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FACTORS ASSOCIATED WITH LOCAL ECONOMIC GROWTH

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HIGHLIGHTS

- ◆ A higher education level in a community provided only a weak boost to employment growth during the 1980s.
- ◆ Communities that were relatively specialised in primary sector employment and traditional manufacturing employment were relatively disadvantaged in the 1980s.
- ◆ The type of region in which a community was located had a substantial impact on the rate of local economic growth. Communities in regions influenced by metropolitan centres benefited relative to other communities.
- ◆ A higher unemployment rate in a community in 1981 did not indicate an excess supply of labour that would attract employers. In fact, wage rates grew less in these communities and thus these communities fell further behind during the 1980s.
- ◆ Communities with a higher share of population with low incomes experienced higher economic growth in the 1980s, relative to the average community. These communities were catching up to the average community during the 1980s.
- ◆ There was a wide variability in community growth patterns in the 1980s. Many communities achieved economic growth in spite of the factors identified here that constrained growth for the average community.

Introduction

Many rural communities are searching for ways to stimulate local economic growth. Some factors are unique to a particular time and place. But are there other local factors that will foster growth over time? The purpose of this bulletin is to review some of the factors associated with local economic growth.



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Note of Appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

Methodology

Each unit of analysis ("community") in this bulletin is called a census consolidated subdivision (CCS). We start with census subdivisions (CSDs) which are, generally, incorporated towns and municipalities. In cases where a municipality completely surrounds an incorporated town, the two CSDs have been "consolidated" to provide a "community" unit of analysis.

The data are drawn from the 1981 and 1991 Census of Population and thus the analysis considers community economic growth during the 1980s. Specifically, a regression analysis was conducted to correlate our measures of community economic growth with variables measuring the initial situation in the community in 1981. A regression analysis allows one to identify the association between the measure of community economic success and any given hypothesised factor, given a constant level of each other factor. For example, we estimated the association between community economic growth and the average level of educational attainment in the community, holding constant other factors such as the type of region in which the community is located, the share of employment in manufacturing, etc.

Alternate measures of local economic growth

We acknowledge that development is multi-dimensional and community welfare may be measured in more than one dimension. We offer four measures of local community "development" that are admittedly narrowly focussed on the performance of the labour market:

1. the rate of growth of average real¹ earnings² per worker in the community;
2. the rate of growth of average real hourly wage rates for workers in the community;
3. the rate of growth of employment in the community; and

¹ We observe the rate of growth of *real* earnings and *real* wage rates by first deflating the 1990 data to 1980 constant dollars before calculating the rate of growth.

² "Earnings" includes wages and salaries plus net self-employment income from operating a farm or non-farm business. Conceptually, this is equivalent to multiplying the hourly wage rate times the number of hours worked.

4. the rate of growth of community aggregate earnings³ is offered as comprehensive indicator of community economic development. Kusmin *et al.* (1996) argue that the growth in community aggregate earnings (whether due to employment growth, or growth in earnings per worker, or both) is a useful single indicator of local economic development.

Factors to explain growth within localities

The level of local human capacity⁴

Our results indicate that the association between our measures of educational attainment in the community and our measures of local economic growth is generally weak (as summarised in Table 1). A higher level of **community average years of schooling** was associated with a lower rate of growth of average hourly wage rates. Community aggregate earnings grew less in communities with a higher level of education because the lower growth in wages was not offset by the growth of employment and / or the growth of hours worked. Note however that communities with a higher average years of schooling did report higher employment growth, compared to the average community.

We considered another measure of the community's human capacity – the **share of the population with low educational attainment and the share with high educational attainment**. The results indicate that both areas with a lower educational attainment **and** areas with higher education attainment were associated with a higher rate of growth of employment in the 1980s. Communities with low-skilled workers (as indicated by a high share of individuals with a lower level of education) were able to attract jobs during the 1980s and were also able to increase their wage level during this period. Thus, communities with a higher share of population with lower education levels had significant association with a higher growth in aggregate community earnings.

