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Anticipating the Trend: the Pictou Ship Register, 1840-1889*

The change from initial conditions and the response to variations in international markets are of great importance in an export economy. Successful adaptation — what Kindleberger called the ‘capacity to transform’ — is a prerequisite of sustained growth. Recent studies in the shipping industry of nineteenth-century Atlantic Canada have suggested that the Fundy ports of Yarmouth and Saint John successfully adapted to the decline in the old British market for wooden sailing ships by shifting out of the transfer trade in ships and into the bulk carrying trades of international shipping. When changing technology (the increasing dominance of steamships) made seaward investment no longer profitable, investors turned their backs on the sea and sought salvation in the promising new landward economy of post-Confederation Canada.¹ Thus, the ship registers of Fundy ports show a general pattern of increasing vessel building (new gross tonnage on registry per annum) up to about 1865, and increasing fleet size (gross tonnage remaining on registry) up to the late 1870s.² In Yarmouth, for example, fleet size peaked in 1879 at 163,000 gross tons on register, while Saint John’s fleet size peaked in 1877 at 265,000 gross tons. Disinvestment in the Fundy ports came in the 1880s and more especially in the 1890s when it seems that the prospect of attempting to battle Britain’s initial competitive advantage in steam technology was regarded as too daunting, especially in the light of apparently more auspicious investment opportunities nearer home.³ In the ports of the Gulf of St. Lawrence, the “capacity to transform” seems always to have been weaker than in the Fundy. In both Prince Edward Island and Miramichi the transfer trade appears to have been dominant, and the entry into the bulk carrying trades less significant.⁴ In Prince

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1 See D. Alexander, “Output and Productivity in the Yarmouth Ocean Fleet, 1863-1901” and L.R. Fischer, “The Great Mudhole Fleet: the Voyages and Productivity of the Sailing Vessels of Saint John, 1863-1912”, in D. Alexander and R.E. Ommmer, eds., *Volumes Not Values: Canadian Sailing Ships and World Trades* (St. John’s, 1979), pp. 63-91, esp. pp. 89-90, and pp. 117-55.

2 *Ibid.*

3 See R. Craig, “The Copper Ore Trade”, *ibid.*, pp. 277-302 and esp. p. 369, for a similar example in the United Kingdom.

4 Lewis R. Fischer, “Enterprise in a Maritime Setting: the Shipping Industry of Prince Edward

Edward Island, as in the Fundy, attractive investments outside of shipping were more than sufficient reason to reject the difficult and risky transfer to steam — and the port collapsed in the 1870s. In Miramichi, the carrying trade was even more minimally represented, and that port was reduced to a local schooner fleet for the Jersey fishery by 1870.⁵

The port of Pictou is the rogue element in this tidy division of Gulf and Fundy ports. Figure 1 shows that the new tonnage on registry peaked as early as 1854, and there was no equivalent to the mid-sixties peak of Yarmouth, Saint John or even Miramichi.⁶ Indeed, the fleet size of Pictou (Figure 2) shows that the large peak that occurred in other ports in the 1860s did not occur here: the fleet seems to have been declining during the late 1850s, and only recovered to early 1850s levels during the sixties which was a decade of seaward expansion elsewhere in the Canadian maritime world.⁷ Fleet size is an interesting variable, being the best way of measuring net investment in a port's catchment area — that is, assets remaining in a port for local deployment. By examining fleet size over time the chronology of the rise and decline of the shipping industry in a given port can be identified. Sager and Fischer have looked at growth rates (calculated from fleet size) in several of the eastern Canadian ports by decade, finding no negative growth rates anywhere prior to mid-century.⁸ If growth rates are calculated for Pictou on this basis, negative growth first occurred in the decade 1850-59; the only other port with negative growth in this decade was Prince Edward Island, but its rate was a mere -0.6%, while that of Pictou was -3.57%. However, if the growth rates are calculated on a peak-to-trough, trough-to-peak basis, this negative rate is found to have masked a period of slight positive growth (+0.53%) during the years 1851-56, followed by an extremely sharp decline of -8.72% during the period 1856-61. This rate was so steep as to be unmatched in any of the ports considered by Sager and Fischer until the 1890s. Indeed, if Pictou growth rates are calculated on a cycle basis (trough to trough),

Island, 1787-1914" (unpublished monograph, Maritime History Group, Memorial University of Newfoundland, 1978), pp. 115-6.

- 5 R.E. Ommer, "Miramichi a Staple Interface" (paper presented to the Atlantic Conference, Sackville, October 1979).
- 6 Richard Rice, "Measuring British Dominance of Shipbuilding in the 'Maritimes', 1787-1890", in K. Matthews and G. Panting, eds., *Ships and Shipbuilding in the North Atlantic Region* (St. John's, 1977), pp. 109-55. Rice gives generalised figures for the Maritimes. Nova Scotia gross tonnage showed a small peak in the 1850s, a larger one in the 1860s and the largest in the 1870s. New Brunswick had a small peak in the 1850s and its largest peak in the 1860s, the peak of the 1870s failing to match the amplitude of Nova Scotia's peak. Prince Edward Island paralleled the New Brunswick pattern at a much reduced scale.
- 7 The Register covers an area from Pugwash to the Gut of Canso for the years 1840-1857 and 1872-1889. For the period 1858-1871 Pugwash had its own Register, and these values have been added to the graph.
- 8 E.W. Sager and L.R. Fischer, "Patterns of Investment in the Shipping Industry of Atlantic Canada, 1820-1900", *Acadiensis*, IX (Autumn 1979), pp. 19-43.

