

The Future of Work in Missouri: Rural-Urban Differences in Entrepreneurship

Sarah A. Low, PhD
University of Missouri

Austin Sanders, Graduate Research Assistant
University of Missouri

Mark C. White, PhD
University of Missouri

1. Introduction

Over the past decade, Missouri's growth—in terms of jobs, GDP, and population—has lagged the US average.¹ Given Missouri's sluggish economy, we might expect to see a commensurate decline in entrepreneurial activity in Missouri. In fact, this is not what we observed. While rates of entrepreneurship have declined nationally, Missouri—and especially rural Missouri—has had relatively high rates of entrepreneurship.²

The media has highlighted the role of self-employed workers in recent years. In metro areas this growth often stems from participants in the so-called gig-economy: Self-employed workers performing short-

term, on-demand jobs for clients or customers.³ In rural areas, however, growth in self-employment more often is attributed to a shift in the traditional industry mix away from large employers, e.g., manufacturers, and to the consequent absence of jobs leading to self-employment as a means to replace wage and salary job income.⁴

Missouri is a heterogeneous state with a wide array of large metro areas, many more small cities and towns, and a diverse array of rural areas ranging from croplands in North Central Missouri to remote mountainous areas in the Ozarks. We expect entrepreneurship to vary across Missouri due to this heterogeneity. We also expect it to vary because of different entrepreneurial ecosystems (i.e., cultural and technical support for entrepreneurship), and policies/programs across the state.

This paper aims to identify the trends and differences in entrepreneurship between Missouri's metropolitan and nonmetropolitan (rural) areas, to better inform policy intended to promote economic development through entrepreneurship. We examine three different entrepreneurship proxies across time, with a focus on how to best encourage rural entrepreneurship and its resilience going into the next business cycle. We also examine the geography of entrepreneurship in Mis-

Sarah A. Low is an Associate Professor of Regional Economics and Director, Extension's Regional Economic and Entrepreneurial Development program, University of Missouri.

Austin Sanders is a Graduate Research Assistant, Division of Applied Social Sciences, University of Missouri.

Mark C. White is an Associate Extension Professor and Interim Director, Institute of Public Policy, Truman School of Public Affairs, University of Missouri.

Funding for this study was made possible by the Hammond Institute's Center for Economics and the Environment, Lindenwood University.

¹ Between 2010 and 2018, Missouri's population grew 0.3 percent annually relative to the US rate of 0.7 percent (US Census Bureau Population and Housing Estimates Program); Missouri's employment grew 1.0 percent annually relative to the US rate of 1.7 percent (US Bureau of Labor Statistics Quarterly Census of Employment and Wages); and Missouri's State GDP

grew 0.6 percent annually relative to the US Rate of 2.2 percent (US Bureau of Economic Analysis).

² Employer establishment births, a proxy for entrepreneurship widely used in the academic literature because it represents business dynamism in a flow measure.

³ Nicholas Kacher and Stephan Weiler, "Inside the Rise of the Gig Economy," REDI Report (April 2017), accessed December 17, 2019, <https://redi.colostate.edu/wp-content/uploads/sites/50/2017/06/REDI-report-April-gig-economy.pdf>.

⁴ Low and Weiler (2012) find that after volatility in the wage and salary job market (e.g., a manufacturer closing) more self-employment and employer establishment births arise. Sarah A. Low and Stephan Weiler, "Employment Risk, Returns, and Entrepreneurship," *Economic Development Quarterly* 26, no. 3 (August 2012): 238–51, accessed November 18, 2019, <https://doi.org/10.1177/0891242412452445>.

souri and highlight areas where greater entrepreneurship may offer a sustainable path to greater economic development. This is important for policymakers to consider, because the “entrepreneurial” businesses in rural Missouri offer communities the goods and services often associated with increases in rural quality-of-life (e.g., café, grocery store, farmers’ market) and help maintain a vibrant sense of place in rural communities. It is this sense of place that is essential to retain other businesses in rural communities, a phenomenon known as place-making.

We begin our examination by discussing the three annual, county-level proxies of entrepreneurship used in our analysis. These are measures of self-employment (proprietorships), nonemployers (businesses with no paid employees and receipts greater than \$1,000 per year), and employer establishment dynamics (birth and death rates for businesses with paid employees). We delve into each to examine Missouri entrepreneurship in the context of wage and salary employment in the state. We then move to discuss the industry-mix of Missouri entrepreneurs; that is, the industries in which rural Missouri entrepreneurs are concentrated. We conclude with policy implications and discussion about possible next steps.

2. What do we know about entrepreneurship across the rural-urban continuum?

Prior work published in the Missouri Growth Project has characterized Missouri as a slow-growth state,

lagging the national average and many of its neighbors. The state also attracts few new residents and fewer talented, young and skilled professionals, which contributes to weak growth in economic output.⁵ What are some possible explanations? Its education system has been found lacking; its industry-mix is light on white-collar professionals and heavy on slow-growing blue collar industries like manufacturing and agriculture, which may be associated with sluggish economic growth; and labor force that lacks growth caused in part by net out-migration over the years are only part of the answer.⁶ Can another source of overall slow growth at the state level come from the population decline we see in rural Missouri, as the rural population ages, birth rates decline, and out-migration takes hold? We argue that such shrinkage suggests a different approach for economic development is needed for rural Missouri, one that is sustainable and entrepreneur-led rather than firm-recruitment-led.

Previous research suggests a strong correlation exists between entrepreneurship and long-term regional employment growth.⁷ Startups generate 20-33 percent of US gross job creation, and while they have a high rate of failure, the surviving firms still employ about 80 percent of the number of workers in year five as all startups did in year one.⁸ Entrepreneurship may be a more sustainable economic development strategy than alternatives like industrial recruitment, because entrepreneurs tend to locate in their home region—

⁵ Timothy J. Gronberg, Dennis W. Jansen, and Lori L. Taylor, “The State of the Missouri Economy and Workforce,” *Missouri Policy Journal* 6 (Spring 2018): 1-22, accessed November 18, 2019, <https://www.lindenwood.edu/files/resources/the-state-of-the-missouri-economy-and-workforce-mo-2.pdf>; Dean Stansel, “Labor Market Freedom and Economic Prosperity: How Does Missouri Compare?” *Missouri Policy Journal* 7 (Fall/Winter 2018): 12-27, accessed November 18, 2019, <https://www.lindenwood.edu/files/resources/labor-market-freedom-and-economic-prosperity.pdf>; Mark Tranel, “Missouri: Generation Transformation,” *Missouri Policy Journal* 8 (Spring/Summer 2019): 1-15, accessed November 18, 2019, <https://www.lindenwood.edu/files/resources/tranel-missouri-generation-transformation.pdf>; Rik W. Hafer, “Introduction by the Editor for this Issue,” *Missouri Policy Journal* 6 (Spring 2018), accessed November 18, 2019, <https://www.lindenwood.edu/academics/beyond-the-classroom/publications/missouri-policy-journal/num-6-fall-winter-2017-18/>.

⁶ Timothy Gronberg, Dennis W. Jansen, and Lori L. Taylor, “The State of the Missouri Economy and Workforce,” *Missouri*

Policy Journal 6 (Spring 2018): 1-22; Eric A. Hanushek, “Missouri’s Economic Future Lies with School Reform,” *Missouri Policy Journal* 6 (Spring 2018): 23-38; Mark Tranel, “Missouri: Generation Transformation,” *Missouri Policy Journal* 8 (Spring/Summer 2019): 1-15.

⁷ Zoltan J. Acs and Catherine Armington, “Endogenous Growth and Entrepreneurial Activity in Cities,” *Regional Studies* 38, no. 8 (2004): 911-27.

⁸ Ryan Decker, John Haltiwanger, Ron Jarmin, and Javier Miranda, “The Role of Entrepreneurship in US Job Creation and Economic Dynamism,” *Journal of Economic Perspectives* 28, no. 3 (2014): 3-24; Jacob Moore, “Colorado’s New Gig: Colorado Nonemployer Analysis,” REDI Report (August 2017), accessed December 17, 2019, <https://redi.colostate.edu/wp-content/uploads/sites/50/2017/02/REDI-Report-August-Colorados-New-Gig.pdf>; Jacob Moore, “‘We Know What We Are, but Know Not What We May Be’: Nonemployers and Future Employment Growth,” REDI Report (June 2018), accessed December 17, 2019, <https://redi.colostate.edu/wp-content/uploads/sites/50/2018/06/REDI-Report-June-2018.pdf>.

which is especially pertinent for *rural* economic development. Despite decades of empirical research pointing towards entrepreneurship as a more sustainable economic development strategy, many local and state governments are still laser-focused on recruitment, including in Missouri. We hope that in this study we can shed light on how developing entrepreneurial ecosystems, or cultural and technical support for entrepreneurs, in rural Missouri could benefit the overall economy.

Even if a region focuses on entrepreneurship as an economic development strategy, rural policymakers and practitioners must be careful to not *only* focus on so-called economic gardening: fostering only the growth of second-stage establishments (businesses with at least ten employees and sizeable annual revenue). Economic gardening is a worthwhile economic development tool, but when rural establishments get big they tend to outgrow the available human capital (education) and workers (people) that many rural areas can provide and in turn leave the area. As a result, economic and entrepreneurial development efforts in rural areas cannot ignore start-ups and the smallest of employer businesses that may never meet the minimum cutoffs for economic gardening. Even so, care must be taken to understand the heterogeneity of rural areas and the role that natural amenities play in rural economic growth.⁹

3. Data and Methods

Scholars have long argued over the best definition of entrepreneurship. Many different definitions exist because entrepreneurship is inherently a dynamic and complex phenomenon. In the absence of an agreed-upon definition, we follow accepted custom and proxy for entrepreneurship using three measures that are available annually at the county-level in the US. We use three different measures of entrepreneurship because doing so paints a more complete picture of entrepreneurship in rural Missouri than any one metric.

