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## Introduction

The presidential election of 2016 brought the economic distress in rural America forcefully to the attention of the rest of the nation. Frustrated rural voters rejected the traditional platforms of both Republicans and Democrats and in overwhelming numbers cast their votes for political outsider Donald Trump. By winning a huge segment of the rural vote, especially in critical swing states such as Michigan, Pennsylvania, and Wisconsin, Trump was able to secure his surprise win.

The rural anger expressed in the 2016 election is largely a consequence of decades of economic stagnation and decline resulting from fewer jobs in the goods producing industries (manufacturing, construction and the natural resource industries of agriculture, logging, and mining). For example, since the 1970s, the number of jobs in manufacturing has declined by 7 million, 90 percent of coal-mining jobs have been lost, and there has been a 90 percent decline in the hours of farm labor required. Also, since 1990 two-thirds of the logging jobs have been lost. For the jobs that remain, wages in real dollars have declined (Autor and Dorn 2013; Autor et al. 2008). These trends are

significant because these good-producing industries have traditionally been the most essential segment of the rural economy.

After decades of job loss and declining opportunities, many rural residents and other working-class voters were thrilled to hear the message of Donald Trump. Trump promised to bring back manufacturing, coal mining, and other jobs in the goods producing industries by taking a tough stand on immigration, by restructuring international trade agreements to protect American workers, and by eliminating restrictive environmental regulations.

The problem is that Trump's promises about restoring jobs in the goods producing sector simply cannot be fulfilled. His plans to build a wall, restrict immigration, restructure trade deals, and eliminate environmental restrictions will not bring these jobs back. The fact is that these policies do not address the base cause for the loss of jobs in the goods producing industries in the first place. Rather, the decline of jobs in the goods producing sector is primarily a consequence of technological changes. For decades, millions of jobs in agriculture, manufacturing, mining, and logging have been lost as ever-improving machines replace human labor in the production process (Albrecht 2014a; Rasker 2017). Critically, even though the number of workers in these industries is declining, production continues to increase.

Reductions in the number of jobs in the goods producing industries are a part of a massive industrial structure transformation brought about by advancements in technology. Not only are machines more efficient, but also advancements in information and communication technology have made these technological changes more dynamic. The result is that the United States and other nations around the world are transitioning from industrial economies to information- and service-based economies. Job skills in the goods producing industries that once provided a solid livelihood are becoming obsolete, and individuals who once held these jobs now find themselves unemployed or underemployed. No border wall or trade deal can prevent the continuation of this process. The same process is occurring in economically advanced nations throughout the world, and these nations are also dealing with the same feelings of anger and frustration among their residents.

Moreover, the impacts of technological change are spreading to other sectors of the economy. In the next few years, we can expect to lose millions

of jobs in the retail sector as a result of online shopping and self-checkout technologies, and it is likely that millions of transportation jobs will be lost as self-driving vehicles replace truck and taxi drivers. In the emerging information and service economy, any job that consists of the same task being repeated over and over again is going to be replaced by a machine (Moretti 2012). While there are problems in using machines, employers often prefer a technical solution if it is available. While machines occasionally break down, they don't get sick, tired, distracted, fail to show up for work, ask for a pay raise, or quit and go to work for the competitor. Most important, the capacity of machines often greatly surpasses human capacity.

The frustrations expressed by rural Americans, and others with working-class jobs are real and should be addressed (Cramer 2016; Hochschild 2016). Millions of people throughout rural America are desperate for hope. The critical question is, what is the best way to address these concerns? I recognize the complexity of the issue and that cultural changes and a disappearing way of life are also an important source of rural frustration (Wunthnow 2018) and factors leading to the rise of the "Religious Right" and "Alt-Right" movements (FitzGerald 2017; Neiwert 2017). Addressing the economic concerns, however, seems to be a good place to start.

In my travels in rural America, I often hear from people worried about the direction of change and nostalgic for the past. I understand these worries and fears. A county commissioner once told me that his county had nine sawmills in 1962; the county now has one sawmill. The commissioner told me that if I could help bring back the other eight sawmills, the economic struggles of his county would be over. What everyone associated with rural America needs to understand is that those eight sawmills are not coming back. Chief among reasons for their permanent loss is that one modern sawmill using advanced technology can turn more logs into wood products with fewer workers than all nine sawmills could have done in 1962. The eight missing sawmills are not coming back and neither is the stagecoach, the Pony Express, or the slide rule.

