Most rural regions are weak participants in the modern economy. As a result they are often seen as inherently incapable of sustained economic growth. Yet, OECD evidence shows that there are rural regions with relatively high rates of economic growth. Increasing the number of high performance rural regions requires transforming rural economies so that they can take advantage of their underlying opportunities. Although the modern economy is largely held to be best suited to an urban environment it has important opportunities for rural regions if they can manage to take advantage of them. In particular, rural regions must increase productivity, not only because this is the main driver of economic growth, but because an imminent crisis in labor availability will lead to rural economic decline unless the remaining workers can become more efficient. While the necessary transformation should be mainly driven by local strategies, rural regions will require external funds and technical support from national governments to implement the modernization process.

As we look into the future, cities, especially large cities, are commonly seen as the main economic engines for the industrialized nations (Glaeser and Gottlieb, 2009; Power and Scott, 2011; Crouch, 2011). Cities not only are increasing their share of the national population and of GDP, but in most OECD countries large city regions have higher productivity in terms of output per worker, or output per person. Yet in most OECD countries rural regions continue to account for about one fifth of population and a somewhat smaller share of GDP – a still significant share of population and economic activity. However, in rural regions, while output per worker is at very high levels in the primary sector, agriculture, energy, mining, forestry and fishing; workers in manufacturing and services typically have relatively low levels of productivity. The modern economy in urban centers has led to strong increases in productivity in manufacturing and services, but this has not been the case in more rural regions. If rural people, firms and places are to fully contribute to national growth it is important to identify ways that rural economies can experience the same sort of productivity increases that have been seen in cities.

1 This paper is an extended version of a plenary session presentation made at the 8th OECD Rural Development Policy Conference held in Krasnoyarsk, Russia, October 3-5, 2013.
2 Professor, Agricultural Economics and Martin School of Public Policy, University of Kentucky
Jane Jacobs is recognized as a leading advocate for the idea of the city as the main driving force for innovation and economic growth. Her ideas in *The Death and Life of Great American Cities* have informed academic research and practice for half a century. But Jacobs is careful to caution the reader that her ideas apply only to very large cities.

But I hope no reader will try to transfer my observations into guides as to what goes on in towns, or little cities, or in suburbs which are still suburban. Towns, suburbs and even little cities are totally different organisms from great cities. We are in enough trouble already from trying to understand big cities in terms of the behavior, and the imagined behavior, of towns. To try to understand the behavior of towns in terms of big cities will only compound confusion.


This means that the development processes of rural areas and the embedded towns and small cities will be different than the processes that have been identified in large cities. It does not mean that the modern economy does not apply to rural regions, but that it applies in a different way. The aim of this paper is to identify how rural economies can be modernized and, in particular, to begin to suggest how productivity can be increased as the main driver of rural economic growth.

The balance of the paper is organized first around a general discussion of the drivers of economic growth that is adopted from work by the UK Treasury, followed by a stylized definition of the modern economy, which is then contrasted with the traditional rural economy (HM Treasury, 2000). The next section provides some ideas on how rural economies can be modernized to increase productivity. Finally some examples of leading global firms that have rural origins are provided as exemplars of the possibility of rural dynamism at a significant scale and concluding observations are drawn.

**Drivers of Economic Growth**

The UK Treasury has identified five drivers of productivity: enterprise, skills, innovation, competition and investment (Figure 1). These drivers are a convenient structure for organizing the discussion of how to modernize the rural economy in a way that is complementary to the modern urban economy. Because rural economies differ considerably from urban economies the five drivers have different characteristics in rural space than they do in urban places. This reinforces Jane Jacobs’ admonition that different approaches have to be developed for different types/sizes of place/region.

Ultimately economic growth comes from some combination of increased employment and increased productivity of workers. In an environment where the labor force is increasing in size the focus of growth policy is almost always on increasing employment. This reflects the socio-political imperative to maintain high levels of employment in the workforce. Increases in the workforce come about not
just because of population increases, but also reflect: shifts in cultural preferences, for example, increased participation rates by married females in the labor force, and institutional changes, for example, reduced eligibility for welfare programs that have the effect of pushing people back into an active search for employment.

Figure 1: Drivers of Economic Growth

For decades many rural regions have faced a surplus labor problem. This reflected significantly higher fertility rates in rural regions than in urban areas and ongoing capital deepening in the traditional primary industries. The most obvious case of this is agriculture. Farm families were traditionally large because of on-farm needs for labor, but farm consolidation and mechanization continuously reduced the need for labor through the 20th century. As a result, waves of children left rural areas for cities, but enough children remained to create an excess supply of workers in many rural places. Not surprisingly national and local development policies focused on searching for ways to reduce rural unemployment, either by encouraging migration to cities or by increasing the local demand for labor by developing manufacturing and later more services in rural regions.

