

1st Quarter 2012| 27(1)

THEME OVERVIEW: RURAL WEALTH CREATION

John Pender, Bruce Weber, and Wayne Fawbush

JEL Classification Codes: R11, R12

Keywords: Community, Development, Economic, Prosperity, Rural, Wealth

Promoting rural wealth creation in the United States is a high priority of the U.S. Department of Agriculture (USDA) and of a growing number of rural development organizations. Secretary Vilsack argued in 2009 that USDA “must help rural communities create wealth so they are self-sustaining, repopulating and thriving economically”, and this is one of the four goals of USDA’s current strategic plan—with the word “prosperity” replacing the word “wealth”. Achieving sustainable prosperity requires creating and maintaining wealth, broadly defined (Arrow, et al. 2010; Pender, Marré, and Reeder 2012), so this change in wording does not change the importance of rural wealth creation to achieve this goal. Many community and rural development organizations and researchers have advocated an asset-based approach to community and rural development in the past few decades.

Although the concept of rural wealth creation is attracting substantial attention among policy makers and development funders and practitioners, research on this topic has been limited. There are large and growing literatures on some types of assets and their relationship to rural economic development, such as human, natural and social capital. However, there has been much less research that applies a framework incorporating multiple types of assets to investigate the interactions and dynamics of investments in different types of assets, and how these concepts can be measured. Recent work by leading economists has sought to measure the comprehensive wealth of selected nations, but the concepts and methods in this research have not yet been taken up in research on rural areas of the United States.

To take stock of what is known about what constitutes wealth in rural areas, how it can be created and maintained to improve rural livelihoods, and how progress in creating it can be measured, and to initiate an ongoing dialog and research effort, the USDA Economic Research Service (ERS) and the Ford Foundation co-convoked a National Conference on Rural Wealth Creation and Livelihoods in Washington, D.C. in October 2011. Nearly 170 rural development practitioners, researchers, policy makers, funders and others concerned with these issues from all parts of the United States participated. The articles presented in this theme are based on some of the best research discussed at the conference.

In this overview, we briefly define the concepts of “wealth” and “wealth creation”, explain why a focus on wealth creation is important, discuss recent efforts to promote rural wealth creation, discuss what is known from past research about rural wealth creation, and introduce a conceptual framework for rural wealth creation and the theme articles.

What Is Meant by “Wealth” and “Wealth Creation”?

In common language, the term “wealth” often connotes ownership of money and other financial assets, net of liabilities. Economists and statisticians often refer to wealth as the net value of marketable assets, including physical assets such as houses, land, and equipment, as well as financial assets. More recently, some economists have defined and sought to measure broader wealth concepts. For example, Nobel laureate Kenneth Arrow and colleagues define “comprehensive wealth” as “the social worth of an economy’s entire productive base,” which “consists of the entire range of factors that determine intergenerational well being.” Others, such as the World Bank, refer to “intangible wealth” beyond measurable physical, financial and natural assets, arguing that this concept represents the “dark matter” of economics: assets not easily observed and measured but which account for much of the variation in economic performance across nations.

We also define wealth comprehensively, as the stock of all assets net of liabilities that can contribute to people's well-being. However, we don't use the term "social net worth," which suggests that all types of wealth can be measured using a single monetary metric. Nor do we assert that wealth includes all factors that determine well-being, since some factors that determine people's well-being are beyond their control—such as the amount of energy provided by the sun—and because investments in wealth do not necessarily improve anyone's well-being. Improvements in well-being depend on how the wealth is used and how the costs and benefits are distributed.

Wealth includes productive assets, such as business plant and equipment, as well as assets that are valued primarily for direct consumption benefits, such as durable consumer goods. We focus in this theme on multiple types of wealth, referred to as "capitals". In recent decades, many scholars and development practitioners have argued that other forms of capital beyond marketable financial and physical assets are important for economic development, including "human capital"—resources embedded in people, such as education, skills and health; knowledge or "intellectual capital"—distinguished from human capital because it is not tied to any specific individual; "natural capital"—renewable and exhaustible natural resource stocks affected by human activities; social capital—features of social organization that facilitate coordination and cooperation for mutual benefit; "cultural capital"—people's understanding of society and their role in it, and their values, symbols, and rituals; and "political capital"—the ability of a group to influence the distribution of resources within a social unit (Pender, Marré, and Reeder 2012).

All of these types of capital can be accumulated or depleted as a result of investment and consumption decisions and can contribute to the well-being of people. These characteristics make this broad set of assets important for economic and community development, even if not all of these are marketable or easily measured.

"Wealth creation" involves investments in increasing this broad array of assets. If all types of wealth can be aggregated into a single comprehensive measure, wealth creation simply means an increase in this comprehensive measure. However, if some types of wealth cannot be substituted by other types of wealth—as argued by proponents of a "strong sustainability" perspective—it may not be feasible or advisable to attempt to measure comprehensive wealth by a single measure. In this case, it may not be possible to say whether wealth was created or destroyed in aggregate; only whether particular types of wealth were created or destroyed.

Why Focus on Wealth Creation?

Since wealth is the stock of assets that can contribute to people's well-being, increasing wealth is important for increasing well-being. However, wealth creation in aggregate may not improve the well-being of all people in a community. This depends upon the distribution of wealth ownership in the case of private wealth, or more generally, the distribution of costs and benefits among community members and whether the social benefits of the investment exceed the social costs. These impacts depend upon many factors, such as uncertainty about the benefits and costs of the investment, who is making the investment, who is entitled to the flow of benefits from it, and the costs and benefits that the investment may impose upon non-investors.

Although increases in aggregate wealth may not be sufficient to improve the well-being of everyone in a community, increasing wealth is necessary to sustainably increase well-being. For example, communities in a mineral rich region may increase their incomes by mining these resources, but unless sufficient proceeds are invested in other assets, such increases in income may be temporary. Furthermore, since people's income and consumption prospects depend upon their wealth, long-term solutions to poverty require efforts to generate and use wealth effectively.

Recent Efforts to Promote Rural Wealth Creation

Creating wealth has long been a pursuit of regional and rural development policies and programs. For example, in the New Deal era, the Tennessee Valley Authority promoted regional development through investments in dams and other physical infrastructure. The Appalachian Regional Commission (ARC), begun as part of the "War on Poverty" in the 1960s also has had a strong commitment to investment in infrastructure, particularly highways. USDA's rural development programs have for many years supported investment in energy and telecommunications infrastructure, community facilities and rural housing, among other assets. Other types of capital have also been developed through such programs, such as human capital through education and training programs, natural capital through environmental conservation and restoration programs, and social capital through support for cooperatives and other types of civic organizations.

Although the idea of investing in multiple types of assets is not new, in recent years several programs have increased their emphasis on development strategies that build on the multiple kinds of assets that exist in particular regions and communities, take advantage of synergies among different assets, and respond to local priorities. For example, the ARC has embraced an "asset-based development" approach, emphasizing investment strategies that build upon the cultural, natural, physical, and leadership assets of Appalachian communities. Examples of ARC supported asset-

based development projects include development of cultural and heritage tourism along the Bluegrass Heritage Music Trail in Virginia—the “Crooked Road”, tourism development in Gateway Communities to the Blue Ridge Mountains and the Great Smoky Mountain National Park, and rehabilitation of an industrial brownfield site in Pennsylvania into a modern industrial park and business incubator. Each of these projects builds on multiple types of existing assets and invests in multiple assets.

The Ford Foundation is supporting wealth creation in three high poverty regions of the United States—central Appalachia, the Deep South and the Rio Grande Valley—through its “Wealth Creation in Rural Communities - Building Sustainable Livelihoods” program. The Foundation’s approach is based on four principles: 1) focus on place by working with assets on the ground that are accessible; 2) encourage collaboration to share resources in order to develop the capacity to connect producers to viable regional or national markets; 3) understand and contribute to all components of wealth in a community; and 4) emphasize local ownership of wealth as a practical means of maximizing benefit to a community from the utilization of local resources. This approach emphasizes helping value chain intermediaries to identify, explore, and construct value chains that expand livelihood opportunities for low-income rural residents. Because the approach is demand driven—but also builds on local assets that determine communities’ initial capacity to meet the demand—local producers have the opportunity to work with the market sector to create reciprocal relationships that benefit all parties. Value chains are constructed in such a way as to enhance and create seven forms of community wealth that are seen as critical to family and community well-being: individual—synonymous with human—capital, built—synonymous with physical—capital, and intellectual, social, natural, political, and financial capital. Using a wealth creation framework is meant to facilitate understanding of the impacts of value chain development on the total wealth of a community, in order to ensure that wealth is truly being created rather than being simply exploited or transferred from one pocket to another.

Federal Government agencies are promoting rural wealth creation through several regional development initiatives. For example, USDA’s Regional Innovation Initiative is targeting 5% of the funds in 10 existing programs to support regional pilot projects, strategic planning activities, and other investments to improve rural economies on a regional basis. In the past few years, funds have been provided to seven multi-jurisdictional regions in different states to support regional planning activities focused on creating wealth, improving the quality of life and growing the regional economy. These planning activities have focused on developing regional food systems, renewable energy, ecosystem services markets, and other opportunities. Other Federal agencies, including the Departments of Housing and Urban Development, Transportation, and the Environmental Protection Agency are promoting regional planning for efforts to improve land use, transportation, and environmental quality through the Partnership for Sustainable Communities; involving several predominantly rural regions and investments in multiple types of assets. Other Federal and State initiatives are also promoting job and wealth creation in several rural regions.

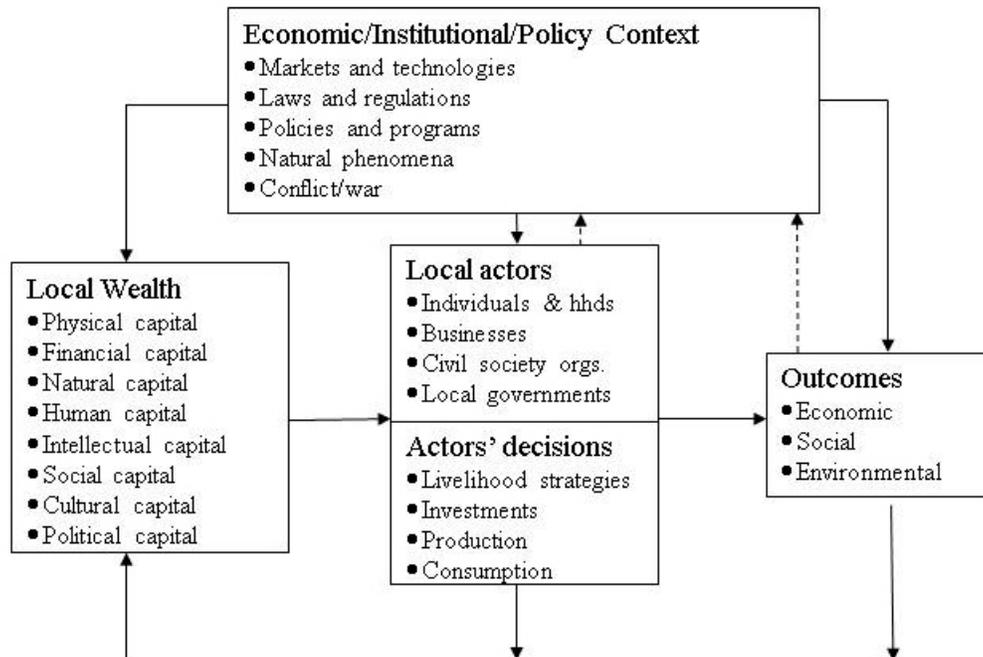
How Much Is Known from Research about Rural Wealth Creation?

Scholars who have focused on development in rural America have tended to concentrate research on movements of people and firms, and changes in income and income poverty. Rural researchers have tended to focus on deficits and problems rather than assets, and have emphasized jobs and neglected broader livelihood strategies and wealth creation.

The domestic and international rural development literatures have developed frameworks over the past few decades that focus on sustainable livelihoods for rural populations, particularly those living in poverty. These frameworks examine how increases in well-being and reductions in poverty for rural populations can grow out of livelihood strategies for the rural poor that involve institutional and organizational interventions that mobilize rural “capitals” within their particular historical and economic context. A conceptual framework for rural wealth creation that draws upon this literature is provided in Figure 1 (taken from Pender, Marré, and Reeder 2012).

This framework emphasizes that wealth creation is a context-dependent and dynamic process, with the economic decisions made by local actors in rural communities—households, businesses, local governments, and civic organizations—affected by their endowments of different types of capital and by the local economic, institutional and policy context. These decisions lead to economic, social and environmental outcomes, some of which feed back to change the asset endowments of communities and their members. This process results in multiple possible dynamic pathways of changing wealth and well-being, such as sustainable growth paths involving accumulation of a broad set of assets and improving living conditions; downward wealth-based poverty traps in which overall wealth is depleted; and transitional paths in which some types of wealth are depleted and the proceeds invested in other forms—for example, investing rents from depletion of mineral resources to develop physical and human capital. Over a longer time frame and broader regions, the accumulation of decisions and outcomes in particular communities can change the underlying context, leading to further dynamic prospects.

