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Analysis of the Meat Processing Industry in the United States

Wilder N. Ferreira

Department of Agricultural and Applied Economics
Clemson University
Clemson, South Carolina, 29634

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ANALYSIS OF MEAT PROCESSING INDUSTRY IN THE UNITED STATES

1. Abstract

This study, which analyzes major aspects of the meat processing segment within the United States, was divided into four major topics: the first deals with a number of issues relating to the industry environment; the second presents some factors that create and influence industry demand and growth prospects within the industry; the third tries to explain the main factors that create and influence cost structure in the industry as they relate to the industry task environment; and the last elucidates major industry trends, threats and opportunities that have a great impact in all firms within the meat processing industry.

The current industry scenario includes a great deal of progress in terms of vertical integration, advances in information technology, distribution systems, automatic slaughterlines, animal tracking systems, meat grading systems, packaging technology, and boxed-meat cutting technology by meat processors. However, consumer awareness and confidence levels have changed due to food safety and health food issues, causing all business involved in the food supply chain to re-evaluate their marketing, quality assurance and operating strategies. As a result, stringent monitoring from the public sector has arisen to review current industry policies and procedures.

The meat industry is changing rapidly and two forces are giving support to its enlarged concentration: changes in technology and food demand (Alan Barkeman, 2001). Technology development in this sector of the economy brought about more efficient meat processing facilities, benefiting from scale economies and learning economies. Food demand has switched from cooking-it-all-at-home to easy-to-prepare products. This shift brought about concerns of nutrition and safety which were not inquired in the

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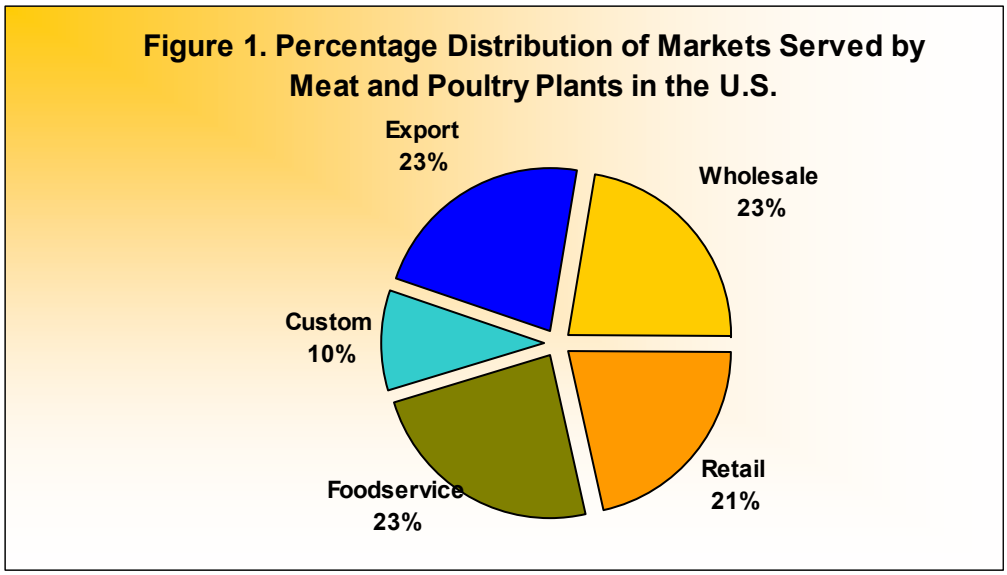
old model. In consequence, not only the meat industry has changed but also its co-participants, the food retailing and livestock production segments.

2. Industry Overview

The meat processing industry is composed of several animal disassembling facilities which slaughter, break down the animal body into smaller portions, and process the meat for consumer consumption or further processing. This industry is also composed of several other meat processing firms, which do not slaughter the animals but manufacture a wide range of fresh or frozen products and sells for grocery chain stores, meat distributors, wholesalers, restaurants and hotel chains, foodservice, and further processors as well (see Figure 1). These slaughter facilities, also known as packers, are usually specialized in one or two species such as beef, pork, lamb, veal, chicken, and turkey. They sell their products as carcass, boxed cuts, case-ready cuts for retail, portioned whole muscle, portioned formed product, ground patties, whole bird and poultry parts (see Figure 2).



Data Source: Meat & Poultry (July 1, 2001)

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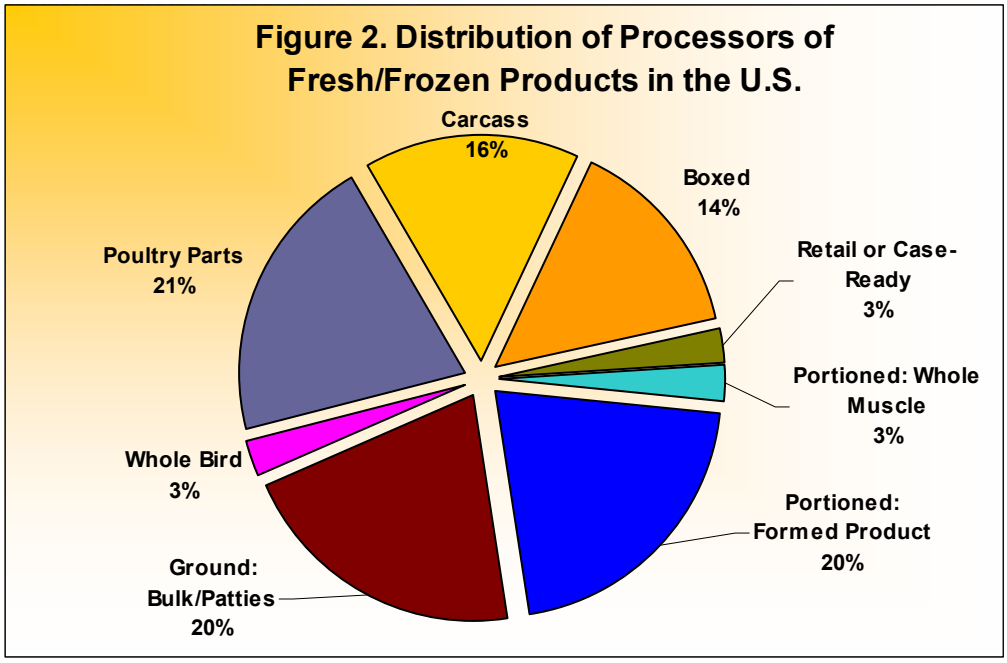
Boxed beef was introduced by IBP in 1967 which process consisted of breaking down the carcass into smaller cuts of meat, vacuum-packing and placing the cuts into boxes. This process helped eliminate fat and bones from the carcass and allowed for more sales to food service, food stores, and further processors. The further processors of processed meat products are commonly named "specialized meat processors" and produce cured, smoked, and cooked meat products such as sausage, ham, bacon, luncheon meats, and other prepared products (see Figure 3).

