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LABOR RELATIONS, TECHNOLOGICAL AND STRUCTURAL CHANGE
IN U.S. BEEF PACKING AND RETAILING

presented by

Stephen Wayne Hiemstra

has been accepted towards fulfillment
of the requirements for

Doctor of Philosophy degree in Agricultural Economics

Harold M. Riley
Major professor

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LABOR RELATIONS, TECHNOLOGICAL AND STRUCTURAL CHANGE IN U.S. BEEF PACKING AND RETAILING

By

Stephen Wayne Hiemstra

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Agricultural Economics

1985

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STEPHEN WAYNE HIEMSTRA

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ABSTRACT

LABOR RELATIONS, TECHNOLOGICAL AND STRUCTURAL CHANGE
IN U.S. BEEF PACKING AND RETAILING

By

Stephen Wayne Hiemstra

The objective of this dissertation was to study the relationships among changes in labor relations, technology, and market structure and their impacts on the general course of changes in beef packing and retailing. The study has centered around these questions:

1. What has been the history of labor relations, technological and structural change in U.S. beef packing and retailing?
2. What are the existing labor practices and regulations? Furthermore, how has the decline of the master agreements affected the structure and performance of the beef packing industry?
3. What role has boxed beef played in collective bargaining and the changing structure of the beef packing industry?
4. What areas are in need of further research?

The research process involved these elements: literature review, interviews, and analysis. Each proved equally important. More than 50 representatives of beef packing, processing, wholesaling, and retailing firms, local unions, and government agencies were interviewed in the course of this research.

A master agreement is an understanding among a number of firms that the first agreement struck among these firms will serve as a pattern for other agreements. The decline of master agreements among big packing firms has been associated with strikes, wage concessions, plant

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closings, and a reorganization of the activities performed in packing plants.

Vacuum-packaged, primal and subprimal beef processed in packing plants is known as "boxed beef." The adoption of boxed beef by retailers was accelerated, in part, by the low cost and high productivity of packing-house labor relative to retail labor. The adoption of boxed beef has accordingly been accompanied by a reduction in retail employment of meat cutters and more moderate consumer beef prices than would otherwise have been possible. The new technologies associated with boxed beef production and with leading firms have altered the mix of skills required of packing-house and retail workers, reduced on-the-job injuries, and increased product quality.

The decline of master agreements and the adoption of boxed beef processing have led to changes in market structure. Thirty years ago beef packing was one activity in a multi-specie, multi-plant, meat packing industry. Today, beef packing is a specialized industry. The entrance of specialized beef packers initially resulted in a more competitive market structure. An oligopolistic market structure has emerged under the strong, innovative leadership of IBP, Inc. The decline of the master agreements and the adoption of new technologies have more generally been associated with reductions in employment and increases in labor productivity in beef packing and retailing.

Several aspects of beef operations would benefit from further research. First, there is a need for collection of more timely and accurate information about industry economic performance to facilitate collective bargaining. Second, there is a need for research to determine the most appropriate methods of administering government programs that affect beef packing and

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retailing. Third, there is a need for research to develop improved labor performance standards and pricing strategies for retail meat departments. Fourth, there is a need for research to identify innovative, low-cost strategies to reduce workplace hazards and to organize temporary and part-time work assignments.

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ACKNOWLEDGEMENTS

The completion of this dissertation required the support, cooperation, and understanding of many people. To everyone who offered assistance to me in this undertaking, I am truly grateful.

This dissertation was financed by the Department of Agricultural Economics of Michigan State University in cooperation with North Central Project 117. I am indebted to Harold Riley and Bruce Marion for arranging for this support.

I am indebted to the faculty members who served on my advisory committee at Michigan State University. This committee included: Harold Riley, Chairman, John Allen, Glenn Johnson, Collette Moser, and Thomas Pierson. Their direction and support made this dissertation possible.

I am also indebted to the individuals and institutions which cooperated in the field interviews undertaken during the course of this research. This interviews and the plant tours which accompanied them provided a sense of realism to my work and they defined the issues in the dissertation.

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LIST OF ABBREVIATIONS

AMS	Agricultural Marketing Service, USDA
AFL	American Federation of Labor
AMI	American Meat Institute
BLS	Bureau of Labor Statistics, USDL
CSB	Committee on Small Business, U.S. Congress
CETA	Comprehensive Employment and Training Act of 1973
CIO	Congress of Industrial Organization
CBO	Congressional Budget Office, U.S. Congress
CEA	Council of Economic Advisers to the President
ERS	Economic Research Service, USDA
ESCS	Economic, Statistics, and Cooperative Service, USDA
FTC	Federal Trade Commission
GAO	U.S. Government Accounting Office
IRA	Individual Retirment Account
I-O	Industrial Organization
ITPE	Industrial, Technical, and Professional Employees Division of the National Maritime Union
IBP	Formerly--Iowa Beef Processors; now--IBP, Inc.
MDTA	Manpower Development and Training Act of 1962
Meat Cutters	The Brotherhood of Amalgamated Meat Cutters and Butcher Workmen of North America
NBPIW	The National Brotherhood of Packinghouse and Industrial Workers
NCA	The National Cattlemen's Association
NCFM	National Commission on Food Marketing
NLRB	National Labor Relations Board
New Breed Packers	Beef packers that never recognized master labor agreements
OSHA	Occupational Safety and Health Act of 1970
OTA	Office of Technological Assessment, U.S. Congress
Old Line Packers	Beef packers that recognized master labor agreements
OECD	Organization for Economic Cooperation and Development

P & S	Packers and Stockyards Administration, AMS, USDA
Retail Clerks	Retail Clerks International Association
RCIA	Retail Clerks International Association
SBA	Small Business Administration
SIPCO	Swift Independent Packing Company
Teamsters	International Brotherhood of Teamsters, Chauffeurs, Warehousemen, and Helpers of America
SIC	Standard Industrial Code of the Bureau of the Census, U.S. Department of Commerce
SCP	Structure, Conduct, Performance Paradigm
UFCW	United Food and Commercial Workers
UPWA	United Packinghouse Workers of America
USDA	U.S. Department of Agriculture
USDC	U.S. Department of Commerce
USDL	U.S. Department of Labor

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CHAPTER I

INTRODUCTION

The labor bill in beef packing accounts for more than one-half of total operating costs exclusive of live cattle purchases. Since labor is the single largest controllable cost in packing, changes in the relationship between labor and management have important effects on the course of technological and structural change in the industry.

The primary objective of this dissertation was to examine the effect of labor policies on the changes which have occurred in beef packing and retailing. The dissertation is a contribution to a larger study of the U.S. beef subsector sponsored jointly by North Central Regional Project 117 and the Department of Agricultural Economics at Michigan State University.

Historical Overview of the U.S. Beef Packing Industry

The U.S. beef packing industry has undergone many changes over the past century. The midwestern beef trade began as part of a cottage industry which developed around the packing of meat products, especially pork products, for shipment east. With the invention of the refrigerated railcar in the 1880s, the small firms making up this cottage industry

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were displaced by large manufacturing concerns and the focus shifted to fresh beef operations. Cattle and other livestock were purchased in urban stock yards, slaughtered in adjacent packing plants, and shipped by rail to packer-owned distribution centers in the major eastern markets. Pioneers in the midwestern industry developed their own technologies and they dominated the trade by means of the distribution system which they developed. This dominance continued until the 1950s when the rise of independent supermarket chains provided a competing distribution network which was open to independent packers. This competition encouraged the entrance of new firms into the industry and these new entrants promoted technological and structural reforms in the 1960s.

Technological and Structural Change

Increasing Firm Specialization and Market Decentralization

New entrants were further encouraged by the unprecedented expansion of beef consumption which followed World War II (WWII). Beef consumption rose from 50.1 pounds per capita in 1950 to 64.2 pounds in 1960 (Figure 2.1). This rise in beef consumption provided a growing market for beef packers and it allowed new entrants to gain a foothold in the market without being seriously challenged by older firms.

The new entrants of the 1960s converted the inter-regional beef trade dominated by diversified meat packers into a specialized, national beef packing industry. They located their plants closer to cattle supplies taking advantage of refrigerated trucks instead of remaining near to stockyard rail terminals where their predecessors held an advantage. They also worked to adapt and refine cattle buying,

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slaughtering, and merchandising techniques to their particular needs. As they grew more efficient, their market share increased with increases in beef consumption. Since the market was larger and the older firms did not increase their share, control of the market became less concentrated in the late 1950s (Table 2.6).

Adoption of On-rail Cattle Slaughtering and On-line Beef Processing

The new entrants also introduced two important technological innovations into the beef packing industry: on-rail slaughtering and on-line processing. On-rail slaughtering was introduced in the late 1950s and it was later picked up by the entire industry. In the adoption process, many old, multi-story plants were closed down and new, single-story plants were built to replace them in areas closer to the emerging cattle feedlot industry in the plains states. Labor productivity began to rise dramatically in this period and overall packinghouse employment began a long term decline (Table 2.2). On-rail slaughtering techniques dominated the industry by 1970.

On-line beef processing was an innovation picked up from the retail industry by Iowa Beef Processors (IBP) in the mid-1960s. In an effort to increase labor productivity and to introduce other efficiencies, major retailers like Safeway, A & P, and Kroger integrated backwards into beef and pork processing in the early 1960s by constructing centrally located meat processing facilities in several metropolitan areas. IBP picked up on this idea by integrating forward from slaughtering into processing and working with the Cryovac Division of Grace Company to develop a vacuum-packaging process that would permit beef carcasses to be cut up, packaged, and boxed for shipment. This new technique became known as "boxed beef."

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On-rail slaughtering and on-line processing radically changed the character of the beef packing industry and facilitated other improvements in equipment, organization, and management. These technologies also contributed to the restructuring of the industry that earlier improvements in the distribution system had begun.

Pressures for Change in the 1980s

The trends which began in the late 1950s accelerated in the late 1970s as per capita consumption declined. The retail industry ceased growing and turned to strategies of market segmentation. Boxed beef displaced carcass beef as the primary product entering wholesale markets, and beef consumption per capita declined. The new entrants to the beef packing industry consolidated their market position in the late 1970s and reversed an earlier trend towards decentralization and declining levels of market concentration. IBP rose to assume a leadership position in the industry during these years and on entering the 1980s it announced the intention of diversifying its product line to include pork and retail-ready beef cuts (Cook, 1981).

Changes in Labor Relations and Collective Bargaining

The rise of packinghouse unions accelerated during the Roosevelt administration's "New Deal." The National Labor Relations Act (Wagner Act) of 1935 legitimized participation in labor organizations. The Fair Labor Standards Act of 1937 set minimum wages and maximum hours which raised average wages closer to union rates, reduced regional wage differentials, and provided a benchmark in collective bargaining. The War Labor Board encouraged meat packers to sign industry-wide master agreements in 1941. As a consequence of these acts and the war,

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membership in the unions which now make up the United Food and Commercial Workers Union (UFCW) rose from 31,800 in 1935 to 320,900 in 1945 (Table 2.9).

The legacy of the New Deal and World War II contracting practices prevailed in meat packing into the 1970s. In the late 1970s and early 1980s, serious strains in labor-management relationships emerged as old and new plants alike were closed down due to regionally inadequate cattle supplies and competitive pressures from firms that refused to honor master labor agreements. These firms, who spearheaded the assault on the master agreements beginning in the early 1960s, rapidly increased their market share by using savings in their labor bill to offer higher prices for live cattle and lower prices for boxed beef. These practices accelerated the adoption of boxed beef by retailers and increased competition in slaughtering and processing.

A Changing Economic Environment

The economic environment of the 1980s within which the beef packing industry now operates differs substantially from that which prevailed for most of the post WWII period. The economic situation differs in at least three respects. The first difference is that the markets of the food manufacturing industries are becoming increasingly more concentrated. This was one of the conclusions of the National Commission on Food Marketing (1966b, p. 32) and it has recently been confirmed in work by USDA (ERS, NED, 1980), by Micha Gisser (1982), and others. An important aspect of this development is the increasing prevalence of conglomerate firms in the food sector (Narver, 1969; Mueller, 1982).

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A second difference is that since the 1970s the U.S. economy has become more open to world markets. The Bretton Woods monetary system was dismantled in 1971 so that the dollar would be able to float in world currency markets and the banking system at home has been transformed by regulations permitting flexible interest loans, ownership of gold, IRAs, and money market accounts. Price and other controls on the trucking, airline, and oil industries have been significantly altered. American grains and oilseeds have been permitted to trade both domestically and internationally at common prices. The U.S. government has refused to block legitimate import competition in the auto and steel industries. The competition created by these and other measures has contributed to increased structural unemployment[1] and to increased market uncertainty. The increased unemployment and uncertainty have pressured unions to make contract concessions and to seek relief from competitive pressures through political lobbying, union mergers, and other policies.

The third difference relates to the second. There has been a decline in public support for social and other government programs. This shift in public sentiment has resulted in budget cuts that affect most public institutions and their employees. The institutions have reacted by making program cuts and by automating office operations. The effect has been to stimulate participation in public employee unions, to politicize government programs, and to increase the dependence of public institutions on their constituent interests.

These changes in the general economic environment have affected the beef packing industry through input prices, through shifts in beef demand, and through interactions with federal agencies.

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The most obvious effects of these changes have been an erosion of public support for the labor movement and a new, more cost-conscious attitude towards collective bargaining in industry.

Concepts, Literature, and Controversies Pertinent to Problems in Beef Packing

Structural Change

Structure Defined

Structure, as an economic concept, defines the parameters of an economic system. These parameters include rights, privileges, institutions, assets, or any other element which affects economic behavior but which does not vary in the short run. Structural change can--by definition--only occur over a longer time period.

Since many elements can be classified as structure, the significant elements must be defined with respect to the system under study. This dissertation concentrates on two systems: the market structure of the beef packing industry and the labor market for butchers and meat cutters working in beef packing and retailing.

Market Structure. In industrial organization (I-O) theory, market structure is one of the three elements (i.e. structure, conduct, and performance) used to classify, analyze, and evaluate industries. The primary components of market structure are:

1. Buyer and seller market share,
2. Barriers to entry and exit of firms,
3. Product specification and substitutability, and
4. Market definition and market growth (Caves, 1980, pp. 3-33).

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These components affect the conduct of market relations and competition in at least these ways:

1. Rivalry among existing firms,
2. The bargaining power of buyers and sellers,
3. The threat of new entrants, and
4. The threat of new products (Porter, 1980, p. 4).

Pricing strategies are an important component of market conduct. Market conduct is, in turn, seen to affect market performance measured in terms of efficiency, progressiveness, and fairness (Shepard, 1979, pp. 377-419).

The market share of leading firms in an industry is often considered the most important element of market structure (Shepard, 1979, p. 23). Changes in the market share of the top four firms in an industry accordingly provide a convenient measure of changes in market structure. Joe Bain (1968) provided this classification of market structures:

Industry type	CR-4 (percent)
Very highly concentrated oligopoly	75
High concentrated oligopoly	65
Moderately concentrated oligopoly	50
Low grade oligopoly	35
Unconcentrated industry	35 & under

Each new classification represents a threshhold level. Once an industry passes a threshhold, structural change has--by definition--occurred.

Labor Market Structure. The labor market is related to the product market by the concept of derived demand. A firm's demand for labor is conditioned by the demand for its product, by the labor intensity of its technology, and by the degree of competitiveness existing in labor markets (Dunlop, 1958). The concept of labor market

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structure remains poorly defined, however, because labor services vary greatly in quality, labor quality is hard to measure, and labor contracts are fulfilled through time rather than at a point in time as is typical of commodity transactions. The institutions and customs of the labor market are accordingly numerous and complex. It is therefore appropriate to review some of the concepts used to analyze labor markets and their institutions.