Figure 1: Conceptual Framework for Rural Wealth Creation



Research on rural wealth creation in the United States has only begun to draw on such frameworks. A substantial body of empirical research has investigated the impacts of particular types of capital on rural development processes or outcomes; particularly human, natural and social capital in recent years. However, little empirical research has investigated the interactions of different types of capital, or how the effects of different types of capital vary across different contexts. An example of such research is a recent article by McGranahan, Wojan and Lambert (2011), which examines how natural amenities, human capital in the form of “creative class” people, and an entrepreneurial context interact to generate greater economic growth in rural U.S. counties. Even less research has investigated the dynamics of rural wealth creation and destruction. In part, this reflects an absence of research on how to measure wealth and changes in wealth in rural areas of the United States, and limitations in the available data. Despite such limitations, research on measuring comprehensive wealth at a national level has demonstrated that progress can be made despite data limitations, and that efforts using available data may inspire and inform efforts to improve data collection in this direction.

Articles in this Theme

The articles in this theme address various components and relationships in the framework presented in Figure 1. In “Wealth, entrepreneurship, and rural livelihoods”, Deborah Markley and Sarah Low investigate how several types of wealth—including human, financial, physical, and natural capital—affect one aspect of rural livelihood strategies—entrepreneurship. Although policy makers often focus on access to financial capital as a key mechanism to promote entrepreneurship, Markley and Low find that other types of wealth may be more important building blocks in some U.S. regions. They raise several questions for future research on how multiple forms of wealth contribute to entrepreneurship and improved rural livelihoods.

In “Latino/a wealth and livelihood strategies in rural Midwestern communities”, Corinne Valdivia and her co-authors synthesize findings from several pieces of research on asset accumulation and livelihood strategies of Latino/as in the Midwest. They focus on the impacts of cultural, social and human capitals on the incomes and subjective well-being of Latino/as in rural communities. They find that social, cultural and human capitals and acculturation strategies have a significant effect on livelihood outcomes; that the interaction of human capital and language ability influences acculturation strategies; and that the rural community context—particularly language pressure and experience of discrimination—also strongly affect outcomes.

In "Forest wealth and economic resilience of Oregon communities", Bruce Weber and Yong Chen examine how federal decisions about the management of natural capital in forests affects changes in population, real property wealth and incomes in rural communities in Oregon. In the early 1990s, the Federal government implemented a major policy shift on federal lands in the Pacific Northwest from harvesting forests to preserving forests. The impacts of this policy on rural communities depended on the economic context; in particular, on whether or not the towns were heavily dependent on mills and logging. Communities close to protected Federal forests experienced greater growth in population, real property wealth, and median household income than more distant communities during this period. If the communities close to protected forests were logging-dependent or mill towns, however, they experienced slower growth in these outcomes.

In "Red light ahead: preparing local governments financially for the next disaster", J. Matthew Fannin and Joshua Detre discuss how Federal programs that fully financed emergency costs and debris removal costs helped to maintain public sector wealth in Louisiana and Mississippi after Hurricanes Katrina and Rita. They provide evidence that the financial liquidity and solvency of counties in the hurricane affected region were little changed after the hurricanes, and argue that this was largely due to the fact that the Federal government provided full reimbursement to local governments. They investigate a counterfactual situation if the Federal government had required a 25% local share of these costs and show the dramatic difference in public financial outcomes that would have occurred. They discuss policy approaches to reduce the risks faced by such communities, considering how likely similar events are to recur and the risk that the Federal Government will not provide full insurance in future disasters.

For More Information

Arrow, K.J., Dasgupta, P., Goulder, L.H., Mumford, K.J., and Oleson, K. (2010). *Sustainability and the measurement of wealth*. NBER Working Paper 16599, National Bureau of Economic Research, Cambridge, MA. Available online: <http://www.nber.org/papers/w16599>.

McGranahan, D., Wojan, T., and Lambert, D. (2011). The rural growth trifecta: outdoor amenities, creative class and entrepreneurial context. *Journal of Economic Geography*, 11(3), 529-557.

Pender, J., Marré, A., and Reeder, R. (2012). *Rural wealth creation: concepts, strategies, and measures*. Economic Research Report No. 131, USDA, ERS, Washington, DC.

John Pender (jpender@ers.usda.gov) is Senior Economist, Economic Research Service, U.S. Department of Agriculture, Washington, D.C. Bruce Weber (bruce.weber@oregonstate.edu) is Professor, Department of Agricultural and Resource Economics, Oregon State University, Corvallis, Oregon. Wayne Fawbush (W.Fawbush@fordfoundation.org) is Program Officer, Ford Foundation, New York, New York.

The views expressed in this article are those of the authors and should not be attributed to the Economic Research Service or the U.S. Department of Agriculture. The authors are grateful to the Agriculture and Food Research Initiative (AFRI) of the USDA National Institute for Food and Agriculture, and to the Ford Foundation, which provided financial support for the National Conference of Rural Wealth Creation and Livelihoods, which led to the identification of the papers in this theme. The conference was supported by the AFRI Agricultural Economics and Rural Communities Program, Award # 2011-67023-30087.

The views expressed are those of the authors and do not necessarily reflect the positions of the Federal Reserve Bank of Kansas City, the Federal Reserve System, or Purdue University.

© 1999-2012 Choices. All rights reserved. Articles may be reproduced or electronically distributed as long as attribution to Choices and the Agricultural & Applied Economics Association is maintained.

**The farmdoc project distributes Choices in partnership with
the Agricultural and Applied Economics Association.**

[click here to visit choicesmagazine.org >>](http://choicesmagazine.org)

1st Quarter 2012| 27(1)

WEALTH, ENTREPRENEURSHIP, AND RURAL LIVELIHOODS

Deborah M. Markley and Sarah A. Low

JEL Classification Codes: R1, O2, L26

Keywords: Capitals, Entrepreneurship, Livelihoods, Self-employment, Wealth

The current attention of policy makers at federal and state levels is laser-focused on job creation—as New York Governor Cuomo said in a December 6, 2011 speech, “it’s all about jobs, jobs, jobs.” Entrepreneurship—the start up and growth of new companies—is viewed as a means toward this end and recent research supports this connection (Stangler and Kedrosky, 2010). Both policy makers and economic development practitioners want to understand how to encourage entrepreneurial start ups, particularly in rural areas. This understanding is linked, in part, to consideration of how investments in rural wealth, broadly defined, may drive entrepreneurship and improved livelihoods. Understanding the relationship between wealth, entrepreneurship and improved rural livelihoods will help focus policy attention on the most appropriate drivers of entrepreneurship.

This article begins by defining entrepreneurship and highlighting some important urban/rural differences in entrepreneurship rates. It then offers a synthesis of key findings from the literature suggesting the impact of wealth on entrepreneurship rates in general and in rural areas. Next, it makes the connection between entrepreneurship and improved rural livelihoods, defined not only in terms of job creation but also in terms of generating wealth over time. The concluding section identifies a set of research questions that need to be addressed to fully understand the relationship between wealth, entrepreneurship and rural livelihoods.

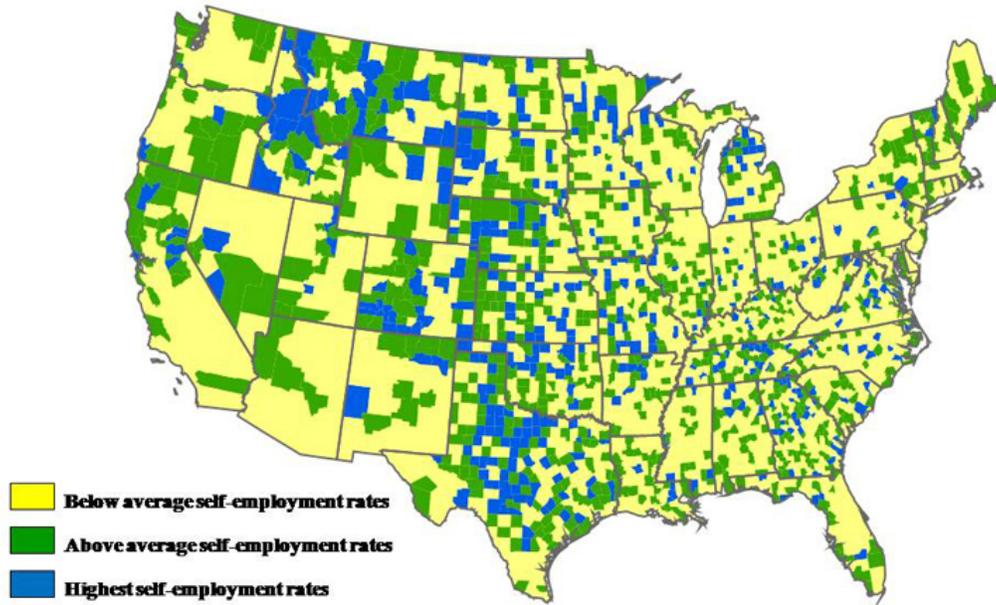
Entrepreneurship Defined

The definition and measurement of entrepreneurship is the subject of much discussion, as are the characteristics associated with entrepreneurs (Bull and Willard, 1993; Goetz, Partridge, Deller, and Fleming, 2010). According to Goetz, et al. (2010, p. 31), “conventional data sets only allow an approximation, forcing analysts to use indirect measures thought to be associated with entrepreneurship.” While not ideal, the self-employment and employer establishment birth rates are widely used metrics because data are readily available. Neither measure adequately captures the presence or absence of entrepreneurial characteristics in the firm owner such as innovation, creativity, and opportunity seeking behavior. However, these measures do reflect two important types of entrepreneurs—those who pursue self-employment—as a means of earning an income and/or pursuing an opportunity—and those who start a business that employs others, often equated with growth entrepreneurs. Since both types of entrepreneurs play a role in the rural economy, these two measures permit an examination of urban/rural differences in entrepreneurship rates and provide insights into the connection between rural wealth and entrepreneurship.

Data show important differences in the type of entrepreneurship in rural vs. urban areas. The self-employment rate is highest in nonmetropolitan counties. This variation could reflect the realities of industry mix—barriers to firm entry may be greater in higher tech or more capital intensive companies located in urban places. It may also reflect necessity entrepreneurship, or individuals starting businesses because they have no other economic alternatives. These enterprises may be marginal in terms of opportunities for future growth but provide important income supplementation. This assumption is supported by the fact that the self-employed in metropolitan counties generate higher incomes and create more value-added, in the aggregate (Low, Henderson, and Weiler, 2005). Conversely, the employer establishment birth rate is highest in metro counties and lowest in the most rural counties. An important research question would be to test whether opportunities, resources and/or motivation to move from self-employment to employing others may be more limited in rural areas.

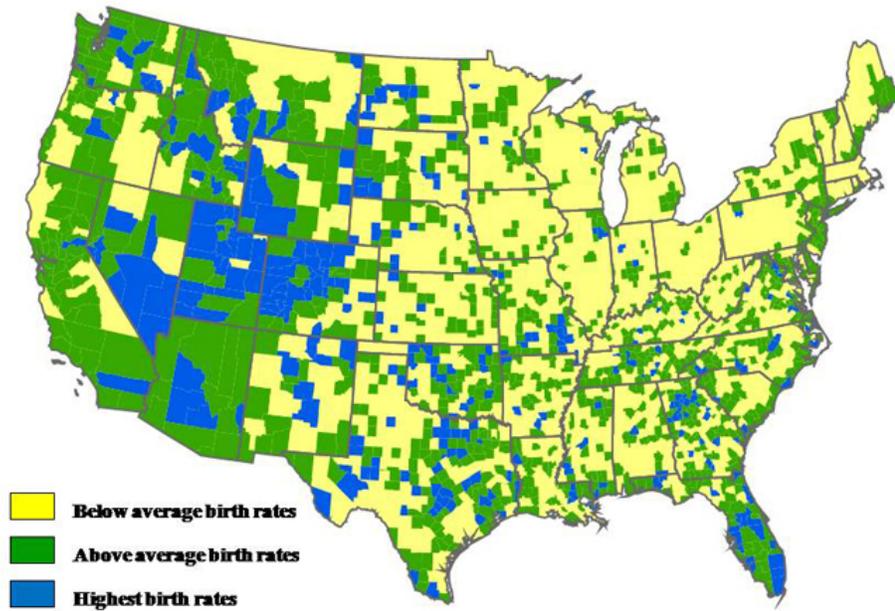
There are important regional variations in entrepreneurship rates as well. Self-employment rates are relatively high in the Great Plains and relatively low in the South (Figure 1). The employer establishment birth rate also exhibits regional variation—it is below average in the Great Plains region and highest in the West and Florida (Figure 2). Accounting for spatial variation raises an important research question—can differences in entrepreneurship across rural and urban places be explained by differences in human, financial, built and/or natural capital?

Figure 1: County Self-Employment Rates



Data from the Bureau of Economic Analysis, 2008. Rate calculated as nonfarm proprietors over total nonfarm employment. Updated from Low, Henderson, and Weiler (2005).

Figure 2: County Employer Establishment Birth Rates



Data from U.S. Census Bureau BITS, 2008. Rate calculated as employer establish births over total establishments. Updated from Low, Henderson, and Weiler (2005).

Wealth and Entrepreneurship

Research considering how different types of county wealth affect entrepreneurship rates focuses specifically on human, infrastructure or built, natural, and financial capital. The relationships of intellectual—R&D and university technology transfer, social, and political capital to entrepreneurship have not been widely studied. In this section, we focus on wealth as defined and documented in Low, Henderson, and Weiler (2005) and point out how differences in entrepreneurship across the rural-urban continuum may be driven, in part, by wealth differentials.

