

Maritime Industrialization from 1870 to 1910: A Review of the Evidence and Its Interpretation

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Maritime Industrialization from 1870 to 1910: A Review of the Evidence and Its Interpretation

REGIONAL DIFFERENCES IN Canadian manufacturing have attracted a good deal of attention in a literature dominated by two conceptual perspectives. The “staple” theory popular during the middle decades of this century recognizes the influence of location, resource and technology on the growth of manufacturing. “Structuralism”, which became influential during the 1970s and 1980s, associates Maritime development with a loss of local control over political and economic decision-making. Still missing from the discussion is a careful documentation of the nature and extent of provincial manufacturing differences before the First World War.

This paper presents census data describing early industrial progress in Eastern Canada. A brief consideration of this information sharpens our understanding of the terrain contested by staple and structuralist interpretations. It is clear that important differences existed between Central Canadian and Maritime industry, between New Brunswick and Nova Scotia, and among the various industries. The degree of heterogeneity suggests that no single explanation is likely to account for all facets of the regional industrial experience. The second part of the paper argues that the data do not inspire confidence in the new orthodoxy of structuralism and that themes broadly consistent with a staple approach invite further consideration. Elements from both analytic traditions are likely to figure in an improved explanation for arrested industrialization in Canada’s eastern periphery.¹

It is useful to begin with a recognition that industrial production in any society inevitably reflects the local pattern of settlement. In the 19th century New

1 In this paper I consider Canada’s original four provinces; data are unavailable for other provinces during the early part of the period under consideration. I use “industrialization” in the sense of a rise in manufacturing share of all commodity production. I thank the many people who have influenced the writing of this paper. The most recent draft has benefited from the constructive criticism of Morris Altman, Phyllis Wagg, participants in the Economic History Workshop at the University of Toronto and the editors and referees of this journal. The Social Sciences and Humanities Research Council of Canada funded much of the research on which this paper is based.

Brunswick and Nova Scotia were thinly settled even by Canadian standards. Only 8 per cent of Maritimers lived in census districts with a population density exceeding 25 persons per square mile in 1851, against 53 per cent in Quebec and 75 per cent in Ontario.² In 1881 the population density of settled areas in the Maritimes was one-third that in Quebec and Ontario.³ By 1891, only 20 per cent of the Maritime population lived in urban areas against 29 per cent in Quebec and 35 per cent in Ontario.⁴

The rural nature of society undoubtedly contributed to the less centralized pattern of production in the Maritimes. The available evidence for cloth and dairy products reported in Table One confirms that on-farm processing was more important in the Maritime provinces than in Ontario. Although farm households everywhere gradually abandoned manufacturing in order to specialize in agricultural production, this change came more slowly in New Brunswick and Nova Scotia.⁵

A belated arrival of the factory system in the Maritimes parallels important provincial differences within the factory system. The typical industrial establishment in 1870 was smaller in Nova Scotia and New Brunswick than in Ontario (Table Two). Moreover, the size difference increased during the first four decades of Confederation. In Nova Scotia, for example, the average factory was only two-thirds that of one in Ontario in 1870 and one-half in 1910. The average New Brunswick factory was 10 per cent smaller in 1870 and 60 per cent smaller in 1910. There were exceptions; several industry groups in 1870 New Brunswick exceeded their Ontario counterparts in size. On average, however, Maritime factories were relatively small in 1870 and even smaller in 1910 particularly in the consumer goods sector.

Maritime mills and shops also tended to be less efficient. New Brunswick and Nova Scotia labour productivity averaged only three-quarters of the Ontario level in 1870 (Table Three). By 1910 relative labour productivity in Nova Scotia had changed little while in New Brunswick it had declined dramatically. Capital productivity in Nova Scotia was four-fifths of the Ontario level in 1870 and even lower in 1900 (Table Four). Capital productivity in New Brunswick, by contrast, was comparable to that in Ontario throughout the period. The productivity gap tended to be smaller for capital because Maritime firms were more efficient in using capital than labour. Maritime productivity was weakest in the consumer

2 Canada, *Census, 1931*, vol. 1, Table 6.

3 O. Sitwell and N. Seifried, *The Regional Structure of the Canadian Economy* (Toronto, 1984), p. 46.

4 Bill Marr and Don Paterson, *Canada: An Economic History* (Toronto, 1980), p. 429.

5 Further discussion of regional differences in domestic textile production is provided by Janine Grant and Kris Inwood, "Gender and Organization in the Canadian Cloth Industry", *Canadian Papers in Business and Economic History*, 1 (1989), pp. 17-32.

goods industries which in 1910 experienced capital and labour productivity less than half that in Ontario.

Because regions differed in their capital/labour ratio, a comparison of efficiency requires the combination of labour and capital in an index of total factor productivity (TFP) reported in Table Five. In 1870 Nova Scotia industry appears to have been seriously inefficient while the productivity handicap of Quebec and New Brunswick was modest. Indeed, certain industry groups in New Brunswick rivalled or bettered Ontario efficiency; these tended to be the same industry groups in which the average size of establishment exceeded that in Ontario (chemicals, clothing, non-ferric metals, paper and transportation equipment).

The relative position of efficiency among the various provinces changed during the following decades. By 1910 Quebec had caught up with Ontario in terms of relative provincial efficiency. Maritime chemicals, coal, transportation equipment (New Brunswick) and non-ferric metals (Nova Scotia) were relatively efficient in 1910 although production was small. On the other hand, inefficiency in the large wood and food processing sectors contributed to an overall level of total factor productivity only three-quarters of the level in Ontario and Quebec. The first forty years of Confederation apparently produced the unhappy result that New Brunswick factories fell to a level of relative inefficiency experienced by Nova Scotia in 1870, and that Nova Scotia unlike Quebec failed to improve its relative position.

Low labour productivity typically brings with it low wages. For this reason we are not surprised to learn that the average factory worker in 1870 earned 14 per cent and 17 per cent less in New Brunswick and Nova Scotia than in Ontario. By 1910 these differences had jumped to 32 per cent and 25 per cent.⁶ There are obvious difficulties with these data because of possible variation in the cost of living, payments in kind, composition of workforce, length of working week and occupational pluralism. Nevertheless, the general pattern is confirmed by information about mill hands and general labourers gathered by immigration agents in 1890 and by Department of Labour information on carpenters, electricians, plumbers and labourers (1901), female cotton spinners (1911) and pulp grinders (1913).⁷

It appears that Maritime workers worked for relatively low wages before the First World War and perhaps as early as 1870.⁸ But what about their employers?

6 Canada, *Census, 1870-71*, vol. 3, Table LIV and *Census, 1911*, vol. 3, Table I. Here I divide the total wage bill by the number of workers to obtain a measure of average labour earnings.

7 M.C. Urquhart and K.A.H. Buckley, *Historical Statistics of Canada* (Toronto, 1965), D40-43, D48-51, D90, D96, D117, D127, D204-205 and D206-207. Here the information is a wage per worker per unit of time.