More recently, rural households have greatly reduced fertility rates to match urban levels. And, while rural outmigration has slowed, it is still significant. Crucially, virtually all rural regions in the OECD countries still experience high rates of youth outmigration, and, in particular, higher rates of female than male outmigration. In addition, rural regions in the OECD countries have been relatively unsuccessful in attracting foreign immigrants. The consequence of this is an imminent shift from a problem of surplus rural labor to one of labor deficit. This is of course more than
just a rural problem in many countries, but the percentage shift will be higher in most rural places than in cities, because of limited in-migration in rural regions.

The obvious consequence of demographic decline is that economic growth, or even maintaining the current level of economic output, will require significant increases in productivity. If rural regions have fewer workers, then these workers will have to have higher output. If productivity in rural regions continues to lag behind urban areas then outmigration will continue and rural decline will accelerate as workers leave for higher paying jobs in cities.

Productivity increases may well ne more important in rural areas than in urban regions. In urban regions a large share of the economy is made up of nontradables that face no competition from outside the region. This by itself reduces pressure for productivity growth. In addition urban regions have a large home market that can allow easy expansion of output to reach economies of scale. By contrast in rural regions the home market is small and growth comes from exports that face high transport costs, making high productivity essential.

**The Modern Economy**

There is no established definition of the “modern economy” or “new economy” but various definitions share common elements (Figure 2 – left panel). Notably it is an economy where services dominate employment and output. In particular, advanced services lead economic growth. These include: producer services (finance, marketing, legal etc.), health care, higher education, and computer and internet services. Expanding on this last sector, the modern economy is a network economy with the internet being the most important network, but supplemented by the efficient transport of goods by air, land and sea. ICT, which combines the internet, computers and telecommunications creates an information creation and dissemination network that affects all other industries as well as government and society.

The modern economy places a high premium on workforce skills. Those with advanced skills, both formal and interpersonal are highly rewarded, but there is growing income gap between the skilled and the unskilled that is increasing polarization. This is leading to the development of an insider and outsider workforce where the firms highly value skilled workers and provide them with a secure working environment, but unskilled workers are increasingly contingent labor with low wages, limited job security and few benefits. The implications of the insider-outsider model for service industries, the major source of employment in OECD countries, is important. While producer services offer high wage jobs tied to advanced skills, the majority of service employment remains in consumer or

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3 Much of this section is synthesized from ideas expressed in: Atkinson, 2005; Andersson, 2000; Audretsch and Thurik, 2001; Cader, 2008; Stiroh, 1999; Stough, Stimson and Nijkamp, 2011; and Temple, 2002.
household services that remain characterized by: low skills, low wages and episodes of unemployment.

Economic growth can be rapid in the modern economy and it is driven by innovation. In particular innovation is mainly seen as the result of large investments in formal innovation systems that mass human and physical capital to address technology gaps. This science based process leads to new products and technologies that typically reinforce the skill premium for workers and displace the unskilled. Innovation is focused in large corporations, research universities and government laboratories, which have the resources to assemble the large teams this formal process requires. In essence a closely coupled corporate-government complex of laboratories, funding schemes and joint priorities promotes innovation. Patents provide a mechanism to recoup the large up-front investments in R&D by these actors, and are the main measure of innovation performance.

While large firms drive innovation in the modern economy, it is entrepreneurs and small and medium size enterprise (SMEs) that create the most jobs. This reflects in part the dominance of the service sector, only a part of which has high productivity. The majority of consumer services remain labor intensive and consequently absorb a large share of workers. And the firms providing these services are for the most part small. It is also a reflection of a bifurcation of manufacturing identified by Piore and Sabel in 1984. Large scale manufacturing often involves a deskilling of the workforce and a substitution of capital for labor. This combined with cheap
transport and the ability to use ICT to manage remote production sites from a distance has led a large share of routine manufacturing to relocate to developing countries where labor costs are low. The relatively small share of manufacturing remaining in the modern economy is largely characterized by small volumes of highly customized output produced by skilled workers using sophisticated technology.

In the modern economy information is a crucial source of competitive advantage and growth. The focus on patents by innovative firms is an example of efforts to protect the returns from knowledge creation. But, the exchange of knowledge also characterizes the modern economy. The ICT industries and the expansion of various networks improve the flow of knowledge. Indeed, one key advantage of cities is the they provide for a wide variety of conversations and contacts that expose people to new ideas. This in turn allows innovation, as individuals firms and governments identify better ways to solve problems or opportunities for new goods, services or technologies.

Typically, the modern economy is seen as an urban economy and in particular an economy driven by large cities. Producer services are mainly found in large urban centers. A large local market makes it easier to provide specialized manufactured products at lower cost. And most importantly while information spillovers can take place thorough ICT, they can also be achieved through face to face contact. In particular, as Marshall observed a century ago important ideas can be exchanged through a serendipitous meeting of people without any intent to have a specific conversation (Marshall, 1890, p. 225).