Dunlop provides an analysis of the labor market in a paper, "The Theory of Wage Determination" (Dunlop, 1982, pp. 33-40) in which he develops a theory of job clusters and wage contours. He defines a job cluster as:

> a stable group of job classifications or work assignments within a firm...which are so linked together by (a) technology, (b) by the administrative organization of the production process...or (c) by social custom that they have common wage-making characteristics (Dunlop, 1982, p. 35).

A wage contour is defined as:

> a stable group of firms...which are so linked by (a) similarity of product markets, (b) by resort to similar sources for a labour force, or (c) by common labour market organization (custom) that they have common wage-making characteristics (Dunlop, 1982, pp. 35-36).

These job clusters and wage contours define which job skills are substitutable and the status of employees in the firm hierarchy.

In his book, Generating Inequality (1975), Lester C. Thurow expands on the concept of job-wage linkage. The job competition model he develops has these characteristics:

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1. The number and type of jobs are technologically fixed,
2. Social custom and institutional factors determine wage rates rather than worker skills or wage bids,
3. Wages are rigid and labor queues constitute labor supply, and
4. In the absence of reliable information on applicants, employers screen applicants based on their perceived trainability and adaptability.

This model assumes a perfectly inelastic labor demand function and a relatively elastic total labor supply function which implies that screening devices are a critical allocation mechanism. Since reliable information is costly, employers screen applicants based on characteristics, such as education, experience, age, sex, and race, and their previous experience with individuals exhibiting those characteristics.

In his paper, "The Challenge of Segmented Labor Market (SLM) Theories to Orthodox Theory: A Survey," Glen C. Cain (1976) reviews studies that question the applicability of neo-classical labor economics. In his view, the orthodox school emphasizes demand conditions (i.e. the derived demand of labor) in short run analysis and supply conditions (i.e. human capital investment) in long run analysis. SLM theories are, by contrast, more often based on empirical observations, such as:

1. The persistence of poverty, income inequality, and racial discrimination,
2. The failure of education and training programs,
3. The use of education and training criteria by employers as screening devices,
4. The unequal distribution of unemployment among demographic groups,
5. The existence of monopolies, unions, and other "protected" labor markets, and
6. The alienation of workers.

Cain classifies SLM theories as job competition theories, such as Thurow's; dual theories which divide labor markets into primary markets (high paying, stable union and government jobs, and jobs in large firms) and secondary markets (low-paying, unstable jobs in

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nonmanufacturing, nonunion, and nongovernmental sector); and radical theories which emphasize class conflict, dialectics, and exploitation. He concludes that neo-classical economists reach many of the same conclusions and often the same policy recommendations as the SLM theorists (excepting the radical theorists) when they relax the assumptions of perfect competition and wage/price flexibility.

The work of these authors suggests two key points about the labor market. First, because labor market structure is so complex, participants in collective bargaining have difficulty evaluating when a structural change has occurred. As a consequence, changes in product demand, product market structure, and technology play a crucial role in signaling changes in labor market structure to participants (Williamson, 1979). Second, there is a strong presumption in labor market theory that labor markets are imperfectly competitive. In a shrinking job market, such as the post WWII market for packinghouse workers, labor organizations can be expected to have an important effect on market performance.

Market Structure and Union Gains

The effect of industrial market structure and institutions, such as labor organizations and the modern corporation, on returns to labor is an important focus of labor theory and research. This section reviews the work of Scherer, Parsley, and McEowen.

F.M. Scherer in his book, Industrial Market Structure and Economic Performance (1980, pp. 358-62) reviews the literature on concentration, unionization, and wage-price dynamics. Scherer observed that:

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> The rate of wage increase appears rather generally to be higher in concentrated industries during times of slack economic activity and perhaps also, but less clearly, in normal times. With booming demand and open or suppressed inflation, however, the relationship reverses. Thus, diverse studies reveal no statistical relationship between manufacturing industry wage increase rates and seller concentration during the generally prosperous 1920s, strong positive correlations during the depression from 1929 to 1937, a strong negative correlation in the booming 1940-47 WWII period, a weak positive correlation from 1947 to 1952, a strong positive correlation in the increasingly slack economy of 1952 to 1958, a continuing positive correlation in the gradually improving economy of 1958 to 1965, and a negative relationship during the 1966-69 Vietnam War boom.

He relates this performance to advantages held by larger firms, including potentially higher productivity growth, greater capital intensity, a deeper pool of profits, and a greater ability to pass on costs (Scherer, 1980, p. 359). He also observes that large firms tend to display a higher degree of unionization and that unionization appears to be more conducive to wage increases when concentration levels are low (Scherer, 1080, p. 359-61). His primary concern in this review is on the link between unionization and inflation.[2]

C.J. Parsley's paper, "Labor Union Effects on Wage Gains: A Survey of Recent Literature" (1980), also deals with links between unionization and inflation, but it takes a wider perspective. He observes that "Pay in the absence of unionism...is clearly different from pay accruing to nonunion members, since unions clearly affect nonunion wages by 'spillover effects'" (Parsley, 1980, p. 1). He points out that links between unions and wages are simultaneously determined and he concludes that it is not the existence of union wage gains which is debated but their magnitude (Parsley, 1980, p. 29).

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1971, pp. 9-10).

Jack McEowen's Ph.D. dissertation, Compensation Differentials, Restrictive Labor Practices, and Food Industries' Structure, analyzes the effects of labor contract provisions and market concentration on the earnings of food system employees. He reported that earnings rise with increases in market concentration and with increasingly restrictive labor provisions. Increases in earnings due to these factors are diminished, however, as markets become highly concentrated and as employee skill levels rise. He also reported that industries that offer seasonal employment usually offer lower wages (McEowen, 1980, pp. 221-22). Many of the contracts McEowen studied were taken from the meat packing industry.

Two observations are suggested by the above review. The first observation is that the structure of unions and firms in a market affect both labor earnings and prices. They are not, however, treated the same. While a product market may be described as competitive, oligopolistic, monopolistic, etc., a labor market is described either as unionized or not. In view of spillover effects, union mergers, and varying degrees of representation in different markets, this asymmetric treatment appears inappropriate. Secondly, the effect of market structure on union gains is not constant through time. Rather, the effect of market structure on union gains appears to change with changes in the business cycle.

Technological change is the advance of technology as embodied in new production methods for existing products, new products, and new methods of management, marketing, and distribution (Mansfield, 1971, pp. 9-10). Following this definition, technological changes

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can be classified according to the dominant sources of change (i.e. new plant and equipment, investment in human capital, organizational change, etc.).[3]

The study of technological change is important because of the wide range of economic effects associated with changes in technology. Technological changes are widely associated with improvements in labor productivity, in job safety and human health, and in the standard of living. They are also often associated with changes in market structure, product design, and employment. Edwin Mansfield (1971) provides a survey of the concepts of technological change in economics.

Several observations about the nature of technological change in the beef packing industry proved useful in this dissertation. First, the most important technological changes affecting beef packing have historically occurred not in the industry itself but in the beef distribution system. The invention of the refrigerated railcar, the growth of supermarket distribution, and home refrigeration appears to have been instrumental in shaping the development of the industry and the demand for its products. Second, the introduction of new products and new technologies has been the path to acquisition of larger market shares in beef packing historically. Industry leadership accordingly appears to be a reward for innovativeness but not necessarily an inducement to remain innovative (Schumpeter, 1950). Third, the beef packing industry is characterized by relatively simple production technologies, by a tradition of borrowing innovations from other industries, particularly pork packing (National Provisioner, 1981), and by labor-intensive production activities. These characteristics

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contribute to the result that the process of inventing new technologies does not appear as important as the process of implementing existing technologies in the beef packing industry. The costs and benefits of changes in technology as perceived by labor and management therefore appears to be the critical element in determining the rate of technological advance (Gold, 1981).

Labor Relations

Labor Relations Defined

"Labor relation" is the process by which representatives of labor and management jointly negotiate and administer collective bargaining agreements. "Collective bargaining" is the primary forum for negotiation and agreements are administered according to the covenants adopted. The Wagner Act outlined the general rules governing the rights and responsibilities of labor and management and it established the National Labor Relations Board (NLRB) to administer those rules.

The institution of collective bargaining has been described as a mechanism which provides employees a voice in the management of modern corporations and an alternative to exiting the firm when grievances arise (Hirshman, 1970). Given this interpretation, collective bargaining functions to provide a channel of communication that competes with the managerial hierarchy in linking production workers with top management (Freeman, 1976, pp. 361-68).

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Cattle Butchering and Beef Cutting

Labor skills are a critical resource in beef packing. Butchering and meat cutting are labor intensive operations for which the butcher knife remains the essential tool. In 1981, employee earnings and benefits in beef packing accounted for an estimated 51.5 percent of total operating expenses[4] (Table 3.9). Since labor policies are an area of potentially large gains or losses in firm efficiency, it is no surprise to find that the vice president for labor relations in many beef packing firms is often also the senior vice president.

The chief controversy affecting labor relations in the beef packing industry in recent years has been the gradual elimination of industry-wide master agreements. The issue began with the refusal of a number of independent beef packers, most notably IBP, to participate in master labor contracts in the early 1960s (Cook, 1981) and it grew with the market position of the independents to become a major controversy in the late 1970s and early 1980s (Meat Industry, 1982; Business Week, 1983b).

Problem Statement, Objectives, and Research Methods

Problem Statement

Three observations motivated the research undertaken in this dissertation. First, the pace of change in the beef packing industry has accelerated in the past 5 to 10 years to a rate unprecedented in the history of the industry. Second, the relationship between changes in collective bargaining, technology, and industrial market structure is not well understood although the interactions which

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characterize this relationship have had an important effect on development of the beef packing industry. Third, in concentrating on partial-equilibrium analysis, analysts have failed to appreciate the full significance of recent industry changes. These observations point to a need for research in a general-equilibrium framework which takes labor relations, technological and structural changes into account.

The general concerns with respect to collective bargaining in the food system have been summarized in an extension publication written by Robert S. Welch and Bruce W. Marion (1965, pp. 141-42). These concerns include:

1. Management and labor often lack a sound understanding of each others goals and they do not trust one another;
2. Management and labor generally do not engage in much long-range planning and they lack an understanding of economic principles;
3. Negotiations are often characterized by a lack of maturity;
4. The balance of power between management, labor, and government is a relative matter and it is subject to change;
5. Considerable variation exists between practices and different geographic regions, firms, industries, and unions;
6. In some cases, management does not fully understand the effect of new technology on its employees and in the long run, on employment in its industry or the economy; and
7. There is a general lack of understanding of organized labor, its actions, and its objectives.

Mary Yeager (1981, p. 243) summarized some of these concerns in observing that "there is still no comprehensive study of labor in the meat packing industry."

This dissertation is written with two audiences in mind. The first audience consists of academic and public policy analysts whose

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primary need is for a conceptual framework within which to interpret statistical data and current events. The second audience is made up of labor and industry analysts whose most urgent need is for a cogent overview of industry trends which will permit them to understand better their own role in the industry. In meeting the needs of those groups, an attempt has been made to weave together concepts drawn from several disciplines, statistical and historical data, and observations taken from interviews with analysts representing labor, industry, and government.

Objectives of the Dissertation

The objective of this dissertation is to study the effect of changes in labor relations on the course of technological and structural change in beef packing and retailing.

The research centered around these questions:

1. What has been the history of labor relations, technological and structural changes in U.S. beef packing and retailing?
2. What are the existing labor practices and regulations? Furthermore, how has the decline of the master agreements affected the structure and performance of the beef packing industry?
3. What role has boxed beef played in collective bargaining and the changing structure of the beef packing industry? and
4. What areas are in need of further research?

The chapters of the dissertation were organized around these questions with emphasis given to the roles of labor practices and the technologies associated with boxed beef as recent sources of change.

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Research Methods

The research reported in this dissertation consisted of interviews with industry analysts, literature reviews and study, and interaction with industry observers, primarily in the Washington, D.C. area. Chapter IV is the major output from these interviews. The literature review and interaction with industry observers were instrumental in preparation of Chapters II and III. Each of these methods--interviews, study, and interaction--are discussed in the sections below.

Field Interviews

The field interviews focused on the question: what role did boxed beef play in collective bargaining? Each respondent was also asked to list the important changes experienced or observed by his organization and to discuss labor practices and policies. The interview guides[5] were drawn up around these questions and the interviews were conducted in the summer and fall of 1982.

The survey process was broken up into several phases. In the first phase, trade associations, international union representatives, and government officials in the Washington, D.C. area were consulted about broad issues and secondary sources of information. In the second phase, firms in the Michigan area were visited in order to gain interviewing experience before larger travel costs were incurred. In the third phase, firms outside the Michigan area were visited. In the final phase, important observations were discussed a second time with trade association, international union representatives, and government officials in an effort to weed out deviant observations. During each phase, an attempt was made to update interview guides, to make a more extensive search of the literature, and to revise study objectives.

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During the course of this research, approximately 50 different representatives of beef packing, processing, wholesaling, and retailing firms, local unions, and government agencies were formally interviewed.[6] Most of those interviewed worked in firms and unions in the vicinity of the states of Michigan and Iowa. Since the interview stage of this research came early in the project, the observations taken in these interviews played an important part in defining the problems addressed in this dissertation. Much of the background work done prior to the field interviews had to be set aside in view of these observations and a new inquiry into the literature of the industry had to be initiated.

The survey sample was judgementally rather than randomly generated (Raj, 1972, pp. 8-9). This method was adopted because firms in the industry are homogeneous neither in their internal structure nor their market position and because travel costs precluded on-site interviewing of distant firms. A preference was, accordingly, given to important and unique firms and to firms located nearest to the Michigan area.

The majority of questions posed were open-ended. Questions were tailored to the responsibilities of respondents because each respondent was not equally knowledgeable with respect to all questions and because time constraints prohibited the posing of each question. Before each interview, the author promised not to disclose the firm data discussed except when it could be cited from a published source. During the interview, sensitive questions were first rephrased and, if this failed to enlist cooperation, they were subsequently dropped from the discussion. After each interview, the author requested newspaper clippings, magazine articles, annual reports, and labor agreements in

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Literature Review and Study

An important conclusion reached at the end of the field research was that the observations generated were insufficient to explain the abolition of the master agreements and the structural changes occurring in the beef packing industry; changes of this sort occur over the course of many years. When this became apparent, the time frame covered by the research and readings had to be substantially expanded. Before the field survey, almost all the research had been focused on the period after 1960. Afterwards, readings dating back to the 1920s were reviewed.

Several issues were identified in the field survey which could only be addressed in an historical context. These issues included:

1. What are the major organizational and technological factors which have influenced the course of change in beef packing?
2. What were the conditions which led to the rise of collective bargaining and the master agreements in the beef packing industry? and
3. What has been the effect of changing consumer and employee demographics on beef demand and on-the-job training costs?

In researching these questions, it became apparent that many current industry controversies are similar to problems faced by the industry at the turn of the century.

These historical readings were important for two additional reasons. First, many of the changes now taking place have been feasible for decades. At critical points in the development of the beef packing industry researchers have therefore studied issues related to the ones now being confronted. Second, through the course of this research, there has been the need to step back from the current situation both to provide better documentation and to maintain

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objectivity. Reviewing the historical record provided an important means for doing this.

Interaction with Industry Observers

Interaction with industry observers, primarily in the Washington, D.C. area, after the field survey was completed played an important role in validating the conclusions drawn out of the field work, the readings, and study. Since the field survey sample was judgmentally rather than randomly drawn, survey observations could not be used for simple generalizations about the larger population of firms in a statistical sense. Nevertheless, generalizations were possible when observations were properly weighted as to the significance of the firms from which they were drawn. Similarly, observations coming out of the readings needed to be placed in proper perspective. Periodic interaction with industry observers therefore served throughout this research to weight the significance of conclusions reached.

