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Article abstract

As a contribution to a larger project which seeks to explore the contours of the socio-economy of Lower Canada in the nineteenth century, this paper utilises the 1831 and 1851 census data to define the extent, nature, and distribution of an essential component in the rural economy — industry — in the St. Lawrence axis during the first half of the nineteenth century. The aggregate census data suggest that a degree of numerical stagnation, or even deindustrialisation, occurred between 1831 and 1851, localised in the Montréal district. An analysis of the individual census schedules for 1851 indicates that no such deindustrialisation actually took place. What is revealed is a picture of great complexity in terms of type and distribution of industries over time. The evolution of the emerging rural industrial landscape is linked to population growth, expanding land settlement, and urbanisation. What emerges is a picture of an integrated economy based on a relatively well-developed structural exchange system.

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SERGE COURVILLE, JEAN-CLAUDE ROBERT,
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Résumé

As a contribution to a larger project which seeks to explore the contours of the socio-economy of Lower Canada in the nineteenth century, this paper utilises the 1831 and 1851 census data to define the extent, nature, and distribution of an essential component in the rural economy — industry — in the St. Lawrence axis during the first half of the nineteenth century. The aggregate census data suggest that a degree of numerical stagnation, or even deindustrialisation, occurred between 1831 and 1851, localised in the Montréal district. An analysis of the individual census schedules for 1851 indicates that no such deindustrialisation actually took place. What is revealed is a picture of great complexity in terms of type and distribution of industries over time. The evolution of the emerging rural industrial landscape is linked to population growth, expanding land settlement, and urbanisation. What emerges is a picture of an integrated economy based on a relatively well-developed structural exchange system.

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Cet article est l'un des éléments d'un vaste projet d'histoire des contours de la socio-économie du Bas-Canada au dix-neuvième siècle. Il met à profit les données des recensements de 1831 et de 1851 pour définir l'étendue, la nature, et la distribution d'un des aspects les plus importants de l'économie rurale dans l'axe du Saint-Laurent durant la première moitié du dix-neuvième siècle: l'industrie. Dans un premier temps, les données agrégées du recensement suggèrent qu'une stagnation numérique, voire un phénomène de désindustrialisation, se serait produit entre 1831 et 1851 dans les limites du district du Montréal. Mais dans un second temps, une analyse des fiches individuelles de recensement pour 1851 ne révèle aucune désindustrialisation du genre. Ce qui apparaît plutôt est une situation d'une grande complexité quant au type et à la distribution des industries dans le temps. L'émergence d'un paysage rural industriel est liée à l'accroissement de la population, à l'expansion de la colonisation, et à l'urbanisation.

We wish to acknowledge financial support received from the Social Sciences and Humanities Research Council of Canada, the Fonds FCAR, Université Laval, Université du Québec à Montréal, and Université du Québec à Trois-Rivières. We also wish to thank Philippe Désaulniers, who was responsible for handling the data and for the computerised mapping; Claude Belleavance, who designed the unit data entry forms and supervised the data entry from the 1851 manuscript census; and, finally, Jocelyn Morneau and France Normand, who did data entry and validation for 1851.

L'image qui en ressort est celle d'une économie intégrée, basée sur une structure d'échanges relativement bien développée.

This paper is a product of an on-going research project on the socio-economy of central Québec between 1815 and 1880. This area, which is referred to as the St. Lawrence axis, consists of the territory directly dominated by the cities of Montréal and Québec and corresponds roughly to the old seigniorial zone on each side of the river between the areas immediately upstream from Montréal on the west and a line drawn from Matane to the Saguenay River to the east. The general objective of this project is to reexamine the components of the socio-economy of the area and the changes which took place during the nineteenth century. Our general approach can be characterised as a historical geography of exchanges. It is clear that, with a better knowledge of the basic infrastructures of that particular area and of the material basis of its system of production, historians will gain a wider and deeper perception of the diversity and the various articulations in time and space within the St. Lawrence axis, its coherences and its complementarities.

Another objective is to show the importance of the internal dynamics in the overall process of change within the socio-economy of Lower Canada. At the same time, however, the effects of external factors in its structuring and restructuring have not been discounted. In fact, these external factors were also determinant, sometimes to a dominating degree. On this point, we are trying to arrive at a more balanced picture of economic development, to move beyond a simplistic vision, and to show the relative complexity of the socio-economy.¹

For the last few years, our work has turned to the study of rural and urban industries. This paper will focus on rural industries alone. Our main hypothesis is that rural industries played a major role in the transformation of both the rural space and the whole of the Lower-Canadian socio-economy. As a matter of fact, early in the nineteenth century, they were instrumental in the diversification of the rural world and the reorientation of town and country relations. In a more general way, their effect was important in widening and deepening the relations to market in the whole of Lower Canada. It is crucial, however, not to minimise the impact of urbanisation and the role of the city in the larger process of industrialisation that would gain momentum and radically transform the socio-economy at a later stage. These phenomena must, however, be examined at different levels, from the rural parish and village to urban areas, to the St. Lawrence axis, to the whole of Lower Canada, and beyond. While we do not posit a direct and necessary relationship between the rise of rural industries and the large-scale industrialisation which would transform the Québec economy at the end of the nineteenth century, the former period represents, in our opinion, an essential element in the development of an integrated market economy.²

1. For a more detailed presentation of our views on this point, see Serge Courville, Jean-Claude Robert, and Normand Séguin, "La vallée du Saint-Laurent à l'époque du rapport Durham: économie et société," *Journal of Canadian Studies/Revue d'études canadiennes* 25:1 (1990): 78-95.
2. For an illustration of the role of rural industries in agricultural production, see Serge Courville, "Le marché des «subsistances». L'exemple de la plaine de Montréal au début des années 1830: une perspective géographique," *Revue d'histoire de l'Amérique française* 42:2 (1988): 78-95.

We will not attempt here to present a global analysis of the role of rural industries in the development of Lower Canada, for too many elements are still missing. At this point, we intend only to provide an overview of the phenomenon. This paper is therefore divided into four parts. The first defines the limits of the notion of "rural industries" as used in this paper. The second employs a combination of text and a series of maps to sketch the relationships in the location of mills and factories in the rural parts of the St. Lawrence axis at two points, 1831 and 1851, on the basis of census information.³ The third part of the paper is founded on the analysis of individual schedules of the 1851 census which, in spite of their flaws, present a much more detailed picture of the spacial distribution of rural industries at midcentury. The final section focuses on the largest industrial establishments in terms of workforce in 1851 and shows that there was already a hierarchy within the pattern of rural industries in Lower Canada.

SOME DEFINITIONS

Our first step is to define what the concept of "rural industries" encompasses. In a paper presented in 1985, René Hardy, Pierre Lanthier, and Normand Séguin attempted just such a definition.⁴ They used this expression to designate nonagricultural production found in rural areas. This expression encompasses organisations with the following characteristics: they rely on paid labour either seasonally or year-round, and they need capital investments to start and maintain production, enter markets, and survive.

The size of these organisations varies according to their relationship to the marketplace: one could serve only the local market or be linked to a much wider geographical area. This definition is useful for two reasons: it is consistent with the hypothesis of the intensification of market-related activities within the rural world, and it addresses explicitly the question of the capitalist basis of nonagricultural production. Thus, there is a distinction to be made between these and the purely artisanal production usually found on the farm or within a residence. While this somewhat restrictive definition of a rural industry is admittedly useful in analysing both the integration of organisations and the marketplace and the development of rural entrepreneurship, it is too limiting for our purposes because it excludes from consideration an intermediate zone of economic activity between artisanal and industrial production. For this reason, we prefer to use a

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3. These snapshots are based essentially on the aggregate data from the 1831 and 1851 censuses. For this comparison, we employed the published aggregate data because the manuscript census for 1851 is incomplete. Many schedules are missing, and these gaps seriously hinder any systematic comparison between the 1831 and 1851 censuses except at the aggregate level. Particularly frustrating is the absence of schedules for numerous parishes, especially on the south shore of the district of Montréal and for the entire city of Montréal. Moreover, in many districts, data are incomplete. Despite these numerous shortcomings, censuses of the first half of the nineteenth century remain indispensable because of the wealth of aggregate and nominal data they contain on the rise of rural industries. Moreover, their wide coverage encompassing the entire province at a specific moment in time is invaluable. Few, if any, other sources provide this type and level of information.
 4. René Hardy, Pierre Lanthier, and Normand Séguin, "Les industries rurales et l'extension du réseau villageois dans la Mauricie pré-industrielle: L'exemple du comté de Champlain durant la seconde moitié du 19e siècle," *Sociétés villageoises et villes-campagnes au Québec et dans la France de l'Ouest, XVIIe-XXe siècles*, eds. F. Lebrun and Normand Séguin (Trois-Rivières, 1987), 240.

somewhat wider definition of rural industries that includes under this rubric some elements of artisanal production.

While we seek to understand the capitalistic dynamics within the rural world, we also wish to present a broad conceptualisation of the basis of nonagricultural production in the rural world. For this reason, the absence of wage labour did not automatically eliminate an enterprise from being included in our database. We considered all non-agricultural units of production as long as they were spatially distinct from the farm. Thus, a blacksmith shop or a grist mill that employed only a single person would be included. To sum up, we exclude only the nonagricultural production of farms in our picture of rural industries.

