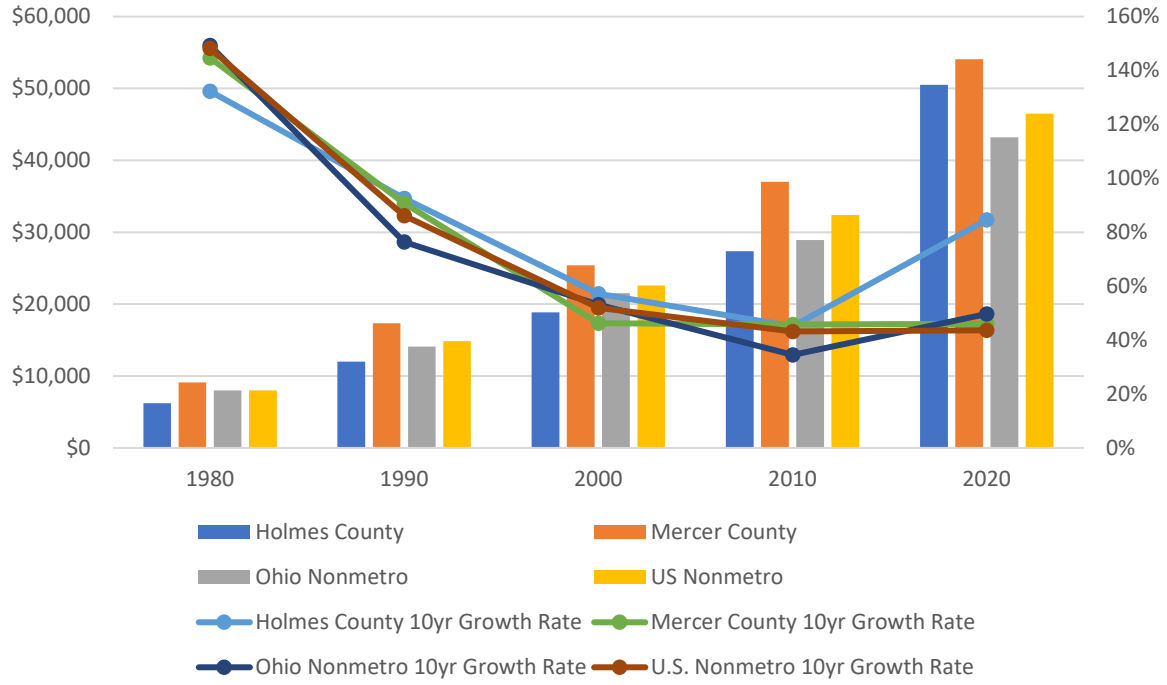
From 2020 to 2022, Mercer County lost about 0.4% of its population, while Holmes County gained 0.4%. Yet, disruption due to the pandemic makes it difficult to draw medium- to long-term post-pandemic conclusions.

Table 1. Population Dynamics in Holmes, Mercer, and Selected Locations

	County	2010-2022 Population Growth Rate (%)	2010 Population	MSA/CSA
Panel A.	Holmes	4.5	42,475	
	Ashland	-2.1	53,295	Ashland MSA & Mansfield-Ashland-Bucyrus CSA
	Coshocton	-1.0	36,940	
	Knox	3.4	61,096	Columbus CSA
	Stark	-0.7	375,463	Canton MSA & Cleveland-Akron CSA
	Tuscarawas	-0.7	92,577	Cleveland-Akron CSA
	Average of counties surrounding or nearby Holmes	0.1		
Panel B.	Mercer	3.7	40,819	
	Allen	-4.9	106,345	Lima MSA
	Auglaize	0.0	45,932	Lima CSA
	Darke	-2.7	52,982	Dayton CSA
	Shelby	-3.4	49,343	Dayton CSA
	Van Wert	0.3	28,697	Lima CSA
	Average of counties surrounding or nearby Mercer	-1.9		
Panel C.	Nonmetro Ohio	-2.7	2,352,674	
	Nonmetro U.S.	-0.5	45,659,646	

Notes: Column 3 reports the 2010 county's population. County name is bolded if its population is larger than Holmes County in Panel A or Mercer County in Panel B.
Source: Bureau of Economic Analysis.

Figure 6. Per-Capita Personal Income



Source: Bureau of Economic Analysis.

Figure 6 shows that Holmes and Mercer County population growth was accompanied by per-capita personal income growth that roughly tracked the U.S. and Ohio nonmetro average over the 1980-2010 period. One exception is Holmes County's remarkable performance between 2010-2020, in which its per-capita personal income grew nearly double that of the others.

Holmes County's recent per-capita income growth is even more noteworthy when considering that the equivalent of 8% of Holmes County's personal income is on *net leaving the county* because so many more workers commute *into* Holmes County vs. Holmes County residents who commute outside the county (see **Figure 11**).[20] [The income of cross-county commuters is counted in the workers' county of residence.] The degree of in-commuting into Holmes is especially surprising, given that most rural counties have more out-commuters to (usually) urban locations than the reverse. For example, a more typical rural-America case is that about 11% of Mercer County's personal income comes from having more workers out-commute than workers in-commute (see **Figure 11**). The high share of Holmes County earnings paid to outside-commuters also illustrates how Holmes

[20] Holmes County's job-creation success means it has to "import" workers. 33% of workers employed in the county commute from elsewhere (BLS).

County is an important "economic engine" for its entire region.[21]

Between 2010-2020, Holmes County's all-industry and manufacturing labor-productivity growth rates were approximately two-thirds to double those of the state and nation.[22] Their productivity growth is especially striking, given that it is a low-skilled workforce, which runs counter to the normal narrative that a skilled workforce is a must for productivity growth.[23]

In **Table 2**, Columns 1 and 3 present the ratio of Holmes County per-capita income relative to the Ohio and U.S. nonmetro averages. Holmes County's relative per-capita income increased from 77% of the U.S. nonmetro average in 1980 to 108% by 2020—with most of the growth occurring after 2010. Examining columns 2 and 4, over the 1980-2020 span, Mercer County's per-capita personal income consistently exceeded other Ohio and U.S. rural areas, with it being about 15% above the U.S. rural average over the period.

Table 2. Per-Capita Personal Income Relative to Ohio and U.S. Nonmetro Area

Year	Holmes / Ohio Nonmetro (%)	Mercer / Ohio Nonmetro (%)	Holmes / US Nonmetro (%)	Mercer / US Nonmetro (%)
1980	77.6	113.4	77.9	113.9
1990	84.9	123.0	80.6	116.8
2000	87.5	118.0	83.4	112.4
2010	94.5	128.0	84.5	114.4
2020	116.8	125.2	108.6	116.3

Source: Bureau of Economic Analysis.

We now investigate the factors that drive the success of these two counties. We begin by examining various socioeconomic and geographic features to identify the unique aspects underlying their performance.

[21] To illustrate how Holmes County's prosperity became a magnet for in-commuters, as late as 1981, nearly 11% of its personal income was due to its number of out-commuters being much larger than the number of workers who commute to Holmes County. By 1992, the county was sending away more earnings to neighboring counties because of the growing in-commuting to fill Holmes County jobs. This trend continued to increase.

[22] Using BEA data, 2010-2021 all-industry labor productivity growth as proxied by the 2010-2021 percent change in nominal GDP minus the corresponding percent change in total employment shows that nominal GDP per worker grew by 69% in Holmes County vs. 37% in the U.S. and 41.4% in Ohio. The corresponding figures for manufacturing and Holmes County's mainstay were 69%, 41.2% and 32.9% for the U.S. and Ohio, respectively. Mercer County's corresponding all-industry and manufacturing labor-productivity growth rates (GDP per worker) were 57.4% and 46%, respectively, which are also notably higher than those of the state and nation, but not to the extent of Holmes County.

[23] In 2021, Holmes County's population share over 25-years old without a high school degree was four times greater than the Ohio nonmetro average (see Appendix Table 1-1).

Socioeconomic & Geographic Attributes

Key Findings

- **Holmes County's natural amenities exceed the Ohio average, contributing to an increase in its QoL.**
- **Mercer County's natural-amenity ranking is near the Ohio average, but popular features such as Grand Lake St. Marys provide recreational activities and enhance QoL.**
- **Holmes and Mercer Counties are very heavily manufacturing-dependent, which has proven to be a surprising "engine of growth," given the challenges typically faced by other manufacturing-dependent locales.**
- **Holmes County's manufacturing-led growth boosted growth in sectors such as construction, retail, and wholesale trade.**
- **Mercer County experienced rapid growth in transportation and warehousing employment.**
- **Mercer County boasts an above-average educational attainment, suggesting a relatively skilled workforce.**
- **Holmes County's educational attainment is rather low, further indicating how it overachieves, given the usually large structural disadvantages.**
- **Holmes County faces challenges regarding housing affordability.**

Table 3. Socioeconomic Characteristics of Selected Areas

	Holmes County	Mercer County	Ohio Nonmetro
Population	44,271	42,309	24,940
Persons under 5 years	8.4%	7.6%	5.6%
Persons under 18 years	30.5%	26.3%	22.4%
Persons 65 years and over	14.1%	19.0%	20.4%
Bachelor's degree or higher	10.5%	20.4%	15.4%
Households with Internet subscription	60.4%	89.1%	78.4%
Median household income	$69,454	$68,692	$53,311
% Persons in poverty	10.1%	7.3%	14.0%
Median value of owner-occupied housing units	$231,200	$169,500	$118,825
Median gross rent	$700	$679	$683
Housing unit vacancy rate	8.8%	10.8%	10.7%
Building permits in 2021	4	85	32

Note: See Appendix Tables 1-1 and 1-2 for details.
Source: U.S. Census Bureau, American Community Survey 2017-2021.

Holmes County

According to the 2017-2021 ACS 5-year estimates, Holmes County's median household income was $69,454 vs. $53,311 in nonmetro Ohio (See **Table 3**). The county's relatively high income is striking considering its disadvantages. For example, only 10% of its population holds a bachelor's degree or higher (Ohio nonmetro avg.= 14.0%). However, in an interview, Mark Leininger, Executive Director of the Holmes County Economic Development Council, explained that Amish human capital is not measured by credentials, but by learning-by-doing and self-education. He added that large Amish families further contribute to labor-force availability and access to capital, fostering a robust entrepreneurial culture.

Only 60% of its households have a broadband Internet subscription, compared to 78% in nonmetro Ohio. The county's population shares aged 0-17 indicate that it is considerable "younger" than the nonmetro Ohio average. U.S. Census Bureau data show that the county's poverty rate was 10.1%, which is 4 percentage points below the Ohio nonmetro average. Holmes County's low poverty rate is especially laudable, given its high child population share, as families with children tend to have disproportionately higher poverty rates.

Housing Conditions:

The availability of low-cost housing is an attractive factor for many rural areas. However, steady growth and hilly terrain that limit land supply means that this does not apply to Holmes County. The 2017-2021 ACS estimates that Holmes County's median value of owner-occupied housing units was $231,200, considerably higher than the Ohio nonmetro average $118,825, and slightly lower than the U.S. average of $244,900. The offsetting factor is Holmes County's median gross rent of $700, which is less than the U.S. median $1,163. However, relatively low rental rates compared to housing values give Holmes developers less of an incentive to build multifamily units. Thus, it is unsurprising that the Holmes County home-vacancy rate was only 8.8%, or below the Ohio and U.S. nonmetro averages of 10.7% and 21.9%, respectively.[24] ACS data show that Holmes County exhibits less housing per person than the Ohio nonmetropolitan average (see footnote 41 below).

[24] Computed as the share of vacant units among total housing units using 2015-2019 5-year ACS.

Mark Leininger said that the housing availability problem is linked to the large in-commuting of workers, where low workforce availability is constraining the growth of their small manufacturers. Holmes county's 2022 unemployment rate was relatively low at 2.8% versus the Ohio nonmetro average of 4.0% and 3.6% in the rural U.S. (BLS, Local Area Unemployment Statistics). The county's low unemployment rate and high labor force participation means that there are few options to squeeze out more county residents to work in its labor tight firms. The county's housing shortage and affordability concerns mean that expanding local firms cannot rely on the in-migration of new residents to meet their labor needs. Rather, to expand the workforce, local employers must attract commuters from nearby counties. Of course, the aforementioned transportation difficulties mean that it will be increasingly challenging to attract outside commuters on congested roads, meaning that higher wages would be necessary to attract outside commuters.

