

BENCHMARKING STUDY ON CANADIAN LOBSTER

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SUMMARY

Industry highlights

American lobster forms the basis of a \$1.5 billion industry in North America (all figures in CAN\$ unless otherwise indicated), and ranks as one of the most important species in the Atlantic fisheries in Canada and the U.S.

Canada

- ❑ Landings ranged between 40-50,000 t annually between 1990 and 2004. Landed value is currently in the \$550 million range, down from a peak of \$650 million in 2003. The decline in value is due to the appreciation of the Canadian dollar and a drop in landings.
- ❑ Just over 9,700 vessels are licenced to fish lobster, generating employment and income for some 25,000 skippers and crew.
- ❑ Canada exported lobster valued at \$989.3 million in 2005, down slightly from just over \$1 billion in 2002 and 2003. About 80% of exports are destined for the U.S., half in live form and the balance in various frozen forms.
- ❑ The lobster fishery is heavily regulated. Entry is limited, and licence fees in most areas range from \$300-500 annually. The lobster fishery is subject to seasonal openings, with vessel and gear restrictions. A legal minimum size is the main conservation measure. It varies by area, with most areas subject to the same size as the U.S. fishery (82.5 mm). There are no limits on how much lobster may be caught, provided they are at or above the legal minimum.
- ❑ The industry supports several hundred buyers and shippers of live lobster. There are about 50 plants concentrated in the southern Gulf of St. Lawrence producing various processed products. All buyers, shippers and plants must be licenced by provincial authorities, with fees ranging from \$10 to \$2,000. There are no limits to entry for buyers and shippers, though in most provinces they must meet certain investment criteria. Processing plants engaged in the export trade must be federally registered (\$1,500 fee) and must meet specified standards. Plants and production are subject to periodic CFIA inspection.
- ❑ Canadian firms import 50-70% of the U.S. catch annually. Most of this goes to Gulf-based processing plants, augmenting their supply of raw material from local fisheries. This output makes up a substantial share of the processed product flow to the U.S.

United States

- ❑ Landings ranged between 30-40,000 t annually between 1990 and 2004. Landed value is currently in the \$475 million range, down from a peak of \$500 million in 1999. The fluctuation in value is due mainly to fluctuating landings.
- ❑ The lobster fishery is more closely regulated than it used to be, but is not as heavily regulated as the Canadian fishery. Entry is now limited in most states, with licence fees ranging from \$290-480 annually. The lobster fishery is open year-round. Gear restrictions are comparable to Canada's. There are no restrictions on vessel size, though vessels tend to be comparable to those used in Canada. A legal minimum size is the main conservation measure (82.5 mm).
- ❑ Just over 7,500 vessels are licenced to fish lobster, generating employment and income for some 15,000 skippers and crew.
- ❑ The industry supports several hundred lobster dealers and four processing plants. All buyers, shippers and plants must be licenced by state authorities, with fees ranging from \$25 to \$760. There are no limits to entry. Processing plants engaged in the export trade must be federally registered (for which the FDA imposes no fee), and must meet federal standards. Plants and production are subject to periodic NMFS inspection with a service fee of \$117/hour.

Regulation and competition

The main conclusion to emerge from the benchmark analysis is that the Canadian and U.S. industries operate on more or less an equal footing at each stage. They are closely integrated by virtue of the high level of trade in raw material (U.S. to Canada) and final product (Canada to U.S.).

Both industries are regulated, but the regulatory environment diminishes greatly as the lobster moves up the value chain. Regulation is strongest at the harvesting stage, less so at the processing stage, and virtually non-existent at the marketing stage. In light of this, if there were opportunities for some redress of a regulatory imbalance affecting the ability of Canada's industry to compete, they are more likely to occur at the harvesting stage than some later point along the value chain.

- ❑ **Legal size:** There is conformity between Canada and the U.S. in the minimum legal size for the live lobster trade. This is the most important conservation measure. There is pressure in some quarters in the U.S. to increase the legal size in order to improve the long-term sustainability of the resource.

In the event the U.S. increases its minimum legal size above 82.5 mm, Canada should adopt a legal size at least as great to ensure continued access to the U.S. market for live lobster. Canada could, of course, act independently and adopt a smaller legal minimum and rely on shippers to size grade for particular markets, or it could adopt a larger minimum size to meet more stringent conservation objectives.

- ❑ **Seasons:** Canada benefits from its approach to setting seasons. Fishing in most areas is allowed only in months when lobster quality is high. As a consequence, most lobster is suitable for the higher value live market in the U.S. and other markets (provided, of course, it meets the minimum size requirements). The steady rise in catches in Canada and the inability of markets to absorb seasonal supply without depressing prices have caused shippers in Atlantic Canada to invest in various types of holding facilities. These facilities allow shippers to re-time the market to avoid gluts and take advantage of periods of strong demand outside lobster seasons.

By contrast, U.S. effort and catches are highest in the immediate post-moult period when lobster quality is at its lowest. About half of the lobster goes to the lower end of the live market, depressing prices for harvesters but setting up a buying opportunity for Gulf of St. Lawrence plants wishing to extend their processing season.

The current Canadian approach to setting seasons appears to serve conservation and market needs very well. There would not appear to be any merit in adjusting the seasons, particularly given the ability of the Canadian industry to re-time the market by relying on holding facilities.

- ❑ **Industry cost structure:** The cost structures of the harvesting sectors are broadly similar. The respective lobster fleets are composed of similar sized vessels (most under 45'), mostly operating within a few hours of their home ports and using more or less identical gear.

The rationale for vessel restrictions in Canada may be found in the desire to limit effort while also providing a measure of equity in the fishing opportunity (trap limits also help in this respect). There would appear to be no sound reason for disturbing the current restrictions, particularly since the more relaxed U.S. approach does not appear to confer any competitive advantage on harvesters there.

- ❑ **Overcapitalization and destructive price competition:** The Canadian and U.S. fleets operate under the same owner-operator principles. Though the rule is not always followed in Canada, non-compliance is not so great that it undermines the ability of licence-holders generally to extract maximum prices for their catches. The same conditions apply in the U.S. fishery, and with the

aggressive buying of raw material by Canadian processors in the U.S., processors in both countries face similar input costs.

The shore price paid by shippers and processors (after buyer commissions) accounts for 80-85% of the cost of sales. This means that all other factors (e.g., fees, labour and other operating costs) contribute just 15-20%. Strong competition for raw material accounts for the relatively high shore prices. Strong competition is explained in part by the combination of independence of fleets and shippers/processors, and in part by the excess capacity in the shipping/processing sectors. The perennial risk is paying too much for raw material and then undercutting competitors to gain sales.

The processing sector would argue for direct access to raw material through elimination of fleet separation. The harvesting sector would argue that the status quo should be maintained (and even strengthened). Eliminating fleet separation would result in greater control over raw material supply and reduce the upward pressure on shore prices, thereby reducing the raw material share of cost of sales and improving shipper/processor margins. Whether it would make the industry as a whole any more competitive in international markets is open to question. In the absence of a coordinated selling approach, the higher margins could simply provide shippers and processors more room to undercut each other.

Buying behaviour is a symptom of a more fundamental problem than a problem in itself. It suggests that both the live and processed segments of the industry suffer from excess capacity. Most firms in the industry continue to be supply driven, bidding up the price of raw material in order to maximize capital utilization and extend the season as long as possible.

Overcapitalization and aggressive competition for raw material arguably represent the main sources of weakness in the lobster industry (and other shellfish sectors as well). This is the legacy of a lack of financial discipline in the industry that has seen governments support weak or failing companies in order to maintain employment in small communities. Though the intention may be laudable on a case-by-case basis, taken collectively, such decisions tend to undermine the stability of the industry in the long run because of the price effect. Examples of this may be found in each of the Atlantic Provinces. The introduction of moratoria on new plants in key provinces, and the promise by some provincial governments not to provide financial support may help to establish equilibrium.

Provincial governments and federal development agencies must assess carefully the industry-wide impacts of any policies and programs that would undermine financial discipline governing the level of productive capacity in the shipping and processing segments of the lobster industry. The overriding objective should be to establish a policy environment resulting in long-term competitive equilibrium between the harvesting and processing sectors.

- **Product safety:** Shippers and processors in both countries are subject to essentially the same set of standards regarding food safety (HACCP or QMP). All facilities must be federally registered and are subject to inspection by federal agencies (CFIA in Canada and FDA or NMFS in the U.S.). Some in the industry in Canada express the concern that Canadian processing plants, while nominally compliant with QMP/HACCP standards, fall short in their ability to actually meet these standards on a consistent basis. They cite variable and inconsistent auditing/inspections as the reason for instances of non-compliance. They also fear industry-wide implications should product from non-compliant plants cause health problems in export markets.

CFIA, through consistent on-site audits of the production process and inspection of products, should ensure that all federally registered plants meet or exceed established QMP standards.

INTRODUCTION

1. WHY THIS STUDY

This study is one of several sponsored by the Seafood Value Chain Roundtable in its mission to foster collaborative industry-government action that “secures an enduring competitive advantage for Canada in international markets”. More specifically, this study is aimed specifically at gaining a better understanding of the lobster industry in Atlantic Canada, determining whether there are steps government and industry could take to enhance the value of the resource, and whether there are trade policy concerns.

The lobster industry was selected for study for several reasons. It has for many years been Canada’s most valuable fishery and leading seafood export. It is the most widely distributed of Atlantic species and contributes to the livelihood of more harvesters than any other species. It sustains more communities than any other species, including communities home to processing plants and holding facilities.

Lobster is also the most important species in the U.S. northeast for many of these same reasons. The U.S. also represents the largest market for Canadian lobster, typically taking 70-80% of Canada’s total exports. Interestingly, Canada represents the largest market for U.S. lobster, in the past decade importing upwards of 50% of U.S. landings. This lobster represents an important source of raw material for the processing industry based in the Gulf of St. Lawrence. Much of this lobster is re-exported to the U.S.

For both countries, lobster is the one resource that to date in most areas has withstood the substantial pressure brought to bear by the thousands of harvesters participating in the fishery. But signs of overfishing have begun to show up on both sides of the border. For example, catches are down substantially in areas in the Northumberland Strait, and also in several areas in New England (off Rhode Island and Massachusetts in particular). Scientists, managers and many harvesters in both countries have expressed concern about exploitation levels, and have argued for stronger conservation measures.

In short, the Canadian and U.S. industries are closely intertwined. They fish the same species, confront many of the same resource management issues, and rely heavily on each other’s raw material and products in supplying the same market. They also operate within similar policy and regulatory environments. This is important because it places Canadian industry on a more or less equal competitive footing with its U.S. counterpart. This report explores the elements of this competitiveness, examining in particular how the regulatory environment influences industry structure and operations.

2. OBJECTIVES

Given its great importance as a generator of income and employment in coastal regions in both Canada and the U.S., it is critical to stakeholders in each country that their respective lobster industries function on a basis as environmentally sustainable as possible, while also achieving high standards of product quality and market acceptability. As the major lobster exporter into the U.S. market, Canadian industry must achieve these standards, while also strengthening its ability to compete.

Against this backdrop, this study embodies two main objectives:

- ❑ Using a set of accepted benchmark indicators, provide an assessment of how the Canadian lobster industry compares with its American counterpart
- ❑ Based on the findings of the benchmark assessment, present any recommendations for change to improve the competitiveness of the Canadian industry.

3. OUTLINE

We present the benchmarking analysis within a “Structure – Behaviour – Performance” framework. This analytical framework provides a systematic basis for identifying the *structural* characteristics of an industry and how these characteristics influence competitive *behaviour* with respect to the key factors determining market share including investment and price setting. These factors in turn influence *performance* as measured by such conventional indicators as return on investment.

Industry structure captures that set of characteristics governing the nature of competition among buyers and sellers at each level of trade in the value chain. These characteristics define the competitive environment. The relevant characteristics include: industry concentration – the number and relative size of buyers (plants) and sellers (vessels); buyer-seller relationships – formal and informal links between enterprises along the value chain; entry and exit conditions – the more open the industry is, the more competitive it is likely to be.

The report begins with an overview of the Canadian and U.S. lobster industries, examining resource, structure, regulation, production, markets and price issues. This is followed by an assessment of competitiveness along the value chain, highlighting the factors influencing structure and competitive behaviour. The final section provides an analysis of how the Canadian and U.S. industries stack up in terms of each of the several benchmark indicators.

CANADIAN & U.S. LOBSTER INDUSTRIES

1. INDUSTRY STRUCTURE

Overview

The Canadian and U.S. lobster industries share several structural similarities resulting in a highly competitive industry. The value chain in both industries features several thousand independent harvesters, several hundred shore buyers, many independent shippers/processors, many brokers and distributors, all supplying a substantial number of food service and retail outlets. The respective industries have been shaped over the years by three key drivers: resource, regulation and market.

- **Resource:** the industries fish the same species. Lobster population dynamics, climatic conditions and fishing grounds are broadly similar resulting in the development of similar fishing vessels and gear, with operations subject to similar biological and weather opportunities and constraints.
- **Regulation:** the regulatory framework facing harvesters in Canada and the U.S. differs markedly in most respects except one – that harvesters must be owner-operators. This requirement, if observed strictly (not always the case), serves to establish a highly competitive environment at the first point of sale (between vessel and shore buyer) in both industries. Other regulations governing fleet structure and gear have resulted in harvesting sectors with broadly similar features. Points of departure attributable to regulation centre on fishing seasons, trap limits and terms of entry.
- **Market:** most of the final product of both industries supplies the same general market – the U.S. – but the market is clearly segmented along product form (live and processed) and quality (high and low) lines. Canada supplies the high quality live market (the timing of the catch means intrinsically higher quality), while the U.S. supplies the lower quality segment of that market. Canada also supplies most of the processed lobster market, with a substantial share of the raw material imported from the U.S.

