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**Consolidation in the Canadian Agri-food Sector  
and the Impact on Farm Incomes.**

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**Canadian Agricultural Policy Institute  
June 8, 2005**

**Draft Discussion Document**

## Executive Summary

Consolidation is occurring at every level of agri-food supply chains. It is particularly prevalent anywhere there are significant economies of scale and where firms have difficulty differentiating themselves and their products. In the food industry, that is almost every level, with the exception of further processing and manufacturing of food products. At all of the other levels consolidation continues and market power is evident. Consolidation is one by-product of firms seeking to adjust to the ever changing environment they operate in.

Consolidation is a global phenomenon, not national. Many of the large players in the primary processing of beef, hogs and grain in Canada are multi-nationals, as are the seed and chemical suppliers. These companies exert their market power on a North American or global basis. Globalization seems to be affecting farm incomes more than consolidation. Prices are no longer based on local conditions, but instead on international prices for commodities with only minor local adjustments. Dramatic improvements in productivity and the entry of new producers in Brazil and China are putting pressure on Canadian Farm income. Consolidation is not going to go away or decrease. It is based on economic factors that will not likely change in the near future.

**Illustrations of Summary of Consolidation Findings**

Supply Chain Level	Comment	Examples from paper (Concentration and ownership of top firms)
Retail	Driving chain due to its size and buying power but also access to consumer information. Dominated by large Canadian retailers with considerable market power. Will be further reshaped by Wal-Mart. Canadian retailers are repositioning themselves in preparation.	CR4 – 68% (Can) Price indices indicate increasing market power, particularly related to meat.
Further Processing	Many small and medium size firms.. Product differentiation opportunities and relatively low barriers to entry have made this the only level where concentration is relatively low.	
Primary processing	Concentration levels are high in primary processing of meat and grain	CR3 Beef – 80% All U.S. firms CR4 Pork -56% Can/US CR 2 Grain – 78% both U.S.
Farm level	Productivity improvements and economies of scale continue to support consolidation of farm production.	Firms with constant 2000 \$ sales over 250,000 increased from 3% of farms

		to 14% and the total revenue from those farms grew from 24% to 56%
Input suppliers	Seed and chemical dominated by a few large multinationals. Economies of scale, R&D and long development times all create barriers to entry.	U.S. CR4's are in the 55-80% for most crops.

Consolidation will continue and large firms will have significant market power in their supply chains. As predominantly price takers in commodity markets, Canadian farmers will see their incomes rise and fall with the fortunes of the world market. Whether farmers choose to remain in commodity markets or move into niche markets with part of their products they need to approach managing their farm as any manager would approach their business; identifying and implementing strategies to build competitive advantages over the long run. The summary table below summarizes some of the activities which farmers will need to undertake to survive and grow their businesses, not simply their crops. They will help farmers really consider what business they are in, what business they should be in and where their current businesses fit into their plan for the future. The objective is to help farmers be proactive, self reliant and successful with targeted assistance from associations and government.

**Summary of Activities, Needs and Role for Programs and Policy**

<b>Activity</b>	<b>Farm Level Needs</b>	<b>Where can programs and policy help?</b>
Understanding markets and market requirements	Market research Requirements analysis Forecasting trends	Training, access and support for market research capabilities
Identification of competitive priorities	Identification of where commodity vs niche focus applies to the business What product/market mixes?	Strategic analysis and business planning support.
Gap analysis - Delivery - Attributes - Quality/Safety - Traceability - Service	Identification of gaps between market requirements and farm capabilities.	Provision of consulting tools and services to identify gaps.
Reorganization of resources	Realignment of resources and addition of capabilities necessary to compete	Capital investment funding programs
Assessing and	Ability to analyze and	Assistance in new

adopting new technologies	understand the impact of new technologies and develop a technology adoption plan.	technology development (ongoing currently) Technology adoption advice and assistance
Supply chain management	Skills in partner identification, relationship building and maintenance Infrastructure investment – supply chain software and systems and training	Facilitating and supporting value chain oriented programs through both funding and training Assistance in contract development
Entering foreign markets	Creating relationships with foreign buyers Understanding market needs and differences from current markets	Trade policy Trade promotion Trade assistance programs Market intelligence and assistance in identifying and approaching local partners
Risk management	Developing skills in risk management tools and strategies or hiring those skills	Disaster relief programs On-going risk management programs Support for training and for establishing self funding programs and risk pooling programs
Performance assessment	Assessment of achievement of specific strategic objectives Identification and analyzing the obstacles and inhibitors of performance	Development of performance assessment worksheets and programs

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## 1. Introduction and Objectives

The global agri-food sector is changing more quickly and more deeply than it has in centuries. Canada's food sector is not immune, and as part of the ongoing change it has become more integrated into the global economy than ever before. Primary producers and other participants in agri-food supply chains are dealing with changes due to new technologies and increasing globalization of both production and markets, and the resulting changes in the structure of the agri-food production and distribution system. Consolidation has been occurring at every level of the food system and will likely continue. From a producer's perspective the changes are intimidating. They are dealing with bigger suppliers and customers and their competition is no longer the farm next door or in another province, it can come from anywhere. The products sold to consumers bear ever less resemblance to the farm level products used to produce them and farmers are contributing less of the final product's value.

The situation of consolidation in the agri-food sector raises several issues related to producers and producer incomes. Is consolidation real and continuing? Does it have an impact on the relative market power of participants in the value chain and thus producer incomes? Most importantly is there anything that producers or policy makers can do to improve producer market power and incomes?

Consolidation is just one force changing the structure of the Canadian agri-food sector. Others include globalization, changing consumer demands and political/regulatory environments. Examining consolidation in isolation, particularly if the objective is to consider the impact on farm level income, would ignore the interactions that are changing the environment and economics of farm level production and marketing.

In this paper we examine consolidation and the changing structure of the Canadian agri-food sector and how those changes affect food value chains. We place particular emphasis on what the changes mean to farmers and farm incomes. The paper will examine the following major issues:

1. What industry and external environmental forces are driving consolidation
2. What is the degree, level and nature of consolidation and how international is merger and acquisition activity

3. What is the impact of consolidation in each stage of the agri-food value chain?
4. What are the implications of consolidation for farmers?
5. What instruments are available to farmers to alter market power in the value chain?
6. What are the potential implications for agri-food policy particularly with respect to market power and farm income?

We address the drivers and strategies influencing consolidation in section 2. Section 3 considers the nature and impact of consolidation. We examine the implications for farmers in section 4 and the strategies available to farmers to alter market power in section 5 of the paper. In the final section we consider the implications of our findings on agri-food policy.

### 1.1 A Value Chain Perspective

This analysis of the impact of consolidation is framed in the context of Canadian agri-food value chains, the forces changing them and how businesses within the value chain are adapting. Figure 1 provides a representation of these value chains aggregated at the national level. Agri-food value chains typically include input providers of seed, chemicals, equipment and genetics who sell to different producers across Canada. The producer level includes many different types and sizes. In some instances, like the cattle or hog industries, the producer level may actually comprise several levels dealing with different stages of production. Processing may also include multiple levels.

The figure shows the number of establishments in each of the different categories in 2002<sup>1</sup>. Note that in many cases multiple establishments are owned by a single company, but available data makes it extremely difficult to estimate the specific number of firms in each category.

As we will discuss in this paper, the structure and function of food value chains has been changing. They are no longer located entirely within individual countries; many span the globe and products can cross several borders in their journey from farm to fork. Farmers

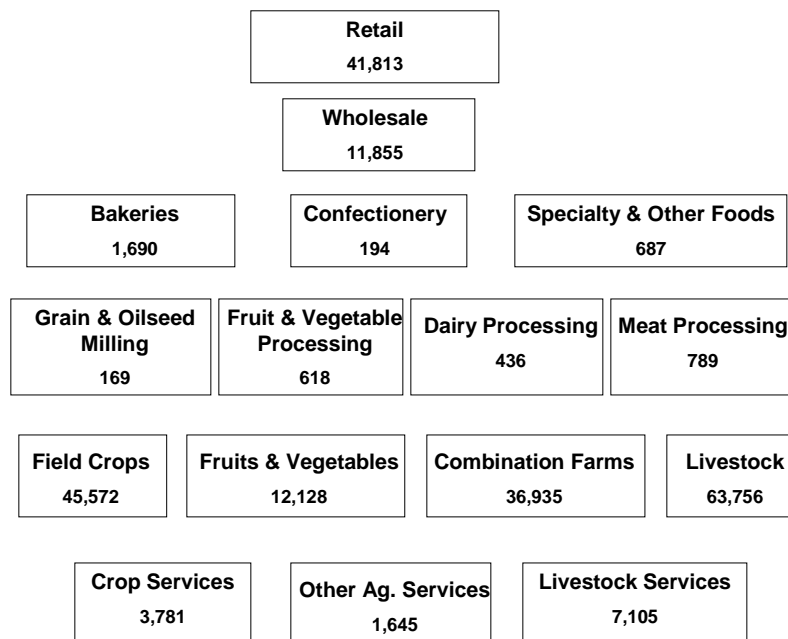
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<sup>1</sup> Data for the diagram came from the Statistics Canada Survey of Manufacturing 2002. Establishment numbers were broken down by four digit NAICS codes and establishment of a similar nature were grouped to yield the numbers in the diagram.



face a significant challenge in that their products are often several levels and great distances away from ultimate consumers. Much of the value in consumer food products is added by others in the chain.

Figure 1. Canadian Food Chain Levels and Establishment Numbers (2002)



While Figure 1 provides an indication of the numbers at the different levels of Canadian agri-food chains, it cannot possibly portray the diversity among chains and how many are being reshaped by innovative participants to deliver value in different forms to customers. Nor can they portray the complex web of relationships that Canadian agri-food businesses have with Canadian and foreign companies that comprise the daily business of Canadian food companies and farmers. The choices that farmers make in the value chains they join and the partners they work with can have dramatic impacts on their business operations and incomes.

One of the implications of taking a value chain perspective of consolidation is that it is impossible to isolate changes at one level (or in one part of the world) from the events and activities at other levels. To understand the reasons behind recent changes in Canadian food chains we examine changes at all of the levels and consider their interactions and the impact on farm income in Canada.

## 2. The Relationship between Consolidation and Market Power

Consolidation is the process whereby fewer and fewer firms in an industry control an increasing percentage of the industry revenue. It occurs as existing firms take over a larger portion of an industry either by purchasing competitors in the sector or by increasing their market power through “co-optive” strategies, sometimes forcing others to exit the industry. These co-optive strategies can be formal or informal relationships, either vertically or horizontally. Consolidation can be driven by a number of factors that may come into play simultaneously. Figure 2 presents a graphic representation of consolidation process, its drivers and outcomes.

Consolidation in the agri-food industry is of concern because large agri-businesses are thought to abuse their power when fewer buyers control the value chain (Wirtz, 2000). Consolidation of firms within an industry with few new entrants creates market conditions whereby one or more companies may have sufficient power to force supplier prices down, exerting market power in monopsony or oligopsony situations (Wilke, 2004). Rude and Fulton define market power as “the ability to establish a price that exceeds marginal cost”<sup>2</sup>. Market power disparity in the value side of mergers has become an increasingly contentious issue and some academics, farm leaders and politicians feel that the development of guiding principles for future agri-food acquisitions may be necessary to limit the monopsony/oligopsony impact on farmers and consumers.

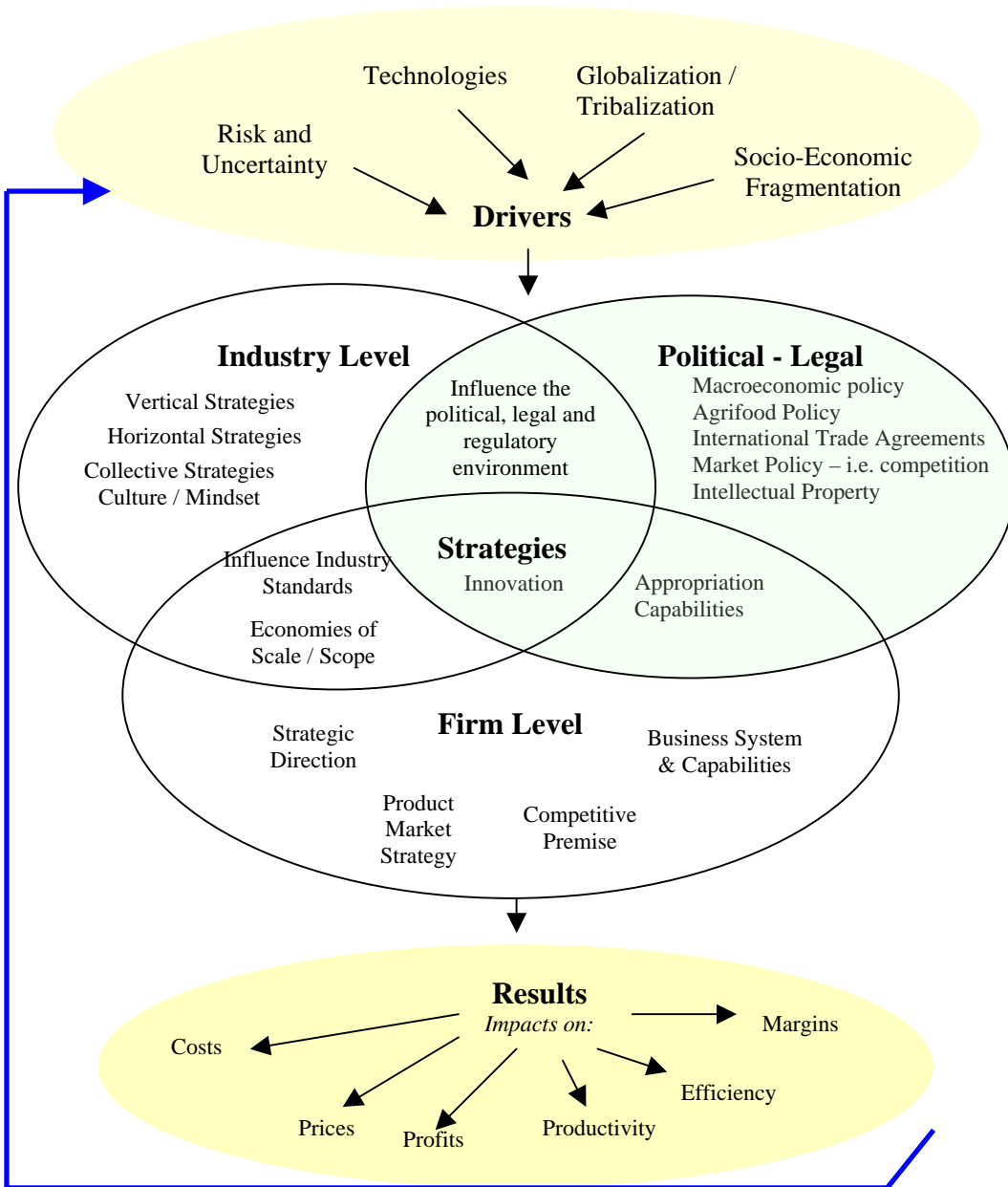
### 2.1 Drivers

Drivers of consolidation are those factors that are beyond managers’ direct control, but may induce strategic responses by firms, industries and organizations involved in setting political-legal contexts.

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<sup>2</sup> Rude, J. and M. Fulton, Concentration and Market Power in the Canadian Agribusiness in *Structural Changes as a Source of Trade Disputes under NAFTA*, pg. 140.

Figure 2: Drivers, Strategies and Results related to Industry Consolidation

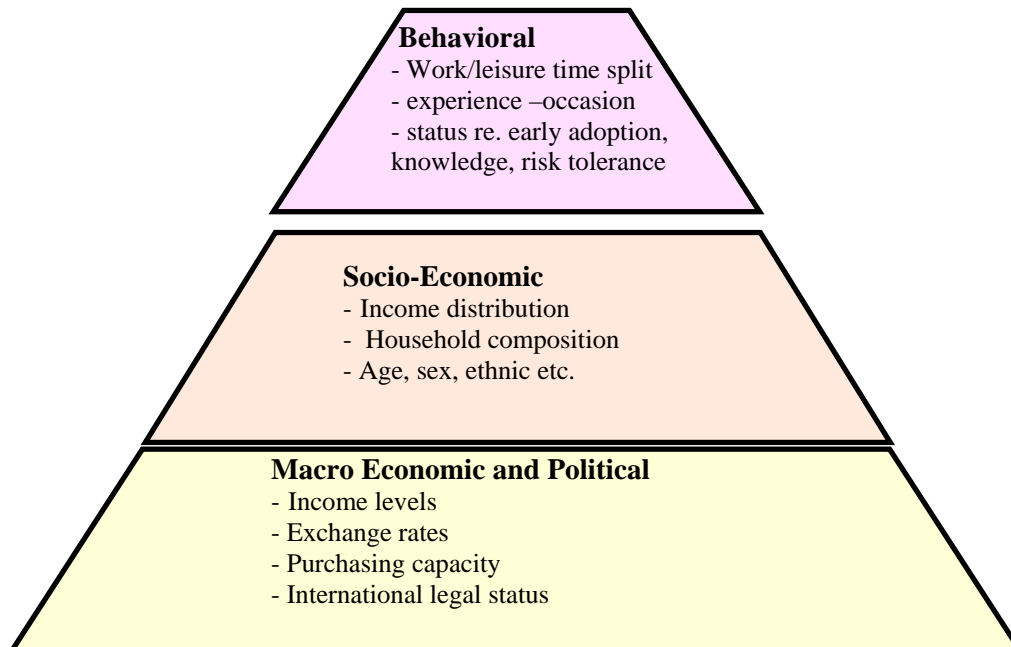


**Technologies:** New technologies reduce production and processing costs and contribute to economies of scale, a major factor in consolidation in many industries. Many technologies that drive strategic responses that contribute to consolidation originate outside the agri-food sector. Communication and information management technologies have reduced transactions costs between vertical levels of the supply chain and among horizontal

actors in an industry. Scientific knowledge and technologies also contribute in this manner. For example, if the presence of an undesirable characteristic can be detected reliably by a test, there may be a reduced incentive to control production of that product, and instead purchase on a contract basis. Co-option strategies may result instead of formal integration strategies.

**Globalization and Tribalization:** Globalization, and its related force “tribalization” (Friedman, Huntington), exert significant pressures on organizations. Tribalization is the cultural response to globalization and manifests itself in stronger local identification, more interest in preserving local and national cultures and often stronger identification with religion and other non-tangible social factors. As transparent barriers to trade decline, culturally based barriers appear more significant. Such barriers may be particularly important in the agri-food industry, since food is a key component of any culture and agri-food products often have strong regional-local roots. So, for example, while the food ingredients industry is becoming more globalized, the products that are being created with these ingredients are being used for increasingly specialized niche markets.

**Socio-Economic Fragmentation:** The markets in which Canadian, and indeed all, agri-food product compete continue to fragment further. As a small, export dependent country, Canadian agri-food businesses must increasingly understand a larger array of markets, with more fragmented preferences, in order to compete in available, emerging and potential markets. . Macroeconomic factors determine the underlying capacity for food consumption, while socio-economic factors are the first set of factors that create market segmentation, along the traditional lines of age, income etc. Behavioral factors comprise the general set of dynamics that affect food consumption within socio-economic segments, but increasingly also across socio-economic segments. For example, conspicuous consumption of high quality, decadent food products may be a more frequent occasion for higher income groups, but also occurs in other socio-economic groups, either via the real product or lower-prices imitations (“knock-offs”). Early adoption status and the possibility to “trend-set” can be a powerful determinant of consumption in any socio-economic group, perhaps particularly so among more affluent female buyers, starting with pre-adolescents. Higher real or perceived risk with certain foods can also be more easily mitigated with higher disposable incomes.