Natural Amenities:

A large body of research suggests that natural attributes have been among the largest factors affecting US migration patterns since the 1950s, if not before (e.g., McGranahan, 1998; Rappaport, 2008). Rural counties with more natural amenities and recreational opportunities attract older and younger residents, retirees, vacationers, and second homeowners. The highest-natural-amenity areas are found in mountain and coastal western counties, the upper Great Lakes, New England, and the Atlantic Coast region from Virginia to Florida (Johnson, 2012).

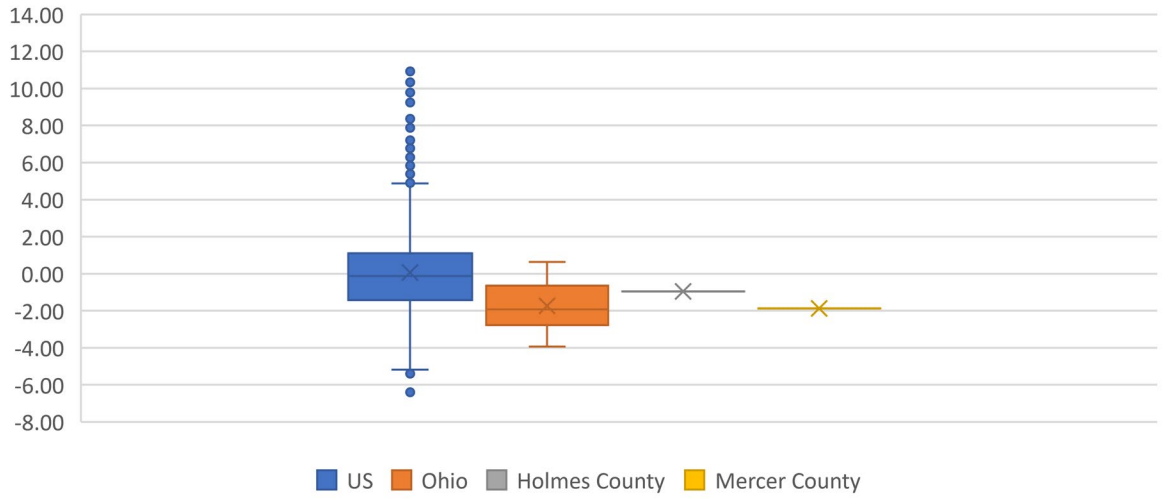
Holmes County's natural amenity advantage is its bucolic landscape of rolling hills interspersed with farmland. The USDA constructed a Natural Amenity Scale (1998) based on key factors, such as climate, mountains, and water area. **Figure 7** shows that Holmes County ranks near the median for the entire U.S. and near the 75th percentile for Ohio counties on the USDA scale, giving it a relative advantage over the other Ohio counties. The key negative amenity factor for Holmes County is its relatively cold cloudy winters and humid summers. Nonetheless, Holmes County's overall amenities are higher when considering its Amish culture as a key tourist draw.

Industry Composition and Economic Performance:

Holmes County's economy is quite manufacturing dependent. The county also has smaller but robust agricultural and tourism-related sectors. **Figure 9** shows that due to globalization

and the offshoring of U.S. manufacturing activities to low-wage/low-skilled countries, the manufacturing share of rural employment has declined since the 1970s, similar to that of urban employment.[25] This decline in the relative size of U.S. manufacturing places heavy strain on most manufacturing-dependent communities, especially in the manufacturing-intensive Midwest (e.g., hard-hit northeastern Ohio).

Figure 7. Natural Amenity Scale for Selected Locations



Notes:

1. The y-axis represents 'Natural Standardized Scores,' where a greater score indicates a higher Natural Amenity rank. The score is a composite of the six measures of the environmental qualities most people consider: warm winter, winter sun, temperate summer, summer humidity, topographic variation, and water area.
2. The boxplots for the U.S. and Ohio demonstrate the spread of the scores among counties in quartiles and outliers. For example, the lowest score among U.S. counties is -6.4, and the highest is 11.1. The median score in the U.S. is set to zero. The median score among Ohio counties stands at -1.9, with the 75th percentile at -0.6. Between these, Holmes County scores -0.9, and Mercer County scores -1.8.

Source: U.S. Department of Agriculture, the Natural Amenity Scale (USDA ERS - Natural Amenities Scale).

[25] U.S. manufacturing job growth considerably lagged total job growth, with the 2010-2021 U.S. overall and manufacturing job growth rates equaling 17.9% and 7.8%, or a 10 percentage-point gap. The analogous figures were 9.8% and 7.8% for Ohio—a 2-point gap. Yet, footnote 26 below reports a modest post-Great Recession rebound in *rural* U.S. and Ohio manufacturing job growth with manufacturing growth modestly exceeding overall job growth in the rural U.S. and Ohio (urban manufacturing growth greatly trails overall urban job growth).

Figure 8: Holmes County Manufacturer

Image Credit: Gus Chan/ The Plain Dealer. (© 2019 The Plain Dealer. All rights reserved. REPRINTED/USED with permission.)
Source: from Cleveland.com with permission.

Considering the national restructuring away from manufacturing, Holmes County is a rare case of achieving growth primarily from manufacturing (see **Figure 9**). In 2021, manufacturing accounted for 27.5% of total Holmes County employment vs. 17.3% for nonmetro Ohio and 10.6% for rural U.S. Remarkably, over the 2010-2021 period, BEA data show that their total employment, including proprietors, grew a sizzling 30.3%, led by 36.7% growth in manufacturing employment, far exceeding their peers.[26] In terms of GDP, manufacturing accounted for an outsized 32% of Holmes County GDP in 2021, 26% in nonmetro Ohio, and 16% in nonmetro U.S. (BEA Interactive Data Application). Arnie Oliver, Holmes County Planning Commission Director, explained that their manufacturing strength is from small-scaled firms in building supplies, stone products, furniture, and food processing.

[26] The corresponding 2010-2021 nonmetro U.S. total job growth and manufacturing job growth rates were 7.4% and 10.7%, respectively, whereas they were 8.5% and 12.7% for nonmetro Ohio.

Like the vast majority of rural Ohio and the U.S., Holmes County's real estate sector boomed, with employment rising by 115% between 2010 and 2021.[27] The county's general prosperity, especially in manufacturing, supported rapid growth in a host of sectors, such as construction, retail, and wholesale trade (2010-2021 job growth ranged between 44% and 56% in those three sectors).[28]

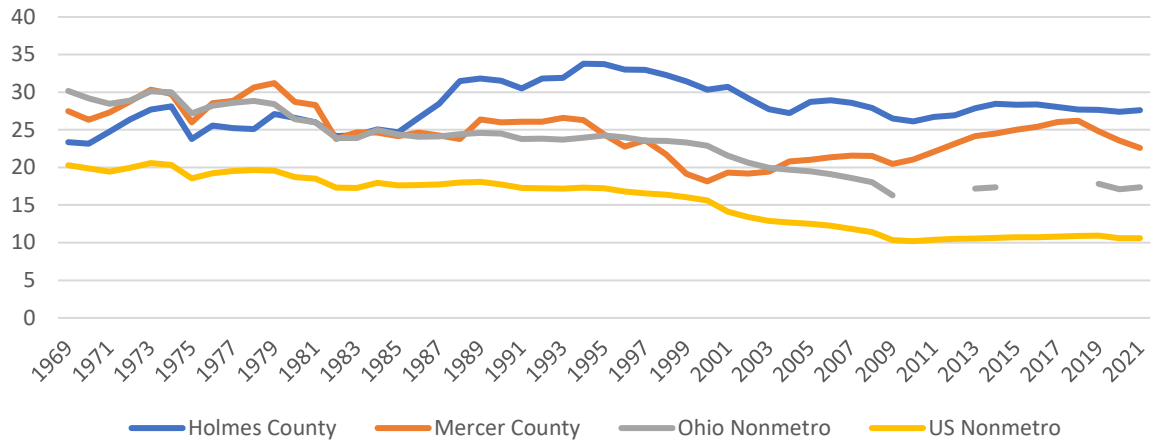
Holmes County's farm employment share is 6.6% (vs. 4.1% in nonmetro Ohio and 5.6% in nonmetro U.S.), illustrating the important role of agriculture in its economy. Its farm employment rose by 10.7% between 2010-2021, compared to a more modest 2.6% growth for nonmetro Ohio and a 2.6% decline for the rural U.S. In fact, Holmes County bucked the long-run trend of rapidly falling farm employment—i.e., it rose 4.1% between 1969-2022.[29] Mr. Oliver noted that agriculture's local role supports a balanced growth in the region. He stated that county policymakers adopt a hands-off attitude toward agriculture by avoiding zoning, which constrains farming practices. Local policy has not stressed farmland preservation, allowing landowners the right to make land use decisions for future development.

Holmes County's tourism-related service industries—arts, entertainment, recreation, accommodation, and food—account for 10.2% of its employment, boosting local economic industry diversity.[30] Like the vast majority of nonmetro America, Holmes County lost considerable state- and local- government employment after the Great Recession, falling by 4.7% between 2010-2021. To the extent that declining government employment reduces valued public services that facilitate higher firm productivity and/or greater household QoL, this is a worrisome development. Yet, the opposite applies if the loss of government jobs allows lower local taxes.

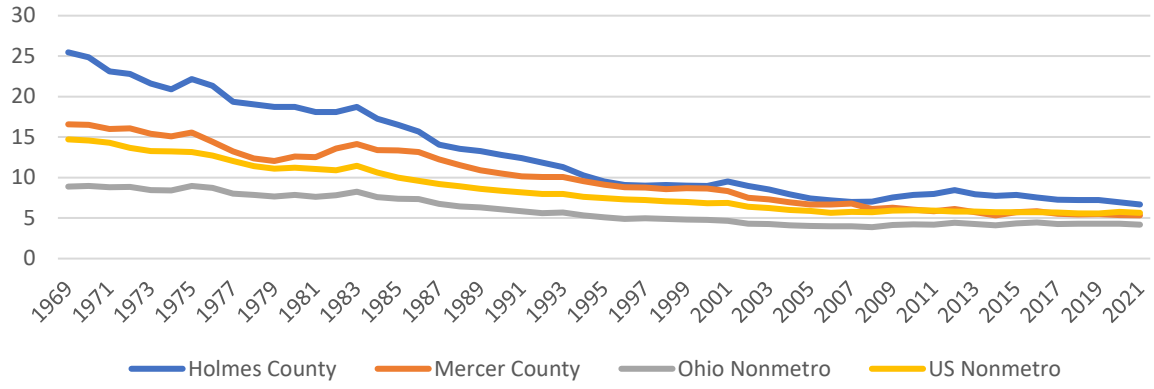
[27] 2010-2021 real-estate sector job growth averaged about 48% in both nonmetro Ohio and nonmetro U.S.
[28] For the nonmetro U.S., 2010-2021 job growth in real estate, retail, and wholesale trade ranged from 4% to 12% (nonmetro Ohio BEA job figures were suppressed for confidentiality reasons for two of these sectors).
[29] The corresponding 1969-2022 farm employment declines in nonmetro Ohio and nonmetro U.S. were -35% and -39%, respectively.
[30] According to the BEA data, Holmes County real GDP also experienced a significant 51% (Mercer 29.5%) increase between 2010 and 2021, substantially more than the respective Ohio and U.S. nonmetro growth rates of 13.3% and 3.4%, respectively. Over the same period, the GDP growth rate for Holmes County manufacturing was 58.3% (38.2% in Mercer), which is much higher than the 12.7% for the U.S. nonmetro area. Here, GDP (inflation) is deflated by the overall U.S. BEA GDP deflator.