Human Capital

Human capital embodied in a region's labor force is an asset that can influence entrepreneurship development and the potential success of programs and policies designed to encourage business start up and growth. While human capital is usually assumed to contribute to entrepreneurship development, research suggests differential impacts depending on the type of entrepreneurship. The relationship with self-employment is weak—the percent of adults with a college degree is weakly negatively associated with growth in self-employment (Goetz and Rupasingha, 2009) and has no relationship with the self-employment rate, but has a positive relationship with self-employment income (Low, Henderson, and Weiler, 2005). These results may be explained by the fact that individuals with higher levels of educational attainment have greater wage and salary opportunities and are less inclined to seek self-employment. Research shows human capital is positively related to employer establishment births and there is also evidence that more educated individuals with entrepreneurial aspirations may be opportunity entrepreneurs—starting businesses in response to perceived market opportunities that, in turn, employ others immediately (Figuroa-Armijos, Dabson, and Johnson, 2012).

From a policy perspective, investments to increase levels of educational attainment and other forms of skill building may enhance the potential of growth entrepreneurs in a rural area. However, human capital is mobile. Investments to increase educational attainment may not increase the stock of human capital in rural places if, for example, young people leave after high school and do not return. Corresponding investments in other forms of capital, e.g., natural capital, or broadband access—built capital, may play an important role in encouraging more highly skilled individuals and entrepreneurs to remain in rural places, thus offsetting the mobility of this enhanced human capital.

Infrastructure or Built Capital

Several county-level studies of entrepreneurship have looked at infrastructure measures including highway density and broadband Internet availability. Drawing again on Low, Henderson and Weiler (2005), results show that self-employment income and value-added are positively related to highway density and broadband availability, in contrast to the self-employment rate alone which had a weak but negative relationship. These results suggest that built capital, including higher technology investments in broadband, are important components of a community environment that supports employer establishments or growth entrepreneurs. In today's global environment, entrepreneurs view broadband access as they do transportation options—as a way to connect with nonlocal markets in order to grow their companies. From a policy perspective, it is important to recognize that infrastructure degrades or becomes outdated over time, as can be seen with Internet access. Investment in built capital requires both current and planned expenditures to deal with obsolescence.

Natural Capital

Natural capital has been found to be positively related to indicators of entrepreneurship in many county-level studies (Glaeser, Kerr, and Ponzetto, 2010; McGranahan, Wojan, and Lambert, 2011; Stephens and Partridge, 2011). Natural capital is associated with economic growth in non-metro counties that have higher levels of creative capital and entrepreneurship, measured as average firm employment and self-employment (McGranahan, Wojan, and Lambert, 2011). The relationship between natural capital and entrepreneurship may work in two directions. Entrepreneurs may be attracted to areas rich in natural capital—ski slopes in Colorado and coastal communities—and, assuming investments in other forms of capital, choose to live and work in these regions. Alternatively, entrepreneurs may build their businesses around the natural capital assets or wealth of the region—wind farms, tourism companies, and regional food companies. Policies protecting and remediating the natural assets, as well as increasing access to the outdoors, could contribute positively to enhancing the entrepreneurial development potential in a region by attracting people who in turn create jobs for themselves and potentially others.

Financial Capital

Access to financial capital is widely seen as a critical ingredient for entrepreneurship development, particularly in rural America where a lack of access to financial capital is perceived. Many public policies and programs have been

implemented to increase access to financing—state-run venture capital funds and the USDA business and industry loan guarantee program. This focus on the supply of financial capital does not take into consideration the effective demand for capital in rural areas. To be a positive ingredient to entrepreneurship development, financial capital must come at the right time and in the right form to meet the needs of the entrepreneur. Identifying these needs is difficult without survey and other primary data collection techniques.

Measures of financial capital used in research come primarily from publicly available secondary data. A positive relationship between bank deposits per capita and the employer establishment birth rate and the self-employment rates has been identified (Low and Weiler, forthcoming in *Economic Development Quarterly*). This result may reflect the fact that those seeking self-employment often do so as an income supplement and not to create a growth venture. Entrepreneurs are more likely to seek bank capital when they want to expand their business. Since entrepreneurs often use equity in their homes as collateral for business loans, the percent of owner-occupied homes or the median housing value in a county should be positively related to entrepreneurship. The association has been confirmed for self-employment and its growth (Goetz and Rupasingha, 2009; Low and Weiler, forthcoming in *Economic Development Quarterly*). Given this important relationship, the current housing crisis and the presence of “underwater homes” likely have a depressing effect on entrepreneurial development in rural and urban areas alike. Despite the assumption that financial capital is an important driver of entrepreneurship, the financial wealth measures presented explain less than 1 and 1.5 percent of the variation across counties in self-employment and establishment birth rates, respectively.

Wealth Interactions

In spite of the insights gained from considering several forms of wealth and their relationship to our two measures of entrepreneurship, it appears that many other factors are involved, and potentially more important, in determining entrepreneurship rates. Research is beginning to suggest that multiple forms of wealth, and their interactions, are necessary to achieve entrepreneur-driven economic growth. McGranahan, Wojan, and Lambert (2011) posit that the combination of creative capital and natural wealth holds promise for realizing growth from entrepreneurship in nonmetropolitan America. Creative capital provides knowledge and ideas. Natural capital provides quality-of-life amenities and resource-based assets that attract entrepreneurial talent. In testing this idea, McGranahan, Wojan, and Lambert (2011) find that creative class-driven economic growth is strongest in communities that have high levels of natural wealth and entrepreneurship, all else being equal. From a policy perspective, this research suggests that rural communities without natural amenities may be challenged in tapping the potential of entrepreneurship as a driver of economic growth.

Another important interaction across multiple forms of wealth relates to the connection between financial capital and human capital. Experience from venture investing suggests that money alone is less effective than if combined with high quality advisory services. Financial capital may meet one set of needs, but building the entrepreneur's skills to effectively use that capital and grow a business requires corresponding investments in human capital (Scruggs, 2010).

The Livelihood Connection

Entrepreneurship is associated with improved rural livelihoods when the businesses created enable individuals and families to increase their income and eventually begin to accrue assets—create wealth. The relationship between average self-employment income and the self-employment rate is mixed. Income volatility affects self-employment rates (Low and Weiler, forthcoming in *Economic Development Quarterly*) and counties with stable self-employment income streams have growing self-employment rates (Goetz and Rupasingha, 2009). This evidence suggests that entrepreneurship, defined by self-employment, may be perceived as a way to increase or stabilize income and contribute to improved livelihoods, if the opportunities are present.

According to the Global Entrepreneurship Monitor project (Ali et al., 2011), the rate of necessity entrepreneurship increased dramatically during the Great Recession—growing from 16.3 % of new U.S. ventures in 2007 to 24.7 % in 2009. If these necessity ventures are to generate improved rural livelihoods, a better understanding of the wealth needed to help these entrepreneurs successfully use self-employment as a strategy to increase income and resiliency would be helpful. At the same time, helping some of these entrepreneurs step onto a pathway from necessity to opportunity entrepreneurship, and begin to employ others in the region, may be an important policy consideration as well.

Entrepreneurs can also influence rural livelihoods through decisions they make about the management of their wealth or capital resources. The sustainable use of forest lands or investments made to reduce wastewater contamination of local waterways, for example, may improve natural capital and create opportunities for other entrepreneurs and

residents to benefit from the use of those assets. Similarly, successful entrepreneurs may help endow education, amenity, or economic development efforts that improve livelihoods.

Key Research Questions

Research suggests that investments in multiple forms of wealth may be a prerequisite to entrepreneurial development, whether defined as self-employment or employer establishment births. It may be the interaction between forms of wealth or capital in a particular region that contributes to creating a strong environment for entrepreneurship. Research to date has been constrained by a number of factors. One, much research has focused on entrepreneurship in urban areas, which benefit from proximity to dense markets and transportation nodes by definition. More research is necessary to better understand the drivers of entrepreneurship in rural areas of the country. Two, existing research has been dependent at least in part on publicly available secondary data that, in many cases, provide only rough proxies for levels of entrepreneurship and specific forms of capital. As a result, there are drivers of entrepreneurship that are not yet well understood or measurable. Three, research suggests that the influence of wealth on entrepreneurship is place-based, giving increased importance to field-based research to better measure specific capital assets, entrepreneurial potential, and the interaction between these components of a regional entrepreneurial environment.

A number of research questions are worthy of further study:

- How do other forms of capital or wealth impact entrepreneurship development? What impact might social and political capital have on entrepreneurship? How might this be measured and what are the implications for both policy and practice?
- How do investments in multiple forms of wealth drive entrepreneurship and improve rural livelihoods? How can we better understand the interaction effects across multiple forms of wealth and entrepreneurial development? What are the likely regional variations in these interactions?
- How does ownership of regional wealth influence the entrepreneurial potential in a region? Outside ownership and extraction of natural resources often lead to impaired natural capital, reducing the opportunities for this wealth to contribute positively to entrepreneurial development in a region. How might new ownership structures—land trusts, cooperatives, and conservation easements—be used to capture wealth for the benefit of the region? What are the implications for entrepreneurial development?
- What are the returns to strategies that promote entrepreneurial development as compared to those that promote the attraction of outside companies? Are there differences in the forms of wealth that contribute most positively to these alternative strategies? What are the rural-urban implications of these differences?
- Is there a sequencing of investments in multiple forms of wealth that is most effective in supporting entrepreneurial development? For example, do investments in social and human capital need to precede investments in financial and built capital in order for the latter forms of wealth to be most effectively employed? What does that suggest for both practice and policy?

Entrepreneurial development offers an additional benefit to rural regions that is not addressed in past or proposed research but is important nonetheless. Effective entrepreneurial development can set in motion a wave of impacts in communities and regions that go beyond the wealth created by individual entrepreneurs and their enterprises. Successful entrepreneurs create returns for their investors, often family and friends located in their rural regions. As the companies they create expand and grow, local units of government benefit from the expanded tax base and revenue streams. As companies grow, they often create employment opportunities, contributing additional income and benefits for local residents, along with the allied multiplier impacts. Finally, growth entrepreneurs often create wealth that is rooted in the local region. Successful entrepreneurs may become donors to local community foundations and contribute their time, talent and treasure to other community endeavors. While the broad-based research to document and better understand the role that entrepreneurs play in local wealth creation is lacking, there is ample anecdotal information of the potential for local entrepreneurs to give back in multiple ways to the rural communities that have supported them.

Moving Forward

If, as some suggest, the future of the United States and its regional economies lies in the encouragement of entrepreneurship, it becomes imperative to understand the relationship between investments in wealth and the encouragement of a region's entrepreneurial potential. While past research has created a starting point for this understanding, additional research is needed to clearly articulate for practitioners and policy makers the relationships between multiple forms of wealth and entrepreneurship. In addition, further study of the connection between entrepreneurship and improved livelihoods for rural people will require a better understanding of how wealth can help to move necessity entrepreneurs onto a pathway toward growth, how wealth can be used to maximize livelihood impacts, and how wealth can be captured in rural regions for the benefit of rural residents. The research questions

offered here may stimulate further thinking and exploration by researchers, practitioners, and policy makers concerned about the future of rural economies in the United States.

For More Information:

- Ali, A., Brush, C., De Castro, J., Lyons, T., Meyskens, M., Onochie, J., Phinisee, I., Rogoff, E., Suhu, A., and Whitman, J. (2011). 2010 United States National Report. Global Entrepreneurship Monitor Project. Babson College and Baruch College.
- Bull, I. and Willard, G. (1993). Toward a theory of entrepreneurship. *Journal of Business Venturing*, 8(3), 185-195.
- Cuomo, Andrew M. (December 6, 2011) Video Transcript of Economic Message. Available online: <http://www.governor.ny.gov/12062011videotranscript>.
- Figueroa-Armijos, M., Dabson, B., and Johnson, T. G. (2012). Rural entrepreneurship in a time of recession. *Entrepreneurship Research Journal*, 2(1).
- Glaeser, E. L., Kerr, W. R., and Ponzetto, G. A. M. (2010). Clusters of entrepreneurship. *Journal of Urban Economics*, 67(1), 150-168.
- Goetz, S., Partridge, M., Deller, S., and Fleming, D. (2010). Evaluating U.S. rural entrepreneurship policy. *Journal of Regional Analysis and Policy*, 40(1), 20-33.
- Goetz, S., and Rupasingha, A. (2009). Determinants of growth in non-farm proprietor densities in the US, 1990–2000. *Small Business Economics*, 32(4), 425-438.
- Low, S. A., Henderson, J., & Weiler, S. (2005). Gauging a region's entrepreneurship, *Economic Review*, 3rd Quarter. Kansas City, MO: Federal Reserve Bank of Kansas City.
- Low, S. A., and Weiler, S. (forthcoming). Employment risk, returns, and entrepreneurship. *Economic Development Quarterly*.
- McGranahan, D. A., Wojan, T. R., and Lambert, D. M. (2011). The rural growth trifecta: outdoor amenities, creative class and entrepreneurial context. *Journal of Economic Geography*, 11(3), 529-557.
- Scruggs, P. (2010). The role of equity capital in rural communities. Report to the Ford Foundation. Available online: <http://www.yellowwood.org/The%20Role%20of%20Equity%20Capital%20in%20Rural%20Communities.pdf>.
- Stangler, D., and Kedrosky, P. (2010). *Exploring firm formation: Why is the number of new firms constant?* Kauffman Foundation Research Series: Firm Formation and Economic Growth (Kansas City, MO: Ewing Marion Kauffman Foundation).
- Stephens, H. M., and Partridge, M. D. (2011). Do entrepreneurs enhance economic growth in lagging regions? *Growth and Change*, 42(4), 431-465.