Specialized meat processors are a small portion of the meat processing industry, and have experienced slower sales growth compared to the packers/slaughterers. Total sales revenues of the meat processing industry amounted 100.7 billion in 2001. (Meat & Poultry) The meat industry has experienced remarkable changes over the last 30 years. For better understanding of this industry, we separated the meat industry into two animal, raw material groups: red meat and poultry.



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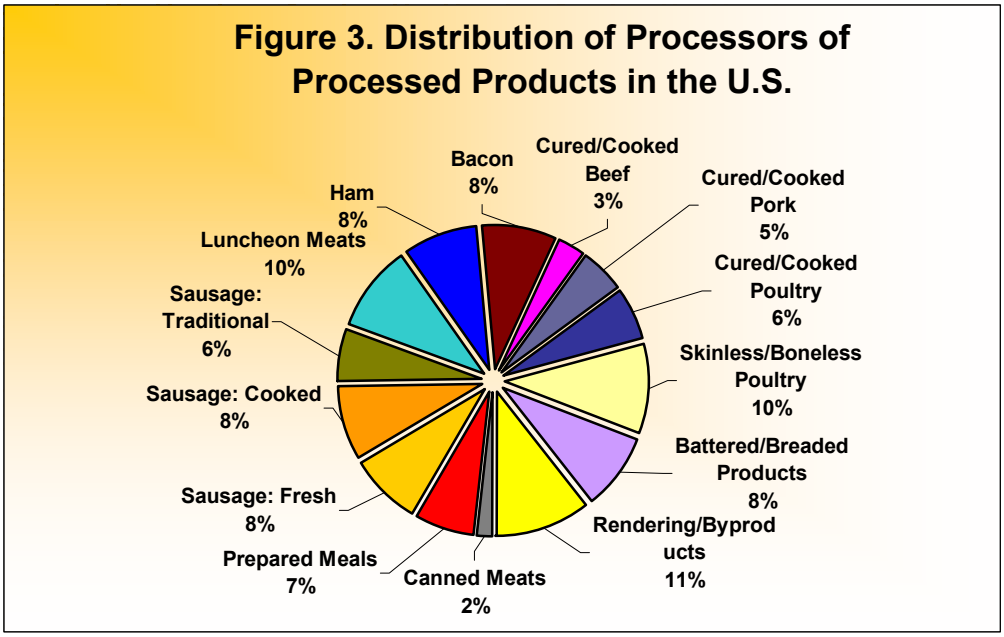
The *red meat* segment is composed of cattle, calves, hogs, sheep and lambs. In terms of livestock production, there has been a major trend towards specialized cattle feedlots since 1950 which has caused the decentralization of cattle purchasing from livestock terminal markets to directly sales between producers and slaughterers. Thus, meat packers started building large facilities close to these large feedlots in order to increase capacity utilization through the continuous flow of raw material. Pig production has also shifted from small farm operations to large-scale confinement of animals. The high-volume production of livestock in the U.S. resulted in "large-scale movements of animals and feed around the country." (Richard L. Kohls, 2002) Because meat packers existence depends on livestock production, there has been enormous efforts to organize producers for cooperative market procedures. Profitability of this segment depends on continuous flow of feeder animals to feedlot facilities to reduce price volatility, geographic location of feedlots near feed production, geographic location of slaughter facilities near feedlots, and size of facilities. Sales are lost to the poultry segment when red meat prices rise.



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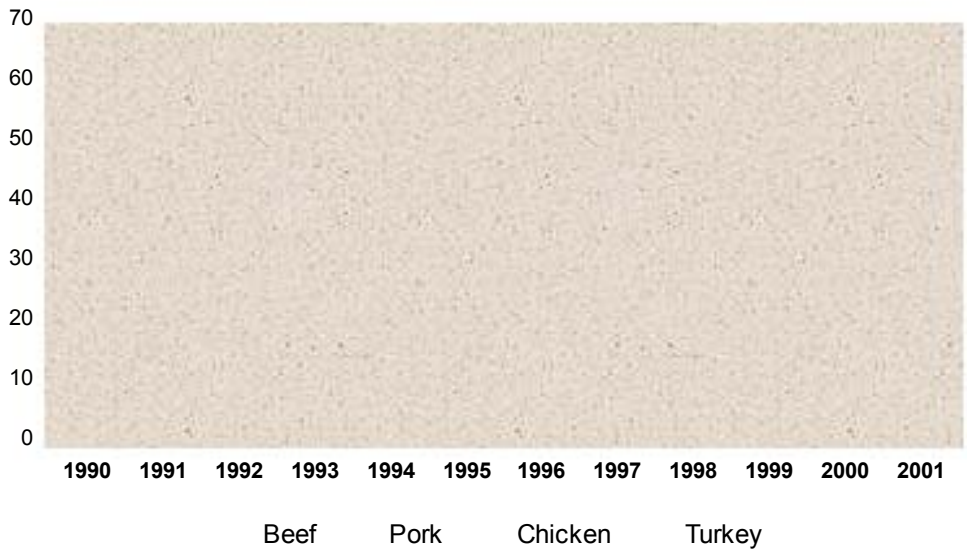
The *poultry* segment is composed of two major products: chickens and turkeys. This segment is today "considered one of the most industrialized sectors of agriculture." (Richard L. Kohls, 2002) Demand for chicken has continually increased while demand for beef, turkey and pork has been pretty much stable over the past 10 years (see Figure 4) Americans consumed an average of nearly 43 pounds of chicken in 1990 compared to 57 pounds in 2001, an increase of nearly 34 percent in 10 years.

Although Americans are spending less money on food items as compared to other domestic consumption items over the last 70 years (see Figure 5), there has been an increase in per capita meat consumption from 169 pounds, in 1990, to 189 pounds, in 2001. (ERS/USDA) Notably, chicken consumption increase leaded the industry demand growth by far, but beef still remains the number one in preference among Americans followed by chicken, and pork (see Figure 6).