Figure 9. Employment Share for Selected Industries

A. Manufacturing Share of Employment (%)



B. Farm Share of Employment (%)



Source: U.S. Bureau of Economic Analysis, Total full- and part-time employment by industry.

Mercer County

Mercer County has structural advantages over many other rural areas in Ohio. According to the 2017-2021 ACS, Mercer County's median household income was $68,692, compared to $53,311 in nonmetro Ohio (see **Table 3**). One reason is that roughly 20% of its population over the age of 25 holds a bachelor's degree or higher, or 5 percentage points more than the Ohio nonmetro average. 89% of Mercer households have a broadband Internet subscription (vs. 78.4% in nonmetro Ohio). U.S. Census Bureau data show that the county's poverty rate is 7.3%, or about one-half the nonmetro Ohio rate—i.e., the county's prosperity is widely shared across income classes.

Housing Conditions:

Mercer County has relatively affordable housing. According to the 2017-2021 ACS estimates, its median value of owner-occupied housing units was $169,500, near the $118,825 Ohio nonmetro median, but well below the nation's $244,900 median. The county's $679 median gross rent was lower than the Ohio nonmetro median $683 and the U.S. median of $1,163. The Federal Reserve Bank of Atlanta estimates that a median-income Mercer County household spends 22.6% of its annual income on total housing payments, which is relatively affordable compared to 30%, which is the U.S. Housing and Urban Department (HUD) threshold for high housing-cost burden.[31] Mercer County's 10.8% home vacancy rate and 0.425 housing units per person were near their Ohio nonmetro averages.[32]

Natural Amenities:

Mercer County's USDA natural-amenity rank is near the median of Ohio (see **Figure 7**). Its cold winters and flat topography are the greatest drawbacks.

Industry Composition and Economic Performance:

Mercer County's 2.7% unemployment rate in 2022 is about one percentage point below the overall rural Ohio and rural U.S. rates (BLS Local Area Unemployment Statistics). Like Holmes County, Mercer County has a manufacturing-dependent economy with key agricultural and service sectors. **Figure 9** shows that its manufacturing share of the total employment is 22.5%, which is well above the average for its peers.

Mercer County's manufacturing sector displayed significant resilience over the last quarter century. In 1999, Mercer County experienced the closure of major factories, such as Huffy Bike and New Idea Farm Equipment, resulting in its manufacturing employment share dropping from 26.0% in 1990 to 18.1% in 2000. However, its manufacturing sector made an impressive recovery, with its 2010 employment share rising to 21.0%, despite the severity of the Great Recession, with its share increasing further thereafter.

Like Holmes County, Mercer County's "economic engine" is manufacturing. While overall county job growth was 13.2% between 2010-2021, manufacturing employment grew a robust 21.4%, or nearly double the corresponding total-employment and

[31] Home Ownership Affordability Monitor- Federal Reserve Bank of Atlanta (atlantafed.org)
[32] Computed using 2021 U.S. Census Bureau data.

manufacturing-job growth rates in rural Ohio and U.S. [33,34] Presumably taking advantage of low-cost land and proximity to US 33 and I-75, jobs in its transportation and warehousing sector rose 32.5% between 2010-2021. Transportation and warehousing are likely to benefit from the expanding e-commerce sector and consumer demand shifting towards goods away from services during the pandemic.

Farm employment accounts for 5.3% of Mercer County's employment, exceeding nonmetro Ohio, but slightly trailing rural America. However, Mercer farm employment fell by just over 1% between 2010 and 2021, continuing a long-term trend (its farm employment declined nearly by one-half since 1969). Following the national rural trend, Mercer County's real estate job growth soared by 49% between 2010 and 2021.

[33] Manufacturing is also the largest Mercer County sector in terms of GDP. In 2021, it accounted for 29.3% of its total GDP, far exceeding the Ohio and U.S. nonmetro averages.

[34] The BEA data reveal that Mercer County's GDP increased by 29.5% between 2010 and 2021, far exceeding their rural Ohio (13.3%) and U.S. counterparts (3.4%).

Small-Business Led Growth

Key Findings

- **The economic growth of Holmes and Mercer Counties is primarily driven by small businesses.**
- **Both counties, especially Holmes, have strong social capital and connectivity that create networking opportunities, facilitating small-business development.**
- **Mercer County has successfully used a multi-million-dollar small-business grant program to enhance startups.**

Economists have studied the relative economic advantages of small and new businesses over large firms. Large firms often benefit from "economies-of-scale" allowing productivity to grow as firm size increases but increasingly suffer from inflexible and bureaucratic management. Existing large firms may also have older vintage capital (e.g., machinery, structures, and information technology) that puts them at a competitive disadvantage. Likewise, existing large firms may sell products that are "mature" or technologically lag with little future upside and, more likely, eventual decline. Finally, unlike typical small businesses, large firms may relocate to chase the next tax incentive or outsource and take advantage of low-cost labor in developing countries.

Small businesses often struggle to secure working capital and financing, primarily because of their limited access to credit (De and Nagaraj, 2014). Unlike larger enterprises, they find it challenging to obtain alternative financing options such as venture capital or access to financial markets for loans, bonds, and equity. Instead, they predominantly rely on traditional banking institutions. Yet, banks typically view financing startups and existing small firms as risky because they have few track records and/or collateral. Consequently, a lack of credit access significantly constrains the number of startups. Liquidity constraints underlie the critical role of small-business grant programs, such as those implemented in Mercer County or the innovative initiative seen in Centralia, Washington (Messenger and Partridge, 2023).

The lack of small-business political clouds can also be problematic. Whose requests will the state and local governments prioritize? A firm with, let's say, 3,000 employees, or one with only two? We have not even considered the role of sizable political contributions, extensive lobbying employed by large firms, or the fact that small business owners are

unlikely to have time to participate in legislative hearings or other related forums. It is no wonder that the tax and regulatory environment favors big over small ones, despite the greater local economic benefits from small businesses.

For example, consider the state and local tax incentives offered to attract and retain a specific firm. Virtually all such schemes are aimed at large firms for political-economy reasons just mentioned, as well as the simple notion that politicians obviously feel they receive more political credit for a firm-incentive package with thousands of jobs rather than dozens of packages to small businesses, each with only a handful of jobs.

Partridge et al. (2020) describes how incentive packages for large firms have unintentional consequences. One is they often lead to fewer public services or higher taxes for everyone else, reducing their economic competitiveness. Further, spillovers from the increased demand for labor by the new firm cause higher wages that crowd out the existing-business hiring. Likewise, incentivized firms have advantages over *existing local competitors* who pay full taxes, which cause further job losses among those competitors. Finally, unlike their smaller counterparts, large businesses tend to source inputs globally, whereas the ensuing profits also tend to leak out to the company's international owners, e.g., stockholders. With small businesses, the profits remain local, and these firms are more apt to buy inputs locally, given their small scale.

In one of the most concerning elements of tax-incentive schemes, Partridge et al. (2020) finds that large incentive packages crowd out a significant share of small-business startups—i.e., startups that would have opened will no longer open. Individual-firm tax/subsidy schemes incentivize the wrong players (big firms) for sustained local economic growth while placing the more valuable small-business ecosystem at a competitive disadvantage. Indeed, Partridge et al. (2020)'s findings are widespread, regardless of the subsidized firm's industry. That is, not only do large incentive packages generally crowd out startups, but they also crowd out startups in the subsidized industry's supply chain, who are also likely to be located elsewhere.

Research has also shown that higher concentrations of self-employed small-businesses positively impact productivity growth, income growth, job growth, and poverty reduction (e.g., Robbins et al., 2000; Holtz-Eakin and Kao, 2003; Acs and Armington, 2004; Bruce et al., 2007; Goetz et al., 2010; Rupashingha and Goetz, 2013; Faggian et al.,

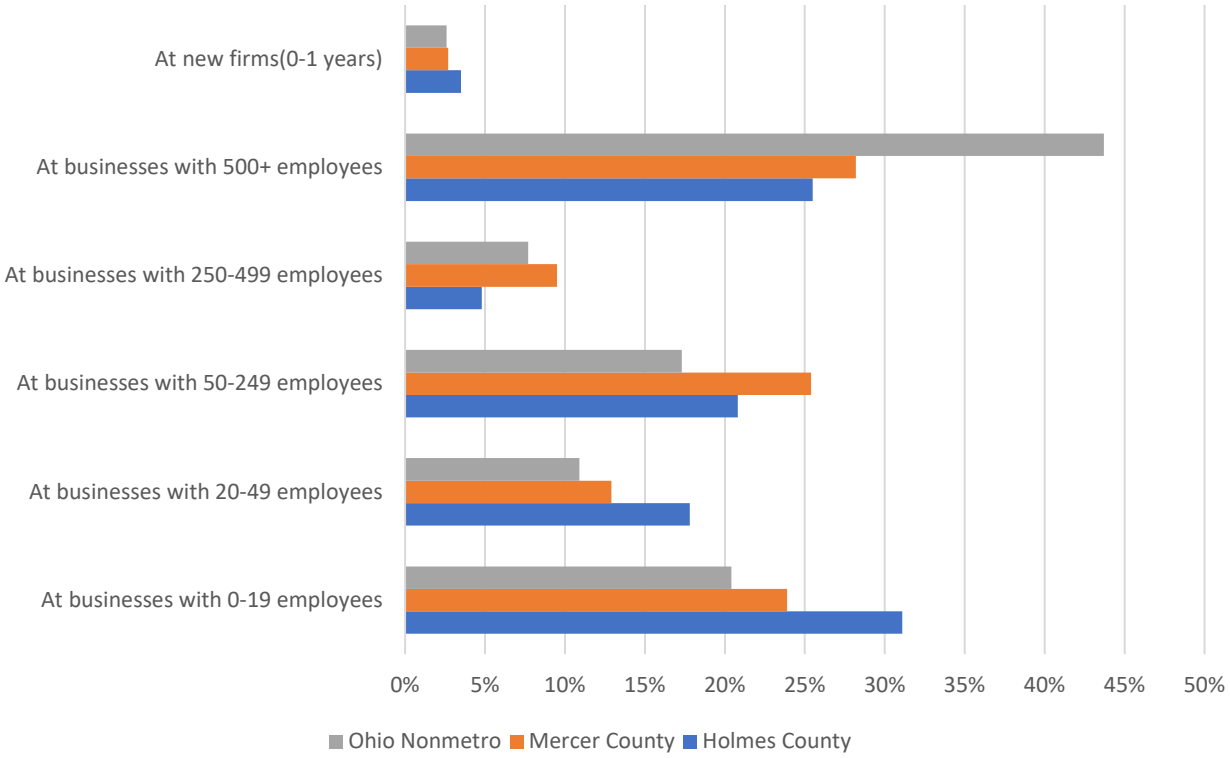
2017). [35] Small firms generate more patents per-capita, have less bureaucratic management, and are more agile in adapting new technologies (Dhawan, 2001). De and Nagaraj (2014) finds that small manufacturing firms in India invest more in R&D, have more liquidity, and are more productive. Small businesses are typically more adaptable to changing market conditions, resulting in economies that are more diverse and resilient.

The success of Holmes and Mercer Counties is closely linked to the advantages of having small-firm concentration. **Figure 10** presents the employment shares by firm size and age. Both Holmes and Mercer Counties have higher employment shares in new firms (0-1 years old) compared to the Ohio nonmetro average. The difference is even more striking for employment share by firm size. Businesses with 0-19 employees account for 31% of Holmes County's employment and 24% in Mercer County, which is significantly higher than the Ohio nonmetro average of 20%. Small firms as those with less than 50 employees, 50% of Holmes, and 37% of Mercer County's employment lies in small firms, much higher than the Ohio-nonmetro average of 31%.

Holmes County planner, Arnie Oliver described how Holmes County's local concentration of small firms led to economic resilience to large-scale shocks. For instance, he noted, "The county somewhat downplayed the COVID-19 Pandemic, which paradoxically saw a substantial increases in sales tax revenue," Similarly, Mercer County touts the advantages of focusing on small- to medium-sized businesses because they enhance local economic resilience and diversity. As Jared Ebbing—Mercer County Community/Economic Development Director, described, "Contrasted with the negative economic impact from the loss of big firms in the 1990s, which resulted in a significant increase in unemployment, small- to medium-businesses diverse in sectors including manufacturing, agriculture, food, and diverse businesses such as military-tent manufacturing helped [our] communities survive negative economic shocks including the outbreak of COVID-19."