Our proxies for entrepreneurship are drawn from three publicly available sources: the US Bureau of Economic Analysis (BEA) nonfarm proprietorships,

the US Census Bureau's Statistics of US Businesses (SUSB) Establishment Dynamics, and the U.S. Census Bureau's Nonemployer Statistics (NES) data. The three different measures complement each other, helping us form a holistic picture of entrepreneurship. Together the three measures help us understand how entrepreneurship varies across Missouri's rural-urban continuum and help us understand how entrepreneurship could be used to boost economic activity in Missouri.

BEA's nonfarm proprietorship data gives employment (full time and part time) and income for nonfarm proprietors, as defined by Federal Income Tax Form 1040 Schedule C filers. Nonfarm proprietors include business owners, whether sole owners or partners, regardless of their number of employees or business age. Nonfarm proprietorship data are not particularly useful for predicting future economic development because these different business types vary so widely in their potential for innovative activity, employment growth, and income growth. These data can be useful, however, for gauging a region's entrepreneurial ecosystem. This is because factors such as local culture (e.g., acceptance of entrepreneurs and innovators), access to financial capital, and market access are likely to affect the self-employed differently. We use the BEA data to gauge how nonfarm proprietorships and associated earnings change across the urban-rural continuum. These data are available at the county level, annually, with some industry break-outs, and are based on administrative data, making them reliable and replicable.

The US Census Bureau's Statistics of US Businesses (SUSB) data focus exclusively on employer establishments. Data are available at the county level with some industry detail. SUSB data are often referred to as business dynamics data because they cover establishment dynamics (births, deaths, expansions, contractions) for a period that extends from the week of March 12th to the week of March 12th in the subsequent year. We focus on establishment birth rates, death rates, and churn rates (defined as the birth rate plus the death rate, which are both normalized by population), because these metrics show entrepreneurial

⁹ In their seminal article, Steven Deller and colleagues found that predictable relationships exist in US rural counties between amenities, quality of life, and local economic performance. Steven C. Deller, Tsung-Hsiu (Sue) Tsai, David W. Marcouiller,

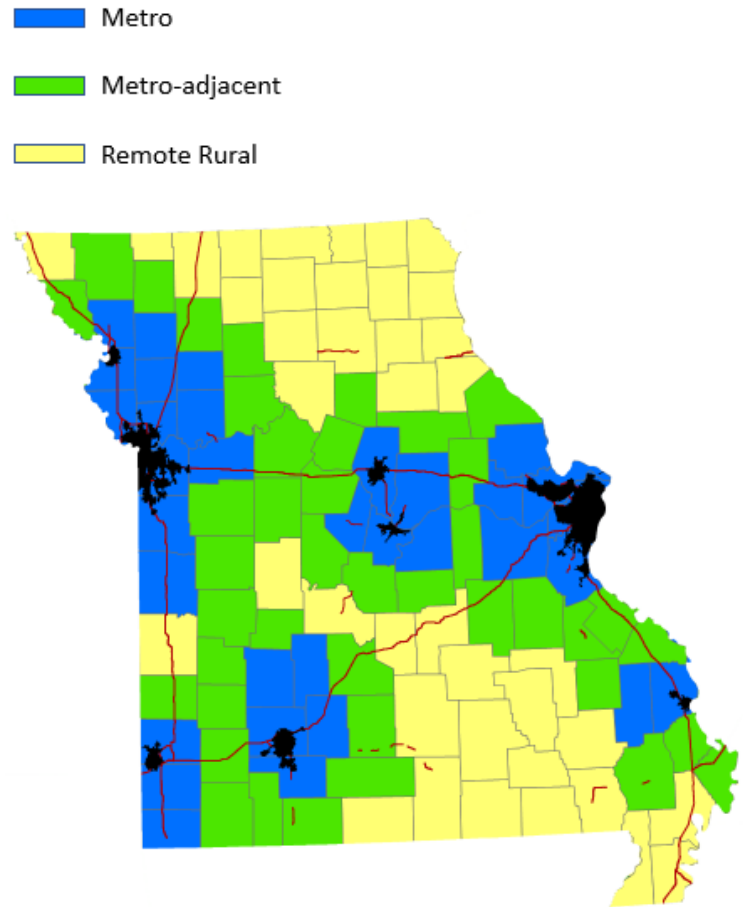
and Donald B.K. English, "The Role of Amenities and Quality of Life in Rural Economic Growth," *American Journal of Agricultural Economics* 83, no. 2 (May 2001): 352-75.

and establishment behavior under the economic conditions of a time and place. High establishment churn rates suggest that businesses and entrepreneurs are identifying and reacting to business opportunities and challenges, while low churn rates suggests that they aren't reacting to opportunities or that all the opportunities are already being exploited.

The US Census Bureau's Nonemployer Statistics (NES) contain data on businesses with no paid employees. The data are based upon Federal income tax returns for nonemployer establishments (or proprietorships) with receipts over \$1,000, which are subject to Federal income taxes. Receipts are summed and made publicly available by industry and county, enabling us to examine receipts and assess the average value of these nonemployer proprietorships. We use these data to examine nonemployer trends relative to total employment and to calculate location quotients by industry to see which nonemployer industries are concentrated in Missouri relative to the nation and metro, metro-adjacent, and remote rural areas of Missouri.¹⁰ To avoid disclosing potentially personally identifiable information, the US Census Bureau may withhold data cells or inject "noise" into the receipts data, most commonly in counties with few nonemployers (i.e., low population, rural counties). This means that our calculations of trends in remote rural county types are likely to have more noise than our metro county calculations. This suggests that care must be taken when interpreting data for small groups.

To examine trends along the rural-urban continuum, we classify Missouri's counties into three categories based on their urban connectivity, *metropolitan* (metro), nonmetro but *metro-adjacent* (i.e., nonmetropolitan and adjacent to a metropolitan county), and *remote rural* counties (i.e., nonmetro and not adjacent to a metro).¹¹ We also use the term nonmetro to mean the metro-adjacent and the remote rural counties; nonmetro is the opposite of metro. Figure 1 shows

Figure 1. Missouri Metro, Metro-adjacent, and Remote Rural Counties



Source: USDA Economic Research Service Rural-Urban Continuum Codes, 2013

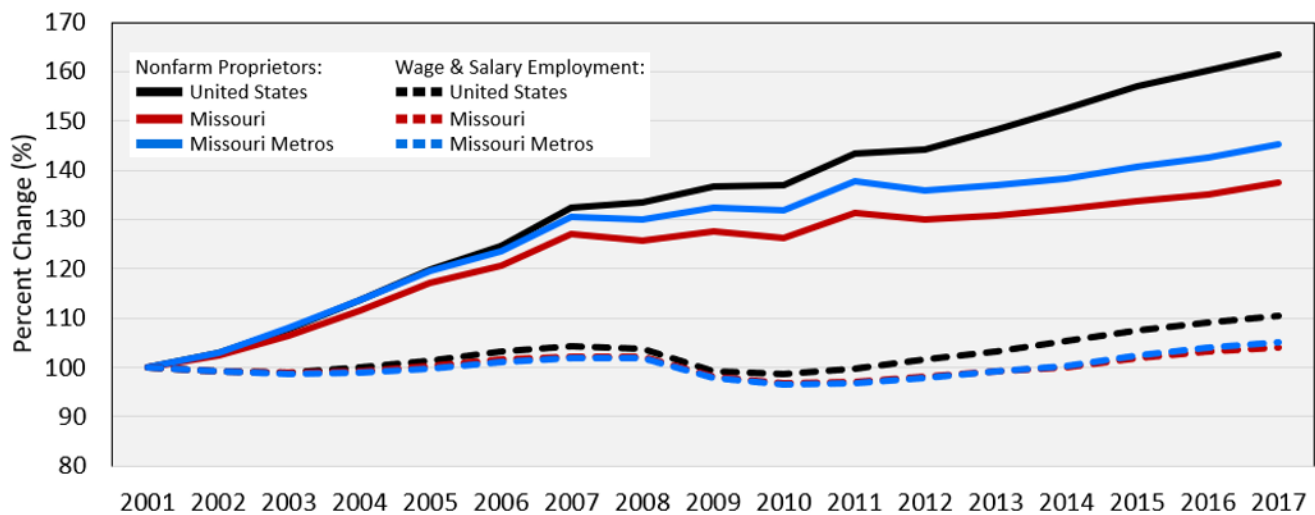
how, using these definitions, the state is partitioned. Metro counties are shown in blue and cluster around Missouri's Urban Areas, shown in black. These are Kansas City, St. Joseph, Columbia, Jefferson City, St. Louis, Springfield, Cape Girardeau, and Joplin. Nonmetro metro-adjacent (metro-adjacent from here on out) counties are shown in green, cover large swaths of the state, and tend to follow major highways, which are also indicated in Figure 1. Counties classified as remote rural cover the rest of the state. Of the 114

¹⁰ We use location quotients (LQ) to measure the relative percentage of non-employer industry employment, as compared with the industry's national share of non-employer industry employment.

$$LQ = \frac{NE_{ij}/NE_j}{NE_i/NE}$$

NE_{ij} = nonemployer establishments in industry i in a given region J
 NE_j = nonemployer establishments in region J
 NE_i = total nonemployer establishments in industry i in the nation
 NE = total nonemployer establishments in the nation

¹¹ These definitions are based on the USDA Economic Research Service's 2013 Rural-Urban Continuum Codes (RUCC).