8 Phillip Wood reads the evidence differently; see his "Barriers to Capitalist Development in Maritime Canada, 1870-1930: A Comparative Perspective", *Canadian Papers in Business*

Table One
The Farm Share (%) of All Processing

	BUTTER AND CHEESE				WOOLENS AND LINENS			
	NS	NB	PQ	ONT	NS	NB	PQ	ONT
1870	100	99	98	84	98	98	69	60
1890	62	49	47	17	28	19	27	5

SOURCES: Sources are Canada, *Census, 1870*, volume 3, Tables XXIV, XXXIV and XXXVI and 1891, Tables III and IV; J. Snell, "The Cost of Living in Canada in 1870", *Histoire sociale/Social History* 12 (1979), pp. 186-189; R.H. Coats, *Wholesale Prices in Canada* (Ottawa, 1910), pp. 84-85, 132-34, 136, 290 and 146-47. In 1870 the price of ticking is used for linen, and the price of tweed for woolens. For 1890 Coats supplies the butter and cheese prices; the linen price is obtained by scaling the 1870 price with the DBS textile index J38; and the woolen price is obtained by scaling an 1897 price with Coats' textile index.

NOTE: Unless otherwise noted all data underlying this and the following tables are taken from volume III of the Canadian censuses of 1870-71, 1890-91 and 1910-11. The industry groups are those of the 1948 Standard Industrial Classification used to organize Canada's early national accounts. I have ignored certain industries such as dentistry and painting which were not manufacturing activities in any sense. The consumer, durable and intermediate goods sectors are my own constructions. Output is calculated as value of production less raw materials. All values are in nominal terms; available price indices do not permit satisfactory adjustment for regional price differentials or price change over time. Note that these data do not support a measure of productivity change from 1870 to 1910 because (i) there is no adjustment for price change, (ii) the 1910 data exclude firms with fewer than five employees which were included in 1870, and (iii) capital in 1870 is restricted to fixed capital whereas 1910 encompasses both fixed and working capital. The 1910 data at the level of individual industries reflect the suppression of information by census authorities concerned to preserve confidentiality in districts where fewer than three firms comprised the entire industry.

Did investments in manufacturing pay as well in the Maritimes as they did in Ontario? The estimates of profitability reported in Table Six indicate a steady

decline in the rate of profit in New Brunswick from 1870 to 1910, absolutely and relative to Ontario and Quebec. Manufacturing in Nova Scotia follows a more interesting pattern; profitability was low in 1870 but it had largely recovered by 1890 after a decade of National Policy expansion. Between 1890 and 1910, however, the rate of profit in Nova Scotia as in New Brunswick fell absolutely and relative to both Central Canadian provinces.

The data describing factory size, efficiency and profitability suggest a pattern in which *intra*-regional differences diminished while *inter*-regional differences became more pronounced between 1870 and 1910. The indicators for New Brunswick in 1870 are not unlike those for Central Canada while Nova Scotia industry was noticeably less robust. Nevertheless, Nova Scotia did relatively well during the following forty years in contrast to the disastrous experience of New Brunswick industry. By 1910 the two provinces had converged toward the pattern of industrial weakness familiar in the 20th century.

Provincial differences in the level and growth of output reported in Tables Seven, Eight and Nine follow a similar pattern.⁹ New Brunswick's level of manufacturing activity was within ten per cent of Ontario's in 1870 (Table Nine) but it fell increasingly behind in both subsequent sub-periods (Tables Seven and Eight). By contrast, the Nova Scotia manufacturing sector started out remarkably small but it grew quickly from 1870 to 1890 in the consumer and intermediate goods industries. Even in Nova Scotia, however, consumer goods production decelerated at a tremendous rate after 1890 while durable goods production declined absolutely.

One point of similarity between New Brunswick and Nova Scotia was the slow growth of durable goods production. Over the entire four decades durable goods output eked out an increase of 25 per cent in Nova Scotia and 50 per cent in New Brunswick; in contrast durable goods output quadrupled in Quebec and Ontario. Overall, Ontario increased its strength in consumer goods and durable goods while the Maritimes tended to specialize in intermediate goods industries. These tendencies were so pronounced that by 1910 Maritime output per capita of consumer and durable goods was less than one-quarter that in Ontario.

Perhaps the most important regional contrast is that Maritime manufacturing expanded with equal vigour in the two sub-periods (1870-1890 and 1890-1910) whereas Ontario and Quebec manufacturing expanded much more quickly in the second interval. Most scholars attribute the acceleration in Canadian economic growth to the effect of the wheat boom, a dramatic quickening in the pace of Prairie settlement during the 1890s.¹⁰ One popular view is that the wheat boom

9 Growth is examined from 1870 to 1890 and from 1890 to 1910 because the Canadian census changed its basis of enumeration after 1890; see Kris Inwood and John Chamard, "Regional Industrial Growth in the 1890s: the Case of the Missing Artisans", *Acadiensis*, XVI, 1 (Autumn 1986), pp. 101-17.

10 M.C. Urquhart, "New Estimates of Gross National Product, Canada, 1870 to 1926", in S.

Table Two
Average Output of Industrial Establishments
(relative to Ontario)

	1870			1910		
	NS	NB	PQ	NS	NB	PQ
all firms	0.65	0.90	0.94	0.51	0.41	0.72
consumer goods	0.71	0.75	1.19	0.26	0.21	0.54
durable goods	0.65	0.78	0.81	0.34	0.56	1.21
intermediate goods	0.66	1.07	0.84	0.80	0.65	0.96
chemical products	0.47	2.30	1.61	0.52	0.20	1.32
clothing	0.88	1.54	1.51	0.41	0.27	1.22
coal & petroleum products	0.97	0.29	0.91	0.65	0.91	0.69
electrical goods	na	na	na	na	na	1.79
food & beverages	0.51	0.43	1.08	0.25	0.19	0.19
iron & steel products	0.48	0.80	0.71	0.74	0.58	0.80
leather & fur products	0.92	0.99	1.95	0.63	0.72	1.09
nonferrous metal products	0.92	1.20	2.38	0.29	0.15	1.14
nonmetallic mineral products	2.19	1.59	1.51	0.54	0.52	1.17
printing	1.16	0.72	1.32	0.36	0.48	1.02
paper products	0.23	0.98	1.74	na	0.21	3.11
rubber goods	na	na	10.49	0.01	na	0.20
transport equipment	1.14	1.17	1.38	0.22	0.72	2.13
tobacco products	4.94	0.51	4.78	0.16	na	2.06
textiles	0.23	0.41	0.35	1.05	2.31	3.36
wood products	0.47	0.95	0.62	0.35	0.72	0.67

Engerman and R. Gallman, eds., *Long-Term Factors in American Economic Growth* (Chicago, 1986), p. 9-88; M. Altman, "A Revision of Canadian Economic Growth: 1870-1910 (a challenge to the gradualist interpretation)", *Canadian Journal of Economics*, XX, 1 (February 1987), pp. 86-113; Kris Inwood and Thanasis Stengos, "Discontinuities in Canadian Economic Growth, 1870-1985", *Explorations in Economic History*, Vol. 28, no. 3 (July 1991), pp. 274-286.

influenced the pace of extensive growth but did not bring structural change in the sense of an industrial recomposition.¹¹ Nevertheless, the inability of Maritime factories to benefit from the wheat boom created structural change of a different kind involving a locational shift of production within Eastern Canada.