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NOTES -- CHAPTER I

[1]The average rate of unemployment rose from 4.78 percent for 1960-69 to 6.21 percent for 1970-79 and 8.40 percent for 1980-83 (CEA, 1983, p. 287).

[2]A recent paper discusses the link between the length of the union contracting period and the speed of wage-price inflation (Taylor, 1983).

[3]"Because there is no way to distinguish clearly the marginal return to complements in production, there is no certain way at present to identify the returns to technology, to human capital, or to institutions separate from one another." (Bonnen, 1983, p. 959).

[4]Operating expenses exclude livestock acquisition costs (AMI, 1983, p. 12).

[5]Examples of the interview guides are provided in Appendix A.4.

[6]A list of the participants interviewed is given in Appendix A.3.

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CHAPTER II

OVERVIEW OF THE HISTORICAL CHANGES IN TECHNOLOGY, MARKET STRUCTURE, AND LABOR RELATIONS IN BEEF PACKING

Introduction

The history of the midwestern beef packing industry can be divided into three periods. In the first period, the industrial structure, technology, and labor relations system were in their formative stages. This period began with the Civil War when the major packers--Armour, Swift, Cudahy, and Wilson--grew wealthy servicing Union wartime contracts and moved west to establish a packinghouse center in Chicago in the 1880s. This period ended when the Supreme Court upheld the constitutionality of the Wagner Act (1935) in 1937.

A second period began with the Second World War. During the war, the War Labor Board encouraged the signing of master labor agreements in the meat packing industry and the USDA encouraged the widespread use of federal cattle and beef grading standards. Following the war, a growing population, economic stability and growth, and urbanization stimulated the demand for beef and facilitated continuance of the master agreements.

The beef packing industry entered a new period in its evolution beginning in the late 1970s. This period has been marked by the widespread utilization of on-rail cattle slaughtering and on-line

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beef processing technologies, the decline of master labor agreements, and the emergence of new leadership in the industry. Although these events are not new, their significance has recently increased at a rate unprecedented in the industry's history.

The objective of this chapter is to review the history of the beef packing and retailing trades to provide a basis for analysis of recent industry changes. This review focuses on changes in technology, market structure, and labor relations.

Technological Change

Changes in technology have profoundly affected working conditions and the options available to labor and management in collective bargaining (Dunlop, 1958, pp. 33-61) in the beef packing industry. They have also been instrumental in defining industry market structure (Yeager, 1981, p. 242).

The history of technological change is divided into two parts. The first part describes important packinghouse technologies and their impact on the pace of work and compensation. The second part sketches the history of packinghouse technologies over the past century.

Beef Slaughtering Technologies

There have been three basic slaughtering technologies in the beef packing industry historically. The first technology employed a small crew of butchers working with a hoist and a slaughtering bed. The butchers worked together on the carcass, raising and lowering it as necessary, and completing one carcass before moving onto another.

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In order to speed up the work-pace, plants in the 1880's housed a number of autonomous beds side-by-side and the crews worked in competition with one another. Packers kept up the pace of work by placing their best butchers in a single crew, paying them double-time, and giving them every other day off (Harris, 1956, p. 7).

The second technology, introduced in the 1890s, was known as the "ring system" since each butchering task was performed sequentially by butchers assigned a single task who moved from bed to bed in a circle around the kill floor (Sinclair, 1907, pp. 42-44). Since the butchers worked as a single team under this system, pacemakers could no longer be effectively employed and numerous piecework systems were developed to encourage teams to work hard. Carver (1982, pp. 120-32) cited six piecework systems in use in the packing industry by the 1920s. These systems worked best in smaller plants, but they were used throughout the industry because of their popularity[1] and they were retained in some plants until the decline of the master agreements--long after the ring system had vanished.

The third technology--on-rail slaughtering--was introduced in the late 1950s. Under this system, carcasses were hung from an overhead rail which moved them mechanically from station to station. Butchers needed only to meet each carcass as it passed their station, perform the assigned task, and wait for the next carcass. As a consequence, the rail speed was set by the slowest operation on the line and it became the most important measure of labor productivity in the plant. The work became less fatiguing because butchers no longer needed to move around the kill floor in completing their work and because many jobs could be done quicker than the slowest task on the line.

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Piecework incentive systems were, accordingly, unnecessary to maintain the pace of work in the plant and they were gradually replaced by an hourly wage system.[2]

Technological Development in Beef Packing

Several observations can be made about the history of technological development in the beef packing industry. First, beef preservation methods and changes in transportation systems have played a crucial role in modifying seasonal production patterns. Second, butchering and cutting tasks have been gradually transferred from the retailer to the packer and processor. Third, there appears to be a continual problem with technological adjustment as packing plants relocate and as jobs are lost in the retail sector. These observations are developed in the narrative that follows.

In the years prior to 1850, meat packing was a curing operation separate from slaughtering. Livestock were slaughtered by one firm and packed in barrels of brine by another for shipment by rail from Cincinnati, Louisville, and St. Louis to the East Coast. Beginning in the 1850s, carcasses began to be shipped east as fresh, chilled meat during the winter. Refrigeration was the key constraint in development of beef packing because U.S. consumers favored cured pork over cured beef products. "Ice packing" was developed in 1857 (Welch, 1965, p. 113) and a refrigerated railcar was perfected by Gustavus Swift in 1881 (Chandler, 1977, p. 299). By the late 1880s, Chicago became the nation's packinghouse center because of its role as a rail center and a national market for carcass beef began to evolve (Yeager, 1981, p. 234).

The railroads posed another key constraint on the packing industry in early years. The Vanderbilt and Pennsylvania lines refused to handle carcass beef because it reduced the value of company investments in eastern stockyards and in livestock cars. Midwestern packers were, accordingly, forced to build their own railcars and to transship carcass beef through Canada to avoid the Vanderbilt and Pennsylvania lines. The availability of carcass beef made retail slaughtering unprofitable and it reduced the demand for skilled butchers in the retail markets. It did not, however, eliminate the urban packinghouse (Brody, 1964, pp. 2-12).

The introduction of the refrigerated railcar did not eliminate the seasonability of cattle slaughter because cattle production is itself seasonal. One means of coping with the seasonal peaks and troughs was to slaughter other species of livestock during the slack periods in the year. The bed-system of slaughter facilitated the slaughter of different livestock species because, in contrast to the on-rail slaughter system used today, the hoists and beds used did not require any particular livestock dimensions.[3]

Bed-kill systems dominated beef packing technology until the adoption of on-rail systems in the 1950s (USDL, BLS, 1982a, p. 3). The reasons for the late shift[4] to on-rail slaughter are not altogether clear. Four changes, however, contributed to the decision to shift:

1. The growth of commercial feedlots in the plains states in the 1950s reduced production seasonality and concentrated production further from the Chicago packers.
2. The development of a refrigerated truck and the beginning of the interstate highway system in the 1950s reduced the advantage held formerly by the Chicago packers and permitted plains states packers to take advantage of lower-cost, rural labor;

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3. The growing use of federal livestock and meat grades facilitated specification buying and the growth of the national carcass market; and
4. These changes together made it possible to increase the size of plants.

For these reasons, the beef packing industry moved out of the old rivertown packing centers and into the country. In the process, they built new, on-rail slaughter facilities and developed strong commercial ties with the emerging commercial feedlot industry. These changes permitted them to purchase larger volumes of high-quality, beef cattle year-round and to make better use of plant, equipment, and labor. The change in location, however, left many former packinghouse workers unemployed.

Unemployment that results from technological change is often referred to as technological adjustment. This concept gained wide currency in the 1930s when large numbers of people experienced long-term unemployment in the process of moving from blue-collar jobs in agriculture to blue-collar jobs in manufacturing. During the periods of technological change since the 1930s public programs to aid displaced workers and their families have been motivated both by compassion and by the recognition that providing such aid speeds up the adoption of new technologies. The GI Bill, the manpower and trade adjustment programs, subsidies to education, and macro-economic policy have all been designed with this problem in mind.[5]

Although there have been technological adjustments associated with beef packing since its inception, serious attempts to ameliorate its consequences did not take place until 1959. Instead, as it became clear that large scale changes would occur, those affected formed alliances within the business community in an effort to block the

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change. The alliance between retail butchers, stockyard owners, and the railroad companies cited earlier is one example.[6] In 1959, by contrast, the Armour Company announced that it was willing to cooperate with the packinghouse unions in attempting to alleviate the distress anticipated to accompany the closing of some 20 of its older plants. A tripartite Automation Fund Committee was formed following negotiations with:

> ...broad powers to study the problems of displacement resulting from the modernization program, to promote transfers within the company by providing retraining and relocation allowances and to consider other employment opportunities (Schultz, 1966, pp. vii-viii).

Since the demand for beef was increasing throughout these years and Armour was bound by its master agreement to provide some assistance, to the 13,000 workers affected. The results were, however, less than satisfactory. In the words of Clark Kerr:

> For the committee and staff, this experience has been a successful learning process. Over time, an increasing proportion of the workers displaced by the plant shutdown alone or in conjunction with government agencies, and progress can be reported in every phase of activity; interplant transfer, placement, retraining. On the other hand, the report makes clear that there is here no panacea, nor any justification for complacency, because the displaced workers are now less well off than they were before (Schultz, 1966, pp. vii-viii).

Subsequent research reports similar experiences (Bluestone, 1982, pp. 72-78). The Armour experience was important, nevertheless, because it demonstrated that labor and management could work together in the collective bargaining process to facilitate technological change and to solve related industry problems.

Since the adoption of on-rail cattle killing technologies, three important technological changes have occurred. The first change

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was the gradual refinement of on-rail technologies. Hydraulic knockers, power knives and saws, horizontally moving platforms, mechanical hide-pullers, and electric stimulators were introduced to speed up movement of the line. Rendering operations were automated (USDL, BLS, 1982a, p. 3). These improvements helped to eliminate much of the back-breaking work from cattle slaughter.

The second change was the integration forward of cattle slaughterers into beef processing. At first, most packers simply added stationary meat cutting tables to an extra room in their plant. Later, these tables were lengthened and replaced by a conveyor belt. In either case, additions needed to be built onto the existing facilities. Beginning in 1966, carcass parts began to be vacuum-packaged and boxed in a process known as "boxed beef" (Hall, 1980, p. 1). These vacuum-packaging machines were hand-operated at first, but since the late 1970s they have been partially automated. Boxed beef led to introduction of fully automated inventory-control systems in coolers, to hamburger processing, to further packaging of organ meats--particularly liver, and to introduction of the many information management systems required to monitor and merchandise a more diverse product line.

A more recent change has been the introduction of computer-based technologies beginning the late 1970s. These technologies have been used in ordering, general record-keeping, inventory-management and control, time-card management, weighing and labeling product, temperature-control, and monitoring carcass yields at various stages in production. The full application of these technologies is not yet completed.

Structural Change

Structural changes have also historically shaped labor relations in the beef packing industry. This analysis focuses on three aspects of structural change. The first aspect is a review of secular shifts in beef demand and in packinghouse employment. The second aspect is a discussion of changes in population demographics. The third aspect is an analysis of changing patterns of industry market concentration and of corporate ownership.

Patterns of Change in Beef Demand and Packinghouse Employment Since 1900

The meat packing industry was still in its formative stages on entering the twentieth century. The growth of the industry hinged on its ability to ship chilled carcasses more economically than live cattle could be shipped between western cattle states and eastern metropolitan markets. This reason for being shaped industry development in the years that followed because: (1) many potential customers lived on farms and in other regions of the country; (2) beef had been customarily purchased from independent butcher shops that permitted viewing of cattle before and after slaughter; (3) beef perishability made it difficult for packers to compete with local butchers on the basis of product quality; and (4) rail shipment had provided packers the opportunity to concentrate ownership of the industry. Growth in demand for packinghouse beef products therefore rose with increases in rural-urban migration and personal income, with the passage of the Federal Meat Inspection Act of 1907, with improvements in preservation and refrigeration techniques and in transportation systems, and with the growth of new methods of wholesaling and retailing.

The potential for expansion and development of new technology appear to have exceeded the demand for packinghouse products in the years before World War I. Wartime demand for packinghouse products therefore played a critical role in the establishment and expansion of meat packing as an industry. Government contracts provided the initial incentive to Armour, Swift, and Morris to establish an industry in the east during the Civil War which they later moved to Chicago[7] during the Reconstruction as improvements in rail transportation permitted (Corey, 1950, p. 41).[8]

The First World War was a turning point in development of the meat packing industry. During the war, commercial exports of beef products rose from 67 million pounds in 1913 to a record of 954 million pounds in 1918.[9] Domestic beef consumption also rose during the war to levels not exceeded again until 1947 (Figure 2.1). As a result, packinghouse employment nearly doubled within a decade, rising from 104,800 in 1909 to 196,300 in 1919 (Table 2.2), and packinghouse slaughter increased its market share relative to retail and farm slaughter (Table 2.1).

High beef prices and unparalleled industry profits brought public censure during the war. President Wilson responded by ordering an FTC investigation of the meat packing industry in 1917. The report of that investigation led to an anti-trust suit and to the Packer Consent Decree of 1920.[10] This agreement required packers to give up their interests in stockyards, railroad terminals, market newspapers, product lines unrelated to meat, and retail meat stores but it allowed them to keep their refrigerator cars, cold-storage plants, branch-houses, and interests in dairy, poultry, cottonseed oil, and oleomargarine

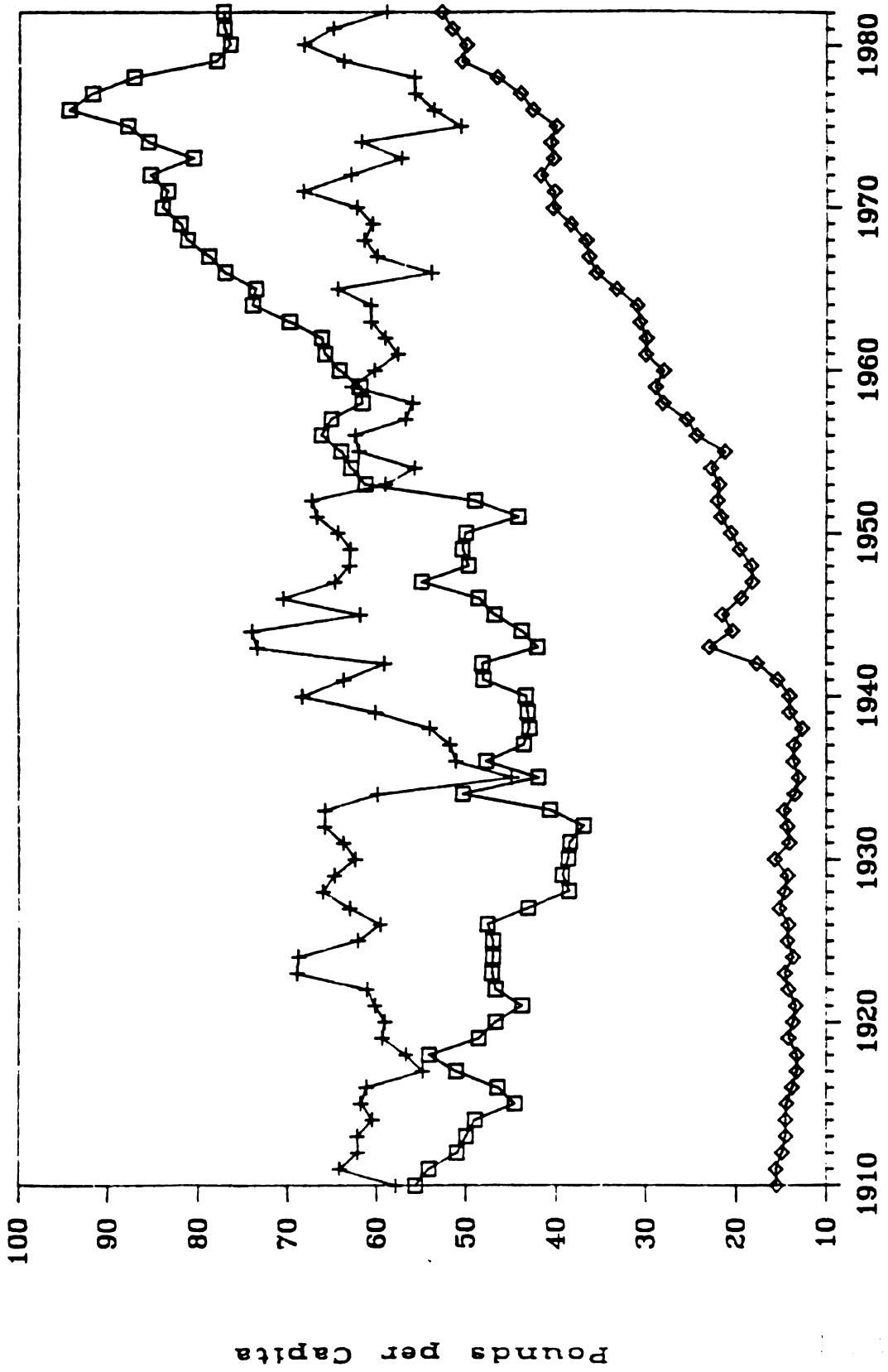

Figure 2.1. U.S. Meat and Poultry Consumption, Retail Weight Equivalent

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Table 2.1. U.S. Cattle Slaughter. Selected years, 1900-1980.