Figure 4. U.S. Per Capita Meat Consumption in Pounds



Data Source: Economic Research Service / USDA

Facing the same problems regarding seasonality of raw material and price volatility as the red meat segment did, poultry production shifted towards fewer and

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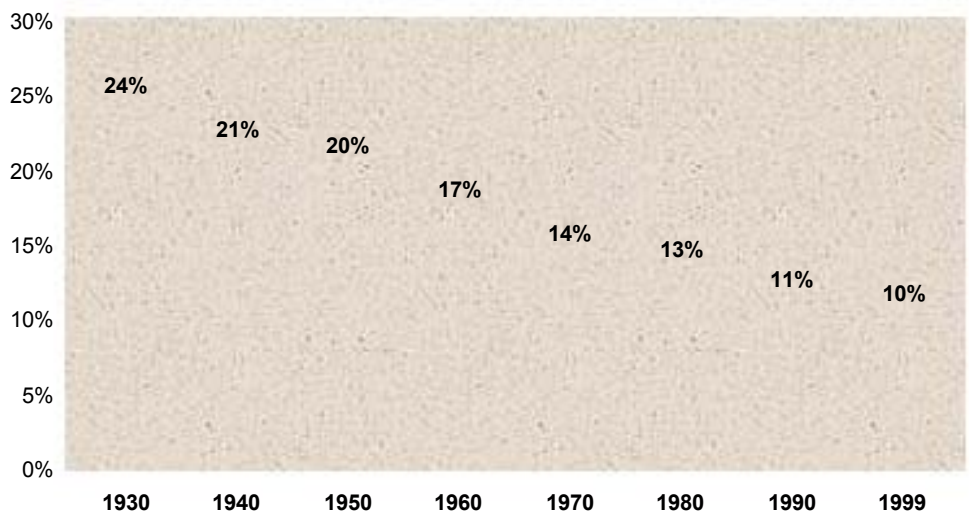
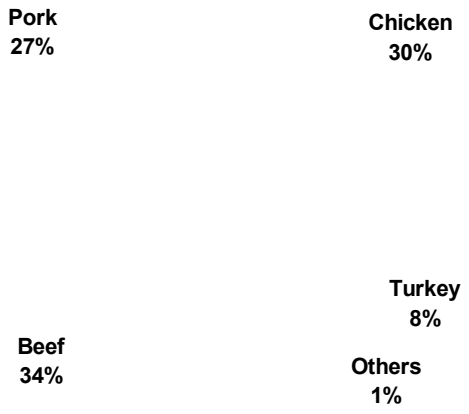
larger producers. However, geographic movements took place in the opposite direction. Southern states lead the poultry production in the U.S. – Georgia, Arkansas, Alabama, North Carolina and Mississippi. (Richard Kohls)

Figure 5. Total Food Spending as a Pecent of Disposable Personal in the United States



Data Source: U.S. Department of Labor and ERS / USDA

Figure 6. 2001 Meat Consumption Percentage Distribution



Data Source: U.S. Department of Agriculture.

After all these movements in livestock and poultry production within the country, allowing for a more stable flow of raw material to the packers, a surge in concentration

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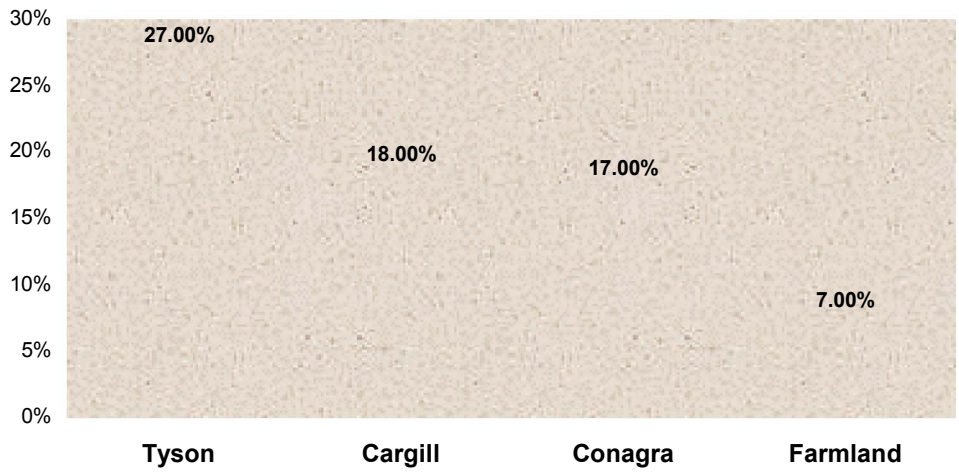
has occurred due to increasing processing costs faced by slaughterers and processors. To reduce industry costs, on a very low profit- margin business, packers became highly organized to cut down on unionization influence which was driving average salaries to unacceptable levels. Due to this effort, only 50 percent of workers in the industry belonged to a union in 2000, compared to 80 percent in 1980. (REAP, 2001) Meanwhile, the industry was becoming highly concentrated trying to cut down on slaughtering costs with increased number of larger plants that slaughtered at least 1 million hogs, and 500,000 steers and heifers. As of today, the beef segment of the industry is the most concentrated of all segments, in which four companies handle approximately 80 percent of all cattle slaughter in the U.S., compared to 36 percent in 1980. (ERS/USDA) In terms of sales, these same four companies capture nearly 70 percent of the market share (see Figure 7). Poultry competition also brought about sales stagnation in the beef segment reinforcing the need for consolidation.

The hog (58%) and poultry (49%) segments of the meat industry are not as highly concentrated as the beef segment, but they are expected to be as more and more large companies enter the market (see Figures 8 and 9).

Figure 7. Market Share of Four Major Competitors in Beef



Data Source: Meat & Poultry Annual Report (2001)

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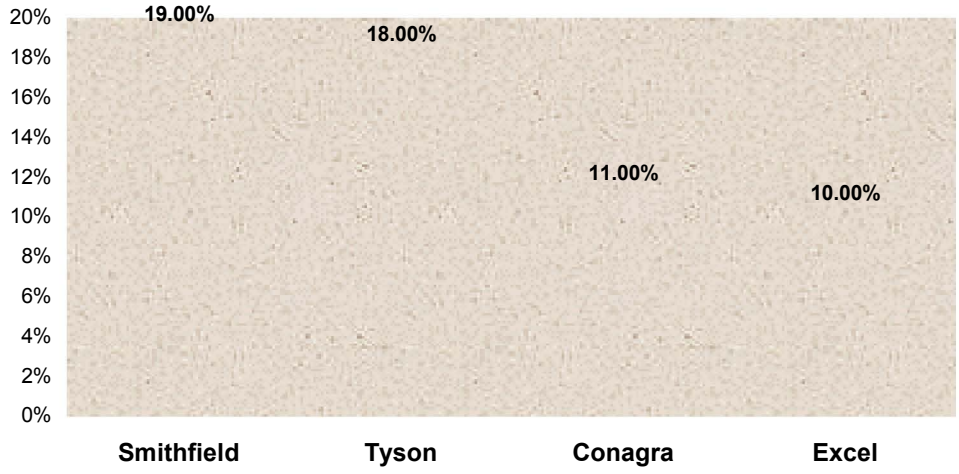
Figure 8. Market Share of Four Major Competitors in Pork



Data Source: Meat & Poultry Annual Report (2001)

Because the inflexible costs with livestock purchasing account for 90 percent of total costs, reducing the adjustable slaughtering costs is considered life-saving in this industry. (ERS/USDA) Additionally, savings from slaughtering may come from better use of transportation, refrigeration, labor, electricity, supplies, and equipment. Therefore, ***Economies of scale*** in this industry seems to be worth of exploitation.