**Figure 3: Factors Driving Food Consumption**

**Risk and Uncertainty:** Risk and uncertainty are key drivers of consolidation in that many integration and co-option strategies are aimed at reducing risks or positioning the organization to deal with uncertainty. Risk, which is typically defined as an unknown future state that can be modeled probabilistically, may have different implications for consolidation than uncertainty, which cannot be modeled and may at best be anticipated. Risky situations may be manageable through either integration or co-option strategies.

**Momentum-Feedback Effects:** In addition to pure external drivers, the results of ongoing consolidation provide further momentum for consolidation. For example as margins decline, there is increased pressure to increase scale and scope economies in order to increase productivity and reduce costs. Financial markets also exert pressure to consolidate in order to bring profitability or returns from agri-food related business in-line with those observed in other sectors.

Consider the following example. Consolidation is more likely to occur in stable or declining industries where companies are struggling to increase sales which can only be

done by acquiring market share from others as was the case in the U.S. beef processing sector (Barkema, 2001). Overcapacity, intense price competition and lower margins reduce the incentives for firms to stay in the industry and lead to the sale of their businesses to competitors seeking economies of scale. Bower found that 37% of the largest mergers and acquisitions in the U.S. from 1997-99 were related to overcapacity. Even with extensive merger and acquisition activity, consolidation will not occur if entry is relatively free and new firms can enter the market and erode existing firm market share, or capture attractive growth opportunities.

## 2.2 Strategies

Several types of organizations and interactions among organizations determine the process of consolidation and related responses to the drivers of technology, globalization/tribalization, risk and uncertainty and the momentum and feedback effects of ongoing consolidation. These responses occur at the domain of the firm, within and across the industry and within the public domain, as well as the interface of these domains.

### Firm Level Strategies

Firm level strategies refer to any action that can be taken by managers and other decisions makers in individual firms. Typically, these actions or decisions deal with the interrelated components of strategic direction, product-market strategies, competitive premise, business systems and capabilities.

**Strategic Direction:** Some firms certainly change their strategic directions in responses to consolidation. Changes in their strategic goals may include a changes from reliance on achieving growth targets using internal growth, to expanding into new markets or increase their penetration of existing markets by acquiring existing businesses.

**Product-Market Strategies:** Changes to product-market strategies are the most visible response to consolidation and its drivers. Adding product and market reduces the margins required to meet financial and other strategic goals.

**Competitive Premise:** within the agri-food sector, firms are choosing between two fundamentally different competitive premises in response to consolidation and its drivers.

One choice is the commodity approach, which the business literature refers to as the mass-market approach. This approach essentially requires the firm to organize its business system activities into capabilities that enable it to compete within the “larger is better” part of the sector. It emphasizes more standardized products or commodities, which are sold in mass market and requires increase economies of scale, along with supporting firm level **capabilities** and **business systems**. The other choice is the focus or niche approach, which emphasizes specialized, customized products, which are sold in niche markets. This approach requires specialized capabilities and business systems. Table x summarizes how key types of capabilities fit with the mass-market or commodity approach versus the niche-focus approach.

**Table 1: Implications of Competitive Premise on Firm Capabilities**

Capability	Competitive Premise	
	Mass-Market Commodity	Focus-Niche
Efficiency	Scale and scope economies are critical to competing effectively	Not critical
Customer responsiveness	Must be able to meet scientifically and contractually determined specifications on a timely and reliable basis	Must be able to anticipate and design products and related services for existing and emerging market niches
Quality	Can be assessed using scientific means	Is assessed using higher level consumer decision making criteria, such as suitability for the occasion, experience consumption etc.
Innovation	Focused on process improvements	Focused on product improvements
Flexibility	Met through scope and scale capabilities	Met through understanding and serving existing consumer needs and wants and unknown preferences
Other		

### Political-Legal Strategies

Political – legal strategies are managed by public organizations, with the influence of industry groups and firms (the intersections in the diagram). Political-legal strategies that

exert important influences on the consolidation process in the agri-food sector include macro-economic policies, sectoral or agri-food policies, international trade agreements, market policies such as competition laws, and intellectual property laws.

Macroeconomic policies exert a powerful influence on the agri-food sector. Due to its exceptionally high level of capital intensity, trade dependence and ongoing technological improvements, the agri-food sector is particularly vulnerable to inflation, interest rate and exchange rate movements. Upswings in these variables squeeze margins and accentuate other pressures to consolidation, particularly during times when technology improvements and the need for growth in sales are already exerting pressure.

International trade agreements and their regional variations have facilitated the pressures of globalization throughout the agri-food sector. Declining tariffs and periodic efforts toward reducing subsidization have enabled firms to pursue multi-domestic and transnational strategies, both of which require consolidation vertically and horizontally when pursued from within the Canadian market. Remaining barriers to trade encompass technical, safety and increasingly “consumption-preference” based product characteristics. Companies can cater to these characteristics using the “multinational standard approach” or the “local niche” approach.

Since the early 1990s, competition law has increasingly recognized that the relevant market for Canadian based firms is the world market. Agri-food policies may also affect consolidation through various intervening factors such as their impact on risk and uncertainty, technology, innovation and industry culture. This topic is not addressed in this paper, due to its scope and complexity.

### **Industry Level Strategies**

Industry level strategies comprise strategies refer to the vertical, horizontal and collective relationships among organizations in an industry, as well as the industry culture or mindset. Vertical strategies range from legal integration to co-operative relationships among organizations, both vertically and horizontally. Horizontal strategies include mergers, licensing and other arrangements through which firms may align selected components of



their strategies. Collective strategies include trade associations and formal and ad-hoc industry groups. Such strategies are very developed in the agri-food sector. Industry culture also influences the consolidation process. Getting “bigger” is generally perceived as detrimental to the interests of primary production, without understanding the dynamics of supplier and buyer power in the supply chain, the nature of market segmentation, and entry and exit barriers. For example, large land bases, unique technological and production systems and quota investments may all seem reasonable strategies to develop producer-level specific market power at one time, but they may also reduce exit options and drive down returns.

### **Intersections**

Firm level, industry level and political-legal strategies interact to affect consolidation. At the intersection of political-legal and industry-level strategy, the process by which industry groups work with public officials may shape the agenda and often the outcome of policy and programs. Firm-level and industry-level strategy interactions may create market power through their ability to create industry standards, such as geographical and other traceable designations. While these benefit the domestic industry, they can be interpreted as protectionist to external competitors or as unfair barriers to entry to potential entrants. The intersection of firm-level and political-legal strategies deals with how firms deal with the political-legal environment in terms of their own strategy formulation and development. Far too many farm businesses formulate their strategies with the expectation of government support, instead of formulating that a strategy that will work in spite of government support. This interaction between political-legal strategies and firm level strategies introduces considerable uncertainty into the business environment in which farm businesses must compete.

### **3. Consolidation and the Impacts on the Canadian Agri-Food System?**

We form our analysis of the nature of consolidation on the Canadian agri-food system around the impact on Canadian food value chains. Our first observation is that Canadian food chains are not really Canadian, they are international. For example, roughly half of our beef and pork production is destined for the United States. Much of the grain produced in Canada is exported. At every level of the chain we see large international

companies competing with Canadian firms. We also see Canadian firms making acquisitions outside Canada to expand their market opportunities. The small domestic market is often a limiting factor in profitable shareholder return for agri-food conglomerates thereby increasing the likelihood of global buyer alliances (Hollingsworth, 2004). Global retail food markets are currently estimated at U.S. \$3,496 billion. With projected annual compound growth rate of 4.8% the market will grow to U.S. \$6,353 billion by 2020 (Food Institute Report, 2005. IGD, 2005). U.S., China, Japan, India and Russia are forecast to be the five leading retail markets in 2020 with NAFTA retail markets at 21% of global total (Food Institute Report, 2004; IGD, 2005).

Trade liberalization and improved logistics capabilities have erased many barriers to entry and all countries shipped globally US\$ 442 billion in agricultural and food goods in 2002 (Just-Food, 2004. pg 5). Global trade in food grew at an average rate of 2.6 %/year from 1990-2001. Canada benefits from increased trade liberalization and agri-food trade increased at a healthy 5.4% per year from 1992-2002 to C\$ 30.5 B. More than 67% was with the United States and a further 9.4% with Japan (Ash 2004). Canada's trade composition changed over that period moving from a focus on lower value commodities to higher value processed food products (Table 2). This represents a move away from farm level or slightly processed bulk goods to products which bear little resemblance to bulk commodities and contain a far lower % of farm level value.

**Table 2 Canadian Agri-Food Exports**

<b>CANADIAN AGRIFOOD EXPORTS BY LEVEL OF PROCESSING</b>				
	<b>1993</b>	<b>1997</b>	<b>2002</b>	<b>1993-2002</b>
	<b>Value</b>	<b>Value</b>	<b>Value</b>	<b>Growth (%)</b>
Bulk	4,780.1	8,732.0	5,536.0	15.8
Processed	8,557.8	13,770.0	20,338.5	137.7
% Processed	64.2	61.2	78.6	

Source: Statistics Canada. Note: Millions of Canadian dollars.

Mattiacci & Vignali (2004) argue that the economic rationale for globalization, recognizing the competitive advantage of nations is eroding, creating an increasing justification for niche food products for international markets and developing the value chain relationships to support them. Trade is global and so is concern over concentration and market power. Recently the FAO Panel of Eminent Experts on Ethics in Food and Agriculture (2000) stated that 'there are serious power imbalances arising from the concentration of economic power in the hands of a few'.

One issue to be addressed is the definition of concentration levels. This is generally done on a national level using measures like the CR4, the % of the market controlled by the top four firms, or the Herfindahl Index. While these are useful indicators of national situations Rude and Fulton (2001) and Palsson and Monteiro (2001) raise questions related to the relevance of using national four digit SIC code data to examine concentration in international markets or regional market like that created by NAFTA. Economic theory generally contends that increasing market size by creating international markets increases the number of trading firms and reduces concentration (Sutton 1991). However, under such situations the real measures of concentration should be defined by the relevant market boundaries, rather than by national or provincial boundaries.

In the following sections we examine the extent and impact of consolidation on the different levels of food value chains and pay special consideration to the effects of the international nature of the sector.

### **3.1 Changes at the Consumer Level**

We begin by our discussion at the level that drives all other activities in the chain, the consumers of agricultural products. Consumers in Canada and countries importing Canadian food products cannot be lumped into a few categories. The changes in consumer trends are well documented and since they are being analyzed in another paper they will not be reviewed here beyond highlighting two important trends that relate to agri-food value chains.

#### ***Demand for product variety***

There are a multitude of papers dealing with changing consumer characteristics and preferences and the fact that they demand more product and preparation options, a greater range of quality choices and product alternatives which suit both their lifestyle and personal values. The demand for more choices means more products. Consumers are highly diverse and markets for food products are being continually being subdivided. New product offerings are differentiated to take advantage of the many opportunities these more segmented markets provide. Not surprisingly, food category consumption patterns have become more fragmented over the past decade and policy makers, researchers, and industry are encouraged to use only the most recent demand trend information when determining opportunities and selecting regional initiatives (Larson, 2004). Larson (2004) suggests that food trend research is more accurate when regional analyses is included in new product testing, evaluation, and to track changes in growth opportunities.

### ***Growth of Organics***

The fastest growing categories in the food industry right now are organic. Over the 1998 to 2003 period sales of organic products in the U.S. increased at approximately 20% per year and now made up 1.9% of food sales in 2003 (Food Institute). Organics tend to be marketed differently and two organic food chains, Whole Foods and Wild Oats account for 44% of all organic food sales in the U.S.

### ***Bio-products***

Not all farm products are destined for human food products. A small percentage are used in products such as plastics, fuels, fibres and lubricants. Canada and other countries are rapidly increasing their research funding into bioproducts as alternative crops for farmers. As an example, new crop opportunities that the U.K. Non-Food Crops Centre is pursuing include; alternative fuels, apparel, beauty products, drugs, and plastics from crop derived, raw materials (Anderson, 2004). A commitment to reverse problems associated with climate change is one of the drivers for the government initiative and 2010 is the timeframe set to achieve 1 mt. carbon savings by way of a 5% fossil fuel to biofuel substitution (Anderson, 2004).

## Conclusion – Consumer Level

The changes at the consumer level offer more opportunities for farmers, but they do need to be included in the value chain in an effective manner in order to capitalize on these changes. The need for more variety and different food alternatives should provide new markets for farm products. The challenge is that the distance of the farmer from the consumer and the transformations which the product undergo before they are offered to consumers distances farmers from much of the value being paid for by consumers.

### 3.2 Changes in Canada's Food Retail System

Distribution channels have been reshaped in recent years, with retailers appearing to take on increasingly powerful roles. The changing power at the retail level is a result of the considerable restructuring of global food retail companies. On the one hand, consolidation in the food industry, particularly in Europe and North America is the result of the fact that the markets are relatively mature and growth is slow. Firms seeking growth to meet expansion targets and increase shareholder value have two options. They can purchase competitors or they can enter new markets. Over the last decade we have seen North American and E.U. retail firms doing both. (Tittleson 2000, Barkema et al 2001). None have had a great impact on reshaping retail structure and operation than Wal-Mart, the largest retailer and the largest food retailer in the world. In 1998 Wal-Mart had just 3.2% of the U.S. market (Cotterill 1998). Wal-Mart now dominates the U.S. market with 19% of U.S. grocery sales (Turock & Rogers, 2005). The company is poised to make similar inroads in Canada.

Wal-Mart uses its considerable buying power to impose continuous demands for cost reductions to ensure its competitiveness and profitability (Neff 2004). As the value chain leader, Wal-Mart dictates the terms of vendor relationships in everything from the adoption of Radio Frequency Identification (RFID) to a limit on how much the supplier company's total sales can be to Wal-Mart (30%) (Neff, 2004). Subsequently large suppliers like "P & G are quietly putting their eggs in other baskets" as they near the threshold to protect their individual strategic growth opportunities (Neff, 2004). However, suppliers in many categories are still seeing gains from Wal-Mart and maintain the huge retailer will continue to be a force in the supply chain (Neff, 2004) with projections for growth estimated by Retail Forward at

up to 35% of grocery sales in the U.S. by 2008 (Turock et al., 2005). Nevertheless, a U.S. retail analyst pointed out that “They’re getting smarter at Wal-Mart, but so is the competition” (Neff, 2004).

Retail concentration is a concern for Canadians with Loblaws and Sobeys controlling the majority of Canadian grocery store sales. Those companies have been actively repositioning themselves for a fight for market share with Wal-Mart. Canada’s retail landscape is more receptive to format segmentation with service and quality niche players like Fortino’s, a Loblaw’s company, positioned to capture dispersed customers populations outlying large urban centers (Turock & Rogers. 2005). Loblaw offers over 5000 private-label products including organic products as well as traditional and organic grocery items (Hoovers). Many powerful retailers are leveraging their brands into high-margin private label products, further increasing their power in the value chain (Cotterill, 2001). These products offer a distribution alternative for small producers without the marketing capabilities to support national or regional brands. They can use the retailer’s brand power to market their products but to do so they must meet strict quality, pricing and development criteria.

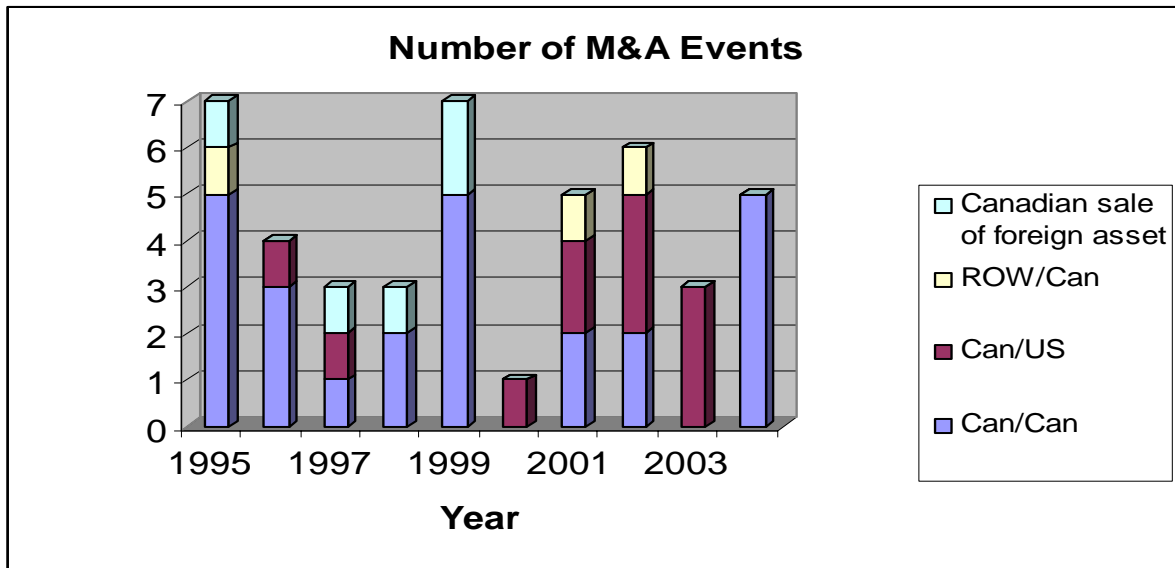
**Table 3: A Comparison of Canadian Retailers with Global Retail Companies**

	Sales 2000	Sales 2004 \$billion	# of stores 2000	# of stores 2004	Merger & Acquisition 1995 -2004	Net Profit Margin 2004
Loblaw	20,1	26.2	1651	1600	4 and 1 u.s. divestiture	3.7%
Sobeys	8.9.7	11.0	1142	1310	2 Can. Food service divestitures	1.5%
Wal-Mart Global	156.2	256.3	3989	4906		3.5%
Whole Foods Global	1.8	3.9	117	163		3.5%

Data source: Hoovers, 2004 Annual Report. Loblaws, 2004 Annual Report Sobeys and the Canadian Merger and Acquisition Database.

Table 3 presents a comparison of Canada’s two major food retail chains with the global figures for two new entrants into the Canadian food retail sector, Wal-Mart representing the biggest conventional competitor and Whole Foods representing the alternative distribution competition. Growth among Canada’s two largest food retailers has been slower than that of both Wal-Mart and Whole Foods. Some of the growth has been through mergers and acquisitions as illustrated in Figure 3 but much has been through organic growth and changing store formats to larger stores with a wider range of food and, more recently, non-food offerings. Mergers and acquisitions involved in food retail in Canada are predominantly Canadian companies taking over Canadian companies or U.S, retail companies as illustrated in Figure 4.

**Figure 4. Retail Mergers and Acquisitions involving Canadian Companies**



Source: Annual Directory of Mergers and Acquisitions in Canada, Crosbie & Company Inc.

Retail concentration is a concern in almost every country in the world and Canada is no exception. The OECD examined sales by the top three retailers in various countries around the world. In Canada the top three controlled 61% of sales of retail food sales in 1998 (Boylaud and Nicoletti, 2001). In 2002, that percentage had increased on 0.5 percent and the CR4 is 68.5%. The growth has been taken by relatively new entrants into Canadian food retail, Wal-Mart, Cost-co as well as by the entry of drug marts and other retail formats into food retailing , In 94 U.S. cities sales by the top four retail firms averaged 74.4% of food retail sales in 1998, up from 64.5% in 1987. Appendix 3 examines trends in food price

indices in the different levels of the food chain. The pricing data indicates that from 2000 or earlier on market power at the retail level has been resulting in retail price advantages, particularly in meat products (Figure A1).

To answer the question of “does retail firm size matter?” Smith and Trant examined profits in the retail sector in Canada during the period 1990-1998. They found that large food retailers (over 100 employees and over \$100M in sales) had higher returns over the period than medium food retailers, who outperformed smaller firms. Food retailers also outperformed non-food retailers in profitability.