Year	Farm Slaughter	Commercial Slaughter		Total Slaughter	
		Wholesale	Retail		
	Percent				Thousands
1900	8.3	61.1	30.6	100	10,792
1910	9.9	61.8	28.3	100	14,140
1920	7.1	71.4	21.5	100	13,470
1930	4.0	83.0	13.0	100	12,056
1940	3.8	83.9	12.3	100	14,971
1950	3.9	96.1		100	18,624
1960	3.1	96.9		100	26,029
1970	0.9	99.1		100	35,356
1980	0.9	99.1		100	34,116

Source: USDA, Yearbook Statistics Committee, Agricultural Statistics, (Washington, D.C.: Government Printing Office), selected years.

Table 2

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Sources:

Table 2.2. Employment in Meat Packing (SIC 2011) and Retail Meat Cutting, Selected Years, 1899-1981.

Year	Employees in Meat Packing			Retailing Industry
	Production	Salaried	Total	Meat Cutters 1/
	------Percent----		-------Thousands-------	
1899	87.0	13.0	78.7	33 (1900)
1909	83.8	16.2	104.8	41 (1910)
1919	82.0	18.0	196.3	61 (1920)
1925	83.2	16.8	144.7	NA
1929	84.0	16.0	145.9	120 (1930)
1933	85.4	14.6	132.5	NA
1937	83.6	16.4	152.6	160 (1940)
1947	80.2	19.8	208.4	180 (1950)
1954	76.2	23.8	220.2	NA
1958	75.1	24.9	201.0	189 (1960)
1963	76.5	23.5	180.9	NA
1967	76.7	23.3	170.5	206 (1970)
1972	78.3	21.7	157.6	201
1977	79.7	20.3	146.2	191
1981	80.1	19.9	135.3	178

1/ Meat cutters, except slaughtering and packing, working as employees in the retail industry.

Sources:
1. USDC, Bureau of the Census, 1977 Census of Manufacturers, Vol. II: Industry Statistics (Washington, D.C.: Government Printing Office, August 1981); and other issues.
2. _____, Historical Statistics of the United States, Bicentennial edition: Colonial times to 1970, (Washington, D.C.: Government Printing Office).
3. USDL, Bureau of Labor Statistics, Labor Force Statistics Derrived from the Current Population Survey: A Databook, Bulletin 2096, (Washington, D.C.: Government Printing Office, 1982b).

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(Corey, 1950, p. 188). It also led to passage of the Packers and Stockyards Act of 1921 which reinforced many of the provisions found in the decree. The outcome of these events molded the structure of the industry that was to prevail up until the 1960s.[11]

Declining beef consumption through the 1920s and 1930s (Figure 2.1) favored the industry even through it was accompanied initially by declining packinghouse employment. This irony occurred because of farm migration increased consumer dependence on the food marketing system and because the Great Depression increased the demand for more economical products. Supermarket chains specialized in economical products and, since carcass beef was cheaper than retail butchered beef, the growth of supermarkets in the 1930s stimulated the demand for carcass beef and other packinghouse products. The decline of retail slaughtering (Table 2.1), which gave proprietary butchers a quality edge, was accordingly associated with the increasing employment of retail meat cutters by the supermarket industry (Table 2.2).

The changes in the 1920s and 1930s created an alliance between the supermarket and meat packing industries which began to pay off in the 1940s. The initiation of the Second World War created a strong export demand for meat products, particularly pork, and a strong demand for industrial workers of all kinds. Off-farm migration increased dramatically, the rate of population growth doubled what it had been in the previous decade, and disposable incomes grew rapidly (Table 2.3). These events insured that the domestic demand for beef products would remain strong throughout the remainder of the decade[12] and that packinghouse employment would continue to grow.

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Source:

Table 2.3. U.S. Population, Employment in Agriculture, and Disposable Personal Income, Selected Years, 1929-1982.

Year	Population	Agricultural Employment	Personal disposable income 2/		
	Millions	Percent 1/	Dollars	$1972	%Change 3/
1929	121.9	21.9	676	1,883	--
1933	125.7	26.0	363	1,349	-7.1
1940	132.1	20.1	570	1,847	5.3
1950	151.7	12.2	1,362	2,392	3.0
1960	180.8	8.3	1,947	2,709	1.3
1970	205.1	4.4	3,390	3,665	3.5
1980	227.7	3.4	8,012	4,472	2.2
1982	232.1	3.4	9,362	4,544	0.8

1/ Percent of total employment. Note that beginning in 1940 employment figures exclude workers 14-15 years of age.

2/ Per capita.

3/ Annual percent change in 1972 dollars since the previous observation.

Source: Council of Economic Advisers, Economic Report of the President: 1983. (Washington, D.C.: Government Printing Office, February 1983), pp. 191 and 196.

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Several important changes were made during the war. The first change was that most U.S. exports were financed by the U.S. government which required meat packers to employ federal grading standards when making sales. In WWI, by contrast, export sales had been financed entirely by importing nations. A second set of changes resulted from the use of federal grading standards. These standards encouraged the growth of independent packers[13] and of specialized cattle feedlot and beef packing industries through the expansion of a national market for beef carcasses. Another change was the construction of more and better quality roads. These changes played an important role in shaping the development of the beef packing industry in the years that followed.

The postwar period brought the beef packing industry into an era of unprecedented growth. Increases in population and income and decreases in farm employment (Table 2.3) contributed to steady increases in beef consumption that were to continue until the late 1970s. The growth of cattle feeding and the standardization of beef quality brought about by federal beef grading also contributed to an increase in demand for high quality beef (USDA, AMS, Marketing Research Division, 1959, pp. vi-vii) which may, in part, explain the increase in beef over pork consumption that occurred in the 1950s (Figure 2.1).

The postwar increases in beef consumption spurred increased in meat packing employment up through the mid-1950s and in retail meat cutting up through the 1970s (Table 2.2). Employment in meat packing began to decline in the 1950s as the competition of independent, single-species, beef packers led to single-story packinghouses and to adoption of more efficient, on-rail slaughtering technologies.

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Employment in retail meat cutting began to decline in the 1970s as retailers first, in the 1960s, began to fabricate beef themselves in central processing plants and then, in the 1970s, began to buy fabricated and boxed primals and subprimals from the integrated beef slaughtering-processing firms. The efficiencies generated by the changes made in technology and distribution during the period from 1950 to 1980 contributed to an increase in beef consumption of more than 80 percent (Table 2.1) and to a decline in packinghouse and retail employment of roughly 25 percent (Table 2.2).

Demographic Changes

Demographic changes affected the composition of the labor force as well as the demand for beef. The most important changes in the characteristics, quality, and size of the labor force occurred in the post WWII period, as summarized below:

> During the last half-century there have been important changes in the work roles of young and older men and women at all ages. Among men, extended schooling has postponed entrance to the work force by several years; meanwhile, higher job requirements have made it difficult for youth to find employment without post-secondary education. At the other end of the age spectrum, men have come to expect retirement at age 65 as the outside limit, with more than half of those retiring in recent years leaving their jobs before reaching that age.
>
> With women the changes have been far more dramatic and have touched all age groups. Beginning with women's assumption of wartime jobs in the early 1940s, their numbers in the work force have continued a sharp climb. Now, three and a half decades later, their work profiles reveal much steadier commitment to market work, with uninterrupted labor force participation through the childbearing and early child-rearing period rapidly becoming the norm, particularly for educated women. If education levels continue to rise and fertility continues to decline, the worklife pattern for married women will come to resemble more closely than previously those of men and single women (Kreps, 1975, p. 1).

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Several specific observations are warranted. First, the labor force participation of women increased from 31.4 percent in 1951 to 51.1 percent in 1980 in large measure because of the increased participation of married women. Second, while the range of differences in the median number of school years completed has narrowed during the last 20 years, the distribution of educational levels obtained by demographic groups shows important differences. Finally, the labor force is, in general, better educated than in the past.

Changes in the characteristics, quality, and size of the labor force have affected employment patterns in the packinghouse workers. Some of the qualitative effects are suggested in comments made by union and firm representatives in interviews conducted by the author. These included:

--"Younger workers are more sensitive to injuries and complain about it."

--"People don't want to be moved around as much as previously either in terms of location or job assignment."

--"Young workers complain about trivial things like dirty restrooms, an undesirable locker, etc."

--"Monotony generates grievances among the older employees while the younger ones seldom complain."

--"The company isn't responsive to complaints and it refuses to discuss child care."

--"It used to be, if you complained about your wrist, then you were a ..."

--Women seem more prone to carpol tunnel, a wrist injury.

--Younger workers appear more careless.

These comments support the widely-held view that the average age of production workers in the packinghouse industry has fallen with recent plant re-openings and that the employment of women throughout the industry is increasing.

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Table 2.4. U.S. Employment by Industry, Sex, and Race, 1972 and 1981

Industry	1972 Total Employment	1972 Distribution Female	1972 Distribution Black 2/	1981 Total Employment	1981 Distribution Female	1981 Distribution Black 2/
	Thousands	----Percent ----		Thousands	----Percent----	
Agricultural Production	3,074	17.9	8.6	3,039	17.4	8.3
Food Products:	1,739	26.2	11.6	1,780	29.1	13.8
Meat Products	351	29.4	13.1	362	32.0	14.0
Grocery Stores	1,857	30.0	7.4	1,828	39.0	8.0
Eating & Drinking Places	2,894	59.5	10.6	3,058	60.4	11.3
Total 1/	82,153	38.0	10.6	85,064	38.4	10.8

1/ Persons 16 or over.

2/ Black and other races.

Source: USDL, Bureau of Labor Statistics, Labor Force Statistics Derived from the Current Population Survey: A Databook, Bulletin 2096, (Washington, D.C.: Government Printing Office, 1982b), pp. 668-69.

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The involvement of women in the beef packing industry was measured in a 1981 study of wages and benefits in a seven state area.[14] This study cited these figures:

Proportion of Female Employees in Firm	Distribution of Firms Reporting (%)	Firms Reporting Number
0	6.6	2
1-10	13.4	4
11-15	26.7	7
20-30	23.3	7
33-45	10.0	3
No Response	20.0	6
Total	100.0	30

Changes through time can only be inferred from the more aggregated data given in Table 2.4. The table shows that the number of women in the meat products industry (SIC 201) has increased from 29 percent in 1972 to 32 percent in 1981.[15] This increase in women's employment is often attributed to the introduction of effort-saving technology.

From available statistics, little can be said about the age of packinghouse workers. For the food industry (SIC 20) as a whole, as shown in Table 2.5, median age of employees is correlated with union membership. In all demographic groups except black men, union employees were, on average, older than their nonunion counter-parts. Since many packing plants were closed and re-opened with a nonunion work-force in the early 1980s, this observation suggests that the new employees were also younger.

Although it is clear that important changes in the composition of the labor force are occurring, their effect on the beef packing industry and its workers is far from clear. The National Cattlemen's Association

Table 2.5. U.S. Age Distribution of Employed Wage and Salary Workers in the Food Industry (SIC 20) by Labor Organization, Sex and Race, May 1980.

Table 2.5. U.S. Age Distribution of Employed Wage and Salary Workers in the Food Industry (SIC 20) by Labor Organization, Sex and Race, May 1980.

Unionized employees:	Age Distribution 2/ 16-18	18-24	25-34	35-44	45-64	65-Plus	Total 1,000s	Median Years
	Percent							
Total:	0.3	14.6	25.6	21.7	36.9	0.8	628	38.1
Men:	0.4	15.3	25.7	22.3	35.5	0.8	498	37.6
White	0.5	15.4	25.8	22.9	34.8	0.9	423	37.8
Black 1/	0.0	14.7	25.3	18.7	41.3	0.0	75	35.6
Women:	0.0	12.3	25.3	19.2	41.5	1.5	130	40.0
White	0.0	12.0	29.6	17.6	39.8	1.9	108	39.3
Black 1/	0.0	13.6	9.1	22.7	54.4	0.0	22	44.5
Nonunion employees:								
Total:	1.6	23.0	24.6	20.8	28.2	1.7	1,046	34.4
Men:	1.6	22.5	27.0	19.7	26.9	2.3	684	33.4
White	1.7	22.0	27.6	19.0	27.3	2.5	631	33.1
Black 1/	0.0	28.3	20.8	16.4	22.6	0.0	53	36.4
Women:	1.7	24.0	29.6	23.2	30.7	0.6	362	36.7
White	1.9	25.4	18.3	22.2	31.2	0.6	311	36.7
Black 1/	0.0	16.1	28.0	28.0	28.0	0.0	50	37.0
Total	1.1	10.9	25.0	21.1	31.5	1.4	1,674	----

1/ Black and other races.
2/ Parts may not sum to whole due to rounding error.

Source: USDL, Bureau of Labor Statistics, Earnings and Other Characteristics of Organized Workers: May 1980, Bulletin 2105, (Washington, D.C.: Government Printing Office, September 1981), Table 15.

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(1982, p. 5) views the future in these terms:

> Changes in demographics...will be favorable. We will have a relatively larger potential workforce, with a rise in the ratio of workers to non-workers from 1.52 to 1 in 1980 to 1.7 to 1 in 1990.

This interpretation of demographic change suggests that consumer purchasing power will increase and labor bargaining power will decrease but it ignors the qualitative aspects of demographic change which may potentially be more important.

Sex, age, martial status, and race potentially affect education levels, househouse responsibilities, risk preferences, earnings expectations, willingness to join a union, and geographic mobility. In turn, these things can influence worker productivity and employment opportunities. Age and sex have, in particular, been related to absenteeism rates (Hedges, 1977, p. 22) and to on-the-job injury rates (Dillingham, 1981, p. 1).[16] With the changes in labor force participation rates and following enactment of civil rights legislation, these differences in worker productivity and employment opportunities have been a source of much controversy in the meat cutting trades.