Figure 2. Growth, 2001-17, Wage and Salary Employment and Proprietors (nonfarm)

Source: US Bureau of Economic Analysis

counties and one independent city in Missouri, 29 percent are classified as metro, 36 percent as metro-adjacent, and 35 percent as remote rural. Identifying entrepreneurship trends in counties based on their connectivity to urban hubs helps us better understand different drivers of entrepreneurship by rurality and can inform location-specific policy promoting entrepreneurship as a method of economic development.¹²

4. Missouri's Nonfarm Proprietors

Nonfarm proprietorships are considered an alternative to traditional wage and salary jobs and unemployment in the regional economics literature.¹³ Research suggests that nonfarm proprietorships are more common where consumer demand is high and customers

have steady incomes (urban areas) and where there are few alternatives to unemployment other than to be self-employed (remote rural and population loss areas, generally).

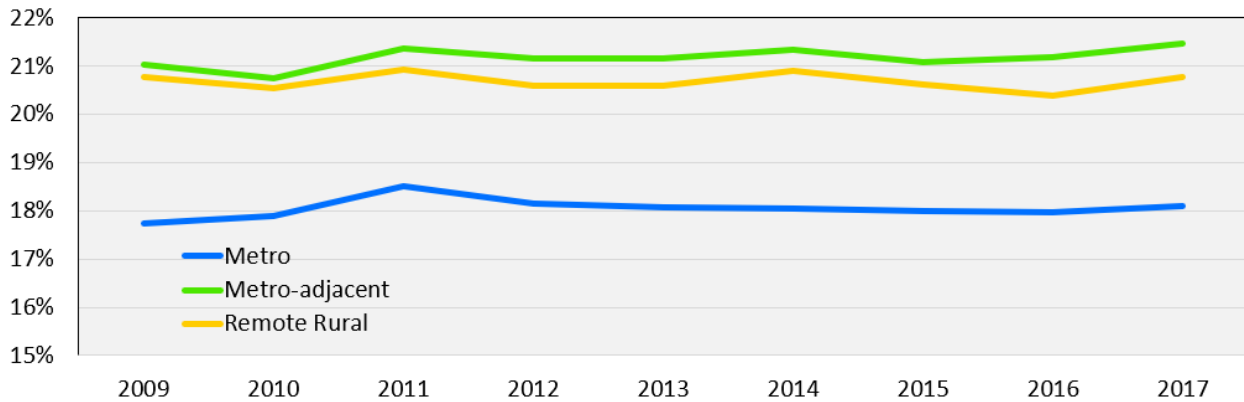
In Missouri, the number of nonfarm proprietorships has increased at a higher rate than nonfarm wage and salary employment over the past two business cycles. Figure 2 shows, however, that Missouri's growth in nonfarm proprietorships lags that of the U.S. in both metro and nonmetro areas of the state. Wage and salary employment growth was relatively low after the 2001 recession, which featured a "jobless recovery" augmented by growth in self-employment. After the Great Recession (2007-09), nonfarm proprietorships continued to grow, but more so in metro counties. The

¹² Metropolitan counties (i.e., RUCC 1-3) are counties included in a metropolitan statistical area by the Office of Management and Budget. Generally, counties containing all or part of an urbanized area of 50,000 or more people and surrounding counties with strong commuting ties to the urbanized area are classified as metropolitan by OMB. All counties that are not metropolitan are considered rural counties, but we parse rural counties into two groups. Counties bordering metro counties that also have at least 2 percent of the employed labor force commuting to the central metro county are considered metro-adjacent (i.e., RUCC 4, 6, 8). Counties that do not border a metropolitan area (or do but do not have the requisite commuting ties to the central metro area) are described as remote rural counties (i.e., RUCC 5, 7, 9).

¹³ The decision to become a nonfarm proprietor over wage and salary employment and unemployment is examined separately by Low and Weiler (2012) and Goetz and Rupasingha (2009).

Low and Weiler find a u-shaped relationship between wage and salary employment growth and nonfarm proprietorship, suggesting that there are higher rates of nonfarm proprietors when there are few wage and salary employment opportunities or in thick markets with higher income and demand for services provided by entrepreneurs. Goetz and Rupasingha find a u-shaped relationship between unemployment and nonfarm proprietorships. Therefore, the nonfarm proprietorship rate is higher in counties with very low unemployment and very high unemployment (over 13 percent). Sarah A. Low and Stephan Weiler, "Employment, Risks, Returns, and Entrepreneurship," *Economic Development Quarterly* 26, no. 3: 238-51; Stephan J. Goetz and Anil Rupasingha, "Determinants of Growth in Non-Farm Proprietor Densities in the US, 1990-2000," *Small Business Economics* 32, no. 4 (April 2009): 425-38, accessed June 2, 2019, <https://doi.org/10.1007/s11187-007-9079-5>.

Figure 3. Ratio of Missouri nonfarm proprietors to total employment by county rurality, 2009-17.



Source: US Bureau of Economic Analysis

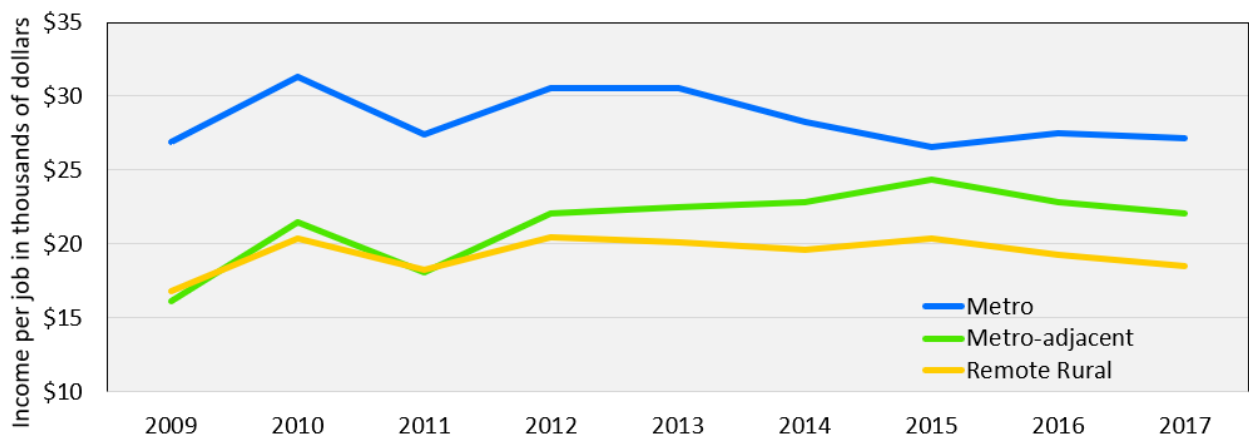
ratio of nonfarm proprietorships to wage and salary jobs is higher (0.30) in nonmetro Missouri than for metro Missouri (0.23), however, indicating nonfarm proprietorships are relatively more common in rural areas.

Given these divergent trends, it is worthwhile to delve into what has been driving growth in proprietorships, particularly in metro areas. Historically, nonfarm proprietorship rates have been highest in nonmetro counties. In Missouri, though, there is little difference in nonfarm proprietorship rates (although they are marginally higher in rural counties). Throughout the post-Great Recession period metro-adjacent rural counties

have a 21 percent nonfarm proprietorship rate, followed by more remote rural counties, around 20 percent. As shown in Figure 3, the nonfarm proprietorship rate for metro counties, where there are relatively more traditional wage and salary jobs, is historically lower than the nonmetro rate.¹⁴ While nonfarm proprietorship rates are very close in metro-adjacent and remote rural counties, the slightly higher rates in metro-adjacent counties suggest that entrepreneurs here may benefit from their proximity to larger markets.

Figure 4 shows that real income per job for nonfarm proprietors has grown little over the current business

Figure 4. Average income for nonfarm proprietors by county type (2009 Dollars)



Source: US Bureau of Economic Analysis

¹⁴ Sarah A. Low, “Regional Asset Indicators: Entrepreneurship Breadth and Depth,” *Main Street Economist*, Federal Reserve Bank of Kansas City (September 2004), accessed December

17, 2019, https://www.kansascityfed.org/publicat/mse/MSE_0904.pdf.

cycle in Missouri. Further, average nonfarm proprietor incomes vary across the rural-urban continuum, being highest in metro Missouri, likely due to higher costs of living and access to thicker markets. For our three county types, average real income increased most for nonfarm proprietors in metro-adjacent counties, with 2017 average income per job about \$6,000 higher than in 2009. Real average income per job gains for nonfarm proprietors were modest in metro and remote rural counties.