The evidence above indicates that size affects profitability; does it also affect market power when that size is associated with greater consolidation in the sector? There are several aspects to any discussion of consolidation and market power. The first is whether firms actually gain market power through consolidation. If they did, was that market power used at the expense of a firm’s customers or suppliers. From a competition-perspective the emphasis is generally on the customer and the impact on prices to customers. Much of the literature examines the impact of consolidation on consumers. In a seeming one-sided approach, Europe’s competition authorities deem consumer welfare the only underlying rationale for assessment of oligopolistic behavior in food retailing rather than protection of the farmer (Cotterill, 2001, Bell, 2000) a situation not dissimilar from the situation in Canada and the United States. Rude (2001) looked at price margins in selected agri-food industries and found that industry concentration does appear to affect price margins on industry sales.

Griffith (2004) examined the effect of retail concentration in Australia and concluded based on anecdotal evidence that retail consolidation had likely had a negative impact on farm incomes and land values in Australia but his analysis did not go beyond interviews and discussion with industry members. However, evidence that is more concrete was not provided. In the United States, Sexton et al (2004) studied the effect of retail concentration on producer welfare in the sale of iceberg lettuce, tomatoes and bagged salad from California and Florida. In this study, they found several examples of imperfect competition. Large harvest of commodity iceberg lettuce, a perishable commodity, increase buyer power and reduce producer margins. They found that producers were generally unable to capture full transportation cost differences. In the case of tomatoes, they found less evidence of retail market power. Florida green tomato producers appeared to have developed a strategy



to maintain a floor price for their crop. However, with bagged iceberg lettuce salad they found almost no relationship between the cost of iceberg lettuce and the price of bagged salad in the store. This would provide significant motivation for producers to move into the relatively simple processing required to bag lettuce in order to reduce the impact of price changes in the commodity iceberg lettuce market. Overall, Sexton et al. concluded that retailers do exert oligopsony power but on an individual chain basis rather than through collusion. Different retail chains were able to execute very different pricing strategies.

However, there are indications that size may not be the whole story, with evidence that independent grocer power is not necessarily diminishing everywhere (Dowdell, 2005). Alternative competitive formats in the distribution channel are taking significant share of the retail food business. Less than half of U.S. total food sales are now transacted through conventional supermarkets and an astonishing one third of sales are coming from “alternative formats” such as Whole Foods Market and Wild Oats Markets (Davidowitz, 2004). Whole Foods is the world’s largest natural food chain, with about 160 stores in the U.S., Canada, and the UK. (Hoovers). Whole Foods went public in 1992 to finance expansion and immediately started to consolidate the fragmented health food sector. Sales growth from 2003- 2004 was 22.8%. Product offerings are narrower than those of the large chains (more than 1200 products), but the company highlights alternative food choices and the quality of its perishables (Hoovers). Comparable-store sales at Whole Foods have exceeded Wal-Mart’s growth for four consecutive years (Davidowitz, 2004).

In a 2004 report Facts About Store Development by the Food Marketing Institute, 12.6 percent of supermarket respondents said they had at least one store offering a specialty retail format up from under 2 percent in 2003 (Alves, 2005). The development of retail format diversification in the U.S. has intensified competition throughout the sector (Hollingsworth, 2004). Stephen Dowdell of Progressive Grocer predicts that as many as two thousand supermarkets in the U.S. may close their doors by the end of the decade (2005). Chains and independent stores with alternative formats are growing rapidly in the U.S. Of stores with differentiated strategies opened in 2004, 3 categories dominated; organic/natural 45.5%, Hispanic 36.4%, and gourmet 18.2% (Alves, 2005). These differentiated stores often seek alternative buying strategies since barriers to entry are significantly higher when competing in any national buyers market (Cotterill, 2001).

Shifting consumer preferences makes it essential for food retailer and processors to understand the difference between new food direction that are fads and those which are sustainable trends (Roselen, 2004). Consumer fads are a temporary demand for new products with distinctive traits without the endurance of food trends (Roselen, 2004) which represent relatively permanent changes in society's eating habits. Recent examples of trends include the shift towards meal solutions, organic/natural, solo-eating, and car-friendly foods, sometimes referred to as "dashboard-dining" (Farmers Guardian, 2003). On the other hand, niche product fads, like low carbohydrate foods, tend to have shorter life cycles, approximately four years (Roselen, 2004). Both offer opportunities for sales and profit growth in the sector, although firms must be more nimble when serving fad markets.

Significantly, increasing numbers of alternative grocers designed to support emerging consumer trends could change the way farmers interact with retailers. Consider the example of Whole Foods, where regional managers choose what is stocked in their 157 stores based on local availability (Fishman, 2004). Whole Foods CEO, Mackey, believes consumer trends will create new opportunities for the pork, cattle, and poultry industries where the highest standards of animal care will be a condition of the consumer's purchasing decision (Fishman, 2004). As a result, Whole Foods has specification standards for many of their meat products on the expectation that many consumers will not buy products raised in factory farm conditions, if alternatives are available (Fisher, 2004). Alternative formats provide production and distribution opportunities for farmers and enable them to develop new sources of power in the agri-food value chain; proactively networking with processors and retailers in the introduction, planning, and development of emerging food trends (Farmers Guardian, 2003).

More recently direct to consumer web sites are allowing specialty food manufacturers and distributors to bypass traditional retail outlets and sell high value products direct to consumers. These provide competition for retailers but also provide them with alternative distribution paths. If the trend continues, it may eliminate several intermediary layers for some high value items (Gourmet News. 2004). Demand for niche artisan and specialty products have led to unique distribution alliances with receptive marketing structures, like powerful Sysco, offering products directly from suppliers with revenue upside for small producers (Perkins. 2005). Many firms have moved to gateway websites like EBay and Amazon as their distribution channel. For example, a search of

Amazon's gourmet food items reveals 89,306 product offerings, generally at extremely attractive price levels.

### **Conclusions - Retail**

Consolidation will continue in Canada's slow growing retail sector as Canadian chains compete with each other and international competitors like Wal-Mart and Costco. Distribution alternatives and product variety will be the weapons used to avoid head to head price competition with Wal-Mart. For many products, retailers will continue to use their buying power and access to consumer information to their advantage pushing for continually lower prices and taking advantage of their market power. This pressure will be transmitted down the value chains. However, value chains offering a differentiated product offer an opportunity for smaller producers with something different to offer. Local sourcing strategies and organic and natural food products demand will offer more attractive pricing to producers. We note that as volume of differentiated products increase they move toward commodity category as the products become more standardized and delivery requirements continually increase.

### **3.3. Consolidation in Food Processing**

Structural change in the Canadian food processing sector has been the result of several factors:

1. Changes at the retail level
2. Increased market segmentation
3. Economies of Scale
4. Shrinking markets

Changes at retail are translated directly down to Canada's food processing companies. Retail firms are getting bigger. Suppliers capable of managing large volume orders, meeting year-round requirements and supplying product across Canada simplify the jobs of national chain purchasing managers. Acquisition of other processing firms can help companies meet buyer needs better and increase their likelihood of supplying national retail chains. Acquisitions can also help processing firms extend their product lines are presented with

numerous new product opportunities as a result of consumer demands for increased variety and retail demands for more product offerings. However, price competition at retail translates into demand for greater efficiencies and costs savings, tighter inventory control and the adoption of new technologies and processes. The changes within processing firms depend on the nature of their processing activities and their strategies with respect to their strategies on volume, distribution and product differentiation. With larger retail companies and higher purchasing volumes, some consider consolidation at non-retail levels of the chain essential to maintaining market power needed to survive in a food chain that starts with large supermarkets dictating the prices they will pay for a given product (Wirtz, 2000). One agri- industry representative suggested the drivers behind concentration in the agri-food value chain are “not for a packer wanting to put a farmer out of business” .... but it’s the packer “trying to keep up with the [next level] processors, who’s trying to keep up with the retailer”<sup>3</sup>.

Retail volume requirements and market power are not the only pressure promoting consolidation at the processing level. There are significant economies of scale in processing particularly in processing commodities. In the United States, MacDonald (2000) found that processing costs for large meat processing plants (4,000,000 head per year) are 12% lower than those for a medium sized plant and 25-40% below those of smaller plants. In the Canadian processing sector size does appear to matter. Burroughs and Harper (2002) did an extensive examination of rates of return in the different food processing sub-sectors during the period 1991-1998 and found that for most sub-sectors, larger firms have higher rates of return than smaller firms. They also found that rates of return for food processing firms in Canada were higher on average than for non-food manufacturing firms.

Figure 5 highlights the key U.S. merger and acquisition trends from food processing through wholesale and retail. Although the absolute numbers remain fairly high, there has been a definite downward trend since the heady days of the late 1990’s when stock markets both supported and demanded rapid growth and the prospects of larger profits. Activity has cooled dramatically in the last few years but is still on-going.

A similar pattern can be seen in the Canadian sector. Although the numbers are much lower the Canadian agri-food sector has been active in this regard and the activity has

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<sup>3</sup> Wirtz, 2000. pg 3

become increasingly international in nature as illustrated in Figure 6. Canadian markets cannot really be considered in isolation from those of its trading partners.

The food processing sector is becoming increasingly international. Trade flows illustrated in Table 2 show a definite increase in partially and fully processed foods. However, trade is only one way which Canadian companies expand sales internationally. Canadian processing companies acquired 33 U.S. processing companies in the last five years and Sales by Canadian companies with U.S. ownership almost tripled between 1987 and 1998 and has been increasing steadily since. Processing food in North America has a continental, rather than national, focus for most firms.

Figure 5. U.S. Food Industry Mergers and Acquisitions

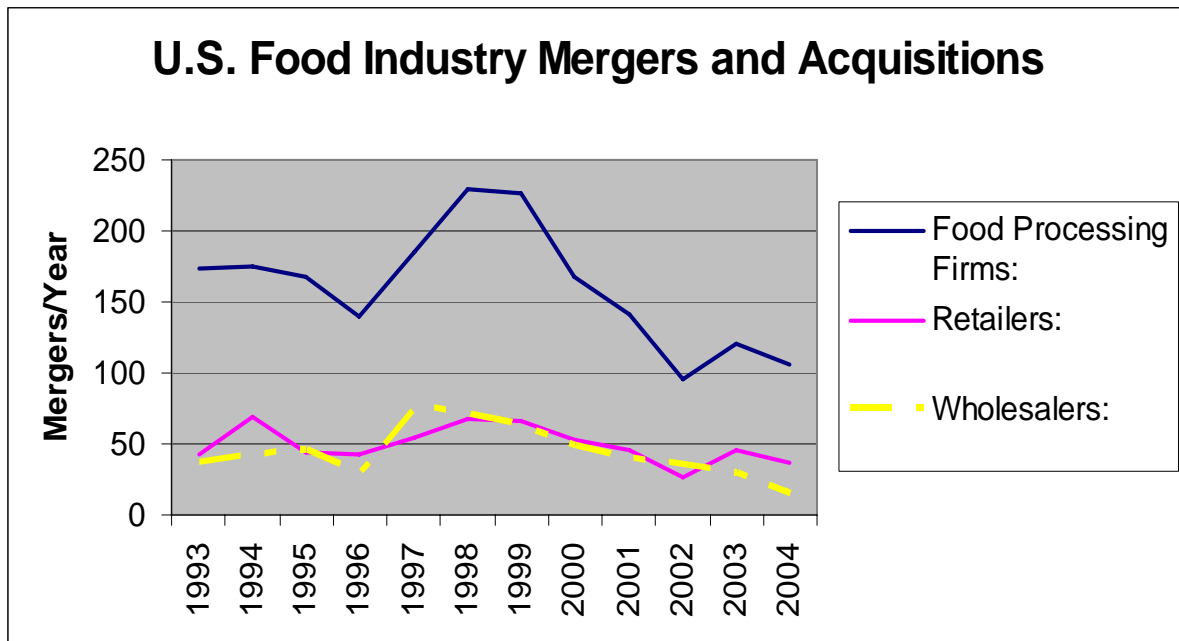
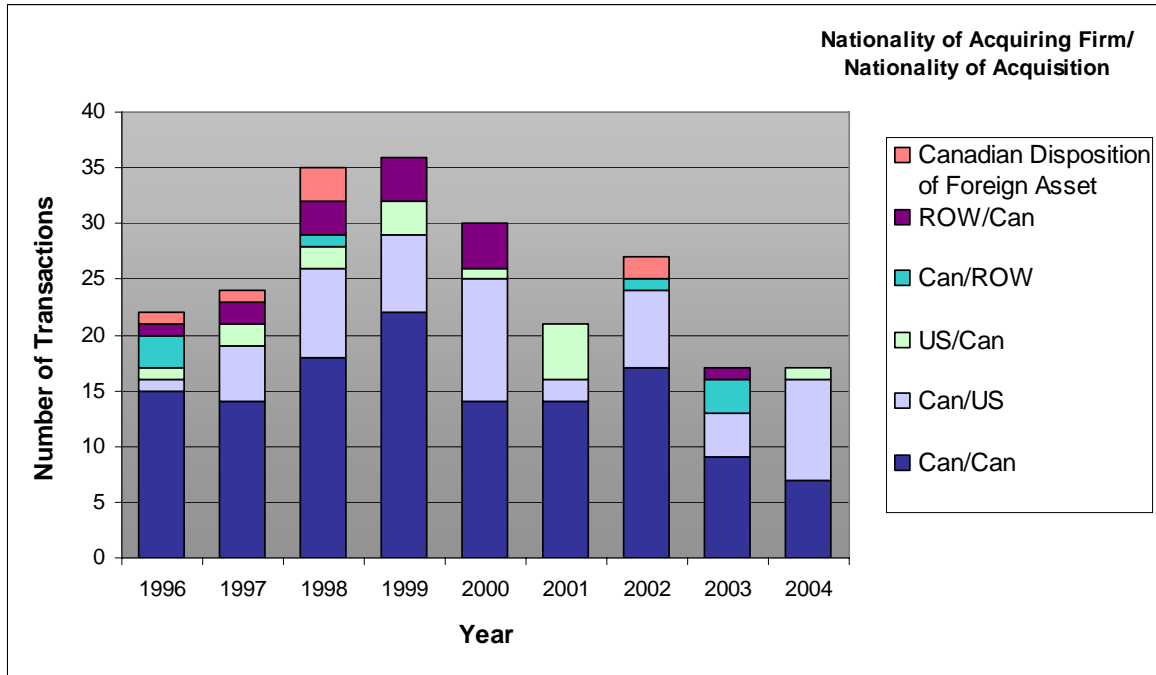


Figure 6. Canadian Food Processing Merger and Acquisition Activity



Source: Annual Directory of Mergers and Acquisitions in Canada, Crosbie & Company Inc.

Rude (2001) examined concentration from a NAFTA perspective; does increasing market size through more open trade (in this case NAFTA) decrease the level of concentration in an industry as the market becomes larger? In the case of primary meat packing, this was not the case. After NAFTA, concentration in the Canadian meat industries increased (Table 4). This was in part due to the entrance of large U.S. meat packing firms.

Table 4: Percentage of Market Share for the Four Meat Packing Largest Firms

	Canada CR4		CR4 United States	
	CR4 1992	CR4 1999	CR4 1990	CR4 1998
Beef		80		80
Hogs	51	56	40	54

Sources: Rude 2001, MacDonald 2001

The beef industry is an excellent example of consolidation in a declining industry with significant economies of scale. In Canada the number of federal facilities processing beef decreased from 400 in 1976 to 43 in 1999 (Thompson 2003). Three firms control 95% of the cattle slaughter in Western Canada. Concentration in beef increased on April 15, 2005 when one of those firms, Cargill, announced the purchase of Better Beef Co., Canada's fourth largest beef slaughter facility. The acquisition expanded Cargill's processing capability into Eastern Canada and increased both concentration and foreign ownership of Canada's beef slaughter capacity. The market power wielded by the retailers and large processors was displayed in the recent BSE crisis. While producer prices plummeted, wholesale prices declined to a far lesser extent and retail prices were relatively untouched. At its lowest point the live price was just 15% of the retail price, down from 25%.

Concentration is evident in other processing sectors as well. Vegetable oil processing in Canada is dominated by two U.S. companies. Archer Daniels Midland and CanAmera control 78% of the market. In the U.S. the top four grain milling firms for flour, wet corn and soybean processed 62%, 74% and 83% in 1997 respectively.

An examination of the Statistics Canada Survey of Manufacturing reveals an interesting anomaly. Although mergers are ongoing, the number of establishments continues to increase, in every category of facility. The data is somewhat difficult to compare before and after 1998 due to the switch from SIC to NAICS classification schemes, which do not overlap perfectly. Rude (2001) completed an analysis of the pre-2000 data and concluded that concentration was occurring in several sub-sectors. Since the methodology for collecting establishment level data changed for 2000, resulting in a general increase in the number of establishments, we have focused on the changes over the 2000-2002 period.

Appendix 1 presents a list of food industry sub-sectors ordered by the percentage growth in the number of establishments from 2000-2002. The second column shows the percentage change in the number of establishments. The third column contains the percentage change in the dollar turnover for the sector and the fourth column contains the percentage change in total value added for the sector. A glance down the list gives the immediate impression of increasing concentration in the high volume production activities like refining milling and making breakfast cereal. Of the fifty sub-sectors identified 18 decreased in the number of establishments, one was unchanged, and 31 increased between 2000 and 2002. Average

increase in production output/establishment was 21.6% for the 18 sub-sectors with decreasing number of firms compared to 3.4% for the sub-sectors with an increasing number of firms over the period. The firms in these sectors are closing plants and consolidating production, making significant increases in output per factory.

We tested the hypothesis that a decrease the number of establishments leads to an increase in output per establishment. Regression analysis confirmed that the relationship was negative and significant at the 1 percent level (Results in Appendix 2). Decreasing the number of establishments increases output per establishment. The relationship between percentage change in the number of establishments and the percentage change in mean value added per establishment is also negative and significant at the 1% level but the coefficient and  $R^2$  values are both smaller. Mean value added is not as closely linked to establishment numbers. When we tested for relationship between average activity and changes in the number of establishments or changes in activity over the period we found no significant relationship. Average plant size is not a predictor of whether the number of establishments, income or mean value added will change.

Although it is extremely difficult to isolate ownership of the establishments, it appears that there is a trend toward new businesses and new production units in areas with opportunities for product innovation and new market development. Note that luxury items like wine, confections, snacks and cheeses dominate the top spots for the largest growth in the number of establishments. Further processing companies are not in the commodity markets. Increasing market segmentation continually adds to the number of potential product/market combinations. Barriers to entry are lower, as are economies of scale and costs of substitution. While a number of firms like Nestle and Unilever will continue to be powerful figures in the field they will not achieve the level of concentration and market power seen in other areas. A recent paper offering new thinking in the field of Product Service Systems PSS opportunities in food found that trends for large global brands are flattening and “global-local” is emerging strongly (Tempelman, Joore, Lindeijer, Luiten, Rampino, van Schie. 2004). The paper reports that regionally designated, specialty foods will increase in importance for new product categories requiring production with organic, identity preservation and traceable origins (Tempelman et al. 2004).



## Consolidation in Food Processing - Conclusions

Consolidation is significant and is continuing in food processing particularly in primary or commodity processing. Price continues to be the main focus in primary processing and there will be constant pressure to drive down input costs. Since those costs are predominantly input costs, this will result in continued pricing pressure on farmers.

The number of product introductions has been leveling off in recent years but at a very high level. The domestic and export opportunities for creative new processed products will continue to grow. Processing firms can market those products through increasingly concentrated main stream channels but they also have more alternative distribution options.