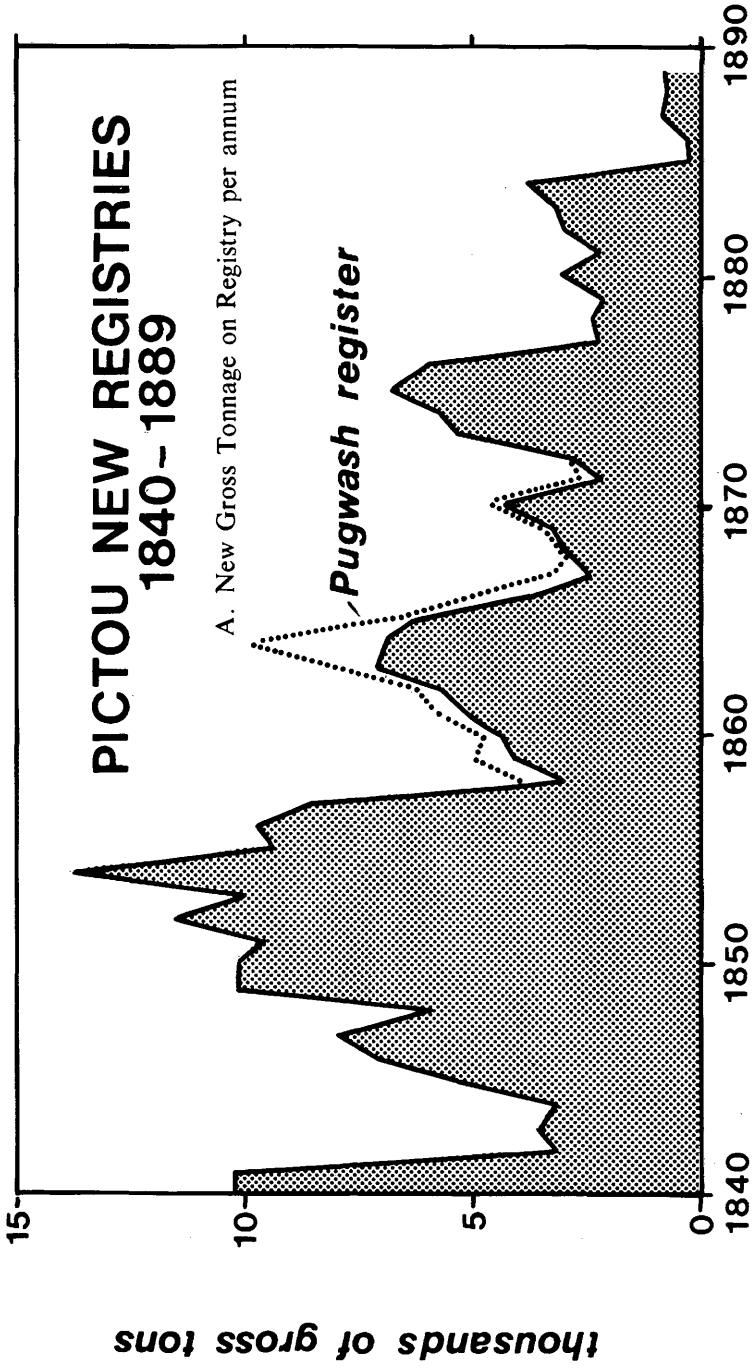
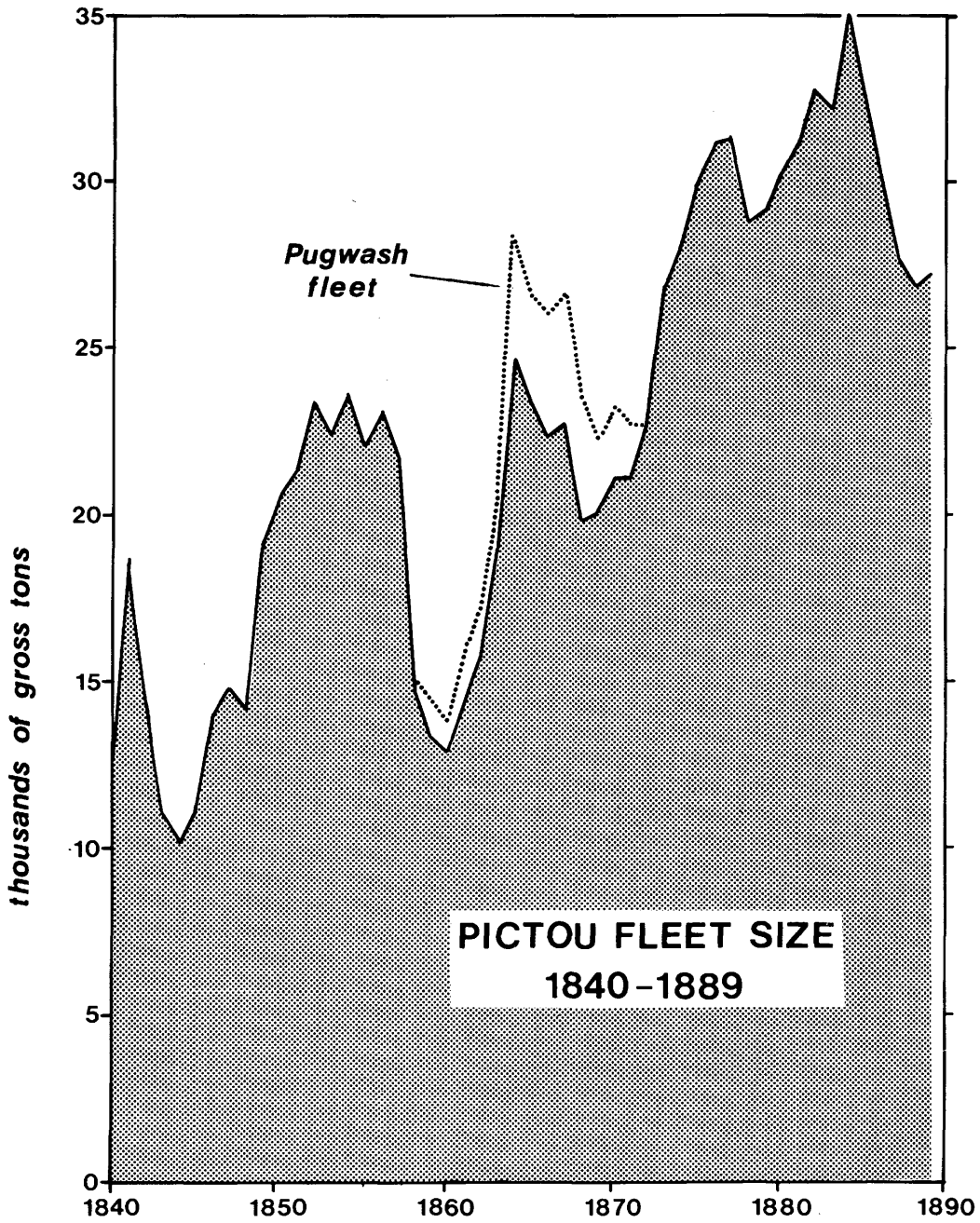


Figure 1

thousands of gross tons

Figure 2



negative growth is found for the first two cycles (1840-46, 1846-60) and the highest rate the port achieved over the period 1840-1889 lay in the third cycle of 1860-73, although it remained low, at +3.19%.⁹

Table 1 shows investment and disinvestment in tonnage classes for Pictou over the four cycles 1840-46, 1846-60, 1860-73 and 1873-89, and Pictou's performance was somewhat poor throughout. Mean tonnage growth from one cycle to the next was not particularly high, especially in the later cycles at which point in time the Fundy ports were deeply involved in the large vessels of the carrying trades. The port of Windsor, for example, had a mean annual tonnage of 275.56 tons in the period 1860-73 — a figure similar to Pictou's 226.7 mean annual tons — but by the next cycle (1873-89) Windsor had grown to 578.5 mean annual tons whereas Pictou had achieved a mere 381.59 mean annual tons. Indeed, the cycle 1860-73 was the only one where Pictou appeared to invest to any great degree in medium to large scale tonnage, and even then the investment was much smaller than the Fundy port of Windsor, which gained 34 vessels in the 500-999 class, 12 in the 1000-1499 class and 28 in the 250-499 class. In other words, whether calculated by fleet size, decadal growth rates, cyclical growth