Deborah Markley, PhD (deb@e2mail.org) is the Managing Director and co-founder of the RUPRI Center for Rural Entrepreneurship, Chapel Hill, North Carolina. Sarah Low, PhD (slow@ers.usda.gov) is an Economist in the Farm and Rural Business Branch, Economic Research Service, U.S. Department of Agriculture.

The views expressed here are those of the authors, and may not be attributed to the U.S. Department of Agriculture

© 1999-2012 Choices. All rights reserved. Articles may be reproduced or electronically distributed as long as attribution to Choices and the Agricultural & Applied Economics Association is maintained.

**The farmdoc project distributes Choices in partnership with
the Agricultural and Applied Economics Association.**

[click here to visit choicesmagazine.org >>](http://choicesmagazine.org)

1st Quarter 2012| 27(1)

LATINO/A WEALTH AND LIVELIHOOD STRATEGIES IN RURAL MIDWESTERN COMMUNITIES

Corinne Valdivia, Stephen Jeanetta, Lisa Y. Flores, Alejandro Morales and Domingo Martinez

JEL Classifications: J15, J18, R23

Keywords: Economics of Minorities, Races and Immigrants, Public Policy, Regional Migration, Regional Labor Markets

The current demographic and cultural changes in Midwestern and Southern communities are among the most important transformational events shaping the future of U.S. agriculture and rural America. Migration has been an important source of labor for the U. S. agricultural sector. Today's immigrants, primarily Latino/as, began to move to rural towns in growing numbers in the 1990s, alleviating decades of population decline, and contributing to the economic vigor of rural communities.

There are a number of implications of this changing demographic trend for rural wealth creation. Often the focus of private organizations and public institutions that promote rural wealth is to invest in existing resources in ways that create wealth for the community—increased income, improved housing, and infrastructure. Similarly increasing access to important services such as education and health care can support the creation of wealth and make the community a better place to live. Responding to the demands for jobs in agriculture, food processing, construction, services and related industries, Latino/as have principally contributed as providers of labor in many rural communities, and have largely been left out of the discussion of wealth creation in rural areas.

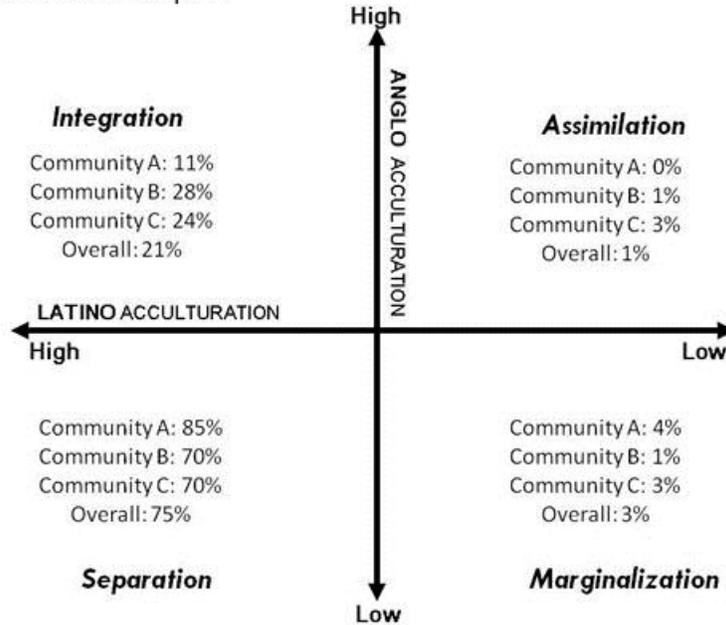
Now, young Latino immigrant families—a potential and substantial driver for the future of agriculture and development in rural America—are settling in communities, bringing renewal and growth. They are buying houses, starting businesses and expanding the talent pool. However, little is known, and often much is misunderstood, about how Latino/a newcomers create wealth. We have been studying the process of Latino/as settling in rural areas, based on information directly provided by newcomers and members of the receiving communities in the Midwest.

Latino Immigrants and Wealth Creation

Like all people, Latino/a newcomers create wealth in assets they accumulate. This not only includes tangible economic assets like physical and financial capitals, but especially intangibles like human, social and cultural capitals. Latinos invest in activities such as jobs and businesses to earn a living, which ultimately contributes to individual well-being and further growth of assets. The sustainable livelihood strategies framework used by social scientists and rural development practitioners focuses on understanding the strengths of newcomers, their assets, how these assets are created and invested, and the outcomes obtained as a result of their use. For example, the social relations and networks as well as the accumulated local knowledge of institutions and culture are key assets in Latino newcomer livelihoods (see Figure 1). Unique in the case of immigration is that the newcomers have cultures and life experiences that often are different from the long-time residents of the rural communities where they are settling. The context of the place—how easy is it for newcomers to access information about banking, schools, renting homes, starting a business, and health care; how people treat newcomers in the community—influences the creation of financial, physical, cultural, social, and human capitals.

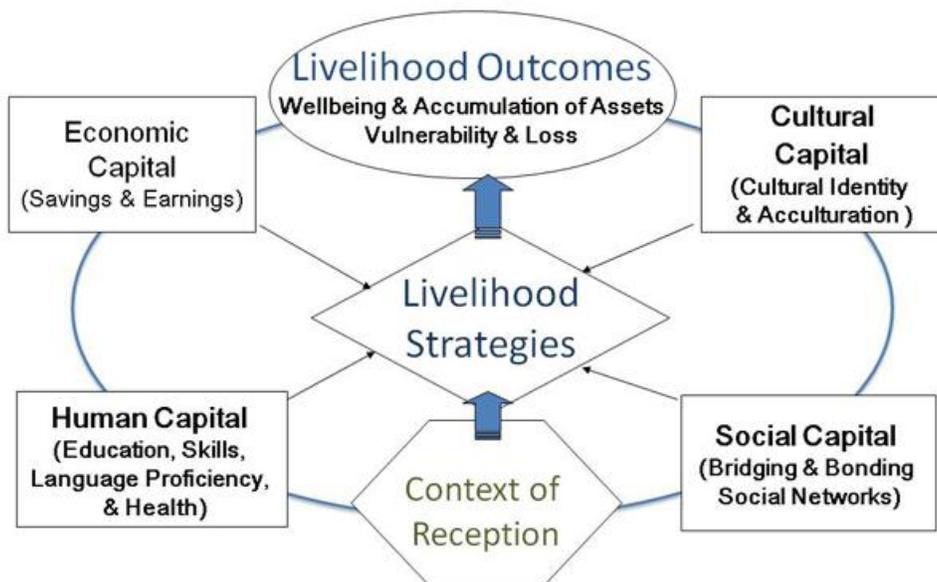
The focus of wealth creation is to learn about the assets that people accumulate and how they invest them to build their lives in the community. In our work, we have focused on understanding how Latinos/as (a) apply and develop their skills and knowledge, with a special emphasis on language; (b) create and utilize networks to access local resources, earn income, and save money; and (c) apply their values in ways that help them connect to their communities. An understanding of these strategies can inform policy making in terms of how to grow their capacity to increase wealth.

Figure 1: Strengths Based Approach: Livelihoods, Capitals and The Context Of Reception



Cultural capital is a key asset of immigrants, which includes acculturation and cultural identity. Acculturation is the adaptation process to the social and cultural context of the receiving community (Berry, 2003), where newcomers may adapt completely, partially or not at all to both the culture of the place where they settle, and the culture of their country of origin. Thus, the acculturation strategy used by immigrant newcomers is a combination of their acculturation to the culture of their country of origin and their acculturation to the host country. For example, the assimilation strategy is reflective of the “melting pot” philosophy, which espouses that the way in which newcomers can be successful in the new context is to shed the culture of the country they come from and to adopt the culture of their new country. On the other hand, an integration strategy reflects individuals who are highly acculturated to both cultures. Often times these individuals are considered bicultural (see Figure 2).

Figure 2: Distribution of Acculturation Strategies Among Latino/A Newcomers Across the Three Communities.



Cultural identity refers to an individual's attitudes about their own culture and the culture of other groups. It affects how newcomers interact with family and friends, colleagues at work, service institutions that support wealth creation, and the community at large. Cultural identity can affect the choices people make to secure their well-being. For example, Mexican immigrant workers in Las Vegas indicated that a primary motivation for moving, or not moving, to a higher level job was related to the effects the change would have on the family's well-being (Shinnar, 2007). These participants indicated that the advancement would appeal to them if it enhanced their family life by reducing their stress level at work. This finding is an example of how cultural identity may explain unexpected behaviors; in this case, salary was not the only driving force in job advancement; rather, the importance of family, a strong cultural value, was central in their job-related decisions. Both acculturation and cultural identity help us understand culture as an asset that individuals invest in, and draw upon to create strategies to function in various domains in society—at home, work, school, business and civic life (Berry, 2003).

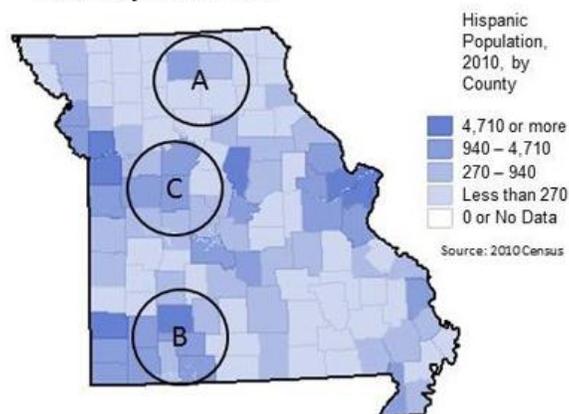
The acculturation strategies used by newcomers affect wealth creation. Higher levels of education and language proficiency in both English and Spanish are key elements in the human capital of Latino newcomers, and also influence how they develop their social networks (Valdivia et al., 2008). Latinos whose acculturation strategy follows the separation path rely on their family and friends networks for their wealth creation strategies, while those who have a more integrated acculturation strategy have family and friend networks but also have access to a broader array of community networks that can help them access resources that can expand their wealth creation strategies and livelihood outcomes.

Finally, the context of reception, or the presence/absence of a welcoming mat, reflects the attitudes of the receiving community toward the integration of immigrant newcomers. Is the community an inviting place that makes it easy to belong and makes it possible for Latino/a newcomers to prosper in the community, or does it discourage their settlement and integration? This can have an effect on where they engage in the community, such as where they send their kids to school, buy their groceries, and seek healthcare services. The context of reception can also affect the types of employment newcomers seek, where they choose to live, and the type of assets they create. If the context of reception is negative, then the strategies for creating wealth among Latino newcomers are limited.

Creation of capitals among the Latino population

In our work, we have sought to better understand the strategies that Latino newcomers developed to increase their wealth, and to what extent they were connecting to the resources in the community as they developed their strategies to create wealth. We interviewed over 600 Latino/a newcomers in three communities of the Midwest. The communities we chose were very different in population size and employment opportunities. One community was a small town with a single employer where most Latinos worked. The second community was a large town, located near an interstate highway, with multiple sources of employment in agriculture, agroindustry, and services. The third community was unique. It had a small local population base and a large tourism industry. The major employers of Latinos were hospitality, construction and services, not normally found in small towns. In all three communities, 10% of Latinos interviewed have established businesses. Some businesses primarily serve the Latino community and others serve the community at large. While immigrants are pulled to these communities for jobs, they remain because they find that these communities are good places to raise their families and educate their children. Fifty percent of the immigrants in our study indicated that they planned to stay in the rural communities where they live today.

Figure 3: Regions of Missouri Where The Study Took Place



We found that immigrants create social networks (social capital); acquire English while maintaining their Spanish, and learn new skills (human capital); and cultivate traditions and develop new ones that shape their ethnic identity (cultural capital). They have created strong social networks that help them find jobs in rural communities, support their businesses, and maintain a lifestyle that allows them to remain there. The networks they have created are diverse but tend to be limited to friends and family. Most Latino newcomers have strong networks of family and friends who share in their culture and language, while fewer have networks that also link them to the receiving community organizations and institutions. Latino newcomers are having some success through the friends and family networks, but the effectiveness of their wealth creation strategies often depends on the opportunities or limitations placed on them by the communities where they settle.

While Latino newcomers primarily form networks through friends and family, local institutions such as churches and employers also facilitate access to networks and serve as resources for services and information. When the networks are more diverse, the quality of information and the resources they access are of higher value. We identified 27 different community perceptions formed by Latino newcomers that were based on poor or inadequate information. For example, if a person has a negative experience with a healthcare provider then that information will spread throughout the network quickly and people will avoid the provider. This can be very difficult in small communities where resources are scarce. The type and extent of social networks that are available to Latino newcomers in a rural community are often dictated by their acculturation strategy. An acculturation strategy where newcomers in these communities are oriented towards both Anglo and Latino cultures was possible for only 25% of the newcomers. Latinos in this group tended to have greater wealth creation opportunities. This type of acculturation strategy was more prevalent in the more diversified communities.