Finally, the combination of a large “home market” provided by cities, the presence of pools of skilled and unskilled labor, the potential for information spillovers and the ability to carry of innovation through formal science based innovation systems create the last characteristic of the modern economy – an endogenous growth process. While the modern economy still needs raw materials they play an ever smaller role in output and employment. In essence the modern urban economy has reached a critical mass where internal demand growth enables a steady increase in production. Instead of economic growth requiring some external demand – exports to some other region, the dynamic of growth reflects internal forces. This does not mean that cities are isolated entities, because trade also characterizes the modern economy, but it does imply that trade is part of the internal dynamic of growth, rather than an external force.

**The Rural Economy**

Since the goal of the paper is to propose ways to modernize rural economies it is important to show how typical rural economies differ from the modern economy. The right-hand panel of Figure 2 suggests the common elements of the rural economy. The first point is that at an aggregate level employment in rural regions is mainly in services and manufacturing as is the case in the modern economy. But crucially consumer services and only basic producer services (bank branches,
general accounting firms and general purpose lawyers, etc.) characterize the service sector. Similarly, most rural manufacturing occupies an uncertain middle ground of firms that are not quite large enough to move off-shore and firms that are not quite sophisticated enough to compete for specialized markets. This suggests why rural regions have not seen the increases in productivity in the service and manufacturing sectors that have driven growth in the modern urban economy because of the underlying nature of the service and manufacturing firms in rural regions.

In parallel, workforce skills in rural regions tend to be much lower than are found in the modern economy. While there are lower skilled workers in the modern economy, economic growth is based mainly upon an insider, high skill labor force. In rural areas these insider jobs are much harder to find, as are the workers capable of filling them. Moreover, while most OECD countries face an aging and shrinking workforce due to an extended period of fertility rates being below the natural replacement level, this problem is greater in rural regions. Rural regions tend to combine low birth rates with high rates of youth out-migration to urban areas. This exacerbates the aging and shrinking problem. And, those who leave tend to have the highest formal and informal skills, which further biases the local labor force capability downwards.

Rural regions are becoming a part of the network economy and in some instances are major beneficiaries from the rapid adoption of ICT technologies. In principle the rural disadvantage of remoteness can be lessened by the use ICT. Indeed, initial claims about the Internet were that it would overcome the penalty of distance. In reality the higher costs of installing broadband in a low population density environment and synergies between electronic and face-to-face contact have left rural regions a peripheral part of networks. Even in a transport sense rural regions are characterized by limited access to airports and weak road and rail connections.

By the standard measure of productivity – patents filed, rural regions are not innovative. Formal science based innovation systems operated by corporations, universities and governments are rarely found in a rural region. Even if a rural region is the location where a patentable idea is identified, in many cases the patent is filed using a corporate address in an urban region. But if the idea of innovation is expanded beyond patents, then rural regions become more innovative. In particular, rural innovations may not be patented because the originator lacks the resources to file and protect a patent, because a trade secret is seen as providing better protection, or because the innovation has limited value beyond the firm that generated it.

In rural regions innovation is still likely to be the result of an individual who has a novel idea or a solution to a specific problem. The main benefit of the innovation is increased competitiveness of the innovator’s firm, not the sale of new knowledge to others. This does not mean that rural innovation is incapable of being a disruptive economic force. Figure 3 lists a number of global corporations that had their origins in a single rural entrepreneur who came up with a novel idea. Importantly, while
some of these ideas resulted in a patent, others remain trade secrets and others reflect the ongoing ability of the innovator’s firm to execute the idea better than its competitors.

<table>
<thead>
<tr>
<th>Firm Name</th>
<th>Product</th>
<th>Patent Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bombardier _ Valcourt, Quebec, Canada</td>
<td>snowmobiles, personal watercraft</td>
<td>initial patent on drive mechanism, but design and reputation more important</td>
</tr>
<tr>
<td>Wal-Mart, Bentonville, Arkansas, USA</td>
<td>general merchandise retailer</td>
<td>no</td>
</tr>
<tr>
<td>LEGO, Billund, Denmark</td>
<td>plastic blocks</td>
<td>initial patent, but not significant now</td>
</tr>
<tr>
<td>Rip Curl, Torquay Victoria, Australia</td>
<td>Surfing wetsuits</td>
<td>no</td>
</tr>
<tr>
<td>Quiksilver, Torquay Victoria, Australia</td>
<td>Surfing clothes and now board sport clothing</td>
<td>no</td>
</tr>
<tr>
<td>KFC, Corbin, Kentucky, USA</td>
<td>fried chicken</td>
<td>no</td>
</tr>
<tr>
<td>Stihl, Waiblingen, Baden-Wurttemberg, Germany</td>
<td>chain saws</td>
<td>continues to patent, but mainly relies on product reputation</td>
</tr>
</tbody>
</table>