The approach to address the economic concerns of rural America cannot be to return to some golden era of the past. Following my presentation in another rural community, a person approached me and said that people like me were always coming and trying to make their community into something it wasn't. "We have always been a coal-mining town," she told me, "and that

is what we should continue to be.” My reaction is that the coal industry will never again be what it was and communities that don’t want to change are going to be left behind and will soon be nothing but “dust in the wind.”

Attempts to return to the golden past will result in our nation falling far behind other countries around the world. Rather, it is essential that we fully embrace the information and service economy and help make rural and blue-collar workers a part of a vibrant twenty-first-century economy. How to accomplish this objective is the goal of this book. To make the necessary changes, it is critical to understand what is happening and why. With this knowledge, it will then be possible to take advantage of potential benefits of the new economy while avoiding many problems and pitfalls.

We would be wise to learn from the massive economic structure transitions resulting from technological changes that have occurred in the past. An obvious example is the Industrial Revolution, beginning in England in the late eighteenth century. This revolution emerged when technological advancements allowed the use of fossil fuels to power new machines. These new machines greatly enhanced human productivity and resulted in many nations transitioning from agricultural-based to industrial-based economies. At times this transition was extremely rocky and resulted in the loss of millions of agricultural and other jobs of that era. Attempts to resist industrial growth, however, would have been futile and counterproductive and would have resulted in the resisting nation falling far behind other nations. While there were rough times during the transition, there were many societal benefits as well. Among the benefits were a higher standard of living, better health, a longer lifespan, and safer and more fulfilling jobs.

The same factors hold true with the current economic structure transformation. Many jobs and skills are becoming obsolete. Of course, this is tremendously difficult for impacted persons and communities. At the same time, new technologies are opening doors for the creation of new jobs, many of which have not yet even been imagined. As will be described in this book, these new economic opportunities can be especially beneficial for rural areas. Additionally, products resulting from the new economy will greatly enhance our standard of living. We can all benefit from access to more information and improved methods of communication. We can benefit as jobs that are dangerous and dull are replaced by jobs that are more interesting and

fulfilling. Nations, communities, and individuals can choose to jump aboard and reap the benefits, or they can hide their head in the sand and be left behind as the rest of the world moves forward. If US policy aims to return to a bygone era, our nation will quickly become a second-rate country as the rest of the world advances.

## The Twenty-First-Century Information and Service Economy

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The current economic structure transition and its wide-ranging impacts on rural America are primarily a consequence of a variety of new technologies that replace human labor. Especially significant is the proliferation of computers, the Internet, and other forms of information and communication technology. Among the impacts of computers and the Internet are vast amounts of information available at the stroke of a computer key and instantaneous communication with persons anywhere in the world. The benefits of these new technologies to education, medicine, and entertainment are obvious. Businesses benefit from the availability of greater amounts of data and increased capacity to analyze that data.

Computers have also enhanced the capacity of the machines being used in manufacturing and other goods producing industries. As a result, machines used in these industries are even more efficient and thus replace even more human labor in the production process. In today's world, computer-guided machines harvest agricultural crops, milk cows, cut trees, drill for oil, mine coal, and, in the form of robots, operate the machines used in manufacturing. Examples of these machines and their impacts are provided in chapters throughout this book.

Since an economic structure transition was the cause of the current economic malaise in rural America, fully embracing that transition is the key to building a vibrant twenty-first-century economy. Specifically, modern information and communication technology have reduced the relevance of distance and opened doors for rural Americans that simply didn't exist in the past (Albrecht 2014a). Rather than resisting or trying to return to the past, we need to prepare for and take full advantage of opportunities available in the new economy. Specific approaches to accomplishing this objective are described in chapter 10.

## Sources of Rural Economic Disadvantage

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Rural America has always been economically disadvantaged relative to urban America. In rural areas, incomes have always been lower, poverty rates higher, and unemployment and underemployment more extensive (Albrecht et al. 2000).

