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and the growth of rural
SMEs

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Business Development and the Growth of Rural SMEs

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The paper reviews the role of Small and Medium Size Enterprises (SMEs) as drivers of employment and economic growth in rural regions across a number of OECD geographies. It argues that SME creation is especially important for rural economic development and identified lessons for national level policy that can help strengthen the performance of SMEs and enhance the creation of new SMEs. This working paper focuses on four cases studies in Atlantic Canada, Quebec, Scotland and the United States to derive general findings and recommendations

Key words: Rural development, innovation, SMEs, geography, place, economic development incentives/tools, benchmarking.

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Table of contents

Acknowledgements	3
Executive Summary	5
1. The context.....	7
2. Challenges in building an SME based local economy	11
3. Case studies and the role of SME's in rural regions	14
4. Bibliography.....	32

Tables

Table 3.1. Number and population by type of region.....	15
Table 3.2. Employment distribution	16
Table 3.3. Number of firms by region type and firms class	16
Table 3.4. Percent of region type total number of enterprises by firm size class	16
Table 3.5. Percent of Total estimated regional employment by region type and firm size	17
Table 3.6. Enterprises and employment by location and size in Scotland 2014	22
Table 3.7. Top 5 sectors by number of firms, 2014.....	23
Table 3.8. Top 5 sectors by growth in number	24
Table 3.9. Employment shares by firm size class for metro and non-metro U.S.	25
Table 3.10. Net job creation by firm size class for metro and non-metro U.S.	26
Table 3.11. Share of substantive, nominal and non-innovators across settlement hierarchy	29

Figures

Figure 3.1. Large rural adjacent location quotients (LQ) by SME sector	18
Figure 3.2. Large rural non-adjacent location quotients (LQ) by SME sector	18
Figure 3.3. Small rural adjacent location quotients (LQ) by SME sector	18
Figure 3.4. Small rural non-adjacent location quotients (LQ) by SME sector	19
Figure 3.5. Percentage change in number of enterprises in Scotland, 2010-2014.....	23
Figure 3.6. Net job creation by young and old firms – non-metro	27
Figure 3.7. Net job creation by young and old firms -- metro.....	28

Executive Summary

This working paper tries to better understand the characteristics, trends and performances of the rural firms across the United States, two Canadian provinces and Scotland using micro-level data. The methodology builds upon the findings of the four independently conducted case studies. The four case studies all focus on the role of SMEs in rural regions. They consider different geographies and employ different analytical methods. Despite these differences, the paper derives some general findings and provides some policy lessons for SME rural firms. The general findings suggest that:

- The vast majority of firms in rural regions are SMEs (employment of less than 250), and this population is highly skewed towards micro SMEs (employment less than 10).
- The vast majorities of rural SMEs have slow employment growth and remain micro-enterprises. This reflects multiple factors including difficulty in identifying new market opportunities, limited financial capacity, labour shortages, high transport costs to external markets, and owner preferences to limit growth.
- Where large firms exist in rural regions they are typically first stage processors of natural resources and are often operated as branch locations of a large corporation, which has its headquarters outside the region.
- A considerable number of new business start-ups occur each year in rural regions, but there are also many business failures. However in any given year in many rural regions there is net growth in the number of businesses.
- In general SMEs in urban regions perform better than SMEs in rural regions on a variety of measures – earnings growth, employment growth etc., but there are high performing rural SMEs in many types of rural regions, particularly in regions with a strong natural resource base.
- SMEs in rural regions are found across a broad range of industries, but when compared to urban SMEs, a larger share produce tradeable goods.
- Compared to urban SMEs, rural SMEs are particularly reliant on access to external markets if they are to expand, because their home markets are too small to accommodate growth.
- The two main drivers of productivity (GDP per worker), catching-up in rural areas are proximity to cities and tradable sector. Amongst tradable activities, it is often the export of a high value natural resource. In some cases this resource is produced by a large branch plant, but in other cases it originates from SMEs.
- Improving the human skills of entrepreneurs and leaders of existing SMEs can help to improve firm viability and increase growth potential.

- Most innovations developed in rural areas have small markets and mainly benefit the innovating firm and its direct customers. Few involve formal R&D effort and few are patented.
- Innovation in rural areas has two sources. Large branch plants import innovation from their parent organization and some SMEs also take advantage of imported innovation from other regions that they identify by various means. The other path is user innovation where the rural SME produces innovations of direct value to the firm.

The five case studies point to a number of policy lessons:

- National and regional policies should emphasise support for new and existing SMEs in rural regions, but this support has to be differentiated to account for the large variability in conditions across the various types of rural territory.
- Governments should broaden their support for innovation to include more than the typical formal science based innovation system. Innovation is important for rural SMEs, both to introduce new products but to also improve processes that can increase quality and reduce costs of production, which leads to increased competitiveness.
- SMEs in rural regions can benefit from policies that improve various types of networks – transportation, business, professional and telecommunications, since these help to reduce the penalties of distance and low density, thereby increasing access to external markets.
- The high degree of economic and geographic diversity across rural regions in most OECD countries means that support for rural SMEs has to be flexible, not only by type of industry but also by the geographic milieu of the firms.
- Policies that only focus on identifying and supporting potential “gazelle” SMEs result in an incomplete business development strategy. The vast majority of SMEs are not gazelles but in aggregate make an important contributions to regional and national growth. In rural areas, where local labour markets are small, even modest increases in employment by micro-SMEs can make noticeable improvements in employment.
- Because individual SMEs in a rural region have few local peers in the same industry, it is important for local governments to support opportunities for firms in specific industries to build professional networks through meetings and electronic means. It may also be useful to facilitate meetings of all SMEs through umbrella organisations, like chamber of commerce or business owner associations.
- Business retention and expansion programmes are particularly suited to rural regions because they focus on increasing the odds of survival of SMEs and on assisting them in identifying growth strategies.
- Innovative programmes that address constraints to SME start-up and growth are essential. These can include programmes to improve management capacity in SMEs, mezzanine finance for SMEs that complements owner equity and conventional debt finance, support for export market identification and development, and adopting a relatively liberal definition of innovative activity in rural areas.

1. The context

For several decades there has been a strong interest in the role that Small and Medium Size Enterprises (SMEs) play in national economic growth in terms of creating new employment and income. The origins of the interest in the United States came in 1981 when David Birch published research showing that 66% of net new job growth in the US between 1969 and 1976 came from SMEs (Birch 1981). This was a direct contradiction of conventional belief at the time that very large firms, and in particular multinational corporations, were the main drivers of employment growth. Over the intervening decades, there has been a large body of research that examined Birch's results and came to mixed conclusions. Some studies confirmed his findings while others refuted them. A recent paper by Neumark, Wall and Zhang summarises the debate and conducts new analysis that confirms Birch's finding, although the share of new jobs coming from SMEs in the 1992-2002 period is lower than Birch found in his analysis (2011).