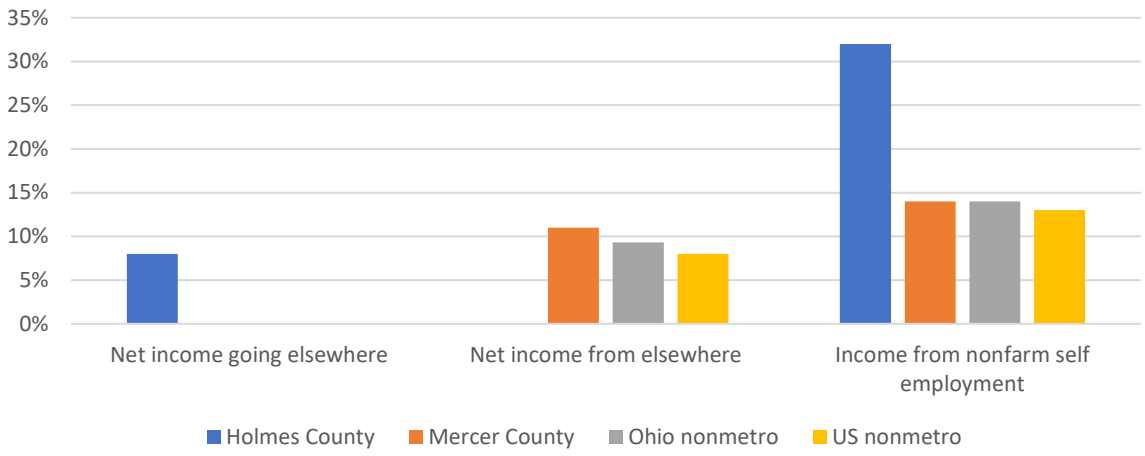
[35] Self-employed or proprietor firms are defined as having pass-through income from partnerships, LLCs, or being directly owned (i.e., they don't file corporate tax returns). *They can employ additional workers* or they can have no employees besides the owner(s)).

Figure 10. Employment Share by Firm Size & Age



Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics (LEHD) Quarterly Workforce Indicator (QWI) 2021.

Figure 11. Personal Income Flow, Average of 2018, 2019, 2021.



Notes:

1. Net-income going elsewhere is a loss of personal income due to significant in-commuting.
2. Net-income from elsewhere is a net gain of personal income due to out-commuter earnings.

Source: Bureau of Economic Analysis.

Figure 11 illustrates how Holmes County's *nonfarm-self-employment* income share is exceptionally high 32% compared to the nonmetro-Ohio and nonmetro-U.S. averages of 14% and 13%, respectively. Obviously, small-business success is a central factor driving its prosperity. Rural *nonfarm* entrepreneurial activities *also* provide farm households with higher *off-farm* income job opportunities that support the viability of a large share of farms (Thurik et al., 2008; Vogel, 2012).

Another key factor contributing to Holmes County's success is strong social capital and connectivity. Its large Amish community values hard work, self-sufficiency, and close-knit social networking, promoting this sense of community and facilitating a supportive and cooperative business environment where local entrepreneurs can rely on each other for resources, support, and advice. The county's prosperity and the close nature of the community have attracted residents. The positive connectiveness, networking, and trust effects associated with these social networks are labeled the "bridging" and "bonding" varieties of social capital. These favorable types of social-capital benefit the local business community by increasing productivity and local well-being. Besides helpful networking and information-exchange effects, enhanced trust and social cohesion, for instance, avoid the need for time-consuming and costly schemes, such as complex legal contracts and legal enforcement mechanisms for business transactions.[36]

Religious organizations play a crucial role in facilitating the growth of social capital that, in turn, supports small-business activities. **Figure 12** reports the religious-adherent population shares for Ohio, the U.S., and Holmes County. While adherents (believers) account for 68% of the Holmes County population, **Table 4** shows that approximately 42% of evangelical Protestant residents are Amish. This indicates that Holmes County has a significantly more religious culture than average. Rupasingha et al. (2000) and Isserman et al. (2009) argue that social capital is directly related to the frequency of associational activities, which encompasses involvement in religious organizations, participation in sports and recreational clubs, engagement in civic and social associations, affiliation with

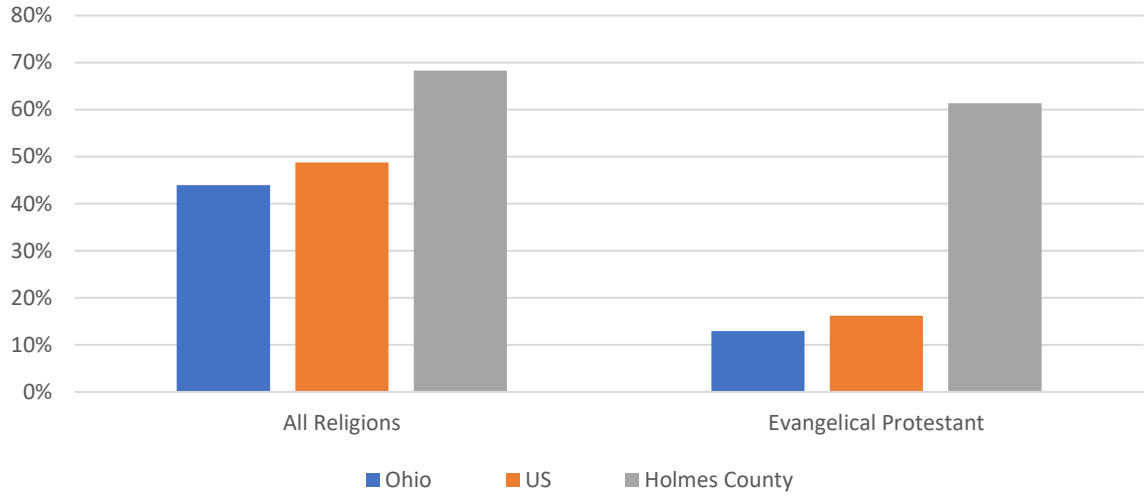
[36] Negative effects of social capital occur when large community subgroups such as religious organizations or other community associations create an overly restrictive community culture limiting personal behavior and excludes outsiders. Unless you are a long-time resident following community social norms, you feel unwelcome and will be prone to relocate. These "outsiders" are unable to provide useful input and can be shunned if they try to take community leadership positions. Without general support of the community, starting a business would be very challenging for outsiders. The community loses when outsiders are unable to achieve full potential and/or leave.

labor organizations and business associations, as well as membership in political organizations.

The role of social capital seems more critical in rural settings. In a small community, where everyone seems to know everyone, an association or group can more easily enforce local cultural norms. Moreover, the lack of anonymity in rural areas also makes enforcing social norms easier, meaning that a rural community's social capital has an outsized importance in affecting well-being. Thus, it is unsurprising that Isserman et al. (2009) finds that prosperous rural counties often have more religious adherents, enhanced civic engagement, more small manufacturing establishments and family farms, and greater self-employment income, all of which pretty much describe Holmes County. Deller et al. (2018) further finds that religious institutions positively impact small-business activities through enhanced networking opportunities.

The success of Holmes and Mercer Counties highlights the importance of prioritizing small businesses, building strong community connectivity, and leveraging unique locational advantages. By applying these lessons, other rural communities can revitalize their economies, attract new residents and businesses, and build a sustainable future for their communities.

Figure 12. Share of Religious Population for Selected Regions



Source : Social Explorer - Religion 2010 (RCMS).

Table 4. Evangelical Protestant Subgroups

	Ohio	US	Holmes
Amish groups, undifferentiated	0.5%	0.1%	41.8%
Beachy Amish Mennonite Churches	0.0%	0.0%	1.3%
Berea Amish Mennonite	0.0%	0.0%	0.4%
Conservative Mennonite Conference	0.0%	0.0%	3.0%
Mennonite Church USA	0.1%	0.0%	4.7%
Unaffiliated Conservative Amish-Mennonite	0.0%	0.0%	0.3%

Source : Social Explorer - Religion 2010 (RCMS).

Quality-of-Life and Human-Capital Oriented Growth

Key Findings

- **Both Holmes County's and Mercer County's local governments and associated nonprofits aim to deepen school-industry linkages for young adults and students to enhance their labor pool for current and future economic growth.**
- **Mercer County also stresses QoL approaches to attract and retain residents, especially those aimed at retaining young adults to augment their labor pool.**

Mercer County

Mercer County's economic development strategy actively promotes residents' Quality of Life (QoL) and builds workforce human-capital (or skills). This approach has apparently been successful. In 2011, Homan et al. (2014) conducted a web-based survey of registered voters aged 25-34 years to evaluate community contentment and its influence on their choice to remain or return to eight northwestern Ohio counties, including Mercer.[37] Mercer County stood out among these counties, scoring among the highest in perceived aspects such as "Income potential in the area," "Fun activities in the area," "Shared Values," "Positive Growth," "Employment Opportunity," and "Recreation Activities" (Homan et al., 2014)

Homan et al.'s (2014) survey illustrates how Mercer County successfully pursued human-capital/worker-training initiatives connecting available workers to local employers. Their endeavors include educating the local community about career opportunities, advertising the achievements of young local adults, establishing an online platform to showcase job prospects and the benefits of residing in the region, organizing career fairs to inform local youth and adults about the area's high-demand careers, and motivating workers, especially young adults, to acquire essential skills.

These efforts have reportedly successfully connected residents with information about careers and job opportunities to meet the requirements for skill acquisition and training. Its

[37] The eight counties surveyed were Auglaize, Hardin, Henry, Mercer, Paulding, Putnam, Van Wert, and Williams.

HomeTownOpportunity.com website is an access point for links to local resources, including realtors, schools, higher education, potential employers, business environment, and possible incentives for local firms. The network between anchor institutions such as Mercer Health, schools including the Wright State's Regional Campus, and active community services is also described as key to local growth. Jared Ebbing, Mercer County Community/Economic-Development Director, described that the local career-training center, TriStar Career Compact, near the Wright State University-Lake Campus as a notable success.

Complementing their human-capital building efforts, Mercer County also employs a QoL-oriented approach to boost economic development. Mr. Ebbing explains that one key tenet of their development strategy focuses on providing "better amenities for residents such as parks, schools, and amenities designed to attract younger, educated individuals." Such efforts not only attract and retain residents for their future workforce, but by adding more residents, the local community gains critical mass to provide public services more efficiently and gain more size to attract a wider range of services to support local businesses.[38]

Economic research further supports the pivotal role of public schools in enhancing rural success as QoL factors. Marré and Rupasingha (2019) found that rural school quality played an important role in attracting new residents. Parents view high-quality public education for their children as a key community attribute. Considering all U.S. domestic migrants to rural counties between 2005 and 2009, they found that a 1% decrease in the high school dropout rate and a 1% increase in the share of student proficiency in reading and math increased the expected number of in-migrants by 1.4% and 1.8%, respectively. Hence, rather than only a workforce-training mechanism, quality public schools are an amenity that enhances local QoL. Moreover, the positive impact of public school quality on in-migration is stronger for remote nonmetro counties than for suburban or metro counties.

Mercer County's school quality appears to be stronger than that of the average nonmetro Ohio district. For example, the percentage of the population aged 25+ years who did not graduate from high school is 7.1%, much lower than the 11.9% Ohio nonmetro average (U.S. Census Bureau, 2021).

[38] Economists refer to the advantages that larger cities (or disadvantages faced by rural areas) have in economic development as agglomeration economies.

Holmes County

Holmes County has a similar hands-on approach toward education and workforce training. Holmes County planner, Arnie Oliver emphasizes one key area that the county focuses on is a “collaboration with high school students and potential opportunities for more career or technical training at local medical facilities.” Both he and Mark Leininger emphasize the significant contributions of the Amish community with their large families, entrepreneurial spirit, and cooperation.