Unlike the manufacturing and service sectors rural firms in the primary industries have typically exhibited very high rates of productivity over an extended time period. Agriculture, mining, energy, forestry and fishing are the traditional rural industries. In the modern economy they now play a relatively minor role in terms of share of GDP and employment. While this reduced role largely reflects the growth in other industries, the fall in employment is also driven by high rates of substitution of capital for labor and ongoing technical advance. Output of the resource industries has steadily increased over time, but the number of workers has steadily fallen (Scott and Pearse, 1992). As a result the role of resource industries appears to be fairly minor, even in rural regions.

By definition rural regions have low population densities, large commuting costs and small populations. For this reason alone they rely almost completely on small and medium size enterprises, because large establishments cannot assemble enough workers to be viable. However, unlike in urban areas where multiple firms in a single industry can survive because the home market is large enough, in rural areas typically only one, or at most a few, firms that provide the same types of goods or
services can be found. This reduces competition, opportunities for information spillovers and the possibility of developing pools of specialized labor. Distance and the small home market can also make it harder for firms to grow as new market opportunities may be hard to identify.

Finally, rural regions largely rely on exogenous forces for their growth opportunities. Rural economies are small, specialized and truncated which gives them weak internal dynamics. Growth is initiated by being able to increase exports to some other place. This provides an infusion of financial capital that can be used to expand the local economy. In urban areas the potential for endogenous growth provides an opportunity for greater local control of economic development (Stough, Stimson and Nijkamp, 2011). In rural areas development options will always be constrained by the necessity to identify external markets both for exports and for necessary imports.

**Strategies for Modernizing the Rural Economy**

It is clear that rural regions have an absolute advantage in the production of natural resources. These remain essential to the economy of OECD countries, but in many countries domestic raw materials are more expensive than imported raw materials so the mere presence of natural resources is not a sufficient condition for rural economic growth. Moreover, even in those regions where natural resources are abundant and the investments in production and transportation have been made to allow efficient supply there is a limited capacity for the natural resource sector to drive sustainable rural economic growth.

A first point to question the role of natural resources as a driver of rural development is the inherent instability of the approach. Harold Innes developed the “Staple Theory” of development in the 1930s to describe the evolution of the Canadian economy as a provider of raw materials to England (Innes, 1956; Watkins, 1963). The export of a natural resource, either in unprocessed or semi-processed form, provides the economic base upon which additional economic functions can develop. With strong exports it is possible to construct a large secondary economy that provides complex goods and services. Crucially however, the viability of these new functions hinges on the continued flow of primary exports. A decline in exports lead to a decline in the whole economy.

A second point is the steady substitution of capital for labor in the natural resource industries that now make them a minor source of employment, even in regions where they remain a major share of output. The majority of the capital goods are provided by large multinational firms that optimize global production in a small number of large scale assembly plants. This leads to significant financial leakages from the region and limited potential for upstream linkages. Similarly, while natural resources may offer some opportunities for developing local semi-processing to reduce the weight of output shipments, these are limited to first round processing. Once again most value-added inevitably occurs outside the region.
Even in regions where natural resources are abundant it is necessary to identify other engines for economic growth. A series of papers by Kostov and Lingard make the point that rural development involves a shift away from reliance upon the export of a single commodity (2001, 2003, 2004). Adding more economic functions increases resilience for individuals, firms and communities in a rural region. A clear example of the importance of this idea is the Balance Agriculture With Industry (BAWI) program developed in Mississippi in the 1930s (Hudson, 2000). At the time the state economy was highly dependent upon agriculture and forestry, and both were facing falling demand. The result was a high unemployment rate and weak economy. The BAWI strategy was to recruit industrial firms from the northern part of the United States to Mississippi with the promise of low wage labor and support from the state for the construction of new facilities for the firm. The program had mixed success, but became the foundation for industrial recruitment efforts across the American South that led to a major relocation of manufacturing firms from the North. Importantly, most of the firms left industrial cities in the Northern US for smaller rural towns in the South, leading to significant diversification of rural economies.

The BAWI program offers another important lesson. Mississippi took what could be seen as a significant development disadvantage – a labor force that was largely poorly educated and with few skill that were directly relevant to manufacturing and repackaged it as a competitive advantage – an inexpensive labor force. This focus on converting a perceived weakness into a potential opportunity is a crucial lesson for rural regions. The modern economy at face value seems an unlikely opportunity for rural regions. Indeed the modern economy is typically described as an urban economy. However for the OECD countries the modern economy is the future, and this is true in rural and urban areas. While some of the attributes of the modern economy are difficult to apply in rural areas, others, from the right perspective, have a rural relevance.