Figure 9. Market Share of Four Major Competitors in Poultry

Data Source: Meat & Poultry Annual Report (2001)

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Because of intensified used of inputs and seemingly relative lower wages due to de-unionization, a large hog slaughtering facility that slaughters 4,000,000 hogs per year can reduce slaughter costs per head by 25 percent compared to a mid-size facility that slaughters 1,000,000 hogs per year, whereas a large cattle slaughtering facility with 1,350,000 head killing capacity may reduce costs up to nearly 22 percent compared to a mid-size plant that slaughters 425,000 per year (see Figure 10). In 1994, a study conducted at Colorado State University concluded that a meat processor would profit grossly $70.23 per head from purchasing an animal and selling its meat and by-products, not accounting for fixed costs and processing costs. Thus, based on this study, only a large plant can produce an animal for profit. A small plant would process the animal for an average of $130, resulting in loss of $59.77 per head.

Besides the increase on the size of the operations, meat producers also captured some economies of scale through fully-integrating all the phases of the business operations. This vertical integration concept has its roots in the chicken segment, having the market coordination totally transferred to the processor who owned all the production inputs and coordinated the flow of the materials to the processing plant. Thus, producers were paid a flat fee to raise the broilers to slaughter and received some rewards for superior quality. The hog segment also has experienced some vertical integration by forward contracting with major producers to "gain control over at least portion of supply needed to operate processing plants efficiently and to better provide the types of products by consumers." (Chris Bastian, 1994) The beef segment has been gradually integrating with feeding operations in which packers become more capable of getting control of product quality, product quantity, and procurement costs.

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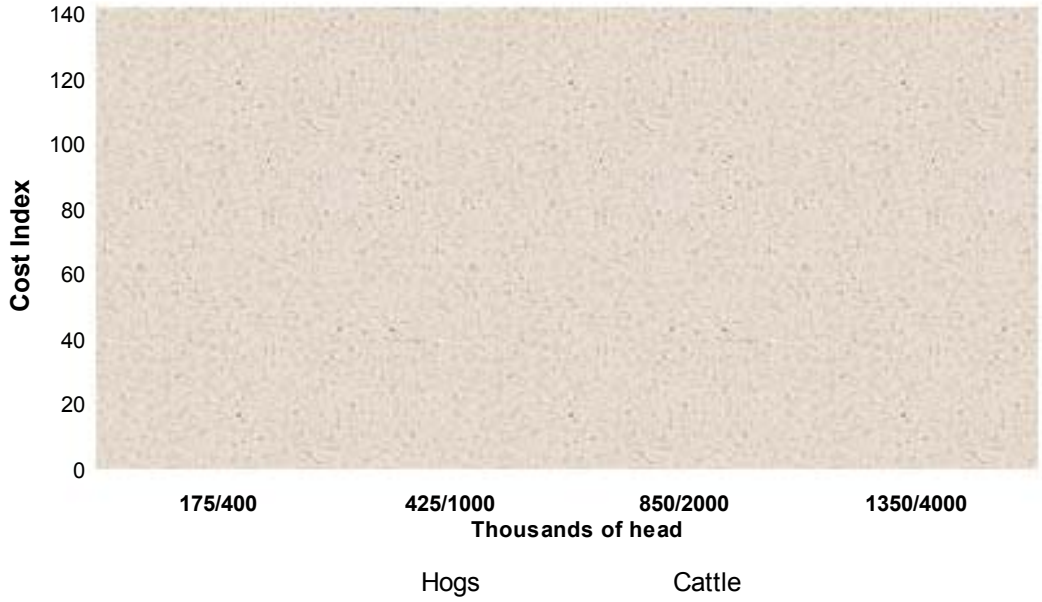
Figure 10. Costs Reduction as Plant Size Increases



Data Source: U.S. Census Bureau and ERS/USDA

Consumers in turn have been playing a major role in the industry's transformation, because they have been eagerly seeking out convenient ready-to-eat, ready-to-cook and other prepared food products to satisfy their basic needs. Because of several animal disease breakthroughs over the years, consumers have also been concerned about safety and quality control issues. These factors, along with improved distribution systems and a widespread, powerful food retailing industry, have contributed to the current development of supply chains that should be able to deliver more consistent products.

Food companies who traditionally were not involved in the further processing business are now on their way towards growing their market share in the food industry and looking for niche opportunities in the market. Companies such as Conagra, Tyson, and Smithfield preferentially have been seeking out new markets and product developments through acquisitions of smaller "specialized meat" companies and construction of facilities in other geographic areas. In 2001, 79.4 percent of total meat

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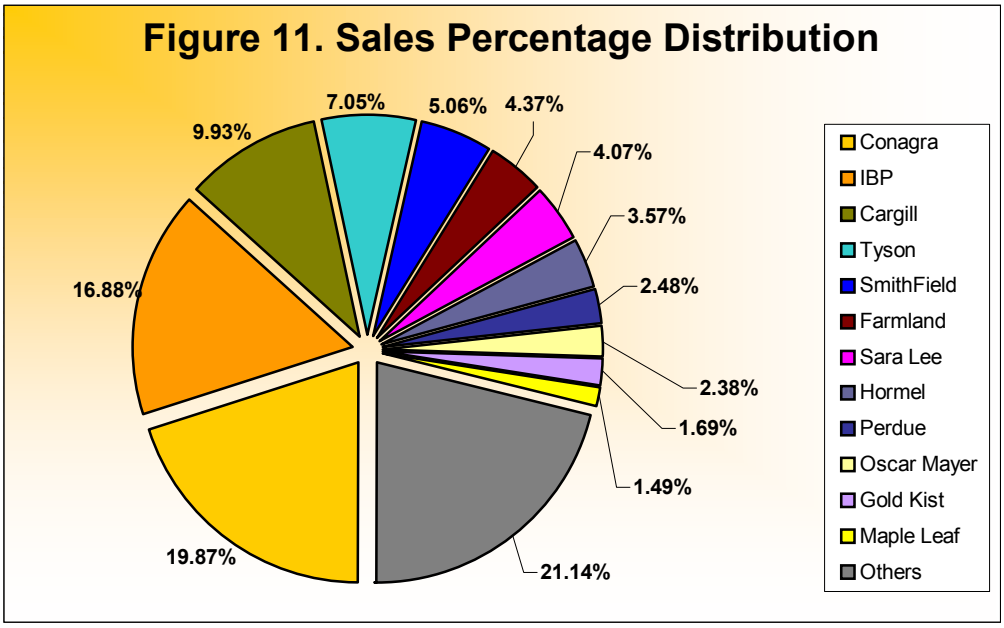
market sales were generated by 12 companies only (see Figure 11). However, there are still some local slaughterers, who usually butcher beef, hogs, and poultry from small suppliers for the suppliers' own consumption, or to sell to local grocery stores, local organizations, local meat processors, and local restaurants. These small slaughter-houses will keep on existing due to a niche market of more conservative consumers whose meat consumption has been associated with their keen knowledge of the animal conditions.