Canada

The harvesting sector is comprised of 9,770 independent (mainly) licence-holders spread out over five provinces (Table 1). They operate from vessels under 45' using mainly rectangular wire-frame traps (though traditional wood-frame traps are used in some areas). The number of licences is fixed through limited entry, though access to the fishery is possible for a new entrant by acquiring an existing licence. Licences trade at prices ranging up to \$1 million, with price largely a function of the value of the fishing opportunity in the particular Lobster Fishing Area (LFA) to which the licence is assigned.

Table 1
Lobster fishing licences and fees by region, 2004

	# licences	Licence fees (\$)	
		min	max
Nova Scotia	3,352	100	1,890
Prince Edward Island	1,289	310	465
New Brunswick	1,563	310	465
Quebec	643	500	740
Newfoundland	2,923	30	100
Total	9,770		

Source: DFO

The processing sector captures two main activities: buying and shipping/processing. In all, there are over 500 licenced buyers in the Atlantic Provinces, some 400 shippers and about 40 processors (Table 2). Buyers may be independent operators (taking ownership of the lobster before selling it on to a shipper/processor), commissioned agents of particular shippers or processors, or the shippers or processors themselves. Shipper/processors tend to be lumped under the general heading, “processors”, though the functions are quite distinct. Shippers operate in the live market, grading, sorting, holding and packing lobster for truck or airfreight shipment to distributors and customers in final product markets. Processors (located mainly in PEI, New Brunswick and Quebec) produce various cooked, shucked and frozen products using local lobster either too small for the live market (“canners”) or, lobsters suitable for the live market that cannot be held any longer without risking spoilage (or, if sold live, of depressing prices).

Table 2
Number of buyers and processors by province, 2004

	Buyers		Shippers / Processors	
	Number	Lic. Fee	Number	Lic. Fee
Nova Scotia	370	\$213	181 / 1	\$213
Prince Edward Island	54	\$50	13 / 8	\$200
New Brunswick	640	\$10	50 / 17	\$1,000
Quebec	18	\$450	n.a. / 18	\$450
Newfoundland	23	\$2,000	89 / 0	\$2,000
Total				

Source: Provincial fisheries departments

U.S.

The harvesting sector is comprised of some 7,500 licence-holders in five states (Table 3). This number represents a mix of commercial, semi-commercial and recreational harvesters, each with different trap limits, and in some cases, subject to different licence fees. As in Canada, they operate from vessels under 45' (though there is no restriction on vessel size) using mainly rectangular wire-frame traps. Entry had been unlimited in most state waters until recently, but excessive pressure on the resource has led to the adoption of limited entry in most fishing zones. Licence transfers are limited to immediate family members in Massachusetts and are prohibited in Maine. Maine has also introduced a system to reduce the number of licences by allowing one new entrant for each five licences retired (retiring the licence is the only option for harvesters wishing to withdraw from the fishery).

Table 3
Lobster fishing licences and fees by state, 2004

	# licences	Licence fees (US\$)	
		min	max
Maine	5,468	240	240
Massachusetts	1,374	260	260
Rhode Island	400	75	300
Connecticut	n/a	60	400
New Hampshire	300	103	300
Total	7,542		

Source: State fisheries departments

The processing sector is comprised of some 2,000 dealers (buyers/shippers) operating from basic facilities along the New England coast (Table 4). The buying and shipping functions are not distinguished for licencing purposes, and in general, the value chain is shorter than in Canada. Dealers sort and pack for shipment to distributors or customers in the major centres. Some operate tidal lobster pounds, though most of the lobster is shipped directly to U.S. markets and Canadian processors upon landing. In recent years, 50-70% of the U.S. catch has been shipped to Canada for processing in PEI and NB plants.

Table 4
Number of buyers and shippers by state, 2004

	Buyers/Shippers	
	Number	Lic. Fee (US\$)
Maine	1,400	635
Massachusetts		130
Rhode Island	n.a.	n.a.
Connecticut	41	200
New Hampshire	129	100
Total		

Source: State fisheries departments

The processing industry, a major force in Maine in the late 1800s, disappeared completely by the turn of the century as conservation measures eliminated small lobsters from the catch and as landings declined dramatically in the early 1900s. Four plants were established in Maine in the late 1990s in response to the substantial increase in landings and the sharp seasonal price drops. Three of the four produce frozen product using conventional technology, while the fourth has adopted hydrostatic technology to produce fresh meat. They compete for U.S. raw material and product markets with the larger Canadian industry based in the Gulf of St. Lawrence.

2. FISHERIES MANAGEMENT

For both countries lobster is the one resource that to date in most areas has withstood the substantial pressure by the thousands of harvesters participating in the fishery. But signs of overfishing – or environmental change – have begun to show up in both Canadian and U.S. waters. For example, catches are down substantially in areas in the Northumberland Strait, and also in several areas in New England (off Rhode Island and Massachusetts in Management Area 2 in particular). Scientists, managers and many harvesters in both countries have expressed concern about exploitation levels and the need for more stringent conservation measures.

Canada and the U.S have historically taken very different approaches to managing the lobster fisheries, though this is changing.

- ❑ Canada has closely regulated the fishery, using various input controls and conservation measures including limited entry licencing, trap limits, size limits, returning berried females and closed seasons. The lobster fishery is a matter of federal jurisdiction, with overall management responsibility resting with the Department of Fisheries and Oceans (DFO) and exercised through its four administrative regions. Regulations governing international trade also fall with the federal purview, as does food safety (the responsibility of the Canadian Food Inspection Agency (CFIA)). Regulation of trade within the province, including the licencing of buyers and processing facilities is a matter of provincial jurisdiction.
- ❑ Until recently, the U.S. had taken a more *laissez-faire* approach, relying mainly on size limits while avoiding measures to control effort. This is changing as some stocks have declined and others appear to be threatened by overexploitation. Forms of limited entry and trap limits have been introduced. While fishing is permitted year-round, catches tend to be highly seasonal. Though management is largely a state matter (state regulations govern the fishery much of which is conducted within three miles of the coast), aspects of management have been delegated to the Lobster Management Board of the Atlantic States Marine Fisheries Commission in an attempt to create a harmonized approach. The ASMFC issued an Interstate Fishery Management Plan for Lobster in the mid-1990s, and it has been amended several times with the aim to reduce fishing effort. The states continue to regulate buyers and shippers, with the federal Food and Drug Administration (FDA) responsible for food safety.

What seems clear from a comparison of regulatory frameworks is that the U.S. now relies on many of the same kinds of measures to manage the fishery – limiting entry, trap limits and size limits. Differences among measures tend to be ones of degree.

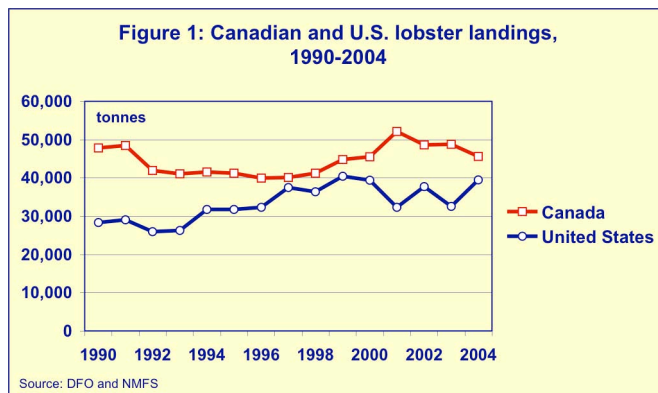
The major difference lies in the absence of closed seasons in the U.S. But in spite of the opportunity for a year-round fishery, effort is concentrated over a single four-month period (late summer and fall), resulting in greater seasonality than the Canadian fishery with its two seasonal peaks (spring and winter).

3. LANDINGS

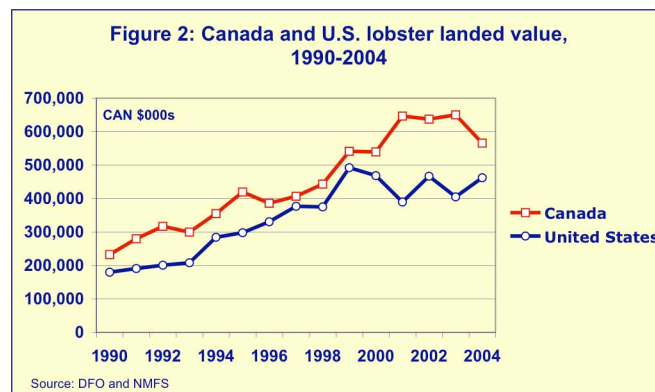
Quantity and value

American lobster (*Homarus americanus*) forms the basis of a \$1.5 billion industry in North America and ranks as the most important species in the Atlantic fisheries in Canada and the U.S. northeast. The lobster resource is among the most widely distributed of all commercial species, providing the basis of a fishery to Canadian harvesters along the coasts of all five provinces in Atlantic Canada ranging from southern Labrador, into the Gulf of St. Lawrence, along the Scotian Shelf into the Bay of Fundy, and onto Georges Bank. U.S. harvesters fish lobster from Maine to the southern limit of its range in the waters off the Carolinas.

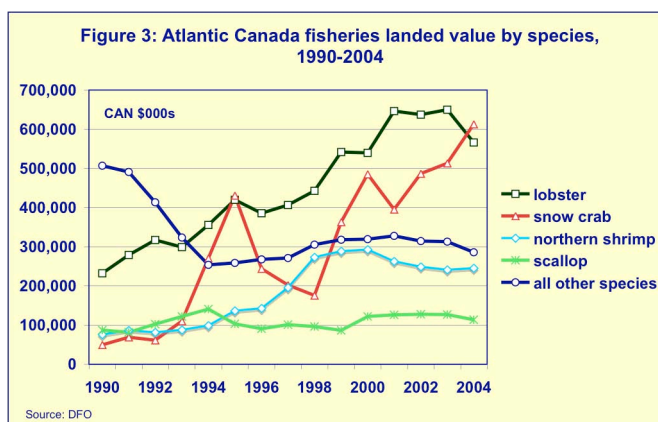
The lobster fishery has endured the ups and downs of environmental change, and despite relatively high exploitation rates, has maintained fairly stable landings during the 1990s and early 2000s, following a rapid rise in catches during the late 1970s and 1980s. Landings rose through the 1980s in both countries, reaching a combined total of about 80,000 t in 1991. Canadian landings dropped from 50,000 t to the 40,000 t range though much of the 1990s, then climbed to 52,000 t in 2001 before declining to 45,000 t by 2004. U.S. landings climbed steadily through the 1990s, reaching a peak of 40,000 t in 1999 and then fluctuating between 30,000 and 40,000 t since then (Figure 1).



The value of landings in both Canada and the U.S. increased steadily through the 1990s, buoyed by strong market conditions. Between 1990 and 1999, combined landed value more than doubled, rising from \$410 million to just over \$1.0 billion (all values in Canadian dollars). Canadian landed value continued to rise, reaching a peak of \$650 million in 2003, then declining to \$575 million in 2004. At the same time, U.S. landed value fluctuated between \$400 and \$470 million, largely due to the swings in landings but influenced as well by shifting market conditions (Figure 2).



In Canada, lobster accounts for about 30% of total landed value. It consistently generates the highest landed value and income for its harvesters, despite the growth of such species as shrimp and snow crab since the mid-1990s (Figure 3). Crab increased sharply during the late 1990s following erratic shifts in the early 1990s. The data will show that landed value of crab dropped in 2005, as both TACs and prices declined. Northern shrimp increased sharply during the mid-1990s as groundfish declined, with landed value peaking in 2000. The decline since reflects mainly weak market conditions. By contrast, lobster landings and prices increased fairly steadily until 2004, when the combination of a decline in landings and a rising Canadian dollar caused landed value to drop.



Regional distribution

Canada

Though the lobster fishery is widely distributed in Atlantic Canada, about half the catch is taken on the Scotian Shelf and landed in ports in Nova Scotia (Table 5). Much of the balance of the catch originates in the Gulf of St. Lawrence, landed mainly in ports in Prince Edward Island and New Brunswick. Most of the catch landed in Nova Scotia is shipped live to markets in the U.S., Europe and the Far East. Much of the Gulf catch (excluding Quebec) consists of lobster too small to enter the U.S. as live product, so it is processed into various cooked and frozen forms.

Table 5
Lobster landings and value by province, 2004

	Quantity (tonnes)	Value (\$000s)	Average \$/kg
Nova Scotia	24,187	323,137	13.36
Prince Edward Island	8,985	96,014	10.69
New Brunswick	6,613	75,042	11.35
Quebec	3,838	49,829	12.98
Newfoundland	1,999	22,055	11.03
Total	45,622	566,077	12.41

Source: DFO

U.S.

Maine accounts for over 80% of U.S lobster landings (Table 6), followed by Massachusetts (13% and Rhode Island (4%). Maine benefits from its extensive coastline and ideal lobster habitat along the inner Bay of Fundy. The difference in average prices across states reflects supply and demand conditions at time of landing. The Maine catch is concentrated in just four months (August-November) and, with limited holding capacity, the market is unable to absorb this supply without some softening of prices.