For rural regions, Birch's findings and its confirmation are especially important. While there is a distribution of firm sizes from sole proprietorships to very large establishments in metropolitan regions, in many rural regions there are only SMEs. Thus, if employment growth were to be dominated by large firms that take advantage of scale economies, the prospects for economic development in rural regions would be bleak. However, since SMEs provide a large share of total employment growth then there is potential for rural regions to grow, if they can develop the right kind of SMEs.

Local labour markets in rural regions, particularly more remote regions, are small. This means that for all but the largest local labour markets there is little likelihood of a large employer (e.g. 1500 workers) locating in these regions. When large firms are found in rural regions they are typically engaged in first stage processing of a natural resource that has to be done locally, either because of perishability - food processing, or weight saving in transport - or refining. This makes them specific to only those regions where the basic resource is found.

Recent research on SMEs has focused on high growth firms – the gazelles, since they offer the greatest increase in job numbers (Acs 2011, Davidsson and Delmar 2006). This literature notes that only a relatively small share of SMEs fall into this category and that they are hard to identify a priori. Moreno and Casillas (2007, p. 85) find that better networked firms have access to a variety of resources – financial, technological and human, that facilitate rapid growth, and that these are easier to obtain in urban regions. Moreover, gazelles have tended to be concentrated in the high-tech sector, particularly in Internet based services, for example, Facebook, Uber and Twitter.

This suggests that rural regions are unlikely to host high growth SMEs for three reasons:

- The first is an inability to provide sufficient workers to a high growth firm given the small local labour market.
- The second is the low probability of any individual SME being a gazelle, which means that a region has to have a large number of SMEs to have a reasonable probability of hosting a gazelle; and once again, the small population of a rural

region means that in any region only a relatively small number of SMEs will be found.

- The third reason is that rural regions have had limited success in hosting “high-tech” firms. While it is possible to identify a few technology driven companies that have originated in rural regions, the vast majority are found in relatively large metropolitan regions.

However, while gazelles are important for metropolitan regions, because it takes a large increase in employment by a single firm to have any discernible impact on the total employment level of the region, this is not the case for rural regions. In rural regions relatively small changes in the absolute number of jobs make big changes in the percent of the workforce that is employed. For example, in a metropolitan region with 100,000 workers a 1% increase in employment requires 1,000 new jobs. In a small rural region with 1,000 workers a 1% increase requires only 10 jobs, which can easily come from a single small firm. Thus, for rural regions, increasing the number of small establishments or adding one or two more workers to existing establishments can have a significant impact on employment.

SMEs in rural regions

In this section, we review the role of SMEs in rural regions. But we first note the importance of a more nuanced notion of rural that identifies three distinct rural contexts (OECD 2014). They are:

- Rural territory that is integrated into a metropolitan region by virtue of being part of its local labour market.
- Rural that is adjacent to a metropolitan region, which allows it ready access to goods and services in the urbanized region but is not part of the metropolitan labour market
- Rural that is remote from any metropolitan region and as a consequence must rely on local firms for most goods and services and employment opportunities.

The balance of the analysis excludes rural territory within a metropolitan region and only considers rural regions that are either adjacent to, or not adjacent to, metropolitan regions. Four factors can be identified as contributing to the importance of SMEs in rural economies.

Small local labour markets limit opportunities for large firms and constrain firm growth.

If a rural region is defined on the basis of its local labour market, then the workforce of the region is determined by the number of workers found within its commuting zone. If a region is defined by administrative boundaries, it may have multiple distinct local labour markets, but the available labour force in any specific location is, for the most part, restricted to the commuting zone around that location. Further, in sparsely populated rural regions local labour markets may not share a boundary. The presence of unoccupied space that separates markets makes it hard for workers to shift among labour markets. Another basic characteristic of rural regions is that local labour markets are small. In general, in rural regions the vast majority of workers in a local labour market are drawn from within a one hour radius of travel time about the employment location. In sparsely populated regions this limits the size of any single employer since other firms will also require workers.

Clearly, this suggests that firms in rural regions will almost exclusively be SMEs and their size will be biased towards small rather than medium.

Small local labour markets reflect small local populations, which result in a small home market with limited local demand for firm outputs.

Second, a small local labour market also suggests a small home market. While the market for a firm may not be contiguous with the location of its labour force for many types of firm the one hour travel boundary may also apply to customers. This is most likely to be the case for services and retail establishments where customers bear travel costs. Since firms of this type form the largest share of establishment in virtually all communities, the size of the local market can constrain the size of firms. In North America, the Wal-Mart phenomenon somewhat counters this situation. By constructing large stores that offer a wide variety of products at relatively low prices Wal-Mart created a virtual monopoly by driving out its competitors, and greatly increased the distance that people were prepared to travel to shop at its stores.

The small home market has important implications for competition and the rewards from innovation. Economists see competition as being valuable for consumers because it limits pricing power of firms, and because it creates an incentive for a firm to innovate in order to differentiate its product or gain a cost of production advantage. Both of these benefits are unlikely in rural areas where there may only be one provider of any particular good or service in the region and the local firm is protected from external competition by high transport costs. This suggests that remote regions face a disadvantage in being competitive.

On the other hand a small remote market can provide an advantage in some circumstances. SMEs in remote regions may be unable to purchase an “off the shelf” solution for a production problem, either because they cannot identify a provider or for cost reasons. This can encourage them to develop their own solution for their problem. This idea of “user innovation” is not well recognised in the innovation literature, but there are numerous examples of the phenomenon occurring, often by SMEs in rural regions (Freshwater and Wojan, 2014). Similarly, the standard argument that private firms face a disincentive to innovate if competitors can copy their innovation may be less relevant in rural regions. The lack of local competition can provide some assurance that the firm will capture the returns from innovation. And, even in the case of an exporting SME, if the market for the product or process is limited in size it can be difficult for potential competitors to offset the first mover advantages of the incumbent innovating firm.

Rural firms must export to grow but face high transport costs that can limit growth possibilities.

A third factor that leads to the dominance of SMEs in rural areas reflects the combination of significant transport costs and an inability to capture scale economies in production that makes many rural exporting firms niche providers of goods or services. For a firm with a small home market, growth can only come from exports. However in rural areas, especially more remote regions, the cost of shipping goods to distant markets increases their cost to the buyer or reduces profits for the seller depending on how costs are distributed. Additional less tangible costs that remote regions with low market access must bear include institutional and language differences (Lima and Venables, 2001) low access to markets additional In either case the distance penalty reduces potential demand. Consequently, firms in rural areas tend to not engage in activities that have clear scale economies in

production or they accept that they have to be relatively high cost producers for a limited market because they cannot expand demand enough to achieve full scale economies.

The rural social milieu can favour SMEs because they better fit community values.