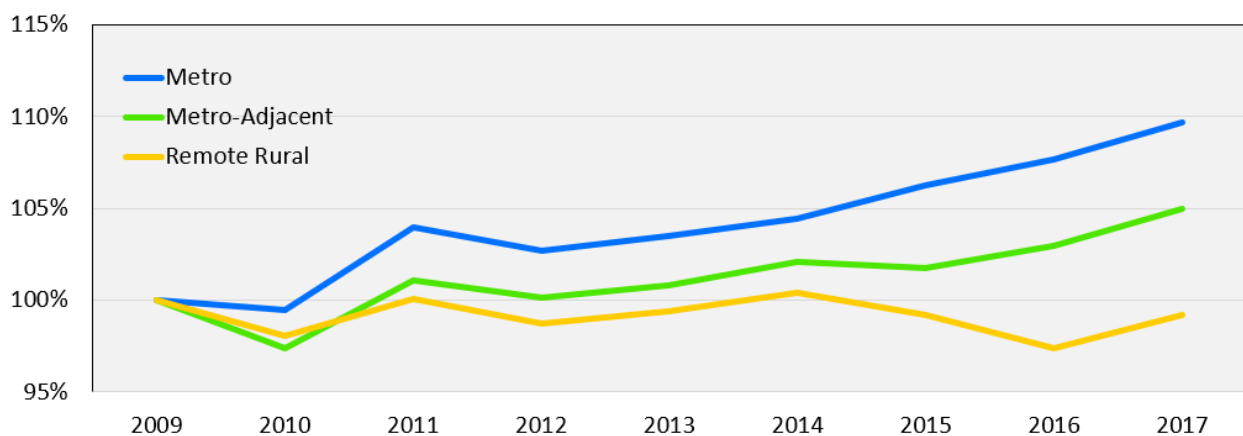
In the aftermath of the Great Recession, an inverse relationship between nonfarm proprietor growth and their average income was observed for a brief period. The loss in the number of nonfarm proprietors in all county types during 2009 to 2010 corresponds with an increase in nonfarm proprietor average income. Likewise, the increase in nonfarm proprietors from 2010 to 2011 corresponds with a decrease in average income. Together, these observations suggest that nonfarm proprietors with lower incomes were more likely to start or close a business shortly after the recession.

Growth in nonfarm proprietorships is highest in metropolitan counties—principally due to the so-called

gig economy.¹⁵ Companies such as Uber and Airbnb provide opportunities for people to earn additional income, especially in metro areas—and these “gigs” are included in nonfarm proprietorships. Figure 5 shows that the number of nonfarm proprietorships in metro-adjacent counties increased by 5 percent over the period 2012 through 2017 while average income during that time also increased or held steady. This suggests that either the new nonfarm proprietors in metro-adjacent counties had similar/ higher incomes than the already-established proprietors, or that the established proprietors’ incomes increased enough during the period to make up for low incomes by new entrepreneurs. In either scenario, metro-adjacent proprietors seem to be benefitting from their proximity to larger markets.

Promoting entrepreneurship as an economic development strategy in these counties would likely mean building on existing strengths and filling in gaps. This could mean investing in quality-of-life measures to attract new residents with higher incomes from jobs in metro areas or further increasing access to metro markets through improved internet access or marketing campaigns.

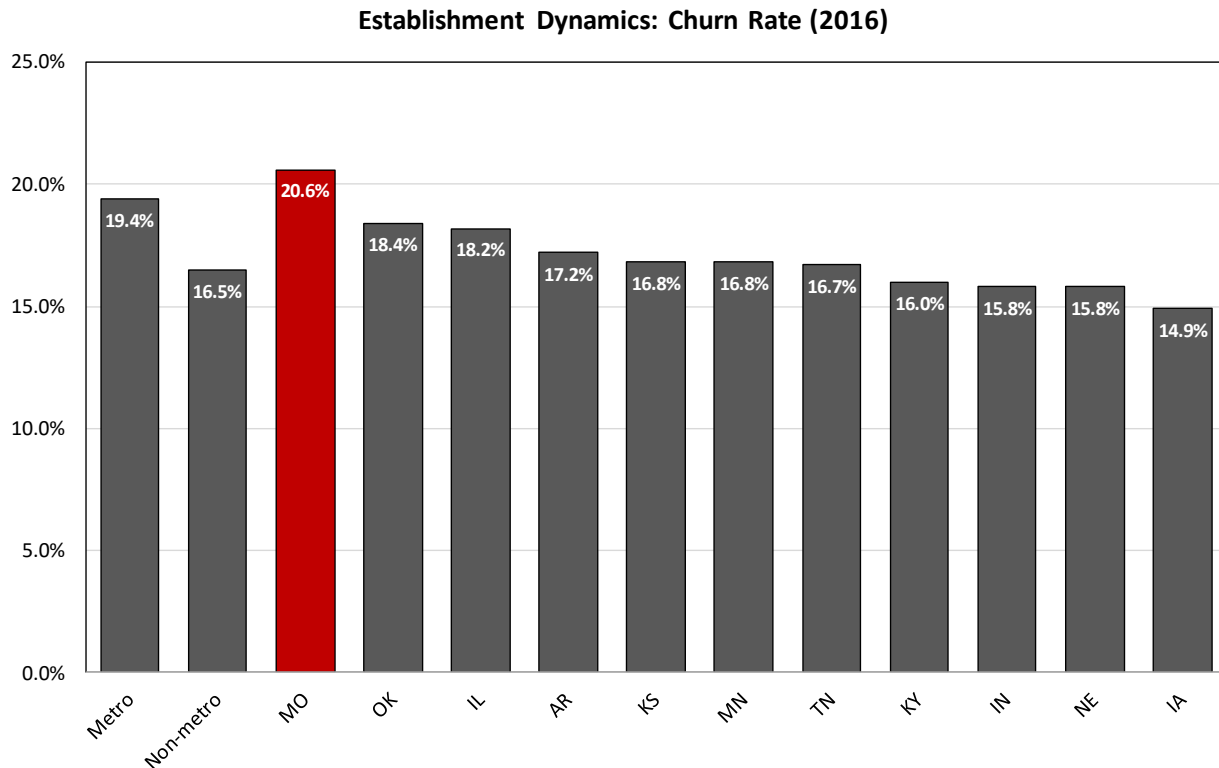
Figure 5. Growth in the number of Missouri nonfarm proprietors, 2009-17



Source: US Bureau of Economic Analysis

¹⁵ According to Abraham et al. (2019) “a gig worker is not paid a wage or salary, does not have an implicit or explicit contract for a continuing work relationship, and does not have a predictable work schedule or predictable earnings when working.” The gig economy is often discussed in the context of recent technological changes such as the development of mobile apps and widespread use of the internet that allow gig workers to easily connect with potential customers (e.g., Uber, Lyft,

Airbnb). Gig workers may be people who choose to supplement wage and salary or other income by providing ridesharing services or renting out extra living space, or they may be people who have no other employment and depend on “gigs” for all or most of their income. Katherine G. Abraham, John Haltiwanger, Kristin Sandusky, and James Spletzer, “The Rise of the Gig Economy: Fact or Fiction?” *AEA Papers and Proceedings* 109, (May 2019): 357-61.

Figure 6. Missouri has relatively high employer establishment churn rates (and birth rates)

Source: Authors' calculations using Census Bureau BDS data, 2016

Remote rural counties have relatively high nonfarm proprietorship rates, but the lowest average nonfarm proprietorship incomes during the study period. Further, their total numbers declined. Many remote rural counties in Missouri are characterized by population loss, explaining why the number of nonfarm proprietors decreased. Counties experiencing population loss typically have higher levels of so-called necessity-based entrepreneurship, characterized as people “pulled” into entrepreneurship due to a lack of alternative wage and salary jobs. Conversely, opportunity-based entrepreneurs may be “pushed” into entrepreneurship by their innovations or market opportunities they identify—this is most typical in urban areas. In the case of necessity-based entrepreneurship, policies to promote development could focus on increasing market access, perhaps via better internet access.

Rural-urban differences in nonfarm proprietorship in Missouri beg the question of whether *certain* entrepreneurs benefit from urban proximity more than oth-