### 3.4 Changes at the Producer Level

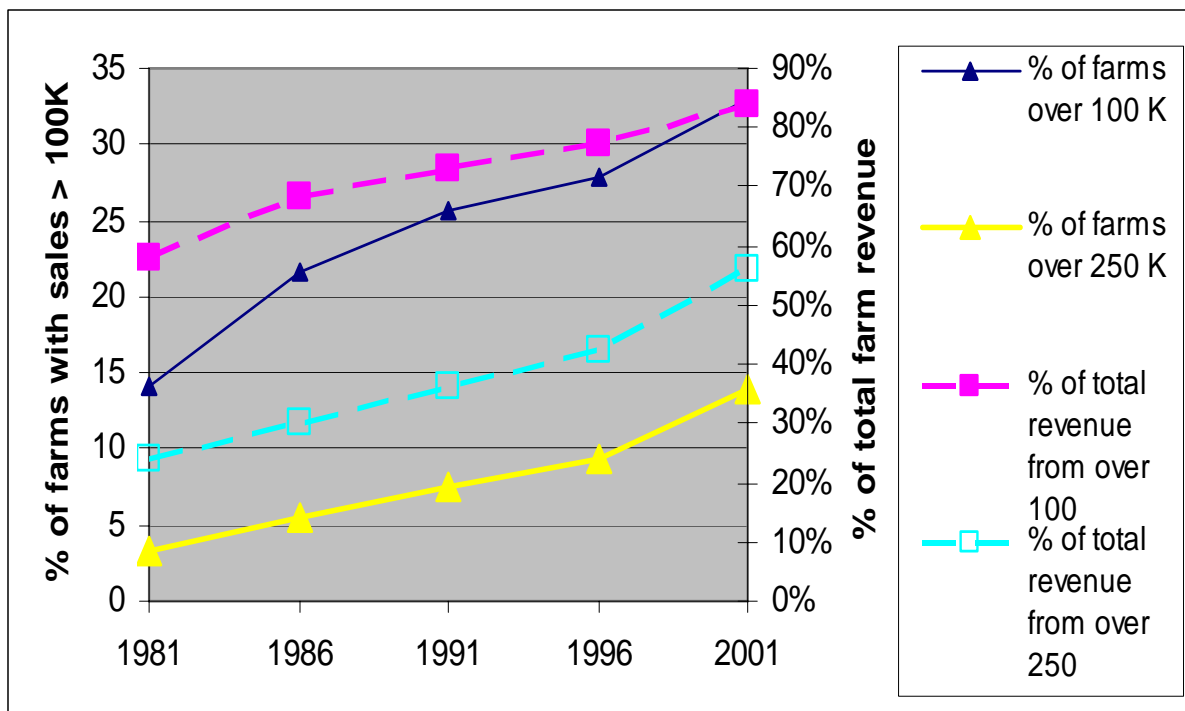
Consolidation at the producer level has been a concern for decades, in part because of the negative impact it has on rural communities. The introduction of new farming technologies and processes is continually increasing the productivity of farmers and their ability to manage ever larger production units. Output per farmer or farm worker in constant 1999 U.S. dollars has increased from \$2,300 in 1910 to \$35,600 in 1998 (Poole 2000). Economies of scale are very much present at the farming level. Production costs are continually being driven down and the minimum economic size for most farm categories is increasing, particularly for those farms producing for commodity markets. Figure 7 illustrates the consolidation of economic output in an ever-smaller producer base. Farms with annual revenue greater than \$100,000 (in constant 2000 dollars) increased from 14% of the total farm population in 1981 to 33 % in 2001 while those with revenue above \$250,000 increased from 3.3% to 13.9% over the same period. Large farms in the latter category now contribute roughly 56% of all farm revenue, up from 24% in 1981<sup>4</sup>. During the twenty-year period the total number of farms declined from 318,361 to 246,923, a reduction of 22.4%.

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<sup>4</sup> To estimate total revenue for each revenue class, the number of farms was multiplied by the mid-point of the class' receipts income range. For the >500,000 we used an average of \$700,000.

An examination of farms with cattle reveals that farmers adapt to change political and economic conditions and that the result can be shifts of production volumes and locations. While the number of cattle increased only marginally (2.8 percent) from 1976-2001, the number of farms decreased 45.8 percent (Food Facts) across Canada. Viewed from a more regional perspective one observes that in Alberta the number of cattle increased by 43.4 percent and the number of farms only decreased by 28.7 percent. Changes in the economic and political landscape dealing with feeding cattle have resulted in a shift of production to Western Canada and Alberta in particular.

**Figure 7. Characteristics of Large Farms**



Farm consolidation only provides on aspect of the changing structure at the farm level. The number of farms does not convey the changes in the organization and interaction of farm businesses in Canada. Production has become more specialized to take advantage of economies of scale in different components of production. The animal production loops where farmers specialized in one part of animal production are an example. Another major change is the increased use of contracting throughout agri-food supply chains. Contracts are useful in ensuring that food chains get the necessary volume and quality of product that their markets require. They represent an increased level of commitment to food chain

activities. However, they raise several issues for farm income. First, those meeting volume and quality standards have increase assurance of selling their product and they may secure premiums above farmers selling into spot markets. This will put them at an advantage to farmers unable or unwilling to work on a contract basis. For that they give up some marketing freedom. However, as an increasing percentage of products are sold through contracts, the relevance of spot market pricing signals diminishes. The products sold on spot markets may be significantly different from those sold through contracts. Price discovery may become an issue since contract prices are not readily available to those outside the agreement.

### **Consolidation at the Producer Level - Conclusions**

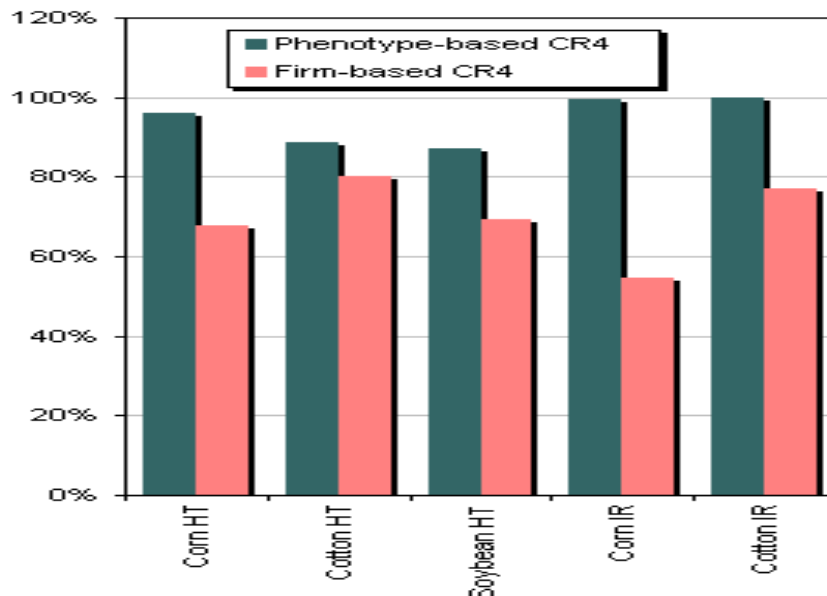
The Canadian farm sector is still locked predominantly into the commodity markets. Processors do have considerable market power over producers in non-supply managed commodities. Farmers in commodity markets have no alternative but to take advantage of new technologies and economies of scale. They are caught between large processors and large input suppliers. However, the pork case study for this paper found that all participants in the pork industry were optimistic about the benefits of consolidation at the producer level. There was unanimous recognition that market power strength in the agri-food chain was linked to size; either individually or through informal or formal groups with specific strategic objectives. Producers are aware of the reality that more sophisticated business methods must be incorporated into the farm infrastructure and like other businesses in the agri-food chain, network power is an important tacit input, and is as critical as technology or branding.

### **3.5 Inputs to Canadian agriculture chains**

Inputs to Canadian agriculture includes plant and animal genetics, chemicals, energy, equipment and services. The seed and chemical industry have been reshaped by biotechnology and the intellectual property rights associated with it. Biotechnology seed development is a long and extremely expensive process. Sunk costs in the form of R&D and regulatory approval costs provide incentives for consolidation and concentration ratios in key seed products is high (Figure 8). Biotechnology multi-nationals used mergers and acquisitions as a strategy for acquiring access to new technologies and attempting to obtain

a dominant position in the industry. The effects were obvious in the late 1990's. When stock market conditions in the late 1990's provided high valuations and relatively easy access to cash the acquisition reached a frenzied pace. In 1998 alone the top ten plant biotechnology firm completed 140 acquisitions, 11 mergers and 13 joint ventures (Fulton and Giannakas 2003).

**Figure 8: Comparison of phenotype and firm-based concentration ratios**



Source: Oehmke and Wolfe 2003.

### Inputs – Conclusion

There has been considerable consolidation in the inputs to Canadian farmers. For seed inputs the consolidation has been consolidation of multi-national seed and chemical companies into a very limited number of suppliers. Long lead times, economies of scale and high sunk costs in the form of research and development and regulatory approval mean that seed suppliers have considerable market power and are able to extract rents from farmers in the form of user fees and higher seed prices. In many cases, this has been enhanced by the linkages between seed and chemical products owned by the same firm. However, the view of pork producers in case study was that primary input costs were not punitive and the producers felt they had access to a competitive market. Overall, these

products have still provided net benefits to farmers and consumers due to improved productivity and lower costs.

**4. Is the increased market power caused by consolidation the major factor in producer incomes that it is generally assumed to be?**

From a producer perspective, the primary concern relative to consolidation and concentration in an industry is that it will increase market power for the firms involved and reduce that of primary producers. Producer concern over income is occurring for several reasons.

1. The producer share of total food expenditures is decreasing.
2. Producer incomes have been under continual stress. Although the reasons may range from droughts and BSE to overproduction of grain globally, the impact is stress on farmers and continual demands that the federal and provincial governments take action.
3. There is a recognition that the power of producers to influence price is being continually diminished and their importance in the global economy appears to be lessening.
4. The continual exodus from rural communities from rural economies is viewed as resulting from a combination of poor incomes, poor prospects and continued consolidation at the farm level.

Declining incomes, decreasing influence over price and products and the demise of the rural economy are a bleak picture from any perspective. In the U.S. several legislative attempts have been made to address this by prohibiting mergers and acquisitions among agribusinesses. Although they have been unsuccessful to date, there is still some momentum to take action in this direction. However, before accepting or rejecting such action, it is worthwhile examining the concerns addressed above and asking the question whether consolidation is to blame.

The food distribution system has changed dramatically in the last two decades. A better understanding of consumer requirements for convenience, variety, quality and freshness has resulted in food that is further processed, partially or fully cooked, shipped from different

locations around the world, stored, moved and prepared meant that the food offered has an increasing percentage of value added beyond the farm gate. Since more value has been added beyond the farm gate, it should come as no surprise to anyone that the farm share of total food expenditures is decreasing. The percentage of value contributed by farmers has decreased and will likely continue to decrease in the future. Sexton and Zhang note that the producer share of total food expenditures remained stable at 40% from 1960-1980 but then declined to 24% by the turn of the century.

Unfortunately, it is virtually impossible for one or a few individuals involved in managing a family farm to have all of the skills and experience needed to do all of those activities well. In addition, farmers in Canada have a long history of viewing themselves as efficient producers of food, not managers of markets or the supply chains to serve those markets. While this is obviously not true for all farmers, it is true for the majority and it is an impediment to changing the way that producers undertake their business and consequently to farm level income. A good starting point might be to lose the term producer completely and start training farmers to think about themselves as providers of food solutions rather than producers of food products that will hopefully be purchased.

Farmers are faced with a limited set of options as they consider their future in a world of changing consumer expectations, consolidation at primary processing levels but more fragmented and differentiated markets closer to the consumer. In the next section we consider the options open to farmers who want to change their approach to food markets and hopefully their share in the value of those markets. A central component in all the strategies is an understanding of what the markets need and a reorganization of resources and efforts to meet those needs.

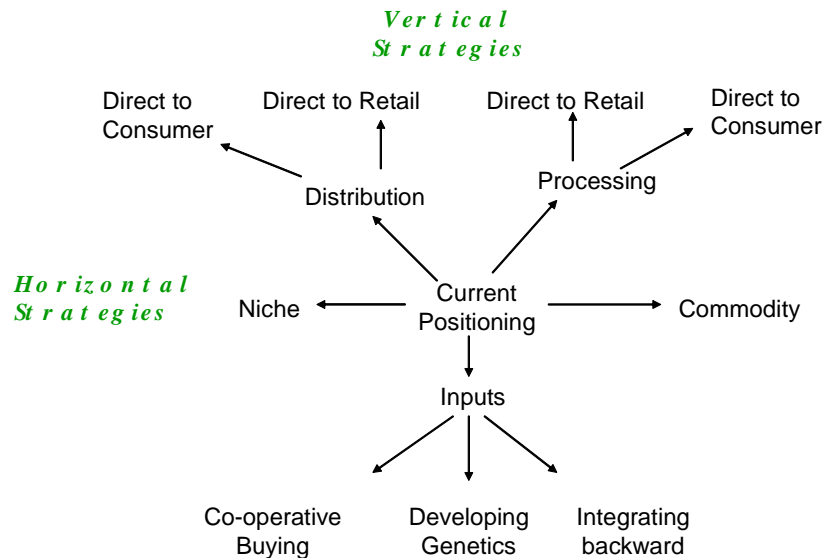
## **5. What Strategies Can Producers Take To Increase The Income?**

Farmers face a very real structural dilemma. Collectively, they are a significant productive force but individually, they are a very small part of the markets in which they sell. In any other industry, the significant productive capacity at the farm level would be organized into units that were both efficient from a production perspective and effective from a complete business system perspective. This would mean larger production units with supporting infrastructure units; distribution and value chain management, marketing,

finance, human resources and information management. Skills would vary broadly throughout the organization and resources would be allocated to cover all essential activities.

This is not an option for most producers and so they must consider other strategies to achieve the same result. Figure 9 illustrates the strategies which farmers can use to increase their market power and ultimately their income. We point out that these strategies and tactics are not mutually exclusive and, depending on the situation, some have to be undertaken simultaneously to be successful.

**Figure 9: Strategies for Changing Market Power and Income**



**5.1 Horizontal Strategies**

Farmers wishing to stay exclusively in farming have a limited set of options and those are based on their choice of markets. Essentially they can operate in markets that are variations of the two competitive premise choices shown in Table 1, competing in price focused commodity markets or focusing the efforts of the business on one or more small niche markets. We organize our discussion of the tactics available to farmers to support their choice of competitive premise along the lines illustrated in Figure 10. We begin with an

analysis of market strategy because the strategies discussed here also apply to markets entered through vertical strategies. Farmers choosing to move into distribution or processing must clearly understand their competitive premise and how their product and service offerings are meeting customer needs.

**Figure 10: Strategies to Support Market Choice**



**Commodity Strategies**

Producers who plan to remain in commodity markets will be price takers and the prices will generally be dictated by global commodity prices governed by global supply and demand patterns, although they may be modified by local conditions. Since there is very little that producers can do to influence price, they have little choice but to seek economies of scale and use any technological and environmental advantage they have to increase efficiency and drive down costs. Figure 7 illustrates the fact that farms are indeed getting larger, but with very few exceptions, not at a rate that will allow them to keep pace with their competitors. With countries like Brazil increasing their agricultural production at an incredible pace, commodity prices will almost certainly remain low in the years ahead.



In addition to increasing size we have seen a move toward greater specialization as a strategy for improving performance. We have seen this in animal production systems where, rather than managing the entire production cycle from birth to market, farmers are focusing on a selected portion of the life cycle. In the hog industry these have become relatively established and formalized.

There are risk management strategies available to producers of commodity markets ranging from farm income insurance programs to the use of different marketing and hedging strategies. These have been under-utilized by Canadian producers for several reasons. First, farmers typically view themselves as producers of products not marketers and the latter activities are often ignored or done poorly. In some cases this is due to a lack of skills in the area. Government income relief programs relieve some of the responsibility of income protection from farmers; if things get really bad different governments will step in with relief programs.

Right now commodity markets are the reality for many producers. It is essential that those involved in these markets recognize that their role as price takers dictates the risks involved in the markets and take all possible options for improving efficiency and marketing of their products.

One of the areas where government and industry association policy can make a difference to commodity producers is in producer access to marketing skills. This can be accomplished through education programs and through sourcing marketing skills that producers can access. The latter might include assistance in pulling together producers to market their product and helping them source professional assistance.

### **Niche Market Strategies**

Niche markets offer farmer and opportunity to reduce the relationship between global commodity prices and the prices of their products by identifying product characteristics beyond commodity characteristics which are valued by customers and/or consumers. The demand for value added services and specialty crops with uncommon attributes in the value

chain is forecast to continue rising at 20 to 30% per year (McDonald, 2001). Small farmers previously unable to compete gainfully on price are now finding new buyers ready to pass on the costs of the value added benefits to growing numbers of selective consumers (McDonald, 2001). By identifying the additional value opportunities for their products and organizing their production/distribution system to provide those characteristics producers can capture part of that value and disassociate themselves from commodity market prices. As illustrated in Figure 9 there are several avenues by which farmers can differentiate their products.

### **Branding**

A successful brand is an identifiable product, service, person, or place, augmented in such a way that the buyer or user perceives relevant, unique added values which match their needs most closely. Furthermore, its success results from being able to sustain these added values in the face of competition." (Chernatony & McDonald 2003). Brands offer credibility and assurances of quality and consistency to customers and consumers, attributes which add value to products and command a price above commodity levels (Rosenshine et al., 2003). An E.U. study by market research group, *Ipsos*, reported that 85 percent of consumers will shop for specific brands. Brands convey information about the products and in some cases the processes used to produce the products. In the *Ipsos* study 77 percent of those polled were interested in the provenance of the product including ethical considerations (NutraIngredients.com, 2004).

Food producers will get premium prices for brands that have distinctive attributes with superior quality to other generic products of its kind (Mattiacci & Vignali, 2004). Some of the attributes that may characterize a differentiated product are territory, identity, nutritional surplus, specificity, tradition, time, legal regulation, the industrial nature, and merceology (Mattiacci et al., 2004. p. 706). However, few farmers possess the skills needed to create the buzz necessary to thrust their product on the radar screen of large buyers (Just-Food, 2004). A recent study also found communication in the agri-food supply chain is extremely fragmented; consequently, consumers are unable to make reasoned purchasing decisions based on the impacts to the farming industry (Duffy, 2005). Large agri-food purchasers are conscious of the buy-local consumer trend but institutional buyers are not equipped to deal with small individual producers (Just-Food, 2004). Groups of producers may realize greater

opportunities if they invest in an experienced marketing professional to manage the process and co-ordinate convenient, single-source contact for institutional buyers (Just-Food, 2004).

Branding food products can be accomplished at several levels working from broad national and regional brands to more focused industry and firm brands. National branding strategies are focused a promoting the qualities associated with the image of national products. “Country branding is hot and for good reason. There is ample evidence that the country a product comes from can be a strong influence on consumers.” (Dunne, 2004) The Government of Canada announced the Branding Canada initiative as part of their Strategic Plans 2003-2004 RPP, “The department is preparing a branding strategy consisting of initiatives to help promote Canada’s strengths as a reliable supplier of quality food produced in an environmentally responsible manner. Canada branding pilot programs are being developed as part of this effort” (2003).