**Ways to Improve Rural Growth**

Figure 1 provides a structure for thinking about how to modernize the rural economy. In particular each of the drivers of economic growth can be examined from a rural perspective. This examination will focus on how the attributes of the modern economy can be repackaged into potential sources of rural economic growth. In essence we are attempting to perform the same trick the State of Mississippi performed in 1936 when it created BAWI. For each of the six drivers of economic growth in Figure 1 it is possible to identify attributes of rural regions that can make the particular driver an opportunity or an impediment to growth. In many cases the characteristic can be either an opportunity or an impediment depending upon how it is perceived.

But perception is only the starting point. To convert an impediment to an opportunity a context has to be provided. Low skill labor was an impediment in Mississippi, but if it could be combined with a lower wage than prevailed in existing locations, and assistance in relocation in the form of financial support for a new
factory building, then the owner of a firm may revise their impression of the labor force from negative to positive. The crucial next step is for the region itself to undertake this process, because it is a specific combination of regional characteristics that that convey competitive advantage. And, local leaders and citizens are best placed to identify the individual attributes of the region and to develop ways to combine them into a viable modernization strategy.

*Increasing Employment Numbers*

Expanding the size of the workforce has been the traditional way of increasing rural economic growth. Most rural regions have faced an environment where the supply of labor exceeded local demand. Outmigration to urban areas has been an important response to this situation of an excess supply of workers. But mobility alone has rarely led to a full employment equilibrium. As a result, the majority of past rural development policy has revolved around efforts to increase the demand for labor, either through inward investment or by stimulating the introduction and expansion of local firms.

Already many rural regions are facing a demographic transition. Several generations of below replacement rate child births when combined with steady youth outmigration have resulted in a labor force that is rapidly aging and shrinking. In the majority of rural regions in the OECD countries this phenomenon will soon occur. From one perspective the change is major vulnerability. Rural regions will no longer be able to rely upon one of their key marketing strategies – an ample supply of workers who are prepared to work for relatively low wages.

On the other hand, in the modern economy the demand for low skilled workers is shrinking. One exception to this is for some consumer services, parts of health care and household services, for example. But these are small parts of the rural economy because they require relatively large numbers of clients in close spatial proximity. This suggests that a reduction in the number of unskilled workers reduces the need for rural regions to focus on finding ways to attract employment providers. Instead, rural regions will be able to look for sources of economic growth that do not have to provide large numbers of jobs. Since the same demographic shift is also affecting urban areas in OECD countries it may be possible for rural regions to attract some firms from cities, especially given the historical reluctance of many rural people to leave their place of origin.

*Enterprise*

New firms are seen as a source of increasing productivity because a new firm typically is providing anew good or service, for which there is an expanding market, or because the new firm is more cost-efficient than incumbents, which should allow to take market share. In particular there is focus on “gazelles” in the modern economy – those firms that have high growth rates and rapid increases in employment and output. Some sectors, including, ICT, pharmaceuticals and business services, have limited or no potential in rural regions because they are highly
dependent upon various agglomeration effects that can only be obtained in major city.

However, other types of business, especially those that serve spatially dispersed markets can be conducted in a rural region. This is especially the case for firms that do not need rapid growth to achieve scale economies. Specialty products, such as customized business software, niche manufactured goods or focused retail establishments that serve a narrow customer base may be able to fully serve global customers from a rural location. Low transport costs and instantaneous communication led to the loss of routine manufacturing in rural parts of the OECD countries, because it could be performed more cheaply in developing countries. But the combination of web sites, package delivery services and rapid air freight can allow new rural enterprises that focus on emerging markets to be successful startups. The crucial difference between the two situations is the type of production and the importance of bundling a product with tailored customer service.

There are impediments to new business formation in rural regions. The first of these is a belief that people in rural regions cannot develop the ideas that lead to new business. Unfortunately, this belief is too widely held among the rural population, and entrepreneurs may become discouraged by social attitudes. Certainly finance for new business is more difficult to obtain in most rural regions. In part, this reflects the underlying skepticism of the possibility of new ventures being successful. In part, it reflects thinner financial markets that have less capacity and capability to fund new ventures. And, in part, it reflects the powerful role of the dominant form in single industry towns. These firms can often discourage independent thought of any kind because they see it as potentially destabilizing to their leading role.

**Skill Development**

In the majority of OECD rural regions the workforce has lower levels of formal education and lower levels of technical training than are found in urban regions. Some of this has to do with the fact that employment opportunities that require the highest level of education and skill are concentrated in urban centers. Thus there is little reason to believe that there is any likelihood that urban-rural skill gaps will ever completely close. But, for the rural economy to modernize there will have to be a significant increase in average levels of skill.