The current economic structure transformation has had even greater implications for rural American than it has for urban America. This is because rural residents have always been more dependent on jobs in the goods producing industries, while urban economies have tended to be much more diverse. Because of their greater dependence on the declining goods producing industries, rural areas did not recover from the Great Recession as quickly or as completely as urban areas (Farrigan 2015; Hertz et al. 2014). In nonmetropolitan counties, the poverty rate has actually increased since the end of the 2007–2009 recession. In contrast, poverty rates have declined significantly in metropolitan areas during the same time period.

Urban economic advantages over rural areas are a consequence of two major factors—location and population size (Albrecht 2012). First, with respect to location, urbanization means that being near markets and suppliers reduces transportation costs. Also, urbanization typically means a larger pool of potential workers, often with industry-specific skills that ensures both a lower probability of unemployment for workers and a lower probability of labor shortages for business (Krugman 1991; Venables 2003). Further, research clearly shows that workers with similar knowledge and skill sets are more productive when working in close proximity and having face-to-face interactions with others than when working in isolation. Interaction and the exchange of ideas resulting from agglomeration greatly enhance creativity (Gaspar and Glaeser 1998; Glaeser 2011; Storper and Venables 2004). Many rural communities exist where they do because their location provides access to a resource (farmland, minerals, forests, etc.) critical for the goods producing industries. These locations may be isolated from urban areas, which has contributed to rural disadvantage.

Population size provides further advantages for urban areas. A larger population provides opportunities for more specialized services and greater economic opportunities. These advantages can be illustrated by looking at health care. Many small towns have a doctor or two and perhaps even a

small hospital. However, these small-town doctors are unlikely to be heart surgeons, and the small-town hospital is unlikely to specialize in heart surgery. The population is simply not large enough to provide enough patients with bad hearts to support such specialization. Medical specialists are usually located in large cities, where they draw clientele not only from the larger urban population base but also from surrounding rural areas that do not have that specialized service. The same urban advantage exists in many other industries, including finance, insurance, sports, and politics.

Further, population size provides vast economy of scale advantages. Laying broadband cable to a city where a million inhabitants will subscribe is more profitable than laying broadband to a small community where 200 households will subscribe. The telecoms thus lack motivation to provide adequate Internet to rural areas, and as a consequence rural broadband service is generally not as good (Whitacre et al. 2015). Similarly, urban areas have advantages with respect to many educational technologies and programs. These technologies or programs often have substantial initial cost, whether 10 students or 10,000 students use the technology or program. Thus, per-student costs are lower in urban areas.

The consequence of urban advantage is that the incomes of full-time rural workers are only about 82 percent as high as their urban counterparts when controlling for industry of employment, race/ethnicity, age, and gender. Rural/urban differences increase steadily as education levels increase (Albrecht 2012). For persons with less than a high school degree, rural and urban incomes are virtually identical. Then, as education level increases, the income gap becomes progressively larger. Persons with a postgraduate degree could expect to earn \$75,225 in rural areas in 2012. This is only 71.2 percent as much as the \$105,618 this person could expect to earn in an urban area.

As will be described in chapter 10, modern technology at least partly reduces these rural disadvantages. By using the computer and Internet, rural residents can market their products to potential consumers throughout the world, thus reducing the problem of a smaller local population. Persons with some specialized skills can market these skills broadly, thus reducing the problems associated with location. Some differences, however, remain. The products of some businesses cannot be marketed effectively to distant consumers; a restaurant is an obvious example. Further, the face-to-face advantages of interaction are not completely offset by online communications.

Thus, at least into the foreseeable future, we can expect that average incomes in urban areas to continue to be higher than in rural areas and that people who chose to live in rural areas will often pay an economic cost.

### **Advantages of Rural Living**

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Many people are willing to forego the economic advantages of urban living for the benefits of living in a rural area. Millions of people in the United States desire to live in rural areas, but traditionally have been unable to do so because of limited job availability (Cromartie 2009; Travis 2007). For those individuals, it is now often possible by using modern information and communication technology to find a way to live in the rural area of their choice.