Regional branding initiatives can accomplish similar acceptance results but in a much more focused manner with more observable impact. Europe has a well-developed system for differentiated products that is deeply entrenched in their agri-food value chain:

- *Denomination of protected origin (DOP)*- Acknowledges the product worthy of a certain denomination, by respecting production rules, connecting its production processes to a specific geographical area and to an acknowledged production know-how.
- *Indication geographically protected (LGP)* – Acknowledges a product as being typical of an area, by virtue of the fact that at least one of the principal production phases is done in that area; the product also enjoys a certain, acclaimed, fame; an example is aceto balsamico of Modena (Balsamic Vinegar)
- *Guaranteed traditional specialty (STG)*- Does not refer to an origin, but aims to valorize the traditional composition of the product, or of the relative production method ((Mattiacci et al. 2004, page 709)

“The EU uses this criteria to maintain discipline in food-chain activity; by protecting consumers with transparent information, promoting agricultural production and protecting the names of products from imitation and abuse”.<sup>5</sup> Europe has 600 geographical indications products registered (not including alcohol) and none are from non-EU countries.<sup>6</sup>

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<sup>5</sup> Mattiacci et al. 2004, page 709

<sup>6</sup> Food Institute Report, 2005, page 9

Although there is evidence of regional branding in Canada, such as “Alberta Beef” and Foodland Ontario, regional branding is generally undeveloped effort in Canada. While national and regional branding initiatives assist in increasing produce acceptance, some of the greatest impacts of branding are occurring at the industry level, which is usually defined as an industry within a contained geographic region. Large producers in the food and beverage industry are exploring ways to cooperate to participate in profitable new niche markets which are estimated to reach \$20-25 billion by 2020 (NutraIngredients.com, 2004). The Ipsos study found that consumers are skeptical about the integrity of large corporations, providing a unique opportunity for niche “Farmer Owned Brands” (Hayes, Lence, Stoppa, 2004) to capture a share of the emerging credibility gap market.

The IPSO study authors propose that the credibility gap market is a rapidly growing niche for companies who have differentiated themselves by communicating their social responsibility commitments and actions. This market segment is in response to the growing consumer niche that would prefer to make buying decisions based on their socio-political, personal belief system. On the part of the organization, this often includes a variety of transparent communication methods to the stakeholder community such as efforts to reduce their ecological footprint on the planet, fair-trade pricing, or supply chain human rights policies. There is ample evidence that corporations that have embedded social responsibility into their strategic planning process within the corporate governance structure have received market support for the perceived added-value to the consumer.

A human rights policy is simply good business today as media, investors, consumers and non-governmental organization (NGO) are increasingly sensitive to human rights violations by multi-national corporations and their supply chains (Fussler, Cramer, Vogler, 2004). The commitment to improvements in global human rights has market power as evidenced by new retail chains in the U.S. such as “No Sweat Apparel” and “American Apparel”, ethical makers of shirts, jeans and sneakers who promote their social responsibility agenda, pay above average wages in the U.S., their home country and use unionized shops overseas (New York Times, 11/23/04, page 2). Sales at American Apparel in 2003 were US \$80 million reflecting a growing consumer marketplace that prefers their consumption to be free of exploitation (New York Times, 11/23/04, page 1).

*Innovation*

Michael Porter of Harvard Business School said “Eco-efficient innovations allow companies to use a range of inputs more productively – from raw materials, energy and labour- thus offsetting the costs of improving environmental impact...Ultimately, this enhanced resource productivity makes companies more competitive not less.” (WBCSD, 2003). Innovation is the link from the resource limitations on our planet to corporate sustainability and companies that are able to provide product solutions to problems of an environmental or societal nature will benefit economically (WBCSD, 2003).

Firm level branding is often part of an overall firm strategy accompanied by firm Farmer owned brands are more evident in Europe but some examples exist in North America (Hayes et al. 2004) such as the successful brands like California Almonds, California Prunes, and Sunkist Orange Juice (Hayes et al., 2004). The Almond Board of California projects a 1.5 billion-pound crop by 2009, which is an increase of 50 percent from 2004 (Gourmet News, 2005). During the past year, international demand for almonds grew 3% and domestic consumption has doubled in the past five years (Gourmet New, 2005).

Another innovative branding idea has reintroduced traditional, fatty pork sometimes called Pedigree Pork from a growing niche of producers raising “purebred” pigs, viewed as the quintessentially traceable product, where family lineage can be tracked for generations, as well as, tasting the “way pork used to taste” (McLaughlin, 2004). Other monikers for the specialty pork are rare breed, heirloom, or heritage and typically get buyers to pay three times the price of regular pork (McLaughlin. 2004). Representing less than 1% of slaughtered hogs, both parents must be registered purebreds (McLaughlin, 2004). The luxury meat niche is very pleased with this addition and reports purebred pork is “a great marketing point” (McLaughlin, 2004).

These branding initiatives build industry and, sometimes, regional information into an easily recognizable brand that conveys a mix of attributes which may include quality, nutrition and farmer commitment. Industry branding presents an opportunity for producers and industry associations to contribute to their own success by moving their product out of the commodity product space.

Firm level branding is often one component of an overall firm strategy to target niche markets. The branding strategy is often accompanied by firm level vertical strategies to control more of the value chain activities and move closer to the consumer by performing some processing, packaging and distribution activities. These will be discussed in the section on vertical strategies for enhancing market power.

## **Intellectual Property**

Farmers can also increase their market power by employing intellectual property strategies, establishing and enforcing patents and trademark protection.

### *Trademarks*

The Vidalia Onion is an example of a successful brand that is a registered trademark of the Georgia Department of Agriculture and is grown only by a group of authorized farmers (Hayes et al., 2004). The success of the brand has added value to the producer's farm gate receipts where the market for Vidalia Onions will pay \$27.10/cwt, and onions from other states of a similar type will realize only \$5.53/cwt to \$24.40/ct (Hayes et al., 2004; Clemens, 2002).

The Farmer Owned Brand (FOB) concept depends on appropriate property rights legislation to prevent the agricultural product from becoming a commodity and extend protection to brands that incorporate fixed attributes like quality production practices (Hayes et al., 2004) "Therefore, for a Farmer Owned Brand to succeed it is crucial that expansion be curtailed by the appropriate regulations. Thus support from state and federal authorities is needed to establish a legal framework allowing groups of farmers; 1. To obtain property rights on their differentiated products or brands and; 2. To manage such brands in a profitable manner" (Hayes et al., 2004).

The WTO ruled in December 2004 that the EU must respect U.S. trademark owners their rights and U.S. farmers, ranchers and other food producers should have the same protection for 'geographical indications' (GIs) as food producers in Europe (Gourmet News, 2005). This will open the door to brands to the EU markets for GIs like Vidalia Onions and Idaho potatoes (Gourmet News, 2005).

## Patents

Trademarks can be effective protection for farm and processing level outputs where the nature of the product makes patent protection unlikely. However, many of the input to farmers are protected by patents. This is particularly true for biotechnology products and chemical inputs. Traditionally farmers have not used this protection, partly due to the high costs of developing and protecting new technologies. However, more recently groups of farmers have been extending their reach back into their supply base to gain control over their inputs or to develop new inputs or genetics for their businesses. This can be accomplished through producer associations using their research check offs for the benefit of their members. It can also be used by private farming companies with the resources to fund their own development either in house or in a university/research institute.

## Process Differentiation

Products can also be differentiated on the basis of the processes used to produce them. Consumers will pay premium prices for product which they believe will benefit them personally through greater safety or better health. They will also pay premiums for products produced using methods they perceive as more social responsible methods. Organic products are the largest product category that is differentiated by its production process. However, products are also differentiated by their non-GMO status, treatment of animals, protection of species or the environment and by their fair treatment of producers, as in the case of products like fair trade coffee.

These products receive a premium based on credence attributes, which are product attributes that cannot be seen in the final product presented to consumers. As such the consumer must receive assurance that the products are actually what they are purported to be. This requires the organization of process standards and a process for overseeing and ensuring that all standards are observed. Traceability systems are important for confirming credence attributes and in many cases certification and auditing bodies ensure the integrity of the processes.

The success of any patent, trademark or certification instrument designed to protect and encourage differentiated agricultural products should include the following criteria:

- i. Differentiated products to restrict grower participation for a specified period but at a scale that makes the expansion and sustained progress of the consumer brand image profitable
- ii. Licensed other legal protection from imitation for differentiated products
- iii. Consumer price signals transmitted to producers (Hayes et al., 2004 page 271)

Farmers have a number of options for differentiating their products to achieve price premiums or greater market penetration. A critical factor in their success is the establishment of the estimated market potential and the ability of their product to penetrate the market. Farmers typically do not spend enough time and money establishing the market potential and requirements before launching differentiated products. One part of the research should look at the implications for their value chains and the interest by current or prospective chain partners.

## 5.2 Vertical Strategies

Figure 8 highlights the strategies that farmers may employ to extend their role in their supply chain beyond their traditional production role, moving backward into the input side or, more commonly, forward taking control of more of the chain toward the end consumer. Many farmers have become involved in processing, marketing and distribution as a means of capturing more value from their products. Although vertical strategies may be implemented independently, these are often on a relatively small scale, which raises problems with customers if volumes are not sufficiently high. Many of the innovative new initiatives are being undertaken on a larger scale by groups of producers committed to working together to extend their reach, market power and incomes.

### Working Together

Customers are generally getting bigger and they are serving increasing differentiated markets. To better market their products farmers must tailor their products and services to customer needs. This can include meeting more stringent quality and delivery criteria than in the past in order to secure a higher price or even simply to remain in the market. Customer requirements can include minimum volume levels, year round delivery, requirements to be able to deliver to different locations on relatively short notice. Customers may expect

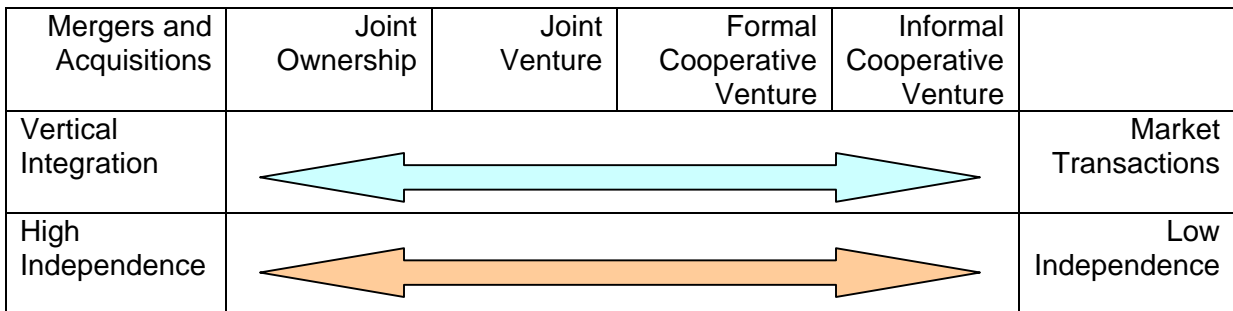


suppliers (in this case farmers) to be able to interface with their inventory control and ordering systems (Enterprise Resource Planning systems) and traceability systems.

To achieve these results and capture more value from their value chains farm businesses may undertake both horizontal and vertical strategies. However, most farms lack the financial and human resources to be successful. Farmers are more frequently turning to the alternative and creating a cooperative relationship with the other members of the industry or supply chain. Although many of the relationships will be created between farmers, numerous others are created between farmers and their customers and suppliers.

For farmers, cooperative strategies can run the gamut from very loose informal arrangements, like participation in buying groups, to cooperatives, formal joint ventures and shared ownership of businesses, as illustrated in Figure 11. The new relationships may be formed vertically through a value chain or horizontally across a level of the chain. In many cases, it is essential to create horizontal relationships in order to meet the volume requirements of the vertical relationships.

**Figure 11: Cooperative Arrangements**



Source: Sparling and Cook 2000.

Farmers can change their horizontal relationships– creating relationships with other producers to change their market power and profitability. Horizontal relationships can provide producers with the ability to aggregate production from a number of units to meet the volume needs of their customers. Producers can use them to increase market power and achieve a mutually profitable pricing strategy (Feenstra, Huang, Hamilton. 2003). The strategic advantage of horizontal relationships may also be an improvement in market position with the benefits of economics of scale, scope and product quality (Cotterill, 2001).

## Strategic Alliances

Relatively informal legal relationships, like strategic alliances, can still maintain a strong commitment and play an important role in the future of a business. A strategic alliance (SA) can be broadly defined as a variety of flexible cooperative arrangements between organizations, ranging from fluid, short-term cooperation to long term, formal agreements (Sparling & Cook. 2000, Das & Teng, 1998; Murray and Mahon, 1993). Partners in a strategic alliance remain independent after forming the alliance, however both share the benefits and management responsibilities, as well as, contributing in one or more strategic areas as needed (Sparling et al. 2000; Yashino & Rangan, 1995). Since they are relatively informal they tend to remain in operation as long as they are meeting the needs of both partners. Some last decades but most only last a few years so an important part of strategic alliance creation is planning for the entire strategic alliance life cycle. Sparling and Cook (2000) define the four stages in the life of a strategic alliance as motivation for cooperation, alliance creation, alliance maintenance and alliance dissolution.

Understanding the different requirements for each phase and planning in advance can improve the effectiveness of the alliance, extend its life and simplify its dissolution when it is no longer advantageous to one or both parties.

An example of a unique strategic alliance was by The Meat and Livestock Commission in the UK created a campaign with several high profile brands to encourage consumers to eat more Sunday roast (Marketing, 2002). Co-promoters included the British Potato Council, Pillsbury's Jus-Rol Pastry, New Wave Wines, non-stick cookware brand Tefal, Green's Batter Mix, Colman's mustard and gravy and stuffing brands Bisto and Paxo; all incorporating the "Roast Britannia" campaign into their individual marketing efforts (Marketing, 2002).

As well, a group of small Canadian hog producers successfully launched a strategic alliance by means of a "fixed window" contract mechanism substantially increased their power in the supply chain (McClinton & Deutsch et al., 2004). The alliance is a form of "fee-for-service" operation of individual producers and is philosophically different from a co-op. The difference is that a 'fee-for-service' is a fundamental transaction based relationship – "each producers pays Rocky Mountain Pork a check-off of C\$1.25 per hog to cover the

overhead” (McClinton & Deutsch. 2004. page 28) a departure from a co-op where members have shares with voting rights. Rocky Mountain Pork has gone into partnership with some of the producers and owns three or four operations outright, but the most of the hog farms using the service are independently owned (McClinton et al., 2004 (page 28)

Rocky Mountain Pork (RMP) in Alberta is an alliance of 17 farms that pooled their production of small herds together for a total of 12,000 sows so that they could attract the attention of large packers (McClinton et al. 2004). The alliance members enjoy a greater degree of price stability through a system of contracts from 1 – 15 years that may include capital or operating loans for the period of the contract. The concept addresses the requirements of large packers who need to be able to average prices out, thus these contracts reflect average, long-term hog prices (McClinton et al. 2004).

They can also change their value chain or their role within the value chain, which alters their vertical relationships; moving backward to suppliers and even research, moving forward to distribution, processing, marketing, new product development.

## **Cooperatives**

One more formal form of relationship that has been used by farmers for decades is the farmer owned cooperative. Cooperatives are legal entities which provide organized power for small independent producers when selling individually to processors or packers (Campbell. 2002). They share in the buying power benefits of the coop and in the profits, some of which are redistributed to members. At a recent USDA conference in Washington, farmers and livestock producers were encouraged to recover some of their lost bargaining power by creating bargaining co-ops, in so doing strengthening their negotiating positions with leading processors (Looker, 2002). A bargaining co-op made up of small independent producers can also find power is enhanced by creating an identifiable brand and employing the strategies available to brand power (Kruse, 2001). Bargaining co-op are better equipped to leverage strategic knowledge about the value of their product to the buyer, network with other similar groups, develop and manage relationships with buyers, and respond with delegated authority to critical pricing and timing issues (Kruse, 2001).

*Re-engineered and Traditional Co-ops*

For decades, farmers have organized themselves in cooperatives. Cooperative structure are now often referred to as being either traditional or re-engineered. These are differentiated by the guiding principle related to cooperative structure; who will benefit from the cost/pricing policies, ownership, and control (Kyriakopoulos, Meulenbert, and Nilsson. 2004). Traditional co-ops limit equity participation only to members and operate democratically with a one-member one-vote principle (Barton, 1989) that extends to products, services, and patronage (Kyriakopoulos et al., 2004). The objective of a traditional co-op is to put forward the maximum price for commodities (marketing co-ops) and offer competitively priced supplies (value co-ops) factoring in market conditions and cost of operations (Kyriakopoulos et al., 2004). On the other hand, effective performance of cooperative firms will vary by market orientation, entrepreneurial culture, and competitive turbulence (Kyriakopoulos et al., 2004)

Re-engineering of traditional co-ops allows proportional, minority, non-member participation in control, ownership, voting, patronage, products, and services (Kyriakopoulos et al., 2004). Cooperative research suggests that firm performance and market course are influenced by professional management who are growth oriented (Kyriakopoulos et al., 2004; Cook, 1994; Ginder & Deiter, 1989) Strategic goals are prioritized by innovativeness vs. efficiency characteristics co-op's with an entrepreneurial culture (Kyriakopoulos et al, 2004).

Co-ops can affect market power and profitability in several ways but most commonly they are formed to increase buying power in the agri-food value chain. They may also allow farmers to collective reach forward in their value chain and undertake activities like marketing, processing, or distribution.

Dairy co-ops like Gay Lea are prime examples of how farmers can maintain more market power by developing processing and branding capabilities. Gay Lea, one of the largest dairy co-operatives in Canada with 4,500 members, processes 11 per cent of Ontario's milk and recorded sales of \$284 million in 2003 (Kohane, 2004). Gay Lea is an entrepreneurial co-operative that committed to creating innovative branded products but also value private label items for customers that include Loblaws, Sobey's, A&P and Lucerne/Safeway (Kohane, 2004). Furthermore, the co-op is planning to leverage their non-dairy export division, representing approximately 10 per cent of their portfolio, into other market opportunities in the U.S. (Kohane, 2004).

In some cases co-ops may provide farmers to reach back into their value chains and affect the inputs to their farms. For example, a large re-engineered co-op in the U.K. is considering several entrepreneurial, collaborative ventures in their ongoing search for new ways to reduce cost for their members. Opportunities include cattle breeding to increase hybrid vigour in dairy cows, marketing of specification-targeted sired beef, commercialization of waste byproducts and labour management innovation (Farmers Guardian, 2004).

Cooperatives also provide excellent examples of the fact that even farmer owned organizations are ruled by the same economics as private firms. Over the last decade we have witnessed considerable consolidation among Canada's dairy cooperatives, as the coops grapple with the need to capture economies of scale to remain competitive.

Out-of-the-box thinking provided opportunity for two U.K. farmer-owned, livestock marketing co-ops who agreed to work together by means of a franchise arrangement (Harris, 2004). The larger of the two co-ops needed to expand and, rather than competing with the smaller operation, granted the junior co-op a franchise to source for its members, directly from farmers, calves of any number, weight, breed and age (Harris, 2004).

### **Supply Management**

In Canada farmers in the dairy and poultry sector were allowed to control the supply of their commodities through farmer run supply management boards. Quotas were established and production was limited to a level which ensured that farm level prices remained high enough to cover costs and provide a profit. Border controls were implemented to limit the flow of imports and the potential disruption to the domestic market. Supply management has been soundly criticized by buyers of these commodities as keeping supplies too low and prices too high. However, it has been a means for producers to maintain considerable market power in the face of concentration of their input suppliers and processing and retail buyers.

Supply management is no longer a feasible option for non-supply managed commodities. The global trade environment has changed and there is no political will to undertake such steps. Under the GATT agreements border controls which allow supply management to survive have been turned into tariffs which are targeted for gradual

reduction and elimination. Supply management has provided farmers with sufficient market power to avoid the vertical integration and concentration observed in the United States and elsewhere in the same industries.

### **Vertical Integration**

Vertical integration is effectively another form of industry concentration by exerting great control along the chain rather than across a level. Integrating upstream and downstream operations can increase both market power and profitability (Cotterill, 2001). Specifically, vertical integration can provide increased profit through improved intermediate input costs (Feenstra et al. 2003). Vertical integration reduces transmission of pricing information from farm to retail (Cotterill, 2001). Cotterill (2001) suggests that vertical integration can lead to monopoly rather than efficient competitive equilibrium. We have seen numerous examples of extensive vertical integration particularly in the meat processing. In the United States vertical integration has been extensive in the beef, pork and chicken industries. In Canada it has been less extensive but still obvious in beef and pork but not in chickens due to Canada's supply management system.