Table 1

PICTOU INVESTMENT AND DISINVESTMENT, BY CYCLE

	Growth Rate (%)	Mean Annual Tonnage	Top Gain By Tonnage Classes	Second Gain By Tonnage Classes	Top Loss(es) By Tonnage Classes
1840-46	-1.5	187.9	100-149 + 19 vessels	10-49 + 15 vessels	150-299, 500-999 - 3 vessels
1846-60	-0.7	194.04	150-249 + 12 vessels	250-499 + 2 vessels	100-149 - 8 vessels
1860-73	+3.2	226.79	500-999 + 15 vessels	250-499 + 8 vessels	50-99, 150-249 - 12 vessels - 9 vessels
1873-89	+0.2	381.59	1000-1499 + 10 vessels	1-9 + 2 vessels	250-499 - 20 vessels

⁹ Even using decadal growth rates, Pictou's high point (4.5 percent in 1860-1869) is lower than that of any port analysed in Sager and Fischer's paper (*op.cit.*). That remains true when the decade 1870-1879 is split into two five-year periods, where Pictou achieves +6.59 percent growth in the period 1870-1875.

rates, or investment/disinvestment in different tonnage classes, Pictou's performance in the shipping industry of eastern Canada was somewhat half-hearted. To understand the shipping industry of Pictou, one must explain the early negative growth rates of the Pictou fleet, especially in the period 1856-61, as well as the port's rather unenthusiastic recovery later on. The rest of this paper is centred around a search for this understanding, and the wider connotations of the need for a maritime community to change and adapt.

When the Pictou ship register opened in 1840, its catchment area, which stretched from Pugwash to the Gut of Canso, had been experiencing settlement for over seventy years, based on a pioneer and post-pioneer economy of fishing, agriculture, timber and trade — the latter mostly with Halifax and Britain after the American War.¹⁰ The pattern of trade had been the traditional one for the Maritimes: fish traded to the West Indies in return for rum, sugar and molasses; timber traded to the United Kingdom in return for manufactured goods; agricultural produce sold increasingly to nearby Halifax. It has been estimated that as early as 1810 merchants in Pictou Harbour were receiving annually about £80,000 for pine timber, and by the 1830s the region's pine timber stock had been seriously depleted.¹¹ Likewise, by the 1830s, depleted stocks had put an end to the fish export trade, and the traditional economy of the coast from Pugwash to Canso would have been in trouble, had it not been for the boost given to the area by the arrival of the General Mining Association in 1827. While coal had been mined in the region since 1798,¹² the General Mining Association developed the resource using miners brought from England during the years 1827-47. One of the spin-offs of this landward activity was that it provided an impetus for the local shipbuilding industry which appears to have been in existence from 1788,¹³ and to have been known province-wide. The *Harriet*, for example, built in 1798 by the Lowdens, was described in Halifax as "the largest and finest ship ever built in the province".¹⁴ New Glasgow commenced building in 1821 and Tatamagouche built ships for the transfer trade in

10 This section is drawn from a variety of local histories dealing with different parts of the catchment area of the Register. These include: James M. Cameron, *Pictou County's History* (Kentville, N.S., 1972); Frank H. Patterson, *John Patterson, the Founder of Pictou Town* (Truro, N.S., 1955); Alexander M. MacNab, *The Pioneers of Malagash* (reprinted Amherst, N.S., 1977); Frank H. Patterson, *The History of Tatamagouche* (Belleville, Ontario, 1973); James F. Smith, *The History of Pugwash* (North Cumberland Historical Society, Publication No. 8, 1978). See also R.M. Guy, "Industrial Development and Urbanization of Pictou County to 1900" (MA thesis, Acadia University, 1962), esp. pp. 18-37.

11 Marshall's *Brief History of Nova Scotia* (1873), as quoted in Patterson, *op.cit.*, p. 23.

12 Guy, *op.cit.*, p. 28. Dr. MacGregor's "home mine" sent a shipment of coal to the Admiralty in Halifax in that year.

13 Patterson, *op.cit.*, p. 49. Captain William Lowden is often referred to as the "father of Pictou shipping".

14 Guy, *op.cit.*, p. 21.

ships to the United Kingdom steadily from 1818 onwards. Many of these pre-registry ships were built by men who were to appear as major owners in the first decade of the Ship Register. Particularly important were George MacKenzie, his in-laws the Carmichaels, and Alexander Campbell of Tatamagouche. MacKenzie and Campbell appear to have been in the transfer trade throughout, but the Carmichael family, like the region, would go on to demonstrate the meaning of the “capacity to transform”.

The General Mining Association boosted this nascent industry with demands different from those of the transfer trade. In 1829 it ordered two steam vessels, one for local river navigation and the other (of 100 Horsepower) for “coasting and carrying the coals to market”.¹⁵ In 1833, it launched the *Cape Breton* to ferry between Pictou and Miramichi and the *Royal William* departed from Pictou Harbour to make the first Atlantic steam crossing, fuelled, in part, by Pictou coal.¹⁶ In 1835, Henry Hatton, another major owner of the 1840s, began a regular packet service between Pictou and Liverpool (England) with his barque *Mary Ann*, and in 1840 the *S.S. Unicorn*, a Cunarder, commenced a fortnightly service between Pictou and Quebec, thereby completing the link that took mail from Britain to Halifax, thence by stage to Pictou, thereafter by the *Unicorn* to Quebec. In other words, the General Mining Association was creating links for the Pictou region both to other parts of British North America and to the United Kingdom, and was creating demand for tonnage which was to be operated locally. In 1830 Joseph Howe described Pictou as a region that ate oatmeal so that it could export wheat, that operated wool and lumber mills and that maintained regular sailing connections with Prince Edward Island, New Brunswick, Cape Breton and the Magdalen Islands in order to bring them goods in exchange for fish and oil. He pointed to the coal trade as giving “additional life and energy” and described a steady stream of incoming agriculturalists as “keeping the drygoods and hardware men on the alert”.¹⁷

By the time the Ship Register of Pictou opened in 1840, the local economy of the Pictou catchment area was already rather different from the traditional economy of the eastern Canadian ‘outport’. It possessed no significant fishing component, and timber was also relatively unimportant. On the other hand, Pictou County contained 13 percent of the improved acreage of Nova Scotia and 65.3 percent of the labour force was involved in agriculture by 1850.¹⁸ The County, which experienced heavy population growth rates throughout the 1850s and would not experience negative growth until the 1880s, produced 51.8 percent of Nova Scotia’s coal output by 1850 and, according to the *Census* of 1851, the

15 *Ibid.*, p. 31.

16 *Ibid.*, p. 32.