Role of Federal, State, and Regional Governments to Support Local Economic Development

Key Findings

- **Higher-level governments should support local governments and their regions in creating a small-firm-friendly environment. The Centralia, Washington Model provides another good example.**
- **Invest in transportation and broadband infrastructure to improve rural accessibility.**
- **High shares of rural cross-county commuting indicate that economic activity spills across broader regions. Governments should support and incentivize collaborative efforts for regional economic development across counties.**
- **Support affordable rural housing initiatives to attract and retain households to ensure an adequate workforce for current and future economic growth.**

Arnie Oliver, Holmes County Planning Director, described to the authors how the county invests in creating an environment that encourages small-firm growth. This is achieved through low taxes, limited regulations, and provision of essential infrastructure and services. Additionally, the county implemented an enterprise zone program that offers a 10-year 50% tax abatement to incentivize business development, although this is not a key component of their strategy. Mr. Oliver noted that workforce availability, particularly for small manufacturers paying around $16 to $18 an hour, has constrained growth.

A successful Mercer County policy is its offering assistance to small/medium-sized businesses, including revolving loan programs, occasional property-tax abatements, and state capital loans. Jared Ebbing, the county's Community/Economic Development Director, described how they lent and provided grants equaling about $15 million for small business development, with no defaults in 13 years. In the concluding section, we describe the aggressive Centralia, Washington Model, which has successfully supported small-business development and turned around its lagging economy.

Workforce training is another area where governments play an important role. State

and federal governments also play an important role in providing funding, and perhaps just as important, in developing accepted standards for workplace certificates and apprenticeship programs that are widely recognized by employers and workers. It is unrealistic to expect a potential trainee to enroll in such programs, even an excellent one, if firms do not recognize their value in hiring and setting pay.

Local governments' efforts to cooperate with their neighbors can also play important roles—*and these efforts typically save money*. Jared Ebbing described how Mercer County shares public service provision with a nearby county, emphasizing a preference for small government and low taxes under the "community-development" banner. Public-service sharing across municipalities and counties provides economies-of-scale that typically reduce average costs and often improve quality.

Mr. Oliver commented that the state and federal governments should facilitate local economic development, but such efforts have largely fallen short. Federal programs such as the Appalachian Regional Commission (ARC) and the U.S. Department of Agriculture's Rural Development (USDA-RD) program have been minimally assessed in their case. In contrast, Mr. Oliver believes that state-level initiatives such as Jobs Ohio and the Appalachian Community grants may prove more effective.[39] Of course, with state efforts, less-populated rural areas have problems being heard. Mr. Ebbing similarly added that his experience with state and federal economic-development assistance programs is that there are often too many strings attached and lengthy delays.

Higher-level governments can support rural transportation needs. Moreover, as Genetin et al. (2022) describe, affordable, high-speed broadband is essential for basic business functions, education, and remote work. The federal government has recently increased subsidies for the construction and modernization of high-speed broadband. Yet, our concern is that such efforts are typically "one-offs" that end once policymakers lose interest. Genetin et al. (2022) describe how broadband construction is not one-off because the required speeds continue to grow, meaning that broadband needs to be constantly improved to meet these demands. Hence, subsidies to underserved areas must be ongoing to be effective. In addition, just having "access" to the high-speed Internet is insufficient if

[39] In defense of federal and ARC development programs, Holmes and Mercer Counties are victims of their own success. Federal and ARC funds are typically targeted at lagging areas that do not characterize these counties. On the other hand, one could argue that government investments in growing counties, such as Holmes and Mercer, have greater returns than investing in places with weak economic prospects.

it is unaffordable. Efforts to ensure adequate competition to maintain affordable prices are necessary and may require local governments and nonprofits to step up to provide their own local Internet service, as has been done in several communities, akin to other public utilities in water, electricity, etc.

Another area where higher-level governments can provide support is by incentivizing multi-county economic-development districts. The degree of cross-county commuting illustrates that economic activity spills over the county boundaries. An economic success in one county is a success for its neighbors because neighboring county residents also have access to more jobs through commuting.

One example is the ARC-incentivized local-area economic districts (LDD) that combine several counties for economic development planning. Another advantage of the ARC and its regional counterpart, the Delta Regional Authority (DRA), is their regional-broker role. The ARC or DRA through LDDs has the gravitas to bring disparate federal, state, and local governments together for regional solutions. Moreover, the ARC and the DRA can provide seed money or matching funds to get a regional project off the ground, which incentivizes normally opposing local actors to cooperate for their greater good. Finally, organizations such as the ARC and the DRA play an important role in capacity building. Many rural counties lack the resources or personnel to (say) apply for state and federal grants, given their complexity. Cooperative efforts of the ARC and DRA with their personnel can help fill that role.

Another positive feature of federal regional development programs is their low costs. For instance, in fiscal year 2021, the ARC was appropriated $180 million dollars for a region of 26.3 residents, or only $6.84 per-capita.[40] Morin and Partridge (2021) show that regional economic development commissions, such as the DRA and ARC, can have an outsized influence on benefits that exceed costs by many fold.

The lack of affordable housing of sufficient quality is a challenge for both Holmes and Mercer Counties, as well as for much of rural America. Mr. Oliver commented that since about 2000, Holmes County has been a net-importer of workers, which he partially attributed to the lack of local housing availability. Natural population growth and skyrocketing land prices, particularly in farming areas, have contributed to this upward

[40] The DRA has even less funding. In federal fiscal-year 2021, $30 million was appropriated for the authority's 10 million residents, or $3 per-capita.

trend. Mr. Ebbing also added that a “Housing shortage is a challenge in Mercer County.” Indeed, Mercer County has less housing-stock per-person than the Ohio nonmetro average.[41]

Some of the rural housing shortages are related to supply constraints. Given the low historical growth in many rural areas, speculative-housing projects may be risky. Rural developers may experience higher costs because their projects tend to be smaller, which means that builders cannot take advantage of economies-of-scale to maintain low costs, whereas transportation costs from urban suppliers add to costs. Rural construction workers may be in short supply. Furthermore, low rural rents provide less incentive for developers to build multifamily housing. Finally, the hilly landscape of Holmes County further constrains the land supply for new housing.

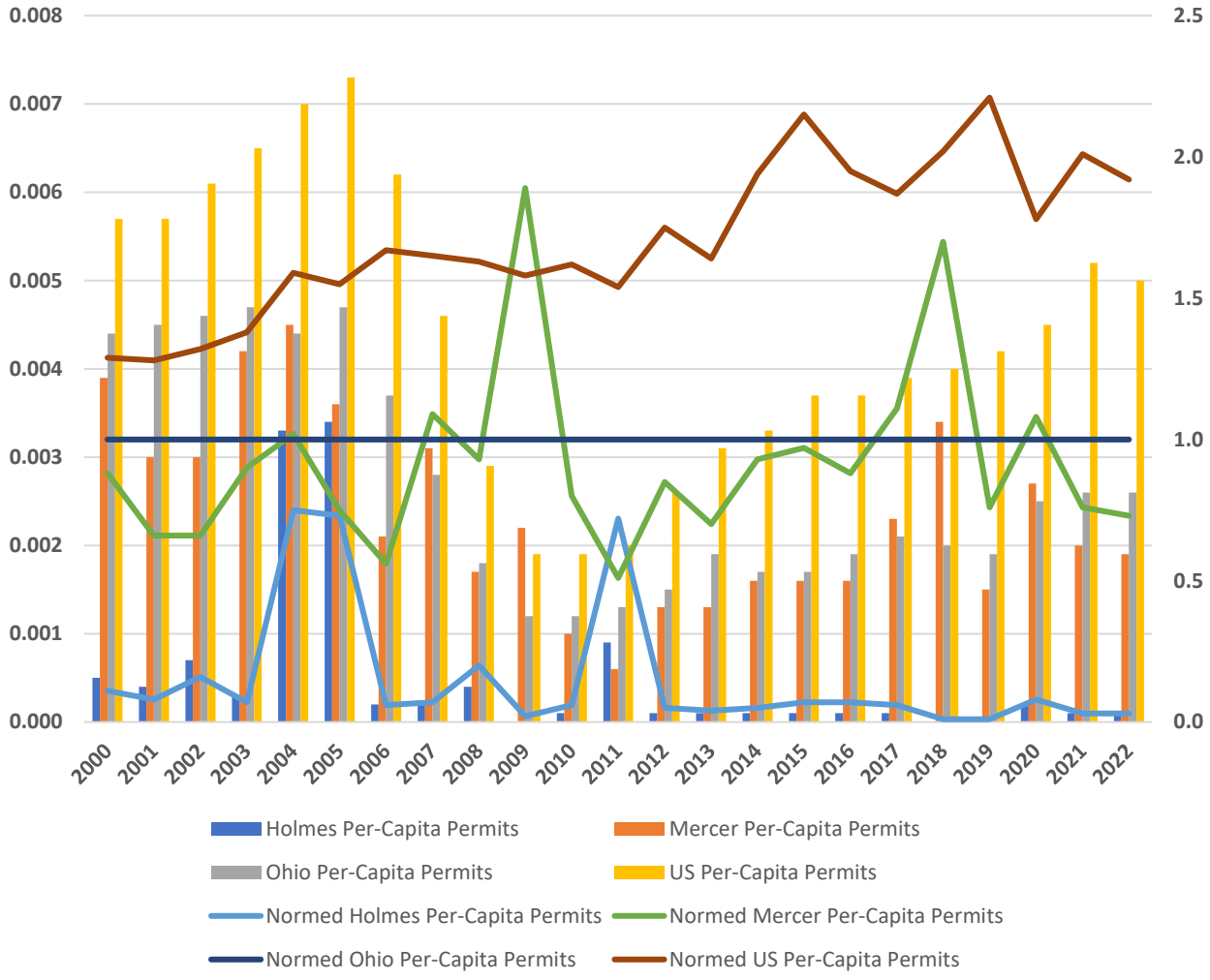
Figure 13 reports the building-permit data showing how housing supply is constrained in Holmes and Mercer Counties. In 2022, Holmes County had 0.0001 permits per person, equivalent to 0.03 when normalized by the level of per-capita Ohio permits – i.e., Holmes County had 0.03 (or 3%) per-capita permits compared to the state average. Similarly, Mercer County had 0.0019 building permits per-capita, equivalent to 0.73 (or 73%) of the per-capita building permits compared to the Ohio average. These figures are even more telling when noting that Ohio building permits per-capita are barely above one-half the U.S. average.

Housing supply limitations appeared to increase housing prices more in Mercer County. **Figure 14** illustrates the changes in housing prices in Holmes County, Mercer County, and overall for Ohio normalized to 2000 price levels. Between 2000 and 2022, housing prices increased by 94.5%, 76%, and 82% for Mercer, Holmes and Ohio, respectively.

The housing shortage in Holmes County meant that its workforce demands had to be increasingly met by outside commuters. **Figure 15** shows that 20% of employed Holmes residents work elsewhere, whereas 33% of the workers employed in the county live elsewhere. The need for outside workers was less acute in Mercer County—i.e., 31% of employed Mercer County residents work outside the county, while 28% of the workers employed in the county live elsewhere.

[41] Holmes and Mercer County per-capita housing units equaled 0.33 and 0.43 in 2021, vs the 0.45 nonmetro Ohio average.