Table 6
Lobster landings and value by state, 2004

	Quantity (tonnes)	Value (\$000s)	Average \$/kg
Maine	32,465	375,803	11.58
Massachusetts	5,119	66,996	13.09
Rhode Island	1,387	18,968	13.68
Connecticut	294	4,116	14.00
New Hampshire	175	2,326	13.29
Total	39,440	468,208	11.87

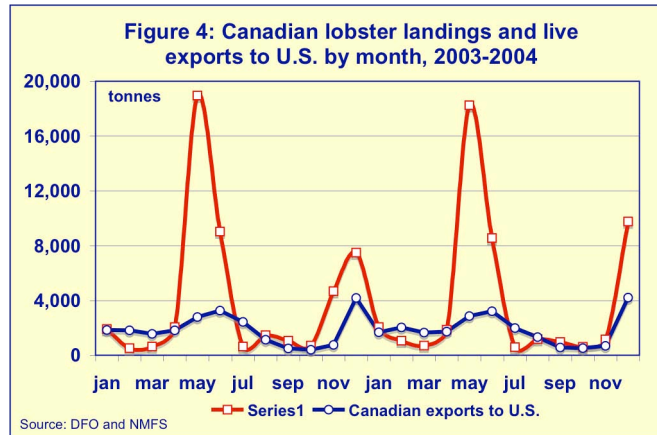
Source: NMFS

Seasonal distribution

Canada

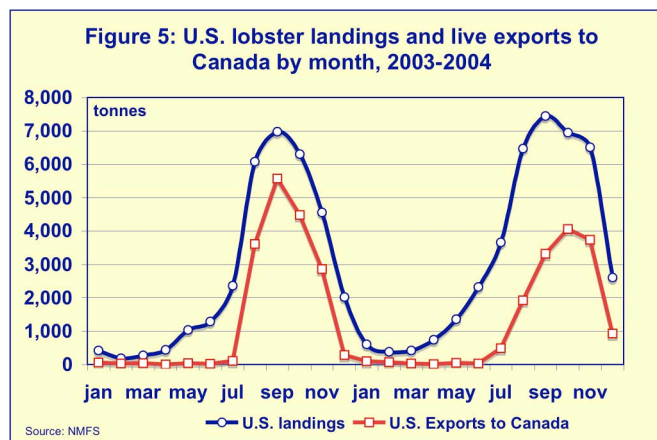
Lobster grounds in Canada are divided into 41 distinct fishing areas, each with its own season. Seasons last from eight weeks to eight months, with the timing and length determined by biological, economic and climatic factors. Fisheries are timed to avoid the moulting and growth periods (summer in most areas), and where possible, to coincide with favourable market conditions. This results in two peaks in fishing and landings (Figure 4), one in the spring (May-June) and again in early winter (December). This pattern limits the overlap with the U.S. fishery.

- ❑ The fishery along the coast of southwest Nova Scotia lasts from the end of November to the end of May, with the bulk of the catch taken in December and early January when catch rates and markets are strongest. Limited fishing occurs in February and March due to poor weather and unfavourable fishing conditions. This fishery generally produces excellent quality, but in the last 2-3 years quality has declined due to warm water conditions.
- ❑ Most of the Gulf fisheries open in late April when the ice leaves the coastal areas and last for just two months with a sharp peak in May. Most of the catch is processed.
- ❑ Other areas (off Newfoundland and eastern Nova Scotia) begin fishing in April when weather and ice conditions permit and continue for a 2-3 month period.



U.S.

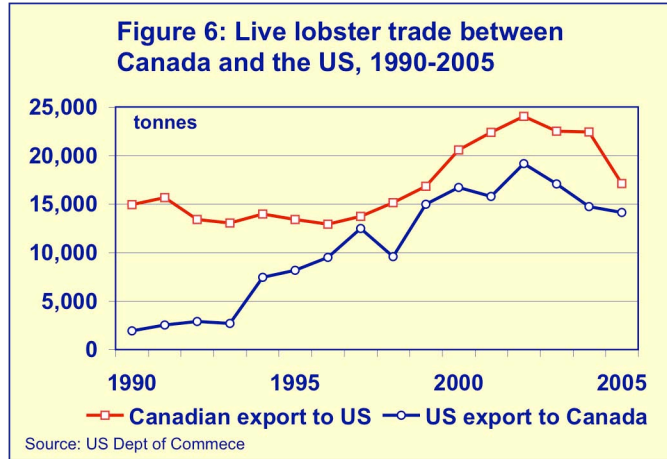
The U.S. lobster fishery is open year-round, but fishing effort and catches are concentrated in the August-November months when about 70% of landings occur (Figure 5). This timing reflects an attempt to balance four key factors: demand (summer months are a period of strong demand); catch rates (these are high in the pot-moult period because the lobster is hungry); quality (allowing time for shells to harden and lobsters to be fully “meated” following the summer moult); and, weather conditions. This harvesting pattern tends to produce a seasonal glut of poor to fair quality lobster, resulting in weaker prices during the summer-fall period. Unlike their Canadian counterparts in Nova Scotia, U.S. harvesters have limited scope to hold their catches to “re-time” supply and therefore must accept what the market offers at the time of harvest. Upwards of half the catch has been exported to PEI and New Brunswick in recent years for processing.



4. MARKETS

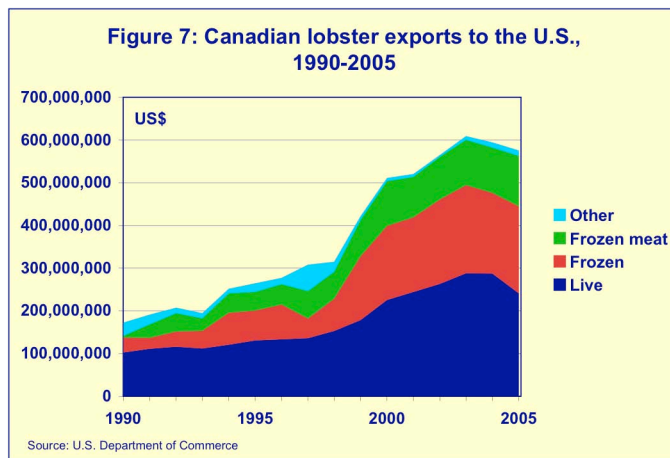
Canadian shippers supply the domestic market as well as exporting lobster to some 60 countries. Data limitations make it difficult to come up with precise estimates of the respective sizes of the domestic and export markets, but industry contacts suggest that 80-85% of total domestic supply (in live and processed form) is exported. In 2005, Canada's lobster exports were valued at \$989.3 million, suggesting that the total value of production ranged between \$1.2 and 1.3 billion.

Complicating the analysis of markets is the substantial level of exports of live lobster to Canada from Maine, much of it going for processing and then re-export to the U.S. Figure 6 shows how exports to Canada have increased since the early 1990s, rising from about 8,000 t in 1995 to just under 20,000 t in 2002 (55% of the U.S. catch). This dropped to 15,000 tonnes in 2005, about 40% of the U.S. catch. Rising shore prices in the U.S. coupled with high inventories of processed lobster caused Canadian processors to reduce their imports from Maine.



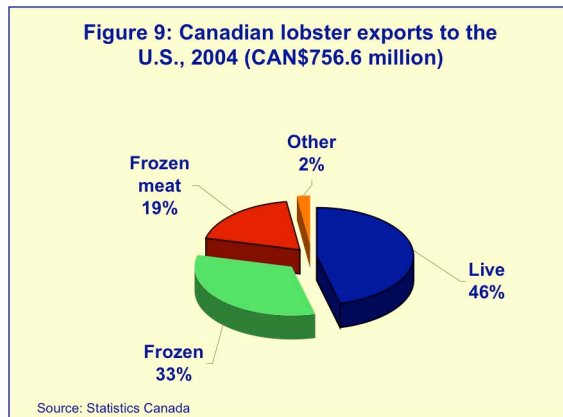
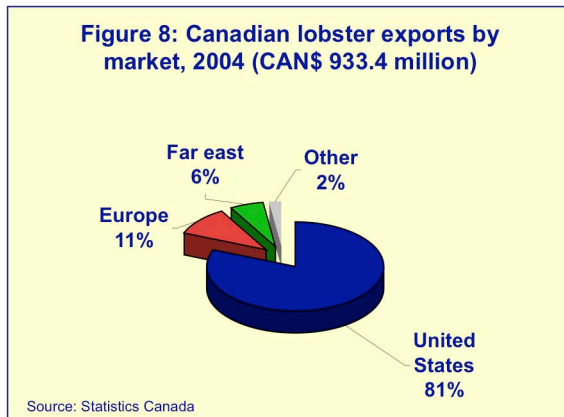
Industry estimates suggest that 45-50% of the imported lobster is processed in plants in New Brunswick and PEI. This trade allows plants to extend their processing seasons using lower priced raw material (particularly in recent years as the Canadian dollar has strengthened), and it also serves to take lobster off the live market in the U.S. thereby strengthening prices. Another 35% or so goes to the fresh market in Ontario and Quebec (during the summer and fall months when landings in Atlantic Canada are low). The remaining 10-15% is held in Canadian pounds and re-exported in February and March when supplies are low.

Rising landings in Canada over the past 15 years coupled with substantial growth in the import of U.S. lobster have combined to triple the value of Canadian lobster exports to the U.S. Exports rose from just under US\$200 million in 1990, to just over US\$600 million in 2003 (Figure 7). The frozen segment of the market saw the most rapid growth, rising five-fold between 1997 and 2005 (up from under US\$50 million to just over US\$200 million). A decline in landings coupled with a shift in markets due to a weakening of the U.S. dollar resulted in a drop in exports to the U.S. in 2004 and 2005.



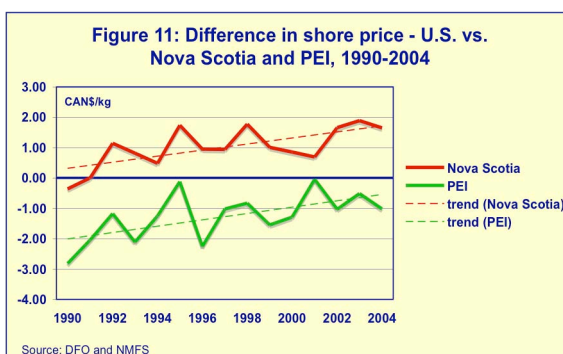
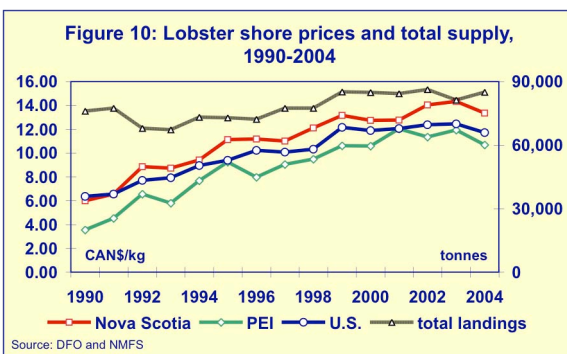
The U.S. is by far the dominant export market, accounting for 80% of total exports by value. Europe and the Far East are the other major market areas, taking 10% and 6% respectively (Figure 8). Live lobster represents just under half the total Canadian exports to the U.S. (and also represents about half the live lobster production in Canada), with frozen and prepared products making up the balance (Figure 9).

Industry sources in Canada indicate there is a brisk re-export trade in live lobster in the U.S. and that as much as 70% of Canadian lobster exported to the U.S. may be re-exported (with the balance consumed in the U.S.). This re-export trade with Europe and Asia occurs because of the wider array of airfreight options and lower rates available to U.S. shippers.



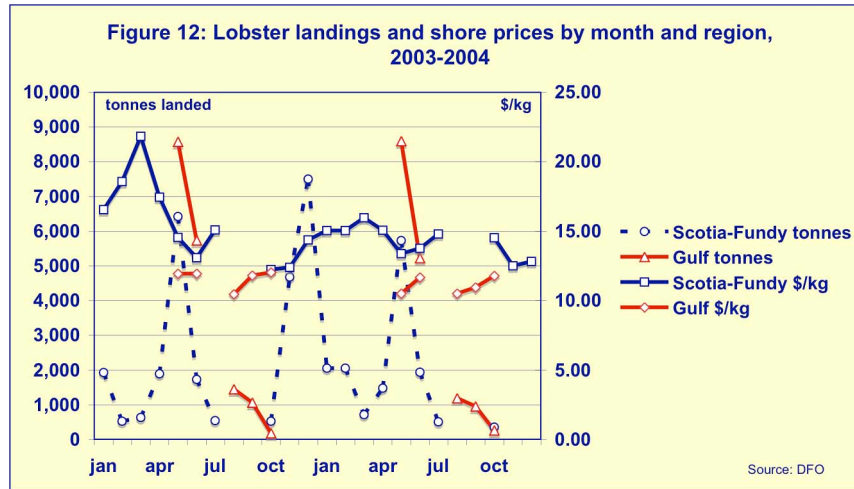
5. PRICES

As the dominant final product market, supply and demand conditions in the U.S. tend to drive the price of lobster in Canada. Prices have risen fairly steadily over the past 15 years, at least doubling since 1990. This comes in response to increased market development and demand, while supply (catch) over the period has remained fairly stable (total landings have increased by about 10%). Figure 10 shows the long-term trend of shore prices in Canada and the U.S. against total supply.



The difference in shore prices among Nova Scotia, PEI and the U.S. reflects ultimate product market, seasonal factors, quality, as well as port market competition. The gap between the Nova Scotia and U.S. (Maine) shore prices (the difference between the red and blue lines in Figure 11) is widening, reflecting conditions in the live and processed markets. That the gap between PEI and the U.S. has narrowed (the difference between the green and blue lines), should not be surprising since much or most of the landings are headed for the same product market.