The purpose of this paper is to take stock of the different units of production and chart their spacial distribution within the St. Lawrence axis.⁵ To achieve this goal, we employed two different notions: the establishment itself (such as a distinct building), and the unit of production (such as a saw mill or a flour mill in the same building; in French, this is referred to as an *équipement*).⁶ These two notions, the establishment and the unit of production, enable us to understand the principles of the material organisation of the units of production.

The establishment corresponds to a precise locale, established to produce something. For us, it is a physical space, a building or a part of one. A single enterprise can operate more than one establishment (though we did not integrate this information in our general picture of rural industries). The unit of production, on the other hand, is a technical arrangement of tools used to make a certain product in a precise location. Thus the unit of production is fixed, has a certain locational permanence, and is housed within an establishment. For example, a threshing machine, owned by a certain farmer and moved from farm to farm, is not considered to be a unit of production. We did, however, take into consideration the existence of various stages of development in defining a unit of production. At one end of the scale, it need not be a sophisticated piece of machinery; it could be fairly simple and be made up of tools and instruments without a mechanical link. It is the worker who integrates the various units and brings his skills and energy to bear. This is the case for many artisanal operations, such as those carried out by shoemakers or blacksmiths. At the other end of the scale, the equipment is more sophisticated; here we are talking about a machine using a nonhuman source of energy. This is the case for hydraulic or steam mills. Frequently there is a concentration of units

5. There are a number of important topics which, because of the focus of our paper, we cannot consider here. These include the legal form of rural industries, the distinction between capitalist- and artisan-based operations, and the transition from the one to the other. On these questions, see two interesting studies: Jean-Pierre Kesteman, "Une bourgeoisie et son espace: industrialisation et développement du capitalisme dans le district de Saint-François (Québec), 1823-1879," PhD diss., Université du Québec à Montréal, 1985 and Robert Sweeny, "Internal Dynamics and the International Cycle: Questions of the Transition in Montreal, 1821-1828," PhD diss., McGill University, 1985.
6. For a more detailed analysis of this distinction, see Jocelyn Morneau, France Normand, and Claude Bellevance, "Les équipements, recensement de 1851," *Le pays laurentien au XIXe siècle. Cahier 1*, eds. Serge Courville, Jean-Claude Robert, and Normand Séguin (Montréal, 1992).

of production in a single establishment. For the purposes of this paper, we considered each separate production function as a distinct unit of production. A grist mill, a saw mill, a carding mill, and a fulling mill — each is analysed separately even if all were located in a single building. In this paper, we are therefore analysing only individual and distinct processes. Our computerised database does, however, enable us eventually to analyse these diverse but interconnected units found in the census in relationship to the various establishments.

RURAL INDUSTRIES IN 1831 AND 1851: AN OVERVIEW FROM THE AGGREGATE CENSUS DATA

In his recent book on the development of villages, Serge Courville examined the overall growth of rural industries in the entire seigniorial territory of Lower Canada and proposed a preliminary portrait.⁷ Using data provided by Joseph Bouchette,⁸ Courville found 607 mills and factories in 1815. For 1831, he made some estimates for six industrial processes: grist mills, saw mills, fulling and carding mills, foundries, distilleries, and pot and pearl ash factories.⁹ For 1831, Courville calculated a total of 1349 units of production for these six sectors. He estimated the total number in 1851 at 1277.¹⁰ These figures indicate an important growth in the number of units of production between 1815 and 1831, the number more than doubling. Between 1831 and 1851, however, he has found a slight drop of seventy-five units. This decline, Courville notes, might be exaggerated because of a specific problem with the statistics for pot and pearl ash factories. These were not reported in the published version of the 1851 census. Courville attempted to overcome this gap by utilising the relevant data scattered throughout the “remarks” section of the individual schedules. The figure of 1277 units of production for villages in 1851 must be regarded as a minimum. In any case, he did his compilation of data only for the villages within the seigniorial area. Any pot and pearl ash factory outside those villages was not included.

A second problem arises from the number of missing or incomplete schedules in the 1851 census. Because of these lacunae, it will always be difficult to determine the change in the number of pot and pearl ash factories between 1831 and 1851. None the less, there seems to be a clear reduction in numbers because we have found references to fewer than seventy for the entire St. Lawrence axis in the surviving schedules. This figure seems to suggest that this industry not only did not grow in numbers but significantly declined after 1831 in the seigniorial area. Indeed, if we remove the number of pot and pearl ash factories from the total number of units of production, there is a decrease within the seigniorial area after 1831. In that year, 1072 units of production

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7. Serge Courville, *Entre ville et campagne. L'essor du village dans les seigneuries du Bas Canada* (Québec, 1990).
 8. Joseph Bouchette, *A Topographical Description of the Province of Lower Canada* (London, 1815).
 9. We use the term “unit of production” with caution because the data taken from aggregate published censuses does not have the same precision as that taken from individual schedules. Taking into consideration our distinction between establishments and units of production, our experience with censuses leads us to conclude that published censuses are much less precise than those in manuscript form.
 10. Courville, *Entre ville et campagne*, 169.

were recorded (1302 less 230 pot and pearl ash factories) and, for the same five categories, 1053 in 1851. Very clearly, then, we have a decrease of nineteen operating units. If we compare this with the population growth for the same area, the question of decline in the number of rural industries in the St. Lawrence axis after 1831 becomes a real one that must be addressed.

Tables 1 and 2 provide a picture of rural industries by district in 1831 and 1851, using the six categories of units of production listed earlier. In 1831, the distribution of these units was roughly the same for the two larger districts of Québec (roughly 45 per cent) and Montréal (just under 42 per cent), the cities included. Trois-Rivières, much less populated, had a little less than 13 per cent of the total operating units within the axis. By 1851, however, the distribution had changed. Though the Québec and Trois-Rivières districts maintained their numbers of units, the Montréal district showed a marked decrease, from 591 to 347 in just twenty years. It is here that virtually all the decrease took place.

If we turn to the issue of the type of industrial process involved, four categories dominate the 1831 figures. The 592 saw mills represent half of all units and constitute roughly 80 per cent of the saw mills in Lower Canada. This percentage is comparable to the proportion of the Lower-Canadian population living in the St. Lawrence axis, 87 per cent.¹¹ Grist mills follow, with 298 units representing nearly 76 per cent of the Lower-Canadian total. Then we have the 230 pot and pearl ash factories, which account for only 45 per cent of the total, and 149 fulling and carding mills, a little more than 78 per cent of the total of this type. The last two categories were not very numerous: the twenty-one distilleries represent 45 per cent of the total in Lower Canada, the twelve foundries 67 per cent. These two categories were concentrated in towns: six of twenty-one distilleries and seven of twelve foundries were located there. Conversely, there were no pot and pearl ash factories in urban centres and the census found only one fulling and carding mill, five saw mills (four of which were located in Trois-Rivières), and ten grist mills (four in Trois-Rivières and six in Montréal).

In 1851, the population of the St. Lawrence axis represented 80 per cent of the Lower-Canadian total, a relative decline of seven percentage points from the 1831 figures. This change reflected the numerical growth and geographical expansion of settlement and, possibly, the shift of some production away from the St. Lawrence axis. In our review of the 1851 census material, we employed only five categories, and they appear roughly in the same order as in 1831, the only difference being that foundries became more numerous than distilleries. A closer examination, however, reveals some important changes. The number of saw mills went from 592 to 547 and their share of the Lower-Canadian total of this type of industrial activity declined from 80 to 51 per cent. Grist mills increased from 298 to 322, but their proportion decreased from 70 to 60 per cent. Fulling and carding mills remained stable both in terms of numbers (a gain of four) and proportion of the total (an increase of one percentage point). The number

11. Serge Courville, Jean-Claude Robert, and Normand Séguin, "Population et espace rural au Bas-Canada: l'exemple de l'axe laurentien dans la première moitié du XIXe siècle," *Revue d'histoire de l'Amérique française* 44:2 (1990): 260 and Table 3.