A final aspect of an SME based rural economic structure is that it can lead to a higher quality of life than is the case for rural regions dominated by large enterprises. The initial argument for this perspective was made by Walter Goldschmidt in 1944 following his research in two rural communities in California, where one was dominated by large scale farms and the other by small farms. Goldschmidt's hypothesis that a large number of smaller farms results in improved socio-economic conditions when compared to an environment dominated by a small number of large farms remains a core concept in rural sociology (Lobao, Schulman, and Swanson 1993, Peters 2002). The idea can also be connected to the literature on socio-economic conditions in "single-industry towns" which are in reality single-firm towns where one large employer not only dominates employment opportunities but various other aspects of the community (Barnes 2005, Dale 2002). While these places can be prosperous for extended periods their economic fate hinges on decisions made by very large corporations that operate multiple facilities and have little attachment to any particular host community. Conversely, a local economy based on multiple SMEs is more likely to be more resilient (Freshwater 2015).

2. Challenges in building an SME based local economy

Getting a better mix of firms

As is noted in much of the research literature on SMEs, they are not created equal (Davidsson, Achtenhagen and Naldi 2006, Henrekson and Johansson 2010). Gazelles are seen as the most desirable SMEs because they offer prospects of rapid increases in growth over time that can make a significant contribution to even a small metropolitan region. But, in rural regions gazelles are likely to leave at early stage for an urban location where, the labour force is larger, supplier networks are better and there is the potential for interaction with related firms. In short, the benefits of agglomeration identified by Marshall (Asheim, 2000) will lead to firm relocation. On the opposite end of the scale the majority of SMEs offer limited prospects for employment growth, either because they are focused on supplying a small local market that has little scope for growth, or because the business owner has no desire to expand the firm. The majority of small service and retail oriented firms in rural regions fall into this category. They provide useful services for their locality but are unlikely to add new jobs.

Between the gazelles and the static SMEs lies a range of firms that have modest growth potential. If these firms are able to identify new market opportunities and obtain the resources to allow growth they can add employees. While each individual firm may not add many employees, if multiple firms can add workers then the employment level in the region increases significantly. For example, if there are 60 firms in a rural region with total employment of 1700 and 12 of these firms each add 6 employees this results in a 4.2% increase in employment. A characteristic of these firms is that they already serve, or have the potential to serve, external markets, which is necessary because of the limited potential of the home market. Most of these firms will be manufacturers, but there is scope for some specialised service providers to serve external markets, for example, rural tourism by definition serves mainly an external market.

Overcoming the barrier of distance

Distance is a challenge for rural SMEs that seek to expand. Distance first, makes it harder to identify market opportunities that can be more easily observed in a larger region. More isolated firms have a harder time obtaining market information and in making contacts that lead to sales. Transport costs also make it more difficult to serve local markets since the producer may have to absorb freight costs in order to match a competing supplier with a closer location. SMEs may see these as significant barriers, because they represent fixed costs that have to be spread over a small volume of sales in the case of market development expenses, or because the SME is not shipping enough volume to be able to get a freight discount.

Inability to achieve economies of scale

Almost by definition a rural SME is unable to capture economies of scale in production. Either because of a small local labour force or limited local opportunities for sales, it cannot

easily reduce unit costs by increasing volume. In some regions SMEs in the same or related industries have worked together to form clusters to mimic the scale benefits of a large firm thereby allowing them to penetrate large external markets. The most famous examples of this clustering process are in Emilia-Romagna, Italy where flexible coalitions of manufacturers form and dissolve to fulfil contracts that are too large for any single firm to satisfy (Brusco 1990, Markusen 1996). For this type of clustering to exist however it requires: that a group of related firms with complementary skills be in close proximity, that these firms be able to organise and manage the collaboration process, and that there be sufficient ongoing work to maintain the cluster.

A more common situation is that rural SMEs serve niche markets. Firms only produce relatively small quantities, because this fits the size of the market. Even if there is the technological possibility for scale economies, the limited size of the available market does not allow scale to occur, so there is a low chance of a large firm entering production and driving down prices. These niche markets may be regional, where shipping costs are high or demand is geographically limited, or even international, if shipping costs are low relative to the value of the product and total demand is small.

Entrepreneurship and Innovation

There is considerable conflict on the role of SMEs in innovation that dates back to Schumpeter's seminal theories on the role of innovation as a disruptive force. In his original writings in the 1920s he conceived of innovation mainly coming from small firms that displaced incumbent large firms – Schumpeter Mark 1 (SM1), but by the 1940s he concluded that innovation was largely the result of formal R&D investments carried out by large firms - Schumpeter Mark 2 (SM2) (Ortega-Argiles, Vivarelli and Voight 2009 pp. 5-6). The current literature tends to see SM1 and SM2 as both being possible but in different industries, where the distinguishing elements are related to differences in: barriers to entry, scale economies, market power and access to capital (Ortega-Argiles, Vivarelli and Voight 2009). Moreover, the literature tends to see SME innovation as taking place in only a subset of firms that are located in more technologically advanced regions and in sectors where product differentiation is valuable, or process innovation improves quality or reduces costs.

Opportunities for SMEs to improve employment levels in rural regions are higher if the firm produces a good or service for which there are few or no existing competing suppliers and if the market has growth potential. New innovative products best satisfy these conditions, but this raises crucial questions about incentives for rural entrepreneurs to emerge and the potential for rural innovation. The literature on entrepreneurship distinguishes between necessity based and opportunity based entrepreneurs (Acs, Desai and Hessels 2008, Block and Sandner 2009). The former start businesses because they cannot find wage based employment and seldom achieve significant success, The latter start businesses because they perceive that their product or service will satisfy an unfulfilled demand and are the most likely to be innovative. If these opportunity based entrepreneurs are correct in their perceptions, their firms can rapidly become profitable and achieve considerable growth.

Rates of entrepreneurship, measured by new business starts, vary considerable across countries and across regions. And, there is no good method for differentiating between necessity and opportunity entrepreneurs. Moreover there is little support for rural innovation in most OECD countries, because the focus is on innovation systems that operate at the national or large region level. These systems are almost exclusively structured as complex interactions among public universities, large businesses with formal

R&D activity and government agencies. The idea that SMEs in rural regions can produce innovations is seldom considered.

Where national governments do provide support for rural innovation, such as Innovation Norway, the criteria for eligibility are restrictive and set a high bar in terms of the degree of novelty so that most rural firms are not eligible for support. Certainly from a national or even metropolitan region perspective, innovations by entrepreneurs or SMEs are unlikely to be as significant as those produced by a sophisticated regional innovation system. But, at the level of a small local economy, a small innovation that expands the market for a firm or reduces its cost of production may be sufficient to allow the firm to add a few employees, which can be meaningful for that region, and make a positive contribution to the national economy.

3. Case studies and the role of SME's in rural regions

Four case studies are associated with this project. Each case study was conducted independently and was largely structured to address questions that were important to the sponsoring organisation. The four case studies all focus on the role of SMEs in rural regions, but not only do they consider different geographies, they also employ different analytical structures and focus on distinct issues.