Shore prices are responsive to seasonal movement in supply and demand, with market size lobster (>82.5 mm) the most sensitive to market conditions. Among the key turning points in the relationship between price and landings shown in Figure 12:

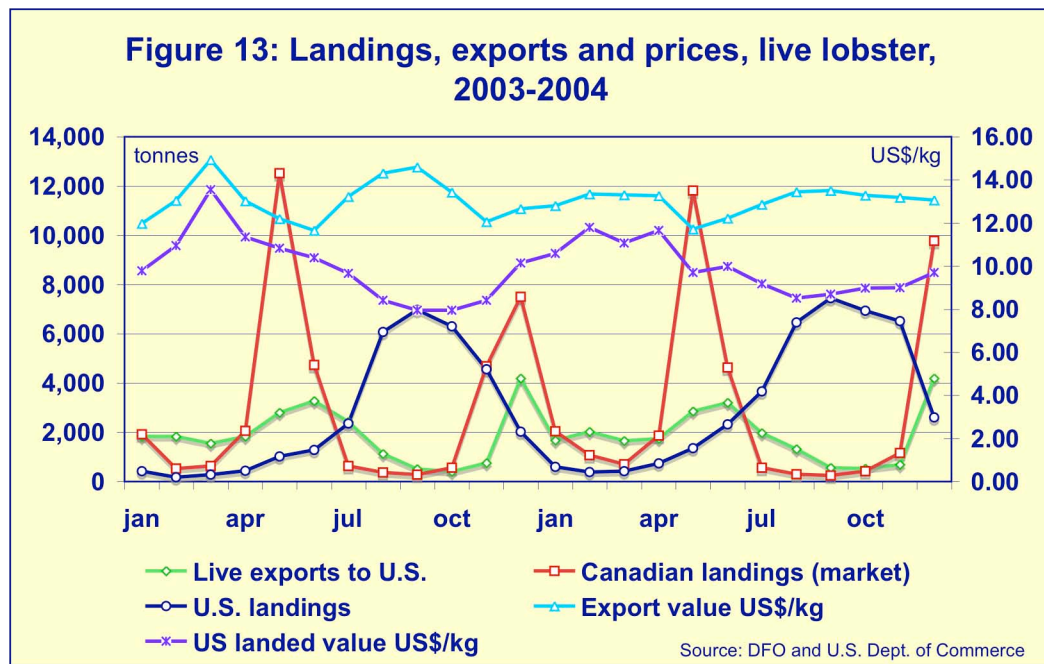


- ❑ As landings decline in Scotia-Fundy in January and February, prices rise, and may exceed \$20/kg in periods of short supply. By this time, the peak demand in December has been met and pounds would have limited supply.
- ❑ Prices drop in April as the fishery in southwest Nova Scotia resumes, and as the fishery in the Gulf of St. Lawrence begins later in the month. Prices tend to be at their lowest in May with substantial supplies on the market from all regions.
- ❑ There is limited fishing during the summer months during the moulting period and as the Maine fishery reaches peak activity. Prices tend to be at their lowest (about \$10/kg in the past few years).
- ❑ Prices begin to rise in the late fall as supply from the Maine fishery declines. They reach a peak in December-January in the face of strong holiday demand. Many harvesters in Nova Scotia will hold their November and December catches until just before the holidays in order to drive up prices. This can backfire (and has) if catches remain strong right up to Christmas.

A more complex picture emerges when the pattern of Canadian supply is considered in the context of the U.S. market. Of particular interest are the relationship (magnitude and timing) of landings and exports to U.S. landings, and the overall influence on prices. Figure 13 sets out some of these relationships. Among the key points:

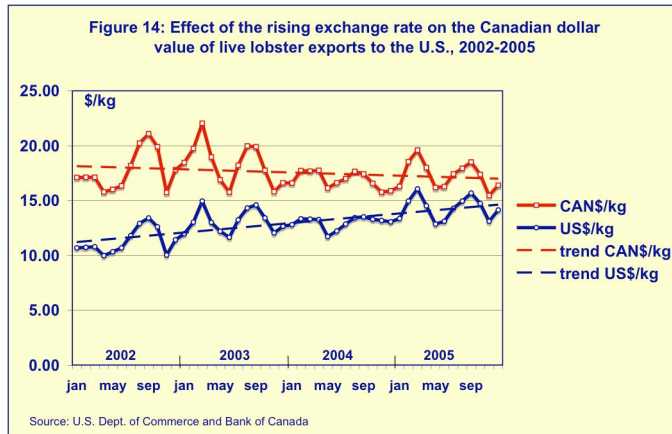
- ❑ The market is segmented into two distinct parts: one based on the supply and demand for Canadian lobster, and the other based on the supply and demand for U.S. lobster. The price trend for each source is (predictably) inversely related to the level of supply from that source, but seemingly independent of overall supply in the market. For example, as Canadian exports rise in spring, price drops; it rises again in summer as exports decline, but it does so in the face of rapidly rising U.S. catches whose influence seems limited to the shore price alone.

- Though there is a sharp peak in landings of market-size lobster in May-June in Canada, less than one-third is exported to the U.S. during this period. It serves the domestic market, is exported to other countries, or is held for later sales.
- Exports from Canada are timed to coincide with periods of low U.S. supply and/or strong demand. Through a combination of staggered seasons and the ability to re-time supply using holding facilities, the export price for Canadian lobster remains within a relatively narrow band of US\$12-14/kg. For example, the U.S. market is supplied from Canadian pounds in February and March, as neither the Canadian nor the U.S. fisheries are active (supply from pounds occurs when the green export line in Figure 13 exceeds the red landings line). The export price climbs during this period of low supply.
- The export price and the U.S. shore price begin to drop in April as Canadian landings rise sharply, and as U.S. landings resume. The drop in the U.S. shore price continues to September as U.S. catches reach their peak, and as Canadian exports drop off. Shore prices rise steadily as catches decline through fall and winter.

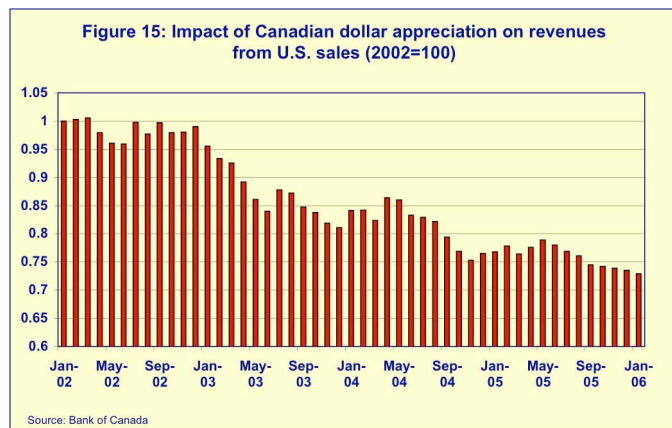


- The segmentation of the U.S. market becomes evident by July as the export price for Canadian live lobster and the shore price in the U.S. begin to diverge. The export price (light blue line in Figure 13) moves up in response to the drop in supply of high quality Canadian lobster (the green line), while the shore price moves in response to U.S. supply. To have the export and shore prices move in opposite directions means the markets are operating independently. Canadian (hard shell) lobster serves mainly the high-end restaurant and retail trade, while the Maine (soft shell) lobster supplies the mid-grade restaurants and lobster suppers catering to the tourist trade.

The U.S. market for live lobster has recovered to some extent from the recession of 2000-2001, generating a moderately rising price trend against seasonal fluctuations. This has proven to be of little benefit for Canadian shippers as the declining value of the U.S. dollar has resulted in an effective price decline in Canadian dollar terms. Figure 14 illustrates the point, showing that the unit export value (in US dollar prices) of live exports has risen from about US\$11.00/kg to about US\$15.00/kg between 2002 and the end of 2005. But the declining value of the U.S. dollar has caused the effective Canadian dollar price to shippers to drop from \$17.00/kg to just over \$16.00/kg over the period.



The impact of the appreciation of the Canadian dollar may be seen more clearly in Figure 15. This shows by how much revenues from sales to the U.S. have declined simply due to the shift in the exchange rate. In the three years between January 2003 and December 2005, each U.S. dollar earned by Canadian shippers and processors declined in value by 25-30%. In other words, had the exchange rate held its 2002 value, the Canadian dollar value of lobster sales to the U.S. in 2005 would have been some \$200 million higher (just over \$1 billion compared with \$818 million).



III

COMPETITION ALONG THE VALUE CHAIN

1. OVERVIEW

Transactions between fishermen and buyers, buyers and shippers/processors, and between shippers/processors and distributors/wholesalers and customers form the key links in the chain of market operations required to move lobster from the ocean to final consumers. The ultimate aim is to satisfy consumer demand. It is at this final stage of the value chain where the product flow stops and the process of price formation starts. Prices are determined at each trade level as market participants each try to maximize their profits given the demand and supply conditions. The final result is a supply of fresh and processed lobster at prices consumers are willing to pay.

A principal objective of this study is to examine the competitive environment facing buyers and sellers at the various trade levels in Canada and the U.S. The United States is the principal market for Canadian lobster (both live and processed), and as such, exerts a dominant influence on prices. The trade statistics also reveal that Canada is a major buyer of U.S. lobster. It is processed and held here and re-exported to the U.S. in various product forms. So the respective Canadian and U.S. industries and markets are closely intertwined. For all these reasons, in trying to benchmark the competitiveness of Canada's lobster industry it makes sense to use the U.S. as the basis for comparison.

Industry structure represents one of the key factors determining competitiveness. In fact, as we explore the various stages of the value chain and the technical and logistical challenges firms face in order to operate in the lobster business, it becomes clear that structural issues – particularly as these relate to price formation in the port market – overwhelm all other factors in shaping the competitive environment.

2. STRUCTURE AND COMPETITIVE BEHAVIOUR

Key factors

Industry structure refers to those characteristics influencing the nature of competition among buyers and sellers at each stage of the value chain. The relevant characteristics are:

- ❑ **Industry Concentration:** The number and relative size of buyers and sellers provide an indication of market power and reflect the degree of competitiveness in an industry. Market power is normally expressed in terms of industry concentration: the share of sales or purchases accounted for by the largest individual sellers or buyers. For example, in a market characterized by high buyer concentration, a few companies account for a large share of purchases and are able to exert considerable influence over price. Conversely, in markets characterized by low buyer concentration, each company accounts for a small share of purchases and is a price taker.

- ❑ **Buyer-Seller Relationships:** Formal and informal links between buyers and sellers (harvesters) may limit the independence of each. The relationship is formal if the buyer owns the vessel and controls the catch. This is not permitted in Canada and the U.S. (except in the offshore lobster sector). The relationship is informal if there is separate ownership of harvesting and processing equipment, but with arrangements between buyers and harvesters that provide some mutual guarantees. To the extent independent action by fishermen is constrained, transactions would not be subject to price competition from other buyers. This could affect price levels and the speed with which prices change in response to market conditions.
- ❑ **Entry and Exit Conditions:** Freedom of entry and exit are fundamental characteristics of a competitive industry. This means any new company or individual may begin selling or buying if it appears profitable to them to do so, or conversely, may stop and leave the industry. It also means that existing participants have no way of barring the entry of others and there are no legal (regulatory) restrictions on entry or exit. Where barriers exist, industry price setting or investment behaviour may depart from that expected in a competitive industry.

Concentration

Harvesting

In both Canada and the U.S. concentration is low at the harvesting stage. This means that none of the 9,770 harvesters in Canada and 7,500 in the U.S. controls a sufficient share of the catch to be able to influence price. Some areas have larger and more productive grounds than others and this results in wide differences in landings by LFA or Area, and within a given area, some fishermen catch more than others because they are more skilled, have better boats and gear, fish more productive grounds, or simply work harder. But despite these differences, within defined licence areas landings tend to be distributed fairly evenly among harvesters.

Harvesters in both countries act individually when selling lobster, negotiating directly with buyers. Paradoxically, though, through their communication networks harvesters effectively act in concert (informally) to drive the shore price uniformly to the highest level possible. Buyers are obligated to pay the prevailing shore price or lose the vessel's supply *for the season* to a competing buyer. In short, despite their large numbers, the competitive balance tends to favour harvesters (sellers) because of strong demand and finite supply over a given season. This is particularly true in Canada where seasons tend to be short, thereby establishing a high penalty for not buying aggressively.

Buying

Buyers range from individuals operating in a single port and buying from a few vessels, to ones operating in several ports and in more than one province buying from hundreds of vessels. The several hundred buyers active in Atlantic Canada and New England suggests low concentration, and consequently a limited ability on the part of any individual buyer to influence price. Unfortunately, data to support this observation are not readily available, and nor are they necessarily reliable. Anecdotal evidence suggests concentration is not an issue in the U.S., though it may be an issue in Canada, particularly in Nova Scotia and New Brunswick, where a few buyers account for a significant share of the lobster landed and reportedly have some ability to influence prices by playing shippers/processors off against each other.

Shipping/Processing

Determining the degree of industry concentration at this stage is difficult due to the complex network of buying and marketing. Many shippers and processors obtain raw material from independent buyers, rather than directly from harvesters. There is no formal record of these transactions.

There are over 200 shippers of live lobster in the Scotia-Fundy Region. Many of these are relatively small firms, marketing their product through one or other of the Region's larger shippers. Anecdotal information suggests the top four shippers in the Region (shipping for the live market) would account for less than 50% of total purchases within the Region. In the Gulf Region, with its 45-50 processing companies, the top four (producing processed lobster) would also account for less than 50% of total purchases within the Region. These degrees of concentration are below the 60-65% regarded as the minimum level of market power needed to be able to influence prices on the buying side.

Distribution

Importers, wholesalers, brokers and traders carry out the distribution of lobster in the U.S. They are the intermediaries in the industry, whose livelihood depends on their knowledge of sources of supply and demand. Their role is to move product efficiently from shipper/processor to retailers and food service firms. They react to market demand by supplying what their customers want.

American importers buy mainly from Canadian shippers. Some have set up in Canada and buy directly from harvesters. They hold lobster in tidal pounds and tank systems and airfreight or truck to regional distribution centres. Wholesalers purchase product from air freighters, shippers and processors, and hold it for resale to retailers and food service companies. Brokers are selling agents for shippers and processors who are paid a commission (2-3%) to arrange sales. Traders are essentially opportunists who enter the market when possibilities for short-term profit present themselves.

Several hundred distributors in the United States carry Maine or Canadian lobster in some form. While no reliable information is available on the quantities of lobster each buys and sells, industry sources indicate that four Boston firms handle about *half* the wholesale market (including both United States landings and Canadian imports).

Retail and food service

At the retail level, lobster is sold to consumers by the food service sector (including restaurants, cruise lines, casinos) and retail outlets (supermarkets, specialty seafood shops). A few thousand companies operate chains of three or more restaurants, and as well as there are tens of thousands of independent units offering lobster. The total number of restaurants would be in the hundreds of thousands. There are similar numbers of supermarkets, owned individually or by chain operators. Specialty seafood stores number in the thousands.