As the economy shifts to more of an insider-outsider structure, the better jobs are those requiring higher skills. Regions with only low skill workers will increasingly play a peripheral role in the economy and remain in intense competition with worker’s in developing countries for routine production work. Workers who receive higher wages can only earn these wages if they have high productivity, and that means either the ability to work effectively with sophisticated technology, or the ability to apply human ingenuity. Both of these situations require a relatively high level of skill and training.
In the past education and training was far more challenging to provide in a rural environment. Small, widely dispersed populations made schools more expensive to operate and there was limited demand in any single place for advanced courses. Similarly technical training programs also faced the problem of small numbers and high travel costs for individuals to get to a training program. Now web-based education and training technology offers the chance for rural regions to introduce a large array of programs in a way that is accessible to small groups and individuals.

Perhaps most importantly, in many rural regions people saw limited benefit from formal education and technical training. As long as local employers placed little value on education there was little incentive for workers to invest in improving their skills. Now however, even in rural regions, the returns from education are evident, and are becoming larger as a shrinking labor force leads to firms replacing labor with equipment and technology. Not only are employers altering the mix of skilled and unskilled labor they employ, but the wage differential between skilled and unskilled workers has been increasing, and this alone provides a new incentive to individuals to invest in training.

Recent research by the OECD also shows that investments in upskilling for lower skill workers have a greater impact on regional economic growth than do investments in increasing the number of highly skilled workers (OECD, 2012). This is encouraging for rural regions because they have a large percentage of lower skill workers and because only modest investments in training may be needed to increase their qualification levels to the point where there are significant benefits to workers and to the region.

**Competition**

Economists have long recognized that competition among firms drives each firm to control its costs and increase productivity as a way to either gain market advantage or to remain profitable in the face of efficiency gains by its peers. Firms in rural areas have often not faced this sort of competitive pressure because in many rural places the small local market and distance from urban centers results in spatial monopolies. High transportation costs and information gaps prevent local customers from seeking out distant suppliers and kept external firms from penetrating the local market. Where local firms have had monopoly power they have had little interest in increasing productivity.

In a rural economy where a large percentage of local firms have effective monopolies the costs for economic growth can be high. Costs for firms in the rest of the local economy are raised because firms with pricing power both limit output to raise price and have little incentive to drive down their production costs. As a result aggregate regional output is below its potential, and those local firms that could be competitive in external markets may struggle to match competitors’ prices.

The modern economy provides an important mechanism to expand completion in the form of ICT. The internet increases information on prevailing prices so
consumers know when they are being charged too much. The Internet combined with low cost delivery services also expose local monopolies to direct competition. Firms in rural areas that sell tradable goods or services must now find ways to meet the prices of external suppliers. Because a larger share of rural economies is composed of tradables than is the case in urban areas, this new form of competition has had a big impact.

But ICT also can convey benefits to rural firms. When rural firms were restricted to a small home market they had little incentive to increase productivity. But now they face the stick of completion for external firms and the carrot of being able to penetrate much larger markets if they have high enough quality at low enough prices. For rural firms that could not push costs of production down while they were restricted to serving local demand the opportunity to expand into regional, national or international markets the chance to increase profits. While most rural firms are small and medium size enterprises they may still need a larger market than is available locally to reach minimum efficient scale. Without an export market they may be able to survive if they have a local spatial monopoly but only by being able to pass high production costs onto a captive market.

There is one development advantage for rural firms that do not face strong competition. Start-ups that are trying to perfect a product or a business model may be more successful in a rural region for two reasons. The first is that they are shielded to a considerable extent from substitute products produced in other regions, as these face higher transportation costs and may not be known locally. Second, the small local market may keep others in the community from imitating the innovator. A number of large global firms that had their origins in rural regions were able to perfect their product or process before expanding into larger urban markets. When they did expand they had built up a first-mover advantage that made it difficult for others to challenge them. Perhaps the leading example of this phenomenon is Wal-Mart, which stayed out of urban areas while it perfected and expanded its supply chain model. When it did move into cities, the existing chain store competitors were unable to adapt in time to Wal-Mart’s cost advantage and many failed.

**Investment**

The modern economy requires a high level of capital investment for each worker. In rural regions most of the primary sector has made this transition. Capital investment per worker in commercial agriculture, modern forestry, mining and energy, and commercial fishing exceed the levels found in most urban industries. The result is very high levels of output per worker. For much of rural manufacturing and rural services these levels of investment have not been made. In addition public investment in platform infrastructure (roads, broadband, utilities) that provides enabling services to business are below the levels found in urban regions.