Among the many benefits of living in rural America are living next to nature where one can quickly be in the mountains or the forest. Many people enjoy nature-based activities such as hiking, nature photography, fishing, hunting, and skiing, and many of these activities are easily accessible to most rural residents. Many people enjoy the close-knit interaction patterns that proliferate in small towns. Others want to remain in their hometown amid friends and family. For many people, living in rural areas means enjoying peace and quiet while avoiding the congestion, crime, and pollution common in urban communities (Wirth 1938). Whatever the reason may be, quality of life can be improved when people live where they wish to, rather than living where their job requires them to be.

### **Consequences of Rural Economic Disadvantage and Decline**

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Finding a way to revitalize the rural economy is extremely important. The serious economic problems that are currently being experienced by the residents of rural America have significant consequences. Most fundamentally, the decline in the number of jobs in the goods producing industries and reduced wages for remaining workers have resulted in the decline of the “Great American Middle Class.” The middle-class America of decades past has largely been replaced by a two-tier society, where the divide between the advantaged and disadvantaged is large and becoming ever larger. Most of the economic growth of recent decades has gone to those with already-high incomes (Stiglitz 2012). To be born into one segment of society then crossing

the wide chasm to the other side is more and more difficult and increasingly rare (Chetty et al. 2014). As a result, to a growing degree the social class that a person resides in as an adult is determined by the circumstances of their birth. In the America of today, millions of talented and energetic kids with disadvantaged parents have virtually no chance of achieving a lifestyle that those from advantaged families accept as a matter of course. Increasingly, rural Americans are finding themselves on the disadvantaged side of the chasm. This result is very troubling in a nation that has always prided itself in being a land of opportunity, a land where anybody can become anything they want to.

Being born disadvantaged impacts many aspects of life. There is a strong relationship between economic circumstances and health (Berkman and Kawachi 2000). Disadvantaged individuals are less able to afford visits to health care professionals, less likely to have health insurance, and tend to consume a less healthy diet. Poor health reduces performance both at school and in the workforce, which has long-term economic consequences. Recent research, in fact, has found a marked increase in mortality rates among white, middle-aged men and women with lower levels of educational attainment (Case and Deaton 2015). This increased death rate appears especially prominent among rural residents (Snyder 2016). Of special significance in recent years are high rates of opioid addiction and overdose deaths among rural and disadvantaged populations (Monnat and Rigg 2016). There are counties in Appalachia where life expectancy today is less than in 1980 and on par with places such as Ethiopia.

The economically disadvantaged, especially those living in rural areas, also have significantly fewer educational opportunities. Two factors are relevant. First, schools are largely funded by local property taxes. This source of funding means that schools in poor communities have fewer resources than schools in wealthier neighborhoods. Often underfunded schools fail to get young people excited about learning or motivated to continue their education. Second, the rising cost of a college education makes it much more difficult for persons with fewer economic resources to attend and complete college. The subsequent limited education for the disadvantaged means limited employment opportunities, which then puts their children in a position where educational opportunities are subsequently limited, and the cycle continues (Haveman et al. 2001).

There is also a strong relationship between economic disadvantage and crime (Benson et al. 2003; Byrne and Sampson 1986). Living in disadvantaged communities with high crime rates increases the likelihood of being a victim of crime. Additionally, the fear of crime reduces quality of life. Further, many of the costs of economic disadvantage are psychological. Economic hardship means wondering how next month's rent and utility bill will be paid, or even if there will be food on the table. The stress from these concerns results in higher divorce rates and more family problems (Booth and Amato 1991). Moreover, economic disadvantage often leads to a sense of inferiority when interacting with others. The costs of these feelings are impossible to measure.

The cumulative effect of hardship on so many levels is that economically disadvantaged persons tend to experience higher levels of drug addiction, alcoholism, and suicide. Substance abuse is often an attempt to cope with despair (Resnick et al. 1997). Collectively, drug addiction, alcoholism, and suicide have become known as "Diseases of Despair." For example, the opioid epidemic has been especially problematic for persons in rural areas and among blue-collar workers experiencing economic distress. Since 2000, nearly 800,000 people in the United States have died of drug overdoses. The opioid epidemic is especially devastating in economically depressed areas such as Appalachia and struggling "Rust Belt" communities (Haven et al. 2011; Monnat 2018). The subsequent despair and anger from all of these outcomes were apparent in the 2016 election. Clearly, the best way to address the opioid epidemic and other rural problems would be to improve economic conditions.