Buyer-Seller Relationships

Fisherman – Buyer

Lobster buyers (or “dealers” as they are also known in the U.S.) and fishermen are linked in informal ways. The arrangement may be described as one of mutual dependence. Buyers/dealers do not own fishing vessels (unless they are harvesters first and buy as a sideline) and do not have a secure supply of lobster. They depend on fishermen. Similarly, with few exceptions, fishermen do not own and operate lobster handling facilities (though some have small holding facilities in some areas), and do not have a ready means of marketing their catch. Most depend on buyers. Fishermen generally agree to sell all lobster to a particular buyer in exchange for an agreement by that buyer to provide a range of services including provision of supplies and credit, and access to unloading facilities and transportation. Buyers also agree to take *all* lobster from that fisherman at the prevailing shore price.

Buyer – Shipper/Processor

Through information compiled in this study and in past ones, it is clear that the image of the buyer as a small operator carrying out a modest intermediary function is no longer valid. Though many buyers continue to operate in the traditional mode (aggregating supply on behalf of others), the buying function has evolved from a simple agency relationship with a given shipper/processor, to a distinct stage in the value chain where larger independent or quasi-independent buyers take actual ownership of the raw material (this is the case in Canada and the U.S.).

- ❑ In Canada, they may have a nominal relationship with a specific shipper/processor, but they are not above offering the lobster to the highest bidder where market conditions (or shipper/processor desperation) appear to support a higher price. The point is that the larger buyers have some price setting ability in that they are able to extract higher prices from shippers/processors by playing one off against another at certain times in the market cycle.
- ❑ In the U.S., the value chain tends to be a bit shorter, and these larger dealers function as shippers and sell directly to distributors.

Shipper/Processor – Distributor

Virtually all Canadian shippers/processors exporting to the United States, and all dealers in the U.S., use independent distributors and brokers. The principal markets are Massachusetts, Maine and New York. Though transactions are at arms length, there is a need to develop good working arrangements (quality, delivery, payment, etc.), so relationships between particular shippers/processors and distributors, and between dealers and distributors, tend to be fairly stable.

Distributor – Retail/Food Service

Seafood distribution and the Retail/Food Service segments of the industry operate at arms length, with the relationship based on price and service.

Entry and Exit

Harvesting

- ❑ **Canada:** Limited entry licensing was implemented in the lobster fishery in the late 1960s. This was partly a conservation measure aimed at limiting the expansion of fishing effort, and partly an economic measure to ensure fishermen were able to earn adequate incomes. While no additional vessels may enter the fishery, licence transfers are permitted and the entry of new fishermen is therefore a possibility. In light of the relative prosperity lobster fishermen have experienced in recent years, transferability has also made it attractive to leave the industry if that were desirable. Licences are transferred in most areas for amounts in the hundreds of thousands of dollars, and in one area at least, in excess of one million dollars. These costs may represent barriers to entry for most individuals, but are of academic interest from a price competition standpoint because it is limitation on the *number* of licences that represents the barrier.
- ❑ **U.S.:** Out of concern for the health of lobster stocks, limited entry is now in force in all states but Rhode Island. In Maine, entry is not just limited, but the State has introduced a system where five licences must be retired before a new one may be issued (so, the number of commercial harvesters will gradually decline). Licence transfer is not permitted, so licences have no asset value in a secondary market. Licence transfer is permitted in Massachusetts, but only to an immediate family member.

Buying

- ❑ **Canada:** Depending on the province, individuals or firms wishing to become lobster buyers may have to meet certain criteria before they are eligible to obtain a licence. But in no province is there is no limit on the number of licences that may be issued. Where eligibility criteria exist, they include investment in lobster holding facilities to a specified standard. Meeting these criteria could act as a barrier to the more opportunistic buyers (who have been known to act as a destabilizing force in the shore market), though size of the investment is relatively low. Effectively, entry restrictions do not limit competition in any meaningful way.
- ❑ **U.S.:** Buyers in each state but Connecticut must obtain a licence. The number issued is not limited.

Shipping/Processing

- ❑ **Canada:** Shippers require a licence in each province, but there is no limit on the number. Shippers are required to meet certain criteria with respect to facilities. In practice, this is less a barrier to entry than a discouragement, since the requirement is nothing more than the minimum an enterprise would need in order to carry out the business at a modest level.

Processors also require a licence in each province. They must satisfy minimum standards with respect to facilities in each case, and in Newfoundland and Labrador and Prince Edward Island they must also make the case that additional facilities are justified from a raw material supply perspective. This requirement is put in place to avoid an imbalance in supply and demand resulting in excessive price competition for raw material.

- ❑ **U.S.:** Processors require a licence in each state, though only Maine has plants in operation. They must meet state and federal standards. Entry is encouraged as a means of creating employment and strengthening communities.

Distribution

Lobster distribution is a high volume, low margin business dominated by just a handful of U.S. companies. Entry is not formally restricted, but achieving the scale to compete effectively represents the main barrier to entry. Achieving scale requires development of sales channels and reliable sources of supply, as well as investments in holding facilities. Industry sources in the United States indicate that despite these factors, improvements in transportation and distribution systems and growing demand for lobster have lured many small producers and brokers into the business.

Retail/Food Service

For restaurants and retail stores the availability of space and investment in holding tanks are the main barriers to entering the live lobster trade (assuming there were local distributors). Other key factors influencing the decision to sell live lobster is price stability and year-round availability. The substantial number of establishments involved in lobster sales suggests these are not major obstacles, though they presumably have a bearing on profitability and help to explain some of the difficulties in market development.

3. PRICE FORMATION

Overview

Shore prices for lobster in Atlantic Canada are ultimately determined by demand and supply conditions in the United States, the dominant market for both live and processed product.

A highly simplified description of the price formation process for live and processed (frozen) lobster is illustrated in Figures 16 and 17. Actual prices for 2005 are used. The interplay of demand and supply at the retail or restaurant level establish the market price at the point of final consumption. This is what consumers are willing to pay, given the consumption options open to them. This price (less a margin to cover costs and profit at each stage) is communicated to distributors, and in turn to shippers and processors in Canada. Competition among shippers/processors to satisfy wholesale demand establishes prices at this level. Shippers/processors reflect this price to buyers who in turn express it at the various ports and landing sites along the Atlantic Coast. Shore prices are established by the interactions between fishermen and buyers.

Industry structure and behaviour conform to the characteristics of a competitive market. These characteristics effectively rule out the possibility of buyers or fishermen, shippers or distributors, being able to maintain artificially low or high prices (even if they wanted to). Industry concentration is relatively low, implying that individual buyers and fishermen (or groups of either) have negligible influence over prices. There may be informal ties at various stages of the value chain, but these tend not to relieve the buyer from searching for the lowest price and the seller from finding the highest price. Given the number of competitors and the accessibility of market information, any artificially low or high prices would soon attract competition and drive prices to an equilibrium level.

Figure 16
Live lobster value chain showing prices and margins at each stage of the market

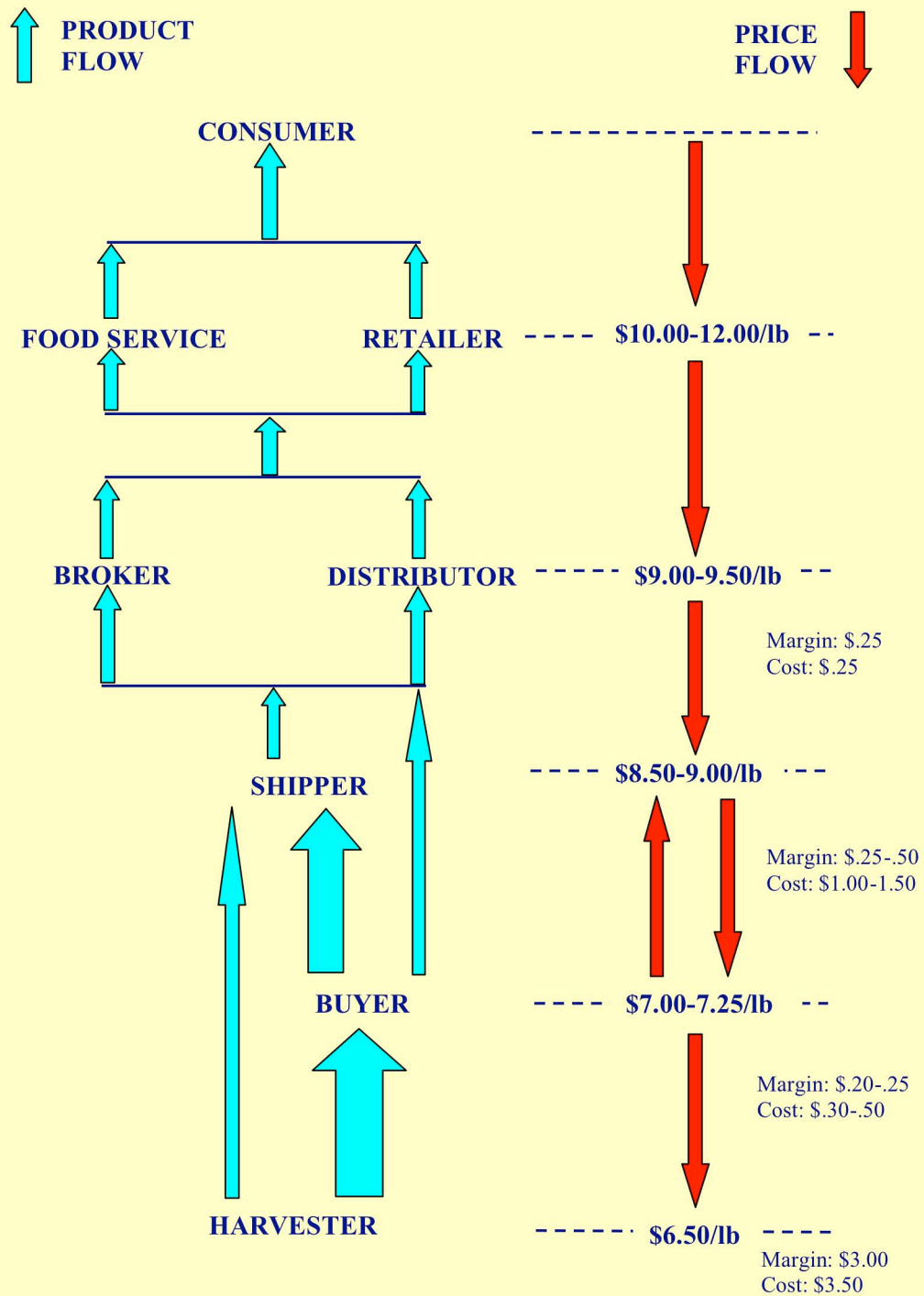
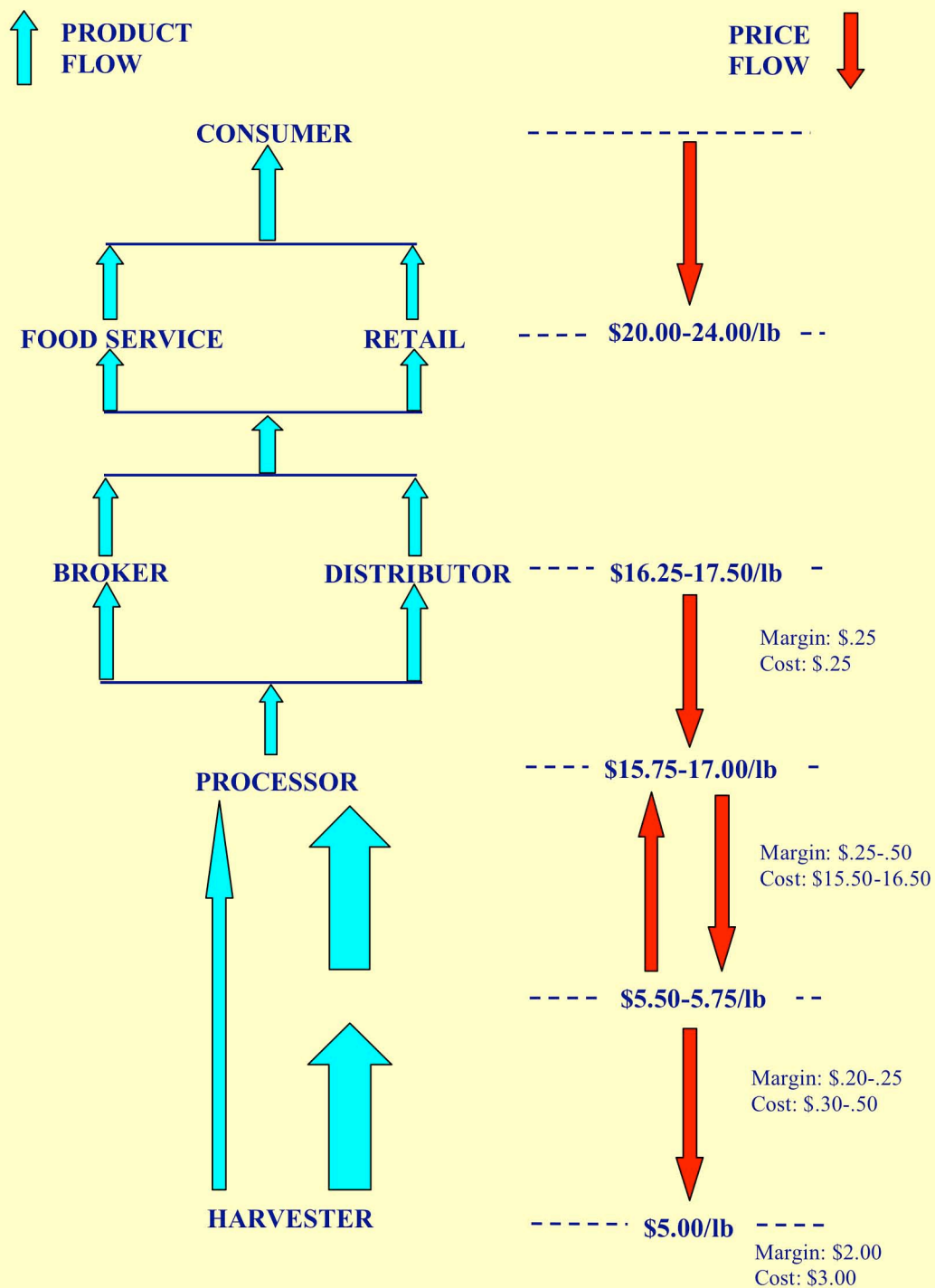


Figure 17
Processed lobster (frozen) value chain showing
prices and margins



Fisherman-Buyer

Live market

The annual process of price formation begins at the end of November and tends to be a ritualized affair, with initial low offers from buyers rejected by fishermen until a satisfactory price is reached. The time needed to arrive at a satisfactory price varies with the season, the area (in particular, whether it is possible for fishermen to hold lobster), market conditions and the financial position of buyers and sellers. Fishermen play the market trying to extract higher prices from buyers and buyers play the market offering higher prices to fishermen while trying to extract higher prices from shippers. Bluff, deception, fear and greed tend to be the main price drivers early in the season.