Figure 13. Per-Capita Building Permits for Selected Regions

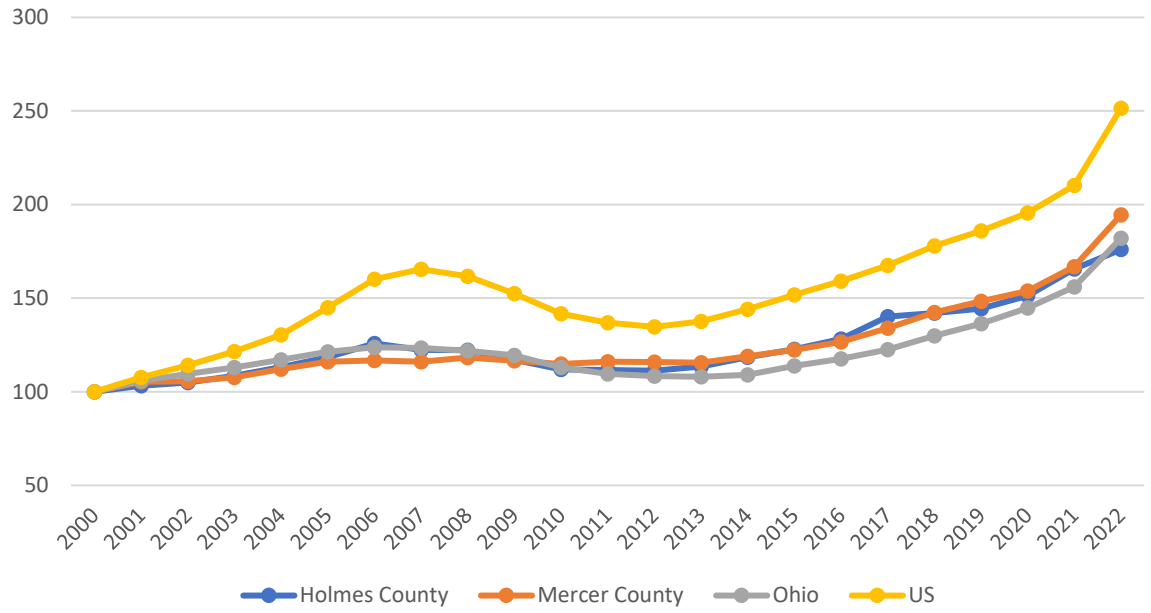


Notes:

1. Per-Capita Permits = Building Permits / Resident Population.
2. Normed Per-Capita Permits = Per-Capita County Permits / Per-Capita Ohio Permits.

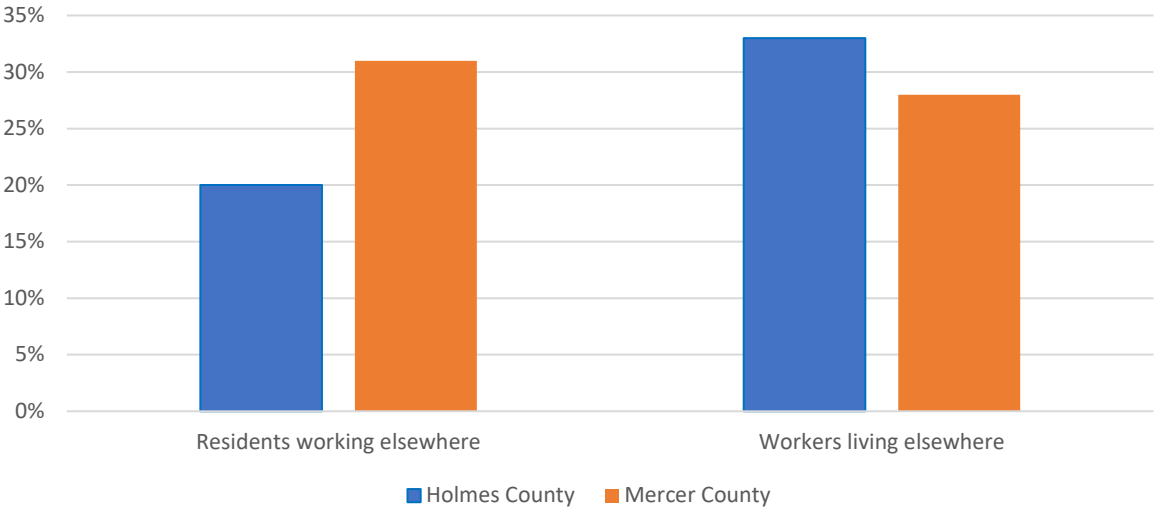
Source: New Private Housing Structures Authorized by Building Permits, Federal Reserve Bank of St. Louis FRED.

Figure 14. House Price Index for Selected Areas: 2000 to 2022



Note: Each year's price is normalized by dividing by the 2000 price level.
Source: All-Transactions House Price Index, Federal Reserve Bank of St. Louis FRED.

Figure 15. Commuter Percentage for Employed Residents and Workers



Note:

1. (Employed local) residents working elsewhere = 100 × [The number of the county's employed residents commuting to work in other counties / Total number of employed county residents.]
2. Workers living elsewhere = 100 × [The number of the county's workers living in other counties / Total number of workers in the county.]

Source: U.S. Census Bureau, 2016-2020 5-Year American Community Survey.

Policy Suggestions and Conclusion

Much of rural America has faced economic-development challenges in the last century, suffering population loss and weak local economies. Two exceptions are Holmes and Mercer Counties in Ohio. Both exceed the average growth for other rural Ohio counties, and they exceed the growth of their neighboring counties. What lessons can other rural communities learn from the successes of Holmes and Mercer Counties?

(i) Small Business Development

To overcome the structural economic disadvantages faced by rural communities compared with their urban counterparts, many attempts have been made to attract big businesses with tax incentives and subsidies. We discussed the numerous unintended consequences of these tax-incentive schemes. Thus, it is unsurprising that these policies often do not yield expected benefits. Rather, to successfully develop rural economies, local leaders are well versed in following the examples of Holmes and Mercer Counties. They utilize home-grown assets to build an entrepreneurial small business-driven economy that locally sources inputs, locally retains profits, and is more resilient to adverse shocks, such as recessions, because it does not put all its eggs in the basket of one large employer. These economies are diversified across many firms in multiple industries. Community leaders and policymakers routinely pay lip service to the importance of small businesses, but what are the best ways to provide support?

There are simple approaches that are widely accepted in small-business development. Yet, they are necessary but not sufficient alone. First, communities can employ the use of mentors and incubators for new owners as well as favorable tax and regulatory policy. Smaller rural communities may not be large enough to support an incubator but assigning mentors for new entrepreneurs/owners can be helpful in providing advice about identifying markets, finding financing, hiring workers, and perhaps most importantly, giving new owners a sense of whether their business idea is even feasible to weed out failures—i.e., capacity building for startups. Similarly, deepening networks across the business community enables new owners to acquire similar information.

In the previous section, we discussed how Mercer and Holmes Counties use different ways to expand local networking. Rural communities could also use training centers and

technical/community colleges to provide short courses for new business owners, such as in accounting, taxes, and database management to track sales, cash flow, and inventory to teach how to start a business **and** keep it operating.

Tax and regulatory policy can play some role with existing small businesses, but the evidence is weak in that tax breaks aimed at small businesses actually encourage startups. For example, beginning in 2013, Ohio implemented a series of tax cuts aimed at stimulating startups and small businesses in general. Since 2016, 100% of pass-through income up to $250,000 is deductible from state income taxes, with a 3% rate cap on pass-through income over $250,000. Yet, there is little evidence that these reductions spurred overall job growth or even small-firm job-growth, and there is also little evidence that these tax breaks stimulated more job growth in young Ohio firms.[42]

In another widely cited case, between 2012 and 2017, Kansas implemented an extensive tax reduction, including a 100% deduction for pass-through income, aimed at spurring growth in startups, jobs, and GDP. However, analysis by the Center for Budget and Policy Priorities (CBPP) and others found no evidence that Kansas's tax cuts spurred the desired outcomes. Kansas greatly lagged the U.S. in all three measures, as well as generally trailing their neighboring states.

These results are not surprising. An Endeavor Insight survey of owners of 150 fastest growing U.S. firms found that these owners focused on local QoL and personal connections in selecting their firm's location. Furthermore, the largest location-specific factor for these owners was the availability of talent, with a strong emphasis on high-skilled workers. Of course, this requires state and local governments to invest in education and training programs that run counter to simply cutting taxes. Only 5% of these owners cited taxes as an important factor in determining their business locations, whereas only 2% cited the regulatory environment as important.

[42] As noted above, the vast majority of U.S. of **net** job growth is due to small-businesses, especially young firms which are disproportionately small firms. However, using U.S. Census Bureau data, there is no apparent trend in Ohio's overall job growth due to young firms after the state introduced a generous tax break primarily aimed at small businesses. In 2011 and 2012, the two years before Ohio had a pass-through income-tax deduction, Ohio's (net) average annual job growth due to firms under 3 years old ("young firms") trailed the corresponding U.S. rate by 0.41 percentage points, rising to 0.57 percentage points in 2013 and 2014 when Ohio began a 50% income deduction on the first $250,000 of pass-through income. In 2015, Ohio raised its pass-through income deduction to 75% for the first $250,000 of pass-through income, further increasing generosity to a 100% deduction in 2016 with a cap 3% tax rate on pass-through income exceeding $250,000, which remains in place today. Yet, average annual job growth due to Ohio's young firms trailed the U.S. rate by 0. 47 percentage points in 2015-2016. In the 2017-2019 pre-Covid Pandemic period, Ohio trailed the U.S. by an even greater 0.53 percentage points before falling to 0.35 percentage points in 2020 and 2021 pandemic period.

For existing small business, nonetheless, owners are especially stressed for time. Regulations requiring significant time demands in filling out forms or in managing regulatory visits can be more challenging than taxes because a day, by definition, is fixed at 24 hours. Unlike large businesses, there is no large legal department handling such requests. Government efforts to streamline the time-compliance costs of their regulatory regime would be welcomed. At a related point, the new small-business permitting processes should be streamlined and timely. In general, government regulatory time delays can prove costly to businesses and should be minimized.

As noted above, shortfalls in startup and working capital are often the biggest obstacles facing potential startups or existing small businesses. With banks as the primary source of loans for startups and small businesses, the lack of a track record or proven business model, as well as little collateral, means banks typically view these entities as risky prospects. These liquidity constraints are even more pressing for entrepreneurs from low-income backgrounds without family resources to borrow, and disproportionately apply to minorities.[43] Thus, excellent business ideas never see the light of the day, hurting overall productivity and economic growth. In Holmes County, Amish families and extended families can prove to be sources of capital, but this option is usually not readily available elsewhere.

Mercer County has successfully offered some $15 million grants and loans to small businesses over the last decade or so. When spread out over time, the amount Mercer County spends on this program is just over $1 million annually. Larger efforts are required to move the economic dial. One successful example is the Centralia, Washington Model described in Box 3.[44]

[43] The U.S. Small Business Administration (SBA) offers loan guarantees to presumably reduce risk to facilitate lending, but they only partially solve liquidity problems faced by small businesses. The most popular SBA loan is (7a), which is flexible in terms of how funds can be used. Depending on loan type (7a), the maximum loan is $5 million. For (7a) loans under $150,000, the SBA guarantees 85% and guarantee 75% for larger loans. Yet, the SBA and bank require unlimited personal guarantee from owners with over a 20% stake, and other owners may be required to offer personal guarantees. The loans typically require collateral and/or down payment of 10%. They also require a guarantee fee of 0.25% to 3.75%, which increases with loan size. Other fees include a 3% to 5% packaging fee (up to $30,000) charged by the bank along with closing fees and a $2,500 flat fee. For loans under $50,000, the interest rate is prime plus 6.5% to prime plus 3% if over $350,000. With the January 2024 prime at 8.5%, interest rates on SBA-backed loans range from 11.5% to 15%, which, with fees, hardly puts small businesses on equal footing as large firms. Finally, the application process is complex and requires owner(s) to demonstrate that they have exhausted all the other loan options. The underwriting process usually favors firms that have operated for lengthy periods, which is of little use to startups. Furthermore, the time for the loan's funds to be dispersed can be months.

[44] Messenger and Partridge's (2023) provide a detailed economic evaluation of the Centralia model. A summary of this study can be found here.

BOX 4: The Centralia, Washington Development Model

Centralia, Washington, is approximately halfway between Seattle and Portland. Home to about 20,000 residents, this city is located in Lewis County, which boasts a broader population of 85,000 residents. Centralia's economy is heavily dependent on natural resource extraction—timber, coal, farming, and downstream industries, such as sawmills and a coal powerplant. Like most natural-resource dependent economies, the economy has suffered over the last few decades. For instance, Centralia faced devastating floods in 2007, and a 2006 coal mine closure left several hundred relatively well-paid workers out of work. Local difficulties were exacerbated when a local power utility announced the closing of their large Centralia coal power plant beginning in 2020. The local economy faced a vicious downward cycle, as negative expectations led to out-migration, and businesses began to disinvest. Why start a new business or invest in existing businesses under such circumstances?