17 Cameron, *op.cit.*, pp. 217-8.

18 *Census of Canada*, 1871, recap for 1851. Labour force defined as males and females aged 20-50 years.

population in 'industrial occupations' was 26.1 percent of the work force. In 1851 the County, with 11.8 percent of the Nova Scotian population, contributed 13.5 percent of the value of the Nova Scotia economy.¹⁹

During the first decade of the Ship Register the gross tonnage registered grew from 10,094 tons to an historic peak of 13,745 in 1854.²⁰ The mean tonnage registered per annum lay between 103 and 286 tons, and by the end of 1854, 571 vessels had been registered for the first time at Pictou (see Figure 1). A substantial amount of this new tonnage was transferred out of Pictou rather rapidly, to be sold in the transfer trade in ships. This shipbuilding industry was distributed throughout the region among a few primary building sites and a large number of smaller sites. In the 1840s the largest of these centres, in terms of both gross tonnage built and number of vessels, was Pictou itself. It was dominated by the transfer trade; 97.7 percent of its gross tonnage was sold. Next came New Glasgow, which also had a large transfer trade, although 17 percent less tonnage was transferred from this port, as befits the centre closest to the future industrial heartland of the region. Third was Tatamagouche, which transferred 90.9 percent of its tonnage. Wallace and Merigomish built only for the transfer trade. However, since Tatamagouche, New Glasgow and River John all built non-transfer vessels of greater than 100 mean tons, the local fleet was large and not merely a fishing fleet as in Miramichi. Indeed, New Glasgow stands out as having possessed a local fleet whose mean tonnage was actually larger than the mean tonnage of the transfer vessels; gross investment per vessel built was greater for the local vessels than it was for the transfer vessels, and significantly so since mean tonnage of transfer vessels was 289 mean tons as opposed to 348 mean tons for the locally-retained fleet of eight ships (see Table 2).

The large size of the non-transfer fleet is shown even more clearly if the register for the 1840s is broken down by rig and tonnage class. Although the non-transfer vessels were dominated by schooners and small tonnage, 34 percent of the fleet was brigantines, barques, ships and one steamer, and 44 percent was larger than 149 tons. This distribution is in direct contrast to Miramichi during the same time period and suggests that a trading economy was in effect in Pictou. The smaller vessels were probably used in the negligible fishing component of the economy and in local coasting and carrying of goods to markets, while the larger vessels were perhaps already into the bulk carrying trades that would become the mainstay of the Fundy Fleets a decade later.²¹ Certainly, by the beginning of the 1850s, Pictou shipowners are said to have repudiated the

19 Statistics compiled from the *Journals of the House of Assembly, Nova Scotia, 1852*.

20 A respectable, if not large amount — compare with Prince Edward Island and Miramichi, which both registered over 13,000 tons in 1840.

21 All of the large non-transfer vessels were owned by major owners on the Register, and these are the men who would be most likely to enter the carrying trade — for example, Thomas Graham, Bernard Law Kirkpatrick and two vessels owned by George Mackenzie.

Table 2

TRANSFER AND NON-TRANSFER TONS FOR MAJOR BUILDING CENTRES, 1840s

Settlement*	Tons and Number of Vessels			Tons and Number of Vessels		
	Transfer Tons	Mean Transfer Tons	Vessel	Non-Transfer Tons	Mean Non-Transfer Tons	Vessel
Pictou Town	16,013	239	67	371	92	4
Tatamagouche	10,944	237	46	1085	217	5
New Glasgow	11,858	289	41	2788	348	8
R. John	8,507	229	37	737	122	6
Pugwash	3,197	159	20	388	97	4
Antigonish	1,674	93	18	338	67	5
Wallace	2,621	163	16	—	—	—
Total for area	59,662		289	7293		62

*Rest were scattered along coast.

transfer trade. Cameron notes that “builders generally retained ownership and looked for profits from freight carrying”,²² and local entrepreneurs who were more involved in the landward than the seaward economy were definitely engaging in investment in shipping.²³ Nevertheless, during the 1850s and the 1860s, the transfer trade was of vital importance to the Pictou area (Table 3). The United Kingdom market absorbed 79 percent of the total transfer trade, with Liverpool (the largest single centre) buying 27 percent of the total sales.²⁴ Newfoundland was the second largest component, comprising 13 percent of all sales and 63.8 percent of the British North American transfer trade. The British North American trade in ships was a significant component in the Pictou export trade, providing it with a broader base than Miramichi obtained with its single-minded concentration among large owners in the United Kingdom markets.²⁵

After 1854, and particularly after 1857, the Pictou shipbuilding industry went into decline, not to recover to previous levels until 1864. There was rapid disin-

22 Cameron, *op.cit.*, p. 71.

23 *Ibid.* Cameron cites as examples “Noonan, Ives, Fraser the Chemist, . . . and MacGregor, Fraser Downie, Chisholm whose main interests were not marine”.

24 The two remaining transfers to the West Indies suggest an “on the spot” sale rather than a deliberate choice of the West Indies as a market.

25 Ommer, “Miramichi: a staple interface”, esp. Figure 1.

Table 3

THE PICTOU TRANSFER TRADE IN THE 1840s

B.N.A.			
Place	Tons	Mean Tons	# Vessels
Newfoundland	7,429	100	74
St. John's	397	99	4
Halifax	2,396	99	24
Arichat	384	76	5
Quebec	505	168	3
Mag. Is.	72	36	2
Saint John	665	332	2
Rest B.N.A.	406	67	6
Total	12,254		120
U.K.			
Liverpool	15,964	313	51
London	4,620	462	10
Hull	1,535	255	6
Whitby	973	194	5
Newcastle	1,067	355	3
Rest England	2,395		13
Beaumaris	740	370	2
Rest Wales	111		1
Glasgow	6,010	273	22
Greenock	1,957	489	4
Irvine	1,183	394	3
Dundee	1,053	263	4
Rest Scotland	2,669		11
Belfast	1,264	158	8
Limerick	927	309	3
Rest Ireland	4,034		16
Total U.K.	46,502		162

vestment out of shipbuilding from about 1854 to 1860, followed by reinvestment thereafter. The transfer trade did show a rise in gross tonnage sold from 59,386 gross tons in the 1840s to 72,938 tons in the 1850s, but most of the vessels disposed of had been built prior to 1856.²⁶ Entrances and clearances for Pictou Harbour also rose rapidly during this period,²⁷ but the distribution of fleet size makes it clear that this growth was not reflected in increased shipbuilding activity in the later half of the decade. It seems odd that Pictou shipowners, who had turned to the profits from freight carrying in the early 1850s, were now turning their backs on the new freighting opportunities presented by a rapidly rising export trade out of Pictou.