The importance of the wheat boom depends somewhat upon one's choice of conceptual framework. Scholars influenced by the staple perspective view the wheat boom as a prime example of the importance of natural resources and location. Structuralists, on the other hand, have tended to ignore the direct impact of the wheat boom on the Canadian market for manufactures.¹² The structuralist literature combines the tradition of regional economic grievance with the social science ideology of dependency to argue that political and financial control by outsiders undermined regional interests.¹³ Although diverse, the

- 11 Alan Green and M.C. Urquhart, "New Estimates of Output Growth in Canada: Measurement and Interpretation", in Douglas McCalla, ed., *Perspectives on Canadian Economic History* (Toronto, 1987), pp. 182-199; Gordon Bertram, "Economic Growth and Canadian Industry, 1870-1915: The Staple Model and the Takeoff Hypothesis", *Canadian Journal of Economics and Political Science*, XXIX (1963), pp. 159-84. Morris Altman has argued that adjustments for price change provide greater evidence of structural change; see his "A Revision of Canadian Economic Growth". Useful perspective is brought to bear on the debate by Ken Norrie and Doug Owrarn, *A History of the Canadian Economy* (Toronto, 1991), pp. 293-298, 329-333 and 359-368.
- 12 Influential contributions by historians include T.W. Acheson, "The National Policy and the Industrialization of the Maritimes", *Acadiensis*, I, 2 (Spring 1972), pp. 1-28 and "The Maritimes and Empire Canada" in David Bercuson, ed., *Canada and the Burden of Unity* (Toronto, 1977), pp. 87-114; E.R. Forbes, *The Maritimes Rights Movement* (Toronto, 1977) and "Misguided Symmetry: The Destruction of Regional Transportation Policy for the Maritimes", pp. 60-86 in Bercuson, ed., *Canada and the Burden*; David Frank, "The Cape Breton Coal Industry and the Rise and Fall of the British Empire Steel Corporation", *Acadiensis*, VII, 1 (Autumn 1977), pp. 3-34; James Frost, "The Nationalization of The Bank of Nova Scotia", *Acadiensis*, XII, 1 (Autumn 1982), pp. 3-38; Greg Kealey, Ian McKay and Nolan Reilly, "Canada's 'Eastern Question': A Reader's Guide to Regional Underdevelopment", *Canadian Dimension*, Vol. 13, No. 2 (1978), pp. 37-40. Contributions from social science include R. J. Brym and J. Sacouman, eds., *Underdevelopment and Social Movements in Atlantic Canada* (Toronto, 1979); Michael Clow, "Politics and Uneven Development: The Maritime Challenge to the Study of Canadian Political Economy", *Studies in Political Economy*, 14 (Fall 1984), pp. 117-40 and his "Situating a Classic: Saunders Revisited", *Acadiensis*, XV, 1 (Autumn 1985), pp. 145-52; Ralph Matthews, *The Creation of Regional Dependency* (Toronto, 1983).
- 13 Keith Griffin and John Gurley, "Radical Analyses of Imperialism, the Third World and the Transition to Socialism", *Journal of Economic Literature*, XXIII, 3 (September 1988), pp. 1089-1143; Cristobal Kay, *Latin American Theories of Development and Underdevelopment* (New York, 1989); S. Lall, "Is Dependency a Useful Concept in Analyzing Underdevelopment?", *World Development*, 3, nos. 11-12 (1975), pp. 799-810; Patrick O'Brien, "A Critique of Latin American Theories of Dependency", in I. Oxaal, et al, eds., *Beyond the Sociology of Development* (London, 1975), pp. 7-27; Alec Nove, "On Reading Andre Gunder Frank", *Journal of Development Studies*, 10, nos. 3-4 (April-July 1974), pp. 445-55 and Eric Sager, "Dependency, Underdevelopment and the Economic History of the Atlantic Provinces", *Acadiensis*, XVII, 1 (Autumn 1987), pp. 117-37. I borrow the term "structuralism" from the Latin American literature; see Joseph Love,

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Table Three
Labour Productivity (\$ value added/worker), 1870 and 1910

	1870				1910			
	NS	NB	PQ	ONT	NS	NB	PQ	ONT
all firms	419	432	487	574	925	683	1053	1182
consumer goods	490	408	503	572	570	535	1014	1292
durable goods	437	468	463	558	831	908	1063	1056
intermediate goods	363	424	487	591	1102	700	1087	1182
chemical products	569	1496	1403	986	654	765	1437	1739
clothing	368	333	430	350	644	597	809	779
coal&petrol products	2196	1018	1472	3226	3662	2279	3789	2962
electrical goods	na	na	na	na	na	na	1704	1156
food&bev	589	479	1092	1443	498	441	1110	1980
iron&steel products	447	561	504	598	1039	1011	1230	1177
leather&fur products	513	488	523	497	981	1119	985	1427
non-ferric metal products	550	769	524	631	946	492	842	1112
nonmetallic min products	397	307	407	326	662	555	1127	1153
printing	755	591	553	641	878	862	1001	1073
paper products	609	774	646	730	na	474	1178	1017
rubber goods	na	na	285	2250	237	na	1512	2125
transport equipment	462	487	403	559	859	988	876	983
tobacco products	727	205	647	380	1024	na	1351	1523
textiles	371	434	487	486	611	670	938	812
wood products	274	373	368	429	629	590	730	932

"The Origins of Dependency Analysis", *Journal of Latin American Studies*, 22, no. 1 (February 1990), pp. 143-68.

literature tends to focus on the loss of local control over public policy and private enterprise following Confederation, which is viewed as a “critical turning point” for the region.¹⁴

Evidence supporting or contradicting the ‘turning point’ hypothesis is elusive since the first good census in British North America was not undertaken until three years after the alleged turning point. Nevertheless, there is some evidence that the manufacturing lag antedates Confederation; Inwood and Chamard have reported that Maritime industrial employment lagged in six large industries during the 1850s and 1860s even after adjusting for differing provincial rates of population growth.¹⁵

Confidence in the turning point hypothesis is further undermined by evidence reported above that as early as 1870 Maritime factories were small, unproductive in their use of capital and labour, paid low wages and, at least in Nova Scotia, relatively unprofitable. New Brunswick manufacturing was more robust in 1870 but even its per capita output was noticeably less than that in Ontario.

Obviously, the political union cannot be blamed for something which preceded it. It remains possible, however, that the policies of the new Canadian government may have made matters worse than they otherwise would have been. According to this line of argument, an inward-looking or continentalist Central Canada dominated the political union and established policies unsuitable for an outward-looking Maritime region. But what policies? During the first few years of Confederation the national government spent heavily in the Maritimes in order to construct the Intercolonial Railway. It is difficult to discern a spending bias against the Maritimes in this period, although a careful regional accounting of expenditures by various government departments might alter this judgement.