### **Using the Power of Associations**

Associations and industry boards provide other opportunities to organize producer activities cooperatively and informally to secure benefits for their businesses and for their industries as a whole. Associations provide an inexpensive means for farmers to pool their resources and invest in activities that are vital to the survival of their industries. This can include research into new crops, products or processes, analysis of industry trends and issues and training and human resource development. The milk producer boards across Canada invest in product and process research, market research and in promotion campaigns aimed at promoting generic milk products. Numerous studies have shown that both the returns to research and to generic advertising (Cranfield 2003)

### **Clusters and Innovation**

Not all impacts from interaction come from informal or informal cooperative arrangements. When it comes to innovating, numerous studies examining national and

regional innovation systems have found that geographic location is a valuable resource and a competitive advantage from a resource-based view (RBV) (Bendiksen & Dreyer, 2003) Bendiksen et al. (2003) found that “a well developed infrastructure and implementation of new technology can alter the bargaining position in a local raw material market”.<sup>7</sup>

A cluster by definition is geographically proximate operations in the same industry that maximize the utility of the network structure (Bell, 2005). While farmers are less flexible than processors when choosing a geographic location, there are producers who have tapped into the advantage of the cluster concept. Both the competition and cooperation in clusters contribute to the level of innovative activity in a cluster. Identification of new opportunities and innovative problem solving are the benefits of information exchange when there are growers nearby with similar capabilities and collaborative restructuring of existing resources is possible (Tempelman et al. 2004).

Greenhouse growers in Leamington and Niagara, Ontario have taken advantage of the power of a cluster where individual growers benefit from logistics, infrastructure, and research efficiencies. Furthermore, a cluster is critical to the development of Geographical Indicator (GI) brands, which is an important opportunity for all producers who might choose to leverage their geographically linked product offering, a benefit of the WTO ruling in 2004.

Promotion of both the creation of clusters and the interaction between cluster members can have an impact on innovation and ultimately the performance of a sector. The Conference Board of Canada released the results of an Executive Roundtable Discussion of 35 leaders about commercializing innovation in Canada and a key sentiment shared by the group was “we can no longer be all things to all people in the international marketplace” (Guthrie & Munn-Venn, 2005). Furthermore Guthrie et.al point out that a small domestic market in Canada is a limiting factor to establishing home success, thus a dependence on the international market place is embedded in the local business culture of commercialization when seeking consumer critical mass for new products (2005). The participants of the round table agreed that global supply chains are sophisticated and that Canada must identify niche opportunities, if order to maximize their profitability as a value added player (Guthrie et al. 2005)

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<sup>7</sup> Bendiksen et al. (2003) pg 245.

An Australian case study offers an example of a producer who successfully introduced and commercialized a new food crop, Japanese Horseradish, *Wasabia japonica* syn. *Eutrema japonica* (Wasabi), and a primary finding was the importance of a ‘supportive national culture that fosters innovation and strategic experimentation’ (Bhaskaran, 2004). This enterprising family farmer responded to a casual conversation from a customer who expressed a market for domestic, stream grown Wasabi existed in Australia.

The buyer was an existing supply chain customer who also contracted the production of green tea. A tiny trial crop of 700 plants was agreed to and even further entrepreneurial initiative created an mutual opportunity with a local fishery farm with an environmental, water discharge problem (Bhaskaran, 2004). The wasabi crop would use the water discharged from the fish farm to filter the water before re-entering the waterways (Bhaskaran, 2004).

Critical seed funding was provided by the government for R & D, as well as facilitating expansion and supporting the rapid commercialization of the product (Bhaskaran, 2004). Furthermore the supply chain buyer and the producer mutually benefited from an informal alliance based on a proven history of trustworthy commitment and a handshake (Bhaskaran, 2004).



## 6. Conclusions and Implications for Industry Action and Policy Support

The business environment for firms operating in the Canadian agri-food markets is changing. Industries are becoming more global and new international competitors are entering the Canadian market, new technologies are providing increasing economies of scale, consumer markets are becoming increasingly segmented providing new opportunities for food companies. Firms respond to those changes with strategies which they feel will improve their performance, strategies which will differentiate them from their competitors. In commodity industries where there are increasing economies of scale one obvious strategy is to get bigger in an attempt to differentiate themselves as the lowest cost producer. This is exactly what many meat and grain processing firms have done. The result is greater consolidation and an incentive for others to take similar strategies to reduce their own costs.

Other businesses take different strategies to differentiate themselves, producing products targeted at specific markets where they can extract the highest value. Rather than compete head to head with the largest players they move into different market segments. This has been particularly evident in the further processing sector where firms can develop a wide range of products to offer their customers. This is the one level of the supply chain where mergers and acquisitions occur frequently but where barriers to entry are much lower and new firms enter on a continual basis. For those firms survival is based to a great extent on their ability to develop, produce and deliver new products to their wholesale and retail customers.

Consolidation is just one aspect of the changing global agri-food environment. It occurs as firms implement their strategies for surviving and profiting in their chosen global markets and react to changes in their environments. It will continue particularly in primary industries where product offerings are relatively undifferentiated. There are policies in place to ensure that consolidation does not reduce the level of competition in an industry to an unacceptable level. Beyond that putting policies in place to limit consolidation may place the firms in those industries at a competitive disadvantage in global markets and ultimately damage the industries including farmers more than the consolidation the policies were trying to limit.

Canadian farmers are predominantly price takers in increasingly competitive and volatile international commodity markets. Farm income and farm survival are dependent on the ability of farmers to understand their markets and the market requirements, to identify product market combinations where they will be competitive and to formulate plans to produce and market (with emphasis on the latter) their products in a way which maximizes their return at a reasonable risk level. When we consider the issues related to farm income we need to ask the same questions that we would ask of any other business, namely:

- Has the farming business environment changed?
- Have farms changed in response to the changes in their environment?
- How are those changes affecting the farming business and its markets?
- What markets does the farm sell into and what are their requirements
- Are farm resources best positioned to reduce the impact of the changes and take advantage of any opportunities?

The answers to the questions are relatively obvious. The farming business environment has changed dramatically and we have seen many farms respond individually and cooperatively. However, not all farm managers have repositioned their farms to reduce the impact of changes or take advantage of different market opportunities. Many have not optimized their use of risk management strategies to mitigate the effect of some of the disruptions in their industry. Not all farm managers are cognizant of the need to change and are dismayed when their current financial results do not meet their expectations. To consider what government policies and programs can do to affect farm incomes we need to examine the types of activities which farmers need to undertake as part of their business planning and management processes and then consider where outside stakeholders can play a role.

### **Implications for farm income**

The first implication is that farmers should be very aware of the markets they are in and the requirements for success in those markets. In this paper we split agri-food markets into two broad categories commodity and niche markets.

#### ***Commodity markets***

- Commodity prices will remain linked to world prices. No domestic policy will change that fact. The strategies for survival and maximizing income in commodity markets are limited.

- Products – Selection of a mix of products which optimize local production and marketing capabilities and maximize returns based on projections for the commodity
- Efficiency – Producers in these markets must be large and efficient. Consolidation will continue and adoption of new technologies will be critical to success
- Risk management – Better use of risk management tools can reduce the fluctuations in farm incomes

***Policy Implications:***

In 2001 fewer than 22,000 of Canada's almost 250,000 farms reported income over \$250,000 (in constant 2000 dollars). The number in that category tripled in the 1981-2001 period. The number of really large farms which can compete in a global commodity market is small. The business requirement for these firms is different. Should policy be as well? These farmers need access to risk management knowledge, training and tools. Programs which support the development of training programs and creation of marketing groups will assist these farmers in being more competitive. Although these sound similar to some of the extension programs of the past they will differ in their level of sophistication. Owners of large farms today tend to have higher levels of management skills than in the past. They need advice and training from specialists rather than from general extension personnel to take those skills to the next level. The firms need access to new technology and capital to increase the scale of their operations and improve their cost competitiveness.

**Niche Markets**

Market segmentation offers an opportunity to disassociate product prices from world commodity prices. Harvard Business School author Jonathan Byrnes offers that "we are entering a new era in business.... as profound and disruptive as those that occurred when....local markets began to join together, and mass markets first developed.... the Age of Precision Markets" (Byrnes, 2005). Marketing success now depends on a well-developed criterion, establishing which market segments to serve with compatible partners in the supply chain (Byrnes, 2005)

For producers, several factors must be in place to take advantage of niche markets.

1. Market understanding - An understanding of the market opportunity and requirements for success – The process must begin with market research
2. Capability Development – developing the capabilities to meet market needs or partnering with organizations which have them
3. Supply chain management – creating and managing the supply chain from inputs to consumer.

While niche markets can be quite profitable often the profit lies further up the chain. Innovative farming groups are becoming more active in the processing, distribution and marketing of their products. These activities can capture more of the value in the supply chain and improve farm income.

### ***Policy Implications***

Niche markets offer the opportunity for higher prices. If the products are developed and produced in further processing firms from commodity goods the profits will remain with those firms and the retail companies distributing them.

### **Changing Farmer Attitudes and Business Strategy**

The previous discussion, particularly as it relates to expanding the role of farmers in their supply chains leads to a fundamental question. Is the production of primary farm products like animals and grain essentially a low value activity in the food supply chain? What will change that? We contend that as long as world production continues to increase and we have an oversupply of grain then the situation is not going to change. Canadian farm incomes will be driven to a great extent by world prices.

To get out of the current situation farmers need to completely reassess their business models. What food products are the best choices for their businesses? How much of the production and distribution process should they control to maximize the value of the business activities? Who do they need to work with to accomplish their objectives and how should they structure their relationship? How will they measure the performance of their business and their relationships to ensure that their business models are effective and their business activities remain on track?

For any farming business moving ahead requires a thorough analysis of the business environment, markets, capabilities and strategy. Farmers will need to undertake activities identified in Table 5. The table also identifies the areas where farm businesses may require additional resources or assistance and ways in which industry and government policies and programs can help. Programs need to be tailored at least partially to industry characteristics. We believe that many of the suggestions would be best implemented through industry associations who can contract with appropriate professionals to meet the needs of their constituents. The role of governments in such instances could be one of partial financial support but more importantly, one of coordination and knowledge transfer; assisting in creating program approaches can be adapted from one sector to the next. We note that many of the initiatives are in place in one form or another in different parts of the country. Coordinating and refocusing such programs could lead to much more effective application nationally. We also note the trade implications of new programs must be evaluated so that they do not result in trade actions by trading partners.

**Table 5. Changing Farm Business Activities**

<b>Activity</b>	<b>Farm Level Needs</b>	<b>Where can programs and policy help?</b>
Understanding markets and market requirements	Market research Requirements analysis Forecasting trends	Training, access and support for market research capabilities
Identification of competitive priorities	Identification of where commodity vs niche focus applies to the business What product/market mixes?	Strategic analysis and business planning support.
Gap analysis - Delivery - Attributes - Quality/Safety - Traceability - Service	Identification of gaps between market requirements and farm capabilities.	Provision of consulting tools and services to identify gaps.
Reorganization of resources	Realignment of resources and addition of capabilities necessary to compete	Capital investment funding programs
Assessing and adopting new technologies	Ability to analyze and understand the impact of new technologies and develop a technology adoption plan.	Assistance in new technology development (ongoing currently) Technology adoption advice and assistance

Supply chain management	Skills in partner identification, relationship building and maintenance Infrastructure investment – supply chain software and systems and training	Facilitating and supporting value chain oriented programs through both funding and training Assistance in contract development
Entering foreign markets	Creating relationships with foreign buyers Understanding market needs and differences from current markets	Trade policy & promotion Trade assistance programs Market intelligence and assistance in identifying and approaching local partners
Risk management	Developing skills in risk management tools and strategies or hiring those skills	Disaster relief programs On-going risk management programs Support for training, self funding programs and risk pooling programs
Performance assessment	Assessment of achievement of strategic objectives. Identification and analyzing the obstacles	Development of performance assessment worksheets and programs

There are numerous opportunities for government and industry associations to make a difference to producers in developing or accessing business planning, marketing and risk management skills and in organizing their resources to meet market needs. Support can also help in identifying new products and market opportunities and in evaluating new technologies and their likely impact on specific sectors. The programs should have extensive producer and/or producer association involvement. For example, Australia's DOOR, (Do Our Own Research) program, is a marketing course that offers help to farmers in identifying the potential ways the new crop might be sold and in so doing evaluate its potential as a viable option for further investment (The Australian New Crops Newsletter, 1998). The program is targeted at the new crops industry and includes a partnership with the University of Queensland who provide the short courses for farmers (Fletcher, 2005). While such programs are excellent at enhancing farmer skills they may not actually be as effective as organizing farmer access to selected marketing skills.

This paper does not attempt to address the truly difficult political question. What about lifestyle farmers who are not willing to make changes but still expect to continue to earn a decent living from a limited, unfocused farming operation? That will be addressed somewhat in the self selection process for the programs since they will be aimed primarily at

businesses that take action. The selection process for eligible applicants can also incorporate criteria related to the size or sales of the business to ensure that programs are reaching businesses capable of moving ahead. However, size needs for viability vary depending on the product/market combinations being targeted.

Access to knowledge is a critical component of success for Canadian producers if the goal is to increase or even maintain farm income. Canadian farmers will benefit if they can evaluate and selectively incorporate the improved business tools available to them within the agri-food value chain. This includes the tacit knowledge of networks, technological advances, branding and marketing advantages. The government must prioritize the development of an ongoing agri-food policy restructuring process if Canadian farmers are to be expected to successfully meet and overcome the challenge of producing in an export dependent nation.

The advantage of small number producers in Canada is the opportunity to communicate and disseminate new information rapidly. The development of a linked national system of formal access to Canada's existing, and thriving research and development community is an opportunity to stay slightly ahead of the learning curve for producers on an ongoing basis – enough to maintain a slight advantage over other nations. With a coordinated national effort in global sales and marketing, perhaps through the Branding Canada initiative, products in Canada may be able to achieve new market opportunities – possibly even innovator status, thereby, garnering a slight premium for agri-food attributes not found in other global markets.

While commodity production will continue to make up a significant part of the farming community in the foreseeable future, Canada has a growing group of farmers with the desire to stake a portion of their operation on new opportunities in the agri-food chain. However, evolving government policy and producer access to information and capital will be a necessary component of sustained success in the international agri-food chain with the additional anticipated benefit of facilitating and improving farm income for Canadian producers.

### Case Study: Hog Industry in Canada

Consolidation in the agri-food chain is having a significant impact at the producer level and the authors of this paper chose to focus on the hog industry as a case study. The hog industry has gone through a noteworthy numbers of changes over the recent decade, and has become more globally focused by intent and circumstance. The method for gathering information was a review of the literature both academic studies and journal articles.

A semi structured interview was conducted with four representatives of the Canadian hog sector. Two hog industry representatives provided an eastern and western provincial marketing board perspective and two contributed their perceptions from the producer level; a founder of a new generation co-operative and the other, running a large, family farm. Due to time constraints, the group is admittedly small but diverse and active. The interview participants offered interesting insight about how they perceived agri-food consolidation is influencing and affecting hog producers in Canada in 2005.

The case will also be developed on a framework describing the drivers, strategies and results related to consolidation as illustrated in figure 1. The key interview findings will be presented within the categories offered within the framework.

#### *Political-Legal*

In 1995 political changes led to risk and uncertainty in Western Canada as the Western Grain Transportation Act was rescinded. Part of the motivation for this political decision was an underlying need by the Canadian government to reduce their federal deficit and partially to satisfy a commitment to the World Trade Organization (WTO) to reduce subsidy instruments. This created a situation in the prairies where it was no longer economic to transport corn and barley to Canada's hog producers in eastern provinces.

Out of crisis, new opportunity was created and the western prairie hog industry became attractive because of the abundance of inexpensive feed. It also was due to the North American Free Trade Agreement (NAFTA), which initiated huge changes in the dynamics of hog production in North America and allowed Canada to integrate with the U.S. in geographic efficiencies, using a combination of strategic economies with technological advances. Currently, over 8 million hogs are shipped to the U.S. each year, two thirds as feeder hogs and the rest for slaughter.

One of the drivers of consolidation is continuously improving technology, also driven by the need to reduce costs, increasing health standards, and globalization. Genetic trait improvements, increasing feed conversion efficiency, reduced mortality through pharmaceutical introductions have created a management environment where consistency and profitability are possible at a large scale (Farmers Guardian, 2004). One industry participant offered that there were two important technologies which made multi-site hog production possible; "the invention of the integrated circuit and the dissection of the DNA molecule – vaccines let us maintain the benefits of multi-site systems and the computer allows us to ventilate hog barns and control the system". Other technologies like automation in the slaughtering process and blast chilling also improve product quality and positively affect performance in an improved work environment (Vansickle, 2003.)

In fact, technical progress is one of the most important factors driving economic organizations today (Cotterill, 2001) and the general economic rationale for firms to integrate is to internalize technological economies (Perry, 1989; Cotterill, 2001)

Others echo the notion that food industry organizations have evolved with the assistance of technology are the "advances in agricultural and food-processing equipment, biological sciences, chemistry, pharmaceuticals, computers, optical scanners and ....



marketing. Technological advances have lowered the cost of production, created new products, improved the quality of older products, created new industries and new market channels. Examples include.... channels like A.C. Neilsen, the artificial insemination industry for dairy cattle, the frozen food industry, and the chilled food industry” (Cotterill, 2001. page 39).

As an example, technology made it possible for a producer owned, co-operative in Illinois to construct a state-of-the-art, 100% market driven packing plant with a focus on developing niche markets, sorting products with certain specifications such as antibiotic-free, trichinae-free and organic (Vansickle, 2003). The hog producers determined there was a need for such a facility when they could not respond to the growing market opportunity for specialty items. With the current commodity oriented system, traditional packers are uninterested in handling this specialty market presumably because of the lack economies of scale (Vansickle, 2003).

Emerging competitors in the hog industry, most often cited as Brazil and China, have access to the same technology and with lower labour costs are deemed to be formidable players in the very near future. The study found overwhelming unanimity that Canadian hog producers will have to be tactical and deliberate with their strategic choices in the future, not only to survive, but grow their business from existing and new strengths. Of equal concern, our interview with a family farm operator found that there is a probability that “rivals with differentiated capacity will come from smaller, unexpected players.”

Volatility in prices at the commodity level is a constant risk that is felt by Canadian hog producers who are price takers not price makers. Saskatchewan exports approximately 80% of their hogs according to one executive and said creative, efficient producers can suddenly be faced with a 20% drop in price when the market is over saturated by a mere one-half of a percent. Even though Canada has a global reputation for one of highest science based regulated and properly enforced, hog industries, regulation will only get you in the game, however, it is not enough for strategic advantage.

### *Industry Level*

Growth in the hog industry has more than doubled in the last ten years in the province of Saskatchewan. “From an industry perspective or at the macro level, the hog industry is becoming a more integral part of the province,” was the view from Saskatchewan.

In speculating why volatility has increased with consolidation in the past five years, one offering was a link to the impact of vertical integration. “Because there are fewer buyers and sellers, you see more volatility and ultimately market failure and it’s a powerful argument against single desk selling” said an industry executive.

The industry viewed with concern, the rising Canadian dollar as a predicament and in Ontario because labour costs in the province are higher than in the U.S. there is a fear that producers will not be able to adjust if hog prices fall. “Throwing some real numbers at this – if we thought our average cost of production was between \$1.50 and \$1.55 per kg. and the new reality might be \$1.35 per kg. the producers are looking at their own bottom line and thinking can I be competitive in that environment or not?” an executive offered. “In Ontario it may be the younger farmers with higher debt loads who are sacrificed because their cost of production is going to be higher” an industry member speculated. The overwhelming view was the reality for producers is that, “The commodity markets drive the prices below the cost of production at times”.