Indeed, ownership patterns in the Pictou area (Table 4) show that there was a decreased concentration of major owners in both shipbuilding and ship transfer after the 1850s. Overall net investment, and concentration of investment in the hands of major owners (in terms of both tonnage built and tonnage transferred) decreased after the 1850s. A recent study by Panting has shown that the largest number of major (1000+ ton) owners acquired their greatest tonnage in 1850-1854 and that the largest number of major owners who left the industry did so in the following quinquennium of 1855-1859.²⁸ More importantly, these owners who disinvested in 1855-1859 were the same people who had achieved the best average purchase before disinvestment (\$53,200 on average) of any quinquennium from the start of the Register. Of all owners on the Register who had disinvested by 1859, 54 percent (7 persons) were in shipbuilding; by 1865 another 10 owners had disinvested, 5 of them shipbuilders. At this point in time, 52 percent of all major owners had disinvested, and just over half of them were marine oriented. As early as the mid-1850s, 56 percent of the total tonnage of these major owners had already been purchased. Taken together, the evidence clearly

26 The collapse of the transfer trade is apparent in the 1860s when only 24,437 gross tons were transferred, dropping to 11,970 gross tons in the 1870s and 9,749 gross tons in the 1880s. After 1860, the vast majority of sales were no longer transfers in the true sense of "built for market" but rather were on the spot sales of vessels built for the carrying trades, as places of disposal such as South America, Maritimes and the like indicate.

27 I am grateful to Dr. Larry McCann of Mount Allison University for providing me with the data on entrances, clearances and exports. The source for the exports, entrances and clearances is the Customs Records of the Port of Pictou, 1833-1875, RG 13, Public Archives of Nova Scotia.

28 G. Panting, "Labour and Investment in Canadian Shipping" (paper presented to the Fourth Annual Conference of the Atlantic Canada Shipping Project, St. John's, July 1980), pp. 9-11. To be published in R.W. Ommer and G. Panting, eds., *Working Men Who Got Wet* (St. John's, forthcoming). This pattern of disinvestment continued over the next two decades, with moves into local industry and finance sectors. I wish to thank Gerry Panting of the Maritime History Group at Memorial University for the information on disinvestment contained in this section. Panting's information comes from a sample, taken from the Pictou Register, of vessel owners who acquired 1000+ tons over their buying cycle. See also L.D. McCann, "In Accordance With This Law of City Growth: The Metals Industry and Urban Growth in Pictou County, 1858-1929" (paper presented to the Atlantic Canada Studies Conference, Halifax, April 1980).

78 *Acadiensis*

Table 4

MAJOR OWNERS, OWNING 1000+ TONS IN AT LEAST ONE DECADE

	1840 - 49	1850 - 59	1860 - 69	1870 - 79	1880 - 89
Place built					
River John	5814 tons	8067	5118	4388	3814
New Glasgow	11,597 tons	18,474	3608	5780	2412
Pictou	8142 tons	7662	163		
Tatamagouche	9962 tons	10,086	5307		
Other*	4356 tons	14,588	121		
Total	39,871 tons	58,877	14,285	10,168	6226
Disposals	37,135 tons (195 vessels) 22 owners	55,236 (274 vessels) 33 owners	13,896 (105 vessels) 23 owners	8311 (43 vessels) 12 owners	5878 (18 vessels) 5 owners

* includes Pugwash and Wallace. In the 1840s, Pugwash=1483 tons and Wallace=1567 tons; in the 1850s they = 9904 and 1891 respectively; from the 1860s onwards they do not appear.

NOTE:- In the 1840s, the owners were: Alexander Campbell, Wm. Campbell, James Carmichael, George Mackenzie, Alex. Mackenzie, S. Cunard, David Davison, Levi Eaton, Thos. Graham, Henry Hatton, J & W Ives, Joseph Jones, B.L. Kirkpatrick, J. Kitchen Jr., K. Maclean, Ch. McLennan, J. Millar, J. Mockler, Th. Morrison, R. Purves and Alex. Russell. In the 1850s, Cunard had gone, as had Hatton, Kirkpatrick, Maclean and Russell, but J.W & P Crerar were building, as were Robt. Brown, S. Burbridge, Wm. Forbes, Ed. Kent, J. Kitchen, Robt. Logan, J & T Marshall, Donald McDonald, Archd. Patterson & Chas. Reilly. By the 1860s, Alex. Campbell was gone, as were Brown, Burbridge, D. Campbell, Davison, Eaton, Graham, Jones, Kitchen (Jr.), J & T Marshall, Millar and Morrison. In that decade only G & R Doull started building. By the 70s, G. Mackenzie had gone, along with W & A Campbell, P. Crerar, W. Forbes, the Ives, Kent, Logan, D. McDonald, A. Mackenzie, Mockler, Patterson, Purves and Reilly. In that decade, Jeffrey McColl and Archd. Mackenzie started building. By the 80s, only the Carmichaels, Jas. Kitchen, Jeffrey McColl, Archd. Mackenzie and Charles McLennan were left. Only the Carmichael, Kitchen, Mackenzie and McLennan families built throughout the whole period.

suggests that the 1855-1859 period of declining fleet size in Pictou was not merely a temporary slump, such as occurred from time to time in the shipbuilding industry, but a critical turning point in the history of Pictou shipbuilding.

The most likely reason for this dramatic disinvestment in shipbuilding is that investment money (some of which had always been from primarily non-marine interests) was flowing out of shipping and into the export sector and related sectors of the landward Pictou resource economy. Most probably this was a result of the termination of the General Mining Association monopoly of the coal mines, which took place in 1857.²⁹ The coincidence of the end of the monopoly and the collapse in fleet size is very striking. Certainly there are numerous, if tenuous, connections between owners on the Pictou register and people who were involved in developing the mines. Even before the General Mining Association lost its monopoly, John Mackay and Adam Carr, who appear briefly as shipowners in the Register in the 1840s, had a coal lease at Albion Mines (Stellarton); Carr also had George Smith (a shipowner in the 1840s) as a partner.³⁰ J.D.B. Fraser and J.W. Carmichael (of a major shipbuilding firm) transferred land to the Acadia Coal Company, and in 1859 Fraser opened a small mine of his own from which he sent coal to the United States.³¹ When the Acadia Company was formed in 1865, its first field manager was Jesse Hoyt, also to be found in the Pictou Ship Register; and John Campbell who was building ships in the 1860s and 1870s was the discoverer of coal at what became Westville. Westville mine opened in 1865, and the Acadia, Intercolonial and Black Diamond mines followed in 1866, 67 and 68.³²

It would seem reasonable, therefore, to surmise a move towards landward investment, and a consequent boom in the landward resource economy and the related export trades. If this were the case, then fleet size, instead of increasing as exports, entrances and clearances into Pictou increased, would fall away, at least initially, as investment was withdrawn from shipbuilding and redirected to stimulate the landward economy. That is not to say that the Pictou landward economy was capitalized solely from profits drawn from the seaward sector — indeed, much investment came from external sources³³ — but that the limited nature of the pool of local investment would force removal of capital from the seaward sector if there were to be anything other than insignificant local investment in the new resource and related trades economy. The growth rate of tonnage of British ships clearing from the area with cargo, but particularly in ballast (that is probably carrying coal) would then show strong growth while

29 David Frank, "Richard Smith", *Dictionary of Canadian Biography*, vol. IX (Toronto, 1976), p. 731.

30 Cameron, *op.cit.*, p. 134.

31 *Ibid.*, p. 136.