Studies in the United States (e.g. Killian and Parker, 1991) found no significant association between community employment growth and community education levels, if the industrial structure of employment and the type of region were taken into account. In this study, we have controlled for the industrial structure of employment and the type of region and we do obtain a positive (albeit weak) association between employment growth and education levels. Thus, during the 1980s, Canadian communities, but not communities in the United States, appeared to benefit from high community education levels.

³ Community aggregate earnings is calculated as the sum of "earnings" for each individual who resides in the community.

⁴ We use the level of educational attainment to indicate the level of human capacity in the community.

Mix of employment by industrial sector

Employment specialisation in the primary sectors was associated with lower growth in all measures of community development outcomes. Community specialisation in traditional manufacturing was significantly associated with lower employment growth and with lower growth in aggregate community earnings. Community employment specialisation in the primary and traditional manufacturing sectors constrained the growth in community development outcomes during the 1980s.

Local factors influencing local economic development

The **share of the labour force that was self-employed** had a weak association with a higher growth of hourly wages, contrary to expectations. However, there was no significant association with job growth. Thus, communities with a higher share of the workforce being self-employed did not indicate an 'entrepreneurial' community with higher job growth.

A higher **share of Aboriginal people** in the community was associated with lower employment growth and with lower growth in community aggregate earnings. In spite of high population growth in Aboriginal communities, job growth was relatively lower, holding all other factors constant.

A higher **rate of unemployment** in the community in the initial period constrained the growth of hourly wage rates, as expected. The apparent excess supply of labour in the initial period, as indicated by a higher rate of unemployment, had no significant impact on job growth in the subsequent period.

Communities with a higher **share of employment in the education sector** experienced lower employment growth, lower wage growth, a lower growth in average earnings, and consequently, a lower growth in aggregate community earnings in the 1980s. The presence of an educational institution did not spur local economic development.

A higher **share of in-migration by youth** in the previous period was not associated with employment growth nor with earnings growth. A higher share of in-migration by youth was weakly associated with lower wage growth. It was hypothesised that this variable would signal areas expected to grow in the subsequent period.

A higher **share of older individuals** in the community did signal past out-migration of youth and was associated with lower employment growth and with lower earnings growth.

Retirement-destination communities appear to generate significant growth in aggregate community earnings by generating significant growth in employment.

Communities with a higher **share of poor persons** were associated with higher growth in all measures of community economic development. It appears that these communities were catching up (i.e. had relatively higher growth rates) during the 1980s.

The nature of the region in which the locality is located

To indicate the nature of the region, we adopt the typology developed by Hawkins (1995)⁵. The type of region in which the community is located does matter. Communities in each type of region showed less growth than communities in the comparison category—the booming “rural nirvana” regions. Employment growth was much lower in communities in the “rural enclave” regions, relative to the communities in the “rural nirvana” regions (the coefficients are reported in the longer working paper listed at the end of this bulletin). Regarding growth in wages, growth in average earnings and growth in community aggregate earnings, we see the lowest growth (i.e., the largest negative coefficient) for communities in the “agro-rural” regions.

How to read Table 1

The first column lists the variables that measure the situation in the community in 1981. The second column lists the four measures of local economic growth that are considered in the analysis. The third column gives the association that was found between the variable in the first column and the indicator of growth in the second column.

For example, the first variable is the average years of schooling for individuals in the community. The fourth measure of local economic growth is the growth from 1981 to 1991 in the level of employment in the community. The reported result of a “higher” association (fourth line of Table 1) may be interpreted as:

“a higher level of education attainment in a community is associated with a “higher” growth in community employment, relative to the growth in an average community”.

As another example, the fourth variable is the share of community employment in the primary sector. The first measure of local economic growth is the growth from 1981 to 1991 in the overall level of earnings in the community. The reported result of a “**LOWER**” association (13th line of Table 1) may be interpreted as:

“a higher share of community employment in the primary sector is associated with “lower” growth in aggregate community earnings, relative to the growth in an average community”.