Latinos create wealth in the community by providing an important source of human capital to the community at large and by investing in the education of their children, the next generation. They invest in social networks (social capital) to find better jobs, establish businesses, and to provide support for each other when there are emergencies. The diversity and extent of the social networks is affected by how well the Latinos are acculturated. Those Latino newcomers who acculturate towards both the U.S. and their own culture —become bicultural—are able to participate in a broader array of networks and thus have access to a broader array of wealth creation opportunities than those who do not. However, most Latino newcomers (75%) are highly acculturated toward their country of origin and not acculturated toward U.S. culture. For these immigrants, most of their social networks are limited to other Latinos with little interaction with the receiving community.

The Latino networks are critical in terms of helping the Latinos meet their basic needs and contribute to their wealth creation. Because they are not integrated in the broader community, they often don't have as much access to the resources they need to grow their businesses, buy land for their farms, or homes for their families. How the host community receives the newcomers affects how Latinos decide to integrate (acculturate), build their social networks, and develop their cultural identity (cultural capital).

We sought to understand what the process of acculturation and cultural identity looks like in terms of how immigrants integrate into the community—the different types of relationships that the Latino/a newcomers invest in as they settle into the community. We explored the following: How are the relationships at the level of friends and family? How are their relationships at the community level? How are their relationships with the schools characterized? Do they participate in community events and join service organizations and other groups?

Language skills (human capital) influence not only Latinos' earnings, but they also influence who they relate to in the receiving community, and the networks that they build. Foreign-born Latino/as who are bicultural or integrated earn more than those who assimilate to the Anglo culture and are not acculturated to Latino culture. The wealth created influences the outcomes and further ability to accumulate assets. A high human capital—more education, and strong English skills—have a positive effect on income earnings and investments in economic assets such as a home or a business.

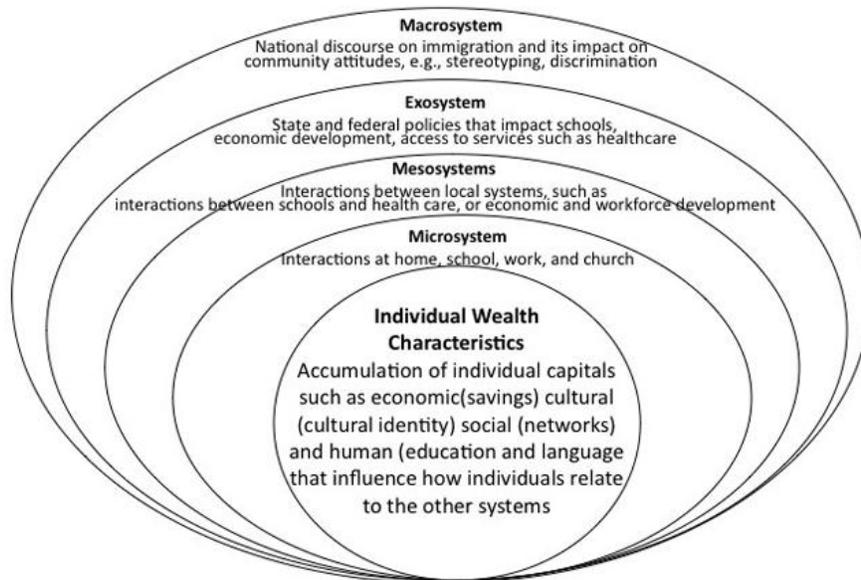
Cultural capital contributes to earnings, job satisfaction and sense of well-being. A qualitative study with Mexican workers in the hospitality industry revealed that these workers felt ethnic pride from the quality of their work (Shinnar, 2007). In our research, newcomers with strong levels of ethnic identity and Anglo acculturation were satisfied with their jobs (Valdivia and Flores, 2012). One key element to the wealth creation strategies of rural places with a Latino population is to figure out how this cultural asset can be harnessed by local communities to build other assets.

Capitals, Interactions, the Community Context and Outcomes

The local context and institutions make a difference in terms of wealth creation outcomes among Latino/a newcomers. In particular, context is a key to understanding the paths of integration of newcomers (Berry, 2003). Our study of Latino/a immigration in the Midwest took into account the context of reception in the new settlement

communities, and its impact on wealth creation, in terms of the types of social networks that newcomers build, the cultural capital created, and the accumulation of English and Spanish language skills and education. For example, among Latina women in rural areas, perceptions of discrimination—not being accepted because of their limited English speaking ability, or the color of their skin—led them to stay indoors (Flores, Jeanetta, Valdivia, and Martinez, 2010) and feeling isolated (Valdivia and Dannerbeck, 2009). When the climate is positive there are higher levels of integration, more diverse social networks and greater investment in the community by the Latino newcomers. When the climate is negative, there are lower levels of integration, the social networks are narrower—mostly friends and family—and opportunities for wealth creation and investment in the community are fewer. In another study using 2000 Census data for nonmetro regions in Missouri, we found that in places where the community climate was poor, Latinos actually earned less (Valdivia et al., 2008).

Figure 4: Community Climate: Interactions Between Individuals and Their Environment.



Modified from Bronfenbrenner, U. (1979)

The context of reception impacts the ability of Latino newcomers to create and access different forms of wealth. For example, at the community level Latino/a newcomers have a difficult time accessing credit because they do not understand how credit systems work (see Figure 4). If a community is more welcoming, then it is possible to look for ways to address the cultural and educational challenges that make accessing credit because they do not understand. However, if a community is not receptive, it is best to address this receptivity before Latino/a newcomers risk expanding their engagement with the wider community institution—for example, the credit systems. In studying communities, wage earnings were not the impetus for Latino/a immigrants' decision to migrate to the Midwest, nor what defines their quality of life. Latina immigrant women's wages did not increase due to migration, yet they were getting ahead (Valdivia and Dannerbeck, 2009) because Latinas were accumulating other assets; their children had a good education, building human capital of the next generation; they had a home; and felt safe.

Policy Recommendations for Increasing Latino/a Wealth Creation

Our findings indicate that immigrants will earn more money if they speak both English and Spanish. A potential challenge is that Adult English programs are often not available in rural areas. Investing in programs that are built around the work cycles of the immigrant labor force and the work seasons would increase the capacity of newcomers to integrate. Developing more accessible language programs during the periods when people are not working would be ideal. Bilingual immigrants will also generate greater earnings and invest more in the community.

Latino newcomers develop effective networks to access resources and support each other, making it possible to create and maintain wealth. Policies that facilitate networks and integration with the broader community would improve the quality of information available to newcomers, increasing their opportunities for wealth creation. Trusted resources in the community such as churches, employers and schools can facilitate this process as well. Identifying bridges between newcomers and the receiving communities who are associated with these trusted institutions would enhance these efforts.

Latino newcomers often don't know how systems, programs, and institutions work in their communities. The development of educational programs that foster their cultural adaptation can help them understand the context they live in. State and Federal programs often assume that people know how to access their programs and resources. Unfortunately, this is not the case of Latino newcomers in rural America. Greater outreach to newcomers through their networks, and the institutions they trust is one way to bridge to these resources. Outreach to date has mostly depended on the good will of churches and schools, which are often trusted connectors for the Latino community. Employment centers are an ideal place where bridging to newcomers can help them access economic resources in the community.

Latino parents see the opportunities for their children and invest in their education. Bilingual education will contribute to wealth creation. Children who can speak both English and Spanish will have better jobs and higher education opportunities. Thus, children of newcomers will have access to better job opportunities and thereby increase the diversity of their networks, creating more wealth. For youth in the receiving communities, schools can develop policies to require the next generation to be multilingual reflecting the languages spoken in the community, instead of policies that marginalize or literally outlaw the use of other languages.

In addition to policies to support the newcomers in adapting to the new community, there is work to be done to improve how communities welcome newcomers, especially in terms of appreciating and valuing the contributions they make to the community. Community events that celebrate cultural customs and holidays can bring the communities together and expose members of the receiving community to other cultures and develop appreciation for each others culture. The professional community also has a responsibility to develop cultural competencies for serving all members of the community. Therefore, policies are needed to support diversity training and increasing knowledge about tailoring services to be accessible to the newcomer population.

Given the steady growth in the number of Latino newcomers in rural America, practices and policies that foster their integration, will also enhance their ability to create wealth and to invest it back into their new communities, which will benefit both long-time residents and newcomers alike.

For More Information

Artz, G., Jackson, R., and Orazem, P. F. (2010). Is it a Jungle Out There? Meat Packing, Immigrants, and Rural Communities. *Journal of Agricultural and Resource Economics*, 35(2), 299-315.

Berry, J. (2003). Conceptual Approaches to Acculturation. In K. Chun, P. Balls Organista, and G. Marín, eds. *Acculturation: Advances in Theory, Measurement, and Applied Research*. Washington DC: American Psychological Association, pp.17-37.

Bronfenbrenner. U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.

Flores, L. Y., Jeanetta, S. C., Valdivia, C., and Martínez, D. (2010). Perceptions of Community Climate Among Latino Immigrants in Three Rural Communities in the Midwest. In: S. Jeanetta and C. Valdivia (eds) *Latinos in the Heartland*. Proceedings of the 2009 annual conference. Cambio Center and University of Missouri, Columbia. MO. pp. 48-50.

Shinnar, R. S. (2007). A Qualitative examination of Mexican immigrants' career development: Perceived barriers and motivators. *Journal of Career Development*, 33, 338-375.

Valdivia, C., Dozi, P., Jeanetta, S.C., Flores, L. Y., Martinez, D., and Dannerbeck, A. (2008). Networks and context of reception in asset accumulation strategies of Latino newcomers in rural settlement communities of the Midwest: A new framework for understanding immigration. *American Journal of Agricultural Economics*, 90, 1319-1325.

Valdivia, C. and Dannerbeck, A. (2009). Moving around to get by and try to get ahead: Immigration experiences in new settlement communities of the Midwest. *Professional Development: The International Journal of Continuing Social Work Education*, 12, 29-41.

Valdivia, C. and L. Y. Flores. (2012). Factors Affecting the Job Satisfaction of Latino/a Immigrants in the Midwest. *Journal of Career Development*, 39(1), 31-49.

Corinne Valdivia (valdiviac@missouri.edu), is Associate Professor Department of Agricultural and Applied Economics, University of Missouri, Columbia, Missouri. Stephen Jeanetta (jeanettas@missouri.edu), is Extension Assistant Professor Department of Rural Sociology, University of Missouri, Columbia, Missouri. Lisa Y. Flores (floresly@missouri.edu), is Associate Professor Department of Educational, School and Counseling Psychology, University of Missouri, Columbia, Missouri. Alejandro Morales (moralesa@missouri.edu), is Assistant Professor, Department of Educational and Counseling Psychology, University of Missouri, Columbia, Missouri. Domingo Martinez (dmartinez@missouri.edu), is Director of Cambio Center, University of Missouri, Columbia, Missouri.

Since 2004 the University of Missouri has been studying the process of Latino settling in rural areas, collaborating with newcomers and members of the receiving communities. We thank the community organizations, Dr. Pedro V. Dozi, and field assistants in this project. Funding was provided by National Research Initiative Grant No. 2006-35401-17429 from the USDA Cooperative State Research, Education, and Extension Service Rural Development Program, currently Agriculture and Food Research Initiative (AFRI) of the National Institute of Food and Agriculture (NIFA) of the United States (2006-2010); by Rural Development and Agricultural Economics AFRI USDA Grant No. 2011-67023-30105 (2011-2014); and by the University of Missouri Strategic Initiatives between 2004-2007. For more information visit University of Missouri Cambio Center website <http://www.cambio.missouri.edu>

The views expressed are those of the authors and do not necessarily reflect the positions of the Federal Reserve Bank of Kansas City, the Federal Reserve System, or Purdue University.

© 1999-2012 Choices. All rights reserved. Articles may be reproduced or electronically distributed as long as attribution to Choices and the Agricultural & Applied Economics Association is maintained.

**The farmdoc project distributes Choices in partnership with
the Agricultural and Applied Economics Association.**

[click here to visit choicesmagazine.org >>](http://www.choicesmagazine.org)

1st Quarter 2012| 27(1)

FEDERAL FOREST POLICY AND COMMUNITY PROSPERITY IN THE PACIFIC NORTHWEST

Bruce Weber and Yong Chen

JEL Classifications: R11, R12

Keywords: Amenities, Community Wealth, Federal Forest Policy, Income, Northern Spotted Owl, Northwest Forest Plan

Forests and forestland are a key component of wealth in the Western United States. The ownership and use of this natural capital has an enormous impact on development and prosperity in the region, particularly in rural communities. Economic returns to forests can be realized either through harvest of logs, which provide earnings from sales of wood products; or through forest protection and development of amenity values, which provide earnings from sales related to recreation and/or amenity-related residential decisions.

Since much of the forestland in the West is owned by the federal government, Federal forest policy decisions are very important in the rural Western United States. Starting in the late 1980s and early 1990s, Federal forest management policy in the Pacific Northwest began to emphasize habitat protection and reduced the timber harvest on Federal lands. This article examines how this major policy shift affected the prosperity of rural communities in this region, and particularly how the policy shift differentially affected various types of communities.