32 *Ibid.*

33 L.D. McCann, *op.cit.*, p. 18.

fleet size would show negative growth. This indeed was the case (see Table 5 and Figure 3). Similarly, the growth rate of British ships entering Pictou, and that of fleet size, followed opposing trends. Exports rose as fleet size fell. This was so, not only for total exports, but particularly for exports to the United States, which was a major market for Pictou coal. Moreover, as an embryonic manufacturing sector came into being as a result of increased activity in the landward resource sector,³⁴ there would be increased local utilization of goods and increased service components in the local economy. Final demand therefore would be rising, and the resultant multiplier effect would stimulate an additional increase in landward investment.

Whether or not individual shipowners shifted their investments from the seaward to the landward sector cannot be proven until research has been completed on the investment behavior of these shipowners after seaward disinvestment. But whether capital was shifted out of the seaward sector, or was merely less frequently employed in the seaward sector, Pictou shipowning had passed its apogee by 1860. The short-term decline in fleet size coupled with decreasing major investment in shipowning, just at that point in time when various indications of long-term increasing landward activity in the resource and related sectors were becoming apparent, is highly suggestive of investment shift. The region from which the Pictou ship register drew its vessels was one of dramatic structural change in the 1850s and 1860s. Before the ship register had opened, the traditional maritime economy had already undergone initial change away from the export staples of fish and timber and towards development of a coal export staple. While the area had been revived by the General Mining Association's investment in a landward resource, this had been monopolistic, forcing entrepreneurs into other areas, including the seaward sector. Indeed, the General Mining Association supported that sector with its demand for vessels. Pictou as a port of registry had been atypical for the Gulf of St. Lawrence in developing so early a landward economy which stimulated and helped to support its shipping industry. It had also been atypical for both Gulf and Fundy ports in the early conversion from transfer trade to freight trade, if the local histories are to be believed. Although Pictou had developed connections with the Gulf in terms of coasting, carrying goods and also in selling ships, which gave it a broad base from which to develop its seaward economy, much of the stimulus for these activities grew out of the strong early growth of its landward economy. When the Pictou fleet declined in the late 1850s, what had happened was not so much a collapse of the seaward economy — arguably, that had happened much earlier when the export fish trade folded in 1833 — as a turning towards the landward economy wherein lay the real investment and growth potential of the Pictou catchment area.

34 See the statistics provided by the *Journals of the House of Assembly, Nova Scotia*, 1852; the *Census of Canada*, 1871, recap for 1851; and the discussion of those statistics earlier in this paper.

Table 5

EXPORTS, ENTRANCES AND CLEARANCES, AND FLEET SIZE:
GROWTH RATES, 1856-61

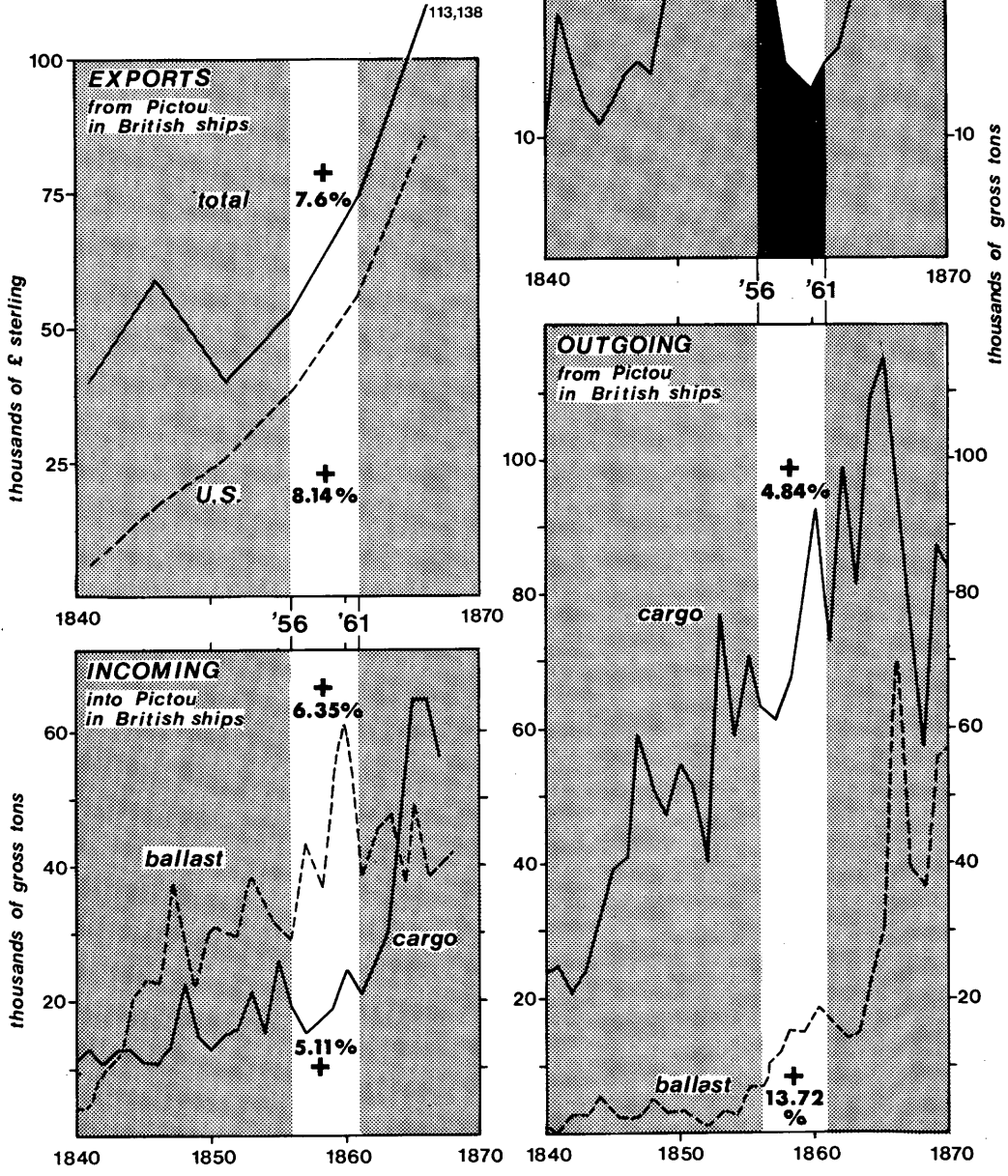
	Growth rate, 1856-61
<i>Exports</i>	
from Pictou in British ships	
Total exports	+7.6%
(£ sterling)	
To U.S.	+8.14%
(£ sterling)	
<i>Entrances</i>	
into Pictou in British ships	
With cargo.....	+5.11%
(thousand tons)	
In ballast.....	+6.35%
(thousand tons)	
<i>Clearances</i>	
from Pictou in British ships	
With cargo.....	+4.84%
(thousand tons)	
In ballast.....	+13.72%
(thousand tons)	
<i>Fleet size</i>	-8.72%

(Growth rates calculated by regression equation $\log Y = a + bt$, except for export figures, where end point ratios were used.)