A more persistent controversy surrounds changes in the tax or tariff on manufactured imports. The tariff acts as a subsidy to manufacturing and hence to any region in which manufacturing predominates or has the potential to grow. The first effect of political union in 1867 was to abolish tariffs on trade between the Maritimes and the Canadas. Although it is at least possible that Maritime factories suffered through a Confederation-related change in protection, any effect along these lines cannot have been large since tariffs were relatively low before and immediately after 1867.¹⁶

14 David Alexander, “Economic Growth in the Atlantic Region, 1880-1940”, *Acadiensis*, VIII, 1 (Autumn 1978), p. 47. See also Canada, *House of Commons Debates*, 1879, pp. 1306-8 and Phillip Buckner, P. B. Waite and William Baker, “The Maritimes and Confederation: A Reassessment”, *Canadian Historical Review*, LXXI, 1 (March 1990), pp. 1-45.

15 Inwood and Chamard, “Regional Growth during the 1890s”, Table Four. The industries are tanning, foundries and machine shops, brewing and various mills (carding, fulling, weaving, saw, flour and grist). Regrettably, shipbuilding is not represented.

16 S.A. Saunders, *The Economic History of the Maritime Provinces* (Fredericton, 1984, [1939]), p. 25.

Table Four
Capital Productivity (\$ value added/\$ capital), 1870 and 1910

	870				1910			
	NS	NB	PQ	ONT	NS	NB	PQ	ONT
all firms	1.08	1.32	1.15	1.31	0.33	0.47	0.51	0.47
consumer goods	1.56	2.55	1.48	1.65	0.50	0.73	0.52	0.67
durable goods	1.67	2.34	1.37	1.66	0.42	1.06	0.78	0.46
intermediate goods	0.67	0.95	0.88	0.96	0.30	0.37	0.41	0.36
chemical products	0.71	1.25	0.91	1.07	1.01	1.11	0.51	0.46
clothing	1.69	5.00	1.41	2.18	0.44	1.50	1.06	0.89
coal & petroleum products	0.24	0.14	0.25	1.18	0.20	0.27	0.11	0.15
electrical goods	na	na	na	na	na	na	0.71	0.39
food & beverages	0.79	0.87	0.77	1.15	0.53	0.65	0.45	0.67
iron & steel products	1.07	1.66	1.34	1.66	0.55	0.55	0.57	0.38
leather & fur products	1.61	1.85	2.07	2.00	0.60	0.63	0.57	0.58
nonferric metal products	1.13	2.35	0.92	1.54	1.32	0.59	0.45	0.50
nonmetallic mineral products	0.55	1.22	2.00	2.42	0.30	0.73	0.59	0.65
printing	1.09	1.37	0.77	1.24	0.47	0.67	0.43	0.59
paper products	0.70	1.46	1.06	0.70	na	0.49	0.34	0.45
rubber goods	na	na	0.31	7.50	0.99	na	1.23	0.65
transport equipment	2.39	3.35	1.24	1.64	0.29	4.16	1.17	0.61
tobacco products	3.58	4.76	1.95	2.15	2.16	na	0.48	1.14
textiles	0.61	0.71	0.78	0.75	0.23	0.29	0.39	0.35
wood products	0.88	1.07	1.09	1.04	0.56	0.37	0.39	0.46

Much has been made of the 1879 shift in Canadian government policy which systematically increased the Canadian tariff on manufactured imports as part of a new "National Policy". Canadian historians commonly assume that tariff changes allowed the domestic price of manufactured goods to rise and that domestic firms substituted their output for imported goods. This view credits the National Policy with responsibility for a manufacturing boom during the early

1880s and perhaps a permanently faster rate of industrial growth. Maritime firms contributed some of the extra output in the short term. It would not be surprising that Maritime interests benefitted from the tariff since powerful Maritime politicians dominated the finance ministry during the 1880s and 1890s and gave regional interests a voice in the delicate negotiations over tariff structure. In the longer run, however, increases in domestic production came disproportionately from Central Canada.

Why did Ontario manufacturing come to dominate the tariff-bound Canadian market? One answer might be that Ontario was more industrialized and hence enjoyed the advantages of a more developed industrial infrastructure. Support for this answer is undermined, however, by the evidence of Table Ten that Ontario was no more industrialized than the Maritimes in 1870. Another answer suggested by the structuralist literature is that Canadian manufacturing over-expanded as a short term response to the National Policy tariffs. Subsequent rationalization of capacity provided an opportunity for ownership to concentrate. As part of this process Central Canadians acquired control of Maritime plants and shut them down. The regional economy suffered unfairly in the rationalization because Central Canadian owners trimmed their excess capacity with a regional bias.¹⁷

This argument comes in two parts — that tariffs were responsible for output growth and that ownership changes caused industry to relocate. The first part suffers from a difficulty that characterizes almost all discussion of the 19th century tariff. Economic historians have been remarkably unsuccessful in identifying Canadian industries which were significantly affected by the tariff.¹⁸ The fundamental problem is a lack of evidence indicating that the tariff really mattered. Maritime manufacturing provides a useful example here. We might be tempted to credit the tariff with Nova Scotia's fast manufacturing growth from 1870 to 1890. It is equally plausible, however, that Nova Scotia was experiencing a kind of "catch-up" from a low level of activity in 1870 because of improved railway services, because the coal trade was growing so quickly or because 1870 was an unusually bad year for Nova Scotia business. Without a careful study of individual industries, it is difficult to make firm conclusions about the impact of the tariff.¹⁹

17 Acheson, "The Maritimes and Empire Canada" and Henry Veltmeyer, "The Capitalist Underdevelopment of Atlantic Canada" in Brym and Sacouman, eds., *Underdevelopment and Social Movements in Atlantic Canada*, pp. 37-58.

18 John Dales, *The Protective Tariff in Canada's Economic Development* (Toronto, 1966) and "National Policy' Myths, Past and Present", *Journal of Canadian Studies*, 14 (Fall 1979), pp. 39-50; Ian Drummond, *Progress without Planning* (Toronto 1987), pp. 112-14; Kris Inwood, *The Canadian Charcoal Iron Industry* (New York, 1986), pp. 46-51.