The Northwest Forest Plan (NWFP), put into place in 1994, established a new forest management framework for the 24 million acres of Federal forestland in Washington, Oregon and California within the range of the Northern Spotted Owl. The NWFP reduced commodity production on public lands in order to protect old-growth trees and provide habitat for the spotted owl and other threatened species. This policy shifted 11 million acres of federal forestland from timber production to old-growth forest protection. In Oregon, more than half (51%) of the state's land—and almost 60% of the state's forest land—is under federal ownership. Implementation of the NWFP speeded up a decline in timber harvests that had begun in Oregon in 1990 (Figure 1). In 1989, almost 5 billion board feet of timber was harvested in Oregon on Federal land managed by the U.S. Forest Service and the Bureau of Land Management. The figure steadily declined to less than 200 million board feet in 2001, and has averaged less than 330 million board feet per year during the most recent decade. Oregon harvests on private timberland during the 1980s, 1990s and early 2000s, meanwhile, continued to average over 3 billion board feet a year.

The wood products industry in the Pacific Northwest had been in the midst of massive structural change over the decades since the 1980s. In 1980, for example, there were 405 lumber mills in about half (113) of Oregon's communities. Two thirds of these mills (282) closed during the following three decades, and by 2007 there were only 58 mill towns in Oregon. Figure 2 shows the location of mills and mill closings in the 1990s. For Oregon's small communities, mill closures can be expected to deal a serious blow to community employment. The average direct job loss per mill closure was about 100 jobs. Since the median population of Oregon's communities is under 2000, a mill closure could be expected to have a significant impact on a community's viability.

How has the shift in federal forest policies away from timber harvest toward preservation of natural capital (forests) affected population growth, growth in real property assets (built capital) and median household income in the Pacific Northwest? This article begins with a review of what is known about the impact of timber harvest reductions and enhanced natural amenities on local prosperity and reports new findings on the impact of the Northwest Forest Plan on rural Oregon communities.

Figure 1: Oregon Timber Harvest by Ownership, 1962-2010

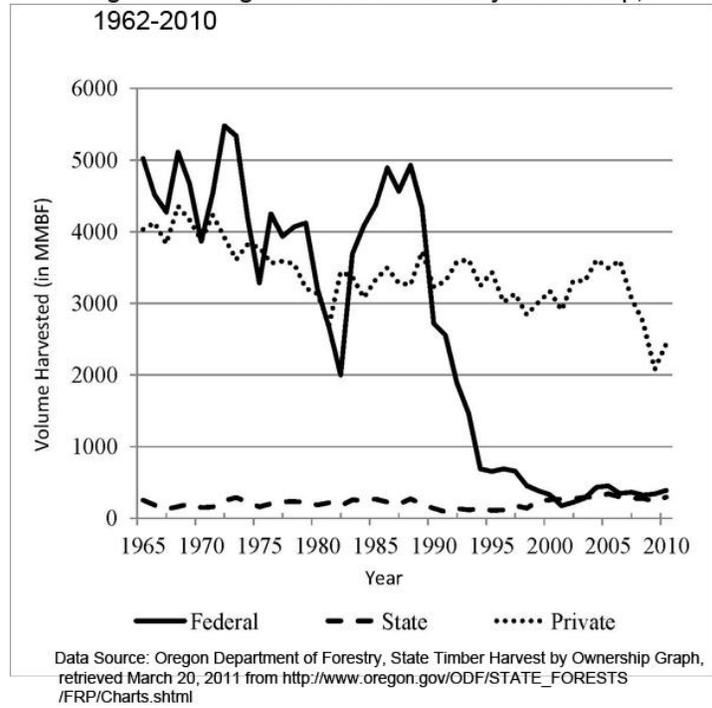
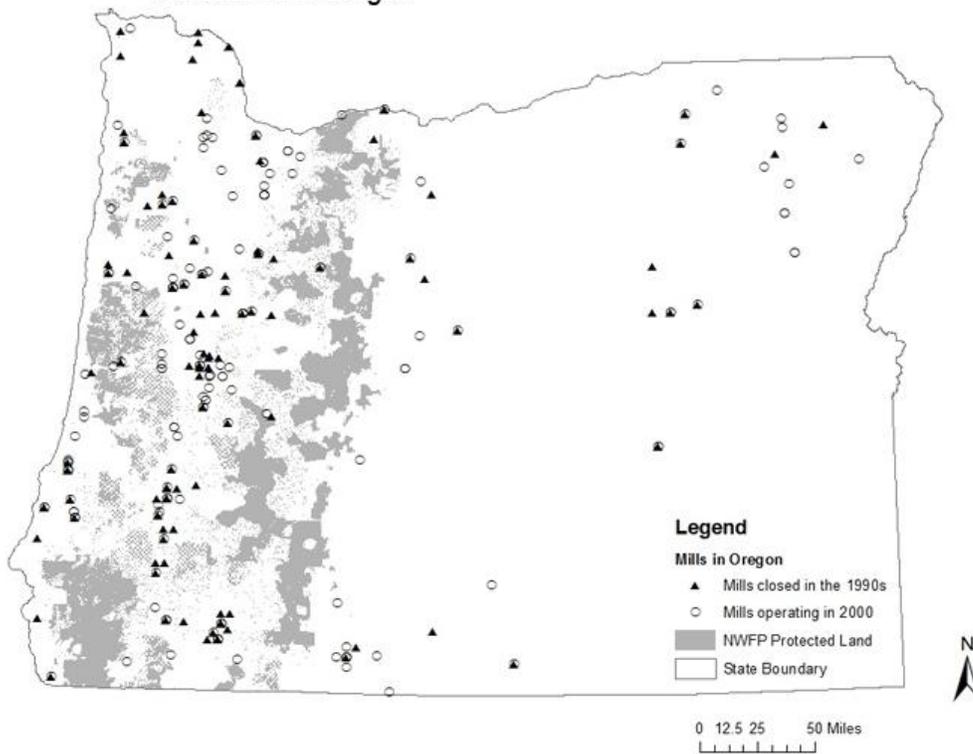


Figure 2: Lumber Mills and Northwest Forest Plan Protected Forestland in Oregon



Forest Policy, Natural Amenities and Local Economies?

The local economic impact of the reduction in Federal timber harvests has been the subject of much research. Chen and Weber (2011, 2012) provide a summary of this research, which has analyzed impacts of the timber harvest reductions and the NWFP on both loss of jobs and on amenity-driven migration. Almost no attention has been paid to possible impacts of forest policy changes on real property wealth or incomes.

Forest Policy Effects on Rural Communities

The studies generally support the conclusion that the timber harvest reductions and NWFP reduced employment in the affected counties, and in some cases nearby counties. Both ex ante impact studies of the region and case studies of particular communities have found job losses and other economic damages to result from policies such as the NWFP. Estimates of the employment reduction due to NWFP range from 13,000 to 147,000 jobs.

Some studies have considered the possibility that resource conservation policies may create amenities that enhance the attractiveness of the nearby communities and create jobs associated with forest-based recreation, leading to rural community population and job growth. In an analysis of effect of the NWFP on county employment growth and net migration, Eichman et al. (2010) found that NWFP did in fact reduce employment in the region and also slightly increased net migration, but that this small positive net migration associated with the NWFP did not offset the negative effect on employment.

Natural Amenities Effects on Rural Communities

Given the potential importance of amenities related to NWFP-protected forests, we also examined research on the effects of amenities on rural community economies. A comprehensive review of the studies of the impact of landscape amenities on population, migration and employment by Waltert and Schlapfer (2010) found the presence of amenities increased population, migration and employment in most studies. Of the 26 studies of population and migration impacts, 10 found significant and positive impact of amenities, while only two found significant negative impacts. Of the 23 studies of amenity effects on employment, seven found positive impacts and none reported negative impacts. Among the 11 articles that reported amenity impact on income—seven on income per capita and four on wage and transfers—four reported significant positive impact, and none reported a negative impact.

Other studies of the effect of amenities on income and wealth have produced conflicting results. Some studies suggest that income levels in amenity rich communities tend to be lower because people are willing to accept lower wages in places with higher natural amenities. Several papers investigating individual location decisions found that amenities in and outside the metropolitan area generate compensating wage and land value differentials because workers are willing to accept lower wages and pay higher rent.

Previous research, primarily at the county level, is summarized in Table 1. It suggests that the Northwest Forest Plan had a negative impact on employment and a small positive impact on population growth. It also indicates that amenities have a positive effect on both employment and population. Property wealth and incomes impacts are not clear.

Table 1

**Previous Research Findings:
Impacts of Northwest Forest Plan and
Amenities on County Economies**

	Employment	Population	Property Wealth	Income
Northwest Forest Plan	-	+	NA	NA
Amenities	+	+/-	+/-	+/-

Table 2

New Research Findings: Impact of Northwest Forest Plan on Oregon Rural Communities

	Population Growth	Change in Real Property Values	Change in Median Household Income
1990's			
Community had one or more closures		-	
Community within 10 miles of NWFP protected land			
< 5% of workers in farming, forestry, fishing		+	
5-<10% of workers in farming, forestry, fishing			-
10+% of workers in farming, forestry, fishing		-	-
2000s			
Community had one or more mill closures			
Community within 10 miles of NWFP protected land			
< 5% of workers in farming, forestry, fishing		+	
5-<10% of workers in farming, forestry, fishing			
10+% of workers in farming, forestry, fishing			

NWFP Impacts at the Community Level

The NWFP, by reserving more forestland for conservation and reducing the timber available to harvest, had two conflicting effects: it enhanced economic opportunity in many Oregon communities by enhancing the natural amenities in the region, and it reduced economic opportunity by decreasing the supply of logs for harvesting and timber processing. Most, if not all, of the studies reviewed above used county-level data. Since counties in the Western United States are quite large, studies using county data may not capture spatially differentiated effects of a multi-faceted policy change that occur at a smaller geographic scale. Because we used community-level data, we were able to determine how the harvest-reducing and amenity-enhancing effects of Northwest Forest Plan affected different types of communities. We used community-level data to examine the impact of the NWFP on population growth, change in real property value per capita and median household income in Oregon's 234 rural communities—incorporated cities with less than 50,000 people.

Some part of the negative effect of Federal resource conservation policies on a given community is likely related to whether the reduction in harvest affects mill operations in the community. Because the mills are not necessarily close to the forests that supply them with logs, some negative effects of reducing harvests on federal timberland are not confined to communities close to national forests but are spread across a broader region. We captured this negative effect by examining the number of mills that closed in a community during the period examined.

The positive effect of resource conservation policy on amenity-related growth, in contrast, is likely most pronounced in communities close to the protected land. We investigated the positive amenity effects of the NWFP by identifying communities within 10 miles of the "reserved land"—designated in the NWFP for species protection—as "NWFP-adjacent communities", and then by examining whether these communities were affected differently than communities outside the 10-mile buffer zone.

The positive amenity impact of being close to protected land, of course, is likely to depend on a town's economic base. Communities in which a large share of the workforce is involved in logging would likely be affected differently by a policy that reduced logging jobs than communities that have a broader economic base. Thus we sorted NWFP-adjacent communities into three categories depending on how important logging and forest management occupations are to the community's employment base: 1) "non-logging communities" with less than 5% of workers in farming, forestry, and fishing occupations; 2) intermediate communities with no less than 5% but less than 10% of workers in farming, forestry, and fishing occupations; and 3) "logging communities," or those with 10% or more of workers in these occupations.

The 1990s was a decade of income growth and significant in-migration in Oregon. It was also the decade in which the NWFP was implemented, Federal timber harvests were reduced by 90%, and total timber harvests were reduced by half. The NWFP appears to have increased the growth of real property values in nearby communities, the

communities that were within 10 miles of Federal reserved forestland. Our research findings also suggest that the impact of NWFP was different for logging communities than for non-logging communities. (Table 2.)

In NWFP-adjacent logging communities in which loggers are a significant share of the workforce, the negative economic impact of reductions in timber harvest under the NWFP appears to have out-weighted any positive impacts of the amenity-related migration on the growth of real property values and income. NWFP-adjacent logging communities experienced significantly lower growth in real property values and income than other communities. Furthermore, towns with mill shutdowns saw significantly lower growth in property wealth than those without mill closures. To the extent that NWFP caused reductions in logging jobs and increased mill shutdowns, it had a significant negative impact on logging towns and mill towns in the 1990s.

The early 2000s were a time of reduced economic growth and slower in-migration, both nationally and in Oregon, and timber harvests remained at the levels of the 1990s. Mills were still closing, but at a slower pace. NWFP-adjacent communities continued to benefit from amenity related growth and saw significantly higher growth in real property value than other communities. This was true whether or not the communities were logging towns. And changes in population, property wealth and median income were not significantly different in communities with mill closures compared to communities without mill closures. Whereas in the 1990s, the NWFP effects were detrimental to logging and mill towns, this no longer appeared to be the case after 2000.

Unlike previous county-level studies that found a small positive effect of the NWFP on population growth, we were unable to discern a statistically significant effect of the NWFP on population growth at the community level in either decade.

Concluding Comments

The policy of protecting natural capital through implementation of the NWFP appears to have increased community wealth, as measured in real property value per capita of the communities close to the NWFP land, except if they were dependent on logging. Not surprisingly perhaps, Federal forest policy appears to have affected the prosperity of logging and mill towns differently than other types of rural communities. In the 1990s, NWFP had a negative effect on the wealth and income of communities whose economic base had historically been tied to the wood products industry, including mill towns and other logging dependent communities.