12. *Ibid.*

THE SPREAD OF RURAL INDUSTRY IN LOWER CANADA, 1831-1851

Table 1
Distribution of Units of Production, 1831

	Number of Grist Mills	Number of Saw Mills	Number of Fulling/ Carding Mills	Number of Foun- dries	Number of Distil- leries	Number of Pot and Pearl Ash Factories	TOTAL
MONTRÉAL DISTRICT							
Montréal Islands							
City of							
Montréal	6	0	0	4	2	0	12
Island of							
Montréal	8	1	3	0	1	2	15
Île Jésus	2	4	4	0	2	0	12
Île Bizard	1	0	0	0	0	0	1
Île Perrot	0	0	0	0	0	1	1
Peninsula							
(Vaudreuil)	6	3	2	0	0	29	40
North Shore	40	50	19	0	4	67	180
South Shore	98	73	31	5	6	117	330
Total	161	131	59	9	15	216	591
Total Without City	155	131	59	5	13	216	579
TROIS-RIVIÈRES DISTRICT							
City of Trois-							
Rivières*	4	4	1	1	2	0	12
North Shore	16	53	11	0	0	5	85
South Shore	21	35	12	0	0	4	72
Total	41	92	24	1	2	9	169
Total Without City	37	88	23	0	0	9	157
QUÉBEC DISTRICT							
City of Québec*	0	1	0	2	2	0	5
Île d'Orléans	7	14	4	0	0	0	25
Île aux Coudres	2	1	0	0	0	0	3
Île aux Grues et							
aux Oies	1	0	1	0	0	0	2
Other Islands	0	0	0	0	0	0	0
North Shore	31	108	21	0	0	2	162
South Shore	55	245	40	0	2	3	345
Total	96	369	66	2	4	5	542
Total Without City	96	368	66	0	2	5	537
TOTAL, ST. LAWRENCE							
AXIS	298	592	149	12	21	230	1302
%AGE OF LOWER							
CANADA	76	77	78	67	36	45	67
TOTAL WITHOUT							
CITIES	288	587	148	5	15	230	1273

* City and Suburbs

Source: "Census of 1831," *Journals of the Legislative Assembly of Lower Canada* (1832), Appendix OO.

Table 2
Distribution of Units of Production, 1851

	Number of Grist Mills	Number of Saw Mills	Number of Fulling/ Carding Mills	Number of Foun- dries	Number of Distil- leries	Number of Pot and Pearl Ash Factories	TOTAL
MONTREAL DISTRICT							
Montréal Islands							
City of Montréal	2	0	0	7	2	**	11
Island of Montréal	6	1	2	0	0	**	9
Île Jésus	2	1	2	0	0	**	5
Île Bizard	1	0	0	0	0	**	1
Île Perrot	1	0	0	0	0	**	1
Peninsula							
(Vaudreuil)	2	2	2	0	0	**	6
North Shore	55	64	21	5	1	**	146
South Shore	74	65	21	7	1	**	168
Total	143	133	48	19	4	**	347
Total Without City	141	133	48	12	2	**	336
TROIS-RIVIÈRES DISTRICT							
City of Trois-							
Rivières*	4	0	1	2	0	**	7
North Shore	19	47	12	0	0	**	78
South Shore	29	28	10	0	0	**	67
Total	52	75	23	2	0	**	152
Total Without City		75	22	0	0	**	145
QUÉBEC DISTRICT							
City of Québec*	0	0	0	3	0	**	3
Île d'Orléans	9	22	5	0	0	**	36
Île aux Coudres	2	0	0	0	0	**	2
Île aux Grues et aux Oies	2	0	0	0	0	**	2
Other Islands	0	0	0	0	0	**	0
North Shore	39	88	27	0	0	**	152
South Shore	75	229	50	3	0	**	357
Total	127	339	82	6	0	**	554
Total Without City	127	339	82	3	0	**	551
TOTAL, ST. LAWRENCE							
AXIS	332	547	153	27	4	**	1053
%AGE OF LOWER							
CANADA	60	51	79	71	57		57
TOTAL WITHOUT							
CITIES	316	547	152	15	2	**	1032

* City and Suburbs

** Included in the "Remarks"; impossible to give precise locations.

Source: *Census of the Canadas, 1851-52* (Montréal, 1853).

Table 3
Population of the St. Lawrence Axis

	1784	1831	1844	1851-52
Montréal District				
Montréal Islands				
City of Montréal	6,479	27,297	44,093	57,715
Island of Montréal and Île Jésus	10,745	26,029	27,657	31,610
Other islands	332	883	980	1,084
Peninsula (Vaudreuil)	1,811	13,984	15,813	20,050
North Shore	13,953	63,936	79,261	92,598
South Shore	22,159	116,937	150,774	185,871
Indian Missions	165	1,664	1,787	2,296
Total	55,644	250,730	320,365	391,224
Trois-Rivières District				
City of Trois- Rivières*	810	3,972	3,297	5,038
North Shore	6,880	19,910	27,696	35,551
South Shore	4,938	21,873	25,905	34,013
Indian Missions				236
Total	12,628	45,755	56,898	74,838
Québec District				
City of Québec	6,492	26,256	32,876	43,882
Île d'Orléans	2,210	4,349	4,177	6,151
Other Islands	645	952	1,208	1,341
North Shore	11,798	33,165	42,887	53,566
South Shore	23,401	84,236	111,753	136,258
Indian Missions	103		199	218
Total	44,649	148,958	193,100	214,416
TOTAL, ST. LAWRENCE AXIS	112,921	445,443	570,363	707,478
TOTAL POPULATION, LOWER CANADA**	112,921	511,917	697,084	890,261

* Figures for 1831 are for the Parish of Trois-Rivières.

** Recalculated from published census figures.

Sources: For 1784, British Library, Add. Mss. 21885; for 1831, *Journals of the Legislative Assembly of Lower Canada* (1832), Appendix OO; for 1844, *Extrait des retours . . .* (1846); for 1851, *Census of the Canadas, 1851-1852*.

of foundries more than doubled, from twelve to twenty-seven, and their proportion of the total increased from 67 to 71 per cent. Distilleries decreased from twenty-one to four, but their proportion increased from 45 to 57 per cent. In 1851, no saw mills, only six grist mills, and one fulling and carding mill were found in cities, but urban areas continued to maintain an advantage in foundries and distilleries: twelve of twenty-seven foundries and two of four distilleries.

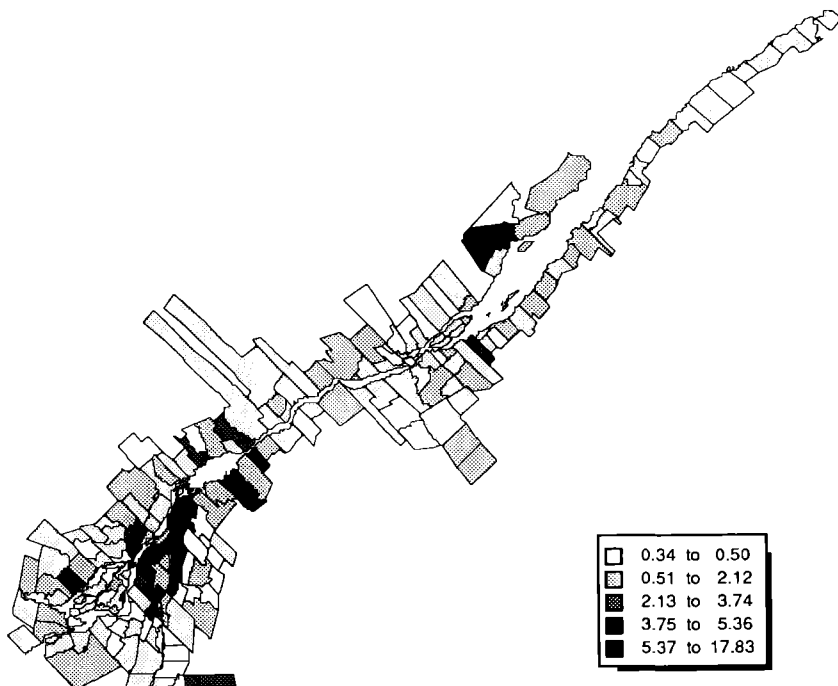
Let us now examine the spacial distribution of units of production. In 1831, the Montréal district, with almost 56 per cent of the population of the St. Lawrence axis, had almost all of the pot and pearl ash factories. Secondly, there was a relative scarcity of saw mills there; though this was the most widespread form of production in the axis, the Montréal district contained not even a quarter of the total. Grist mills, on the other hand, were in the same proportion as their share of the population. The district, on the other hand, did show a concentration of foundries (nine of twelve) and distilleries (fifteen of twenty-one).

The Québec district represented 33 per cent of the population of the axis. There was a marked concentration of saw mills (62 per cent of the total number in the axis) and, to a lesser degree, fulling and carding mills (44 per cent of the total). The Trois-Rivières district, with 10 per cent of the population of the axis, had more than 15 per cent of the saw mills and 16 per cent of the fulling and carding mills. The other categories were not well represented; indeed, their presence was nearly negligible. As for the division between the north and south shores of the St. Lawrence, the distribution of industries varied from district to district. The south shore dominated in two districts, with 56 per cent of all units in the Montréal district and over 63 per cent in the Québec district. It was less than 43 per cent in the Trois-Rivières district.

Though the proportion of population in each district remained reasonably stable in 1851, there were some changes in the distribution of the five categories of units of production. At midcentury, the Montréal district had a lower proportion of grist mills (44 per cent) than its population (55 per cent). Saw mills were still about a quarter of the total, and fulling and carding mills constituted 31 per cent. The concentration of foundries and distilleries had intensified: 70 per cent of the former and all of the latter were located there. The situation in the Trois-Rivières district had not changed very much: its proportion of grist mills went from about 14 to 16 per cent; its proportion of the saw mills in the axis remained stable at between 14 and 15 per cent; and fulling and carding mills decreased slightly from 16 to 15 per cent of the total. This district's share of producing units was, however, always greater than that of its population. The Québec district's share of the axis' grist mills went from 32 to more than 39 per cent, more than its proportion of population (34 per cent). The proportion of saw mills remained unchanged at 62 per cent, while that of fulling and carding mills increased from 44 to 53 per cent.