19 Lou Cain, "Ontario's Industrial Revolution", *Canadian Historical Review*, LXIX, 3 (1988), pp. 300-307.

Table Five
Total Factor Productivity Relative to Ontario, 1870 and 1910

	Relative TFP 1870			Relative TFP 1910		
	NS	NB	PQ	NS	NB	PQ
all firms	0.78	0.88	0.86	0.74	0.77	0.99
consumer goods	0.90	1.09	0.89	0.59	0.71	0.78
durable goods	0.87	1.05	0.83	0.83	1.27	1.23
intermediate goods	0.66	0.86	0.88	0.88	0.77	1.02
chemical products	0.61	1.35	1.13	1.14	1.28	0.99
clothing	0.90	1.50	0.88	0.68	1.04	1.09
coal & petroleum products	0.25	0.14	0.24	1.30	1.41	0.86
electrical goods	na	na	na	na	na	1.55
food & beverages	0.61	0.62	0.69	0.57	0.64	0.64
iron & steel products	0.70	0.97	0.83	1.09	1.09	1.03
leather & fur products	0.91	0.95	1.04	0.86	0.94	0.84
nonferrous metal products	0.81	1.35	0.72	1.61	0.77	0.83
nonmetallic mineral products	0.56	0.70	1.03	0.51	0.77	0.94
printing	1.04	0.99	0.75	0.81	0.91	0.86
paper products	0.92	1.55	1.19	na	0.71	0.94
rubber goods	na	na	0.07	0.67	na	1.39
transport equipment	1.06	1.26	0.74	0.71	1.93	1.16
tobacco products	1.86	0.70	1.52	0.88	na	0.73
textiles	0.79	0.92	1.02	0.70	0.83	1.13
wood products	0.73	0.94	0.95	0.88	0.71	0.81

NOTE: Total factor productivity (TFP) is a weighted average of labour and capital productivity. I define relative TFP as labour productivity in one province relative to that in Ontario and raised to the power of the labour share of factor costs, multiplied by capital productivity in one province relative to that in Ontario and raised to the power of the capital share of factor costs; see W.E. Diewert, "Exact and Superlative Index Numbers", *Journal of Econometrics*, 4 (May 1976), pp. 115-145. Factor costs are computed as total value of production less raw material costs and imputed miscellaneous costs. The latter are assumed to be the same ratio to total product for each industry group in 1870 and 1910 as they were in 1900, in which year the census report on manufacturing was particularly detailed. Shares are calculated by industry group. The labour share derives from reported wages and salaries; the capital share is a residual derived from total factor costs less labour. The residual capital share may be overestimated because miscellaneous costs are likely to be underestimated. This would imply a bias to portray Maritime factories as being more efficient than they actually were, since Maritime factories tended to make more productive use of capital than labour. I follow the published census in using fixed capital in 1870 and both fixed and working capital in 1910.

Another line of argument might draw upon the economics of international trade for an analysis of regional welfare effects.²⁰ Unfortunately, these techniques are of doubtful relevance to our problem since capital and labour were mobile among sectors and regions, factor endowment in 1870 does not appear to have differed markedly between Ontario and the Maritimes, and there is no evidence of sectoral differences in factor proportions. Use of traditional trade analysis is further limited by the common structure shared by Ontario and the Maritimes; both regions exported primary products, imported manufactures and shortly after Confederation had a manufacturing sector accounting for approximately one-third of all commodity production (Table Ten).

The second part of the argument suggests that there may be some connection between ownership change and industrial relocation. This is difficult to sustain in part because we know so little about ownership. No systematic evidence is available to support the presumption of an ownership shift at the end of the 19th century. Indeed, evidence of capital outflow and the career patterns of Maritime promoters suggest that local capital may have increased its influence over firms outside the region during the late 19th century, rather than the reverse.²¹ The presumed shift in ownership might have been linked to an apparent decline in Maritime output during the 1890s, but the linkage would be spurious since the appearance of output decline (relative and absolute) during the 1890s is an artifact created by enumeration changes which introduced a regional bias into census data.²²

The argument is flawed more fundamentally by its implied portrait of capitalists and capital markets. The pursuit of profit led Canadians in this period to invest in a wide variety of enterprise throughout Canada, in Latin America and Europe.²³ There seems little reason to think that they would have avoided investment in Maritime factories if there had been some reasonable anticipation of profit. But how profitable were these factories? Evidence reported in Table Four suggests that Nova Scotia factories were less profitable in 1870, and that throughout the region relative profitability deteriorated after 1890. It is difficult to resist the conclusion that poor profitability undermined the willingness of Maritime

20 James Markusen and James Melvin, *The Theory of International Trade and its Canadian Applications* (Toronto, 1984), pp. 384-90.

21 Chris Armstrong, "Making a Market: Selling Securities in Atlantic Canada before World War I", *Canadian Journal of Economics*, XIII, 3 (August 1980), pp. 438-54; Neil Quigley, "Bank Credit and the Structure of the Canadian Space Economy, 1890-1935", Ph.D. thesis, University of Toronto, 1986.

22 Inwood and Chamard, "Regional Industrial Growth". I circumvent this problem in the present paper by reporting data for 1870-1890 and 1890-1910.

23 Armstrong, "Making a Market"; Greg Marchildon, "Promotion, Finance and Merger in the Canadian Manufacturing Industry, 1885-1918", Ph.D. thesis, The London School of Economics and Political Science, 1990.

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Table Six
Estimated Profitability in Manufacturing

	NS	NB	PQ	ONT
1870				
production	12338	17368	77205	114707
return to capital	1881	2589	14153	18735
capital	11159	9439	56813	81725
profitability	0.17	0.27	0.25	0.23
1890				
production	30968	23850	147460	239242
return to capital	4569	3018	17111	40002
capital	19823	15823	118292	175972
profitability	0.23	0.19	0.14	0.23
1910				
production	52706	35422	350902	579810
return to capital	9020	5179	57709	109784
capital	79596	36125	326947	595395
profitability	0.11	0.14	0.18	0.18

NOTE: Profitability is estimated as the ratio of profit (the value of production less labour, material, depreciation and miscellaneous costs) to capital invested. All values are reported by the census except depreciation which is calculated at 10 per cent of physical capital, miscellaneous costs which are taken to be same share of product value in 1870 and 1910 as they had been in 1900, 1870 working capital which is taken to be the same share of total capital as in 1890 and salaries are imputed in 1870 and 1890 in the same proportion to wages as they were reported in 1910. This method of estimating profitability is described in more detail elsewhere; see F. Bateman and T. Weiss, *A Deplorable Scarcity: The Failure of Industrialization in the Slave Economy* (Chapel Hill, 1981), Appendix C.

business to borrow at rates acceptable to Ontario business and thereby directed Maritime savings into extra-regional investments.²⁴ If this is correct, then the

24 Armstrong, "Making a Market"; Quigley, "Bank Credit".

well-documented capital outflow simply reflects a dearth of good investment opportunities within the region.

Of course, we might seek to explain the poor profitability in the Maritimes in other ways. Structuralists suggest that the Canadian government increased freight rates on the Intercolonial Railway in 1912 and 1917, and in so doing hurt Maritime manufacturing.²⁵ Unfortunately, little is known about Intercolonial costs and pricing. By 19th century standards the Intercolonial carried relatively few passengers and less freight. The low density of traffic possibly made it difficult to implement technological advances enjoyed by other North American railways, in which case shipping from Maritime factories to the Ontario market would have been costly.²⁶ But a dearth of relevant evidence makes it difficult to evaluate the contribution of other influences such as pricing by competing carriers (water and rail) and government policy. Although further research is needed, one point already is clear. The changes alleged to have handicapped Maritime manufacturers came too late to explain a regional lag that originated in the 19th century. The 1912 and 1917 policy decisions may have aggravated an already difficult situation for local manufacturing, but they could not have been the sole cause.