After 2000, however, negative logging- and mill-related NWFP impacts appear to have subsided, and the NWFP induced amenity-migration effects continued: NWFP-adjacent communities experienced higher growth in community wealth than communities more than 10 miles from NWFP-protected land, even among those that were dependent upon logging.

The NWFP appears to have redistributed the benefits associated with the federal forestland, and the impact has evolved during the almost two decades since implementation. For timber dependent communities—the mill towns and logging towns—the implementation of the NWFP reduced growth in community wealth and median income during the initial decade of implementation due to reduced timber harvest in federal forestland. But in the longer run, NWFP appears to have had a more positive impact on the wealth creation in rural Oregon communities, even in those timber-dependent communities that initially went through difficult economic transformations. The associated development may be more sustainable, but that is yet to be determined and is beyond the scope of existing studies. It is possible, of course, that there were also important within-community shifts in well-being between original residents and newcomers as has been found in other studies of amenity-related development, where growth in real property values has priced original residents out of local housing.

The preservation of natural forest capital through the NWFP ultimately has induced a redistribution of the forest-related benefits of Federal forestland across communities. Historically, the major benefits came from the timber production which went mainly to the timber-dependent communities. The implementation of the NWFP, signaling that the federal government wanted to protect old-growth forestland, appears to have promoted community wealth in communities close to the protected land, and to have redistributed the economic benefits from the timber-dependent communities to a broader set of NWFP-adjacent communities.

For More Information:

Chen, Y. and Weber, B. (2011). *Federal forest policy, amenity migration and rural community income: Did the Northwest Forest Plan raise incomes in Oregon's rural communities?* Presented at annual meetings of the North American Regional Science Council, Miami, FL.

Chen, Y. and Weber, B. (2012). Federal policy, rural community growth, and wealth creation: the impact of federal forest policy and rural development spending in the Pacific Northwest. *American Journal of Agricultural Economics*, 94(2), 542-54.

Eichman, H., Hunt, G.L., Kerkvliet, J., and Plantinga, A.J. (2010). Local employment growth, migration, and public land policy: evidence from the Northwest Forest Plan. *Journal of Agricultural and Resource Economics* 35(2), 316-333.

Waltert, F., and Schlapfer, F. (2010). Landscape amenities and local development: a review of migration, regional economic and hedonic pricing studies. *Ecological Economics*, 70(2), 141152.

Bruce Weber (bruce.weber@oregonstate.edu) is Professor, Department of Agricultural and Resource Economics, Oregon State University, Corvallis, Oregon. Yong Chen (yong.chen@oregonstate.edu) is Assistant Professor, Department of Agricultural and Resource Economics, Oregon State University, Corvallis, Oregon.

Funding for this paper was provided by Economic Research Service under cooperative agreement No. 58-6000-0-0053 and by the Oregon Agricultural Experiment Station. We appreciate the insightful comments of John Pender and Walt Armbruster and two anonymous reviewers.

The views expressed are those of the authors and do not necessarily reflect the positions of the Federal Reserve Bank of Kansas City, the Federal Reserve System, or Purdue University.

© 1999-2012 Choices. All rights reserved. Articles may be reproduced or electronically distributed as long as attribution to Choices and the Agricultural & Applied Economics Association is maintained.

**The farmdoc project distributes Choices in partnership with
the Agricultural and Applied Economics Association.**

[click here to visit choicesmagazine.org >>](http://choicesmagazine.org)

1st Quarter 2012| 27(1)

RED LIGHT AHEAD: PREPARING LOCAL GOVERNMENTS FINANCIALLY FOR THE NEXT DISASTER

J. Matthew Fannin and Joshua D. Detre

JEL Classifications: H83, H84

Keywords: Disaster Resiliency, Financial Health, Local Government, Public Wealth

Local governments across the United States face ongoing financial vulnerabilities—macroeconomic conditions, natural disaster risk, and poor fiscal planning—in meeting the basic functions of providing public services such as roads, water, sewer, and education. The effects of these financial vulnerabilities can be seen when examining the financial conditions of local governments. For example, municipal bankruptcies such as the recent case in Jefferson County, Ala., home of Birmingham, have created an environment where governments are trying to identify strategies to mitigate the likelihood of future financial hardship.

This research focuses on challenges local governments have in maintaining wealth in the face of risky events like natural disasters. In particular, we concentrate on the role of federal disaster policy in the period following the 2005 hurricane season in the Northern Gulf of Mexico. We highlight changes in fiscal health that did occur following these storms when the federal government covered 100% of emergency and clean-up costs. Despite generous reimbursement rates witnessed for the 2005 hurricane season, a closer adherence to local cost share requirements in federal policy may occur in the future, as FEMA almost exhausted its funds for disaster recovery in 2011. Therefore, we evaluate how the region's fiscal health might have changed under an alternative scenario where those same local governments would have been required to cost share 25% of these expenses. Finally, we discuss the implications of increased local financial responsibility on local government financial planning for natural disasters.

The 2005 Hurricane Season and Local Government Financial Health

In 2005, Hurricanes Katrina and Rita battered the North Gulf Coast of the United States. In addition to the expensive costs of evacuating and providing short-term shelters, large quantities of debris had to be removed before residents could return to their homes. Through Federal legislation, local parish and county governments in Louisiana and Mississippi received 100% reimbursement of these costs considered federally reimbursable as defined by the Stafford Act and administered through the Federal Emergency Management Agency (FEMA). This “full insurance” helped to maintain the fiscal health of local governments of 37 coastal parishes/counties in Louisiana and Mississippi as seen in Table 1. Two coastal counties and parishes—Harrison County, Mississippi and Orleans Parish, Louisiana—were excluded from this analysis due to data limitations.

In this Table, we see that Louisiana parishes and Mississippi counties were spared increased harm to their financial health or “public sector wealth”. Across the entire region, liquidity as measured by their current ratio (CR)—those assets that can be converted to cash in one year divided by liabilities due within the same year—did not see any statistically significant change between 2005 and 2009. Liquidity overall improved slightly in both metro and nonmetro regions, as well as for medium and low storm damaged regions. Only those high hurricane cost regions saw a minor 12% reduction in liquidity between 2005 and 2009. Further, solvency as measured by their debt to net asset ratio (DNAR)—total debt divided by total net assets—also suffered no statistically significant change over the same period. Solvency only deteriorated slightly, with a 2.11% increase occurring for metro regions. The greatest improvements in solvency were seen in nonmetro regions—with a 24% reduction in DNAR—and high hurricane cost regions—with a 35% reduction.

Since a companion study (Fannin, Barreca, and Detre, 2012) showed that the post-storm economic boom as measured by increased regional earnings and property values had no significant effect on these liquidity and solvency indicators, we conclude that the stable nature of these public wealth financial indicators is an outcome of the federal government effectively offering an unexpected full insurance policy. At the same time, these results highlight

the potential vulnerability of public wealth assets to these types of natural disasters in the absence of federal government support. A greater understanding of these public wealth assets is important in developing policies to protect them.

Natural Disaster Risk Planning and Public Wealth

Public wealth represents one form of a locality's overall stock of wealth. Public wealth can include public sector natural amenities such as national, state and local parks, forests, and lakes; public infrastructure such as roads, bridges, levees, and school buildings; and financial assets such as reserves held by governments. Public wealth can be leveraged by the private sector as a way to attract the human capital necessary to secure a highly skilled labor force and to produce and deliver goods and services using public highways. Consequently, it is important to maintain public wealth for leveraging by businesses and households, but maintaining this wealth in the face of risky events like natural disasters can be quite challenging for local governments.

In some instances, local governments face some potential financial liabilities from risky events that are uninsurable. For example, no insurance product exists for emergency expenses such as police protection, emergency shelters, fuel, ice and generators, and/or debris removal cleanup for local governments. Since insurance products in the United States are typically under state regulatory control, companies are often forced to restrict their risk profile to an individual state. Many large hurricanes present an equal probability of landfall across many state coastlines 48 hours before landfall. As a result, this joint risk profile reduces the likelihood there would be sufficient policyholders paying premiums that would not get impacted to finance those policy holders that would receive payments.

On the surface, it seems that these one-time out-of-pocket costs would only create short-term financial problems for a local government, but for a large disaster such as a hurricane, these short-term costs can create long-term financial devastation to the public sector. Indeed, if a local government is not financially prepared to manage the costs of a natural disaster, these large one-time disaster costs will have a negative impact on the future public wealth of the community.

Given the lack of insurance products, what options are available to local governments to mitigate these costs and maintain public sector wealth? Besides advanced disaster planning, state governments may provide some support, but the insurer of last resort has typically been the federal government.

Liquidity and Solvency Challenges

Relying on the federal government as an insurer of last resort causes local governments to face potential liquidity and solvency problems. The liquidity problem arises because lag times between when a local government is billed for emergency and debris removal services and when FEMA reimburses them often range from three months to two years. In addition, local governments must also come up with their cost-share portion as required by the Stafford Act that typically ranges from 10% to 25%. The liquidity issues are complicated because the funds local governments use to deliver services, such as road, solid waste, and drainage funds, often receive their revenues via dedicated taxes that cannot be redirected to cover emergency costs; thus increasing the liquidity problem.

For those local governments that reside in geographical areas where they face a high probability of repeated natural disasters, there would be insufficient time to rebuild their pool of current assets, which means they may be forced to take out long-term loans and/or issue bonds to pay for recovery efforts. This creates a ripple effect for public wealth preservation and creation. Since all of a local government's available cash would already be allocated to meet previous natural disaster cleanup costs, there would be little to no funds available for maintaining existing public infrastructure and/or meeting operating expenses. To alleviate this short-term cash flow problem, they would have to borrow funds thus increasing their total debt burden. This creates a solvency problem for the local government, as borrowed funds that are not used to generate economic growth can have negative consequences. First, borrowed funds create a payment obligation, which reduces cash available for investment. Second, large amounts of outstanding long-term debt may cause a local government to be viewed as a credit risk, diminishing their capacity to meet financial commitments and making it difficult for them to obtain lines of credit or sell bonds at low interest rates. This reduced access to credit results in capital and infrastructure improvements being put on hold; investments that are necessary to not only maintain public wealth but also create it. Consequently, if a municipality cannot maintain and/or upgrade infrastructure it will likely cause a loss in the tax base and a potential exodus of businesses and citizens, which further exacerbates the erosion of public wealth.

Measuring Disaster Vulnerability

Local governments need strategies in place so that they can effectively mitigate these problems. To provide an example of the impact of having these strategies in place, we present an alternative scenario for the 2005 season in which the most vulnerable parishes/counties in South Louisiana and Mississippi would have been required to cover a 25% cost share for emergency operations and debris removal costs. As previously mentioned, positive economic effects from post-disaster recovery did not have any significant effects on these local governments' financial health (Fannin, Barreca, and Detre, 2012). Hence, we simply assume in this scenario that no other factors—either positively or negatively—would change the financial health of local governments except the increased cost-share presented in the scenario.

To accomplish this task, we first calculate the total obligated costs from the Louisiana and Mississippi Public Assistance (PA) programs, the program from which FEMA through the Stafford Act reimburses local governments. The costs in our analysis include both debris removal and emergency operations costs. Debris removal costs also include U.S. Army Corps of Engineer (USACE) debris removal costs. In future storms, USACE may not provide free debris removal to local governments, thereby placing the onus on local governments to pay for these costs upfront as well as pay for the cost share required by the Stafford Act.