The Centralia Model began in 2016 when the power plant owner agreed to fund a $55 million economic-transition program in lieu of not spending significantly more to upgrade their plant to meet environmental standards. Some funding supports worker training and small-business supports as described above, as well as funding clean-energy initiatives aimed at giving Centralia a first-mover advantage. However, much of the funding went to an energy-efficiency program, which has proven to be very successful. The innovative part of the program supports small businesses and the local economy on the demand side—i.e., creating demand for local small businesses.

Centralia's energy-efficiency provided grants to homeowners and businesses to enhance their energy efficiency with new windows, insulation, new heat pumps, etc. One could easily see that such a program expanded to include housing rehabilitation to mitigate housing shortages. The advantages are that only small businesses would be interested in such work, and outside contractors would have little incentive to take on such small projects. Moreover, such work is quite labor-intensive, increasing the local labor demand.

The results are rather remarkable. Almost immediately, the local economy improved with the construction sector leading the way. The improving economy reversed the negative expectations. Now people are migrating to Lewis County for work. Local businesses began to invest and there is growth in new startups, especially in

construction. Construction employment soared as the sector took on the role of the local "engine of growth." The local growth was reinforced as other advantages of small-business-led development took hold. Overall, population and employment rose considerably faster than the U.S. average, while local-resident personal income also rose much more than the U.S. average. Growing personal income centered on the growth of small-business proprietor income (especially in construction), as expected if the energy-efficiency program was the underlying cause.

Another positive feature is the rapid growth in wage earnings, as the benefits spread beyond small-business owners. In sum, Centralia has transitioned from a declining local economy to one experiencing prosperity that far exceeds rural American norms. Once again, the Centralia experience illustrates how small-business-led development can generate sustainable growth and reverse the fortunes of declining locations. Moreover, the $55 million investment seems very small in comparison to the large tax incentives aimed at attractting big businesses. The benefits remain local, and earnings do not leak to outsiders, such as stockholders.

(ii) Human-Capital and Skills Development

Virtually all rural communities wisely stress workforce availability complemented with skill upgrading, although some communities do it better than others, whereas other communities lack the resources to do so. The best practice is for governments, schools, community colleges, and nonprofits to team together to provide training and skills to meet employers' current needs, as well as provide base knowledge to be capable of adjusting to new technologies, future business practices, or work in different industries.

It is well recognized that workforce-training initiatives need to augment traditional education for training. For instance, skill-certificate programs such as being a welder or carpenter are needed, as well as internship and apprentice programs to provide hands-on experience. However, states and the federal government need to provide funding as well as some type of state and/or national standards, such that certificates and apprenticeships are widely accepted.

Businesses themselves need to step-up rather than naively hope that public schools will fill this void. Schools have literally infinite demands in teaching American history and civics, reading, mathematics, science, physical education, building social skills, etc. All with

limited financial resources over just (roughly) 7 hours a day, 180 days per year. Sure, K-12 schools and community/technical colleges can improve their workforce-skill building, but there is a need to be realistic. There is only so much schools can do. Businesses themselves need to step up to provide formal and effective informal training that incorporates mentoring and learning-by-doing. The fact is that if a firm is paying a worker (say) $20 an hour, it is unrealistic to expect this employee to possess a wide range of skills or experience, or they would likely be in a higher-paying job.

Job training is surely valuable, but firms and potential workers need a way to match the business workforce needs with willing, qualified workers. In this regard, Mercer County shows the value of building networking between local community anchors such as local governments, nonprofits, hospitals, and schools within the entire business community, as well as, importantly, the potential workforce, including students. Without awareness of local job opportunities or the means to acquire necessary skills, rural communities risk losing their most valuable local talent pool: young adults. Holmes County also has excellent job networking for key actors, but their way is more through the tight community surrounding its Amish residents. Mercer County's online platform connecting residents to the job/companies that need them, HometownOpportunity.com, and its career training center, TriStar Carrer Compact, demonstrates how to replicate these positive features of Holmes County without relying on something that is impossible to replicate, such as everyone adopting Amish culture.

(iii) Enhancing Local Quality-of-Life (QoL)

Rural economic development policies have long stressed attracting big businesses with expensive incentives that are often ineffective. Policies should shift their focus towards enhancing local QoL to achieve a more appropriate balance. Good jobs will not lead to strong economic development if people do not want to live in that location. QoL was widely discussed in the previous section. So, we will be brief.

Better local QoL attracts new residents or retains existing ones interested in rural lifestyles and/or low housing costs. Young adults are a difficult group to attract or retain in rural areas, given their desire for higher-paying jobs, nightlife and urban amenities, higher education, and the wish to meet people with common interests. By contrast, migration data show that adults in their 30s begin returning to rural areas, especially relatively new families with children seeking a slower lifestyle, less crime, or return to where they grew up. Thus,

pondering the needs of families led by parents in their 30s is a good way to begin considering appropriate QoL initiatives.

One clear priority for parents is the quality of public schools. In the last section, we discussed research showing how public-school quality attracts and retains residents. Schools should not simply be thought of as a workforce-training endeavor. Similarly, parks, recreational opportunities, bike lanes, trails, green spaces, and a clean environment are other QoL factors that can be provided. Indeed, higher-skilled footloose workers and entrepreneurs can live anywhere. When deciding where to reside, they will almost certainly pick the place with a higher QoL, all else being equal.

(iv) Incentivizing Regional Economic Development Cooperation

Heavy cross-county rural commuting illustrates how rural-economic activity is not confined to local areas but occurs across broader regions. If one county succeeds in attracting new jobs, its victory is shared, as commuters in nearby counties gain new job opportunities. Rather than competing, cooperation in economic development allows all to benefit. Additionally, regional cooperation in public-service delivery promotes economies-of-scale, leading to cost reductions. State and federal governments should incentivize the formation of multi-county regional-economic-development districts that truly function for the entire region's prosperity—e.g., funding is tied to actual region-wide cooperation. The previous section provided further details.

Successful rural economic development is not typically the result of attracting outside firms to revitalize communities. Besides providing a very small share of jobs, outsiders have no inherent interest in revitalizing the community. Large companies are only interested in the community if it enhances their bottom line. Rather, successful development is much more the result of rural communities taking the lead by using their own assets. State and federal governments can facilitate these efforts with supportive policies, but without determined leadership from local residents, economic development efforts are more likely to fail. Hopefully, these success stories provide inspiration for rural communities as well as a roadmap for success.

References

Acs, Z., & Armington, C. (2004). Employment Growth and Entrepreneurial Activity in Cities. *Regional studies*, *38*(8), 911-927.

Bruce, D., Deskins, J. A., Hill, B., & Rork, J. C. (2007). Small Business and State Growth: An Econometric Investigation. *Washington, DC: US Small Business Administration, Report*, (292).

Bumgardner, M., Romig, R., & Luppold, W. (2008). The Amish Furniture Cluster in Ohio: Competitive Factors and Wood Use Estimates. In D. F. Jacobs & C. H. Michler (Eds.), *Proceedings, 16th Central Hardwood Forest Conference; 2008 April 8-9; West Lafayette, IN. Gen. Tech. Rep. NRS-P-24. Newtown Square, PA: US Department of Agriculture, Forest Service, Northern Research Station: 130-138. (Vol. 24).*

Caniglia, J. (2019). *Holmes County Breaks Model for economic success with old-world values, ingenuity*. Cleveland.com.

Carpenter, C.W. & Fannin, M. (2021). Back to the Future: Re-Incorporation of 'Metropolitan Character' in U.S. Core-Based Statistical Area Delineations. *Journal of Regional Analysis and Policy, 51(2),* 67-81.

Davis, J. C., Rupasingha, A., Cromartie, J., & Sanders, A. (2022)., *Rural America at a Glance: 2022 Edition*. U.S. Department of Agriculture.

De, P. K., & Nagaraj, P. (2014). Productivity and Firm Size in India. *Small Business Economics*, *42*, 891-907.

Deller, S. C., Conroy, T., & Markeson, B. (2018). Social Capital, Religion and Small Business Activity. *Journal of Economic Behavior & Organization*, *155*, 365-381.

Dhawan, R. (2001). Firm Size and Productivity Differential: Theory and Evidence from a Panel of US Firms. *Journal of economic behavior & organization*, *44*(3), 269-293.

Donnermeyer, J. (2012). *Estimate: A New Amish Community is Founded Every 3.5 Weeks in U.S.* Research and innovation communications.

Faggian, A., Partridge, M., & Malecki, E. J. (2017). Creating an Environment for Economic Growth: Creativity, Entrepreneurship or Human Capital?. *International Journal of Urban and Regional Research*, *41*(6), 997-1009.

Genetin, B., Messenger, N., Partridge, M., & Chung, S. H. (2022). Finding the Missing Dots: An Update on Ohio Broadband Policy. *Policy Brief. Swank Program in Rural-Urban Policy, The Ohio State University.*

Goetz, S. J., & Debertin, D. L. (1996). Rural Population Decline in the 1980s: Impacts of Farm Structure and Federal Farm Programs. *American Journal of Agricultural Economics*, *78*(3), 517-529.

Goetz, S. J., Partridge, M. D., Deller, S. C., & Fleming, D. A. (2010). Evaluating US Rural Entrepreneurship Policy. *Journal of Regional Analysis and policy*, *40* (1100-2016-89676).

Hamilton, B. H. (2000). Does Entrepreneurship Pay? An Empirical Analysis of the Returns to Self-employment. *Journal of Political economy*, *108*(3), 604-631.

Haltiwanger, J., Jarmin, R. S., & Miranda, J. (2013). Who Creates Jobs? Small versus Large versus Young. *Review of Economics and Statistics, 95*(2), 347-361.

Holtz-Eakin, D., & Kao, C. (2003). Entrepreneurship and Economic Growth: The Proof Is in the Productivity. *Syracuse University Center for Policy Research Working Paper*, (50).

Homan, G., Hedrick, J., Dick, J, & Light, M. (2014). How Young Adults Perceive Their Rural Ohio Communities. *Journal of Rural and Community Development*, 9(2), 1-13.

Hurst, C. E., & McConnell., D. L. (2010). *An Amish Paradox: Diversity and Change in the World's Largest Amish Community*. Baltimore: Johns Hopkins University Press.

Isserman, A. M., Feser, E., & Warren, D. E. (2009). Why Some Rural Places Prosper and Others Do Not. *International Regional Science Review, Vol 32, Number 3*.

Johnson, K. M. (2012). *Rural Demographic Change in the New Century: Slower Growth, Increased Diversity*. The Carsey School of Public Policy at the Scholars' Repository, 159.

Johnson, K. M. (2022). *Rural America Lost Population Over the Past Decade for the First Time in History*. The Carsey School of Public Policy at the Scholars' Repository, 445.

Kraybill, D. B. (2001). *The Riddle of Amish Culture.* Baltimore: Johns Hopkins University Press.

Komarek, T. M. & Loveridge, S. (2013). Too Big? Too Small? Just Right? An Empirical Perspective on Local Firm Size Distribution and Economic Growth in U.S. Counties and High-Poverty Rural Regions. *Economic Development Quarterly, Vol 28, Issue 1.*

Komarek, T. M. & Loveridge, S. (2015). Firm Sizes and Economic Development: Estimating Long-term Effects on US County Growth, 1990-2000. *Journal of Regional Science*, *Vol 55, Issue 2*.

Low, S. A. (2017). *Rural Manufacturing Survival and Its Role in the Rural Economy*. U.S. Department of Agriculture; Economic Research Service. No. 1490-2017-3200.

Lowery, S. & Noble, A.G. (2000). The changing occupational structure of the Amish of the

Holmes County, Ohio, settlement. *The Great Lakes Geographer, 7(1),* 26-37.