The case study on Atlantic Canada, by Simms and Ward, uses local labour markets that vary in size from under 600 in some remote rural areas to over 400,000 for the largest metropolitan region in Atlantic Canada. The main aim is to identify key economic sectors in rural local labour markets of different size and with differing degrees of proximity to an urban region. The case study on Quebec, by Simms and Ward also looks at the role of SMEs in urban and rural contexts but in this case the unit of geographic analysis is the Regional Municipal County (MRC) - the basic regional unit of sub-provincial government in the southern part of the province. The main focus is to examine the economic performance of SMEs in the various types of MRC to determine whether rural SMEs perform as well as urban SMEs. The case study of Scotland, by Pace and Latto, first looks at the distribution of SMEs across the Scottish territory to show that they are a crucial part of the rural economy. It then turns to a subset of rural SMEs that have been supported by Scottish Enterprise and shows how interventions to strengthen management decision making and strategic planning can help increase the rate of rural business growth. Finally, the case study on the United States, by Wojan, first looks at the characteristics of SMEs that are in metropolitan, nonmetropolitan but adjacent, and nonmetropolitan nonadjacent counties. It then turns to a new survey of rural innovation and provides information on the level and types of innovation by SMEs across these three types of geography.

Atlantic Canada

The analysis covers the four eastern provinces of New Brunswick, Newfoundland and Labrador, Nova Scotia and Prince Edward Island. There are major differences in the physical size, population and population distribution among the provinces, and consequently, Atlantic Canada averages are somewhat misleading. Analysis is conducted at the level of local labour markets - functional economic regions (FERs), based on daily journey to work data with about a 100 km maximum one way commute. Each FER contains at least one Census Sub-Division (CSD), which is essentially an incorporated place with some local government function.

In rural regions the biggest concentrations of SMEs are found in traditional resource based industries and first stage processing (agriculture fishing forestry), construction, retail services and food services. Key constraints for SMEs include: high transport costs, small local markets, limited numbers of workers and missing worker skills, and shrinking local markets due to outmigration and demographic decline, especially in the smallest FERs. About 99.6 % of firms in Atlantic Canada employ less than 200 people.

The following five levels of geography are considered:

- Urban -- composed of metropolitan regions with a major urban place and a population of 50,000 or more
- Large Rural Adjacent – FERs with a population of less than 50,000 but more than 10,000 and which are adjacent to an urban FER
- Large Rural Non-Adjacent – FERs with a population of less than 50,000 but more than 10,000 and which are not adjacent to an urban FER
- Small Rural Adjacent – FERs with a population of less than 10,000 and which are adjacent to an urban FER
- Small Rural Non-Adjacent – FERs with a population of less than 10,000 and which are not adjacent to an urban FER

About 53% of the population of Atlantic Canada lives in urban regions, 18% in rural adjacent regions and 29% in rural non-adjacent.

Table 3.1. Number and population by type of region

Region Type	Count
Large Rural Adjacent	12
Large Rural Non Adjacent	21
Small Rural Adjacent	38
Small Rural Non Adjacent	181
Urban	7
Total Count	259

Region Class	2011 Population	% Population
Urban	1234215	53.18%
Large Rural Adjacent	383495	16.52%
Large Rural Non adjacent	485590	20.92%
Small Rural Adjacent	36995	1.59%
Small Rural Non adjacent	180510	7.78%
Total Population	2320805	100%

Source: Statistics Canada Census 2011.

Firm Size Distribution

Using Business Registry data, an administrative database based on firm tax records, the predominance of micro-enterprises (less than 10 employees) becomes clear (Table 1.2). The indeterminate category consists of firms that report no payroll expenses but may employ family or contract workers. Almost three quarters of all firms employ fewer than 5 employees, and 85% fewer than 10.

Table 3.2. Employment distribution

Enterprise Employment Size Class	Number	Percent	Cumulative %
Indeterminate*	60918	42.60%	42.60%
1 to 4	44031	30.79%	73.39%
5 to 9	17127	11.98%	85.37%
10 to 19	10676	7.47%	92.84%
20 to 49	6770	4.73%	97.57%
50 to 99	1952	1.37%	98.94%
100 to 199	912	0.64%	99.58%
200 to 499	438	0.31%	99.88%
500 +	169	0.12%	100.00%
Total Enterprises	142993		

Source: Statistics Canada Census 2011.

The firm size distribution varies by geography with most large firms in urban regions, but with some large firms in all types of region. Large firms have only a slightly smaller average frequency in rural regions than urban, but are absent in some rural regions. About 54% of all firms are found in urban regions, around their share of the population, 53%.

Table 3.3. Number of firms by region type and firms class

Region Type	Micro (1-9)	Small (10-49)	Medium (50-199)	Large (200+)	Row Totals
Large Rural Adjacent	20504	2617	376	48	23545
Large Rural Non-adjacent	24337	3461	461	56	28315
Small Rural Adjacent	2195	211	28	6	2440
Small Rural Non-adjacent	9001	1047	111	22	10181
Urban	64822	9599	1641	300	76362
Atlantic Canada Region	120859	16935	2617	432	140843

Note: Indeterminate merged with Micro (1-9) and government services NAIC (91) excluded

Source: Statistics Canada, BR December, 2013.

Table 3.4. Percent of region type total number of enterprises by firm size class

Region Type	Micro (1-9)	Small (10-49)	Medium (50-199)	Large (200+)	% SME	Row Totals
Large Rural Adjacent	87.08%	11.11%	1.60%	0.20%	99.80%	100.00%
Large Rural Non-adjacent	85.95%	12.22%	1.63%	0.20%	99.80%	100.00%
Small Rural Adjacent	89.96%	8.65%	1.15%	0.25%	99.75%	100.00%
Small Rural Non-adjacent	88.41%	10.28%	1.09%	0.22%	99.78%	100.00%
Urban	84.89%	12.57%	2.15%	0.39%	99.61%	100.00%
Atlantic Canada Region	85.81%	12.02%	1.86%	0.31%	99.69%	100.00%

Note: Indeterminate merged with Micro (1-9) and government services NAIC (91) excluded

Source: Statistics Canada, BR December, 2013.

Table 3.5. Percent of Total estimated regional employment by region type and firm size

Region Type	Micro (1-9)	Small (10-49)	Medium (50-199)	Large (200+)	% SME	Row Total Emp.
Large Rural Adjacent	36.43%	32.93%	20.78%	9.85%	90.15%	174858
Large Rural Non-adjacent	35.52%	33.96%	20.93%	9.58%	90.42%	219958
Small Rural Adjacent	39.16%	28.13%	18.53%	14.17%	85.83%	16920
Small Rural Non-adjacent	40.60%	31.27%	15.68%	12.45%	87.55%	69008
Urban	29.17%	31.45%	23.02%	16.36%	83.64%	689768
Atlantic Canada Region	32.27%	32.08%	21.80%	13.85%	86.15%	1170511

Note: Indeterminate merged with Micro (1-9) and government services NAIC (91) excluded.

Source: Statistics Canada, BR December, 2013.