Table 1

Financial Conditions Before and After the 2005 Hurricane Season and 25% Cost Share Scenario						
Type of Counties/Parishes	Number of Counties/Parishes	2005 CR	2009 CR	CR % Change (05-09)	25% Cost Share CR	CR % Change (05-09 Cost Share)
Total	37	2,901	3,409	17.51	0.629	-78.31
Metro	21	2,907	3,334	14.67	0.67	-76.95
Nonmetro	16	2,849	3,941	38.32	0.394	-86.18
High Cost (>25% Total Assets)	10	2,316	2,027	-12.49	0.371	-83.97
Medium Cost (10% Total Assets)	6	1,658	2,099	26.61	0.628	-62.11
Low Cost (<10% Total Assets)	21	5,594	6,998	25.1	3.659	-34.58
Debt to Net Asset Ratio						
Type of Counties/Parishes	Number of Counties/Parishes	2005 DNAR	2009 DNAR	DNAR % Change (05-09)	25% Cost Share DNAR	DNAR % Change (05 to 05 Cost Share)
Total	37	0.539	0.535	-0.62	1.16	115.79
Metro	21	0.578	0.59	2.11	1.25	116.33
Nonmetro	16	0.296	0.225	-23.92	0.55	84.48
High Cost (>25% Total Assets)	10	0.716	0.462	-35.4	3.92	447.11
Medium Cost (10% Total Assets)	6	0.452	0.509	12.72%	0.51	13.8
Low Cost (<10% Total Assets)	21	0.551	0.589	6.84%	0.57	2.59

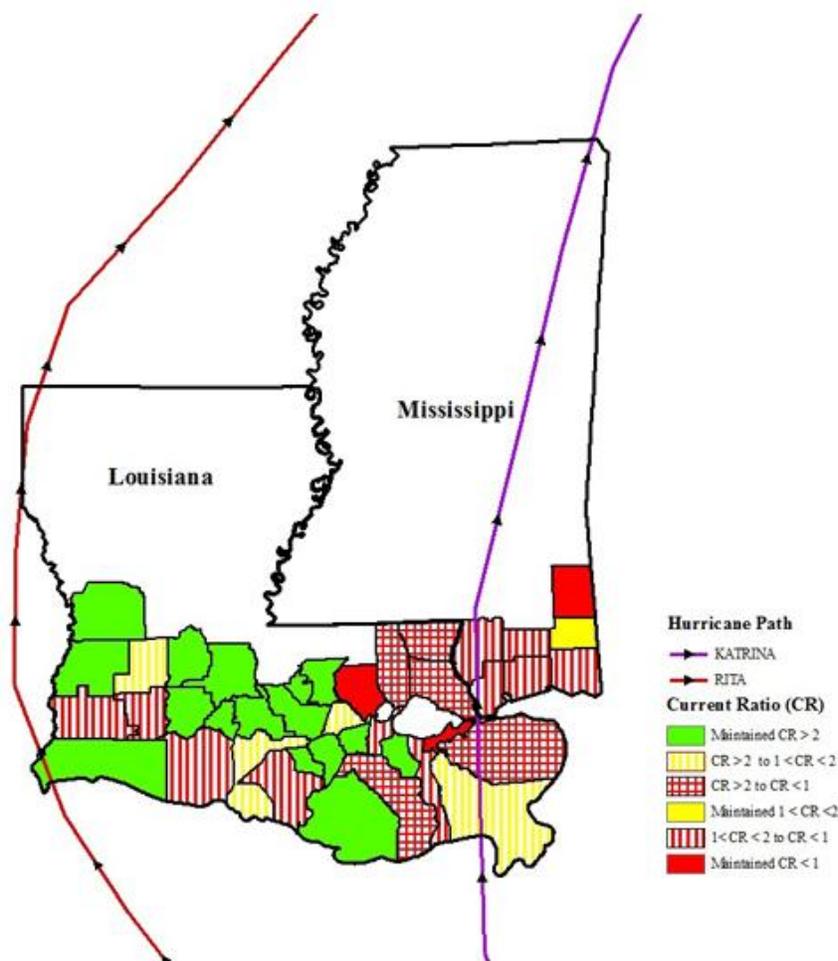
Using the financial statement data, we calculated the end of fiscal year 2005—September 30th for Mississippi Counties and December 31st for Louisiana Parishes—CR and DNAR ratios for each of the 37 counties and parishes. Data for both ratios come from audited annual financial statements required of all parish and county governments in Louisiana and Mississippi. Next, our hypothetical scenario was applied. This required us to add the local governments' 25% share of emergency operations and debris removal costs associated with Hurricanes Katrina and Rita to the 2005 current liabilities. Doing this reduces the CR through an increase in current liabilities and increases the DNAR through an increase in total liabilities and a decrease in net assets. A reduction in the CR puts the local government at an increased risk of financial distress. At low CR levels, local governments are at risk of having insufficient current assets available to meet their current debt obligations. If this situation arises, they are likely to have to borrow additional funds and/or sell assets to meet existing current debt obligations. Both of these choices reduce the amount of funds available for maintaining and/or creating public wealth in the short-run. While an increase in the DNAR, like a reduction in CR, increases the potential for financial distress, at extremely high of levels, it can lead to bankruptcy. If a local government has a bad year financially because a natural disaster hits or a large loss in the tax base occurs, it might not have enough combined revenue and excess borrowing capacity to meet all obligations. If this occurs, creditors could force bankruptcy, the ultimate erosion of public wealth.

Key Findings

As can be seen from Table 1, the weighted average CR under the 25% cost share scenario showed a large reduction, from 2.90 to 0.63. According to Finkler (2010), a healthy CR for a government entity should exceed one—a CR of one implies current assets equal current liabilities—and an extremely healthy CR would exceed two. These results suggest that on average, region-wide liquidity would have dropped to unhealthy levels if the 25% cost share would have been required. This would have occurred for all categories of coastal regions except those that faced the lowest hurricane costs.

Figure 1 summarizes the changes in the CR by county and parish using the 25% federal cost share scenario. Those regions closest to the coast and/or closest to the path of Hurricane Katrina would have seen the greatest reductions in liquidity. Most of the parishes in green were located outside of the Katrina path and would have maintained an extremely healthy CR. Hurricane Rita reduced some parishes' liquidity while others were more resilient.

Figure 1: Change in Current Ratio (CR) Under 25% Cost Share Scenario



Results of the solvency analysis in Table 1 show that the financial impact of the storms would have measurably influenced the solvency positions of the counties and parishes in this study. Under the 25% scenario, the weighted average DNAR would increase to 1.16, meaning the county and parish governments would “owe” slightly more than what they would “own” (Finkler, 2010). High cost regions would be the most affected, with their solvency ratios increased almost 450% to 3.92. With the 25% cost share, these regions would have owed almost 4 times the value of all of their public assets, relative to what actually occurred.

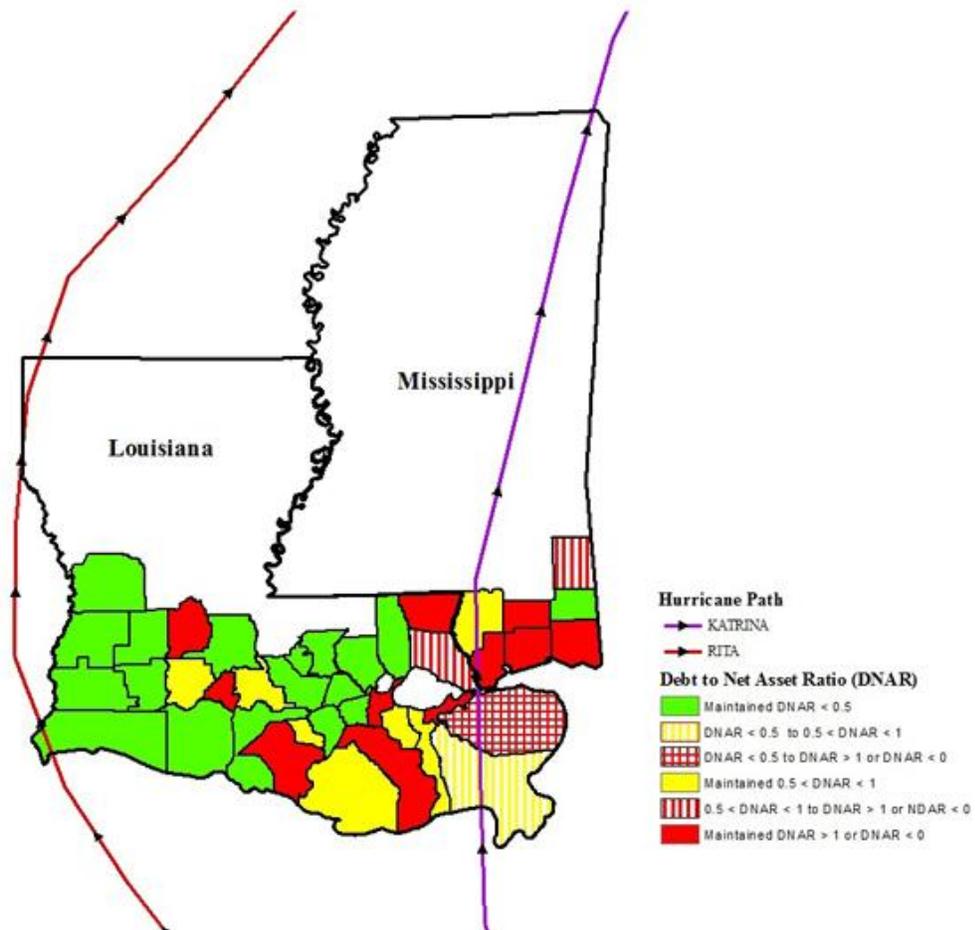
Examination of Figure 2 shows that both metro and nonmetro counties and parishes that were in the direct path of the storm would have had a worsening debt position under a 25% cost share scenario. Further, we see that Hurricane

Katrina's path would have added to or maintained a relatively high debt position for almost all counties and parishes it crossed or were to the east of its eye wall near the coastline.

Implications for Policy

Local governments face many challenges to their fiscal health. This analysis showed that local governments are financially vulnerable to natural disasters under traditional Stafford Act 25% cost shares. Using emergency operations and debris removal costs from the 2005 hurricane season, it can be surmised that both the liquidity and solvency conditions of local governments would have been greatly impacted by the combination of Hurricanes Katrina and Rita if the federal government would have applied traditional cost share requirements rather than picking up 100% of the costs. The results from the hypothetical scenario could potentially be used to create a risk-adjusted CR and DNAR for local governments that face tropical natural disaster risks.

Figure 2: Change in Debt to Net Asset Ratio (DNAR) Under 25% Cost Share Scenario



Further, local governments should identify ways to make a greater proportion of their revenue streams available to cover the short-term, infrequent costs of natural disasters. To do this, local governments will need to employ several strategies including increasing the flexibility associated with special purpose funds when these taxes come up for renewal and advance negotiating of debris removal contracts with payment terms. A combination of the aforementioned strategies and general fund reserves should help provide sufficient liquidity to local governments when they face a natural disaster.

One may question whether using a large tropical natural disaster such as Hurricanes Katrina and Rita is a reasonable proxy for planning in this region. However, applying methods of recent research suggest that such large tropical natural disasters may likely be a more frequent occurrence. For example, by augmenting Klotzbach and Gray's (2012) county landfall probability model, from using over 125 years of climate history to the most recent 30 years, a storm the size of Hurricane Rita at landfall passing through Calcasieu Parish in Southwest Louisiana would increase the 50-year probability from 27% to 45%.

While local governments in regions of the hurricane-prone coastal zone might take these findings as directly applicable, the strategy for local government policy can be generalized to other regions and other types of disasters. As long as local governments can quantify from historical data and/or estimate their cost share from future natural disasters, they can incorporate these adjustments to create risk-adjusted rules of thumb to ensure the best opportunity for fiscal health when faced with natural disaster risk.

One of the biggest challenges facing local governments with natural disasters is the reliability of the federal government to serve as that "insurer of last resort." When a natural disaster in a state occurs, the Governor of the state must request to the President of the United States that a federal disaster declaration be issued before the public assistance program can be activated. Isolated natural disasters in rural areas that do not garner national public attention, unlike the Alabama and Missouri tornadoes did in 2011, may be less likely to have a declaration approved. In these instances, local governments would have to cover 100% of disaster emergency and cleanup costs. Rural regions, in particular, face the increased likelihood of being ignored on the national level because of their inability to speak loud enough to be heard because of a lack of political capital. Although the discussion of how to develop political capital is beyond the scope of this study, having a political voice at the national level would complement those strategies employed by local governments to ensure fiscal preparedness with respect to natural disasters. The ability of rural governments to maintain long-term economic viability is one necessary leg of a multiple legged stool of rural wealth maintenance and long-term wealth creation.

Moreover, this research has shown the need for decision tools and executive education training on natural disaster preparedness for local government leaders to develop their knowledge and competency. Providing local government leaders with the proper tools and training would give them the skills necessary to make informed and rational decisions that could lead to proper implementation of appropriate financial disaster preparedness measures, ultimately reducing the probability of erosion of public wealth.

Finally, this research highlights additional opportunities for policy analysis. Local communities with eroding public infrastructure, as well as a reduced tax base from de-population, may be increasingly vulnerable to further public wealth decline. Future research highlighting the feedback effects of a community's current economic and demographic trends will further aid in understanding public sector wealth effects on the livelihood of its residents.

For More Information:

Fannin, J.M., Barreca, J.D. and Detre, J.D. (2012). The role of public wealth in recovery and resiliency to natural disasters in rural communities. *American Journal of Agricultural Economics*, 94(2), 549-555.

Finkler, S. (2010). *Financial management for public health and non-for-profit organizations*. 3rd ed. Upper Saddle River, NJ: Pearson Education.

Klotzbach, P., and Gray, W. (2012). *United States landfall probability methodology*. Available online: <http://www.e-transit.org/hurricane/welcome.html>.

J. Matthew Fannin (mfannin@agcenter.lsu.edu) is Associate Professor, Department of Agricultural Economics and Agribusiness, Louisiana State University Agricultural Center, Baton Rouge, Louisiana. Joshua D. Detre (jdetre@agcenter.lsu.edu) is Assistant Professor, Department of Agricultural Economics and Agribusiness, Louisiana State University Agricultural Center, Baton Rouge, Louisiana.

The authors would like to acknowledge the support of the Louisiana Sea Grant College Program (grant NA100AR4170077, project no R/SPS-08), the Mississippi-Alabama Sea Grant College Program (grant NA100AR4170078), project no R/MG/CSP-21), the Bureau of Ocean Energy Management (coop agreement M09AC15616) and LSU AgCenter (projects LAB93793 and LAB94080).

The views expressed are those of the authors and do not necessarily reflect the positions of the Federal Reserve Bank of Kansas City, the Federal Reserve System, or Purdue University.

© 1999-2012 Choices. All rights reserved. Articles may be reproduced or electronically distributed as long as attribution to Choices and the Agricultural & Applied Economics Association is maintained.

**The farmdoc project distributes Choices in partnership with
the Agricultural and Applied Economics Association.**

[click here to visit choicesmagazine.org >>](http://choicesmagazine.org)