The influence of transportation, tariff and other factors is easier to discern for individual industries than for the manufacturing sector as a whole. Advocates of the structuralist perspective have pioneered consideration of an important case study, the steel and coal industry. In this industry Nova Scotia companies participated in a tariff-assisted expansion of Canadian capacity between 1890 and 1910. In the latter year the local owners of a profitable regional firm successfully thwarted a hostile takeover bid by Central Canadian promoters. Ten years later a second takeover bid by British interests was successful. Almost immediately the Nova Scotia steel industry plunged into a disastrous period of contraction and wage reduction. The drain of capital out of the region allegedly was facilitated by the watering of stock during the early 1920s.²⁷

The story of Maritime steel and coal has been interpreted as an example of de-industrialization on the periphery resulting from the loss of local control. From this perspective, the regional industry was a casualty in the international concentration and centralization of capital. However, an alternate interpretation of the industry is available. In this view corporate re-organization in the Nova Scotia steel industry was a belated and largely unsuccessful effort to salvage firms already facing bankruptcy.²⁸ A small scale of operations, diminishing

25 Forbes, *Maritime Rights* and "Misguided Symmetry".

26 Ken Cruikshank, "The Transportation Revolution and its Consequences", *Communications historiques/Historical Papers* (1987), pp. 112-37.

27 Acheson, "The National Policy"; Frank, "The Cape Breton Coal Industry".

28 Kris Inwood, "Local Control, Resources and the Nova Scotia Steel and Coal Company", *Communications historiques/Historical Papers* (1986), pp. 254-82.

Table Seven
Percentage Change in Manufacturing Output 1870-1890

	NS	NB	PQ	ONT
all factories	128	42	104	116
farm production	60	67	50	34
all manufacturing	120	44	101	113
consumer goods	160	95	100	119
durable goods	30	-10	83	61
intermediate goods	214	50	120	162
chemical products	210	03	149	410
clothing	224	49	125	277
coal & petroleum products	164	321	365	-5
electrical goods	na	na	na	na
food & beverages	361	292	122	82
iron & steel products	142	21	92	90
leather & fur products	-1	-12	50	41
nonferrous metal products	348	204	191	854
nonmetallic mineral products	114	121	186	215
printing	54	111	86	177
paper products	48	-52	313	254
rubber goods	na	na	202	4311
transport equipment	3	-38	154	26
tobacco products	-78	64	162	265
textiles	505	443	406	150
wood products	213	21	64	143

NOTE: Farm output includes butter, cheese and cloth only. I have adjusted the 1870 data for missing data on railway workshops; see P. Craven and T. Traves, "Canadian Railways as Manufacturers, 1850-1880", *Communications historiques/Historical Papers* (1983), pp. 254-281. In order to make the adjustment I assume that the capital/labour ratio was the same for unreported as for reported firms and that labour productivity in the Great Western's Hamilton shop was identical with that of the Grand Trunk in its Brantford shop.

resources and distance to market undermined profits and contributed to a declining share of national output long before the first takeover bid. Capital

drain via stock-watering was impossible since there seldom was sufficient profit to pay dividends. The Nova Scotia firms faced much more fundamental problems as mining costs rose in a time of excess capacity worldwide and decreased domestic demand.²⁹

International market conditions and a rising cost of extraction would have brought hard times to the Nova Scotia coal fields regardless of ownership and organizational arrangements. It is possible of course that the industry would have adapted more effectively to its difficult circumstances under local ownership. However, this conjecture has not yet been investigated. Careful examination of other industries one day may provide stronger support for the structuralist perspective, but the case will have to be made.

The structuralist failure to account for many aspects of Maritime manufacturing before the First World War redirects attention to the staple theory, an older explanatory tradition emphasizing the adverse effect of resource characteristics and technological developments.³⁰ Several key developments figure in most staple accounts of Maritime development.³¹ Thin soil, a short growing season and lack of a nearby urban market hampered agricultural adjustment in the Maritimes during the 19th century.³² Technological change in ocean shipping undermined local wooden shipbuilding and shipping industries.³³ The eclipse of cane by beet sugar doomed the West Indies trade.³⁴ Limited waterpower and

- 29 Barry Supple, "The Political Economy of Demoralization: the State and the Coal-mining Industry in America and Britain between the Wars", *Economic History Review*, XLI, 4 (November 1988), pp. 566-91.
- 30 Douglas North, "Location Theory and Regional Economic Growth", *Journal of Political Economy*, LXIII (February-December 1955), pp. 243-58 and *The Economic Growth of the United States, 1790-1860* (New York, 1966); A. D. Scott, "Policy for Declining Regions: A Theoretical Approach", in W.D. Wood and R.S. Thoman, eds., *Areas of Economic Stress in Canada* (Kingston, 1965), pp. 73-93; R. Caves and R. Holton, *The Canadian Economy: Prospect and Retrospect* (Cambridge, 1961), pp. 141-95; Boris Schedvin, "Staples and Regions of Pax Britannica", *Economic History Review*, XLIII, 4 (November 1990), pp. 533-59.
- 31 A. Blackbourn and R. Putnam, *The Industrial Geography of Canada* (London, 1984), Chapter 7; Caves and Holton, *The Canadian Economy*, p. 145; A.W. Currie, *Canadian Economic Development*, (Toronto, 1942), p. 131; C.R. Fay and H.A. Innis, "The Economic Development of Canada 1867-1921: The Maritime Provinces", in *The Cambridge History of the British Empire*, Volume VI (Cambridge, 1929), pp. 657-71; Harold Innis, *Essays in Canadian Economic History* (Toronto, 1956), pp. 148, 226 and 349; R.C. Harris and J. Warkentin, *Canada Before Confederation* (New York, 1974), pp. 208-10; L. D. McCann, "Staples and the New Industrialism", *Acadiensis*, VIII, 2 (Spring 1979), pp. 47-79; S. A. Saunders, *The Economic History and The Economic Welfare of the Maritime Provinces* (Wolfville, 1932).
- 32 Currie, *Canadian Economic Development*, p. 123.
- 33 Eric Sager and Lewis R. Fischer, "Atlantic Canada and the Age of Sail Revisited", *Canadian Historical Review*, LXIII, 2 (June 1982), pp. 126-150; Eric Sager and Gerald Panting, *Maritime Capital: The Shipping Industry in Atlantic Canada, 1820-1914* (Kingston and Montreal, 1990).
- 34 W.A. Mackintosh, *The Economic Background to Dominion-Provincial Relations* (Ottawa, 1939), p. 34.