### **Policies to Assist Rural America**

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In some ways, the current problems being experienced by rural Americans are a consequence of being ignored or forgotten in the policy-making arena in recent decades. At one time, the residents of rural America were a large enough segment of the US population that they exerted a strong political voice. Through the years, the United States has become increasingly urbanized, with rural residents comprising an ever-smaller segment of the population. The result has been a subsequent reduction of their political power (Paarlberg 1980). At both the national and state levels, policy makers have adhered to the wishes of their urban constituents, upon whom they are

dependent to win the next election. The lack of concern for rural America has meant that policy makers have not adequately addressed their concerns.

Rural residents have felt betrayed by both political parties. At one time, most blue-collar workers (and thus many workers in the goods producing industries) voted Democrat because of their support for labor unions. In recent decades, membership in labor unions has declined, which has diminished support for Democrats. Most rural residents are hard pressed to find a Democrat policy in recent years that has directly benefitted them. Many feel the Democrat Party's strong emphasis on environmental issues has harmed rural job opportunities in mining, manufacturing, and other goods producing industries.

In recent decades, most rural residents have voted Republican, largely because of the Republican conservative stand on social issues such as abortion and same-sex marriage (Frank 2004; Wunthnow 2018). The resistance of Republicans to social programs benefitting minorities has also played a role in a larger share of white rural residents voting Republican (Hochschild 2016). A number of studies have found that many Americans believe that welfare programs benefit minorities and that these minority individuals lack a strong work ethic and take advantage of the system (Gilens 1999; Quadagno 1994; Wetts and Willer 2018). As was clear from the 2016 election, rural residents have never been totally committed to the Republican philosophy of cutting taxes for the wealthy and then cutting programs for the working class.

Those interested in attaining a greater proportion of the rural vote need to understand the issues and then develop policies that address these issues. I have no question that policies that benefit rural America will also benefit urban Americans as well. Of particular importance, to survive and thrive in a twenty-first-century economy, access to modern information and communication technology is critical. As mentioned earlier, rural America tends to be disadvantaged in this arena compared to urban areas (Whitacre et al. 2015). Closing the digital divide would be a good place for the policy discussion to begin. Other policy suggestions are provided in chapter 10.

## Moving Forward

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Making a reality of the changes suggested in this book will not be easy to achieve. Change means doing things differently than they have been done

in the past. Change means outdated jobs will become obsolete and will be replaced by new jobs. Change means new skills and training will be required. As such, there will be substantial resistance, at least initially. The alternative, however, is to continue the process of slow, eroding decline that is currently underway.

In this book, I describe my vision for a twenty-first-century economy in rural America. I begin by devoting a chapter to each of several major, traditional goods producing industries, including manufacturing (chapter 1), agriculture (chapter 2), coal (chapter 3), oil and gas (chapter 4), logging (chapter 5), mining (chapter 6), and amenities and tourism (chapter 7). In the next two chapters, federal policies related to the environment (chapter 8) and federal land management (chapter 9) are discussed, as these policies have significant implications for the goods producing industries in rural America. For each chapter, I visit at least one community that has historically been dependent economically on the particular industry or impacted by federal policies. I then examine the resulting consequences of economic change for the community. In the concluding chapter (chapter 10), I outline what a twenty-first-century economy in rural America will look like and how we can achieve it.

I feel qualified to write this book for several reasons. Perhaps most important, I genuinely care about and have deep roots in rural America. I grew up on a farm in a small and isolated rural community. Second, I believe my knowledge and understanding of rural America are unsurpassed. I have spent my entire professional career studying the causes and consequences of economic change in rural America. I have written many other books and articles on this topic. In my current position as director of the Western Rural Development Center, I travel widely and interact extensively with the leaders and residents of rural America. I have listened and learned, and the path that needs to be taken is clear. If we make the right choices, the future of rural America can be very bright indeed.