This first set of maps (Figures 1 to 6) illustrates the level of concentration of some of the categories of units of production for 1831 and 1851. Three categories were chosen for illustrative purposes: grist mills, saw mills, and fulling and carding mills. Each map is based on the ratio of the number of units of production in a given area to the total for

Figure 1
Distribution of Grist Mills, 1831
 (% age of the St. Lawrence axis)

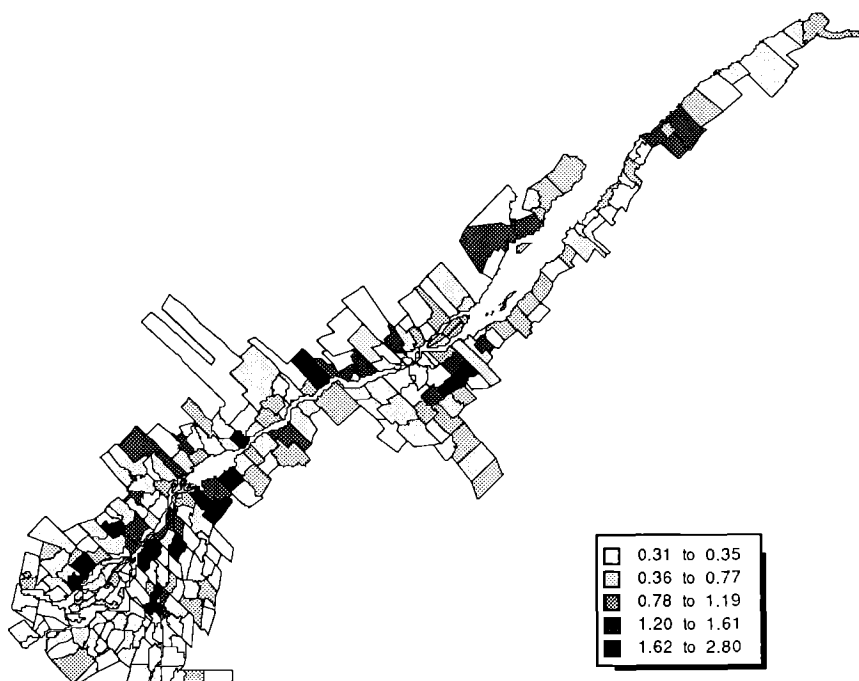


that industrial process for the entire St. Lawrence axis. We used five levels of concentration to analyse differences between various spacial units.

The 1831 grist mill map (Figure 1) shows that they were more common in the southern part of the axis and more concentrated in the triangle south of Lake St. Peter between the St. Lawrence and Richelieu rivers. In 1851 (Figure 2), grist mills were still important in the southern sector, but were locationally less concentrated. Figure 2 also shows the progressive expansion of that type of production unit in the northern part, especially in the Québec region. Saw mills, while showing some local variations, were concentrated in the northern sector in both 1831 and 1851, moreso in the Québec area (Figures 3 and 4). As for fulling and carding mills, the 1831 and 1851 maps (Figures 5 and 6) indicate a shift from the southern part of the axis to the north and, once again, a concentration in the Québec area.

To conclude this overview of the leading features of the distribution of the six categories of units of production, some general remarks can be made. First of all, while some units (such as foundries and distilleries) were concentrated in cities, especially Montréal, there was a general movement of rural industries toward the northeastern

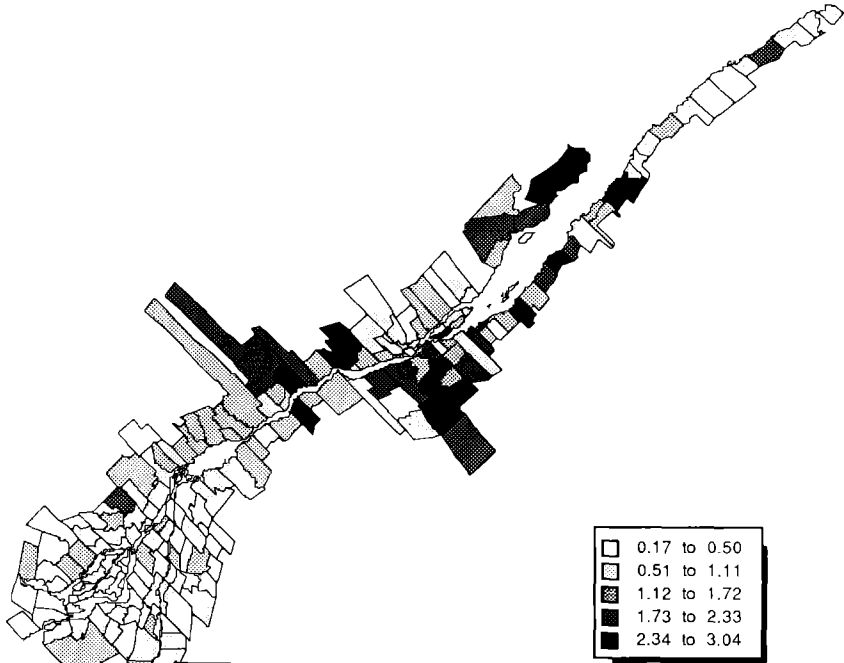
Figure 2
Distribution of Grist Mills, 1851
(%age of the St. Lawrence axis)



portion of the St. Lawrence axis. This was due primarily to a decrease in the number of units in the Montréal district. Moreover, with this shift came a reduction in the proportional weight of the axis' units of production as compared with the whole of Lower Canada. Should this be interpreted as a decrease in rural industries in the southern area and a relative slowdown of growth for the St. Lawrence axis within the province? Is it, in other words, a case of deindustrialisation?

We do not think so. First of all, our six categories of units of production can give only a partial view of the structure of rural industries, moreso in 1851 than in 1831. Secondly, the *number* of producing units alone remains too crude an indicator. Numbers alone do not describe the totality of industrial expansion. For that reason, other indicators, such as the size of the labour force, the volume and value of goods produced, and the overall scale of the operation, must be taken into account. We believe that, during this period, significant change occurred in the structure of the industrial economy. The scale of operations increased while, at the same time, new units of production emerged and old ones faded away, thereby affecting patterns of growth in some particular areas or villages. In fact, there is a process of differentiation of growth in each of the three districts. All of this is confirmed by the more detailed examination of rural industries afforded by the individual schedules of the 1851 census.

Figure 3
Distribution of Saw Mills, 1831
 (%age of the St. Lawrence axis)



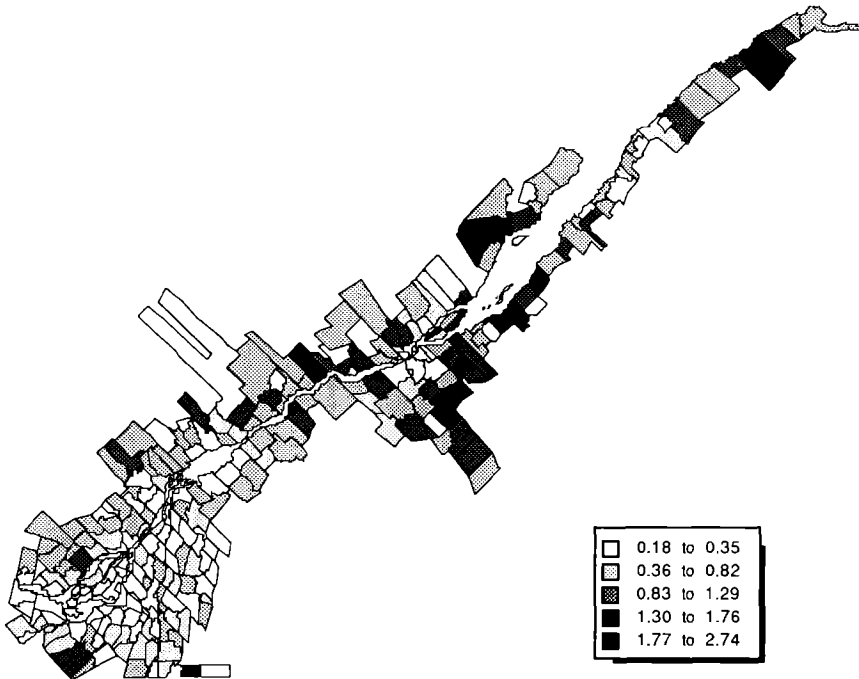
RURAL INDUSTRIES IN 1851: A DETAILED ANALYSIS

Using our distinction between establishments and units of production, we systematically recorded all mentions of the latter from the individual 1851 census schedules.¹³ Table 4 summarises our findings of 3456 units, of which 2926 were located in rural areas. While these figures are certainly underestimated because of known gaps in the sources, they are still three times greater than the units listed in the published aggregate census of 1851.¹⁴ An analysis of these units of production shows a very different picture, both in terms of structure and of spacial distribution between the northern and southern parts of the St. Lawrence axis.

13. For a detailed review of this work, see Morneau, Normand, and Bellevance, "Les équipements, recensement de 1851," in Courville et al, *Le pays laurentien*.