Marré, A. (2020). Rural Population Loss and Strategies for Recovery. *Econ Focus, (1Q),* 27-30.

Marré, A. W. & Rupasingha, A. (2019). School Quality and Rural In-migration: Can Better Rural Schools Attract New Residents? *Journal of Regional Science*, *Volume 60, Issue 1.*

McGranahan, D. A. (1999). *Natural Amenities Drive Rural Population Change*. U.S. Department of Agriculture, Economic Research Service. Agriculture Economic Report 33955.

Messenger, N. & Partridge, M. D. (2023). *A Bigger-Bang Approach to Economic Development: An Application to Rural Appalachian Ohio Energy Boomtowns.* Swank Program in Rural-Urban Policy Summary Report.

Moledina, A. M., McConnell, D. L., Sugars, S. A. & Conner, B.R. (2014). Amish Economic Transformations: New Forms of Income and Wealth Distribution in a Traditionally "Flat" Community. *Journal of Amish and Plain Anabaptist Studies, Volume 2, Issue 1.*

Morin, T. & Partridge, M. D. (2021). The Economic Impact of Small Regional Commissions: Evidence from the Delta Regional Authority. *Economic Development Quar*terly, *(41)* 22-39.

Nolt, S. M. (1992). *A History of the Amish*. Intercourse, PA: Good Books.

Neumark, D., Wall, B. & Zhang, J. (2011). Do Small Businesses Create More Jobs? New Evidence for the United States from the National Establishment Time Series. *Review of Economics and Statistics*, *93(1),* 16-29.

Overcash, C. L. & Pfeiffer J. J. (2014). Surface Water Quality and Ecosystem Restoration: Grand Lake St. Marys – A case study. *Water Environment Federation, Volume 2014, Issue 5.*

Partridge, M. D. (2020). Rural America's Stagnant Economic Performance: What's the Role of Declining Dynamism. American Enterprise Institute.

Partridge, M.D., Tsvetkova, A., Schreiner, S. & Patrick, C. (2020). The Effects of State and Local Economic Incentives on Business Start-ups in the U.S.: County-level Evidence. *Economic Development Quarterly, (34),* 171-187.

Pipa, T. & Geismar, N. (2020). *Reimagining rural policy: Organizing federal assistance to maximize rural prosperity*. Center for Sustainable Development.

Rembert, M. H., Feng, B., & Partridge, M. D. (2017). *Connecting the Dots on Ohio's Broadband Policy.* Swank Program Policy Brief. Connecting the Dots on Ohio's Broadband Policy (osu.edu)

Rappaport, J. (2007). Moving to High Quality of Life. *FRB of Kansas City Working Paper*, (07-02).

Rappaport, J. (2008). Consumption Amenities and City Population Density. *Regional Science and Urban Economics*, *38*(6), 533-552.

Rappaport, J. (2018). The Faster Growth of Larger, Less Crowded Locations. *Federal Reserve Bank of Kansas City Economic Review.* https://ssrn.com/abstract=3318718

Robbins, D. K., Pantuosco, L. J., Parker, D. F., & Fuller, B. K. (2000). An Empirical Assessment of the Contribution of Small Business Employment to US State Economic Performance. *Small Business Economics*, *15*, 293-302.

Rupasingha, A., Goetz, S. J., & Freshwater, D. (2000). Social Capital and Economic Growth: a County-level Analysis. *Journal of Agricultural and Applied Economics*, *32*(3), 565-572.

Rupasingha, A. & Goetz, S.J. (2013). Self-employment and Local Economic Performance: Evidence from US counties. *Papers in Regional Science, 92*, 141-161.

Sablik, T. (2022). *Growing Rural American Through Startups*. Econ Focus.

Stephens, H. M., Partridge, M. D. & Faggian, A. (2013). Innovation, Entrepreneurship, and Economic Growth in Lagging Regions. *Journal of Regional Science*, *55(5),* 778-812.

Thurik, A. R., Carree, M. A., Van Stel, A. & Audretsch, D. B. (2008). Does Self-employment Reduce Unemployment? *Journal of Business Venturing*, *23*(6), 673-686.

Tiebout, C. M. (1956). A Pure Theory of Local Expenditures. *Journal of political economy*, *64*(5), 416-424.

Towne, S. E. (2019). A Lesson for all Rebels at Home: The Holmes County, Ohio, Rebellion of 1863 Revisited. *Ohio History, Volume 126, Number 2,* 5-37.

Troyer, H. (2022). The Varying Fertilities of the Amish Groups of Holmes County, Ohio. *The Journal of Plain Anabaptist Communities*, *3*(1), 54-64.

Tsvetkova, A., Partridge, M., & Betz, M. (2019). Self-employment Effects on Regional Growth: A Bigger Bang for a Buck?. *Small Business Economics*, *52*, 27-45.

Vogel, Stephen J., (2012*). Multi-Enterprising Farm Households: The Importance of Their Alternative Business Ventures in the Rural Economy*. U.S. Department of Agriculture; Economic Research Service; Economic Information Bulletin, No. 101.

Vodden, K., Perez, M. A., & Reid, B. (2023). Understanding Rural Development. In H. Mair (Eds.), *Handbook on Tourism and Rural Community Development* (pp. 41-60). Edward Elgar Publishing.

Weinstein, A. L., Hicks, M., & Wornell, E. (2023). An Aggregate Approach to Estimating Quality of Life in Micropolitan Areas. *The Annals of Regional Science*, *70*(2), 447-476.

Young Center for Anabaptist and Pietist Studies. (2021). *Twelve Largest Amish Settlements*. Elizabethtown College.

Appendix

Appendix Table 1. Summary Statistics for Holmes County & Ohio Nonmetro Counties

	Holmes County, Ohio	Ohio Nonmetro Counties
Population, July 1 2021	44,271	24,940
Population, Census, April 1, 2020	44,223	25,018
Persons under age 5, percent	8.40%	5.59%
Persons under age 18, percent	30.50%	22.40%
Persons > age 65, percent	14.10%	20.36%
Female persons, percent	49.50%	49.36%
White alone, percent	98.40%	96.17%
Black or African American alone, percent	0.40%	1.29%
American Indian and Alaska Native alone, percent	0.10%	0.41%
Asian alone, percent	0.30%	0.43%
Two or More Races, percent	0.70%	1.66%
Hispanic or Latino, percent	1.00%	2.58%
White alone, not Hispanic or Latino, percent	97.60%	93.98%
Foreign born persons, percent, 2017-2021	0.40%	0.98%
Housing units, July 1, 2021, (V2021)	14,578	11,239
Owner-occupied housing unit rate, 2017-2021	77.70%	76.28$
Median value of owner-occupied housing, 2017-2021	$231,200	118,825
Median selected monthly owner costs with a mortgage, 2017-2021	$1,348	$1,077
Median selected monthly owner costs-without a mortgage, 2017-2021	$455	$409
Median gross rent, 2017-2021	$700	$683
Building permits	4	32
Households, 2017-2021	13,200	9,792
Persons per household, 2017-2021	3.28	2.50
Living in same house 1 year ago, percent of persons over age 1, 2017-2021	92.20%	90.66%
Language other than English spoken at home, percent of persons > age 5, 2017-2021	49.50%	2.93%
Households with a computer, percent, 2017-2021	68.70%	86.59%
Households with a broadband Internet subscription, percent, 2017-2021	60.40%	78.41%
High school graduate or higher, percent of persons > age 25, 2017-2021	56.60%	88.18%
Bachelor's degree or higher, percent of persons > age 25, 2017-2021	10.50%	15.35%
With a disability < age 65, percent, 2017-2021	4.50%	12.64%
Persons without health insurance, < age 65, percent	28.40%	9.08%

In civilian labor force, total, percent of population > age 16, 2017-2021		65.00%	55.59%
In civilian labor force, female, percent of population > age 16, 2017-2021		49.80%	52.06%
Total accommodation and food services sales, 2017 per-capita		1,752	922
Total health care and social assistance receipts/revenue, 2017 per-capita		3,728	2,498
Total transportation and warehousing receipts/revenue, 2017, per-capita		3,391	2,173
Total retail sales, 2017 ($1,000)		643,361	214,443
Total retail sales per-capita, 2017		$14,652	$7,806
Median-household income (2021 $), 2017-2021		$69,454	$53,311
Per-capita income in past 12 months (2021 $), 2017-2021		$26,999	$27,862
Persons in poverty, percent		10.1%	14.0%
Total employer establishments, 2020		1,332	423
Total employment, 2020		18,805	6,052
Total annual payroll, 2020 per-capita		40,782	38,284
Total employment, percent change, 2010-2020 (BEA)		27.48%	2.69%
Total non-employer establishments, 2019 per-capita		0.06	16
All employer firms, Reference year 2017 per-capita		0.02	0.01

Source: U.S. Census Bureau

Appendix Table 2. Summary Statistics of Mercer County & Other Ohio Micropolitan Counties

	Mercer County, Ohio	Ohio Micropolitan Area Counties
Population Estimates, July 1 2021	42,309	57,958
Population, Census, April 1, 2020	42,528	58,182
Persons under 5 years, percent	7.60%	5.62%
Persons under 18 years, percent	26.30%	22.15%
Persons > 65 years, percent	19.00%	19.40%
Female persons, percent	49.30%	49.98%
White alone, percent	96.40%	94.33%
Black or African American alone, percent	0.50%	2.44%
American Indian and Alaska Native alone, percent	0.30%	0.36%
Asian alone, percent	0.60%	0.73%
Two or More Races, percent	1.30%	2.08%
Hispanic or Latino, percent	1.90%	3.19%
White alone, not Hispanic or Latino, percent	94.90%	91.64%
Foreign born persons, percent, 2017-2021	1.60%	1.45%
Housing units, July 1, 2021, (V2021)	18,013	26,162
Owner-occupied housing unit rate, 2017-2021	79.60%	72.27%
Median value of owner-occupied housing units, 2017-2021	$169,500	$134,413
Median selected monthly owner costs--with a mortgage, 2017-2021	$1,197	$1,134
Median selected monthly owner costs--without a mortgage, 2017-2021	$473	$443
Median gross rent, 2017-2021	$679	$745
Building permits, 2021	85	85
Households, 2017-2021	15,923	23,029
Persons per household, 2017-2021	2.61	2.45
Living in same house 1 year ago, percent of persons age > 1, 2017-2021	89.80%	87.68%
Language other than English spoken at home, percent of persons > age 5, 2017-2021	2.10%	3.91%
Households with a computer, percent, 2017-2021	92.10%	89.61%
Households with a broadband Internet subscription, percent, 2017-2021	89.10%	82.90%
High school graduate or higher, percent of persons age 25 years+, 2017-2021	92.90%	89.80%
Bachelor's degree or higher, percent of persons age 25 years+, 2017-2021	20.40%	18.98%
With a disability, < age 65 years, percent, 2017-2021	6.10%	11.52%
Persons without health insurance, < age 65, percent	7.50%	8.78%
In civilian labor force, total, percent of population age 16 years+, 2017-2021	69.30%	59.81%

In civilian labor force, female, percent of population age 16 years+, 2017-2021	65.60%	55.46%
Total accommodation and food services sales, 2017 per-capita	1,128	1,678
Total health care and social assistance receipts/revenue, 2017 per-capita	3,922	5,760
Total transportation and warehousing receipts/revenue, 2017, per-capita	5,555	2135
Total retail sales, 2017 ($1,000)	548,311	726,069
Total retail sales per-capita, 2017	$13,410	$12,432
Median-household income (2021 $), 2017-2021	$68,692	$56,517
Per-capita income in past 12 months (2021 $), 2017-2021	$32,528	$29,453
Persons in poverty, percent	7.30%	13.42%
Total employer establishments, 2020	1,027	1,132
Total employment, 2020	16,352	19,506
Total annual payroll, 2020 per-capita	40,589	41,531
Total employment, percent change, 2010-2020 (BEA)	13.59%	2.23%
Total non-employer establishments, 2019 per-capita	0.13	0.06
All employer firms, Reference year 2017 per-capita	0.03	0.02

Source: U.S. Census Bureau