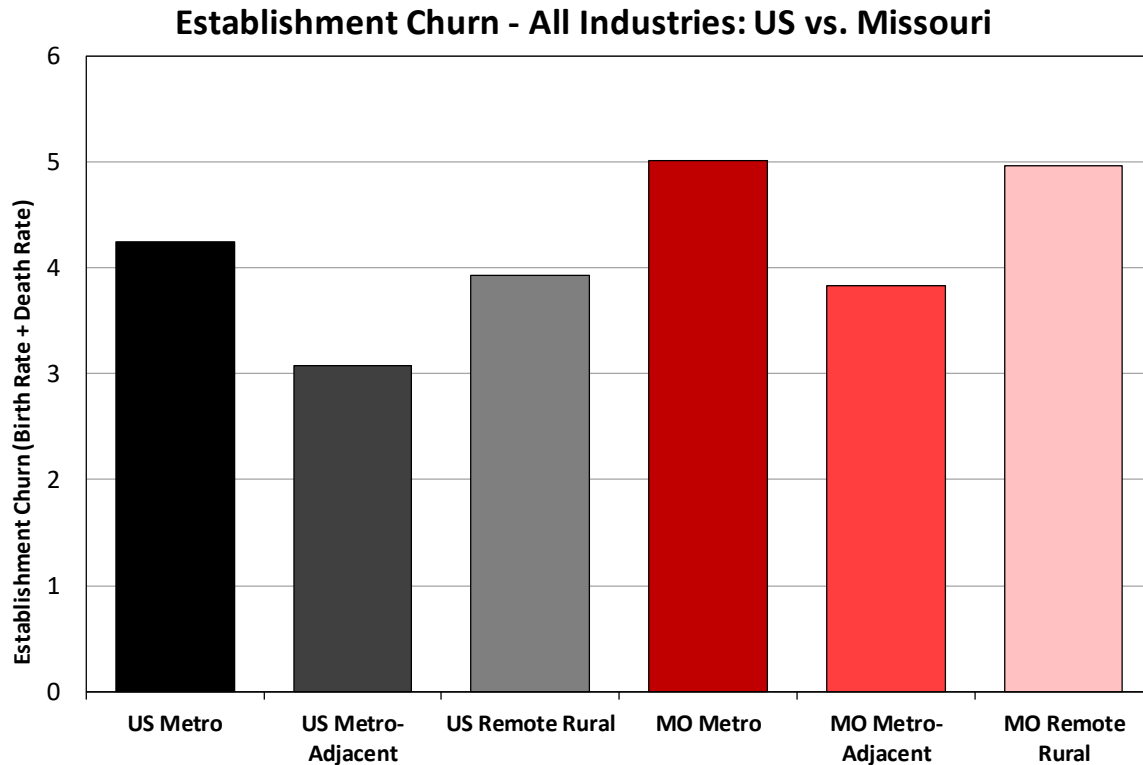
ers because the labor pool varies across the rural-urban continuum. This explains why, for example, mobile app and software developer entrepreneurs tend to congregate in urban areas: They benefit from a more skilled urban labor pool. Identifying what kind of entrepreneurs are thriving in an area can inform policymakers on whether current entrepreneurship is likely to lead to economic growth and help policymakers decide on policy levers that will benefit entrepreneurs with potential for growth, and whether those policies make sense fiscally. If entrepreneurs in metro-adjacent counties have the potential for growth but are struggling to attract talented employees, investing in quality-of-life measures such as primary and secondary education in these counties may give talented, working-aged people additional incentives to locate to a metro-adjacent area.

5. Missouri's Business Dynamics

Employer establishment births are responsible for up to one-third of US job creation annually.¹⁶ As a result

¹⁶ Jacob Moore, “Colorado’s New Gig: Colorado Nonemployer Analysis,” REDI Report (August 2017), accessed December

17, 2019, <https://redi.colostate.edu/wp-content/uploads/sites/50/2017/02/REDI-Report-August-Colorados-New->

Figure 7. Employer Establishment Churn, United States and Missouri

Source: US Census Bureau, SUB Employment Change Tables (2013-16)

this proxy for entrepreneurship is most often targeted by policymakers as a sign of economic growth. Of course, start-ups and young firms have a strong “up or out” tendency; that is, they tend to either grow or fail relatively quickly.¹⁷ The businesses that fail are termed employer establishment deaths. Despite the volatility of employment associated with young firms, researchers have found that employer establishment churn, the sum of birth rates and death rates, has a positive effect on future employment growth due to the information that churn generates, i.e., churn provides information to bankers and other entrepreneurs about what types of businesses are starting (failing), what scale of business is successful (failing), and where innovation may be occurring. The information

effect is larger in rural areas where births and deaths are rare.¹⁸ The information generated by business successes and failures is used by other entrepreneurs to improve their businesses in a process known as *creative destruction*. As shown in Figure 6, Missouri has higher a higher churn rate than many neighboring states, which bodes well for generating entrepreneurial information and economic activity in the state.

Recent data, as shown in Figure 7, indicates that, on average, Missouri also has higher employer establishment churn rates than the United States. This may be due to the low legal barriers to establishing a business in Missouri, but researchers are not sure exactly what is driving high rates of births, deaths, and churn in the state. Across the US rural-urban continuum we see in

Gig.pdf; Jacob Moore, “‘We Know What We Are, but Know Not What We May Be’: Nonemployers and Future Employment Growth,” REDI Report (June 2018), accessed December 17, 2019, <https://redi.colostate.edu/wp-content/uploads/sites/50/2018/06/REDI-Report-June-2018.pdf>.

¹⁷ John Haltiwanger, Ron S. Jarmin, and Javier Miranda, “Who Creates Jobs? Small versus Large versus Young,” *Review of Economics and Statistics* 95, no. 2 (May 2013): 347–61; Ryan

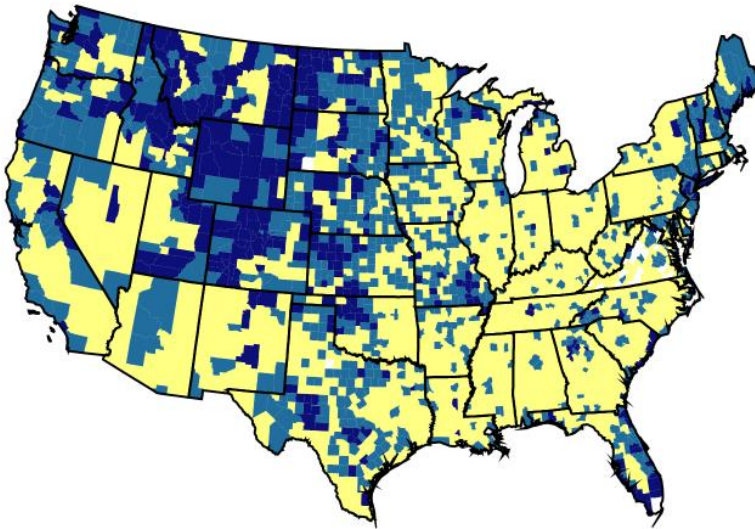
A. Decker, John Haltiwanger, Ron S. Jarmin, and Javier Miranda, “Declining Business Dynamism: What We Know and the Way Forward,” *American Economic Review* 106, no. 5 (May 2016): 203–7, accessed November 18, 2019, <https://doi.org/10.1257/aer.p20161050>.

¹⁸ Devin Buntin, Stephan Weiler, Eric Thompson, and Sammy Zahran, “Entrepreneurship, Information, and Growth” *Journal of Regional Science* 55, no. 4 (2015): 560–84, accessed November 18, 2019, <https://doi.org/10.1111/jors.12157>.

Figure 8. National Employer establishment churn (birth plus death) rates, 2013-16

Legend: Churn Rates

- Low (Below Average)
- Above Average (Average to +1 SD)
- High ($\geq +1$ SD)



Source: Authors' calculations using Census Bureau BDS data, 2016

Figure 7 that the highest churn occurs in metro counties, although Missouri churn rates in remote rural counties are almost as high as metro rates.

Figure 8 shows establishment churn rates across the country for the period 2013-2016. The clusters of high churn (shown in dark blue) occur in the intermountain West, Great Plains (likely driven by unconventional oil and gas extraction), coastal areas, tourist areas and, interestingly, in southeast Missouri. Churn varies over space and time due to factors such as local purchasing power, availability of financial capital, macroeconomic trends, innovation or opportunities and changes in technology, local entrepreneurial culture, and local and state business policy.

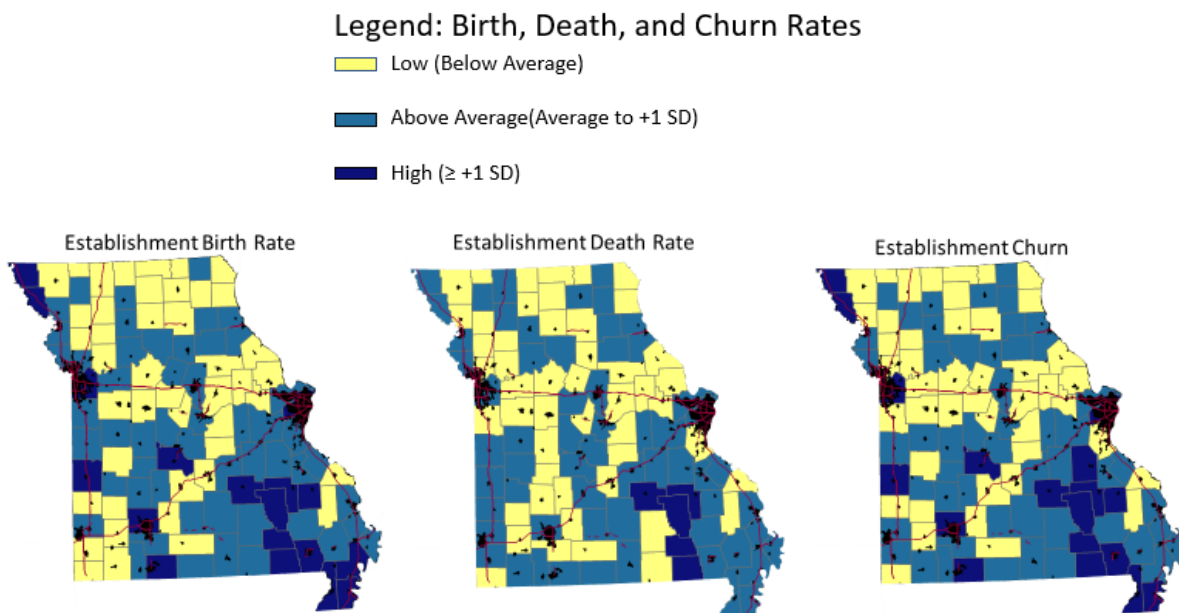
High churn rates often are found in metro areas, because they have relatively higher local income, diversified economies, more people- and business-dynamics, and higher financial capital availability.¹⁹ Outside of metro areas, counties along major state highways and interstates tend to have higher churn, likely due to their connectivity to urban areas, which enhances commuting and trade. Some remote rural areas have relatively high churn rates due to extraction (e.g., unconventional oil and gas in the Bakken shale region, mining in southeast Missouri's lead district) and/or a low population making a relatively small number of births a relatively high rate (births per 1,000 population).