Table Eight
 Percentage Change in Output of Factories
 Employing Five or More Workers, 1890-1910

	NS	NB	PQ	ONT
factories with more than 5 employees	129	78	187	214
consumer goods	26	48	184	277
durable goods	-4	68	214	260
intermediate goods	248	92	171	142
chemical products	-11	-71	227	319
clothing	-45	26	237	165
coal & petroleum products	224	377	139	615
electrical goods	-100	na	2435	1288
food & beverages	16	39	64	228
iron & steel products	101	65	132	279
leather & fur products	47	86	103	315
nonferric metal products	6	-65	173	373
nonmetallic mineral products	-56	-19	33	196
printing	99	73	163	193
paper products	-100	150	478	309
rubber goods	na	na	18	1332
transport equipment	-33	172	162	340
tobacco products	-7	-100	315	351
textiles	-2	29	202	30
wood products	38	72	134	93

SOURCE: K. Inwood and J. Chamard, "Regional Industrial Growth in the 1890s: the Case of the Missing Artisans", *Acadiensis*, XVI, 1 (Autumn 1986), pp. 101-117.

hydroelectric potential impeded the diffusion of new industrial technologies,³⁵ as did the small size of local market. The decline of the fishing industry during

35 Peter Wylie, "When Markets Fail: Electrification and Maritime Industrial Decline", *Acadiensis*, XVII, 1 (Autumn 1987), pp. 74-96.

the early 20th century in spite of increased prices suggests either a reduction in accessible stocks or the withdrawal of labour for some other reason.³⁶ Diminishing returns and rising costs undermined the region's coal and steel industries.³⁷ The Maritimes had no natural hinterland; a location south of the St. Lawrence River and north of the great east-west rail routes brought little stimulus from the booming trade between the North American interior and Europe.³⁸ Finally, it is argued that the major primary products in the Maritimes did not sustain as much processing as in Central Canada, either because of the intrinsic characteristics of a product or because it could not be produced locally at a competitive cost.³⁹

A systematic evaluation of these arguments is not possible with summary information of the sort available in this paper. Nevertheless, the impact of resource availability is visible in the data reported in Table Nine. New Brunswick's per capita output among wood-using industries was very high in 1870 because of local timber availability, just as Ontario's strength in food and beverage manufacturing reflected that province's excellent supply of farm products. Maritime industrial growth after 1870 was strongest in the Nova Scotia coal belt in part because of a strong demand for coal originating in the substitution of coal and steel in a wide variety of industrial applications.⁴⁰ Another development reflected in these data was the replacement of Great Britain by the United States as the source of fuel, machinery and semi-finished iron used by Canadian industries. Manufacturers in Montreal and the Maritimes were favoured as long as these imports originated in Britain. When American supplies displaced the British late in the century south-western Ontario acquired the locational advantage.⁴¹

A full evaluation of these suggestions will require precise information about regional price differentials that is not yet available. It is also suggested that resource availability limited the size and population density of the region, which in turn prevented Maritime factories from adopting new technologies requiring a large scale of production. Research using American data permit a preliminary consideration of this point. Jeremy Atack has used census data to identify the

36 Canada, Dominion Bureau of Statistics, *The Maritime Provinces since Confederation* (Ottawa, 1929), p. 56.

37 Inwood, "Local Control".

38 Saunders, *The Economic History*, p. 24.

39 Caves and Holton, *Canada*, p. 180.

40 Inwood and Chamard, "Regional Industrial Growth".

41 Kris Inwood, "Transportation, Tariffs and the Canadian Iron Industry", University of Guelph Economics Working Paper 89-3 (1989). The point is more often made in the literature on Quebec; see A. Faucher and M. Lamontagne, "History of Industrial Development", in C. Falardeau, ed., *Essays on Contemporary Quebec* (Quebec, 1953), p. 23-37 and Morris Altman, "Resource Endowments and Location Theory: A Case Study of Quebec and Ontario at the Turn of the Twentieth Century", *Journal of Economic History*, XLVI, 4 (December 1986), pp. 999-1009.

Table Nine
Per Capita Manufacturing Output (\$), 1870 and 1910

	1870				1910			
	NS	NB	PQ	ONT	NS	NB	PQ	ONT
all factories	16.76	27.66	27.48	31.41	54.13	48.04	83.02	111.67
farm production	2.01	2.00	1.93	1.33				
total	18.77	29.66	29.41	32.74				
consumer goods	4.25	5.27	10.31	9.76	9.18	9.67	31.51	43.67
durable goods	6.61	7.56	6.31	10.11	5.40	7.82	19.55	31.30
intermediate goods	5.90	14.83	10.85	11.54	39.54	30.55	31.96	36.69
chemical products	0.19	0.63	0.57	0.22	0.30	0.10	2.30	2.45
clothing	0.83	1.62	2.08	1.98	0.82	1.57	7.41	9.31
coal & petroleum products	0.23	0.12	0.21	1.09	1.52	1.98	1.39	4.24
electrical goods	0.00	0.00	0.00	0.00	0.00	0.00	2.23	1.66
food & beverages	1.34	1.38	3.47	6.32	5.88	5.44	6.58	21.03
iron & steel products	2.47	3.90	3.63	5.72	6.52	4.64	7.46	20.90
leather & fur products	2.65	2.88	5.37	2.99	1.29	1.94	8.20	6.06
nonferrous metal products	0.12	0.31	0.44	0.19	0.17	0.17	1.52	2.79
nonmetallic mineral products	0.87	0.64	0.85	0.83	0.59	0.89	1.85	4.53
printing	0.51	0.50	0.72	0.89	0.94	1.45	2.01	4.19
paper products	0.01	0.14	0.24	0.16	0.00	0.13	3.46	1.43
rubber goods	0.00	0.00	0.12	0.00	0.04	0.00	0.25	1.06
transport equipment	3.28	3.41	1.80	2.52	1.50	3.93	6.42	6.44
tobacco products	0.49	0.05	0.64	0.17	0.08	0.00	4.12	1.66
textiles	0.36	0.66	0.58	1.40	1.37	3.55	4.87	2.71
wood products	3.41	11.35	6.31	6.79	9.78	18.09	12.77	18.19

scale of production needed to minimize production cost in 1870 American factories.⁴² In a wide range of industries the minimum efficient size identified by Atack was considerably larger than the average Maritime factory.⁴³ This comparison recommends further consideration of the possibility that Maritime factories were inefficient *because* they were small.

42 Jeremy Atack, "Returns to Scale in Antebellum United States Manufacturing", *Explorations in Economic History*, 14, 4 (October, 1977), pp. 337-59.