Revenues of these livestock meat processing plants, for example, depend on sales of different products (meat or by-products) of an animal carcass. A steer, for example, average yields approximately 46 percent of retail meat cuts (steaks, roasts) and 16 percent of waste (bone, fat). From the meat portion, about 40 percent is used make hamburgers and 60 percent to produce higher-value cuts. (U.S. Department of Agriculture)



Data Source: Meat & Poultry Annual Report (2001)

Animal health and safety of foods have been the center of several debates across the country before the terrorism attacks, but now it has been a major issue regarding national security. "The meat industry is generally recognized as the most highly

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regulated of all food industries in the U.S.." (Daniel Hale, 1993) As of today, there are nine federal agencies in the U.S. that are dedicated to the inspection of meat processing facilities in order to ensure healthy and safe meat products. State and federal agencies are now required to check the entire meat processing operation – from prior-to-slaughtering to labeling – including operational sanitation, carcass examination, blood tests and organ examination. Animals are condemned if they show symptoms of contamination. Federal inspected facilities are allowed to sell their products to any state in the country, whereas state inspected facilities are allowed to sell within their respective states only. Despite the efforts of these agencies, several disease outbreaks and product recalls have been occurring over the last years. Salmonella, E. coli, and Listeria monocytogenes are some of the pathogens that can be found in livestock and poultry fresh meat and cause illnesses in human beings. Meat processors and their lobbyists fight aggressively to protect the industry from new regulations that would raise costs and jeopardize profitability. As a result, meat processors are now responsible for conducting their own tests for E. coli. Accordingly, safety issues should keep playing a major role in the industry.

Meat grading, in turn, has nothing to do with meat inspection. Meat grading is a "voluntary service performed by Agricultural Marketing Service (AMS) of the USDA, which segments carcasses and, in turn, meat products from those carcasses, into homogeneous groups" (Daniel Hale, 1993) and serve as a basis to estimate the carcass yield and predict the meat quality, in terms of tastiness, tenderness and leanness. This grading system works better for the beef segment. Despite the arguments against a standardized grading system, the current system has been contributing to a more efficient marketing channel by "facilitating the buying and selling process, transmitting valuable information to market participants, and providing price incentives for producers to tailor their products to consumer demand" (Richard L. Kohls, 2002). It has

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been through the ability to measure superior meat quality that packers have been successfully creating producer-sponsored marketing initiatives and reaching new market segments throughout the world. Examples of campaigns are: *Pork, the Other White Meat*, and *Beef, It's What's for Dinner*. Meat packers also can produce meat quality in today's market due to enhanced research and development, quality control, animal genetics, management practices, and process technology.

3. Factors Influencing Industry Demand and Growth Prospects

Several factors are responsible for driving industry growth over last 30 years: changes in food process technology has allowed for a greater choice of quality meat products available for consumption; increasingly concentrated food retailing industry competition with restaurants and other foodservice establishments increased the product breadth allowing for more value-added products to be sold such as ready-to-eat and prepared foods; adoption of coordinated supply chains through the use of sophisticated information technology, process technology, distribution technology, and inventory management allowing for more efficient and flexible deliveries; expansion of foodservice and fast-food chains, due to more eating-out, increased demand for chicken and beef; demographic changes in population in terms of age and marital status, due to more couples without kids and single people; increase in disposable income, because of two salaries within the family; expansion of exports; price stability; and industry consolidation.

In today's market, consumers are requiring meat products that are easy-to-prepare, reliable, dependable, reasonably priced and wholesome. The industry's process and production technology evolved to the extent that convenience and versatility are easily taken care of to accommodate customer preferences and needs. Household

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members are less and less dexterous regarding food preparation and cooking. Thus, ready-to-eat or ready-to-cook food products became a need for millions of Americans who wish for tasty and healthy experiences while at home. New product development, then, has been a key to leading demand growth in all three segments, pork, beef and chicken. The chicken segment, once again, took the lead in terms of developing superior process technology to cater to the needs of these challenging customers. Currently, the beef segment has been grappling with developing branded-meat products to address some of the health and convenience issues that consumers demand.

Demand for meat products have also been influenced by the convenience, variety, prices and services that the food retail firms have been offering to their customers. Employing more than 80 percent of all workers in the food industry, and carrying more than 18,000 food items per store, the food retailing industry has been struggling with changing consumers' purchase behavior towards the concept of eating-at-home the same food they would get from their finest restaurants. The food retailing industry has been consolidated by the entrance of new competitors such as Wal-Mart, whose ranking in terms of sales jumped from ninth to first in less than five years. (ERS/USDA)

The poultry industry has been successful in applying supply chain coordination, through the use of sophisticated information systems, to reduce procurement, inventory, processing, ordering, distribution and transportation costs, bringing about additional price declines and demand growth. Process technologies have been developed to allow for tracking back animals to the their original producer or farm while taking care of maximum hygiene, food safety and quality standards. Because demand growth of meat products has been associated in part with industry quality standards, the need for vertical integration and supply chain coordination should play an important role within the beef and pork segments which have been constantly facing consumer confidence problems.

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The foodservice industry has grown faster than the food retailing industry. It has influenced demand for meat products since it provides increasingly convenient locations, quality food, and year round new culinary developments. McDonald's has been the largest foodservice chain and buyer of beef products in the country. McDonald's has itself influenced the change in the marketing and processing of beef and potatoes. These large foodservice chains are experiencing impressive growth, in turn, buying more volume from the meat packing companies and demanding more quality products and services.

Increase in disposable income compensated for greater price increases in beef and pork over the past 10 years, allowing for a somewhat stable beef and pork per capita consumption as shown in Figure 4. However, it seems that it was the chicken consumption that has grasped the most out of the population aging and the dual-income families because of the increased product reliance and product diversification. Smaller households with greater number of unmarried people and one-parent families has also been playing an important role on the proportionate reduction in food consumption in the country. This trend might indicate that per capita meat consumption should grow slowly over the next years.