While rural regions relied upon subsidies questions about the efficiency of government expenditure were seldom raised. The point of such expenditure was...
simply to transfer money in the hope that it would support household incomes. A clear consequence of fiscal constraint brought about by the recession is a greater emphasis on the public return on all outlays, including those for rural development. If this leads to smaller, but more focused public outlays that are tailored to address actual infrastructure constraints that limit economic development, rural regions may be better off.

In many OECD countries local governments in rural regions are fiscally constrained and depend upon transfers from national or provincial/state governments for major share of their funding. Indeed in most countries the powers and responsibilities of local governments are determined by a higher level government. The combination of highly restricted revenues and significant service delivery obligations can lead local governments to underinvest in their region because all of their funds are committed to delivering current services. The result is not only insufficient new investment but underinvestment in maintenance of the existing capital stock, which further limits productivity.

Private firms in rural regions face investment challenges that are not common in urban centers. Not only are there fewer financial institutions in rural areas, so competition is limited, but rural lenders tend to provide fewer services and can be unwilling to fund novel business ideas because they lack the capacity to assess risks. Thin markets in rural areas may reduce the maximum debt to asset ratio a lender will accept. This reflects the greater difficulty in recovering loan losses from a failed business by selling its assets. In urban regions the likelihood of finding a buyer for specialized equipment or buildings is higher than in rural regions because it is more likely that similar businesses already exist. A clear problem in rural regions is an absence of equity investors. Venture capital is virtually nonexistent in rural regions. This reflects the prevalence of slow growth investment opportunities in rural regions, the small size of most rural investments, the limited number of investment opportunities and the difficulty in monitoring geographically dispersed investments.

But, it is clear that private investments are made in the primary sector, and these industries share the characteristics described above. This suggests that if rural businesses have a business plan that provides a clear strategy and market potential then investors will be found. In rural regions the inability of entrepreneurs to provide this fundamental information has been a major impediment to investment. Because rural firms tend to be SMEs they do not require massive financial investments to get them started, and many can grow from retained earnings, so they do not need to “go public”. While this limits growth potential it can make finance easier.

Innovation

Regional innovation has become a key driver of economic growth. Endogenous growth models at the national and regional level rely on an induced innovation process to generate new ideas and technologies that in turn drive growth. Some of the benefits of growth are in turn reinvested in more innovation, which makes the
growth cycle self-sustaining. To generate this endogenous growth process innovation has to move from being the serendipitous outcomes from individual efforts to find new and better products and processes and become a formalized innovation system that is based upon the commitment of large amounts of effort and resources to specific types of research.

As innovation has become defined in terms of formal innovation systems that are based in large corporate or government research centers or at large universities the main measure of innovation has become patents. Because research is now largely decoupled from the actual use of the new idea some mechanism is needed to compensate the research institution for its effort. Patents provide this mechanism. There are three immediate consequences form this type of innovation system. The first is that measures of innovation ignore other forms of innovation that do not result in patents. These include trade secrets, modifications to processes that reduce costs or increase efficiency and ideas where no patent is filed. The second consequence is that research concentrates on areas where a patent can be filed since it is the main means for ensuring that the research center recovers its costs. The third consequence is an overestating of innovative activity because the ratio of patents filed to actual use of patents tends to decline as innovators try to protect any idea they can identify, whether it has commercial merit or not.

For rural areas the shift to innovation systems and patents has resulted in an increased perception of stagnation. Few patents originate in rural areas, largely because the large research centers that drive innovation systems are rarely located in rural places. Even if a patentable idea originates in a rural area, if it comes from a corporate or university subsidiary the patent will be filed by the urban headquarters. Yet, while rural regions are weak participants in innovation systems there is still innovation (Copus, Skuras and Tsegenedi, 2008; North and Smallbone, 2000).

Innovation in rural areas remains grounded in the actions of individuals who seek ways to solve specific problems they face. This can result in creating a new product or process or finding a way to modify existing products or processes to reduce cost or improve quality. Many of these innovations are not patented but they result an increase in the competitive position of rural firms, which supports the local rural economy. In addition, rural areas benefit from formal innovation systems research that take place in a rural area but is specifically intended to be implemented in rural regions. This is most evident in the natural resource industries, especially agriculture. For well over one hundred years science has been applied to farming and has led to it having one of the highest rates of productivity of all industries in the OECD countries. Increasingly this formal research activity takes place in an urban setting, but the research results are implemented in rural areas.

In rural areas there is a particularly strong connection between innovation and entrepreneurship. The innovator tends to directly implement the innovation rather than sell it to a second party. For the most part these innovative firms remain small, but in a small rural economy the employment and income effects of successful small
firms are significant. However it is fairly easy to identify globally significant firms that had their origins in the idea of a single entrepreneur who founded the firm in a rural community. The disruptive innovations caused by these rural entrepreneurs altered the industries they are found in or in some case created new industries.