Changing Patterns of Market Share and Ownership in Beef Packing

The structure of the beef packing industry has been affected by these public policies: The Sherman Act of 1890, the Clayton Act of 1914, the Packers and Stockyards Act of 1921, and the Capper-Volstead Act of 1922. In previous years, the Interstate Commerce Act of 1887 and the Federal Trade Commission Act of 1914 were also important. Except for the Capper-Volstead Act each act is designed to reinforce a competitive market structure. The Capper-Volstead Act, in contrast, attempts to enhance the bargaining position of farm producers relative

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to agribusiness, food handling, and food processing firms. The behavior of beef packers has been affected by these policies because, excepting the period from 1955 to 1980, the industry has been oligopolistically structured[17] since the invention of the refrigerated railcar in the 1880s (Table 2.6).

The refrigerated railcar played an important role in the establishment both of the dressed beef trade and of barriers to entry in beef packing. Prior to the invention of the refrigerated railcar, cattle had been shipped live from mid-west stockyards to east coast metropolitan markets for slaughter and pork packing dominated interregional trade because preservation methods favored pork over beef. Following this invention, pork and beef could be shipped freshly slaughtered which lowered shipping weights and eliminated the death losses associated with live animal shipment. The packers accordingly began to provide a breaking function which linked the stockyards and the rail lines (Williams, 1979, p. 7). An oligopolistic industry structure evolved as the early entrants to the industry gained a controlling interest in the stockyards, owned the railcars and branch houses required to distribute fresh meats, and established interlocking directorships with banks and railroad companies (Corey, 1950, pp. 46-48).

The behavior of the packers reflected the oligopolistic structure that had evolved. In the 1890s, representatives of the large packers met regularly to decide prices and to divide up markets and they drew up plans to merge their companies into a consolidated monopoly as had been done in the steel and oil industries (Yeager, 1981, pp. 236-38). These plans were, however, aborted as government anti-trust policies began to be implemented and as the packers learned to cooperate

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Table 2.6. Four-firm Concentration Ratios for U.S. Cattle Slaughtering Industries, selected years, 1908-81

	Cattle		Steer & Heifer 2/		Cow & Bull 2/	
	Top 4	Big Four 1/	Top 4	Big Four 1/	Top 4	Big Four 1/
	Percent					
1908	---	45.0	---	---	---	---
1920	---	49.0	---	---	---	---
1930	---	48.5	---	---	---	---
1940	---	43.1	---	---	---	---
1950	---	36.4	---	---	---	---
1955	---	30.4	---	---	---	---
1960	23.5	---	---	---	---	---
1965	23.0	---	---	---	---	---
1970	21.3	15.8	27.3	19.5	15.5	11.5
1975	19.3	11.8	28.1	15.8	11.8	6.1
1976	22.3	10.3	27.5	14.1	12.3	3.9
1977	22.1	10.1	29.1	13.8	11.2	2.7
1978	24.4	---	31.6	---	10.6	---
1979	30.3	---	37.4	---	10.5	---
1980	30.6	---	38.1	---	10.4	---
1981	34.9	---	43.6	---	10.3	---
1982	---	---	45.0	---	10.0	---

---Not reported.
1/ Armour, Cudahy, Swift, and Wilson.
2/ Percentages of steer and heifer and cow and bull slaughter as based on federally inspected slaughter.

Sources:
1. John H. McCoy, Livestock and Meat Marketing, Second edition, (Westport, Ct: Avi Publishing Company, Inc., 1979), p. 180.
2. U.S. Congress, House of Representatives, Committee on Small Business, "Concentration in the Meat Packing Industry--National and Local Procurement Levels," by USDA, AMS, PSA, Hearings, September 24, 1979, Appendix 15.
3. USDA, Packers and Stockyards Administration, "Data Processing Report 17A," May 13, 1983, Table 1: U.S. Livestock Slaughter by Firm Rank Group, 1972-81.
4. FTC, Agricultural Income Inquiry: Part I: Farm Products, (Washington, D.C.: Government Printing Office, 1937), p. 198.

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without overt collusion.[18] In 1903, the structure of the industry was reflected in this distribution of stock issues: Swift ($35.0 million), Armour ($27.5 million), National ($15.0 million), Cudahy ($7.0 million), Morris ($6.0 million), and Schwartschild & Sulzberger--later renamed Wilson ($5.0 million) (Chandler, 1977, pp. 391-92).[19]

Up through the early 1930s there was little change in the structure of the packing industry with respect to the dressed beef trade. Agreements reached at the turn of the century led to expansion of industry firms into Argentina, Uruguay, and Brazil (Chandler, 1977, p. 401) and to a common labor policy designed to resist wage increases and unionization (Yeager, 1981, pp. 238-39) as domestic markets matured in the years prior to WWI. The Packer Consent Decree of 1920 forbid meat packers from owning or acquiring non-meat enterprises, but it left the basic structure of the beef trade intact. Changes began to occur in the 1930s, however, with the development of low-cost refrigerated trucks, the construction of all-weather roads, and the growth of supermarket distribution (Yeager, 1981, p. 239). These developments reduced the significance of refrigerated railcars, railroad terminals, and branch houses[20] in dressed beef distribution which had served as barriers to the entry of new firms into the trade in previous years. The increasing use of livestock auction markets in the 1930s likewise reduced the dependence of independent packers on the stockyards which large packers dominated until the time of the Consent Decree.

The changes of the 1930s did not, however, have an immediate impact on industry structure for several reasons. The first reason was that the Great Depression reduced beef consumption leaving the industry in a state of reduced profits (Table 2.7) and overcapacity.[21]

Table 2

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Source:

Table 2.7. Meat Packing Industry Earnings, Selected Years, 1925-82

Year	Ratio of Earnings to:			Net Earnings	
	Total Sales	Net Worth	Live Weight	$Current	$1972 1/
	--------Percent--------		$CWT	-----Millions------	
1925	1.4	5.7	0.20	47	143
1930	0.9	3.7	0.14	32	98
1935	1.3	5.4	0.18	37	147
1940	1.3	5.8	0.15	42	144
1945	0.9	5.6	0.15	51	135
1950	0.9	7.3	0.28	89	166
1955	0.9	7.8	0.26	105	173
1960	0.8	6.7	0.26	110	160
1965	0.8	6.9	0.27	142	191
1970	1.0	10.0	0.41	244	267
1975	1.0	10.6	0.64	380	302
1976	0.9	9.8	0.55	349	264
1977	0.7	7.4	0.43	275	196
1978	0.8	8.3	0.54	333	221
1979	1.0	13.3	0.83	488	299
1980	1.0	12.2	0.79	480	269
1981	0.7	9.3	0.56	343	175
1982	0.8	10.4	0.68	404	195

1/ GNP deflated dollars.

Source: AMI, Annual Financial Review of the Meat Packing Industry: 1982, (Washington, D.C., September 1983).

Table 2.8. U.S. Fed Cattle Marketings and Feedlot Numbers by Feedlot Capacity, Economic Census Years, 1964-1980

Fed Cattle Marketed				Feedlots		

Table 2.8. U.S. Fed Cattle Marketings and Feedlot Numbers by Feedlot Capacity, Economic Census Years, 1964-1980

Feedlot Capacity: (Head)	Fed Cattle Marketed				Feedlots			
	1964	1974	1977	1980	1964	1974	1977	1980
	----------Thousands----------				----------Number----------			
Under 1,000 1/	11,094	8,261	7,927	6,410	233,100	135,800	130,000	111,200
Over 1,000:	7,050	15,073	16,934	16,773	1,668	1,922	1,880	2,144
1,000-1,999	1,043	981	1,176	NA	826	747	819	NA
2,000-3,999	1,147	1,065	1,186	NA	435	484	401	NA
4,000-7,999	1,377	1,541	1,653	NA	244	258	238	NA
8,000-15,999	1,772	2,854	3,583	2,957	119	212	221	202
16,000-31,999	1,153	4,174	4,846	4,575	36	148	140	140
32,000 Plus	588	4,458	4,490	4,806	8	73	61	69
Total 1/	18,144	23,334	24,861	23,183	244,700	137,700	131,900	113,300

NA = Not available.

1/ Feedlot numbers have been rounded and truncated to save space.

Source: USDA, ERS, National Economics Division, Livestock and Meat Statistics, Statistical Bulletin, No. 522, (Washington, D.C.: Government Printing Office, September 1981); and previous issues in the series.

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A second reason was that the Big Four packers branded processed meats and sold fresh meats under their own packer grades thus raising the barriers to entry by advertising costs (USDA, AMS, Marketing Research Division, 1959). Third, although there had been improvements in slaughtering technology for other species, beef packing technology changed little after the turn of the century, as suggested by productivity data provided by Lewis Corey (1950, p. 252):

> Specific increased in man-hour productivity from 1914 to 1931 in various divisions of the packing industry were...5.7 percent in cattle killing, 33.2 percent in hog killing, 21.1 percent in hog cutting, 41.6 percent in calf killing, and 61 percent in sheep killing.

As a consequence, a new entrant could not offer a price advantage based on improved technology and entry could only reasonably occur based on an acquisition or on catering to the local trade. Changes in market structure prior to WWII accordingly occurred quite gradually.

The rapid decentralization of the dressed beef trade which began after WWII has been attributed to these factors:

1. Improved trucks and roads,
2. Construction of new plants closer to cattle production,
3. Lower wages in rural plant locations,
4. Wider use of USDA beef grades,
5. Relatively unimportant economies to scale in cattle slaughtering (NCFM, 1966a, pp. 17-18), and
6. Growing importance of centralized chain-store buying.

This decentralization process was spurred by the growth of specialized cattle feedlot (Table 2.8) and cattle slaughtering industries. The number of packing plants slaughtering only cattle, for example, increased from 34 in 1950 to 127 in 1962 (NCFM, 1966a, p. 15). This increased specialization was fostered by a more stable industry environment created by increasing use of USDA beef grades and public price reporting, the expansion of centralized chain-store buying, and rising

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rising consumer demand. Specialized beef packers may also have benefited from an improved service network, the introduction of new technology, and cost advantages associated with plant construction nearer to cattle production centers (Butz, 1960, pp. 61-67). The dressed beef trade became an industry in the 1950s with the rise of these specialists and they are largely responsible for the decentralization process that began after the war.

The erosion of Big Four market dominance contributed to a disorderly restructuring of the industry in the late 1950s as independent beef packers began to adopt on-rail slaughtering technologies and packing-house unions frustrated Big Four attempts to follow suit.[22] Ownership transfers in the beef packing industry which accompanied the transition to on-rail slaughtering technologies in the 1960s facilitated the entry of large conglomerates into the industry and the acquisition of additional plants by the emerging New Breed beef packers. One study (UPWA, 1968, p. 4) cited entry of these firms into the industry in the 1960s:

Meat Packer	Acquiring Firm	Date
John Morrell	AMK Corporation (NY)	December 1966
Wilson & Company	LTV (TX)	circa 1966
Cudahy	U.S. Smelting, Refining, and Mining (NY)	---
Armour	Gulf & Western	January 1968
E. Kahn's Sons and Bryan Brothers	Consolidated Foods	---
Agar	Commercial Credit	---
Nat Buring Packing	Holiday Inns	---

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Many of these acquiring firms were conglomerates from outside the food industry and many later lost interest in the packing industry. A later study (UFCW, 1982a, pp. 6-7) reported this list of firms for the 1970s:

Meat Packer	Parent Company
Wilson Foods	LTV
Swift	Esmark (1973)
Armour	Greyhound
Morrell	United Brands
Cudahy	General Host
Hygrade	Hanson Trust (UK)
Spencer	Land O'Lakes
Bluebird	Northern Foods (UK)
MBPXL	Cargill, Inc.
Bryan Foods	Consolidated Foods
Kahn's & Company	Consolidated Foods

Many of the firms on the first list appear on the second list under new ownership.

The ownership changes that accompanied abolition of the master agreements in beef packing primarily took the form of parent companies spinning-off new independent companies that have been refinanced. The parent may maintain control through partial ownernship, family ties, or a contractual arrangement. Financing can be obtained through private sale of stock or through government guaranteed loans, such as an Urban Development grant. These companies undertook this sort of change:

Parent Company	Progeny
Dubuque Packing	FDL Foods, Inc.
Cudahy	Bar-S
Swift Company	Swift Independent Packing Company (SIPCO)

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Other companies found their plants to be too small or too far from cattle surplus areas to compete effectively in the absence of wage concessions. In this case, firms sold or shut down plants in an effort to win concessions from employees in their plants. Monfort, Land O'Lakes, and Morrell employed this strategy. As a result, the remaining master agreements were eliminated from the beef packing industry in 1982 (Business Week, 1983a; Meat Industry, 1982).

The 1980s have seen other important changes in meat packer ownership. IBP, the nation's leading beef packer, was acquired by Occidental Petroleum in 1981. IBP has also diversified into pork packing through the management of a plant in Madison, Nebraska, the acquisition of a plant at Storm Lake, Iowa, and the planned construction of a plant at Stanwood, Iowa.

A second set of changes have occurred with respect to the beef packing plants formerly owned by Spencer Beef. These plants were acquired in 1979 by Land O'Lakes, a Minneapolis based farmer cooperative. Land O'Lakes entered beef packing at the request of its members with the hope of providing a marketing alternative to cattle feeders. Following a series of labor conflicts at the Spencer Iowa plant and a general lack of success in managing all three plants, Land O'Lakes attempted to sell these plants to Excel Company in 1983 (Forbes, 1983, pp. 92-99).

A third set of changes have occurred as a partial result of a recent downturn in the pork cycle and IBP's diversification into pork packing. In 1983, both Rath and Wilson companies filed a petition for reorganization under Chapter 11 of the federal bankruptcy code.

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After operating for four years under an "Employee Stock Ownership Plan," Rath Packing was acquired by a New Jersey financier in 1984 and reopened (WSJ, 1984b). By contrast, Wilson reduced employee wages, renegotiated its labor contracts following a lengthy strike, and has worked out an arrangement whereby the company will be broken up into four subsidiaries with Wilson remaining as the parent corporation (Wall Street Journal, 1984c). Also in 1983, Greyhound sold the Armour Company to ConAgra for $166 million (Business Week, 1983a, p. 85).

The restructuring of the beef packing industry which began in the late 1950s reduced concentration levels until 1977 (Table 2.6). From that year, concentration levels in the industry increased rapidly rising from a four-firm concentration ratio of 22.1 percent in 1977 to one of 34.9 percent in 1981. In view of the ownership transfers which occurred in 1982-83, it is likely that the trend towards remergence of an oligopolistic market structure is as yet incomplete.

Labor Relations

The history of labor relations in the beef packing industry has been shaped by technological and structural change, and by the growth of labor traditions and organizations fostered in part by government interventions. Technological and structural changes have been described in the sections above. This section describes labor law, the growth of labor unions in beef packing and retailing, and the evolution of the master agreements in the meat packing industry.

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Labor Law

Labor law is divided into protective labor law and collective bargaining law. Protective labor law affects most employees in the economy and, as such, it defines the labor market. Collective bargaining law, by contrast, affects primarily union employees and it defines the labor-management relation in collective bargaining. Each aspect of labor law is a product of the twentieth century and each owes much to the legislation passed during the Roosevelt administration in the 1930s (Miller, 1975).

Protective Labor Legislation

The basic elements of protective legislation affecting the beef packing industry are found in these laws: The Federal Meat Inspection Act of 1907, the state worker compensation laws, the Social Security Act of 1935, the Fair Labor Standards Act of 1938, the Full Employment Act of 1946, the Manpower Development and Training Act of 1962, the Civil Rights Act of 1964, and the Occupational Health and Safety Act of 1970. Numerous other statutes have amended and complemented these laws. The important provisions of these laws are described and analyzed below.

The two earliest programs to benefit meat cutters were the federal Meat Inspection Act of 1907 and state workers' compensation laws enacted around 1911.

The Meat Inspection Act was passed in the wake of public reactions to the poor working and sanitary conditions described in Upton Sinclair's (1906) book, The Jungle. Although this law aimed primarily to improve sanitary conditions, the presence of federal inspectors in the plants put the working conditions in the plants under public scrutiny and

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restructured plant working hours.[23] The Meat Inspection Act was amended in 1967 to correct certain abuses and to bring state plants up to federal inspection standards (McCoy, 1979, pp. 353-57).