Economic prosperity in several developing countries, world trade liberalization, export enhancement programs, low U.S. production costs, and the economic shift of economic system from some Eastern European countries has allowed for increased poultry and improved red meat export sales (see Figure 12). Russia, Japan, China and Mexico became large importers of poultry products. Mr. Wan Long, an executive from Shineway Group, is very optimistic about the Chinese meat market and said that "with the fast development of the national economy and the raising of living standards, consumption of intensively processed chilled meat, small packaged meat products and

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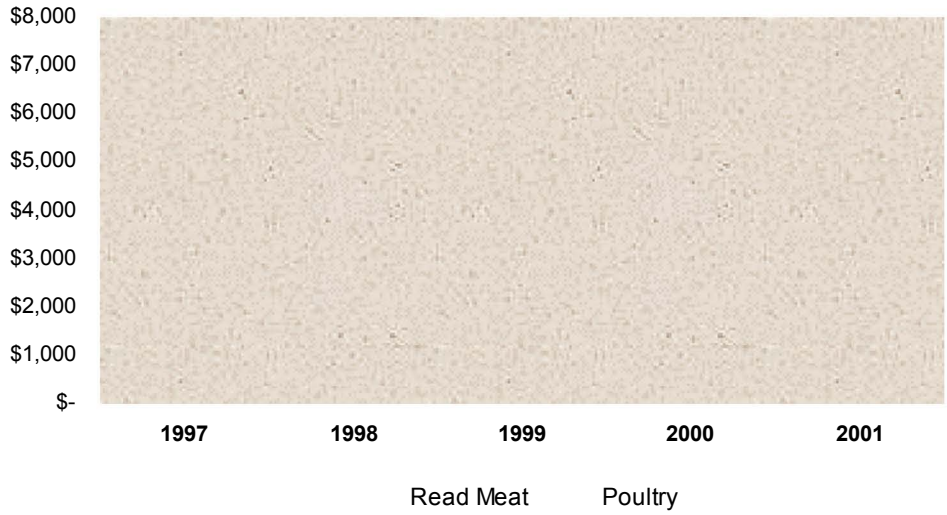
cooked meat products will grow. Consumption of convenience foods, functional foods and leisure foods is also expected to increase." Exports also can benefit from devaluation of the dollar against foreign currencies such as the ones occurred with the British Pound and New Zealand Dollar. Because of its strong economy, though, the U.S. dollars has not weakened compared to most currencies. Expansion will depend mostly on the development of new markets.

Price stability, brought about by industry concentration and consolidation, provided food retailers and foodservices with promotional mechanisms that could not be performed when prices were highly unpredictable and production was seasonal. Demand for red meat and poultry capitalized on augmented capacity utilization of processing plants and economies of scale. However, "in highly competitive industries, cost declines should quickly be passed through, either as lower prices to buyers or as higher prices paid to livestock producers. But, in an industry that has become highly concentrated, large firms may be able to retain the cost advantage as profits." Controlling industry's risk of collusion should be a major issue for policymakers to investigate in the near future.

Figure 12. U.S. Exports in Millions of Dollars



Data Source: U.S. Department of Commerce and U.S. International Trade Commission

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Occasional swings in demand in the meat processing industry may happen due to seasonal events such as Thanksgiving holidays, Christmas holidays, and cook-outs in the summer. In general, though, demand for meat is practically stable, despite the increase in meat prices and infectious disease breakouts.

Meat ***pricing*** is established mostly by market conditions where demand and supply dictate the daily prices that are closely followed by producers, feedlot managers, packers, wholesalers and retailers. Grading systems concerning quality and yield have been developed to differentiate market prices paid for several different types of animals, carcass. Processing costs accounts for less than 10 percent of total costs. Since prices are pretty well established by the market, reduction in processing costs in this industry becomes a very important strategic decision.

Four major ***disruptive forces***, which are also demand drivers, can dramatically affect the current demand and growth prospects of the industry over the next few years: an infectious disease outbreak, weakness of the U.S. dollar, and government intervention on price. The meat industry can be severely damaged if diseases such as foot-and-mouth disease (FMD) and bovine spongiform encephalopathy (BSE) break out in the country. A major break-out can result in taking several firms out of business, the shutting down of several livestock markets and the slaughtering of thousands of condemned animals. Because exports plays an important role in the industry expansion, a major strengthening of U.S. dollar against major foreign currencies would cause U.S. meat prices to increase relative to foreign countries' meat prices and to rise within the country due to reduction in total demand. Government officials are currently discussing the need for Federal agency involvement as to regulate prices within the industry due to its high levels of concentration, just as it has been happened in the pharmaceutical industry. This disruptive force would definitely bring about downsizing of the meat industry and allow

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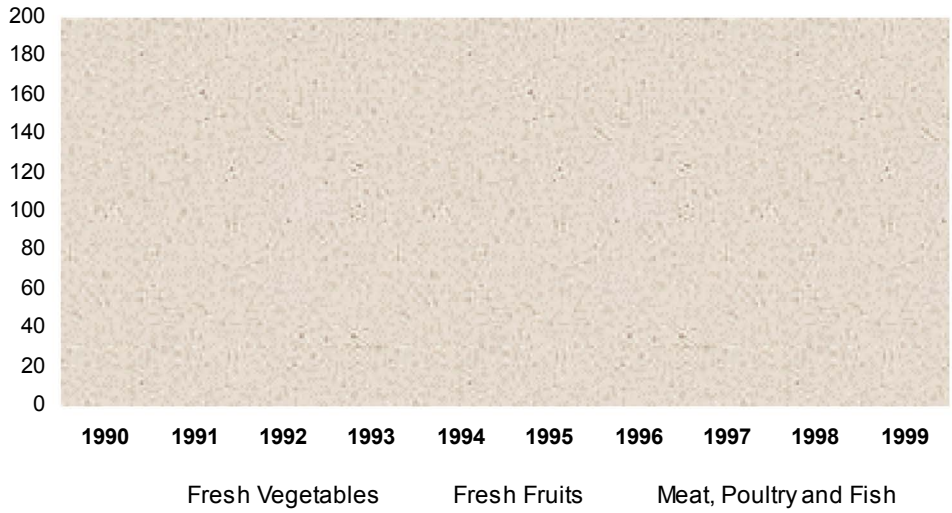
for price reductions to food retailers. By the same token, demand would be expected to increase.

There are other disruptive forces that may influence demand in the short term. For instance, Americans are giving more emphasis on nutrition and think that diet may influence the likelihood of being exposed to diseases such as cancer and heart attacks. The increase in consumption of fresh vegetables and fresh fruits (see Figure 13) has been the evidence of such a trend that affects the consumption of meat not only in the U.S. but also in other countries.