14. This important discrepancy is explained by two factors. First, the schedules are a more complete source and include all types of production. Second, our notion of units of production implies the identification of a broader range of manufacturing facilities than just establishments.

Figure 4
Distribution of Saw Mills, 1851
(% age of the St. Lawrence axis)

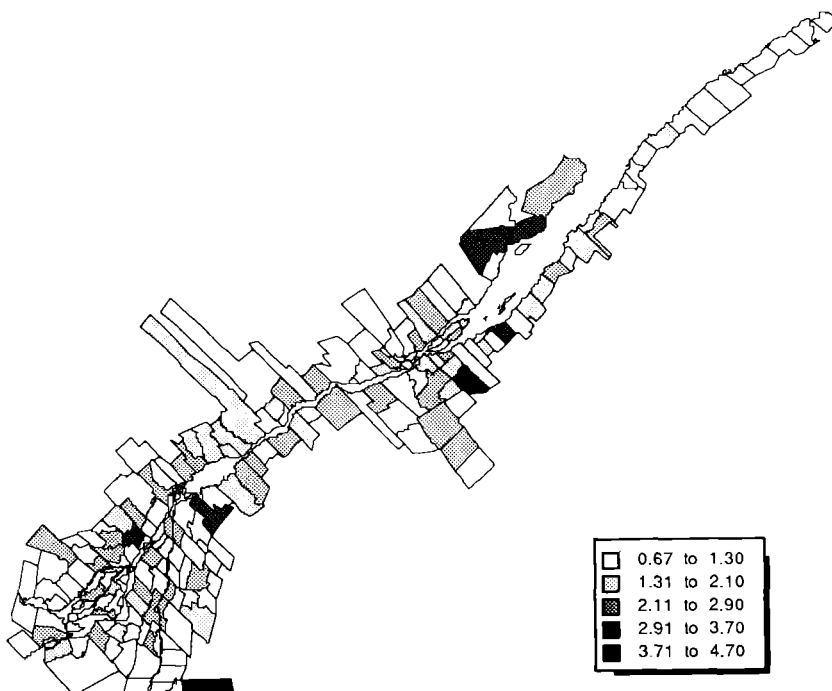


In this instance, the units were classified into ten categories: wood products, leather products, iron and metals, food products, clothing, textiles, transportation equipment, nonmetallic minerals, chemical products, and a miscellaneous group which included construction and manufacturing equipment.

Our analysis will concentrate mainly on the 2926 units found in rural areas. First, in order of numerical importance, came wood products with 910 units; iron and metals followed with 779, then leather products with 389, food products with 323, textiles with 215, and transportation equipment with 113. Less numerous were the 75 units in the miscellaneous category, then chemical products, with 70, clothing with 34, and lastly nonmetallic minerals with only 18.

If we now look to the spacial distribution in terms of districts, half of all the units of production in the St. Lawrence axis were located in the Montréal district, which accounted for slightly more than 55 per cent of the rural population within the axis. Roughly 37 per cent of the units were in the Québec district, which included 33 per cent of the rural population, and 14 per cent in the Trois-Rivières district, with a little less

Figure 5
Distribution of Fulling and Carding Mills, 1831
 (%age of the St. Lawrence axis)



than 12 per cent of the population. If we take into account the fact that missing schedules covered the south part of the Montréal district particularly, the importance of this area stands out sharply. It had, at the very least, a number of units proportionate to its share of the population.

This finding, based on the surviving individual schedules, contradicts the earlier impressions of sluggish growth, or of a decline in the number of rural industries in the Montréal district, or even of deindustrialisation. This stems from the fact that aggregate census data contain only certain categories of units of production.

Spacial distribution among the three districts shows some important features. In the Montréal district, the north shore was the location of 35 per cent of the district's units, while its share of the population was only 28 per cent. The south shore, with more than 55 per cent of the population, had more than 52 per cent of the units. This latter figure, we must reemphasise, is a minimum because it is for this area that individual schedules are often missing. Had we been able to include data from schedules for all of

Table 4
Units of Production in 1851, From the Individual Schedules

	Wood Products	Leather products	Iron and Metal Products	Food Products	Clothing	Textiles	Trans- portation Equipment	Nonmetallic Minerals	Chemical Products	Miscellaneous, incl. Construc- tion and Manu- facturing Equipment	TOTAL
Montréal District											
Montréal Islands											
City of Montréal*	5	4	2	3	0	0	4	0	0	16	34
Island of Montréal	5	21	13	12	0	4	2	0	1	5	63
Île Jésus	5	2	3	1	0	2	3	0	0	0	16
Île Bizard	1	0	2	1	0	0	0	0	0	1	5
Île Perrot	0	0	0	1	0	0	0	0	0	0	1
Peninsula (Vaudreuil)	27	19	22	8	4	3	1	1	7	4	96
North Shore	147	68	141	61	5	34	7	2	39	5	509
South Shore	208	130	225	65	22	28	38	4	7	36	763
Total	398	244	408	152	31	71	55	7	54	67	1,487
Total Without City	393	240	406	149	31	71	51	7	54	51	1,453
Trois-Rivières District											
City of Trois-Rivières*	8	10	9	8	1	1	2	0	0	6	45
North Shore	102	52	49	30	3	26	4	2	2	2	272
South Shore	41	17	35	16	0	13	3	0	3	0	128
Total	151	79	93	54	4	40	9	2	5	8	445
Total Without City	143	69	84	46	3	39	7	2	5	2	400

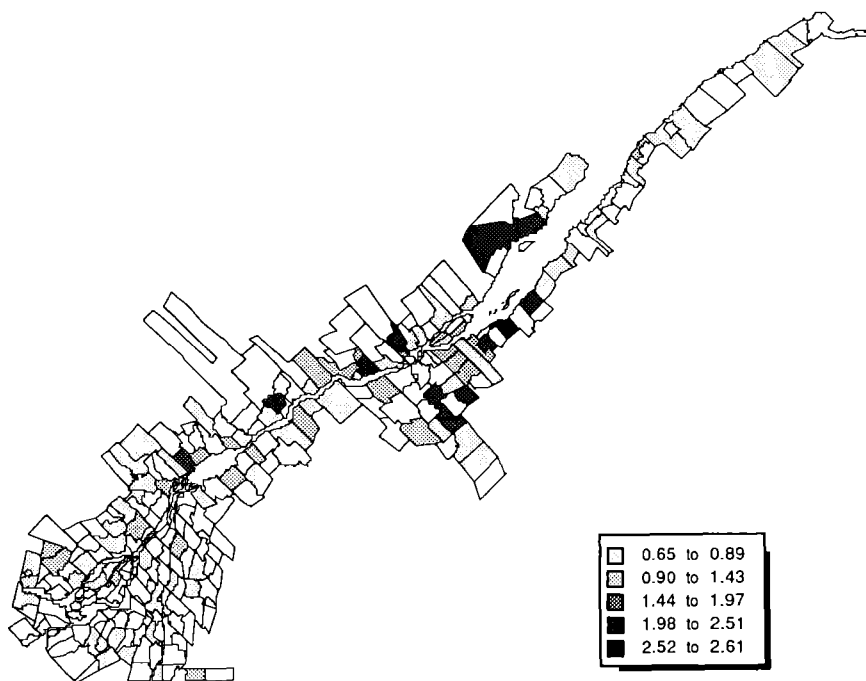
Table 4 (Concluded)

	Wood Products	Leather products	Iron and Metal Products	Food Products	Clothing	Textiles	Trans- portation Equipment	Nonmetallic Minerals	Chemical Products	Miscellaneous, incl. Construc- tion and Manu- facturing Equipment	TOTAL
Québec District											
City of Québec*	96	105	61	62	24	1	27	4	1	70	451
Île d'Orléans	13	2	13	4	0	4	18	0	0	0	54
Île aux Coudres	0	0	2	2	0	0	0	0	0	0	4
Île aux Grues et aux Oies	0	0	0	2	0	0	0	0	0	0	2
Other Islands	0	0	0	0	0	0	0	0	0	0	0
North Shore	84	16	60	37	0	23	9	1	1	6	237
South Shore	277	62	214	83	0	78	28	8	10	16	776
Total	470	185	350	190	24	106	82	13	12	92	1,524
Total Without City	374	80	289	128	0	105	55	9	11	22	1,073
TOTAL, ST. LAWRENCE											
AXIS	1,019	508	851	396	59	217	146	22	71	167	3,456
TOTAL WITHOUT											
CITIES	910	389	779	323	34	215	113	18	70	75	2,926

* City and Suburbs

Source: Manuscript Census, 1851.