Figure 9 focuses on Missouri. We can see that high churn rates exist in many remote rural counties, particularly in the southern half of the state. Remote rural counties can have high establishment churn rates if entrepreneurs are attempting to provide goods and services that residents would otherwise have to purchase outside the region (e.g., driving to a more urban area or online). These businesses may be more likely to struggle, increasing the churn rate, if the local market is too small to support the businesses long-term. High churn rates in remote rural counties can also be a result of dependence on one or two industries that change rapidly due to macroeconomic trends. In the Southeast Missouri lead district, relatively high lead prices stimulated economic activity during the period and likely led to the establishment of both direct employment (lead mining) and induced employment (restaurants, hotels, household goods).

It is possible to hone in on a possible explanation for observed churn rates. In Figure 10 we do this by specifically looking at churn rates in the manufacturing sector. The southern half of the state is home to wood product manufacturing (sawmills) and ancillary industries. Mining and wood extraction are both natural resource extraction-based industries and subject to booms and busts driven by cyclical demand and

¹⁹ Conroy and co-authors find that small business lending rates are lower in nonmetro counties, but also that growth in small business lending leads to relatively more growth in employer establishment births in nonmetro counties. That is, financial capital availability appears to be a barrier to entry for businesses starting out with paid employees. Tessa Conroy, Sarah

A. Low, and Stephan Weiler, "Fueling Job Engines: Impacts of Small Business Loans on Establishment Births in Metropolitan and Nonmetro Counties," *Contemporary Economic Policy* 35, no. 3 (July 2017): 578-95.

Figure 9. Missouri Employer establishment churn (birth plus death) rates, 2013-16

Source: Authors' calculations using Census Bureau BDS data, 2016

prices. Manufacturing in northern Missouri relies less on natural resources and more on low input costs (land and labor) while relying on access to highways, connecting rural manufacturers to large markets. These factors may explain some, but not all, of the observed differences in churn.

Missouri's high business dynamics relative to many neighboring states and the nation suggests that Missouri's business environment allows firms and entrepreneurs to quickly adapt to changing economic situations. This ability to quickly adapt may help firms and entrepreneurs take advantage of opportunities and helps to generate information about what business types/models/plans are or are not successful in the current economic environment. Because this measure counts only employer establishments, Missouri's high churn also may result in high employment turnover. This may be a source of personal and local stress in the short run.

However, the correlation between the Missouri establishment churn rate (2009-13) and employment growth rate (2009-16) is 0.35, higher than the same correlation for the United States (0.25). In Missouri, there is no correlation between churn and personal income growth, however; this correlation is 0.35 for the

United States, suggesting business dynamics are associated with employment growth in Missouri but not personal income growth, likely due to the state's industry mix, which is relatively light in high-paying white-collar occupations.

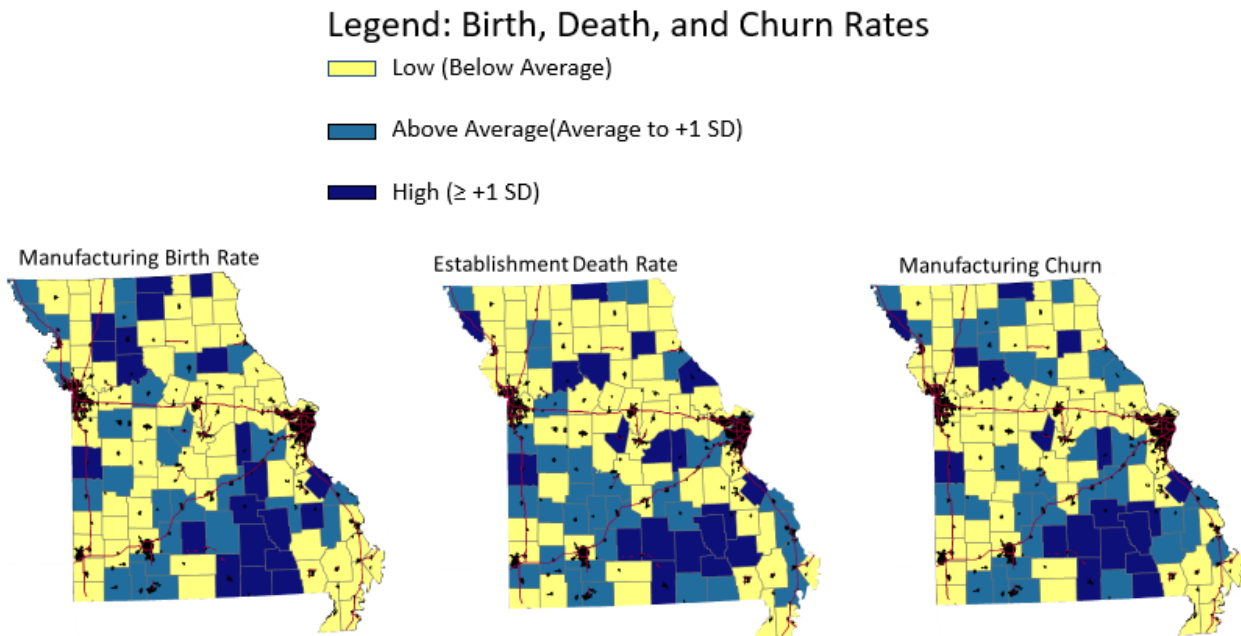
6. Missouri's Nonemployers

Nonemployers may be young firms with the potential for growth, "gig" workers, lifestyle entrepreneurs (i.e., those who run a business to maintain a chosen lifestyle), or individuals with no entrepreneurial intents (e.g., a professor getting paid over \$1,000 to give a speech). In 2016 there were 409,303 nonemployer establishments and 160,912 employer establishments in Missouri—a ratio typical of other states. Thus, there are a lot of nonemployer establishments compared to employer establishments, and many generate very little revenue (i.e., individuals with no entrepreneurial intents). It is estimated that 10-20 percent of nonemployers do eventually hire other employees.²⁰ Regardless of whether there are paid employees, nonemployers contribute to the local economy by providing goods and services on a small scale, particularly in rural areas. In doing so, many argue that nonemployers increase a region's quality of life and

²⁰ Nicholas Kacher and Stephan Weiler, "Inside the Rise of the Gig Economy," REDI Report (April 2017), accessed December

17, 2019, <https://redi.colostate.edu/wp-content/uploads/sites/50/2017/06/REDI-report-April-gig-economy.pdf>.

Figure 10. Manufacturing Employer Establishment Birth, Churn, and Death rates, 2013-16



Source: Authors' calculations using Census Bureau BDS data, 2013-2016

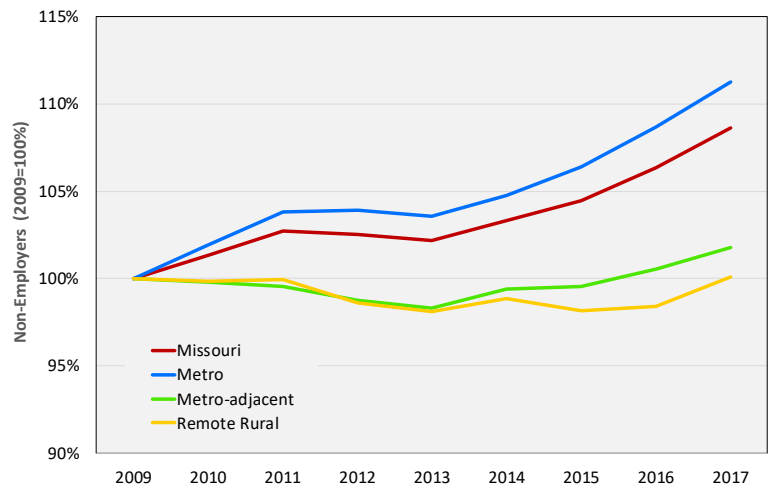
generate marginal sources of income in places where wage and salary employment opportunities are thin.

Nonemployers in Missouri's metro areas, as shown in Figure 11, grew by over 10 percent from 2009 to 2017. As we have suggested elsewhere, this is largely driven by the rise of a "gig" economy where individuals are employed as contract workers, examples being drivers for ride-sharing services (e.g., Uber or Lyft) or home health aides. The number of nonemployers in nonmetro counties increased by less than 2 percent over the same period, however. The relatively large increase in nonemployers in metro counties suggests that the opportunity cost of being a nonemployer compared to a wage and salary job decreased over the period, due to a lack of alternative well-paying wage and salary jobs or increasing returns to being a nonemployer. The slow growth in nonemployers in nonmetro areas may suggest that the opportunity costs have not changed much over the period examined.