Small regions have the largest share of micro-enterprises as might be expected given their small local markets and limited labour force (Table 1.5), but they also have a larger share of big firms, typically in first stage resource processing, than do larger rural regions. In part, these results reflect the low total number of firms in rural regions, which leads to a relatively stable ratio of large firms to total firms across all sizes of region.

Types of Firm

The structure of local economies varies considerably across Atlantic Canada due to differences in comparative advantage but also by type of region. This can be seen by examining location quotients for the 20 largest types of industry in the four categories of rural regions. Location quotients provide a measure of relative specialization, in this case relative to the average distribution of firm types across Atlantic Canada. Sectors with location quotients greater than one have more firms in that industry than the average for Atlantic Canada and this suggests some degree of specialization. The larger the location quotient the more important that industry is to the region than it is to Atlantic Canada as a whole. Location quotients larger than 2 suggest that a sector is particularly important, and in the case of rural regions that the firms in this sector are an important part of the economic base of the region.

Figure 3.1. Large rural adjacent location quotients (LQ) by SME sector

Note: Location quotations measure the degree of specialisation for each sector though the ratio between the number of firms in the sector relative to all firms in large rural adjacent regions relative to the average distribution of firm size in Atlantic Canada. A value above 1 implies that the sector in large rural adjacent regions are more specialised in that sector than the rest of the economy.

Source: Statistics Canada, BR December, 2013.

Figure 3.2. Large rural non-adjacent location quotients (LQ) by SME sector

Note: Location quotations measure the degree of specialisation for each sector though the ratio between the number of firms in the sector relative to all firms in large rural non-adjacent regions relative to the average distribution of firm size in Atlantic Canada. A value above 1 implies that the sector in large rural non-adjacent regions are more specialised in that sector than the rest of the economy.

Source: Statistics Canada, BR December, 2013.

Figure 3.3. Small rural adjacent location quotients (LQ) by SME sector

Note: Location quotations measure the degree of specialisation for each sector though the ratio between the number of firms in the sector relative to all firms in small rural adjacent regions relative to the average distribution of firm size in Atlantic Canada. A value above 1 implies that the sector in small rural adjacent regions are more specialised in that sector than the rest of the economy.

Source: Statistics Canada, BR December, 2013.

Figure 3.4. Small rural non-adjacent location quotients (LQ) by SME sector

Note: Location quotations measure the degree of specialisation for each sector though the ratio between the number of firms in the sector relative to all firms in large small non-adjacent regions relative to the average distribution of firm size in Atlantic Canada. A value above 1 implies that the sector in small rural non-adjacent regions are more specialised in that sector than the rest of the economy.

Source: Statistics Canada, BR December, 2013.

If we focus on sectors or industries, where the location quotient is greater than 1.5 we find that:

- in large adjacent rural regions the over-represented industries are crop production, animal production and truck transport;
- in large non-adjacent they are fishing, and sea-food processing; in small adjacent they are fishing, sea food processing, nursing and residential care, traveler accommodation, crop production, trucking, forestry, sawmills and performing arts;
- in small non-adjacent they are fishing, sea food production, traveler accommodation, banking, crop production, private households, religious organizations and forestry.

The dominance of fishing, agriculture and forestry in rural regions of Atlantic Canada is not surprising, nor is the presence of first stage processing facilities, which are needed to reduce the weight shipped and to preserve or enhance quality. Larger rural regions tend to have only a few sectors that are over-represented, potentially because they have relatively diversified economies. The large number of sectors that are over-represented in smaller rural regions can be explained by, the larger number small rural regions, the higher degree of specialisation in smaller places, and a high degree of variety of specialisation. The importance of resource based and cultural tourism is also evident in these smaller regions. The category of private households includes bed and breakfasts as well as the increasing opportunity in these small regions for permanent residents to provide custodial services for people with seasonal residences.

Quebec

The Quebec case study focuses on how being rural or peripheral influences the performance of SMEs. Analysis is based on aggregate data for the set of 98 Municipal Rural Counties (MRCs) in Quebec, with supplemental data from a sample of 588 individual SMEs distributed across these MRCs. The counties are grouped into 15 types of region based on degree of peripherality and main economic function. The authors adopt a three part typology that addresses the influence of type of region on: firms' performance, firm level characteristics and finally characteristics of the owner or manager. The logic of their approach is that the nature of the region in which a firm is located, in particular the degree of urbanisation and the degree of proximity to a major metropolitan region like Montreal, condition opportunities for SMEs and both the types of firm and its level of performance might be affected by differences in location. In addition, firm performance may also be a function of attributes of the firm itself, including: size, innovativeness, whether the firm exports and its technological sophistication. Finally, the attributes of the owner or manager such as experience education, and age may further affect performance.

The analysis focuses on differences in the mean values of key variables across the categories of MRCs. The variables include: an index of economic development, an index of socio-economic development, productivity, innovativeness, the rate of new firm formation and export orientation. In general the data show that SMEs in large urban regions, including their immediate periphery, outperform medium and small urban regions and all types of rural regions on all measures. However, some types of rural regions have better performance on measures, such as, productivity, innovativeness and the index of economic development, than do small urban centres. In particular, rural regions that specialise in agriculture or forestry, and which are not remote, perform quite well with only

relatively minor shortfalls when compared to medium and small urban centres. This is also true for remote regions that specialise in mining and energy production.

The basic conclusion is that remoteness, measured by distance from Montreal or Quebec City, and, to a lesser extent, a higher degree of rurality both imposes a performance penalty on firms. But, in many cases the authors conclude that the magnitude of the performance gap is not statistically significant. In remote and/or rural regions the loss of agglomeration benefits makes it more difficult for firms to grow and prosper. Crucially the rate of entrepreneurship, standardised for population size, also tends to decline as the degree of urbanisation falls. While the authors identify ways to overcome some of the costs of distance and low density they conclude these are only partial remedies.

However, when the survey data that focuses on individual firm and owner/manager attributes is considered there is less of a sense that distance and low density are major impediments. While some owner–manager characteristics, such as, educational attainment and international experience tend to be higher in urban areas other factors including average age and capacity to network are high in rural regions. In particular rural firms in almost every type of rural region have a higher tendency to export than do urban firms. Urban firms do tend to have products with a higher degree of technical sophistication but for rural forest regions and rural natural resource, regions are relatively close to urban levels. Finally, for many of the variables considered the worst performing regions were small and medium size cities.

Scotland

Rural territory in Scotland is defined as being a settlement with fewer than 3,000 inhabitants. Accessible rural is a rural settlement within 30 minutes driving time of a place with 10,000 or more people. Remote rural includes all rural settlements that are not accessible. Rest of Scotland includes all settlements with a population of 3,000 or more and can be loosely thought of as urban Scotland. Some 30% of all firms are in rural Scotland. SMEs play a large role in Scotland's economy and account for both the largest share of firms and of employment in remote rural and accessible rural territory (Table 1.6).