The fishery in southwest Nova Scotia is crucial from a price-setting perspective because of the influence it has on the general price level in other areas later in the season. The fishery opens at the end of November. Fishing effort is high because demand is strong leading up to the Christmas and New Year holidays. Initial offers from buyers are typically below market. Some lobster may be sold by fishermen who need cash or who lack holding capacity. But most fishermen withhold supplies in anticipation of higher prices. Prices rise as mid-December air shipment and trucking deadlines approach. The risks for fishermen are shrinkage or holding out too long. The risks for buyers are missed opportunities or paying too much.

Prices tend to remain high during the winter months (January-April). Demand tends to run ahead of supply, with inventories (holding facilities) making up the difference. Prices typically drop in late March-early April, as demand declines and in anticipation of the opening of the seasons in the Gulf and other areas. The increase in Canadian supplies is accompanied by gradually increasing catches in the United States. Total supply in spring exceeds demand, placing downward pressure on market and shore prices. Much of the supply during this period goes into holding facilities to be held until demand drives prices up. This occurs when the summer tourist season begins in the U.S. By then (late June), most Scotia-Fundy seasons have closed and demand for Canadian lobster is met from holding facilities.

Processed market

Markets for processed lobster products are relatively stable, and this is reflected in shore prices in the Gulf. There is sufficient information generally available about product markets (including wholesale prices and inventory levels) to reduce the scope for either buyers or fishermen to expect (or receive) prices that are out of line with competitive conditions. Prices for so-called “canner” lobster (ones too small for the live market) tend to run \$1.00-1.50/lb below prices for “markets”.

Price setting differs slightly in the Gulf, where a rebate system is used to limit the uncertainty and jockeying at the beginning of the season. Rebates are essentially end-of season supplementary payments reflecting actual market conditions over the season. The use of rebates avoids the risk of delays in starting the season in the absence of an agreement on prices. Fishermen receive an acceptable price at the outset, knowing that they will receive a top-up at the end. There is no formula to establish the rebate; processors pay what the market will bear, knowing they are competing for supply for the next season.

Buyer-Shipper/Processor

Many buyers operate independently, not simply passing along shipper prices to fishermen, but using their market position to influence the shore price. Some of the larger buyers are known to try to increase their buy by using part of the commission to bid up the shore price. They also try (and often succeed) to pass along higher prices by playing off one shipper/processor against another, causing shipper/processor margins to be squeezed in the process. This is a supply-driven industry and shippers rarely turn down a buying opportunity. Buyers operate on commissions of \$0.50-0.75/lb, realizing net margins in the \$0.20-0.25/lb range.

Shipper/Processor-Distributor

Canadian shippers and U.S. distributors dealing in the U.S. market are supply driven. They buy lobster when it is abundant and cheap, and hold it in the hope of selling when supplies are low and prices high. The net margins earned by Canadian shippers tends to be low (\$0.25-0.50/lb), a reflection of the limited value added in moving lobster to the Boston market and the costs of building and operating holding facilities (including mortality losses).

A typical discussion between a shipper of live lobster in Atlantic Canada and a distributor or wholesaler involves quantity, delivery, and price. Competition for sales/purchases dictates that both groups have a good sense of market conditions. Though there is some stability in arrangements, there is also the need to shop for the best prices. Changes in market conditions are reflected rapidly in changes in price as distributors hunt for cheaper product and shippers for higher priced sales.

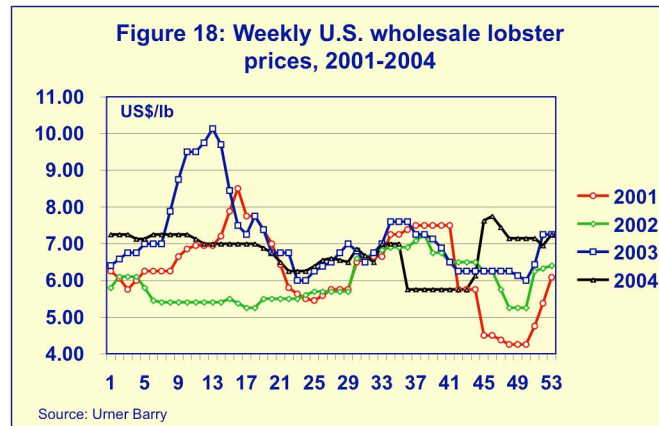
The distribution of the wholesale price is of particular interest because it reflects the relative bargaining strength in the industry. Harvesters typically take about 70% of the wholesale price, shippers 15%, with buyers and distributors splitting the balance about evenly (7-8% each). These relative shares reflect competitive conditions in the industry (Figures 16 and 17).

Distributor-Retail

The underlying principle for companies involved in distribution is to charge what the market will bear. Selling prices are generally held for short periods and are subject to change depending on market conditions. From a distributor's perspective, "market conditions" means demand. For much of the year demand is met from holding facilities in Canada so supply is generally not a major issue. Canadian shippers will release supply at a rate that tries to keep prices as stable as possible. But as Figure 18 shows, trying to maintain stable selling and wholesale prices is no easy task when trying to anticipate and balance natural and market forces:

- ❑ **2001:** prices showed what some might refer to as a typical pattern during winter, rising to a peak by late March and then declining sharply as the spring fisheries began. The slow rise in summer gave way to a sharp drop after September 11.
- ❑ **2002:** the weakness in late 2001 carried through to early summer before the typical pattern of rising prices emerged in early summer, followed by weakness in the run-up to the holidays.

- ❑ **2003:** the year got off to a slow start, but then bad weather and limited supply forced prices to record levels in late winter. The pattern for the rest of the year followed a typical pattern of weakness in the late fall as the U.S. catch peaked. Canadian processing companies bought aggressively as they had done in 2001 and 2002, buoying prices in the live market.
- ❑ **2004:** steady catches in late 2003 and early 2004 meant stable prices during winter, giving way to the seasonal price drop in summer. Prices failed to match the previous few years in the fall, largely because high inventories of processed product kept demand for raw material down, thereby freeing more supply for the live market.



Retail-Consumer

Retail marketing of most products is based on stable pricing. This is particularly true of food, whether sold in restaurants or grocery stores. For restaurants, instability makes it difficult to plan menus. For supermarkets, lobster prices could change substantially in the time it takes to prepare advertising and promotional sales. In many cases, lobster is used as promotional item, often as a loss leader.

Most restaurants offering lobster do so at prices “subject to market conditions”. This generally means that lobster will be served provided it can be offered at a price that allows the restaurant to realize its normal mark-up on food of some 300 percent (a lobster bought for \$8.00/lb wholesale, would be sold for \$24.00/lb). While this may not always be achievable, distributors know when setting prices that restaurants are the main outlets for lobster. To try to push prices beyond levels consumers are willing to pay would be self-defeating. If this margin were narrowed unacceptably due to high wholesale prices, restaurants would react by taking lobster off the menu until prices come down.

IV

BENCHMARK ANALYSIS

1. OVERVIEW

This chapter provides an analysis of the competitive environment facing the Canadian and U.S. lobster industries measured in terms of several benchmark indicators. These indicators cover a range of regulatory, operational, market and administrative issues, many of which spring from government policy. An underlying question in the analysis is whether the respective industries operate on more or less an equal footing, and if not, whether any changes to the regulatory environment could improve the competitive position of Canadian industry.

Standing back from the detail, it seems clear that the regulatory environment diminishes greatly as the lobster moves up the value chain. Regulation is strongest at the harvesting stage, less so at the processing stage, and virtually non-existent at the marketing stage. In light of this, if there were opportunities for some redress of a regulatory imbalance, they are more likely to occur at the harvesting stage than some later point along the value chain.

The main conclusion to emerge from the benchmark analysis is that the industries operate on more or less an equal footing at each stage and that there is little that could be done from a regulatory standpoint that would improve the competitiveness of the Canadian industry.

2. POLICY – REGULATORY ENVIRONMENT

Resource conservation and management

Harvesters in Canada and the U.S. engaged in fishing *market* lobster face identical regulations regarding the key parameter of the fishery: legal size. Lobsters entering the live trade in the U.S. must have a carapace length of at least 82.5 mm (3.25 inches).

Canadian harvesters and processors in the Gulf of St. Lawrence enjoy a competitive advantage in the *processed* lobster trade. Harvesters are permitted to land and processors are permitted to use lobster as small as 67.5 mm. This gives the industry access to a huge resource not available to their counterparts in the U.S. Any U.S. processor (and there are few) must compete with the live trade in securing raw material (importing from Canada is not permitted because of U.S. size restrictions). This has generated some complaints from interests in Maine who argue the smaller legal size in the Gulf confers an unfair advantage.

The other conservation measures are of less significance from a competitive standpoint, though they could have implications from the perspective of sustainability.

- **Harvesting females:** the rules tend to favour Canada, in the short run at least. Canadian harvesters may keep females as long as they are not bearing eggs. U.S. harvesters are required to V-notch and return females. The difference in the respective approaches means that Canadian harvesters are able to realize higher catches per unit of effort (or, alternatively, produce lobster at lower unit costs) because they may keep a higher proportion of the lobsters caught (see Table 7).

- ❑ **Seasons:** on the face of it, the rules would appear to favour U.S. harvesters because they may fish year-round, thereby optimizing income by utilizing capital more efficiently, harvesting when lobsters reach peak intrinsic quality, and timing their effort to coincide with market conditions. But the catch data show that effort is concentrated in the post-moult period (August-November) when catch rates are highest, but when lobster is at its lowest quality. This period coincides with a strong local market, and also with the months of limited competition from Canada. By contrast, though Canadian harvesters are constrained from a timing and duration standpoint, the seasons are set to balance resource (limiting the overall catch) and market considerations (both quality and price).

Industry regulation

Both Canada and the U.S. rely on the same kinds of measures to regulate the industry. Many of these have been introduced only recently into the U.S. fisheries, and in most instances, the measures are less stringent than those facing Canadian harvesters.

- ❑ **Limited entry:** applicable in Canada since the early 1960s, this measure has gradually found its way into the U.S. fisheries (applicable in all states but Rhode Island). In Canada it serves both conservation and income distribution objectives, while in the U.S. it has been introduced chiefly on the merits of its conservation benefits.
- ❑ **Trap limits:** Canadian limits are anywhere from one-quarter to one-half the maximum allowed in the U.S. Whether this confers any competitive advantage or disadvantage is indeterminate because the number of legal size animals available to the fishery in any year is finite, and fewer or more traps would serve simply to shorten or extend the season.
 - The higher limit in the U.S. presumably allows harvesters to catch what is available within the space of a few months. They face higher capital costs (at \$100/trap) and may face higher or lower operating costs depending on how frequently they haul their traps. If costs are lower, they would presumably be offset by lower prices, with the catch hitting the market in such a short period.
 - The lower trap limit in Canada serves primarily as an income distribution mechanism. Most seasons are short, with catch rates declining rapidly after the first two weeks. So the trap limit does not limit the overall catch as much as it assures all harvesters an opportunity to share the resource equitably.
- ❑ **Vessel restrictions:** in practice, the presence or absence of vessel restrictions confer no advantages since harvesters in both countries use vessels <45'. Canada restricts vessel length for the lobster fisheries to <45' in most areas and <35' in some. This serves primarily equity objectives. While the limitation raises no safety issues in most areas where lobster grounds are close to shore, it is beginning to cause concern in areas with more extensive grounds and a winter fishery (southwest Nova Scotia). An increasing number of vessels participates in the fishery during the January-March period in response to high catch rates and strong markets. No vessel restrictions apply in the U.S., though most vessels fish inshore grounds and are <45'.

- ❑ **Licence eligibility:** the same independent owner-operator principle applies in both Canada and the U.S. Only independent harvesters who own and operate the vessel may hold a lobster licence. This places harvesters and buyers/shippers/processors on the same footing in both countries.
- ❑ **Licence fees:** harvesters in both countries must pay annual licence fees. Fee levels in most areas are comparable in absolute terms (ranging from \$100 to \$500), and account for a small percentage of total revenues (generally less than 1% range). Fees in Scotia-Fundy Region LFA 34 are \$1,890 annually (the highest in Canada), but this fishery generated average vessel revenues of \$230,000 in 2004.
- ❑ **Licence transfer:** Canadian licence-holders may transfer their licences. In the U.S., transfers are not permitted except in Massachusetts and Connecticut, where transfer to a family member is permitted. The difference in treatment is noteworthy because of the impact on vessel cost structure in Canada and the potential implications this carries for increased harvesting pressure and higher price expectations. Over time as licences change hands, the capitalized value of the fleet will increase leaving it at a cost disadvantage with its U.S. counterpart and more vulnerable to adverse resource and market shifts.

Trade

The trade in lobster between Canada and the U.S. is open and brisk in both directions. With the exception of minimum legal size, trade is subject to similar rules and standards governing food safety and country of origin labeling (see Table 8).

- ❑ **Size:** Canada set its minimum legal size in LFAs outside the Gulf of St. Lawrence at the legal minimum for the live trade in the U.S. This puts Canadian shippers on an equal footing with their U.S. counterparts. This may have imposed a short-term cost on Canadian harvesters when the measure was introduced (a possible difference in the value of the catch at the old and new sizes), though in the longer term it would result in conservation benefits. Canada may in any event have moved to this slightly larger size for conservation reasons (it adopted more stringent measures in several LFAs some years later).