The workers' compensation system has also benefited packinghouse workers. James R. Chelius (1977, p. 20) provided this general description of the workers' compensation system:

> Beginning in 1911, the states started to enact workmen's compensation laws which have subsequently become known as workers' compensation laws. Under workers' compensation, an employer is obligated to pay employees or their heirs a governmentally determined benefit, frequently less than the full accident costs, regardless of the cause of the work injury. In exchange for immunity from employee damage suits for the full costs of accidents, the employer is required to pay a portion of accident costs for all work injuries. Workers' compensation is essentially a system of compulsory insurance where benefit levels are established by the state government and premiums are paid by the employer. This arrangement represents the first example of what later became known as no-fault insurance systems.

Prior to the introduction of worker compensation statutes, work related injuries, like other injuries, required court action and the party found guilty was liable for damages (Chelius, 1977, pp. 17-20).

Workplace injuries are common in beef slaughtering, processing, and distribution (Table 3.5) which raises the cost of workers' compensation and leads to disagreement. The primary issues which have come up are:

1. Worker coverage,
2. The list of compensatable injuries and diseases,
3. The structure and level of benefits,
4. Administration of benefits and insurance arrangements, and
5. The relationship between workers' compensation and other income security benefits (Chelius, 1977, p. 20).

In the interviews conducted in this research manager complaints centered around administration of the program, compensation for

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hard-to-verify back and wrist injuries, and misuse of the program by workers who quit or retire.

After enactment of the workers' compensation system, not much was done with protective labor legislation until the coming of the Roosevelt administration. Under threat of the Great Depression, Roosevelt's New Deal architects re-wrote the social contract binding employees and employers in the process of stimulating aggregate demand and limiting labor supply. Aggregate demand was stimulated by enacting a minimum wage and maximum hours, by increasing the bargaining strength of trade unions, and by providing assistance to needy families. Labor supply was limited by discouraging overtime work with pay bonuses and child labor with age restrictions, and by encouraging retirement at age 65. Together this social contract, in the words of Arden Walker, was designed to "commence a spiraling effect of spending and producing which would propel our entire society into a never-ending cornucopia of economic well-being" (Meat Industry, 1982, p. 24). This legislation is embodied in two major acts: The Social Security Act of 1935 and the Fair Labor Standards Act of 1938.

The objectives of the Social Security Act (1935, p. 620) are outlined in its preamble:

> To provide for the general welfare by establishing a system of federal old-age benefits, and by enabling the several states to make more adequate provisions for aged persons, blind persons, dependent and crippled children, maternal and child welfare, public health, and the administration of their unemployment compensation laws; to establish a Social Security Board; to raise revenue; and for other purposes.

These objectives were expanded in 1939 to broaden the list of potential beneficiaries to included widows, surviving parents and children of

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deceased workers, and the wives and children of retirees; in 1956 to add benefits for disabled workers and to reduce retirement benefits; and in 1961 to allow early retirement at age 62 (Aaron, 1982, pp. 3-4). The current system can be described according to these five characteristics:

1. The benefit structure favors low over high income participants even though they are keyed to contributions during working years and the system operates on a pay-as-you-go basis;
2. "The difference between the expected value of benefits and the accumulated value of taxes is now large and has nearly peaked" (i.e.,early participants in the program were the greatest beneficiaries);
3. Social security provides a number of benefits other than retirement;
4. Beneficiaries are subject to an earnings test; and
5. Benefits are fully indexed (Aaron, 1982, pp. 5-8).

Although inferences can only be drawn from broad program studies, the establishment of the retirement and unemployment compensation systems have probably had the greatest impacts on packinghouse workers.

The chief impact of the social security program on the decision to retire have come through the income effect of benefits, the taxes on wages from the earnings lost, and the indirect effect of social security on private pension plans (Munnell, 1977, p. 38). The effect of the program on retirement decisions has likely declined through the years, however, because many workers now also receive a pension and new participants no longer receive an implicit subsidy with the program. In 1981, employers and employees each contributed 6.65 percent of the first $29,700 earned annually by each employee to the total social security package (French, 1982, p. 460).

The unemployment system is a state financed and administrated program established by the Social Security Act of 1935. Since the

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states determine the level of employee taxes and the eligibility, level and duration of benefits, it is difficult to analyze the economic functioning of the system as a whole (Hamermesh, 1977, p. 2). Some statements can, however, be made. In order to be eligible, a worker must normally demonstrate a lasting attachment to the work force, he must have worked in an industry covered by the program, and he must be involuntarily unemployed. Benefits are equal to some fraction of the base period earnings and they are provided for a period up to 26 weeks. Following the Federal-State Extended Unemployment Compensation Act of 1970 and its amendments, however, workers distressed by national economic conditions can receive up to 26 weeks of additional benefits. In 1975 the tax on employers used to finance the unemployment compensation program was 3.2 percent of wages up to an annual tax base of $4,200 (Hamermesh, 1977, pp. 4-7).[24]

The second major act of the New Deal era was the Fair Labor Standards Act of 1938. This act established a minimum wage, a 40-hour work week, restrictions on the employment of children, and penalities for noncompliance. Although this act originally applied to interstate commerce, the courts have broadened its authority to cover most industries not specifically exempted. Exemptions were provided for retailers, seamen, fishermen, farm laborers, newspaper employees, subway and bus operators, agricultural and dairy processors, apprentices, and handicappers. Exemptions were also given for executive, administrative, professional, and sales employees (Ronen, 1981, p. 281). Seasonal processors of farm products, such as beef packers,[25] were permitted to work an extended work week for up to 14 weeks a year without paying overtime bonuses. Students between the ages of 14 and 16 could be

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certified to work at reduced wages[26] and child labor in family businesses was also permitted. Amendments to the act have raised the minimum wage, removed many of the exemptions (Levitan, 1979, pp. 42-46) and extended coverage to federal workers. The minimum wage is typically about one half of the average manufacturing sector wage (Levitan, 1979, p. 4).

In the period following the Roosevelt administration there have been many additions to protective labor legislation. Some of the legislation is quite general and reflects a trend towards integration of national economic and social policy. The "full" Employment Act of 1946 is a prime example. A policy of full employment is a commitment to maintain the bargaining power of employees by limiting the number of applicants from which employers can hire. In effect, this is a policy of non-discrimination since, if everyone who seeks a job finds one, the meanest form of discrimination--unemployment--is eliminated. The Civil Rights Act of 1964 makes this policy explicit when it forbids discrimination on the basis of race, color, religion, sex, national origin, and age by employers, by labor organizations, and by educational institutions.[27] The Manpower Development and Training Act of 1962 (MDTA) and the Occupational Safety and Health Act of 1970 (OSHA) are statutes which have particularly affected packinghouse workers.

The MDTA was designed to deal with the problems created by technological change, structural unemployment, and market discrimination which could not be adequately addressed by shorter term assistance programs like unemployment compensation. The experience of technological change in the meat packing industry (Schultz, 1966) suggested that production workers are often substantially disadvantaged by plant

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shutdowns. Problems relating to job search and acquisition, income support, and earnings levels are aggrevated by discrimination.[28] The experience gained in the application of MDTA to the meat packing industry during the early 1960s was instrumental in shaping later civil rights and employment legislation, such as the Comprehensive Employment and Training Act of 1973 (CETA). The effect of the manpower training programs is to shift some of the burden of structural unemployment from families to public agencies. Except in the context of collective bargaining, little of this burden has been borne by the companies concerned.[29]

The orientation of OSHA is somewhat different. OSHA's (1970, p. 1590) objectives are:

> To assure safe and healthful working conditions for working men and women; by authorizing enforcement of the standards developed under the act; by assisting and encouraging the states in their efforts to assure safe and healthful working conditions; by providing for research, information, education, and training in the field of occupational safety and health; and for other purposes.

Just as manpower training programs are complementary to unemployment compensation, OSHA is complementary to worker compensation. This complementarity was recognized in the law when it called for the formation of a National Commission on State Workmens' Compensation Laws (Miller, 1975, p. 150). The act's primary objective is to reduce the burden of disability and premature death on families and the public by accident prevention.

OSHA has been a concern in the beef slaughtering, processing, and distribution industries because they have high rates of on-the-job injuries. For this reason, OSHA included them in its Target

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Industry Program in the early 1970s.[30] After the courts declared this program to be unconstitutional in 1978 (Chamberlain, 1980, p. 495), priority was given to inspecting firms according to:

1. Imminent danger of injury,
2. Catastrophe/fatality investigations,
3. Employee complaints, and
4. Regional programmed inspections (Matwes, 1976, p. 17)

Although OSHA is clearly a concern in these industries, the industry representatives interviewed in this study cited no examples of major costs incurred as a result of the program. Instead, OSHA inspections are considered a nuisance because they often follow employee complaints motivated by concerns unrelated to safety. By contrast, labor leaders tended to view OSHA as an entitlement and one local president even admitted to using a complaint to OSHA as a bargaining chip.

Collective Bargaining Law

Collective bargaining law is a product of the twentieth century and it is based on the premise that labor is different from other inputs. Section 6 of the Clayton Act of 1914 put it this way:

> ...that the labor of a human being is not a commodity or article of commerce. Nothing in the anti-trust laws shall be construed to forbid the existence and operation of labor, agricultural, or horticultural organizations, instituted for the purposes of mutual help, and not having capital stock or restrain individual members of such organizations from lawfully carrying out the legitimate objects thereof, be held or construed to be illegal combinations or conspiracies in restraint of trade, under the anti-trust laws (Cox, 1977, p. 3).

Without this concept, a labor agreement need not be administered any differently than any other commercial contract.

The Clayton Act failed to establish the "uniqueness of labor" doctrine as a basis for federal policy as a result of subsequent Supreme Court decisions (Holley, 1980, p. 81). An important

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precedent, nevertheless, developed out of strife in the railroad industry. The federal government gained experience in successive legislative attempts to defuse this strife and from arbitrating labor-management disputes. In 1926, this experience was captured in the enactment of a national Railroad Labor Act. This act declared that good labor-management relations are a matter of public concern and it established guidelines to facilitate collective bargaining in the industry.[31]

The uniqueness doctrine became national policy with the passage of the Norris--La Guardia Act in 1932. This act places the burden of proof on the firm to demonstrate that employee collective action was contrary to the public interest and it gave legal sanction to non-violent participation in labor organizations and disputes (Cox, 1977, pp. 6-7). The act further restricted the use of judicial injunctions to situations in which violence is threatened and it made "yellow dog"[32] contracts unenforceable in federal courts (Cox, 1977, pp. 5-8). The act did not, however, create an oversight agency.

The National Industrial Recovery Act (NIRA) of 1933 established industry standards for wages, hours, prices, and other "fair standards" of competition. Under its authority, the National Labor Relations Board (NLRB) was created to oversee the implementation of the act. NIRA standards were challenged in the courts, however, and the act was declared unconstitutional by the Supreme Court in 1935 (Miller, 1975, pp. 156-64).

Since the Court had not specifically objected to the NLRB in its ruling, the National Labor Relations Act (the Wagner Act) was passed in 1935 to reinstitute the NLRB. The act further outlined provisions

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for the conduct of union elections and declared certain employer practices to be unfair. The intentions of the authors of this act were expressed in these words:

> The inequality of bargaining power between employees who do not possess full freedom of association or actual liberty of contract, and employers who are organized in the corporate or other forms of ownership association substantially burdens and affects the flow of commerce, and tends to aggravate recurrent business depressions, by depressing wage rates and the purchasing power of wage earners in industry and by preventing the stabilization of competitive wage rates and working conditions within and between industries (Cox, 1977, p. 24).

Since the NIRA had been struck down by the courts, the packing industry ignored the Wagner Act until it was tested in the courts in 1937 (Brody, 1964, pp. 169-80).

The Wagner Act was amended by the Taft-Hartley Act in 1947 and by the Landrum-Griffin Act in 1959. The Taft-Hartley Act provided a list of unfair employee labor practices, it established the Federal Mediation and Counciliation Service, and it gave the President the power to intervene in labor disputes which imperil the national safety or health. The Landrum-Griffin Act was designed to ensure that labor unions uphold certain tenets of democratic process and financial responsibility (Cox, 1977, pp. 47-88).

Labor Unions in Beef Packing

The two most significant packinghouse unions historically have been the Brotherhood of Amalgamated Meat Cutters and Butcher Workmen of North America (Meat Cutters) and the United Packinghouse Workers of America (UPWA). The Meat Cutters were chartered as an international in 1896 by the American Federation of Labor (AFL) and given this jurisdiction:

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> ...the jurisdiction of the Amalgamated Meat Cutters and Butcher Workmen of North America should include every wage earner from the man who takes the bullock at the house until it goes into the hands of the consumer (Harris, 1956, pp. 10-11).

The mandate given the Meat Cutters, accordingly, spanned the slaughtering, processing, and distribution industries, as they are known today.

The Meat Cutters Union has been called a "merging union" (Brody, 1964). The United Food and Commercial Workers (UFCW) Union, which is the dominant union in packing today, was formed following the merger of a number of independent unions with the Meat Cutters through the years. The merger process began in 1940 with the absorption of the Sheep Shearers' International Union (AFL). It was followed by the absorption of the United Leather Workers' International Union in 1951, the International Fur and Leather Workers' Union in 1954, the Stockyard Workers' Association of America in 1955 (Brody, 1964, pp. 221-27), and the UPWA in 1967. The UFCW received its current name following a merger in 1979 with the Retail Clerks International Association.

The Meat Cutter's chartering before the enactment of the Wagner Act led it to assume a craft orientation in organizing and in administration. At the turn of the century, the union organized virtually all of the nation's packinghouse workers--most of whom worked in the packinghouse district adjacent to Chicago's Union Stockyards--[33] and the union called nationwide strikes in 1904 and 1921. Both strikes failed and the union lost most of its packinghouse members following these strikes as firms fired and blacklisted union activists. As a result, the Meat Cutters abandoned the idea of industry-wide organizing and concentrated more on skilled workers both in packing and

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retailing who were harder to replace, hence easier to organize. This is the essence of a craft organizing approach.

By contrast, the UPWA emphasized an industrial approach to organizing. The UPWA was formed as an organizing committee in 1937 and it received its charter as an international union in 1943 from the Congress of Industrial Organization (CIO). The CIO itself was formed in 1935 by dissident members of the AFL, led by John L. Lewis of the United Mine Workers, who believed that the rise of mass production industries and the passage of the Wagner Act called for a new approach to union organizing. That approach, industrial unionism, emphasized organizing every employee in a plant into one local rather than splitting up departments (i.e crafts) in the plant into separate locals as the Meat Cutters had previously done. The UPWA limited its jurisdiction to the packing industry in its early years and it was, in its youthfulness, known as a militant union. Although the Meat Cutters and the UPWA were natural allies and worked together in negotiating master agreements, it was not until after the reunification of the CIO with the AFL in 1955 that it became feasible for them to merge.

The merger of these internationals into the UFCW has reduced staffing costs and increased the efficiency of the union in lobbying efforts in Washington, D.C.[34] It has not, however, been effective in eliminating rivalry among constituent locals. The attitude of locals towards issues like technological, social, and economic adjustment varies considerably and it causes friction among them. Since only a minority of their membership is affected by any particular change, locals organized along an industrial basis are, for example, more amenable to change than their associates organized along a

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Two unions have emerged in recent years to rival the UFCW in the meat packing industry. They are the Industrial, Technical and Professional Employees (ITPE) Union, a division of the National Maritime Union, and the Southern Conference of Teamsters and its Affiliated Teamsters, Local 577. The IPTE was organized as an independent union--the Art Morgan Union--in 1955 and it merged with the National Maritime Union in 1975 with the bankruptcy of the American Beef Company. The involvement of the Teamsters Union in the meat packing industry dates back at least to 1954 when an agreement was signed with the Meat Cutters which called for joint organizing campaigns with a division of new members along agreed jurisdictional lines. The Meat Cutters terminated this agreement in 1958 when the Teamsters were expelled from the AFL-CIO (Brody, 1964, pp. 245-46).