Table 3.6. Enterprises and employment by location and size in Scotland 2014

Urban/rural classification	Size	Enterprises	%	Employment	%	Ave size
Remote Rural	0	8945	44.9	11,510	9.7	1.3
	1-49	10385	52.2	55,140	46.5	5.3
	50-249	295	1.5	11,780	9.9	39.9
	250+	280	1.4	40,130	33.9	143.3
	Total	19,905	100.0	118,560	100	6.0
Accessible Rural	0	12,985	42.3	16,060	7.2	1.2
	1-49	16,605	54.0	89,940	40.2	5.4
	50-249	575	1.9	27,750	12.4	48.3
	250+	560	1.8	89,750	40.2	160.3
	Total	30,725	100.0	223,500	100	7.3
Rest of Scotland	0	39,205	33.2	42,230	2	1.1
	1-49	72,965	61.9	465,900	22.5	6.4
	50-249	3,410	2.9	218,950	10.6	64.2
	250+	2,330	2.0	1,345,370	64.9	577.4
	Total	117,910	100.0	2,072,450	100	17.6
Scotland	0	61,135	36.3	69,800	2.9	1.1
	1-49	99,955	59.3	610,980	25.3	6.1
	50-249	4,280	2.5	258,480	10.7	60.4
	250+	3170	1.9	1,475,250	61.1	465.4
	Total	168,540	100.0	2,414,510	100	14.3

Source: Office for National Statistics, Scottish Enterprise.

Firms with fewer than 50 employees account for over 95% of all firms in all Scottish regions but they account for about 56% of employment in remote rural regions, 47% of employment in accessible regions and 24% of employment in urban Scotland. Large firms with more than 250 employees are found in all three categories but are most prevalent in urban Scotland and least prevalent in Remote Rural Scotland. Importantly the average employment per firm is highest for all firms with employees in urban Scotland and lowest in remote rural Scotland.

Between 2010 and 2014 the number of enterprises of all size increased in all regions (Figure 3.6). Urban regions had by far the largest percentage increase for firms with no employees but both types of rural region had higher percentage growth than urban Scotland for small firms (less than 50 employees), medium firms (50 to 249 employees) and large firms (250 or more employees).

Figure 3.5. Percentage change in number of enterprises in Scotland, 2010-2014

Source: Office for National Statistics, Scottish Enterprise.

In rural areas, the largest numbers of firms are involved in primary production and as would be expected natural resource based firms are not prevalent in urban Scotland (Table 3.7). Vehicle repair is an important category of firms in all regions, as is construction.

Table 3.7. Top 5 sectors by number of firms, 2014

Remote rural	Accessible rural	Rest of Scotland
Agriculture, fishing and forestry	Agriculture, fishing and forestry	Professional, scientific & technical
Wholesale/retail & vehicle repair	Professional, scientific & technical	Wholesale/retail & vehicle repair
Construction	Construction	Construction
Professional, scientific & technical	Wholesale/retail & vehicle repair	Accommodation & food services
Accommodation & food services	Manufacturing	Other services

Source: Office for National Statistics, Scottish Enterprise.

When new firms that started between 2010 and 2014 are considered, the popular new sectors differ significantly from the existing stock of firms (Table 3.8). In both types of rural the top 5 new firms types are completely different from the incumbent top types of firm. In urban Scotland two of the new top five (construction and vehicle repair) were popular previously. The changes suggest perceptions of new opportunities, especially in rural areas.

Table 3.8. Top 5 sectors by growth in number

<i>Remote rural</i>	<i>Accessible rural</i>	<i>Rest of Scotland</i>
Electricity, gas, steam & air cond	Electricity, gas, steam & air cond	Health & social work
Professional, scientific & technical	Professional, scientific & technical	Financial & insurance activities
Real estate	Information & communication	Wholesale/retail & vehicle repair
Financial & insurance activities	Health & social work	Manufacturing
Health & social work	Financial & insurance activities	Construction

Source: Scottish enterprise

Support for Rural Enterprise

Scotland provides considerable support for both SMEs and large firms at the national level from line ministries and from specialised economic development agencies – Scottish Enterprise and Highlands and Islands. Local governments also provide support to SMEs. This support covers typical aspects including, finance, workforce training assistance, location identification, site improvements etc.

In 2007 Scottish Enterprise began a new programme to support rural firm leaders' decision-making capacity after conducting a survey of firms asking their perceived barriers to growth. As a result "ambition to grow" was identified as a key impediment for SMEs, especially those in remote rural areas. While new firm starts are an important way to achieve local economic growth, it is also important to foster expansion of existing firms. And, because existing firms are easier to identify and have a track record, it can be easier to work with them than try to identify nascent entrepreneurs.

The pilot programme focuses on rural firms that are already engaged with Scottish Enterprise through its other programmes. Participants engage in a structured multi-month group process that helps them identify growth opportunities, encourages them to form peer networks, and provides training in establishing personal goals. Results from the programme have been encouraging with a considerable number of participants making significant investments in expanding production and employment. A formal assessment found that:

- 85% of rural leaders now communicate achievements to the wider community; 26% have started a new business;
- 32% have been promoted to a leadership role within a business or organisation they work for;
- 14% have secured new employment in a leadership role within a business or other organisation;
- 66% have adopted additional leadership roles either on a paid or voluntary basis;
- 82% have been involved in implementing change within a business or other organisation;

- 54% adopted an expanded leadership role within an existing employment position;
- 29% received additional training from a business or organisation to prepare you to undertake a leadership role in the future;
- 29% assumed a new or enhanced leadership role in some other way.

United States

In the United States the basic unit of analysis for spatial research is the county. Counties are aggregated into Metropolitan Statistical Areas (MSAs or metro) through the use of journey to work data with at least a 25% two way flow required for inclusion. MSAs have at least one county with an urban place with a minimum population of 50,000. MSAs can be considered local labour markets. Nonmetropolitan counties (non-metro) are not part of a metro region and can be adjacent or not adjacent to a metro region. In terms of local labour markets a non-metro county may be: fractured into multiple local labour markets, may roughly correspond to a single local labour market, or may be part of a multi-county labour market if it is part of a micropolitan region made up of multiple non-metro counties where there are strong two way commuting flows.

Table 1 shows the firm size distribution by metro and non-metro regions of employment. In the US analysis, an SME is defined as having less than 100 employees. The employment share of SMEs in metro regions is 33.8% and it is 42.5% for non-metro counties. Some simple calculations show that if we use 250 employees as the definition of an SME that in metro areas the employment share of SMEs is about 42% of all urban firms and is about 52% in non-metro regions. And the employment share of micro-firms (less than 10 workers) is 10.5% in metro regions and 15% in non-metro.

Job growth in both metro and non-metro counties is more concentrated in SMEs as shown in Table 2. In metro regions SMEs accounted for 42.8% of job growth while in non-metro counties SMES accounted for 53.2%. Large firms, with more than 250 employees, accounted for 49% of job growth in metro regions and for 37% in non-metro regions.