Canada maintains a smaller legal minimum size in several fisheries in the Gulf of St. Lawrence. This smaller size is justified on the grounds that lobster reach reproductive maturity at a smaller size in the Gulf environment. This smaller lobster may not enter the U.S. in live form. As a less valuable size, it provides the basis for a processing industry (producing various frozen in-shell and meat products) exporting mainly to the U.S. This industry also relies heavily on lobster imported from the U.S. during the seasonal peak when prices drop to levels making processing a viable option. This trade dates back many years, but more than doubled in 1994 (rising to 8,000 t) as U.S. landings increased sharply putting downward pressure on prices in the live market. Directing these volumes of market size lobster to processing in Canada benefits the industries in both countries, providing processors with a source of supply to extend their production seasons and keeping prices up in live market.

Table 7
Management measures in the Canadian and U.S. lobster fisheries

	# Licences	Limited Entry	Season	Trap Limit	Cost of Licence	Minimum Carapace Length (mm)	V-Notching		Vessel Restrictions	Licence Transfer
							Mandatory	Return		
CANADA										
Scotia-Fundy	3,017	Yes	Spring Winter	225 – 400	\$100 - \$1,890	76 – 86 (most 82.5)	No	Yes	<45'	Yes
Gulf	3,187	Yes	Spring	250 – 300	\$310 - \$465	67.5 – 82.5	No	Yes		Yes
Newfoundland	2,923	Yes	Spring	100 – 200	\$30 - \$100	82.5	No	Yes	< 35' (some LFAs)	Yes
Quebec	643	Yes	Spring	250 – 300	\$500 - \$740	70 – 83	No	Yes		Yes
USA										
Maine	5,468	Yes	Full year	800	\$240	82.55 Area 1	Yes	Yes	No	No
Massachusetts	1,374	Yes	Full year	800	\$260	82.55 Area 1 86.52 Outer Cape	Yes (Area 1)	Yes	No	Yes
New Hampshire	300	Yes	Full year	1,200	\$103 - \$300	82.55 Area 1	Yes	Yes	No	No
Rhode Island	400	No	Full year	800	\$75 - \$300	82.55 Area 1 87.3 Area 2	Yes	Yes	No	
Connecticut	182	Yes	Full year	Variable	\$60 - \$400	83.34 Area 6	No	Yes	No	Yes

Table 8 Licence requirements for lobster dealers, shippers and processors in Canada and the U.S.				
Is a license required to deal/ship/process?		Is entry restricted?	Criteria for Licensing	Inspection requirements for shippers/processors
CANADA				
Nova Scotia	Yes	No	Facilities must meet minimum criteria (S)	<input type="checkbox"/> CFIA Requires QMP (HACCP) <input type="checkbox"/> Reporting of Imports to CFIA <input type="checkbox"/> Periodic plant and product inspection <input type="checkbox"/> Fee: \$1,500
New Brunswick	Yes	No	Resource, Capacity, Employment (P)	
Prince Edward Island	Yes	Yes	Moratorium	
Newfoundland & Labrador	Yes	Yes	Moratorium	
Quebec	Yes	No	n/a	
UNITED STATES				
Maine	Yes	No	Specific licenses to buy directly from fishermen	<input type="checkbox"/> USDA Requires HACCP <input type="checkbox"/> Periodic plant and product inspection <input type="checkbox"/> No USDA registration fee <input type="checkbox"/> NMFS inspection fee for plant and product <input type="checkbox"/> US\$117/hour
Massachusetts	Yes	No	Primary buyers must report	
Rhode Island	Yes	No	All shellfish from outside RI must be sold outside of RI	
Connecticut	If purchasing directly from fishermen	No	Landings reporting Monthly reporting	
New Hampshire	Yes	No	Reporting	

- ❑ **Plant standards and inspection:** processing plants in both countries must meet essentially the same standard if they wish to export.
 - In Canada, the Canadian Food Inspection Agency (CFIA) ensures plants meet HACCP standards or have a Quality Management Program (QMP) in place that meets reference standards. This has proven to be a challenge for many plants. CFIA conducts periodic compliance verifications, with frequency determined by an assessment of the risks the plant poses. Some in the industry have expressed concern that some plants meet standards on paper only, and that inconsistency in the way inspections are conducted and standards are applied could lead to problems for the industry as a whole should a food safety issue arise at some point.
 - In the U.S., the Food and Drug Administration (FDA) is responsible for ensuring that plants meet HACCP standards. Processing plants are inspected annually, while holding facilities are inspected periodically in the U.S. Inspections are carried out by either the FDA, the National Marine Fisheries Service (NMFS) or State agencies.
- ❑ **Plant licence, registration and product inspection fees:** all plants are required to hold valid licences issued by provincial or state authorities. Plants wishing to export must be federally registered and shipments are subject to random inspections.
 - In Canada, plants pay annual provincial licence fees in the \$200 range. The annual CFIA registration fee is \$1,500. A certificate costing \$25 is required for each shipment, up to a maximum of \$25,000. If a shipment is inspected, the certificate costs \$100. All products must display a country of origin label. For live lobster this is a Canadian flag on the claw band. For processed lobster, the label appears on the packaging.
 - In the U.S., plants pay annual state licencing fees ranging from \$100 to \$635. There is no fee for FDA registration and no fees for food safety inspections carried out by the FDA. But unannounced validation audits are carried out by NMFS on a monthly or quarterly basis, and are charged to the plant on a fee for service basis (at US\$117/hour). Audit costs range between US\$1,000 for a small plant to several thousand dollars for a large facility. U.S. products are identified by “Product of U.S.A.” labels, as well as any industry promotional efforts. For example, Maine Lobster Processors Inc. (a four-member industry organization) will allow any processors meeting its internally developed standards and packing specifications to affix its quality seal to the product.

Animal welfare

Animal rights activists in the U.S. are turning their attention to lobster following some successes in the U.K., Norway and New Zealand. The focus ranges from the development and adoption of more humane transportation methods and holding facilities, to efforts to include lobster in animal welfare legislation (effectively disallowing taking a live animal home and putting it in a pot of boiling water). In the U.S., Whole Foods Inc has taken up the cause, announcing in late 2005 that it would discontinue the sale of live lobsters unless it finds a humane way of transporting and storing them. Any such initiatives could have a more serious impact on the Canadian industry because its higher quality live product is more likely to be sold through higher end outlets.

3. HARVESTING AND PROCESSING OPERATIONS

Management

There are no identifiable differences between Canadian and U.S. industry structure and management at a macro level that materially affect the ability of firms to compete on an equal footing. Enterprises in both countries operate independently and compete aggressively; harvesters to maximize individual shares of the catch, and buyers and shippers/processors to maximize their purchases of lobster in port markets. In neither country is there any form of industry association on the harvesting (selling) or shipping/processing (buying) sides of the market that would provide industry in one country or the other with a competitive advantage.

If one country has a competitive advantage it would be Canada, because of the intrinsically higher quality of the lobster. Ultimately, this comes down to how the fishery is managed. Higher quality has allowed Canadian shippers selling live lobster to differentiate their product and focus on higher price market segments. It has also made it worthwhile for Canadian companies to invest in land-based holding facilities and expand into international markets. The short U.S. season and relatively poor quality soft-shell lobster present a challenge for U.S. companies; much of the product sold live finds its way into lower price market segments.

On the other hand, what poses a marketing challenge for U.S. firms provides a supply opportunity for Canadian processors. They purchase substantial quantities of lobster (50-70% of the Maine catch over the past decade) and ship it to New Brunswick and PEI for processing. The rising value of the Canadian dollar has made this a more attractive proposition since 2002. Canadian companies may face increasing competition for raw material, as a processing industry is beginning to emerge in Maine.

Input costs

The factors influencing the costs of production are similar in both countries.

- ❑ Harvesters use similar size vessels and the same gear, and face similar operating costs.
- ❑ Buyers and shippers in Canada tend to operate more sophisticated holding facilities because they need to hold lobster for longer periods, either to season them before shipping or to wait for improved market conditions. Maine had been known for its large tidal pounds, but few of these continue to operate due to the increased risk (disease is more prevalent, and markets more volatile). Also, much of the lobster that had been held in the past is now exported to Canada for processing, with some also held in tanks and pounds in Nova Scotia for later re-export for the live market.
- ❑ The entry of Canadian processors into the Maine live lobster market also provides an ancillary benefit for Canadian shippers by putting upward pressure on the U.S. shore price. This means Maine lobster enters the U.S. live market at a higher price, resulting in a more competitive environment for Canadian shippers.

- ❑ Canadian and U.S. processing companies compete on more or less the same terms. They buy all (U.S.) or much (Canada) of their raw material from the same source (Maine harvesters and buyers), produce the same range of products, and have access to and use the same technology. If there were a competitive advantage, it would lie with U.S. processors because they buy raw material only at times of peak supply and lowest price. But the entry of Canadian processors into the same market (and buying substantially higher quantities of lobster) would neutralize any input cost advantage from this source. Prices paid for raw material from Canadian harvesters in the Gulf are comparable to the Maine shore prices, despite the lack of competition from shippers of live product in Canada (most Gulf lobster is below the minimum size for entry to the U.S. live market). Prices are comparable because aggressive competition amongst processors drives them to these levels.
- ❑ Canadian and U.S. shippers and processors face similar licencing, registration and inspection requirements, and the costs of complying with these requirements.

Quality

The live market in the U.S. divides into two quality segments. Canadian hard-shell lobster meets requirements (size and meat content) at the upper end of the market, while U.S. soft-shell lobster meets requirements of the lower end of the market (coastal tourism trade and retail loss leader). The difference in quality is attributable to the timing of the respective catches. Most Canadian lobster is caught well after or well before the moult when the animals are fully meated and robust. Most U.S. lobster is caught just after the summer moult when catch rates are highest, but when quality (soft shell and low meat content) is lowest.

Continuity of supply

The ability of Canadian companies to provide the market with a steady supply year-round is attributable to the scale and sophistication of holding facilities. While there are still tidal pounds in suitable areas (e.g., southwest Nova Scotia), Canadian industry has invested heavily in various forms of holding capacity on land that provide more stable environmental conditions, reduce risk and facilitate holding for extended periods if necessary. This holding capacity is sufficiently large to allow the industry to re-time supply so as to maximize revenues. It has also greatly facilitated market development by allowing the industry to ship high quality lobster world-wide on a year-round basis to meet customer specifications with respect to quantity, size and timing.

4. MARKETING

Market research and development

The industries in both countries have access to the same pricing and market intelligence services, as well as the same price and market information from the same large distributors in the U.S. who handle live and processed product for most companies. In both countries, market research is conducted on a firm-by-firm basis, if at all. The main difference between the industries is that the lobster supply and quality characteristics leave Canadian shippers with greater likelihood of reward for conducting market research and development.

- ❑ The nature and extent of research varies, ranging from in-depth analysis of market potential (channels, customers, end-uses, demand level and pricing), to simply shopping product by telephone to the distributor offering the highest price. Those firms investing in market research aim to be market driven. They invest in quality and customer service, trying to differentiate the product with a view to commanding a higher price to cover the costs of more selective buying and investments in holding facilities for year-round delivery. The firms shopping product are supply driven, simply feeding the market with an undifferentiated commodity and accepting what the market will bear as long as supplies last.
- ❑ Similar circumstances obtain in the U.S., though the merits of conducting market research are less obvious, given the characteristics of the fishery and the lobster it produces. The combination of a flood of lobster in a short season, limited holding capacity, and a soft-shell and less robust lobster leaves the industry with a narrow range of market options. The lobster is destined for the live market (much of it going to coastal restaurants during tourism season or to retail outlets as loss leader promotions), or for processing in Canada. In short, dealers find themselves in much the same supply driven position as many Canadian firms, shopping product to the highest bidder.

Product development

Much of the market cachet associated with lobster is that it is a live product. This segment of the market dominates from a unit value perspective (and accounts for about 50% of the total value of Canadian exports to the U.S.). The market is strong, with opportunities for further growth dependent on the development of distribution networks and suitable holding facilities.

Since there can be no variation of live, it is the processed segment of the market that holds out the opportunity for product development.

Product development continues to occur in the processed segment, but innovation moves slowly. Until the 1970s, the industry relied almost exclusively on the production of meat (hot and cold pack). The introduction of brine frozen lobster (popsicle pack) in the late 1970s was a major advance. This came in response to growing demand for in-shell packs, and was facilitated by advances in transportation and frozen storage facilities. In the 1980s and 1990s, the industry continued to innovate, introducing more specialized packs including raw and cooked frozen tails (to compete with spiny and rock lobster), frozen and spit lobster, portion controlled packs and vacuum packs. Further growth in the EU market for frozen products is constrained by tariffs in the 20% range. The industry would clearly benefit from elimination or lowering of tariffs of this kind, one of the matters under discussion during the Doha Round of trade liberalization negotiations.

The most important innovation in recent years is the development of a hydrostatic pressure technique to extract meat from the shell without first cooking the lobster. This opens up a range of possibilities for new dishes and formats relying on raw lobster. At present, one company is pioneering the technology in Canada, with an American company reportedly introducing it in its U.S. operations.

Pricing

Canadian industry is in an excellent position to extract maximum revenue from the market. This is because it produces a quality lobster, and has invested in the holding facilities allowing companies to re-time supply to coincide with periods of strong demand. With respect to both quality and the ability to re-time supply, Canadian industry is ahead of its U.S. counterpart.

Promotion

The Atlantic Canada Lobster and Seafood Promotion Group promotes Atlantic Canada lobster internationally. By participating in various trade shows and trade missions, and meeting with incoming buyers, journalists and chefs, the Promotion Group provides an opportunity for prospective customers to learn more about the Atlantic Canada lobster industry and available products. These shows and missions also provide the Promotion Group with the opportunity to learn more about foreign markets and what they are looking for. The Atlantic Canada Lobster and Seafood Promotion Group is coordinated by the Prince Edward Island Seafood Processors Association on behalf of the Fisheries Council of Canada which manages the project.