Examining the industries in which nonemployers work provides some indication about where there are opportunities for activities that may generate income, even if it is supplemental income. For instance, ride-sharing services through Uber or Lyft are archetypal gig economy activities and this is reflected in the

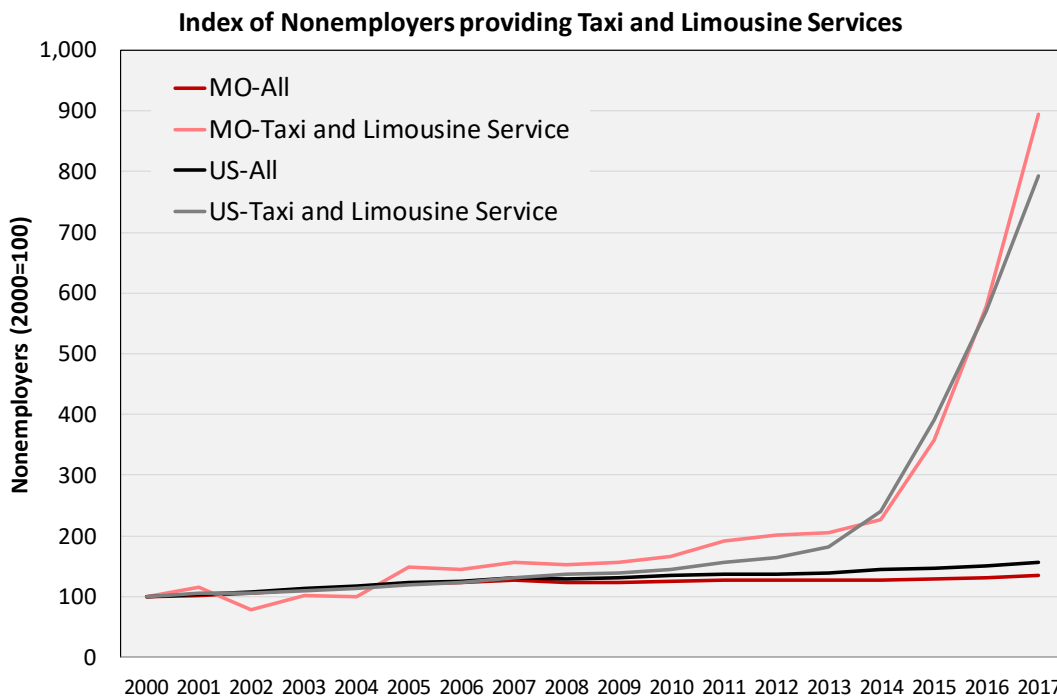
nonemployer statistics. Figure 12 shows that the number of nonemployers in taxi and limousine services in Missouri has grown nine-fold since 2000, with most of this expansion occurring since 2014. While there has been significant growth in both Missouri's metro and nonmetro counties, 96 percent of Missouri nonemployers involved in taxi and limousine services are in metro counties, which demonstrates that the market dictates the range of opportunities.

Figure 11. Missouri Nonemployer Establishments, Change since 2009



Source: US Census Bureau, Nonemployer Statistics (2009-17)

Figure 12. Index of Nonemployers providing Taxi and Limousine Services



Source: US Census Bureau, Nonemployer Statistics

Understanding which sectors nonemployers work is not only important for identifying where opportunities are, but also gauging the extent to which these activities can drive growth. For instance, a nonemployer in lawn care is less likely to promote economic growth than a nonemployer in software development or hospitality. To explore this, we mapped nonemployer sector diversity for the United States, by county.²¹ The result is shown in Figure 13.

What we see is that there is little diversity across most of the South. Note that this extends into southern Missouri. In the South most nonemployers work in manufacturing or agriculture, forestry and fishing sectors (recall, these data exclude production agriculture, so this would be agricultural services such as custom combining). The lack of nonemployer diversity is likely due to predominance of manufacturing and ag/forestry/fishing in these areas, coupled with a notably low levels of so-called white-collar sector

nonemployers (Information, Professional/Scientific/Technical Services, Finance and Insurance).

Missouri’s nonmetro counties have above average shares of nonemployer establishments in manufacturing, construction, retail, and accommodation and food services (Figure 14). Missouri has relatively high shares of nonemployers in manufacturing, particularly in metro-adjacent and remote rural counties. Missouri has a manufacturing-heavy economy, but many of these nonemployer manufacturers are a function of cottage food manufacturing. In 2014, Missouri passed a law, known as a “Cottage Food Law,” that allowed baked goods to be produced in homes and sold, often at farmers’ markets; an individual with more than \$1,000 in receipts from this activity is classified as a manufacturing nonemployer.

Figure 14 reveals a dearth of white-collar nonemployers in rural Missouri. Promoting nonemployers in the

²¹ Our nonemployer sector diversity measure is based on a Herfindahl-Hirschman Index (HHI), commonly used to measure market concentration. We calculate nonemployer sector diversity using the percentage share of nonemployers in each 2-digit NAICS sector by county. The measure is normalized so that the US county with the most sectoral diversity equals one.

$$Sector\ Diversity = \frac{1 - (s_1^2 + s_2^2 + \dots + s_n^2)}{\max[1 - (s_1^2 + s_2^2 + \dots + s_n^2)]}$$

s_{1...n} = nonemployer sector at 2 - digit NAICS level

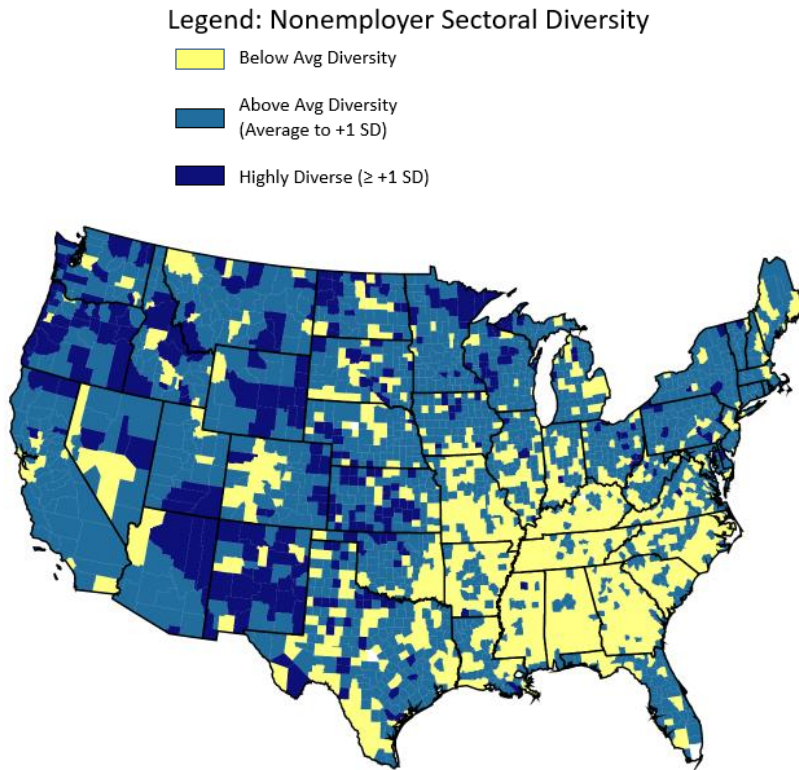
white-collar sector such as physicians, lawyers, accountants, and internet service providers would increase average incomes for rural areas, but the market demand may not be sufficient locally, or, these white-collar employees may not want to live in a rural area, preferring the amenities associated with living in an urban area.²²

Nonemployers in metro counties have the highest average receipts—around \$40K per year. Figure 15 shows that average receipts in remote rural counties were consistently lower, and around \$1,000 higher than in metro-adjacent counties throughout the period. What these data do not tell us is how many of the nonemployers also have a wage and salary job. For example, are nonemployers supporting themselves with the business or does the nonemployer business simply supplement wage and salary income with the gig?

7. Policy Implications

Understanding the dynamics of entrepreneurship in Missouri can help inform the way communities, regions, and the state develop policies and programs to support entrepreneurship and economic growth. Our study highlights Missouri's relatively high business dynamism, or churn, and history of self-employment.

Figure 13. Nonemployer establishment sector diversity index, 2017



Source: US Census Bureau, *Nonemployer Statistics*, 2017

To compliment rural Missouri's entrepreneurial tendencies, we must develop the critical elements of its entrepreneurial ecosystem. These elements include infrastructure (broadband internet, for example), talented people, market access, regulatory support, business assistance, financial capital, and an entrepreneurial culture.²³ Given their relatively smaller size, limited resources, and remote locations, we suggest that the three areas where policies and programs could make a difference in rural Missouri's entrepreneurship and

economic development are business assistance, financial capital, and building a culture supportive of entrepreneurship.

Connecting entrepreneurs to technical assistance and business services, particularly in rural areas can prove difficult. In many instances rural entrepreneurs and small firms are unaware of technical assistance and business support services (e.g., business planning, market research), or they sense that they are too isolated to take full advantage of these services.²⁴ Moreover, they may feel like they lack the resources necessary to take advantage of these critical services. As a result, effort should be made to find ways to better connect rural entrepreneurs to these services. For instance, the [Missouri Small Business Development](#)

²² Richard Florida, "Cities and the Creative Class," *City & Community* 2, no 1. (2003):3-19.

²³ Appalachian Regional Commission. "Entrepreneurial Ecosystems in Appalachia," prepared by EntreWorks Consulting and the Center for Regional Economic Competitiveness. (2018). Available at: https://www.arc.gov/assets/research_reports/EntrepreneurialEcosystemsLiteratureReview2018.09.pdf.