Source: Pictou Ship Register and Customs Registry of the Port of Pictou, 1833-1875, Micro B5087, RG 13, PANS.

Figure 3

PICTOU: fleet size, exports, entrances and clearances with comparative growth rates ($\pm\%$) for 1856-1861



Although refined census data for the 1850s and 1860s do not exist, the *Censuses of Canada* for 1871, 1881 and 1891 show the character of the economic landscape of the area in the years following the fleet decline of 1857. While the earlier data is poor, it does demonstrate the increasing importance of 'primary manufacturing'.³⁵ Primary manufacturing in the Pictou region covered foundries and sawmills in the early years and later included gypsum mills, salt works, iron smelting furnaces, etc. The other important category was secondary consumer goods: breweries, flour and grist mills, weaving and hand looms in the early years and soap and tallow, tobacco, confectionery, tailors, etc., in the later years. Secondary producer goods did not appear in the *Census* prior to 1871, and then came in the form of agricultural implements, carriage making, tin and sheet iron works and (by 1891) boiler making, rolling mills, planing and molding mills and tinsmithing. The Pictou region was entering a period of preliminary resource-based manufacturing growth. After the mid-1850s, most of the growth in shipping in the region centred on Pictou County. Antigonish County shipping shrank to insignificance as the transfer trade died away, and in Cumberland and Colchester Counties, major developments took place in relation to the Fundy shore areas which were not represented in the Pictou Register. The analysis which follows has therefore used only the *Census* figures for Pictou County, since this spatial contraction of the unit of analysis best represents both the Register and the hinterland of the Pictou 'catchment area'.

By 1871, Pictou County was clearly in transition towards industrialization. As Table 6 shows, the primary manufacturing sector was dominant, whether measured by the value of raw materials, value of finished goods, or value added (calculated as finished goods value minus raw materials value). Only in terms of number of units was it marginally less than the secondary sector, but that is not a useful comparative index since number of units cannot be related to size of units. By 1881, value added was greatest in the secondary producer sector of the economy, although primary manufacturing remained dominant in terms of absolute value of raw materials and finished goods. By 1891, the strength of the secondary producer goods sector was firmly established. Between 1871 and 1881, the primary manufacturing sector showed negative growth in value added, despite a growing number of production units (+11.7%), an increase in the value of finished goods (+4.4%) and a decrease in the cost of raw material inputs (-10.3%). That is, despite increased efficiency in this sector, value added was flagging (-30.8%). The secondary consumer sector also showed negative growth

35 See J.H. Dales, "Estimates of Canadian Manufacturing Output by Markets, 1870-1915", quoted in J.M. Gilmour, *The Spatial Evolution of Manufacturing, Southern Ontario, 1851-1891* (Toronto, 1972), p. 196. Dales explains the need for a primary manufacturing category by pointing out that "some manufacturing enterprises are so closely related to the Primary Sector industries that supply their raw materials that they are in effect extensions of the Primary Sector of the economy, and therefore conceptually different from the rest of manufacturing industry". The classification categories given here follow the list given in Gilmour, *op.cit.*, pp. 199-204.

Table 6

STRUCTURE OF MANUFACTURING IN PICTOU COUNTY*

		1871	1881	1891
PRIMARY MANUFACTURING	number of units	163	182	118
	raw goods	394,011	496,704	363,769
	finished goods	636,275	664,435	671,135
	value added	242,264	167,731	307,366
SECONDARY CONSUMER GOODS	number of units	164	152	193
	raw goods	106,526	154,782	465,977
	finished goods	303,134	329,528	956,272
	value added	196,688	174,746	490,295
SECONDARY PRODUCER GOODS	number of units	98	113	142
	raw goods	135,128	210,404	993,918
	finished goods	326,689	438,820	1,873,404
	value added	191,561	228,416	879,486

Source: *Census of Canada*

* value in dollars

Table 7

SECTORAL SHIFTS IN THE PICTOU COUNTY ECONOMY

	1871	1881	1891
PRIMARY MANUFACTURING			
Value added as a % value added all sectors	38.43	29.38	18.33
SECONDARY CONSUMER			
Value added as a % value added all sectors	31.19	30.61	29.23
SECONDARY PRODUCER			
Value added as a % value added all sectors	30.39	40.01	52.44
Total	100.00	100.00	100.00

Source: *Census of Canada*.

in value added (-11.1%). However, the secondary producer sector was experiencing positive growth by number of units (+15.3%), value of raw goods (+55.7%), value of finished goods (+34.3%) and value added (+19.2%). Between 1881 and 1891, the primary manufacturing sector recovered to positive growth (+83.3% growth in value added), and a further increase in efficiency, with fewer production units (-35.2%) and less value in raw material inputs (-26.8%) returning a slight growth (1.0%) in the value of finished goods and a large jump in the growth of value added. This performance, however, was out-matched by the secondary sector which showed positive growth by all indices. Most importantly, value added for secondary producer goods rose by +285%, much faster than that of consumer goods (+180.6%).

The significance of these figures is shown most clearly when sectoral shift is examined (Table 7). In 1871, value added in the primary manufacturing sector was 38.43% of all value added for Pictou County, followed by secondary consumer goods at 31.19% and secondary producer goods at 30.39%. By 1881, both the primary manufacturing and secondary consumer sectors had lost ground, and secondary producer goods dominated at 40% of all value added for the County. By 1891, secondary producer goods led in percentage value added by a solid 52.44%. That is, the classic shift from primary manufacturing to secondary producer goods, along with a clear improvement in the position of producer goods with respect to consumer goods, had occurred — good indication that a strong base for industrial growth had been achieved in the County's landward economy.

What, then, had happened to the seaward economy? In 1870, when the fleet size of the Register had recovered sufficiently from the decline of the late 1850s to regain earlier levels, the Pictou County minimum seaward economy (namely, shipbuilding, boatbuilding and ship material making, as given in Table 8) created 9.36% of all value added for the County, used 10.7% of its employed labour force, paid 12.6% of all wages and generated 7.62% of all returns to entrepreneurial investment, calculated as value added less wages. By 1881, this proportion had slipped slightly, and by 1891 the seaward sector employed 14.56% of the labour force but paid out only 4.16% of the wages. The individual average annual wage in the seaward economy compared very favourably with the landward sector in 1871 and 1881, due to relatively high wages in shipbuilding, but it had dropped drastically by 1891 because of the final collapse of shipbuilding (see Figure 1), as total yearly wages in shipbuilding dropped from \$31,000 (135 employees) in the 1881 *Census* to \$2000 (5 employees) in the 1891 *Census*. Moreover, by 1891 the County invested only 1.26% of its fixed capital in the seaward sector (Table 9) and 1.4% of its working capital — 2.66% if taken together — leaving a massive 97.3% capital investment in the landward sector.