The impact of consolidation on producers is seen positively from Saskatchewan’s point of view, with a chance for people to make a decent living. ‘let’s get rid of the panacea of the old farm because quite frankly it died a hundred years ago ... we don’t want to go back to subsistence”. Ontario felt fortunate about their competitive feed sector however

some skepticism was voiced about the growing concept of bundling of services in general, implying less buying transparency at the producer level.

Vertical reconfiguration is one obvious option for success in the hog industry with comments like 'we would get into value added opportunities if they existed and partner to do that; partner doesn't mean one - partner could mean multiples. Maybe it's time producers got together and put some capital resources into getting higher into the value chain.'

Furthermore, it would be approximately a 10:1 ratio to develop an upstream value added step. "For every ten dollars used to develop primary production, it costs one more to get into the next level... why wouldn't you do that?" We are seeing more co-operation between the larger players and they are discussing how to achieve an integrated model with packers observed an industry insider. He said, "It wouldn't surprise me a bit if producers start gaining a larger share of the packing, wholesaling, sales portion of the business".

Horizontal consolidation across the supply chain is a collective initiative to gain market power strength and participate in mutually beneficial pricing strategies. Strong views reflected the of lack of market power felt by farmers; "The producers are at the bottom of the rung and they always will be until they have an alliance, partnership or a share.. Until they can get to the next level, they will always be subject to a great deal of volatility."

One executive suggested that the challenges ahead for producers are huge and they will need critical mass to achieve market power. Furthermore, "patient capital" is a key component if medium to long-term strategic plans are to be realized. The perception is producers will have to work as a group to deploy a marketing strategy that can achieve brand power and get into the retail market. In particular, critical mass is necessary to provide a reliable supply to a successfully created demand momentum.

Historically the cultural mindset in the Canadian hog industry has reflected a commitment to rural communities and lifestyle. It might even be said that some producers are not comfortable with the ruthless, competitive behavior seen in other industries. This is both an advantage and a disadvantage in the agri-food global economy, where different cultural norms and standards enable production economies that Canadian producers do not share, both philosophically and legislatively in Canada.

Farming has a deeper and more personal meaning for producers that may be more important than financial gain and one executive offered that while the local farm can't compete with Smithfields, Coldspring or Big Sky, that is not the whole story. Competition may difficult because of issues related to the cost of production, but that isn't the dominant driving factor. The view was, "for farmers the cost of production includes everything – and the family farmer will live on nothing – live on depreciation, pride of ownership and the challenge of doing it – lifestyle." However, the feeling in all of Canada seems to be, if small farmers want to continue independently they will always be considered a part of the hog producer community.

Beneficially, consumer preferences have changed in the direction of the natural advantages Canada has to offer like spacious production facilities, environmentally sound farm practices leading to healthy, disease free product. This advantage is not easily duplicated in developing hog markets like Brazil or China and until they can provide reliable legislative and food safety infrastructure, Canada has a market and brand differentiation advantage. The interview process found that the Branding Canada initiative was a highly regarded vehicle for marketing this differentiation to important global customers and further resources should be invested in this area, at the producer, provincial and federal level.

Low cost, commodity producers are emerging from every continent, therefore competing in international markets on price alone, is a volatile model upon which to grow a business, especially for an export dependent country like Canada. This situation is not unique to Canada however, and we see many examples of regional products that chose to exit the commodity market place and achieved sustainable profitability. Brand development

supported by private and public marketing efforts have tapped into the growing consumer willingness to pay premiums for the opportunity to consume the differentiated characteristics available from a variety of global producers.

### *Firm Level*

The competitive premise of whether to go big and realize the economies of scale or stay small and find a differentiated market niche in the hog industry, is one of the big questions in Canada. The majority of hog producers in Canada are currently in a commodity mindset with one industry member offering, “you have to integrate - the operations in my view are going to get larger.”

The question is will size bring market power to Canadian hog producers in the global commodity arena? In Saskatchewan, the view is that 85% of the producers may prefer to stay with a commodity strategy but that may only represent 40% of production. Three firms in Saskatchewan produce 55% of the hogs and twenty years ago, the number may have been hundreds.

“The biggest changes in the hog industry have been the introduction of multi-site systems and that has affected the size of farms so they’re bigger and more efficient” according to another industry executive. Viewed from Ontario it was suggested that commercial farms may be 1000 sows now and the motivators for that have been the need to have large number of pigs at various stages of the system from a single source - rather than cost driven. An executive pointed out that “Agriculture is in the process of being a small business to becoming an industrial machine but that gets publicly characterized as family versus factory farm - the multi-site system is really a factory driven system which only makes system sense in another way”. A twenty-year-old farmer can easily become involved in the pig industry by finding a job with someone who is already doing it and work their way up the career ladder; a sentiment echoed in both Saskatchewan and Ontario. This is a perfectly suitable career choice option typically found in almost any other industry.

It can be reasoned that the Canadian hog industry has a few large producers with the collective power to launch a differentiated Made-in-Canada strategy that is able to create profitable relationships in the supply chain. Saskatchewan thinks they may be able to develop a regional designation, the result of an already existing situation where one or two of the largest producers with 700,000 hogs align, with similar genetics and production practices, can develop this branding opportunity at a larger scale with reliable supply. However, currently the paucity of packer facilities is the limiting factor, when considering the development of a differentiated hog brand according to the industry members interviewed for this study.

Staying small will require wisely chosen alliances in the value chain. Relationships, according to an independent farmer, will be more important than ever. This strategic hog operation has benefited from an informal alliance for two years based on mutual synergy, trust and a handshake. Access to deeper resource and knowledge transfer has been deployed constructively by each farm and they are both reaping the benefits of a 3000 sow operation based on a mutual vision. “Its pure economics”, said the satisfied, independent hog producer.

There is speculation that it may be the hog producer in the middle who disappears as the industry struggles to find certainty in growing their market share, adequate financial resources and changing industry dynamics. One executive felt the larger industry players had deep enough capital resources to withstand a negative turn in commodity prices but if the downturn lasts for a couple of years, they too would “fall like bowling pins”.

### *Strategy*

On the other hand, the hog industry has its share of innovators and early adopters, with speculation that these small to medium sized producers, represent the market shaping, next generation of the business. A perspective from Saskatchewan was, "I think ten years from now agriculture will be completely different"

Innovation in the hog industry is promising in several forms: differentiate the product in taste as seen in the return of heirloom pork that has a higher fat marbling content; production through the adoption of organic, feeding or animal welfare practices. Furthermore, there is an opportunity to develop regional designation of origin brands that offer characteristics unique to a specified area. The marketing of these differentiated products may require new channels in the agri-food supply chain. Evidence exists for many regional brands in proven niche segments, competing profitably both domestically and internationally.

The pork industry has made it clear that they are capitalists, prepared to adapt as required to facilitate the prospect of competitive advantage. However one executive pointed out that even strategic differentiation will be challenging, as that market has become fragmented. So the question by all industry members was which market to choose to focus on? The link to survival of the independent owned business remaining as a significant component of the hog production, may depend on the buying habits of emerging, socio-economic market segments according to one industry member.

A good illustration is a UK hog farmer who has recently downsized from a large, commodity operation to a smaller, value-added structure. This hands-on producer breeds his own well marbled hogs, purchased a small butcher facility to create unique products, and sells differentiated, high quality items directly to discerning consumers and award winning chefs – the business is described as "birth to oven" with sales this year predicted to be £250,000 (Farmers Guardian, 2005). This creative hog farmer managed to find profitability with only 15 acres and 60 sows by adding value at every level of the supply chain process, which he controls with the exception of slaughtering (Farmers Guardian, 2005).

There is a sense with the progressive hog producers that changing consumer purchasing patterns may be linked to demographics and socio-economic drivers. Furthermore, we cannot underestimate the impact that changing norms in culture and social structure influence consumer demand and the increasing value of time (Cotterill, 2001).

An emerging segment of the market, the experience economy, is described as a consumer niche willing to spend a larger share of their disposable income on any hedonistic, sensory experience including food. Traditional economics echo the inability for humans to consume more food and that will not change necessarily but a segment of the population want finer quality food, an added value trend that has profitable potential for a small but innovative, export dependant nation such as Canada.

Studies show there is a cultural and hedonistic value to food – it is no longer considered only for its nutritional value, but has acquired prominent social value (Endright, 1995; Boccaletti and Canali, 1998; Magni and Santuccio, 1999; Bonetti, 2004 (p 764). This is a strong trend that Canada should not ignore. Products with specified production practices linked to geographic areas are described as 'typical' in Italy: 'typical' ham and cold meats represent 77% of total ham and cold meat exports and 'typical' cheeses, 76% of total cheese exports (Bonetti, 2004. p 764). Contrary to the small producer image associated with regionally designated characterization, the concept of typical products has also been embraced by large, industrial organizations who have had used their supply chain relationships, expanding geographical distribution, in response to increasing consumer demand (Mattiacci et al. 2004). Many hog producers are reviewing their plans and selecting either commodity or niche approaches and then organizing themselves to meet market needs. They are recognizing the changes in their business environment and adapting to them but not all in the same way.

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Appendix 1: Percentage Change in Number of Canadian Food Industry Establishments 2000-2002			
Category Sorted by % change in # of establishments	% change in # of establishments	% change in \$ turnover	% change in value added
Sugar	-26.67%	41.44%	-8.94%
Flavouring syrup	-23.81%	-2.08%	-4.62%
Breakfast cereal	-23.53%	80.55%	61.21%
Ice cream and frozen dessert	-17.57%	20.37%	8.54%
Rice milling and malt	-15.79%	40.44%	46.60%
Seasoning and dressing	-15.27%	38.21%	35.64%
Retail bakeries	-10.18%	32.81%	63.00%
Oilseed	-8.33%	4.21%	-4.65%
Fluid milk	-6.81%	9.99%	-2.43%
Bread and bakery	-6.41%	27.03%	31.75%
Breweries	-5.93%	2.83%	0.84%
Bakeries and tortilla	-4.78%	13.87%	17.12%
Fruit and vegetable canning	-3.21%	12.25%	6.55%
Seafood product	-2.97%	16.96%	16.66%
Animal (except poultry) slaughter	-2.93%	7.69%	16.64%
Commercial bakeries	-2.07%	21.34%	23.24%
Food manufacturing	-1.61%	12.47%	9.01%
Dairy product	-0.91%	7.82%	5.56%
Fruit and vegetable preserving	0.00%	11.84%	7.93%
Grain and oilseed	0.60%	12.29%	10.75%
Poultry	0.64%	6.69%	-8.67%
Other food	0.73%	11.35%	8.74%
Cookie and cracker	1.49%	-16.74%	-17.86%
Animal slaughter	1.54%	7.47%	2.45%
Meat product	1.54%	7.47%	2.45%
Manufacturing	1.77%	-3.82%	-5.85%
Dairy product (except frozen)	2.46%	4.85%	4.18%
Roasted nut and peanut butter	3.03%	19.14%	38.18%
Rendering	4.71%	17.11%	-1.32%
Cookie, cracker and pasta	5.00%	-9.91%	-9.40%
Distilleries	5.00%	2.60%	-2.96%
Coffee and tea	5.63%	-4.61%	5.05%
Flour milling and malt	5.68%	11.18%	-9.44%
Sugar and confectionery	6.01%	12.30%	5.67%
Dry pasta	6.25%	8.33%	-2.64%
Frozen food	6.25%	9.30%	7.29%
Confectionery	6.41%	7.76%	-9.72%
Flour mixes and dough	6.85%	-1.25%	10.85%
All other food	7.35%	17.07%	12.19%
Non-chocolate confectionery	7.69%	15.64%	15.08%
Starch, vegetable fat and oil	8.70%	-5.16%	2.45%
Snack food	8.86%	0.34%	-5.10%

Beverage and tobacco	8.89%	-5.69%	-5.23%
Beverage	10.17%	-7.39%	-8.77%
Soft drink and ice	11.52%	-4.67%	-2.47%
Flour milling	11.59%	5.04%	-20.34%
Butter, cheese and dairy	12.57%	-0.64%	16.39%
Other snack food	13.04%	-5.68%	-10.98%
Chocolate and confectionery	20.00%	9.90%	29.98%
Wineries	23.68%	-14.39%	-4.15%

## Appendix 2. Analysis of the relationship between changes in establishment numbers and changes in activity/establishment or mean value added per establishment

### Regression % change in establishments against % change in activity/establishment

#### SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.6629
R Square	0.43944
Adjusted R Square	0.42776
Standard Error	0.07882
Observations	50

#### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.233793	0.23379	37.62805	1.6E-07
Residual	48	0.298237	0.00621		
Total	49	0.53203			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>
Intercept	0.05012	0.013146	3.81274	0.000392	0.02369
X Variable 1	-0.4224	0.068861	6.13417	1.56E-07	-0.5609

### Regression % change in establishments against % change in value added/establishment

#### SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.37189
R Square	0.1383
Adjusted R Square	0.12035
Standard Error	0.09773
Observations	50

#### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.073581	0.07358	7.703946	0.00783
Residual	48	0.45845	0.00955		
Total	49	0.53203			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>
Intercept	0.02353	0.014995	1.56894	0.123232	-0.0066
X Variable 1	-0.21443	0.077256	-2.7756	0.007831	-0.3698

### Appendix 3 An Analysis of Market Power and Canadian Food Prices

To assess changes in market power we examined food prices and food price indices in Canada for several major agricultural commodities. Price index data for 1995- June 2004 was obtained from the Statistics Canada Food Stats 2004 database. For all indices, the average price for 1997 was taken as the base year and set at 100. Changes in the indices represent movements above or below 1997 average price. The data presented provides some indication of the relative price changes at different levels but we note that there are only a limited number of product prices tracked for each commodity. There are other products not available in the database which may follow different trends We will discuss the commodities in detail later. However, the broad conclusion is that retail market power appears to be increasing at the expense of producers and consumers, particularly in meat products. The retail price index is generally increasing relative to the wholesale and farm levels. We caution that in our analysis we have not included possible impacts from reduced costs at the producer and wholesale levels. However, if those cost reductions exist they are not being completely passed on through retail to consumers.

We begin our analysis with an examination of the relationship between farm prices and retail prices. We follow with a more in-depth analysis of the changes in prices at farm, wholesale and retail for a number of commodities and products made from them.

#### **Retail Price Index/Farm Price Index Spreads.**

Retail to farm price spreads have been getting progressively larger over the last five years. The Food Stats database uses 1997 as the base year and indexes the average price for the year at 1.0. Therefore in 1997 the retail index of 1 divided by the average farm index would yield a retail index/farm price index ratio value of 1. For several commodities we divided the retail index by the farm price index to see whether retail pricing was changing at a more rapid rate than farm prices. Table 1 summarizes the results in terms of yearly averages. It is apparent that retail prices have been steadily increasing relative to the average farm price index particularly with respect to meat product. To some extent this appears to be due to market power, particularly in the case of beef and its substitutes, pork and to a lesser extent chicken. The BSE problems of 2003 have dramatically decreased beef prices and there has been a spillover effect on pork. However, another reason is that farm level prices fluctuate widely, as illustrated in earlier figures. Food retailers have a general pricing strategy to maintain fairly consistent product pricing so they will maintain fairly consistent prices to dampen or avoid completely the radical fluctuations experienced at other levels their food supply chains. They also try to maintain some consistency across competing products so as to avoid major swings in demand between categories. These pricing strategies mean that in cases like beef and BSE retail firms will use their market power to hold prices more constant than they would be under more open competition. The retail/farm level price ratio will be worse for products experiencing fluctuations than for more consistent products.

Table 1. Average Annual Ratio of Retail Price Index to Farm Price Index (1997 as base year)

Average Retail/Farm Price Index Ratio							
Year	Beef	Pork	Chicken	Milk	Fruit	Wheat	Vegetables
1997	1.00	1.01	1.00	1.00	1.00	1.00	1.00
1998	0.99	1.51	1.02	1.02	1.02	1.06	1.02
1999	0.96	1.32	1.09	1.01	1.05	1.16	1.07
2000	0.93	1.13	1.14	0.99	1.11	1.18	1.08
2001	1.02	1.17	1.14	0.99	1.16	1.10	1.14
2002	1.15	1.44	1.24	1.02	1.27	1.01	0.93
2003	1.46	1.47	1.22	1.01	1.21	1.14	1.11

Figure A1 below tracks the monthly ratio of the retail index to farm level index. The spikes in pork and beef were caused by massive decreases in the farm price without the accompanying decrease in the retail price. Although the level of volatility is different for all three meat products the overall trend appears to be holding across all products. We point out that this is a comparison of the price indices. A ten percent increase at farm level is significantly lower than a ten percent increase at the much higher retail price. The real differences between retail and farm prices for cattle and a variety of beef products are shown in Figure A2 and for pork in Figure A3