Table 3.9. Employment shares by firm size class for metro and non-metro U.S.

Size Class	Metro Employment	Metro Emp. Share	Nonmetro Employment	Nonmetro Emp. Share
1 to 4	5,032,919	0.049	998,114	0.069
5 to 9	5,580,773	0.055	1,144,704	0.08
10 to 19	6,835,026	0.068	1,290,907	0.09
20 to 49	9,692,905	0.096	1,596,450	0.112
50 to 99	6,949,361	0.069	1,056,006	0.074
SMEs	34,090,984	0.338	6,086,181	0.425
100 to 249	8,283,250	0.082	1,351,787	0.094
250 to 499	5,556,481	0.055	922,320	0.064
500 to 999	5,371,397	0.053	892,702	0.062
>1000	47,560,857	0.472	5,063,191	0.354

Source: 2013 Business Dynamics Statistics, US Census.

Table 3.10. Net job creation by firm size class for metro and non-metro U.S.

Size Class	Metro Job Creation	Metro Share	Metro Job Production	Nonmetro Job Creation	Nonmetro Share	Nonmetro Job Production
1 to 4	1,494,701	0.1	2.004	273,406	0.14	2.008
5 to 9	1,103,877	0.074	1.337	201,343	0.103	1.288
10 to 19	1,166,962	0.078	1.151	190,572	0.097	1.076
20 to 49	1,548,296	0.103	1.072	224,248	0.115	1.031
50 to 99	1,087,707	0.073	1.060	150,844	0.077	1.044
SMEs	6,401,543	0.428	1.266	1,040,413	0.532	1.251
100 to 249	1,294,012	0.086	1.047	197,601	0.101	1.070
250 to 499	827,149	0.055	0.998	111,350	0.057	0.885
500 to 999	769,058	0.051	0.958	99,598	0.051	0.818
>1000	5,682,399	0.379	0.804	507,979	0.26	0.735

Source: 2013 Business Dynamics Statistics, US Census

The data suggest that if US counties are the unit of analysis, there are no large aggregate differences in either the size distribution of employment or job creation between firms in metro and non-metro regions. This similarity reflects both the large geographic size of counties, which include both urban and rural territory, and the significant amount of rural territory and population within many metropolitan regions. More detailed analysis by the author that examines the types of industry present in a county suggests that industry mix plays a large role in explaining differences in employment distribution across counties. Some industries are dominated by very large firms, while others are dominated by small firms. Thus, counties with an industry mix that includes large firms, whether metro or non-metro will show a smaller role for SMEs.

Research has shown that young firms are particularly important for job creation, and this finding is confirmed in this analysis. SMEs five years old or less account for about twice the share of employment growth as their share of all firms, but account for about the same share of job losses as their share of all firms.

Figure 3.6. Net job creation by young and old firms – non-metro

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Source: 2013 Business Dynamics Statistics, US Census

Figure 3.6 shows that young firms (less than 5 years old), which are mainly SMEs accounted for net job growth in non-metro America except in 2006 and 2012 when old firms increased employment. Figure 2 shows a similar overall pattern, but with more years when old firms had positive job growth.

Figure 3.7. Net job creation by young and old firms -- metro

Source: Add the 2013 Business Dynamics Statistics, US Census.

An important element in both graphs is the role of the rate of new firm creation. When few new firms are created then there is less scope for job growth. This suggests that encouraging entrepreneurship is an important part of fostering future job creation as some of these new firms expand in future years.

SME Innovation in the USA

The US case has a focus on innovation and finds that innovation is taking place in non-metro regions, although at a slower pace than in metro regions (Table 3, Rows sum to 100%). Results are based on a recent survey by USDA to investigate the extent of rural innovation. Substantive innovations involve products or processes that are new to the firm or the customer and represent a fairly large step from current products and processes, whereas nominal innovation involves a refinement to an existing product or process.

A larger share of metro firms have substantive innovations than do non-metro firms, but a higher share of non-metro firms have incremental innovation. Over time a pattern of nominal innovation can incrementally increase firm competitiveness and profitability. Most importantly, fewer than half of firms in metro and non-metro areas report no innovation. In all regions large firms are more likely to innovate than small firms.

Table 3.11. Share of substantive, nominal and non-innovators across settlement hierarchy

	Substantive Innovators	Nominal Innovators	Non-Innovators
Metro	23.16	35.04	41.8
Nonmetro Adjacent to Met.	15.91	42.65	41.44
Nonmetro Nonadjacent	13.59	41.67	44.74
U.S. Tradable Sector	22.09	35.98	41.93

Source: 2014 ERS Rural Establishment Innovation Survey.

Large firms in adjacent non-metro regions have a higher likelihood of innovation than do large firms in metro regions, and large firms in non-adjacent counties innovate at almost the same rate as metro large firms. This is true for substantive and nominal innovation. When SMEs are considered, the study finds that a larger share of metro SMEs engage in substantive innovation than do non-metro SMEs. However non-metro adjacent SMEs are more likely to engage in nominal innovation than are metro SMEs.

US Case Study Conclusions

Using county level analysis the study finds limited differences in the size distribution of firms between metro and non-metro parts of the US when size is measured by employment. Further analysis shows that size differences are more related to industry mix than a simple metro non-metro dichotomy. There are however important differences in the role of young firms, which are mainly SMEs, in creating job growth, with firms less than five years old playing a disproportionate role in new job creation. Rural regions have more ability to influence new SME formation than new large firm formation so this result provides support for entrepreneurship programmes. Moreover, the study finds that innovative small firms are possible in rural regions providing an opportunity to increase productivity and expand market share.

Broader Implications from the Set of Case Studies

While conditions facing small business in each of the four case studies differ significantly, as do the study geographies and the analytical approaches, there are some common elements that can be drawn from a comparison. Clearly differences among the case studies make direct comparisons across the four papers difficult. However it is possible to draw some broad generalisations. These include:

- **SMEs are particularly important in rural regions because they make the vast majority of firms and employment, in part because large firms are less common.**

In all four case studies SMEs account for the vast majority of all firms, with micro-SMEs (10 or fewer employees) dominating the number of SMEs. In rural regions, SMEs account for an even larger share of firms and employment. While there are large firms in some rural regions and where present these firms account for a large share of regional employment. In particular the role of SMEs varied across studies depending on the size of region considered. Both the Quebec and US cases used counties as the unit of analysis while in Atlantic Canada and Scotland the basic unit of analysis was a community. Smaller geographies lead to greater importance for SMEs because more individual observations

lack a large firm. Conversely, since a county contains multiple places and typically multiple local labour markets, a large firm in some particular place influences the results for the entire county.

- **In all four cases the relative share of SMEs, and especially micro SMEs, increases as the population of regions declines.**

SMEs are by far the largest category of firm in terms of number and employment share in all regions in the four case studies. As population size declines, the relative importance of micro SMEs tends to increase. This likely reflects both a greater likelihood that new SMEs are small at start-up and the greater difficulty for SMEs in small regions to grow.