43 Using Atack's Table 2, the industries are meat packing, distilleries, cotton textiles, woolen

Smallness may have handicapped regional transportation systems as well. With the possible exception of coal, regional commodities were not shipped in sufficient volume to support bulk transportation technology of the kind used on the Great Lakes.⁴⁴ The geography of the continent made it difficult for Halifax and Saint John to attract the large volume of freight needed to justify the modern material handling equipment or to become a home base for ocean liners.⁴⁵ A similar point might be made about land transportation. Railways such as the Intercolonial carried surprisingly small volumes of freight, and this must have made it difficult to reduce costs using the new railway technology of large cars and long trains.⁴⁶

Another hypothesis entertained by staple theorists is that the small size and slow growth of primary sector income undermined the local demand for manufactures and hence the growth of industry. Census-based estimates confirm that farm family income was lower in the Maritimes; this affected the demand for manufactures in a variety of ways.⁴⁷ Limited income-earning opportunities in the primary sector undoubtedly spurred out-migration by young Maritime men and women. The local demand for durable goods would have been stronger if the level of primary production had supported greater capital formation in primary production and transportation. Moreover, income earned by rural families was an important potential market for factory-made consumer goods.⁴⁸

The various links between the primary sector and industrial demand complement input price and scale considerations in the analysis of slow Maritime industrial beginning in the pre-Confederation era. By 1870 New Brunswick was relatively industrialized but, as we have seen, its manufacturing grew slowly in subsequent decades. Nova Scotia industry was quite anaemic in 1870 but it expanded quickly during the following 20 years. Neither Maritime province was able to match the dramatic acceleration experienced elsewhere in Canada after 1890. The pattern of growth presumably reflected the distinctive characteristics of Maritime industry. By and large factories were smaller and operated at a lower

goods, men's clothing, millinery, furniture, tanneries, boots and shoes, sheet metal, agricultural implements, wagons and carriages. The exceptions appear to be bakeries, flour-milling, saw milling, tobacco manufacture and engine building.

44 J. Laurent, "Trade, Transportation and Technology: The American Great Lakes, 1866-1910", *Journal of Transport History*, 4 (March 1983), pp. 1-24; Sam H. Williamson, "The Growth of the Great Lakes as a Major Transportation Resource", *Research in Economic History*, 2 (1977), pp. 103-183.

45 Saunders, *The Economic History*, pp. 21, 27.

46 Cruikshank, "The Transportation Revolution".

47 Inwood and Irwin, "Inter-regional Differences".

48 Higher primary sector incomes also would have made available greater savings for investment in manufacturing. I do not dwell on this mechanism because capital, like entrepreneurship, was relatively mobile between regions. There is no evidence of a failure to undertake sound business opportunities within the region because of scarce capital or entrepreneurship.

Table Ten
The Manufacturing Share of Commodity Production

	Inwood-Irwin		Green	
	1870	1890	1890	1910
Nova Scotia	.29	.39	.36	.34
New Brunswick	.37	.46	.35	.42
Quebec	.38	.52	.47	.55
Ontario	.32	.45	.40	.49

SOURCE: Kris Inwood and Jim Irwin, "Inter-regional Differences in Canadian Commodity Output in 1870: Preliminary Estimates", paper presented to the 17th Conference on the Use of Quantitative Methods in Canadian Economic History, October 1990 and Alan Green, *Regional Aspects of Canada's Economic Growth* (Toronto, 1971), Appendix B. The Inwood-Irwin estimates are based on a regional decomposition of M.C. Urquhart's new national income estimates for Canada; see M.C. Urquhart, "New Estimates of Gross National Product, Canada, 1870 to 1926, in S. Engerman and R. Gallman, eds., *Long-Term Factors in American Economic Growth* (Chicago, 1986), pp. 9-88. Green follows an earlier estimating methodology used by O. J. Firestone, *Canada's Economic Development, 1867-1953* (London, 1958).

capital-labour ratio in the Maritimes. Household production survived much later. Factor productivity and wages were lower. Relative profitability also declined in New Brunswick between 1870 and 1910 and in Nova Scotia between 1890 and 1910.

These distinctive characteristics of Maritime manufacturing became more pronounced between 1870 and 1910. Their early visibility in 1870, however, adds to the evidence of slow pre-Confederation growth and undermines the idea that Confederation marked a major turning point in regional development. Indeed, a more significant turning point may have been the onset of the wheat boom during the late 1890s. Maritime manufacturing continued to grow at a steady pace during this period but in so doing it missed out on the biggest boom in Canadian history.

The staple theory provides a simple locational explanation for the Maritime failure to capture linkages from western settlement. Among other factors, transportation costs to the west were lower from southern Ontario than from the Maritimes. Structuralists, on the other hand, might cite the influence of Central Canadian control over capital markets, tariffs and transportation. A comprehen-

sive explanation for the salient characteristics of Maritime industrial development is likely to require some consideration of hypotheses drawn from the staple tradition as well as influences associated with political and financial control.

It may be helpful to view Maritime industry in the context of American and British industrialization. European industrial success in the 19th century involved the intensive use of craft labour. This model was difficult to adopt in the high-wage North American environment, and especially so in a corner of the continent relatively remote from the larger centres of innovation and fashion. The literature on North American growth, on the other hand, has tended to emphasize the effect of abundant natural resources and an expanding frontier; Gavin Wright argues that natural resources were the key to success even in the manufacturing sector.⁴⁹ The American model was difficult to adopt in regions such as the Maritimes with a weak resource endowment. Was there a third alternative, a distinctive Maritime strategy for industrial success? It would seem not, or at any rate if some alternative existed, history has not revealed it to us.

One final question concerns the relative importance of manufacturing within the wider economy. Manufacturing largely was ignored by an earlier generation of Maritime historians working in the staple theory tradition. One important contribution of the structuralist literature has been to correct this imbalance and draw attention to the phenomenon of arrested industrialization east of Montreal. We are now aware that manufacturing evolved along distinctive lines in Canada's thinly settled eastern periphery. Nevertheless, the modern fascination with industrial growth should not lead us to equate industrialization with economic development, or at least not without careful thought. It is not obvious that manufacturing growth is essential for satisfactory social and economic development.⁵⁰ Some economies manage to support a growing population at higher and higher incomes through the judicious exploitation of natural resources and the efficient supply of services. Recent discussions of the 19th century rural household have reminded us that regional development ultimately depends upon individual and family struggles for survival and betterment.⁵¹ For an individual household, the nearby presence of factory employment provided a useful alternative, but it was not the only option. Income earned in primary production or the service sector

49 Gavin Wright, "The Origins of American Industrial Success, 1879-1940", *American Economic Review*, LXXX, 4 (September 1990), pp. 651-68.

50 Indeed, some would argue that fast industrialization breeds increased income inequality and poverty. For an introduction to this literature see Cynthia Taft Morris and Irma Adelman, *Comparative Patterns of Economic Development, 1850-1914* (Baltimore, 1988) and Ben Polak and Jeffrey G. Williamson, "Poverty, Policy and Industrialization: Lessons from the Distant Past", World Bank Working Paper WPS 645, April 1991.

51 Rusty Bittermann, "The Hierarchy of the Soil: Land and Labour in a 19th Century Cape Breton Community", *Acadiensis*, XVIII, 1 (Autumn 1988), pp. 33-55; Rosemary Ommer, "The Truck System in Gaspé, 1822-77", *Acadiensis*, XIX, 1 (Autumn 1989), pp. 91-114.

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was for many families as helpful as the same level of income earned in manufacturing. The manifest ability of Maritime families to survive and in some cases to prosper in the absence of industrialization provides a useful caution to the modern scholarly passion for smokestacks.