The IPTE and the Teamsters[35] have each organized a handful of plants in the packing industry. The remainder and the majority of plants covered by collective bargaining agreements are affiliated with the UFCW. In 1979, roughly 80 percent (of 117,500) of all production workers in meat packing were covered by a collective bargaining agreement (USDL, BLS, 1980(b), p. 2). Comparable figures for the beef packing industry are unavailable. Membership trends for the major unions in the packing industry are given in Table 2.9. Note that not all members of these unions are involved in meat packing and many members in the meat packing industry are not butchers or meat cutters.

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Table 2.9. Trends in the Membership of Selected Unions that Represent Meat Cutters, 1897-79

	United Food and Commercial Workers Union				Teamsters 1/
	UPWA	Meat Cutters	Retail Clerks	Total	
	Thousands				
1897	---	1.1	2.7	3.8	---
1904	---	34.4	50.0	84.4	84.0
1912	---	4.0	15.0	19.0	41.5
1920	---	65.3	20.8	86.1	110.8
1924	---	11.5	10.0	21.5	75.0
1930	---	12.5	10.0	22.0	98.8
1935	---	19.8	12.0	31.8	161.9
1939	39.4	62.9	51.0	153.3	441.6
1945	118.4	105.7	96.8	320.9	644.5
1955	135.3	285.0	273.4	693.7	1,291.1
1965	71.0	2/330.0	410.0	811.0	1,506.7
1968	---	3/500.0	552.0	1,052.0	NA
1975	---	451.0	602.0	1,053.0	1,973.1
1978	---	500.0	735.5	1,235.5	NA
1979	---	---	---	4/1,230.0	NA

1/ Chartered in 1899.

2/ Of these members, 165,000 were in retailing and 90,000 were in meat packing in 1963.

3/ The merger that year involved 135,000 members of the UPWA and 365,000 members of the Meat Cutters.

4/ The merger that year involved 730,000 Retail Clerks and 500,000 Meat Cutters.

Sources:
1. Gary M. Fink, Editor, Labor Unions, (Westport, CT: Greenwood Press, 1977).
2. USDL, BLS, Collective Bargaining in the Meat Products Industry, Report 569, (Washington, D.C.: Government Printing Office, July 1979).
3. Business Week, "The Big New Retailing Union Eyes the Services," March 5, 1979a, pp. 73-74.

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The Evolution of the Master Agreements

An industry-wide master agreement is an agreement to pattern all labor contracts in an industry after the first agreement reached in the cycle of negotiations. This arrangement eliminates competition based on wage cuts and it concentrates bargaining costs in the firm that sets the pattern. Other effects historically have been to reduce discriminatory hiring practices by reducing labor turnover and the incidences of striking and strike-breaking, to maintain a stable industry structure by eliminating the volatility of labor costs--the packers' largest controllable cost, to promote cooperation among competing unions, and to maintain uninterrupted production. This section reviews the evolution of master agreements in the meat packing industry and the changes which they have brought about through time.

In the early years of this century labor turnover was a major problem for the meat packing industry. High injury rates (Carver, 1928, p. 161), seasonal and cyclical variations in employment (Carver, 1928, pp. 86-88), racial tensions (Fogel, 1971, pp. 338-53), and a difficult work-pace (Harris, 1956, p. 7) combined to make it hard for meat packers to attract and to hold dependable workers. Carver (1928, pp. 86-88) cited these alternatives to cope with high labor turnover:

1. Reductions in seasonal layoffs,
2. Work week guarantees, and
3. Miscellaneous benefits including employee representation plans, improved health and safety standards, mutual benefit associations, and profit sharing arrangements.

An outgrowth of this process of groping for solutions was the Swift Company's establishment of the first weekly work guarantee in 1912

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(Brody, 1964, p. 61) and the Hormel Company's establishment of an annual work guarantee in 1938 (Chernick, 1945). These practices were voluntarily adopted; others were not.[36]

Following limited improvements in packinghouse working conditions brought about by the Meat Inspection Act of 1907, the federal government's first attempt to intervene directly in packinghouse labor disputes came in WWI. The effect of the U.S. entry into WWI was to strengthen the demand for U.S. meat products and to create a labor-deficit economy. In order to prevent production disruptions resulting from labor disputes, a Presidential Mediation Commission was established to arbitrate unsolved labor complaints arising in the meat packing industry. Commission rulings covered provisions, including:

1. Non-discrimination against union members;
2. Seniority in promotions;
3. Improved working conditions and provisions for lunchrooms, washrooms, and dressing rooms;
4. Establishment of a formal grievance procedure;
5. An 8 hour work-day with overtime pay after 9 hours;
6. Double-time pay for Sunday and holiday work;
7. A 40 hour work guarantee for all plants; and
8. Wage increases.[37]

Defacto labor-management bargaining took place via government mediation, but the packing companies refused to recognize the Meat Cutters during the war years. This arrangement came to an end in 1921, however, when the companies lowered wages and established company unions to displace the Meat Cutters from their plants. An unsuccessful strike ensued and, following it, the company plans went forward (Brody, 1964, pp. 38-46; Carver, 1928, pp. 49-50). In spite of the many policy reversals, however, working conditions in the plants had improved over pre-war conditions.

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Similar circumstances arose in WWII and President Roosevelt acted with Executive Order 9017 to establish the War Labor Board (Holley, 1980, p. 270) which was given broad powers to arbitrate labor-management disputes. The two major outcomes of the war period were the establishment of continuing collective bargaining relationships between the major meat packers and the two packinghouse unions and the initiation of industry-wide, master labor agreements. The first agreement was between the Armour Company and the UPWA, signed in September 1941 (Schultz, 1966, p. 4).

The companies resisted collective bargaining before and after the war. At the heart of this resistance was the feeling that company concessions only brought new demands and that union officials, even with a signed agreement, could not control rank and file militancy. The UPWA compounded this problem as it capitalized on this militancy in its organizing drives and in its bargaining tactics.[38] At the heart of this militancy was the feeling among packinghouse workers that no wage or contract concession was compensation enough for the hardships of the job they had to do. An important strike ensued in 1948 as a number of companies attempted to roll-back gains made by the UPWA during the war. The UPWA's treasury was exhausted and it was forced to go through more than 20 major elections in the year following the strike. Protected by provisions of the Wagner Act, however, the UPWA won all of those elections. Contrary to the experience of the unions following WWI, "a lost strike did not mean a lost union" (Brody, 1964, p. 236). The master agreements survived with the unions.

The experience gained in the 1948 strike also contributed to an increased awareness of the interdependence of the Meat Cutters

and the UPWA. After the 1948 strike, the Meat Cutters attempted unsuccessfully to organize many UPWA plants in the representation elections that followed. The failure of the Meat Cutters to succeed in this effort and the experience of cooperating with the UPWA to work out the master agreements during the war provided motivation to cooperate in later years. The unions signed a treaty in 1953 (Brody, 1964, p. 239) and they merged into a single union in 1967.

Meat packers also benefited from the master agreements. From the establishment of the Consent Decree of 1920 (McCoy, 1979, pp. 172-74) until the adoption of on-rail slaughtering technologies, the market structure and technology of the beef packing industry exhibited little change. Since beef demand rose with the rapid increases in population and disposable income after WWII, the master agreements provided uninterrupted production to the industry and insured the market domination of the Big Four packers. It is therefore reasonable to conclude that labor-management cooperation and industrial tranquility characterized the early postwar period because business was good.[39]

This tranquility lasted until the introduction of on-rail slaughtering technologies in the beef packing industry in the late 1950s. The introduction of new technology was spear-headed by independent beef packers who built new plants closer to commercial cattle feedlots on the high plains and who resisted union organizing drives and, once organized, refused to follow the master agreements. By refusing to honor the master agreements in beef packing, these independents maintained a cost advantage over the older companies. When they later integrated into fresh beef processing, they extended this cost advantage in competing with independent beef processors and retail

processed beef.

The introduction of on-rail slaughtering prompted the Big Four packers to close many of their antiquated, multi-story plants in the early 1960s and to build new, single-story beef slaughtering plants to compete with the independents on the high plains. In doing so they extended the master agreements to cover these new plants and accepted provisions covering employee transfer rights, early retirement, and severance pay in order to insure continued beef production during this period of strong demand.[40] They additionally cooperated in the establishment and financing of a tripartite Automation Fund Committee to implement these programs and to coordinate federal manpower training programs for the displaced workers (Schultz, 1966).

The growth of the independents went unimpeded during the 1960s, however, because of rising beef demand, improvements in labor productivity, and their lower wage and benefit costs. The existance of these independents split the industry into two groups: the firms with the master agreement and the firms without it. The first group became known as the "Old Line" packers and the second group was called the "New Breed" packers. A Fact Finding Panel (Abernathy, 1973, p. 15) divided firms into these two groups:

Old Line Packers	New Breed Packers
Wilson & Company	Iowa Beef Processors
Swift & Company	American Beef Packers
John Morrell & Company	Illini Beef Packers
Cudahy Company	Kansas Beef Industries
Armour and Company	Missouri Beef Processors
Hygrade Food Products Corporation	National Beef Packers
The Rath Packing Company	Needham Packing Company
Dubuque Packing Company	Packerland
Hormel	Spencer Pack

The competition from the New Breed packers and the high cost of the master agreements weakened the Old Line packers in the 1960s and several were acquired by conglomerates before the end of the decade, as described above. In the 1960s and 1970s one firm after another resolved to give up its fresh beef operations and to specialize in pork slaughtering and processing or sausage-making. Many of the New Breed packers likewise had trouble meeting the competition and were likewise acquired by other firms, primarily other beef packers or food conglomerates. Most of their plants continued to slaughter and process fresh beef products.

The late 1970s were a difficult time for the Old Line packers' beef operations. Swift, Cudahy, Morrell, and Dubuque continued to operate a number of beef packing plants, but the other Old Line packers either left the business or continued to maintain only a token presence in beef packing. Three problems emerged: the Old Line packer plants were considerably smaller than the new generation of integrated boxed beef plants being opened by IBP, beef consumption leveled off, and their beef operations continued to operate under master agreement provisions better suited for the less competitive pork packing and sausage-making industries.[41] These problems were aggrivated by rising cattle, fuel, packaging, interest, and distribution costs,[42] by the movement of cattle feeding further west away from many of their plants, and by general economic uncertainty. By 1980, it was clear that the remaining master agreements in the beef packing industry would have to be amended or they would be eliminated.

The events which immediately preceded the elimination of the last of the master agreements in the beef packing industry in 1982

were summarized by Lewie Anderson, Director of UFCW's Packinghouse Division (1982b, pp. 1-2):

> In the summer and winter of 1980, workers at Bluebird in Philadelphia and Kahns in Cincinnati accepted major mid-term contract concessions under the threat of a plant closing. Both of these plants had closely followed the National Wage Pattern in pork, and both were part of multi-plant national packers. The concessions at these plants sparked a pattern of anti-union, employer-instigated actions throughout the industry.
>
> These bargaining events coincided with deterministic economic factors such as creeping monopoly concentration, the existance of productive overcapacity, the declining efficiency of aging plants, and continued disinvestment by conglomerate-owned national packers. A rash of plant closings caused by these economic factors acted to worsen labor relations in the industry. Employers conveniently blamed labor rates and master agreements for these plant shutdowns, even though economic factors dictated otherwise.
>
> Other related national circumstances, such as the Chrysler bailout and wage concessions, and the economic insecurity produced by two recessions within two years greatly influenced the labor relations strategy of the national packers. To confuse and misdirect the workers, the employers created the myth that meat packing, like auto and steel, was a distressed industry. The packers promoted this depressed-industry story despite the fact that their industry was growing and that record profits were earned in both 1979 and 1980. The Bluebird and Kahns concessions and these related national issues set the tone for harder negotiations and demands for mid-term concessions in 1980 and 1981.

Anderson's report goes on to cite 34 incidences of beef and pork plants requesting mid-term concessions between 1980 and 1982 with wage concessions requests ranging from $2.50 to $3.00 per hour. Of these requests for concessions, eight were granted by the union (UFCW, Packinghouse Division, 1982b, pp. 3-6).

Preceded by requests for mid-term contract concessions, the opening of the 1982 contract negotiations were marked by plant sales, closings, and shut-downs. In addition, beef operations of the Swift,

Cudahy, and Dubuk Pakcing companies were spun-off for sale to newly-formed, independent firms during the previous contracting period which initiated new relationships with the existing workforce or hired new ones.[43] The magnitude of changes made by such Old Line packers was such that several New Breed packers found themselves paying wages above the new industry average. IBP, for example, responded to these changes by requesting contract concessions and inclusion of a most-favored-nation clause in its contract which would permit the company to match automatically any concessions granted by the union to its competitors (Shellenbarger, 1982). An off-shoot of these negotiations was the net decline in packinghouse employment that accompanied the closing of plants. By the end of the year, in Iowa and Nebraska alone the number of packinghouse workers declined from 33,918 to 28,563 (15 percent) (Flanery, 1983, p. 1).

Following the 1982 contract negotiations, industrial relations have grown more uncertain in the beef packing industry. A number of plants have outstanding labor disputes in the courts. Some plants have re-opened with a new, younger, lower-paid workforce. Other plants have been permanently closed. Regional patterns of wages and benefits appear to prevail in some areas, but more frequently they vary by plant. An important side-effect has been the forceful spilling over of the master agreement conflict into the pork packing industry (Daubenmier, 1982; Business Week, 1983b).

In retrospect, the master agreements in the beef packing industry seem to have failed to maintain peace in the industry not only because of the schism that developed between Old Line and New Breed packer labor costs but also because the labor-related processing costs

in the packing industry were allowed to deviate significantly from those in the wholesale and retail trades. Competition from the New Breed packers forced Old Line packers to reduce their labor costs while wholesale and retail meat cutter wages and benefits continued to rise.[44] Inasmuch as boxed beef made transfer of processing tasks between the packing industry and the wholesale/retail trades technologically feasible, the lower labor costs achieved by packers made it profitable. The wage concessions granted by packinghouse locals in 1982 can be expected to speed up this transfer process through the further processing of retail cuts at the packinghouse[45] and the further use of boxed beef.

Chapter Summary

Technological change in the beef packing industry has often led to changes in labor organization and market structure. The switch from piece-work incentive wages to an hourly wage with the introduction of on-rail slaughtering machinery provides one example of this relationship. Recognizing this effect of technological change, representatives of the groups adversely affected have sometimes attempted to influence the course and rate of technological change in the beef subsector. Three important examples of this phenomena can be cited:

1. Independent retail butchers were able to frustrate the growth of the beef packing trade in the late nineteenth century by joining with the railroads to prevent rail shipment of carcass beef into East Coast markets;
2. Although centralized processing of meat by retail chains was feasible in the 1930s, the retail unions helped to frustrate its growth until the 1960s; and

3. Frozen and boxed beef introduced by beef packers in the 1950s and 1960s has been adopted slowly following resistance by retailers and retail unions.

As a partial result of labor resistance, a backlog of feasible technologies has periodically accumulated in the beef subsector as suggested by the rapid adoption of on-line processing of beef following the introduction of on-rail slaughtering techniques in the 1950s.

The idea that technological change is an antecedent of changes in labor organization and market structure has also been reflected in public policies. The enactment of anti-trust legislation at the turn of the century and of labor legislation to promote collective bargaining in the 1930s appears to have been a response to the wide dissemination of mass-production technologies and the rise of modern methods of corporate organization and management.