How does this compare with other ports that have been studied? Since most of the ships on register in Pictou and in the rest of Nova Scotia/New Brunswick

Table 8

EMPLOYMENT: SEA VERSUS LAND — PICTOU COUNTY

		1871	1881	1891
SEA	percentage value added	9.36	9.78	4.24
	percentage persons employed	10.7	10.05	14.56
	percentage wages	12.6	11.68	4.16
	Individual average annual wage	216.06	236.6	81.87
LAND	percentage value added	90.64	90.22	95.76
	percentage persons employed	89.3	89.95	85.44
	percentage wages	87.36	88.32	95.84
	Individual average annual wage	179.19	199.78	321.8

Source: *Census of Canada*.

Table 9

WORKING CAPITAL AND FIXED CAPITAL: SEA AND LAND, 1891

Sea	Fixed	25,190	1.26%
	Working	28,050	1.4%
	Both	53,240	2.66%
Land	Fixed	1,238,280	61.9%
	Working	708,763	35.4%
	Both	1,947,043	97.3%
All		2,000,283	100.0%

Source: *Census of Canada*.

were built locally, then the proportion of the value added of the shipbuilding sector of the Pictou economy to the value added of the total seaward economy of Pictou should be the same as the proportion of the value added of the shipbuilding economy of Nova Scotia/New Brunswick to the value added of the total seaward economy of Nova Scotia/New Brunswick. This relationship, however, assumes that the shipbuilding economy of Pictou was making the same contribution to the total economy of the Pictou area as did the shipbuilding economy of Nova Scotia/New Brunswick to the total economy of Nova Scotia/New Brunswick.³⁶ If we further assume that this shipbuilding sector can be treated as a surrogate for the total seaward economy — which is reasonable, since the vessel is the basic production unit — then the proportion of the value added of the shipbuilding (and therefore seaward) sector of Pictou to the value added of the total economy of Pictou should equal the proportion of the value added of the shipbuilding (and therefore seaward) economy of Nova Scotia/New Brunswick to the value added of the total economy of Nova Scotia/New Brunswick. The assumptions stated earlier will also apply here. That is, an “Index of Maritime Participation” can be created using the formula given in Table 10. The index value for any one location will indicate the relative importance of the seaward sector of its economy relative to that for the Maritimes as a whole. An Index value of zero will indicate equilibrium, with respect to the Maritimes, of the land and sea components of the location being examined. A positive value will indicate a relatively larger contribution of the seaward economy of the location being examined relative to that of the Maritimes, and a negative value the opposite.

Hence a value of 1.2 at Yarmouth in 1871 indicates that the seaward sector of Yarmouth’s local economy was slightly over twice as important to Yarmouth as it was in the Maritimes as a whole. In Pictou, by contrast, it is clear that, as this paper has suggested, the withdrawal from the sea had already started by 1871. Yarmouth lacked a hinterland and clung to the sea for as long as it could. Saint John, with its complex urban economy and alternative opportunity, was more balanced; the index is closer to zero. When the seaward economy of the Maritimes flourished, Saint John was in it; when that economy failed, Saint John got out. But Pictou, in advance of the trend by two decades and perhaps even more, turned its back on the sea long before the others.

Even given the upswing in fleet size after 1872 (Figure 2) and the rise in mean tonnage to 381.5 tons (Table 1) gross investment (Figure 1) was down and the growth rate of the fleet was a mere +0.2%. After 1870, the seaward sector rep-

36 That is, $\frac{VA(\text{ships}) \text{ Pictou}}{VA(\text{total sea}) \text{ Pictou}}$ should = $\frac{Va(\text{ships}) \text{ NS/NB}}{VA(\text{total sea}) \text{ NS/NB}}$

The shipbuilding sector as used here is made up of shipbuilding itself along with boatbuilding, ship materials making, masts and spars, and sail making, thus including all related *Census* categories.

Table 10
INDEX OF MARITIME PARTICIPATION

	1871	1881	1891
Pictou	-0.121 (-12.079%)	-0.901 (-90.1%)	-0.874 (-87.4%)
Yarmouth	+1.23 (+120.04%)	+1.579 (+157.9%)	+0.55 (+54.69%)
Saint John	+0.044 (+4.37%)	+0.024 (+2.36%)	-0.623 (-62.25%)

$$I = \frac{\frac{SVA_1}{TVA_1} - \frac{SVA_m}{TVA_m}}{\frac{SVA_m}{TVA_m}}$$

where S = the seaward economy, VA = value added, ₁ = the location being examined, T = the total economy and _m = the Maritimes, in the form of Nova Scotia/New Brunswick.

resented no more than 10% of the value added accruing to the economy of Pictou County, dropping to 4.24% by 1891 (Table 10), by which time it was receiving only a meagre 2.7% of capital invested. The slight retraction that showed in 1891 was no more than a slight upsurge in the backward flow of the massive industrial landward sector into maritime transportation, primarily the shipping of coal to the St. Lawrence markets.³⁷

Pictou, then, had demonstrated admirably that it possessed the "capacity to transform", having changed from a traditional "maritimes" economy in the pioneer and post-pioneer era, to the transfer trade in ships, to the carrying trade economy, to landward industrial growth by the 1880s. It was a rogue element in the Canadian eastern seaward economy in its anticipation of the trend towards maritime disinvestment by as much as twenty years. In the early years of the Pictou economy, when the maritime sector had been very important, the two staples of fish and timber had rapidly been depleted, and the area had been revitalized by foreign investment (in the shape of the General Mining Association) in the landward sector. Perhaps because of lessons learned in these early years, entrepreneurs had thereafter moved out of the 'exogenous market'

37 Cameron, *op.cit.*, p. 139, cites Lévis, P.Q. and the Canadian National Railway as the 'chief customer' for Pictou coal which was water-shipped until 1940.

dependency of the transfer trade in ships into the carrying trades. But unlike a port such as Yarmouth, the Pictou region had alternative development opportunities in its hinterland, and these were not ignored. If the investment potential of the landward continental economy of post-Confederation Canada was the mirage that beckoned the shipowners and entrepreneurs of the Fundy rim, it was the hope of local industrial development that lured Pictonians. In 1872, the Hope Iron Works was founded; in 1900 the Nova Scotia Steel and Coal Company was formed, growing by 1912 into a 14 million dollar giant producing 50 percent of the steel consumed yearly in Canada. When Pictonians turned their collective back on the sea, they had good reason to do so.