Five examples of disruptive rural innovations make the case that rural ideas can spread globally, often without the use of patents. Wal-Mart the largest retailer in the world was founded in Bentonville, Arkansas, USA in 1950. Its main innovation lies in logistics systems and inventory management which are not patentable, but they allowed Wal-Mart to displace larger competitors. Bombardier was founded in Valcourt, Quebec, Canada in 1942 to make tracked snow machines. The initial technology was patented. but Bombardier’s growth came from personal snow machines. By inventing and popularizing snowmobiles and then jet skis the company generated the income to purchase aircraft and rail equipment manufactures that make it eh third largest commercial aircraft manufacturer in the world. LEGO is the fourth largest toy manufacture in the world but was started in Billund, Denmark in 1916. It initially made furniture but switched to wooden toys during eh 1930s and to plastic injection after WW II. The LEGO block is patented but the company’s success comes from designing novel ways to combine blocks into a variety of figures and structures. Torquay, Victoria, Australia was the origin of two global companies founded in the same year. Rip Curl started producing wet suits for local surfers in 1970 and now is a dominant firm in the global surf-wear sector. Quicksilver was also started in 1970 by one of the early employees of Rip Curl who left to start making surfing shorts. Quicksilver now produces clothing for both winter and summer board sports. The success of both companies hinges on the ability to continuously produce new designs that attract customers. KFC was started in Corbin, Kentucky, USA in 1930 as a supplemental business for a gasoline station. Harland Sanders developed a seasoning method for fried chicken that remains a trade secret, but he also was one of the early adopters of franchising and used the process to expand KFC to become the largest retailer of fried chicken.

These examples, while they are atypical of rural innovation, show that rural firms can have a global impact. Crucially they show that major forms of innovation can exist outside the formal science-based innovation system approach, and that patents are one measure of innovation, but not the only measure. If innovation is to reach its potential in rural areas there has to be a wider recognition of these points. Innovation may well be the best opportunity for rural firms to increase economic growth. It has the potential to offset limitations in the number and skills of the local workforce and can play a role in opening access to external markets, either by reducing cost improving quality or by introducing a new product. Because innovation in rural regions is tightly coupled to entrepreneurship, a high rate of innovation can also be associated with new firm formation and a strengthening of existing firms.
Conclusion

Large cities have clear advantages in the modern economy and they account for a disproportionately large share of economic growth. The OECD estimates that the large most urbanized urban regions that make up about 8% of all TL2 regions account for 32% of economic growth across the OECD countries (OECD, 2012, p. 45). But as the report also notes this leaves the majority of growth to be produced elsewhere, and, as Jane Jacobs suggests, probably by a different process. Economic growth can occur in any type of region and we know that some rural regions grow faster than many urban regions and that per capita earned incomes can be high in remote rural places.

The basic message of Promoting Growth in All Regions is that we should look beyond large cities for economic growth. This is in some ways a re-iteration of the x-efficiency argument of Liebenstein where external constraints prevent firms, or in this case regions, from achieving the maximum level of output (Liebenstein, 1978). For large urban regions and small rural regions the objective is to first reach the production possibility frontier and to then expand that frontier. The issue in both types of place is finding an appropriate development approach.

Where rural growth and incomes are strong there is generally high productivity. Growth in these regions occurs in part because of absolute advantages in the form of natural resource endowments, but growth also occurs because of the replacement of labor with capital and ongoing innovations in production technology. Only some regions can exploit a high quality natural resource base, but there is the potential for any region to improve its productivity through: improving workforce skills, increasing firm efficiency, making wise investments in infrastructure and encouraging local entrepreneurs to innovate.

Ultimately the modern economy is neither urban nor rural. The modern economy is not even about rates of economic growth or the absolute level of GDP. It is mostly about identifying and performing a useful economic function in a way that evolves with demand and competition. Productivity is a hallmark of the modern economy and it is crucial for rural places. In most rural regions the local workforce is likely to decline and age so economic, or more tellingly economic stability, growth can only take place with increased productivity. Moreover as noted earlier in rural areas productivity is more important because most of the local economy is made up of tradables that have to absorb significant transportation costs to penetrate distant urban markets.

Finally, while Paul Krugman has observed that nations and large regions do not go broke, so competiveness is not an issue, it is clear that small places do go broke and disappear, making competitiveness vital (Krugman, 1994). It is this difference that makes the transition to a modern rural economy essential. While the decline and eventual loss of specific rural places is of limited significance outside the immediate region, it is crucial to the people in those places. This is of course the central argument for a bottom-up rural development approach, as made in the New Rural
Paradigm (OECD, 2006). The people in any place are the most affected by its growth or decline both in terms of livelihoods, but also in terms of “community” as a shared experience. History shows that some rural places do disappear, but those that are successful in redefining their function can continue to prosper.
References


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