²⁴ Sarah Lyon-Hill, Margaret Cowell, Scott Tate and A. Alwang, "Barriers and Drivers to Accessing and Using Workforce and Technical Assistance Resources for Small and Medium Manufacturers (SMMs) in Rural Regions," *Economic Development Quarterly* 33, no. 1 (2018): 51-60.

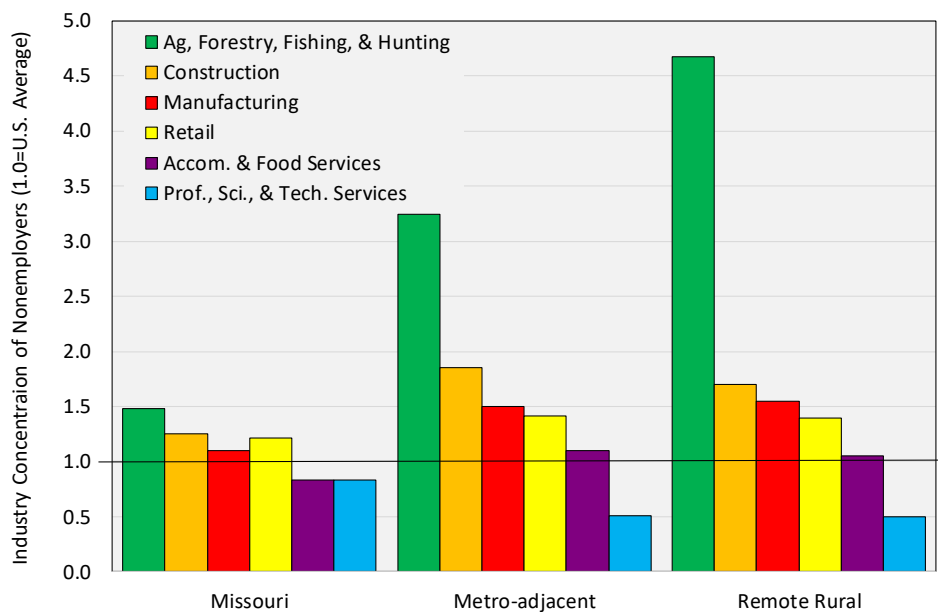
[Center](#) recently added a virtual business counseling service, which is bringing technical assistance to rural entrepreneurs and small business owners via e-connectivity (at least for small business owners who have fast and reliable enough internet access). Additionally, the nonprofit [MOSourceLink](#) curates available resources in Missouri for entrepreneurs and makes them available on a web-based platform. Promoting these kinds of resources, and making them more accessible, will help rural entrepreneurial ventures be more successful and allow them to overcome barriers to growth.

Capital is essential for start-ups and existing businesses alike. Access to financial capital is a challenge for both rural and urban entrepreneurs—research suggests capital is even more constrained in rural areas.²⁵ The dearth of business services in rural areas amplifies the problem. For instance, without a polished business plan, which generally requires technical assistance, obtaining a bank loan can prove difficult. Research shows that more small-business lending has positive effects on employer establishment start-ups and that the effect is strongest in rural communities.²⁶ That is, a little more lending in a rural area can make

a bigger difference in job creation. Regions should take stock of the types of financial capital their small businesses need and work to fill identified gaps—be it with seed grants, direct lending via a revolving loan fund, or expansion loans.

In addition to better connecting entrepreneurs to technical assistance and building a deeper pool of financial capital, rural communities and regions must also focus on building their local entrepreneurial pipeline. Creating an environment conducive to entrepreneurship requires more than just assisting individual entrepreneurs and firms, but rather creating an environment that supports, promotes and celebrates entrepreneurial activity. This may involve building a local culture that is accepting of risk-taking, failure, experimentation, and innovation. Creating an environment that welcomes entrepreneurship not only can help attract other entrepreneurs, but it may also prove attractive to people with wage and salary jobs. This encouragement of entrepreneurship should also start early. In order to build a sustainable entrepreneurial pipeline, school districts should invest in youth entrepreneurship programming (e.g., Missouri AfterSchool Network’s new Mott Foundation funded pilot) that

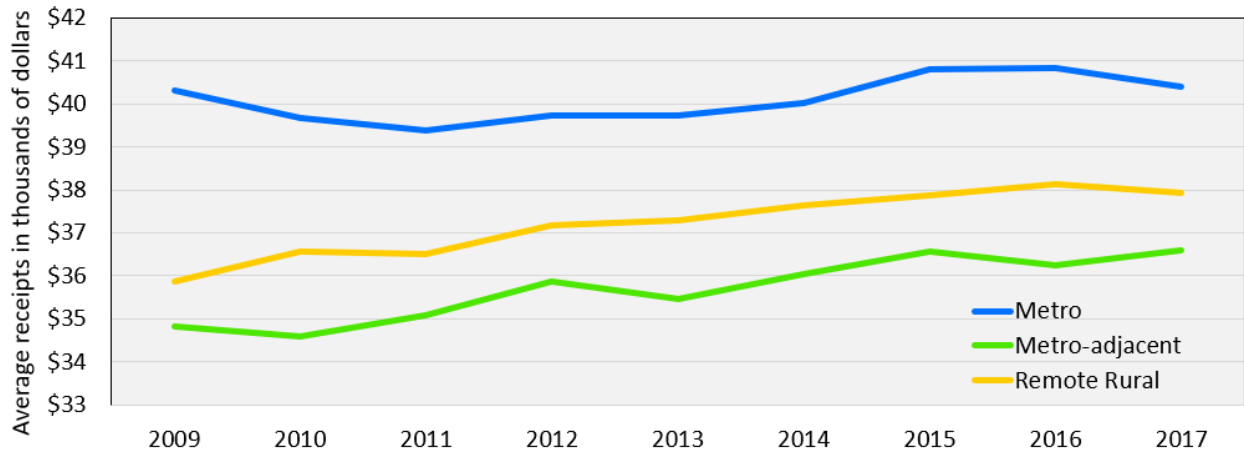
Figure 14. Missouri Nonemployer Concentrations by Urbanicity, 2017



Source: US Census Bureau, *Nonemployer Statistics, 2017*

²⁵ B. Craig, W. Jackson, and J.B. Thomson, “Small Firm Finance, Credit Rationing, and the Impact of SBA-Guaranteed Lending on Local Economic Growth,” *Journal of Small Business Management* 45, no. 1 (2007): 116-132.

²⁶ Nicholas Kacher and Stephan Weiler, “Inside the Rise of the Gig Economy,” REDI Report (April 2017), accessed December 17, 2019, <https://redi.colostate.edu/wp-content/uploads/sites/50/2017/06/REDI-report-April-gig-economy.pdf>.

Figure 15. Average receipts, Missouri nonemployers (2009-17)

Source: US Census Bureau, Nonemployer Statistics

may simultaneously buoy youth entrepreneurial skills and make the school district a more desirable place for parents to live.

There are ways in which place-making activities can be specifically directed toward existing and potential entrepreneurs by, for instance, organizing platforms for local entrepreneurs to connect with potential customers through festivals, artisan shops, or social media platforms. These types of platforms not only help the region's existing entrepreneurs, but they can also provide a signal to other non-local entrepreneurs that the community is working to create a more vibrant community for entrepreneurial activity. More generally, efforts to create a higher quality of life by strengthening high-speed internet access or the availability of natural amenities can create a virtuous cycle whereby high-quality places attract skilled and entrepreneurial workers, and that in turn attracts more investments, workers and employers. This kind of virtuous cycle can be even more important for smaller and more rural communities that lack large talent pools, markets or well-developed identities.²⁷

8. Conclusions

In this study, we examined the factors driving rural Missouri's relatively high rates of entrepreneurship. These dynamics can have important implications for

rural economic development and this information allows us to better understand some of the underlying motivations of Missouri's entrepreneurial activities and the nature and extent of available opportunities. Relative to other types of economic development strategies (e.g., industrial recruitment), entrepreneurship has gained traction in some rural areas as it does not require a large and skilled labor force or access to large markets. Increasingly, rural leaders recognize that jobs, income, and quality-of-life are tied to entrepreneurship and population growth. Investments in entrepreneurial ecosystem building blocks not only help entrepreneurs and business owners, but they also improve rural Missouri's quality-of-life. In the state's more rural counties, relatively higher rates of sole proprietorships often reflect entrepreneurial activity out of necessity rather than opportunity. Where opportunities to work in stable wage and salary jobs are limited, some individuals create their own jobs or find sources of supplemental income. Turning necessity-based entrepreneurs into employer establishment can help generate much needed economic growth in the rural communities.

Nonetheless, more research questions remain to be answered. For instance, what is driving Missouri's relatively high employer establishment churn rates? Can relatively high self-employment rates be leveraged into higher-growth businesses? What types of financial capital would be most beneficial? There are

²⁷ C.J. Reilly and Henry Renski, "Place and Prosperity: Quality of Place as an Economic Driver," *Maine Policy Review* 17, no. 1 (2008): 12-25.

also policy questions for Missouri voters to ponder—to what level should investments in education, infrastructure, and place-making occur? What about more entrepreneur-specific investments such as technical assistance? Is Missouri ready to take on building its entrepreneurial ecosystem, particularly in rural areas of the state? Answering these questions will allow us to develop more effective and regionally appropriate economic and entrepreneurial development policies and programs for Missouri's rural regions and communities.