⁵ A map showing this typology may be found in Hawkins (1995) or Hawkins and Bollman (1994) or Bollman (1994) or Fellegi (1996).

Table 1. Association between variables measuring the community situation in 1981 and alternative measures of local economic growth

Variable name (situation in 1981)	Alternate measures of local economic growth:	Is the variable associated with "higher" ¹ or "lower" ¹ growth?
	Growth from 1981 to 1991 in:	
Level of educational attainment in the community		
Average years of schooling (for individuals 15 years and over) in the community	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	lower higher lower higher
Percent of population in the community (15 to 64 years of age) with less than Grade 9 educational attainment	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	HIGHER n.s. higher higher
Percent of population in the community (15 to 64 years of age) with some post-secondary educational attainment	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	n.s. n.s. n.s. higher
Mix of employment by industrial sector in the community		
Percent of employment in the community in the primary sector in 1981 (agriculture, fishing, forestry, mining, oil extraction and hunting and trapping)	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	LOWER LOWER LOWER LOWER
Percent of employment in the community in "traditional" manufacturing activities in 1981 (food and beverage, rubber and plastics, textiles, wood, furniture, paper and metal fabricating, etc.)	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	LOWER n.s. higher LOWER
Percent of employment in the community in "complex" manufacturing activities in 1981 (printing/publishing, machinery, aircraft, electrical products, petroleum and coal products, chemicals, scientific / professional equipment industries)	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	higher n.s. higher higher
Percent of employment in the community in "producer service" activities in 1981 (finance, insurance, real estate and business services such as accounting, consulting, software design, etc.)	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	higher n.s. n.s. higher
Local factors influencing the dependent variable		
Percent of individuals in the community (15 to 64 years of age) who were self-employed in 1981 (excluding farm self-employment)	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	n.s. n.s. higher n.s.
Percent of individuals in the community in 1981 with an Aboriginal ethnic background	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	lower n.s. n.s. lower

¹ Note : "n.s." indicates that the association was "not significant".
A lower case "higher" or "lower" indicates a weak association.
An upper case "HIGHER" or "LOWER" indicates a strong association.

Table 1. Association between variables measuring the community situation in 1981 and alternative measures of local economic growth (continued)

Variable name (situation in 1981)	Alternate measures of local economic growth:	Is the variable associated with “higher ¹ ” or “lower ¹ ” growth?
	Growth from 1981 to 1991 in:	
Local factors influencing the dependent variable		
Percent of labour force in the community (15 to 64 years of age) which was unemployed in 1981	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	LOWER n.s. LOWER higher
Percent of individuals in the community (15 to 64 years of age) working in the “educational industry”	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	LOWER LOWER LOWER lower
Percent of youth in the community (25 to 29 years of age) who moved into the locality in the five years previous to 1981	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	n.s. n.s. lower n.s.
Percent of the population in the community in 1981 that is 55 to 74 years of age	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	LOWER lower LOWER LOWER
Percent of the population in the community in 1981 that is 55 to 74 years of age and who moved into the locality in the five years previous to 1981	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	HIGHER n.s. n.s. HIGHER
Percent of the population in the community in 1981 that is living in households with less than the national household median level of income (less than \$21,304 in 1981)	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	HIGHER HIGHER HIGHER higher
The nature of the region² in which the locality is located	(The impact of the region is estimated RELATIVE to the “rural nirvana” regions)	
“Primary settlements” Census divisions containing large cities (such as Toronto, Vancouver, Montreal and Winnipeg)	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	lower LOWER LOWER lower
“Urban frontier” Census divisions containing smaller cities	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	LOWER LOWER LOWER LOWER
“Rural nirvana” Census divisions near to and benefiting from the influence of metropolitan centres such as Toronto, Vancouver, Winnipeg and Montreal	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	n.a. n.a. n.a. n.a.

¹ Note : “n.s.” indicates that the association was “not significant”.

A lower case “higher” or “lower” indicates a weak association.