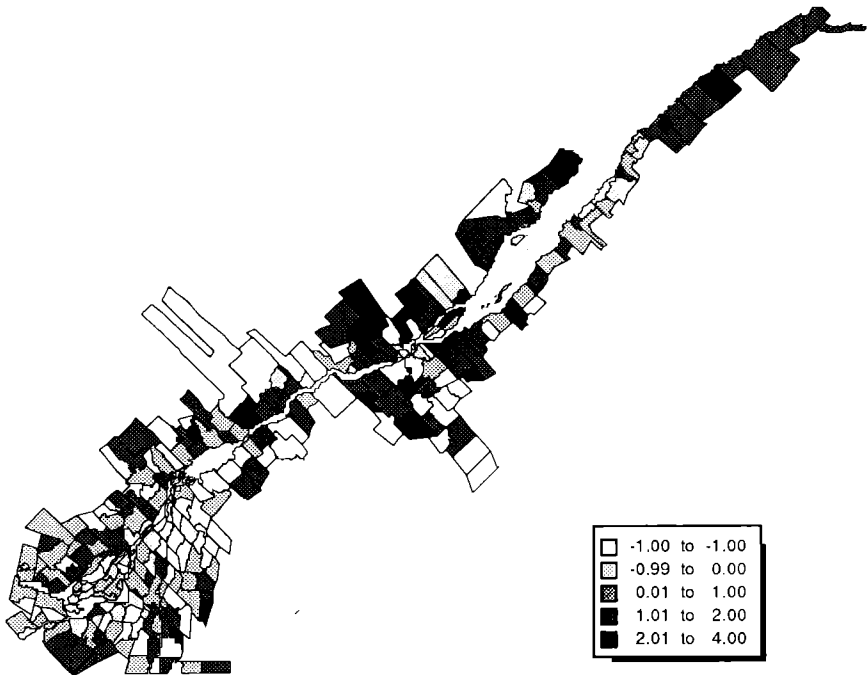
Figure 6
Distribution of Fulling and Carding Mills, 1851
 (%age of the St. Lawrence axis)



the south shore, we clearly would have found a marked concentration of units of production there. No such gaps exist in the data for the Québec district. Here, the north shore had 27 per cent of the district's population but only 22 per cent of the units, while the south shore, with roughly 69 per cent of the population, had more than 72 per cent of units. This is the reverse of the situation found in the Trois-Rivières district, where each shore had approximately the same population, but the north had 68 per cent of the units of production and the south the rest. This discrepancy is striking. Even if we take into account that there are some gaps in the data, the difference between the two shores is too great not to be seen as evidence of a distinct imbalance in the distribution of rural industries. As a matter of fact, in the same area in 1831, the villages showed the strongest growth in terms of rural industrial growth, taking their smaller size into consideration.

If we consider the whole of the St. Lawrence axis, we find a clear pattern of distribution both in terms of population and the location of rural industries. The south shore of the Montréal and Québec districts and the north shore of the Trois-Rivières district stand out as areas where rural industries were concentrated. Moreover, they also seem to be more diversified than in other areas. In further works, we intend to explore this diversification but, for the moment, we can only delineate the pattern by analysing the

Figure 7
Local Specialisation: Wood Products, 1851
(Local %age compared to the %age of the St. Lawrence axis)



distribution of our ten categories when compared to the proportion of population in each district.

The north shore of the Montréal district had an overrepresentation in food products, textiles, and chemical products. Leather products were not very important; nor were clothing, transportation, and the miscellaneous category. The distribution in the south shore was almost the reverse: this area was underrepresented in food products and textiles and overrepresented in clothing, transportation equipment, and the miscellaneous category. Clearly this illustrates the complementarity between rural units of production on both sides of the river in the Montréal district. This complementarity is also evident when the rural parts of Montréal island and Île Jésus are considered. The south shore of the Québec district, which had three times the number of rural industries as were located on the north shore, was underrepresented in food products and transportation equipment and unrepresented in the clothing category. This last activity was concentrated in the Québec area. The south shore was, however, overrepresented in nonmetallic minerals, chemical products, and the miscellaneous category. The north shore had no specialisation, with the possible exception of food products. Its underrepresentations

Figure 8
Local Specialisation: Leather Products, 1851
(Local %age compared to %age of the St. Lawrence axis)

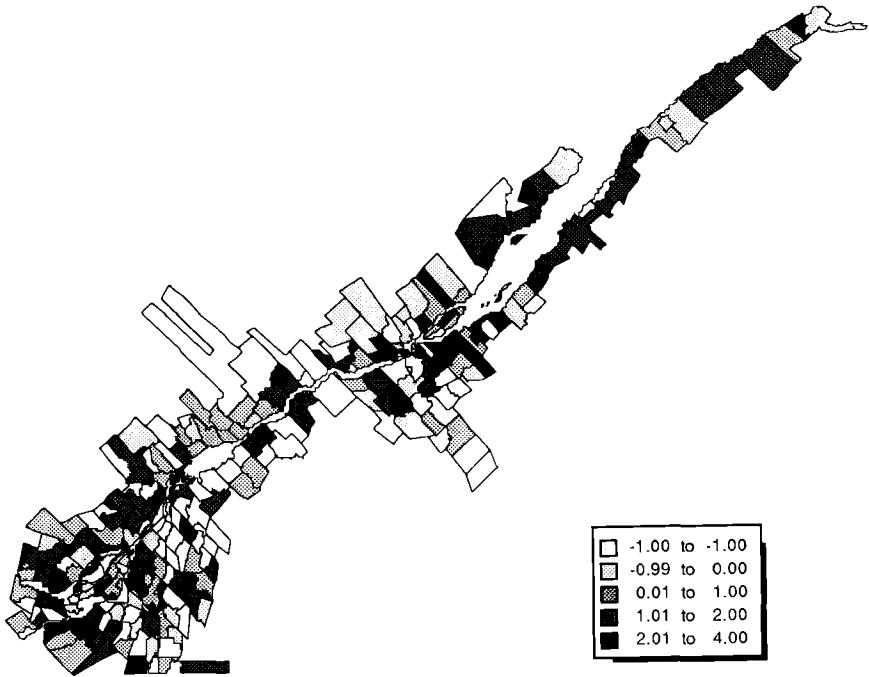


are notable: there were no production units in clothing and a low representation in transportation equipment, nonmetallic minerals, chemical products, and the miscellaneous category. Île d'Orléans seems to stand apart from this generalisation, however: in relation to its share of population, it had a good representation in wood products, nonmetallic minerals, and transportation equipment. Notwithstanding this anomaly, relatively small numbers of rural industries were located in the north shore of the Québec district, and this shows, in turn, in the overall standing of the district. One qualification must, however, be made: in the immediate area around the city of Québec, rural industries were better developed.

Figures 7 to 16 allow a clearer representation of the level of concentration and specialisation for every category of rural industry in the St. Lawrence axis in 1851. We used a composite index which takes into account the strength of a given sector in a census subdivision in relation to its position in the entire St. Lawrence axis.¹⁵ For ex-

15. The formula is $S_i = (N_i - N_j)$, where S_i is the index of specialisation of a given locale in the category N , N_i is the percentage of units of production of the category N in the census subdivision, and N_j is the percentage of all units in the N category in relation to the total number of units in the whole of the territory.

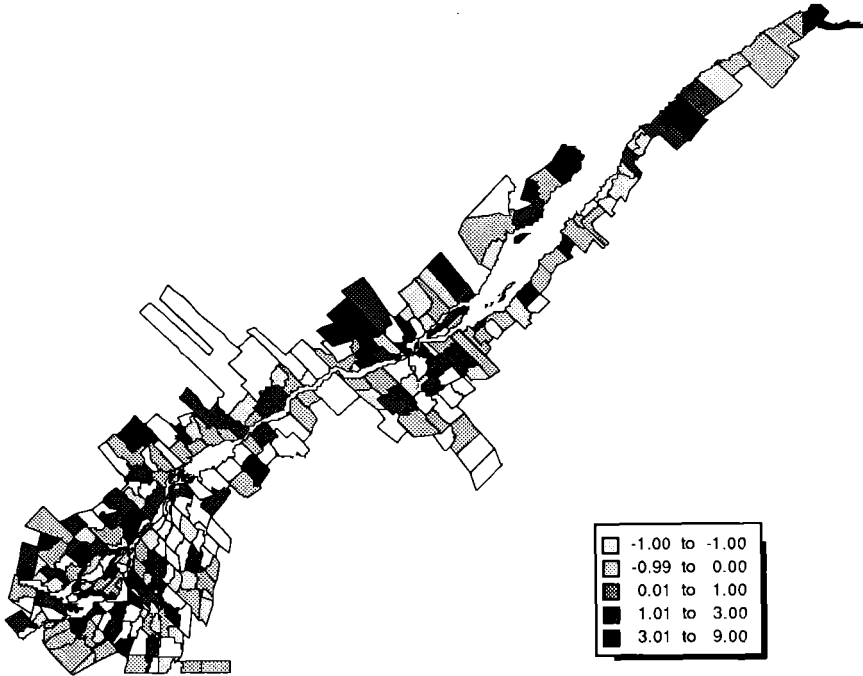
Figure 9
Local Specialisation: Iron and Metals, 1851
 (Local %age compared to the %age of the St. Lawrence axis)



ample, three clothing shops out of ten units in a given locale represent 30 per cent (Ni). On the other hand, we also calculated the proportion of units in each category in relation to the total number of units in the entire axis. In this instance, three clothing shops of 59 in the axis equals 5 per cent (Nj). This ratio was computed according to the formula in note 15. The mapping of this index, using five different levels of specialisation, provides an informative picture of the spacial distribution of our ten categories of units in 1851.