This industry has been experiencing relative low profit levels over the years and there is no evidence that this trend will overturn. Sales are expected to increase mostly because of an upward movement towards chicken product consumption. Even though beef consumption topped $52 billion in 2000, and accounted for 34 percent of total per capita meat consumption in the U.S., as shown in Figure 6, the beef per capita spending as a percentage of total per capita meat consumption has been decreasing over the last 10 years whereas chicken per capita spending has been increasing (see Figure 14).

Figure 13. U.S. Per Capita Major Food Consumption in Pounds



Data Source: Economic Research Service / USDA

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Figure 14. U.S. Per Capita Consumption of Major Meat Segments as a % of Total Meat Consumption

Data Source: U.S. Department of Commerce and U.S. International Trade Commission

The chicken segment has worked its way through a long time ago and now has been reaping the benefits of incessant supply chain coordination efforts. Market coordination in the beef industry is likely to occur in the long run, but integration should keep on being a major issue as to get beef producers together to agree on contractual terms, quality assurance programs and price.

4. Factors Influencing Cost Structure in the Industry

The meat processing industry is now consolidated at least in the beef segment with four companies, IBP, ConAgra, Cargill and Farmland, slaughtering 82 percent of the beef in the U.S.. The hog segment is not consolidated yet with four companies, Smithfield, IBP, ConAgra and Excel, accounting for 60 percent of all hogs slaughtered, but it seems to be the second segment in the list to achieve consolidation followed closely by poultry.

Regarding the ***stage of the product life cycle***, meat industry products are at the declining stage of the life cycle, in which process and product technologies are well

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known by all parts involved, customers see meat products as commodities and are well-informed about all aspects of product development and processing, processing facilities run full capacity to be able to cover fixed costs, fierce competition among giant conglomerates to acquire smaller food companies to increase market share, and economies of scale and learning were fully utilized to achieve cost advantages. An example of such an industry battle for solidification of their product lines and hunting for consolidation and market share was the bidding process of Iowa Beef Processors (IBP) Inc. in 2001. Tyson bought IBP for $2.9 billion dollars, after a turbulent bidding battle against Smithfield Foods Inc.. "Having completed its purchase of IBP, Tyson Foods is now the world's largest meat producer and processor with a 28%, 25% and 18% share of the beef, chicken, and pork markets, respectively, in the United States." (Steven Hacker, 2001)

The need for consolidation was extensively elucidated in this report. Several larger facilities were built near feedlots and to reduce slaughtering costs by an average of 25 percent, as shown in Figure 10. However these costs represented only 10 to 20 percent of overall costs and affected very little processor profit margins which, in turn, averaged only 2.1 percent. Purchasing of animals is a key element to reducing costs, but fluctuating market conditions do not provide mechanisms to take advantage of bulk order discounts, which, in reality, is not currently possible in the industry. Thus, ***economies of scale*** has been partially achieved because of improved input-output relationships and specialization.

Capital intensity is a major factor cause of industry's few major players. Large plants cost millions of dollars to construct and operate, and require maximum ***capacity utilization*** to remain profitable. Consequently, large companies such as Cargill and ConAgra entered the meat processing market and in a short period of time practically

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captured the industry lion's share. The poultry segment has been very successful in operating ***highly automated*** facilities and taking advantage of full capacity utilization due to an efficient coordination of the supply chain. Integration occurs from the hatching-egg farms shipping eggs to the hatchery facilities (or back to the breeding facilities), which in turn ship broiler chicks to the broiler-grow-out facilities whose main objective is to supply live broilers to the processing units. In terms of production, some companies own land and facilities, while others contract with growers who are responsible for providing housing, water, fuel, labor and other inputs.

Technology adoption in terms of meat preservation, packaging, and transportation has been contributing for marketing expansion of value-added meat products to international markets and cost reduction. Improving process technology is expensive and requires a great amount of financing, which is frequently only available for large corporations.

All meat processing companies compete directly to one another for growing market share and niche opportunities. ***Rivalry among competitors*** within the industry has been very intense among top meat processors. Profitability in the industry remains at very low levels and the need for consolidation is vital for cost savings because of slow industry grow and high fixed costs. Additionally, the different segments such as pork, beef, chicken, and turkey compete fiercely against each other, helping plummet profit margins.

Acquisitions in the industry has been utilized as the primary market penetration and development strategy by major ***new entrants***, such as Cargill and Philip Morris. Forces such as large capital requirements, economies of scale, favorable locations and food inspection regulations are considered medium-high ***entry barriers*** that keep small-medium conglomerates away from the industry. Accordingly, it requires a massive

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amount of investment in a high-tech processing plant and in an efficient logistics system to benefit from economies of scale.

This industry is very complex to define close ***substitutes***. Consumers are divided regarding the quality, palatability, and healthfulness among all classes of meat. Some prefer chicken over read meat because they see "white meat" as more nutritious. Others prefer red meat because of the protein factors that are provided by such a product. Because of this consumer segmentation, habit formation and need for balanced nutrition, substitutes such as fish, vegetables, fruits, cereals, breads, pasta, rice, legumes, and milk products do not place a threat to the meat industry. While vegetarians are grappling with trying to convince Americans that they do not need meat products on their table, the meat industry has taken several steps to improve meat quality programs and strengthen consumer brand recognition by ***partnering with external stakeholders*** and reinforcing new marketing alliances, such as check-off program, through several existing ***strategic groups*** such as the American Meat Institute (AMI).

In the hog and chicken segments, ***suppliers*** have no bargaining power since they are small and in large number, the products they sell are not easily differentiated, and there are just a few large buyers. These producers with contracts, in general, may benefit from higher quality and consistency of their animals, because the processors are willing to pay a higher premium for product dependability as an incentive.

In the beef segment, there are three types of animal suppliers in the continuous production chain: cow-calf producer that ships lightweight – between 350 and 500 lbs – steers and heifers to the backgrounders, the backgrounder that ships the feeder animal – between 600 and 800 lbs – to the feedlots, the feedlot that ships the finished animal – between 1100 and 1300 lbs – to the processors. The first has no bargaining power whatsoever. There are several producers in the country who raise a small number of

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animals whose sales are done mostly through local auctions. The second, which may be the producer himself or herself, has no bargaining power as well, but may have some influence on costs when he or she retains the animals on grass and cheap feed for a longer period of time waiting for market prices to improve. Currently, there are some private stockyards and livestock cooperatives that have been implementing several different programs in conjunction with cow calf producers to strengthen their current market position. Feedlots, in turn, have the most bargaining power of all three suppliers. Although they are large enough to pose some threat, in terms of prices and profitability, to the meat processing companies, their bargaining power is balanced out by the even larger meat industry that has the power to integrate backwards. Packers, in turn, are watched closely by the U.S. government that do not want this vertical integration to happen and, thus, has created the Packers and Stockyards Act to protect the livestock suppliers. To circumvent this authoritative act, suppliers and processors are forging partnerships, alliances, cooperatives, and supply-chains for cost reduction and quality purposes.