An upper case “HIGHER” or “LOWER” indicates a strong association.

² Each community (“census consolidated subdivision”) is located in a census division.

A census division is generally a county in eastern Canada and are subprovincial statistical units in the other provinces.

Table 1. Association between variables measuring the community situation in 1981 and alternative measures of local economic growth (concluded)

Variable name (situation in 1981)	Alternate measures of local economic growth:	Is the variable associated with “higher ¹ ” or “lower ¹ ” growth?
	Growth from 1981 to 1991 in:	
The nature of the region² in which the locality is located	(The impact of the region is estimated RELATIVE to the “rural nirvana” regions)	
“Agro-rural” Census divisions relatively reliant on agriculture generally in the Prairies and in Quebec south of the St. Lawrence	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	LOWER LOWER LOWER LOWER
“Rural enclave” Census divisions in the Gaspé region, northern New Brunswick, northern and southern Nova Scotia and outport Newfoundland	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	LOWER LOWER LOWER LOWER
“Resourced areas” Census divisions with relatively high reliance on forestry and mining plus the human capital resources of capital cities (Yellowknife and Whitehorse)	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	LOWER LOWER LOWER LOWER
“Native north” Census divisions with relatively high shares of Aboriginal population	Aggregate community earnings Average earnings per worker Average hourly wage rate Community employment level	n.s. LOWER lower n.s.

¹ Note : “n.s.” indicates that the association was “not significant”.

A lower case “higher” or “lower” indicates a weak association.

An upper case “HIGHER” or “LOWER” indicates a strong association.

² Each community (“census consolidated subdivision”) is located in a census division.

A census division is generally a county in eastern Canada and are subprovincial statistical units in the other provinces.

Conclusions

Our results indicate that the association between our measures of educational attainment in the community and our measures of community economic development are generally weak. Contrary to the research findings in the United States, these findings suggest that the human capital complement in Canada’s rural communities did provide a positive (albeit weak) boost to job growth in the locality during the 1980s. A higher human capacity in a community (as proxied by years of schooling) is associated with a higher growth in community employment. It was also associated with a lower growth in wages that appears to cause an association with lower aggregate community earnings. Thus, a higher education level in a community provided a boost to employment (albeit a weak boost) during the 1980s.

Improving the human capacity of the local workforce is essential to provide opportunities for each individual, regardless of where he/she will work. Although human capital resources are

essential to participate in the new globalising economy, local economic development strategies should recognise they need to focus on more than human capital development to stimulate local economic development.

Communities relatively specialised in primary sector employment and traditional manufacturing employment were relatively disadvantaged in the 1980s. These communities also tend to be in “agro-rural” regions and “rural enclave” regions which were regions that were relatively disadvantaged in the 1980s.

A higher unemployment rate in 1981 did not indicate an excess supply of labour that would attract employers. In fact, wage rates grew less in these communities and thus these communities fell further behind during the 1980s.

A higher share of older persons in the community was associated with lower community economic growth during the 1980s. A higher share of older persons in 1981 suggests that younger people had been leaving up to 1980. This appears to have foretold the forthcoming events in the 1980s as community economic growth was less in communities with a higher share of older persons.

Interestingly, communities with a higher share of low incomes experienced relative economic growth in the 1980s. These communities were catching up to the average community during the 1980s.

There was a wide variability in community growth patterns in the 1980s. Many communities achieved economic growth in spite of the factors identified here that constrained growth for the average community. In other words, there are many other factors determining community economic growth in addition to the ones examined in this study.

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For background details, refer to the working paper: **Human Capital and Rural Development: What are the Linkages?** (Ottawa: Statistics Canada, Agriculture and Rural Working Paper No. 39, Cat. No. 21-601-MPE99039). To order, phone the Agriculture Division of Statistics Canada at 1 800 465-1991 or the Regional Reference Centre at 1 800 263-1136. Ray Bollman may be contacted at (613) 951-3747 (bollman@statcan.ca).

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