Figure A1 Retail Price Index/Producer Price Index 1995-2004

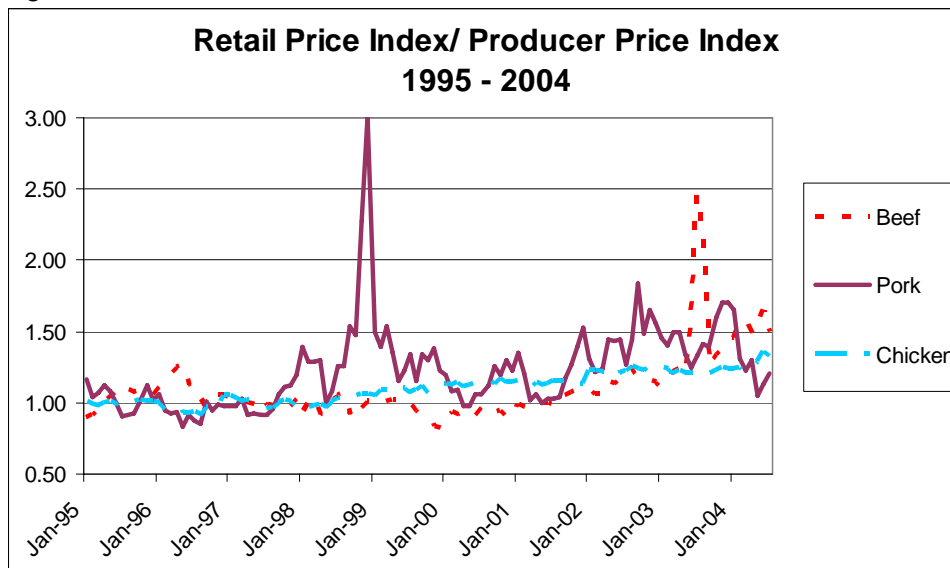




Figure A2 Prices for Steers and Beef Products 1995-2004

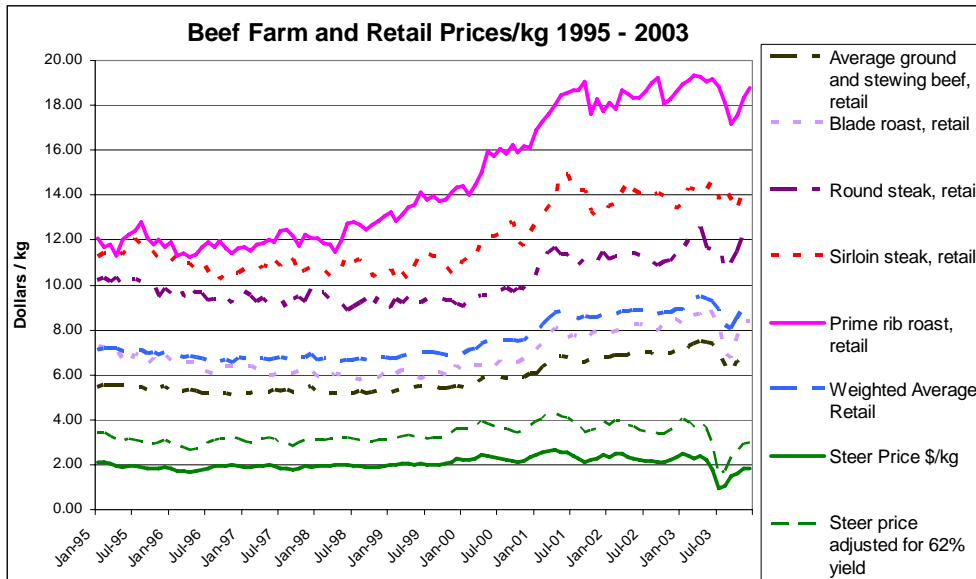
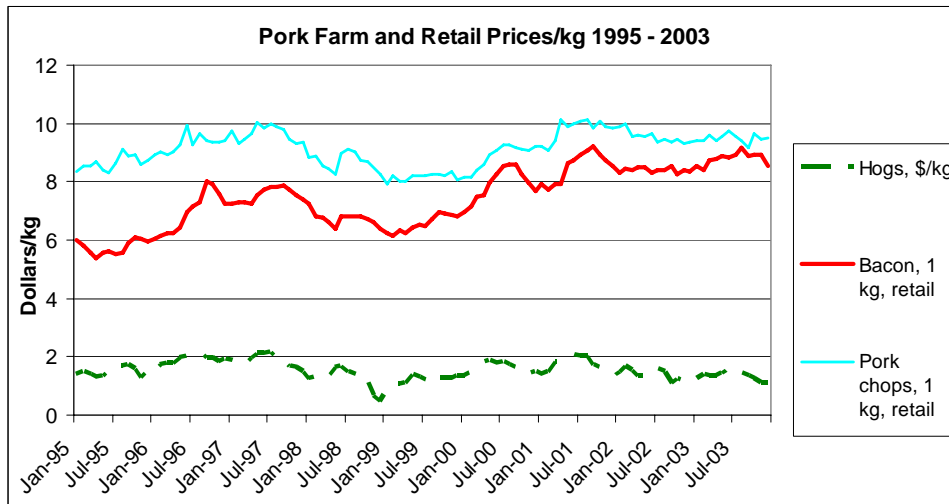
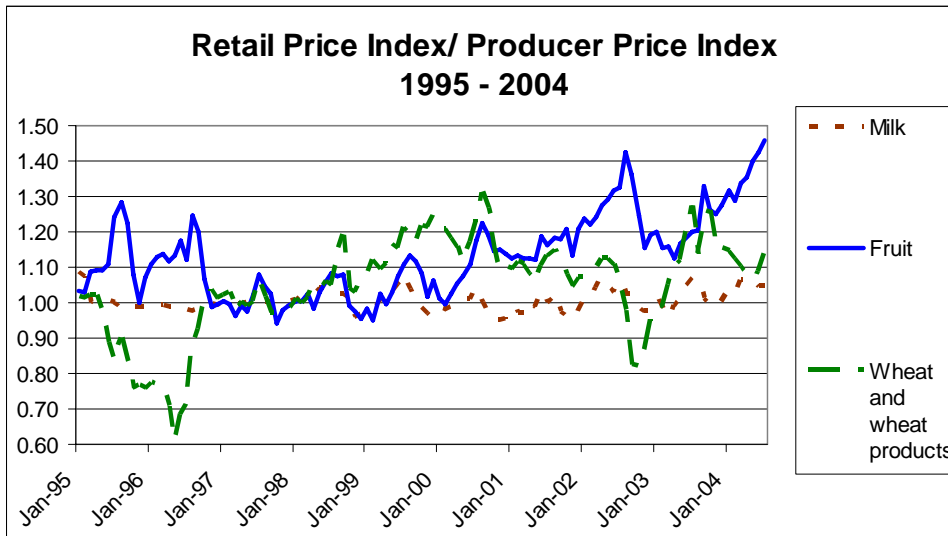


Figure A3 Prices for Pork and Pork Products



For other commodities the picture is less clear (Figure A4). Milk appears to be fairly consistent in terms of movement in price indices. Wheat and wheat products are more variable but the upward trend is mild and results from changes in bread prices. The ratio for fruit is only an approximation but appears to show an upward trend that is partially due to the importation of apples.

Figure A4 Retail Price Index/Producer Price Index for other commodities



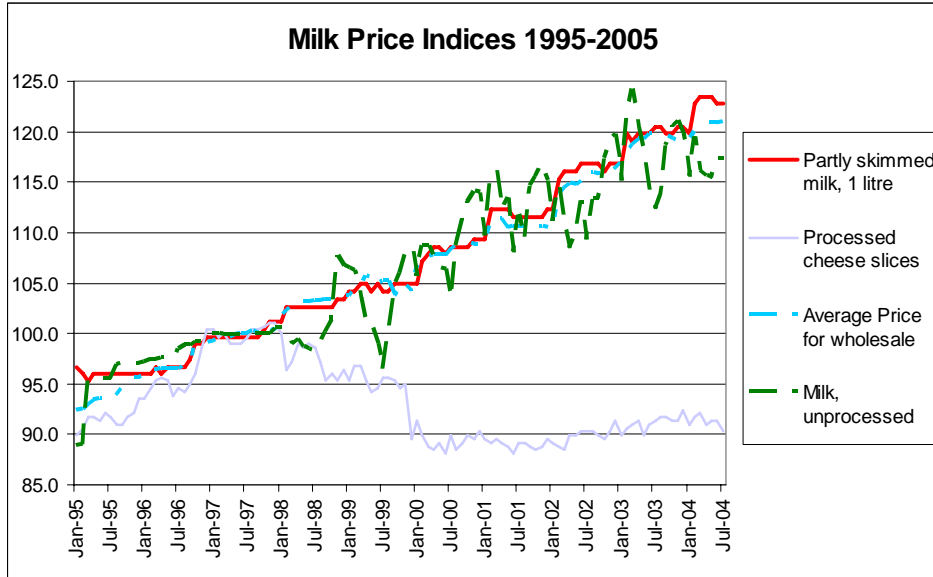
We will now examine individual commodities beginning with two supply managed commodities, milk and chicken.

**Supply Managed Commodities**

Supply management provides farmers with considerable market power in that they have the ability to limit supply, restrict imports and set prices. When we compare the prices indices at the farm, wholesale and retail levels for milk in Figure A5 we can see that although unprocessed milk prices fluctuate more than at other levels the price indices for the three levels are moving in similar patterns.<sup>8</sup> Market power relationships do not appear to have changed over the last decade. The only exception is with processed cheese; however this is more likely due to changing consumer preferences than to shifts in market power.

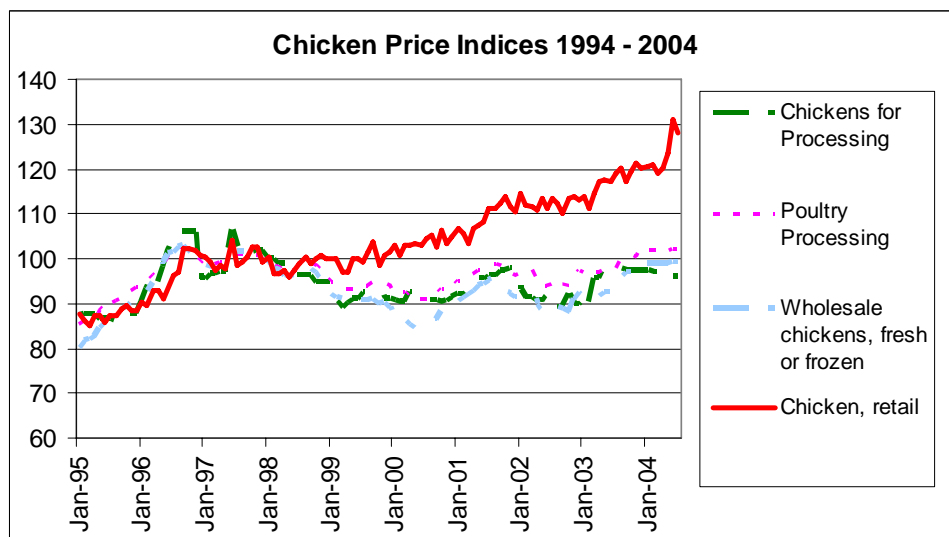
<sup>8</sup> The average price index for wholesale was computed using an unweighted average of the following Canada Food Stats 2004 wholesale indices: fluid milk products; cream, fresh; ice cream and ice milk; industrial milk products; dairy products; other dairy products; cheese, cheddar and processed; cheese, other than whole milk; fluid skim milk; fluid whole milk.

Figure A5 Comparison of farm, processor and retail price indices for milk and milk products



The picture for chicken is somewhat different. The price indices at the farm and wholesale levels have moved in a coordinated manner. The retail price index for chicken separated from the others in mid 1998 and has continued to increase since then. In 2003 when the industry faced more competition from beef due to the halting of exports due to BSE retail chicken prices showed only a marginal impacts and then resumed their climb through 2003 and 2004. The linkage between the farm and wholesale prices for chicken and the retail price appears to be becoming increasingly weak indicating an increase in retail market power.

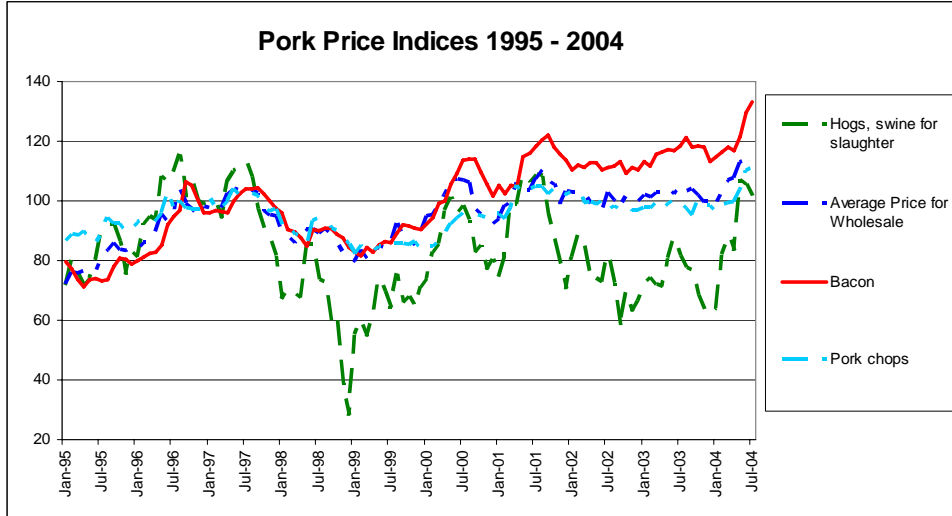
Figure A6 Price Indices for chicken 1995-2004



**Commodities which are not supply managed**

When we look at meat products which are not supply managed we see a similar increase in retail market power. Pork is the most volatile commodity as illustrated by Figure A7.

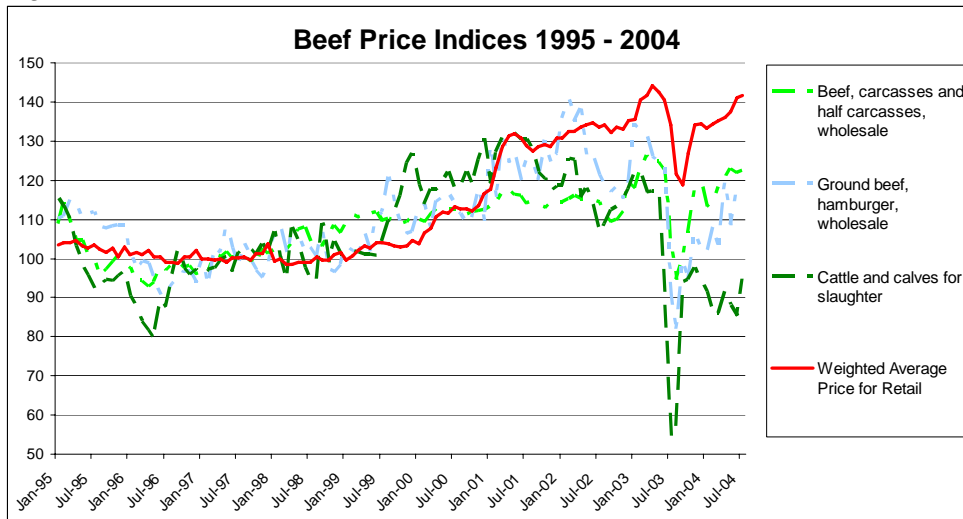
Figure A7 Price Indices for pork and pork products.



Pork processor market power is evident in the relatively low variability compared to the price of the inputs, hogs for slaughter. While retail prices tracked relatively close to wholesale until 2000, they began to diverge in that year and retail prices for further processed products like bacon and ham have climbed steadily since relative to wholesale and farm level prices. Pork chops still track with the wholesale price.

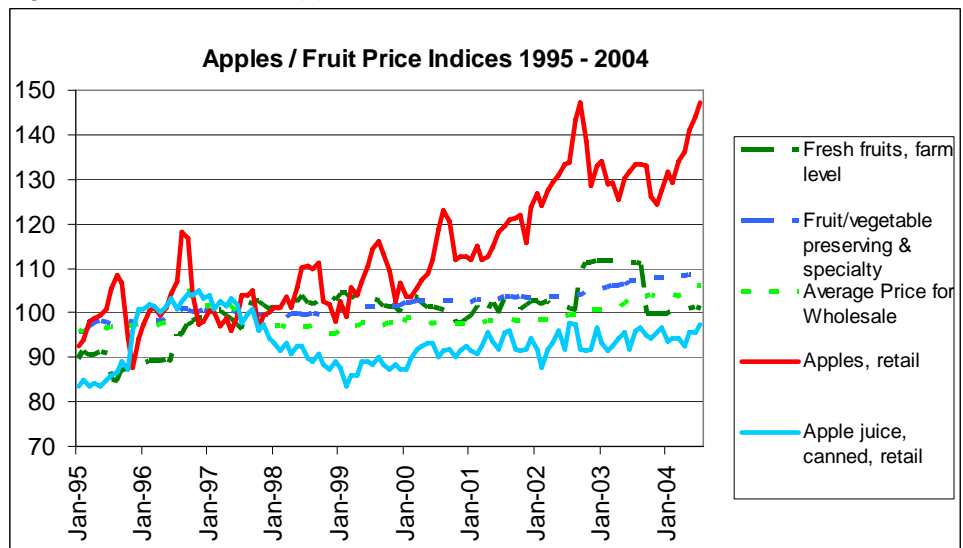
In the beef industry price indices were generally tracking closely until 2002 when retail prices separated from the others (Figure A8). The BSE challenge of 2003 increased that separation and it remains today. The BSE crisis hit producers the hardest. Wholesale prices dropped but not to nearly the same extent as producer prices. This is partially due to market power but it was also due to the fact that there simply was not enough processing capacity in Canada to flood the wholesale market to the extent that the market for live cattle was oversupplied.

Figure A8 Beef Price Indices 1995-2004



It is somewhat more difficult to study other commodities. In Figure A9 we examine price indices for apples and fresh fruit and fruit products. While the products in the different indices do not correspond exactly, the indices do provide some sense of how prices are changing at different levels of the chain. We note that retail prices for apples may partially reflect the increasing importance of imported apples.

Figure A9 Indices for Apples and other Fruit

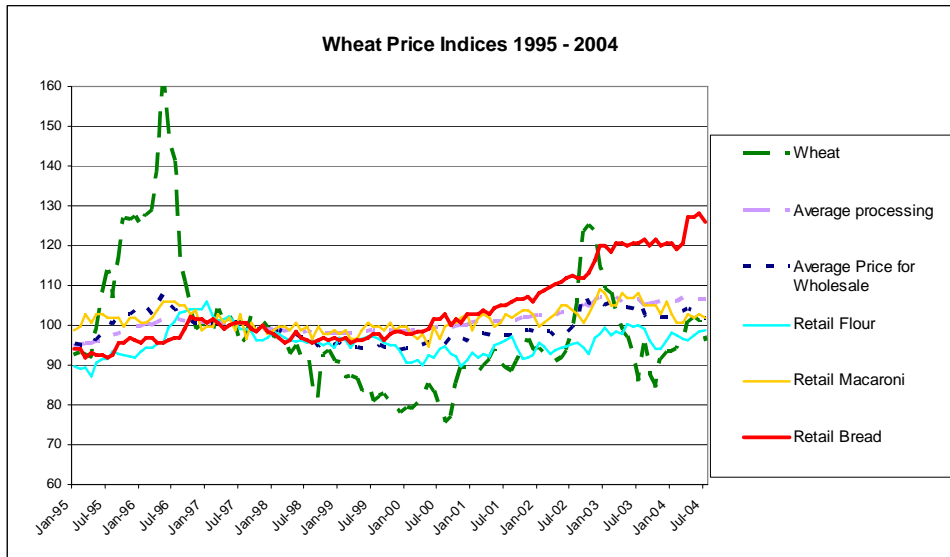


Grains present a problem in that they are inputs to a variety of different products. Figure A presents the monthly change in prices for wheat and wheat products at the farm, processing, wholesale, and retail levels over the period of 1995 – mid 2004.<sup>9</sup> There does

<sup>9</sup> The average wholesale price index was computed using an average of the Canada Food Stats wholesale indices for durum wheat flour, soft wheat flour, hard wheat flour, bakery products, pasta products; flour, wheat, meal and other cereals. The average processing price index was computed using an average of the following Canada Food Stats NAICS indices: flour milling & malt manufacturing; cookie, cracker, and pasta manufacturing; bakeries and tortilla manufacturing; bread and bakery product manufacturing.

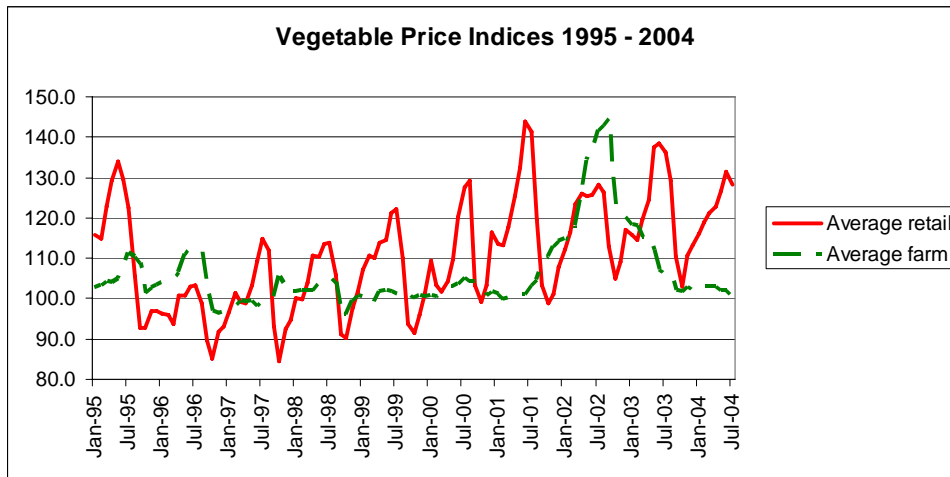
not appear to be strong evidence of market power at any level. The only possible exception in retail bread but that may also be partially due to increasing sales of higher value specialty bread products.

Figure A10 Price Indices for Wheat and Wheat Products



Vegetables display highly seasonal pricing patterns as seen in Figure A11 but there does not appear to be undue market power.<sup>10</sup>

Figure A11 Vegetable Price Indices



<sup>10</sup> The average farm price index used the average of the Canada Food Stats raw materials indices for fresh vegetables; other vegetables excluding potatoes; vegetable products. The average retail price index was computed using an average of the wholesale indices for carrots; celery; mushrooms; onions; tomatoes, canned. Note: Some of the retail vegetable prices were very volatile (carrots, celery, and onions in particular), while the others were not. The retail index is limited in its usefulness.