Customers in this industry are changing as well. Food retailers and foodservice chains are getting larger and fewer. This movement has been imposing some threats to the industry costs and operations because these chains are making increasingly high-volume purchases, are cost-reduction oriented, and reduced significantly the size of their butchery departments by buying boxed meat and/or case-ready products such as steaks, chops, roasts and ribs. Additionally, they benefit from very low switching costs which allow them to bargain bulk discounts with large meat processors and small, local slaughterhouses. Wal-Mart is an example of the extent of consolidation the food retailing industry is experiencing. At the end of the line, consumer preferences have changed as they seek out wholesome products for a reasonable price. Even though they have no

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bargaining power, they dictate the direction meat processors should take in terms of product mix, range, quality, labeling, packaging, information, prices, flavor, and design, which, in turn, may pose some threats to costs in the short-term.

5. Trends, Threats and Opportunities

The most relevant ***socio-cultural force*** that has been causing some changes in the meat industry is the consumer demographic change. Women at work, increased disposable income, U.S. population growth among other ethnic groups, and single families have transformed the cooking-at-home activities into a need-based activity rather than a recreational activity for the families. Consumers have preferred semi-cooked products over case-ready products. Easy-to-cook products will be more in demand by the next generation and should impact processes, product design, costs, and profitability in the meat industry. These value-added products will help companies improve their profitability levels. Custom slaughtering will keep on existing, but they will be reduced as these next generation consumers get older.

Another ***trend*** to the industry is export increase. International demand for U.S. poultry meat is expected to increase, "specially for frozen whole birds, parts, paws, bon-in-leg quarters, and boneless dark meat" (Bilgili, 2001). As other parts of the world are experiencing several animal illness outbreaks, the U.S. meat quality and safety should remain stable because of excellent quality assurance programs developed by U.S. regulatory agencies. U.S. food safety programs are very well-known worldwide by its efficiency and have fostered market development of U.S. meat, reducing the impact of ***regulations*** imposed by different foreign governments.

Some ***technological*** changes will continue to occur as the meat processing industry transforms itself into a highly integrated industry, as opposed to the independent

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market orientation scenario that it has been in the past. One foreseeable change is the tracing-meat-back system, in which carcasses are traced to its farm of origin, allowing meat packers to verify the animal history from the beginning of his life in terms of production practices and medication. This system will contribute to eliminating carcasses that may pose risk to consumers before they are sent to processing, which will guarantee a more reliable product to consumers and, in turn, augment consumer confidence. The use of sophisticated software in conjunction with automated equipment for slaughtering, scalding, de-hairing or de-feathering, cutting, weighing and grading has brought about significant improvements in productivity and levels of hygiene.

The meat processing industry is expected to hold on to its growing prospects because of the population growth and increase in exports. Even though it will be facing ***threats*** from all five competitive forces, which may cause even more reduction in profits in the years ahead, the alliances and partnerships that have been formed should help maintain current profitability levels and help improve quality of products. Additional food safety regulations may affect the industry's ability to cater to needs of a rapidly changing consumer market as companies attempt to comply to the new rules and procedures. A widespread disease breakout or a terrorism attack on the food supply chain could also endanger the industry's operation and cause to put several companies out of business. Strengthening of U.S. dollar may threaten meat export expansion as competitors from other countries benefit from lower prices, mainly Australia and Brazil. Small slaughterhouses will keep facing tremendous competition from large packers and will not be willing to capture more market share.

The ***opportunities*** exist and should be explored by large meat processors and small slaughterhouses. First, there are several opportunities for product development which should help boost profits and sales. For example, beef *tri-tip* is a meat cut that has

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been gradually introduced into the U.S. market as part of a product development program from the National Cattlemen's Beef Association. Marinated chicken has been a successful food product in the U.S. and is currently in demand by several other countries. Second, vertical integration through contract agreements is the key to assuring supply and quality, reducing price risk and marketing management, and improving profit. Third, there are several niche markets in the country and around the world for alternative livestock such as lamb, deer, goat, rabbit, and organic livestock which can be explored by meat processors. Smaller, more flexible slaughtering facilities are preferred in order to be able to process a greater number of species. Profits in this alternative market are quite attractive.

6. Bibliography

Alan Barkeman and Nancy Novack, FEDERAL RESERVE BANK OF KANSAS CITY, Center for the Study of Rural America, "The New U.S. Meat Industry," Kansas City, MO. April, 2001.

Chris Bastian, DeeVon Bailey, Dale Menkhaus, and Terry Glover, "Today's Changing Meat Industry and Tomorrow's Beef Sector," Western Extension Marketing Commission, Fall 1994.

MEATPOULTRY.COM, A Web Community for Meat and Poultry Processors, "Top 50 - Grand Totals", July 1, 2001.

Richard L. Kohls and Joseph N. Uhl, "Marketing of Agricultural Products," Ninth Edition, Prentice Hall, New Jersey, 2002.

S. F. Bilgili, "Poultry Products and Processing Worldwide," 54th Annual Reciprocal Meat Conference, Indianapolis, IN, July 28, 2001.

Digitized by South Carolina State Library

James M. MacDonald and Michael E. Ollinger, "Consolidation in Meatpacking: Causes and Concerns," Economic Research Service/USDA, Agricultural Outlook, Washington, DC, June 2000.

Stephen R. Koontz and Dana L. Hoag, "Community Development and the Profitability of Value-Added Meat Production and Processing," Agricultural Marketing Report, Colorado State University, Feb., 2001.

Daniel S. Hale, "Meat Inspection," Extension Beef Cattle Resource Committee, Texas A&M University System, BCH-4300, 1993.

Sara O'Hagan, "The U.S. Beef Industry: Demand, Spending, and Consumption," National Cattlemen's Beef Association, Factsheet, Washington, DC, March 2001.

G.C. Smith, C.D. Smith, K.E. Belk, J.A. Scanga and J.N. Sofos, "The Beef Industry is Changing,"American Red Angus Magazine, Dallas, TX, March 2001.

Steven Hacker, Joanna Burn, and Colin Chishoulm, "The Battle for Market Share in Meat Processing", Food For Though, Deloitte & Touche Corporate Finance Canada Inc., Fall 2001.

NATIONAL PORK PRODUCERS COUNCIL, "Guide to Contracting," Washington, DC, 2000.

REAP – Research Education Advocacy People, "Reap General 2001 Report on the Meat Packing Industry," Sioux City, Iowa, 2001.

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