Let us start with the category of wood products (Figure 7). Specialisation was greater around Québec, but the difference between the north and south shores was less marked than for saw milling (Figure 4). This indicates that, though saw milling was rather concentrated in the northern part of the St. Lawrence axis, wood working was more evenly distributed. Leather production (Figure 8) was concentrated in the south, while iron and metal production (Figure 9) had a more balanced distribution. Food products (Figure 10) were clustered around the two largest urban centres. Clothing and textiles (Figures 11 and 12 respectively) showed some clear contrast in their distribution to the pattern for saw milling and wood products: textile production was quite strong

Figure 10
Local Specialisation: Food Products, 1851
(Local %age compared to the %age of the St. Lawrence axis)



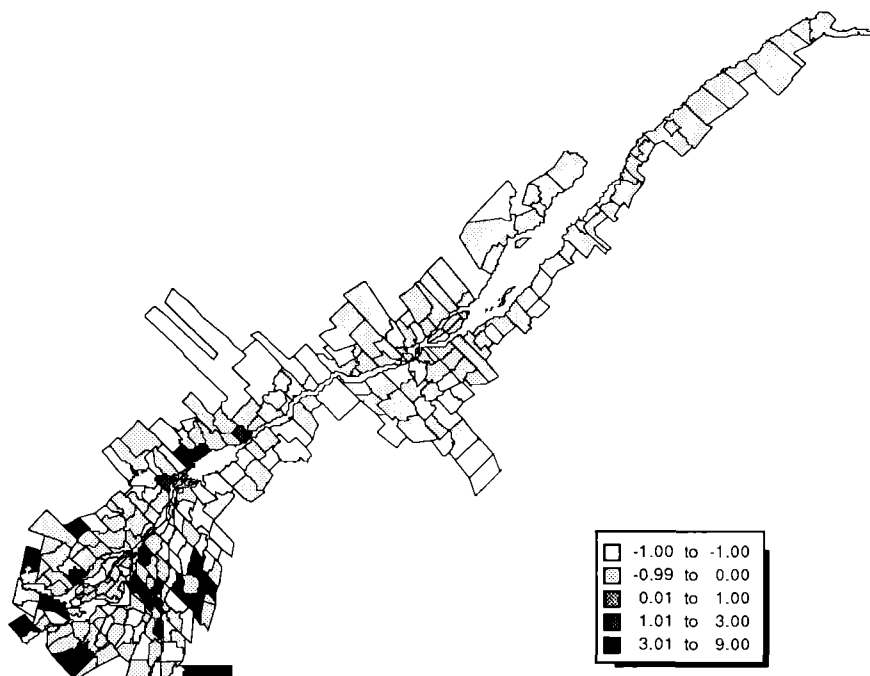
around Québec, but clothing production was concentrated in the southern part of the axis. Nonmetallic minerals and chemicals (Figures 14 and 15) were more important on the outer fringes of the St. Lawrence axis. Finally, the cities of Montréal and Québec attracted the production of transportation equipment (Figure 13) and the miscellaneous category (Figure 16) in addition to food products.

If our first overview based on the aggregate data in the published censuses showed a clear movement of units of production such as mills and saw mills, a closer examination of the data from the individual schedules shows that, in 1851, the rural industrial landscape was more diversified in the southern part of the axis than in the north. This reinforces our conviction that there were different processes of growth involved in the two parts of the axis. This hypothesis remains to be tested in future work.

LARGER UNITS OF PRODUCTION

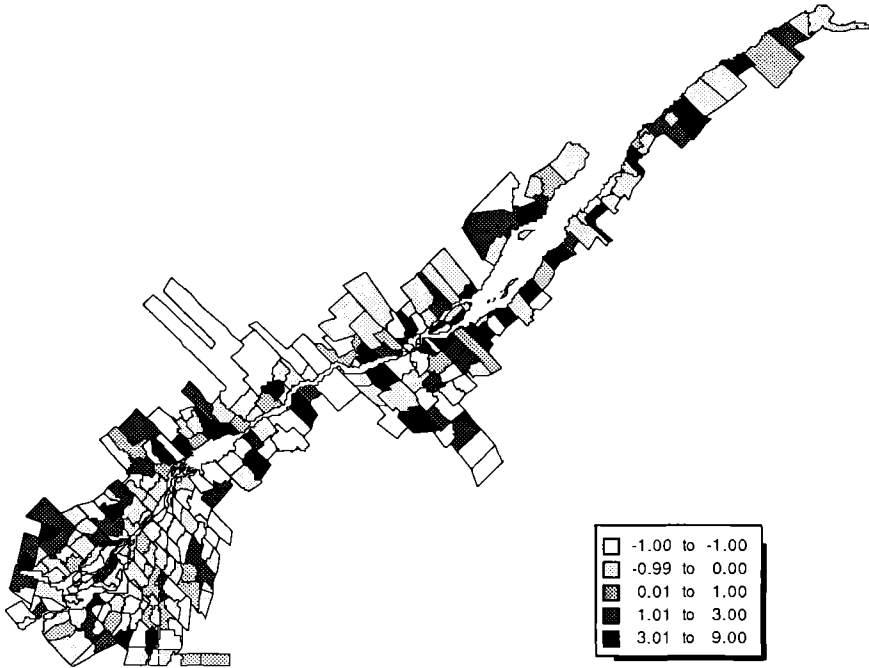
The size of the workforce of a given unit of production is important to an understanding of the processes of growth. This kind of information must, however, be treated with

Figure 11
Local Specialisation: Clothing, 1851
(Local %age compared to the %age of the St. Lawrence axis)



caution for a number of reasons. Only a few can be reiterated here. In the individual schedules for 1851, census takers did not systematically record the exact number of employees working in a given unit. When they did — for example, when only one worker was indicated — there is no way of knowing whether that person was the owner or just the operator of the unit. It is known that owners of equipment during this period did not, as a general rule, declare any unpaid work obtained from family members. Duration of work is another problem: this could be quite variable, from a few days to months to an entire year. For establishments where there was more than one unit of production, the number of employees was very often given as a total, without any breakdown. Moreover, in some instances such as saw mills and other units that used large quantities of wood (ironworks,¹ for example), the number of employees could include those men, such as lumberjacks and drivers, located in the forest or along the waterways in addition to those actually working in the establishment. For our purposes, then, the number of employees can only be used as a crude indicator. Nevertheless, we think that something can be learned from a cautious handling of this data.

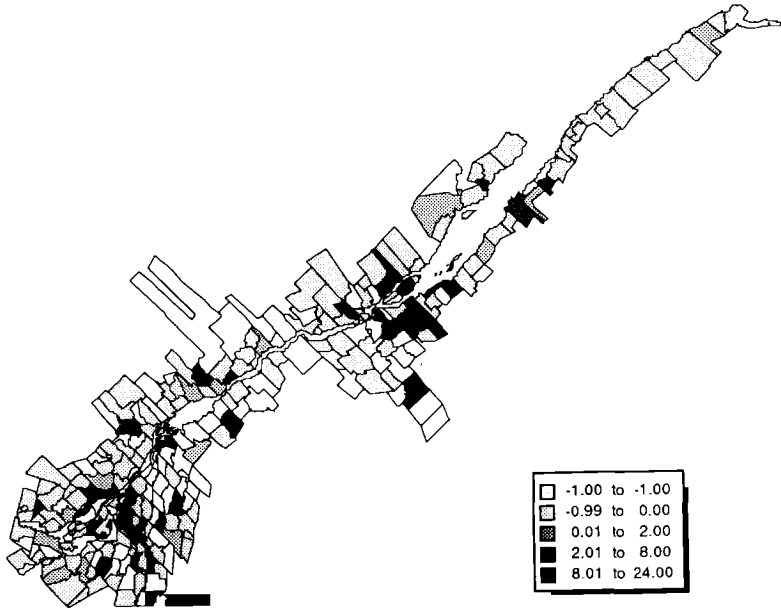
Figure 12
Local Specialisation: Textiles, 1851
(Local %age compared to the %age of the St. Lawrence axis)



For the whole of the St. Lawrence axis, including partial data available for cities, there were roughly one hundred of the total 3456 units of production which employed ten or more workers. These hundred units were distributed almost evenly between the city of Québec and the rest of the axis (the city of Montréal being excluded because of the total lack of data). In general, then, the level of concentration of the workforce in rural industries remained rather low.