- **SMEs in rural regions engage in the production of wide range of goods and services, but unlike urban regions a considerable share are involved in natural resource based industries and in first stage processing of natural resources.**

The case studies from Atlantic Canada, Quebec and Scotland provide information on the types of goods and services provided by SMEs. The studies show that SMEs are represented in wide range of activities and that the service sector accounts for the majority of firms. Evidence from Scotland shows that the mix of firms evolves over time as new firms enter in sectors where there are higher perceived growth opportunities suggesting a dynamic mix of rural firms. A major difference between urban and rural regions in the studies is the role of natural resource based firms, both as primary producers and in first-stage processing. Regions where natural resources are important often have very high per capita incomes and high levels of firm productivity. In some cases, the resource-based firms are large in size and dominate the local economy, but in other cases SMEs are the major actors.

- **There is evidence that innovation takes place by rural SMEs, but that it follows a different path than in formal innovation systems.**

The Quebec and U.S. case studies provide evidence documenting a considerable amount of innovation in rural regions. While large urban agglomerations have the highest rate of innovation, some rural regions seem to be quite innovative. The two studies show that SMEs account for a considerable share of innovation in rural regions and that, at least in the Quebec case, some types of rural regions outperform small and medium size urban regions. We know that formal regional innovation systems are not present in rural regions so the presence of innovative firms suggests some other mechanism for innovation is driving the process.

- **Proximity to a metropolitan region generally improves the prospects for rural SMEs.**

The Atlantic Canada, Quebec and U.S. studies control for distance from a major urban region. Agglomeration economies are not available in rural regions but firms in adjacent rural regions can often “borrow” these advantages from nearby cities. The studies find that there is a distance penalty for rural firms, but that the penalty is not uniform in its effect. Some remote SMEs that produce high value outputs –typically based on natural resources, perform at a high level even though they cannot easily access goods and services from urban centres.

- **Rural firms innovate at a somewhat lower rate than do urban firms, but the gap is not particularly large for most forms of innovation. Furthermore it is clearly not the case that rural SMEs do not innovate.**

The US and Quebec studies show that rural SMEs can innovate and that in some rural regions the rate of innovation is relatively close to urban region rates. In the U.S. the data show that rural firms are more likely to engage in incremental innovation than urban firms, but are less likely to introduce completely new product or process. This may reflect differences in market opportunities as well as the absence of formal innovation research systems in rural areas. Related results from Scotland that show a change over time in the leading sectors for new SMEs suggest that rural entrepreneurs search for new opportunities as local economies evolve.

4. Bibliography

- Acs, Z. J. (2011). High-impact firms: gazelles revisited. In Fritsch, M. (ed.). *Handbook of Research on Entrepreneurship and Regional Development: National and Regional Perspectives*, Edward Elgar Publishing: Cheltenham pp. 133 -174.
- Acs, Z. S. Desai and J. Hessels (2008) *Entrepreneurship, Economic Development and Institutions Small Business Economics* 31:3 pp. 219-214.
- Asheim, B. T. (2000). Industrial districts: the contributions of Marshall and beyond. in Clark, G., M. Feldman and M. Gertler (eds.) *The Oxford Handbook of Economic Geography*, Oxford University Press: Oxford pp.413-431.
- Barnes, T. (2005). Borderline communities-Canadian single industry towns, staples, and Harold Innis. in van Houtum, H., Kramsch, O. T., & Zierhofer, W. (eds.). *B/ordering Space*. Aldershot: Ashgate. pp. 109-122.
- Birch, D. L. (1981). Who creates jobs?. *The Public Interest*, 65:1, pp. 3-13.
- Block, J. and P. Sandner (2009) Necessity and Opportunity Entrepreneurs and Their duration of Self-Employment: Evidence from German Micro Data. *Journal of Industry, Competition and Trade* 9:2 pp.117-137.
- Brusco, S. (1990). The idea of the industrial district: its genesis. in Pyke, F. G. Beccatinni and W. Sengenberger (eds.) *Industrial Districts and Inter-firm Co-operation in Italy* International Institute for Labour Studies; Geneva pp.10-19.
- Dale, B. (2002). An Institutional Approach to Local Restructuring The Case of Four Norwegian Mining Towns. *European Urban and Regional Studies*, 9(1), 5-20.
- Davidsson, P., & Delmar, F. (2006). High-growth firms and their contribution to employment: The case of Sweden 1987–96. *Entrepreneurship and the Growth of Firms*. Cheltenham: Elgar, pp. 156-178.
- Davidsson, P., I. Achtenhagen and L. Naldi (2006) What Do We Know About Small Firm Growth? in S. Parker ed. *The Life Cycle of Entrepreneurial Ventures*, vol. 3 *International Handbook Series on Entrepreneurship*. Springer: New York.
- Freshwater, D. (2015). Vulnerability and Resilience: Two Dimensions of Rurality. *Sociologia Ruralis* 55:4 pp. 497-515.
- Freshwater, D. and T. Wojan (2014) User Entrepreneurship: Defining and identifying an Explicit type of Innovation. paper presented at the 61st North American Regional Science Council Meeting. Bethesda MD, November 12-15, 2014.
- Henrikson, M. and D. Johansson (2010) Gazelles as Job Creators: a Survey and Interpretation of the Evidence. *Small Business Economics* 35(2) pp. 227-244.

-
- Limao and Venables, 2001, Infrastructure, Geographical Disadvantage, Transport Costs, and Trade, *The World Bank Economic Review*, Vol. 15, pp. 451-479.
- Lobao, L. M., Schulman, M. D., & Swanson, L. E. (1993). Still Going: Recent Debates on the Goldschmidt Hypothesis. *Rural Sociology*, 58(2), 277-288.
- Markusen, A. (1996). Sticky places in slippery space: a typology of industrial districts. *Economic Geography*, 72:3 pp. 293-313.
- Moreno, A. M., & Casillas, J. C. (2007). High-growth SMEs versus non-high-growth SMEs: a discriminant analysis. *Entrepreneurship and Regional Development*, 19(1), pp. 69-88.
- Neumark, D., Wall, B., & Zhang, J. (2011). Do small businesses create more jobs? New evidence for the United States from the National Establishment Time Series. *The Review of Economics and Statistics*, 93(1), pp. 16-29.
- OECD (2014) OECD Rural Policy Reviews: Chile .OECD Press: Paris,
<https://doi.org/10.1787/9789264222892-en>.
- Ortega-Argiles, R., M. Vivarelli and P. Voight (2009) R&D in SMEs: A Paradox? *Small Business Economics* 33:1 pp. 3-11
- Peters, D. J. (2002). Revisiting the Goldschmidt hypothesis: The effect of economic structure on socioeconomic conditions in the rural Midwest. Technical Paper P-0702-1, Missouri Economic Research & Information Center (MERIC), Jefferson City.