The Maine lobster industry believes product differentiation is important and is developing a “Maine” brand through the Maine Lobster Promotion Council. With country of origin labeling now mandatory, it will be a straightforward matter to tell U.S. from Canadian lobsters.

Market development

The respective industries rely to a limited extent on generic promotion as a market development tool. As a rule, firms conduct their own market development acting independently. The main initiatives are participation in trade shows (e.g., Boston and Brussels) and direct contact with customers in the U.S., EU and the Far East. Given the commodity nature of much of the product line, product differentiation is a key element in market development campaigns. Otherwise competition reduces to a single element – price.

At the industry level (i.e., Canada vs. U.S.), Canadian firms differentiate live lobster on the basis of quality characteristics. Differentiation represents more of a challenge for firms within the Canadian industry, since many have access to the same lobster. Market development becomes a matter of selling other valued elements such as consistency of supply, reliable delivery and customer service. Among the major obstacles to expanding the market for live lobster are air freight logistics and the availability of suitable transportation and holding facilities at destination.

Access

Access to markets is generally not a problem for Canadian industry as the trade data indicate. In late 2005 and early 2006, though, the U.S. Customs Service stepped up its inspections of trucks carrying Canadian lobster to the U.S., discovering a relatively high proportion of lobsters violating U.S. minimum size restrictions. This served as a wake-up call for Canadian authorities as well, since the same size restrictions apply in Canada.

In other markets, the access issue revolves around tariff and non-tariff barriers. Firms shipping processed lobster to the EU face tariffs up to 20%, greatly undermining their ability to compete in this market. Access is also compromised through the use of non-tariff barriers, for example, using incorrect testing protocols to bar entry to EU markets. One processor cited an instance

where the French barred the entry of a lobster shipment because it was found to exceed acceptable levels of cadmium based on a test of the liver rather than the meat, as required.

Packaging

Canadian industry does not face any packaging challenges that adversely affect its competitive position.

5. ADMINISTRATIVE ISSUES

Human resources

The harvesting sector is beginning to face human resource issues, though these have not yet affected the lobster fleets. For some other fleets, the challenge is to find people who are willing to take seasonal jobs, often in difficult conditions. This issue does not yet confront the lobster fishery because in most LFAs it is conducted during the spring or summer months when labour is available and conditions are favourable. In the southwest Nova Scotia, where the season runs through winter and early spring (six months), the fishery is sufficiently lucrative that finding crews is not a problem.

Lobster processors confirm they are encountering difficulties finding people to work in the plants. The work is seasonal and irregular (heavy demand in May and June and then nothing until August-September), and in many areas there are insufficient weeks of operation to allow workers to qualify for Employment Insurance (eligibility requirements for harvesters are less stringent). Also, skill levels in plants are higher than they used to be with the requirement to meet QMP standards. Some plants report difficulties in finding people with the qualifications to operate to these standards. Labour shortages are not unique to the fishing industry, but affect other sectors as out-migration from rural and coastal areas continues.

Overhead

The Canadian industry has adapted in various ways to the differences in seasonal supply and demand. For live lobster, the seasonal open times result in two peaks, one in the December-January period, and the other in the April-June period. Shippers have invested heavily in holding facilities in order to re-time the market to ensure supplies are available to meet periods of high demand. This strategy avoids gluts, allows new markets to be developed, and contributes to price stability. Though buying when supply is abundant ties up working capital, the use of holding facilities improves firms' operating flexibility by allowing them to release supply when most advantageous from a price perspective.

The substantial level of holding capacity in Atlantic Canada acts as a two-edged sword. On the one hand it provides a basis for greater operating flexibility, but on the other hand it facilitates more aggressive buying by shippers who know they have the ability to hold out for higher prices. The result is higher shore prices and greater risk-taking by shippers in trying to second-guess when price peaks on the demand side may occur.

Companies involved in the processed market take advantage of seasonal supply fluctuations by buying when prices are at their lowest. Notwithstanding a sharp supply spike in the April-June period in the Gulf, processors bid aggressively for raw material, driving prices to levels that leave very little net margin. They are taking the same approach in procuring raw material in Maine,

resulting in higher prices than would otherwise have been the case at the seasonal peak. But it means that the few U.S. processors in the industry face the same raw material input costs as their Canadian counterparts, making it difficult to undercut the market without incurring losses.

Capitalization

Buying behaviour in both the live and processed segments of the industry in Canada suggests that both segments suffer from excess capacity. Most firms in the industry continue to be supply driven, bidding up the price of raw material in order to maximize capital utilization and extend the season as long as possible. Unless they market effectively (through well-developed programs with established customers), they run the risk of oversupply situations and distress selling into a declining market.

Overcapitalization and aggressive competition for raw material supply arguably represents the main source of weakness in the lobster industry (and other shellfish sectors as well). This is the legacy of a lack of financial discipline in the industry that has seen governments support weak or failing companies in order to maintain employment in small communities. Though the intention may be laudable on a case-by-case basis, taken collectively, such decisions tend to undermine the stability of the industry in the long run because of the price effect. Examples of this may be found in each of the Atlantic Provinces. The introduction of moratoria on new plants in key provinces, and the promise by some provincial governments not to provide financial support may help to establish equilibrium.

Of course, the attempt by government to support rural communities is not unique to Canada. We note that at least one of the lobster processing plants established in Maine in the late 1990s received a US\$400,000 grant from government sources. This observation is not meant as a condemnation of a policy aimed at supporting community initiatives, but rather to highlight the potential implications for the industry of such initiatives. By alleviating the need for companies to find private financing for capital and working capital, companies effectively have more financial room to bid up raw material prices, thereby creating a more challenging competitive environment for the industry as a whole.

V

CONCLUDING OBSERVATIONS

1. INDUSTRY HIGHLIGHTS

American lobster forms the basis of a \$1.5 billion industry in North America (all figures in CAN\$ unless otherwise indicated), and ranks as one of the most important species in the Atlantic fisheries in Canada and the U.S.

Canada

- ❑ Landings ranged between 40-50,000 t annually between 1990 and 2004. Landed value is currently in the \$550 million range, down from a peak of \$650 million in 2003. The decline in value is due to the appreciation of the Canadian dollar and a drop in landings.
- ❑ Just over 9,700 vessels are licenced to fish lobster, generating employment and income for some 25,000 skippers and crew.
- ❑ Canada exported lobster valued at \$989.3 million in 2005, down slightly from just over \$1 billion in 2002 and 2003. About 80% of exports are destined for the U.S., half in live form and the balance in various frozen forms.
- ❑ The lobster fishery is heavily regulated. Entry is limited, and the fishery is subject to seasonal openings, with vessel and gear restrictions. A legal minimum size is the main conservation measure. It varies by area, with most areas subject to the same size as the U.S. fishery (82.5 mm). There are no limits on how much lobster may be caught, provided they are at or above the legal minimum.
- ❑ The industry supports several hundred buyers and shippers of live lobster. There are about 50 plants concentrated in the southern Gulf of St. Lawrence producing various processed products. All buyers, shippers and plants must be licenced by provincial authorities. There are no limits to entry for buyers and shippers, though in most provinces they must meet certain investment criteria. Processing plants engaged in the export trade must be federally registered and must meet specified standards. Plants and production are subject to periodic CFIA inspection.
- ❑ Canadian firms import 50-70% of the U.S. catch annually. Most of this goes to Gulf-based processing plants, augmenting their supply of raw material from local fisheries. This output makes up a substantial share of the processed product flow to the U.S.

United States

- ❑ Landings ranged between 30-40,000 t annually between 1990 and 2004. Landed value is currently in the \$475 million range, down from a peak of \$500 million in 1999. The fluctuation in value is due mainly to fluctuating landings.

- ❑ The lobster fishery is more closely regulated than it used to be. Minimum size has been the main conservation measure for many years (currently 82.5 mm), with limited entry and gear restrictions introduced in the last few years. The fishery is open year-round, though landings are concentrated in the August-November period when catch rates are highest. There are no restrictions on vessel size, though vessels tend to be comparable to those used in Canada.
- ❑ Just over 7,500 vessels are licenced to fish lobster, generating employment and income for some 15,000 skippers and crew.
- ❑ The industry supports several hundred lobster dealers and a handful of processing plants. All buyers, shippers and plants must be licenced by state authorities. There are no limits to entry. Processing plants engaged in the export trade must be federally registered, and must meet federal standards. Plants and production are subject to periodic NMFS inspection.

2. REGULATION AND COMPETITION

The main conclusion to emerge from the benchmark analysis is that the Canadian and U.S. industries operate on more or less an equal footing at each stage. They are closely integrated by virtue of the high level of trade in raw material (U.S. to Canada) and final product (Canada to U.S.).

Both industries are regulated, but the regulatory environment diminishes greatly as the lobster moves up the value chain. Regulation is strongest at the harvesting stage, less so at the processing stage, and virtually non-existent at the marketing stage. In light of this, if there were opportunities for some redress of a regulatory imbalance affecting the ability of Canada's industry to compete, they are more likely to occur at the harvesting stage than some later point along the value chain.

- ❑ **Legal size:** There is conformity between Canada and the U.S. in the minimum legal size for the live lobster trade. This is the most important conservation measure. There is pressure in some quarters in the U.S. to increase the legal size in order to improve the long-term sustainability of the resource.

In the event the U.S. increases its minimum legal size above 82.5 mm, Canada should adopt a legal size at least as great to ensure continued access to the U.S. market for live lobster. Canada could, of course, act independently and adopt a smaller legal minimum and rely on shippers to size grade for particular markets, or it could adopt a larger minimum size to meet more stringent conservation objectives.

- ❑ **Seasons:** Canada benefits from its approach to setting seasons. Fishing in most areas is allowed only in months when lobster quality is high. As a consequence, most lobster is suitable for the higher value live market in the U.S. and other markets (provided, of course, it meets the minimum size requirements). The steady rise in catches in Canada and the inability of markets to absorb seasonal supply without depressing prices have caused shippers in Atlantic Canada to invest in various types of holding facilities. These facilities allow shippers to re-time the market to avoid gluts and take advantage of periods of strong demand outside lobster seasons.

By contrast, U.S. effort and catches are highest in the immediate post-moult period when lobster quality is at its lowest. About half of the lobster goes to the lower end of the live market, depressing prices for harvesters but setting up a buying opportunity for Gulf of St. Lawrence plants wishing to extend their processing season.

The current Canadian approach to setting seasons appears to serve conservation and market needs very well. There would not appear to be any merit in adjusting the seasons, particularly given the ability of the Canadian industry to re-time the market by relying on holding facilities.

- **Industry cost structure:** The cost structures of the harvesting sectors are broadly similar. The respective lobster fleets are composed of similar sized vessels (most under 45'), mostly operating within a few hours of their home ports and using more or less identical gear.

The rationale for vessel restrictions in Canada may be found in the desire to limit effort while also providing a measure of equity in the fishing opportunity (trap limits also help in this respect). There would appear to be no sound reason for disturbing the current restrictions, particularly since the more relaxed U.S. approach does not appear to confer any competitive advantage on harvesters there.

- **Overcapitalization and destructive price competition:** The Canadian and U.S. fleets operate under the same owner-operator principles. Though the rule is not always followed in Canada, non-compliance is not so great that it undermines the ability of licence-holders generally to extract maximum prices for their catches. The same conditions apply in the U.S. fishery, and with the aggressive buying of raw material by Canadian processors in the U.S., processors in both countries face similar input costs.

The shore price paid by shippers and processors (after buyer commissions) accounts for 80-85% of the cost of sales. This means that all other factors (e.g., fees, labour and other operating costs) contribute just 15-20%. Strong competition for raw material accounts for the relatively high shore prices. Strong competition is explained in part by the combination of independence of fleets and shippers/processors, and in part by the excess capacity in the shipping/processing sectors. The perennial risk is paying too much for raw material and then undercutting competitors to gain sales.

The processing sector would argue for direct access to raw material through elimination of fleet separation. The harvesting sector would argue that the status quo should be maintained (and even strengthened). Eliminating fleet separation would result in greater control over raw material supply and reduce the upward pressure on shore prices, thereby reducing the raw material share of cost of sales and improving shipper/processor margins. Whether it would make the industry as a whole any more competitive in international markets is open to question. In the absence of a coordinated selling approach, the higher margins could simply provide shippers and processors more room to undercut each other.

Buying behaviour is a symptom of a more fundamental problem than a problem in itself. It suggests that both the live and processed segments of the industry suffer from excess capacity. Most firms in the industry continue to be supply driven, bidding up the price of raw material in order to maximize capital utilization and extend the season as long as possible.

Overcapitalization and aggressive competition for raw material arguably represent the main sources of weakness in the lobster industry (and other shellfish sectors as well). This is the legacy of a lack of financial discipline in the industry that has seen some provincial governments support weak or failing companies in order to maintain employment in small communities. Though the intention may be laudable on a case-by-case basis, taken collectively, such decisions tend to undermine the stability of the industry in the long run because of the price effect. Examples of this may be found in each of the Atlantic Provinces. The introduction of moratoria on new plants in key provinces, and the promise by some provincial governments not to provide financial support may help to establish equilibrium.

Provincial governments and federal development agencies must assess carefully the industry-wide impacts of any policies and programs that would undermine financial discipline governing the level of productive capacity in the shipping and processing segments of the lobster industry. The overriding objective should be to establish a policy environment resulting in long-term competitive equilibrium between the harvesting and processing sectors.

- **Product safety:** Shippers and processors in both countries are subject to essentially the same set of standards regarding food safety (HACCP or QMP). All facilities must be federally registered and are subject to inspection by federal agencies (CFIA in Canada and FDA or NMFS in the U.S.). Some in the industry in Canada express the concern that Canadian processing plants, while nominally compliant with QMP/HACCP standards, fall short in their ability to actually meet these standards on a consistent basis. They cite variable and inconsistent auditing/inspections as the reason for instances of non-compliance. They also fear industry-wide implications should product from non-compliant plants cause health problems in export markets.

CFIA, through consistent on-site audits of the production process and inspection of products, should ensure that all federally registered plants meet or exceed established QMP standards.