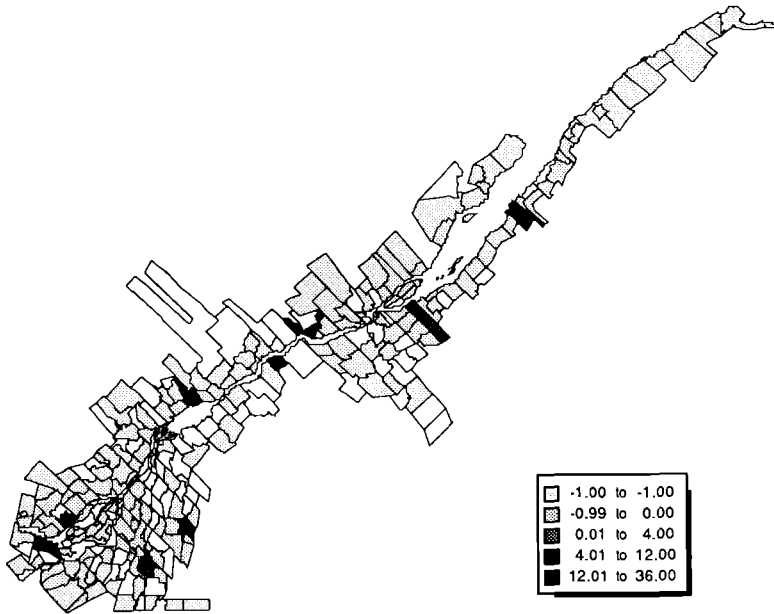
It was in urban centres that the largest establishments in terms of workforce were to be found. A Québec City shipyard was the largest employer with between 750 and 800 workers. The city also had half a dozen smaller shipyards, each with more than sixty employees. Near these stood forty establishments, each with a workforce of more than ten persons. This is as much as can be said about the urban aspect of industry as revealed by the census, since the census schedules are missing for the city of Montréal. Adding that city to the picture would significantly alter the distribution of large-scale establishments between the cities and the countryside.

Figure 13
Local Specialisation: Transportation Equipment, 1851
(Local %age compared to the %age of the St. Lawrence axis)



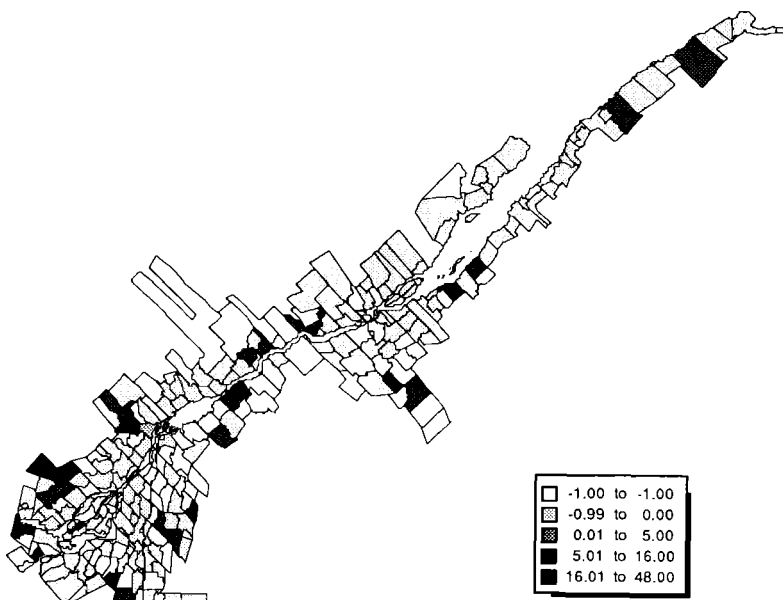
In the countryside, industries in the St. Lawrence axis were dominated by mills: saw mills (more than 450), grist mills (more than 200), carding mills (more than 100), and fulling mills (nearly 75). Together with blacksmith shops (more than 750) and pot and pearl ash factories (roughly 70), these form the dominant elements in rural industrialisation. Two features stand out: the small scale of the vast majority of rural production units, and the composite character of some of them. For example, market orientation and the use of hydraulic power very often resulted in a combination of production in one manufactory. Grist mills, saw mills, and fulling and carding mills were often associated with each other and were sometimes found in the same establishment or building. One example we found of this type was a multiuse mill at Sainte-Cécile-du-Bic, near Rimouski, which had a workforce of fifty hands. These composite establishments are particularly interesting because they indicate a variety of marketing strategies at work. This joining of functions is not to be interpreted as a refusal to specialise production, but rather as a move to maximise the utilisation of equipment by expanding the number of productive phases around one principal activity. The harmonisation of these separate units of production provides a sense of local specialisation and the state of the relationship of the units to the market. This composite character was found both in the smaller concerns of ten employees and in the larger ones as well. It reveals simultaneously the presence of small local entrepreneurship alongside rising capitalist enterprises.

Figure 14
Local Specialisation: Nonmetallic Minerals, 1851
(Local %age compared to the %age of the St. Lawrence axis)



Resource availability, topography, power sources, and transportation networks brought to several rural locales some large-scale establishments which stood out in stark contrast to the large number of smaller operations, most of which employed fewer than five people. Outside Québec, there were forty such establishments identified in the 1851 census schedules. Two were in Saint-Hyacinthe and one in Sorel, the latter an important shipyard with 150 workers. Not surprisingly, the largest rural establishments were saw mills. Three had at least twenty-five workers, five others reported between forty and sixty workers, and three establishments reported one hundred or more employees, including workers in the forest and in the mills. These three were located at Île Verte (with one hundred employees), Fraserville (with two hundred), and Fief Saint-Maurice, near Rimouski (by far the largest, at 360). In addition to these saw mills, there was a glass factory at Vaudreuil with a workforce of about 150 persons. Finally, there were a dozen other establishments employing between ten and thirty hands, including a foundry at Montmagny; three cloth factories, in Chambly, Terrebonne, and Sault-au-Recollet; a clothing factory at Saint-Armand; a brickworks at Deschaillons; two agricultural implement factories at Berthier and Terrebonne; a paper factory in Chambly; and a chair factory at Château-Richer.

Figure 15
Local Specialisation: Chemical Products, 1851
(Local %age compared to the %age of the St. Lawrence axis)

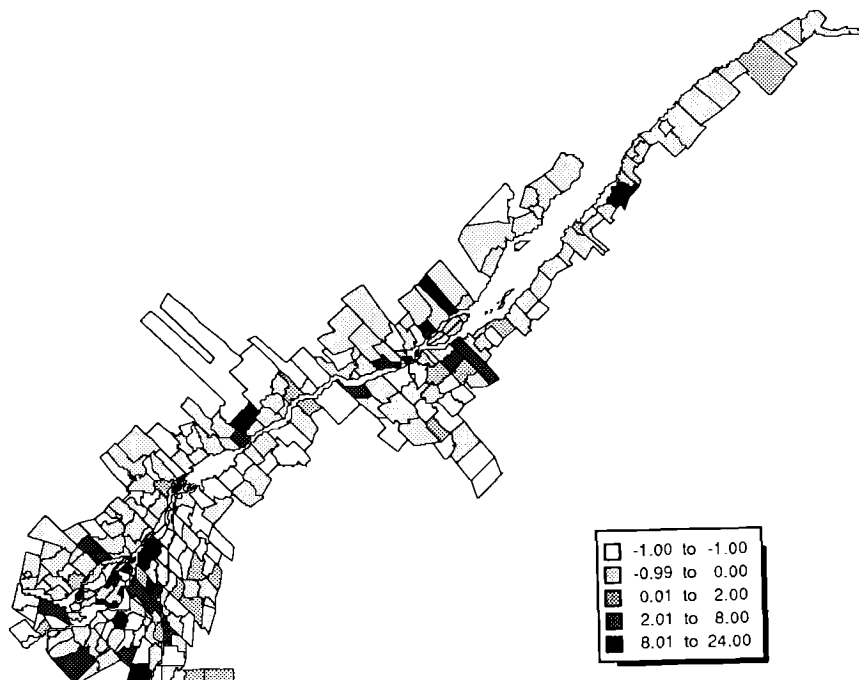


CONCLUSION

This overview of rural industries during the first half of the nineteenth century has revealed their essential characteristics. First of these was their importance for the area under study: these activities were clearly an integral part of economic life, albeit to varying degrees. Even if the period under consideration is rather short, there seems to have been an increasing regional specialisation and diversity. On the other hand, the links between settlement and some industrial activities is quite direct; there is a positive correlation between resource-based production and the settlement frontier. Saw mills and pot and pearl ash factories illustrate this, moving constantly towards the periphery, following receding resources. The level of population and rural industries seems to be positively linked. In many cases, the distribution is parallel. Some discrepancies were, however, found, such as the differences between development on the north and south shores or the tendency towards concentration around urban areas.

A first look at the evolution of the structure of rural industrialisation between 1831 and 1851 suggested an apparent stagnation, localised in the Montréal district. A more detailed examination, however, proved that this was not the case. Because of the struc-

Figure 16
Local Specialisation: Miscellaneous, Fabrication, and Construction, 1851
(Local %age compared to the %age of the St. Lawrence axis)



ture of the data, we had to ignore a significant number of industries in 1851 in order to make a valid comparison with the situation in 1831. On the other hand, the use of the individual census schedules for 1851 showed the diversity of units of production in the St. Lawrence axis. The role of the cities also seems important in the polarisation of the spacial distribution. The absence of individual schedules for Montréal and some other areas prevents further analysis. We are left with a fragmentary vision of rural industrial development and particularly of the concentration of the workforce which, in some cases, reached a surprising level.

Rural industries seem to have been a critical feature in the socio-economy of the St. Lawrence axis. Their evolution is linked to population growth, the settlement of the land, and urbanisation. What emerges is a picture of an integrated economy based on a relatively developed structural exchange system.