The passage of the Sherman Anti-trust Act in 1890 may have discouraged further concentration of the meat packing industry at the turn of the century, but direct intervention in the industry did not occur until the signing of the Packer Consent Decree of 1920. From that point, the market shares of the Big Four packers declined slowly from the 1920s through the early 1970s. Market decentralization was most pronounced in the post WWII era as improvements in transportation, production technology, plant location, and federal grading standards facilitated the development of national markets and the entry of new firms. These new firms had the largest impact on the market as they led most of the advances of this period. In particular, they led in the building of plants closer to cattle feedlots, the introduction of on-rail cattle slaughter and on-line beef processing, and the drive to eliminate master agreements from the beef packing industry.

The cost advantages provided to the new entrants by these changes allowed them to increase their market share and to assume a leadership role in the industry in the 1970s.

Collective bargaining began in the beef packing trade in the 1890s but it was not a continuing influence on the industry until after the enactment of the Wagner Act of 1935. Membership in the unions which now make up the United Food and Commercial Workers International Union grew thereafter from 31,800 in 1935 to 1,230,000 in 1979 (Table 2.9). This growth was due to organizing drives, union mergers, and the attraction of industry-wide, master labor agreements. These master agreements were a product of the war effort during the Second World War.

Maintenance of a common labor policy among firms appears to have been the key to maintenance of a stable market structure in the beef packing industry because of the labor intensity of cattle slaughtering and beef processing activities. An informal common labor policy existed among beef packers from the turn of the century which was formalized with the signing of the master agreements during WWII. The dual wage structure which existed in the 1960s and 1970s by virtue of the entry of new firms unwilling to cooperate with the master agreements led to the gradual decline of master agreement firms and, in the late 1970s and early 1980s, a rapid increase in the market share of the firms promoting the change in labor policy.

NOTES -- CHAPTER II

[1]Incentive wages appear to be more popular with workers than labor leaders (Welch, 1965, p. 75).

[2]Up until 1886, the packing industry paid day wages. That year, however, cattle butchers struck to get a weekly wage and lost. In retaliation, the packers began to pay an hourly wage (Brody, 1964, p. 5).

[3]This system has been described in detail by Upton Sinclair (1906, pp. 43-44).

[4]Hogs began to be slaughtered on-rail in the 1940s (National Provisioner, 1971). Sheep and calves were slaughtered on-rail much earlier.

[5]Recent ideas on dealing with technological adjustment have included establishment of a displaced workers program in forms like: (1) a trust fund operated like the unemployment compensation system in which workers would finance their own adjustment program, and (2) tax-free retraining accounts which workers would set up in planning for their own future problems (Connell, 1983, p. 1).

[6]Both sides prepare for the battle. In the 1930s as retail chains were threatened with hostile tax legislation sponsored by independents, they allied themselves with the Meat Cutters in order to fend off the attack. In return for their support, the Meat Cutters received chain cooperation in their organizing drives (Brody, 1964, p. 138).

[7]Chicago's Union Stockyards opened Christmas Day, 1865 and

closed in August of 1971.

[8]The Spanish American War's meat scandals focused public attention on the need for improved meat preservation methods and for a public meat inspection service (National Provisioner, 1981, pp. 78-82).

[9]Even with USDA subsidies under the Marshall Plan in 1946, U.S. beef exports never again exceeded 661 million pounds (USDA, ERS, National Economics Division, 1968, p. 99).

[10]As a reaction to the Packer Consent Decree, the industry fought to remove FTC jurisdiction over the packing industry. This action contributed to the decision to place authority in administration of the Packers and Stockyards Act of 1921 under the Secretary of Agriculture.

[11]A similar anti-trust suit was filed again in 1948 although little came of it (Corey, 1950, p. 91). The Packer Consent Decree was rescinded in 1971 (McCoy, 1979, pp. 173-74).

[12]Three effects also contributed. In 1927, the meat industry began a series of ads to promote the nutritional advantages of meat consumption. During the war, U.S. GIs were exposed to a wide variety of processed meat products. After the war, home refrigeration became more widespread.

[13]These independents included: John Morrell, Rath Packing, George A. Hormel, Oscar Mayer, Hygrade Food Products, E.Kahn's Sons, Miller and Hart, Stahl-Meyer, Adolph Godel, and Mickleberry's Foods (Corey, 1950, p. 207).

[14]The seven states are: Iowa, Kansas, Minnesota, Missouri, Nebraska, South Dakota, and Texas (IBP, 1981, p. 3).

[15]The 1939 Census of Manufacturing reported that 14.1 percent of the employees in meat packing that year were female.

[16]One study concluded that much of the measured slowdown in productivity growth in the U.S. economy is explainable in terms of changes in these demographic variables: age, sex, education, and immigration. Adjusted for these changes, there has been no "secular decline in technical progress" (Darby, 1984, p. 301).

[17]An oligopoly is defined as any industry with a four-firm concentration of greater than 35 percent (Bain, 1968). Also see Table 4.2.

[18]Since beef packing technology stabilized at the turn of the century and packers knew each others' costs reasonably well, the price leadership provided by National Packing Company, a scaled down version of the planned monopoly, was the primary means of cooperation adopted (Yeager, 1981, pp. 237-38).

[19]Morris was later acquired by Armour in 1923 (Yeager, 1981, p. 241).

[20]"Because of great changes in transportation and distribution patterns, along with central buying by retailers, only about 14 percent of meat was handled by branch houses in 1963, compared with 30 percent in 1939 (NCFM, 1966a, p. 44).

[21]The capacity of the beef packing industry is correlated with its level of production. The level of capacity utilization can accordingly be measured as a percentage of recent production peaks.

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[22]Large firms are often slower to make changes, in part, because more people are involved in the decision process (Olson, 1971, pp. 53-65). Collective bargaining increases the number of people involved. Master contract terms also increased the cost of shutting old plants through severence payments, notification clauses, etc.

[23]These effects have received recent attention as the federal inspectors have been organized into a public employees union.

[24]Since layoff histories are only a partial determinant of employer contributions to unemployment compensation and packing industry layoffs have been above the manufacturing sector average, there is reason to suspect that the packing industry has been a net beneficiary of the program. If this is true, the effect would be to encourage employers to extend the duration of seasonal and cyclical layoffs (Hamermesh, 1977, pp. 40 and 66).

[25]The Hormel Company received a special exemption from work week restrictions by agreeing to guarantee its production workers a minimum of 1,840 hours of work per year and overtime payments for work in excess of 2,080 hours per year (Ronen, 1981, pp. 283-87; Chernick, 1945).

[26]Fast food restaurants have been the largest beneficiaries of this provision (Levitan, 1979, pp. 141-42).

[27]See: (Civil Rights Act, 1964, pp. 255-57) and (Age Discrimination in Employment Act, 1967, pp. 603-604).

[28](Schultz, 1966). Also see: (Young, 1966) and (Stern, 1969, pp. 21-28).

[29]Schultz and Weber recommended that firms be required to give a one year notice of plant closings (Schultz, 1966). Also see: (Bluestone, 1982, pp. 235-45) and (McKenzie, 1982, pp. 101-10).

[30](Smith, 1976, p. 68). Also see Table 3.5.

[31]The companies feared nationalization more than unionization (Balliet, 1981, p. 49).

[32]A yellow dog contract is a provision which makes nonparticipation in a union a prerequisite for employment.

[33]Roughly 60 percent of the industry was located in Chicago. Omaha and Kansas City were also important locations.

[34]This statement is most frequently made with respect to the period after 1979, the year when the Meat Cutters and Retail Clerks united to form the UFCW.

[35]According to one source, the Teamsters and the National Brotherhood of Packinghouse and Industrial Workers (NBPIW) have together organized less than 10 percent of the Meat Products Industry (SIC 201) (USDL, BLS, 1979, p. 1). The NBPIW is a small independent union organized in the early 1920s that represents employees in several Swift Company plants.

[36]Labor turnover rates for recent years are given in Table 4.4.

[37](Harris, 1956). Other changes are chronicled in: (USDL, BLS, undated).

[38]The UPWA was famous for using the slow-down to exact employer concessions during negotiations. These kinds of union practices promoted the passage of the Taft-Hartley Act in 1947.

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[39]The master agreements can also be said to have extended an earlier agreement among the Big Four not to compete on the basis of labor costs (Yeager, 1981, pp. 238-39).

[40]The response of the Meat Cutters was to offer concessions from the master agreements in an attempt to keep plants open and to merge with the UPWA (Juris, 1969).

[41]Armour set the master pattern in 1967; Swift set it in 1970 and 1973; Morrell set it in 1976 and 1979; and Armour set it in 1982.

[42]See Tables 2.7, 3.8, 3.6, and 3.7.

[43]A description of these events is found in: (Business Week, 1982a), (Meat Industry, 1982), and (Business Week, 1983b).

[44]More recently retail labor agreements have been more modest and many restrictive clauses have been eliminated which has reduced the gap.

[45]A new merchandising product--tray-ready beef--provides retail cuts already prepared that need only be repackaged at the retail store.

CHAPTER III

THE PROCEDURES AND PRACTICE OF LABOR RELATIONS IN BEEF PACKING AND RETAILING

Introduction

The last chapter described the history of packinghouse employment and unions, labor law, and collective bargaining. This chapter focuses on the institution of collective bargaining as it affects beef packing and the retail beef trade. The objective of this chapter is to describe the conduct of labor relations and to analyze its performance implications for beef packing and retailing.

The Objectives of Labor and Management in Bargaining

Collective bargaining is a means by which objectives are defined and priorities set with respect to the allocation of labor in the firm. The priorities set down in the labor agreement determine the pace, sequence, intensity, and duration of work activities (Leibenstein, 1978, p. 28), the content of job descriptions, and product quality.[1] In this manner, they are an important determinant of resource productivities (Gold, 1981, p. 89)[2] In this section, the objectives of labor and management expressed in the interviews conducted in this research are reviewed.

In discussing their objectives, managers in beef packing and retailing used these phrases to describe their bargaining position:

"be competitive," "management rights," and "prefer no union." Managers in beef packing stated these ideas more pungently than managers in retailing. More generally, managers have these motives to engage in collective bargaining:

1. To learn more about firm operations from employees and to shorten lines of communication between employees and top management;[3]
2. To serve as a feedback mechanism for resolution of grievances and other labor concerns before they lead to more costly conflict;
3. To facilitate concensus-building within the firm; and
4. To meet legal requirements.

The attitude of managers suggests a preference for labor relations under "administrative" rather than "bargained" transactions (i.e. management by command rather than by negotiation).[4] Economic considerations clearly interested managers but they were not their exclusive interest.

Labor leaders expressed a different set of priorities. The key ideas expressed in the course of this research were: job security, fairness, member interests, and partnership. Local union leaders use different approaches in dealing with management, with the international union, and with change. These approaches reflect their own leadership style and their emphasis on different objectives. They also affect the ability of the local to get along with management. As an illustration, some locals place an emphasis on job security and try to anticipate changes in order to adapt to them. Other locals stress economic issues and resist change in order to maximize salaries and benefits. Eight of the eleven local union leaders interviewed indicated that their top bargaining priority had switched from economic issues to job security and seniority within the past five years.

Collective Bargaining and Its Alternatives

Collective bargaining provides a mechanism whereby labor and management jointly define the objectives and priorities of the firm that pertain to employees. In this sense, collective bargaining is a governance mechanism.

Hugh Clegg (1978, p. 1) describes three alternative labor management governance systems. They are: multilateral (public policy), unilateral (private policy), and bilateral (collective bargaining) governance. Each of these serves as a means whereby priorities are set. Inasmuch as priorities (i.e. values) are determined in the market, each governance mechanism provides information which substitutes for or complements the information contained in market prices (Williamson, 1979, pp. 233-61). Problems with these systems can motivate change in the governance system or institutional change or change in both. Several examples can be cited:

1. Certification or decertification of a union (a change between unilateral and bilateral governance);
2. Establishment of a War Labor Board as during WWII (a change between unilateral/bilateral and multilateral governance); and
3. Transfer of beef processing from a union retail store to a nonunion beef packing plant (institutional and governance change).

In each example, the decision to make administrative or institutional changes is motivated by the relative costs and benefits of each alternative to the extent that costs and benefits are known.

The decision between alternative labor-management governance systems has potentially large distributional consequences for labor. Federal government involvement in the governance of labor-management relations in meat packing during the two world wars led to both

improved working conditions and to higher wages (See Chapter II). Collective bargaining in the meat packing industry has likewise usually led to higher salaries and to more supplemental benefits, particularly in the post WWII period, than are available in nonunion firms. In 1979, for example, union workers earned an average salary 42.7 percent higher than nonunion workers in meat packing (SIC 2011) (Table 3.1). It is therefore not surprising that four out of five production workers in the meat products industry are union members (USDL, 1980, p. 2).

The Procedures of Collective Bargaining

Conflict and Collective Bargaining

Although the role of cooperation in collective bargaining is usually stressed, conflict also plays a role. Conflict assists negotiators in assessing the balance of power in view of changes and in venting pent up frustrations. Selective use of power relations is therefore healthy and it injects a sense of realism into collective bargaining.

In this view of collective bargaining, stable power relations serve as a precondition for stable labor relations. As long as the balance of power is fairly stable, collective bargaining is a process by which existing relationships are refined. When the balance changes, in contrast, collective bargaining becomes a process in which new relationships are defined. A potential for conflict, accordingly, arises whenever one party fails to appreciate the significance of a change in the balance of power and to adjust its bargaining position

Table 3.1. Average Hourly Earnings of Production Workers in the U.S. Meat Packing Industry (SIC 2011) by Region and Selected Characteristics, May 1979 1/

Characteristics:	Regions 4/						
	South East	South West	Great Lakes	Mid-West	Moun-tain	Paci-fic	United States
	Dollars per Hour						
Company type:							
Multiplant 2/	5.16	6.25	8.18	8.09	7.46	7.75	6.97
Single plant	3.91	4.32	6.16	6.52	6.34	8.43	5.92
Community size:							
Metro area	5.23	5.39	7.45	7.98	7.32	8.30	7.16
Non-metro area	4.42	5.81	7.45	7.72	5.78	NA	6.68
Establishment size:							
20-499 workers	4.58	4.89	6.51	6.91	6.74	8.41	6.26
500 plus workers	4.82	6.35	6.28	8.30	7.16	7.60	7.55
Union status:							
Unionized 3/	5.05	6.30	7.64	8.22	7.18	8.10	7.42
Nonunion	4.29	4.09	4.54	6.49	4.85	NA	5.20
Average	4.69	5.52	7.45	7.84	6.88	8.10	6.97

NA = Not available.

1/ Excludes overtime and other bonus pay.
2/ Two or more plants in meat packing or prepared meats or both.
3/ Majority of workers covered by a collective bargaining agreement.
4/ The regions are defined as follows: South East--AL, FL, GA, MS, NC, SC, and TN; South West--AR, LA, NA, OK, and TX; Great Lakes--IL, IN, MI, OH, and WI; Mid West--IA, KS, MN, MO, NE, ND, and SD; Mountain--AR, CO, ID, MA, NM, UT, and WY; Pacific--CA, NV, OR, and WA. States not listed are included under United States.

Source: USDL, Bureau of Labor Statistics, Industry Wages Survey, Meat Products, Bulletin 2082, (Washington, D.C.: Government Printing Office, December 1980), Table 1.

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appropriately. When this happens, the cost relative to the benefit of conflict falls and the probability of conflict rises. The probability of conflict could, however, remain quite low for three reasons. First, the cost of conflict could be high. Second, the benefit of conflict could be low. Finally, negotiators could assess changes in the balance of power accurately and articulate assessments of them skillfully.

Three conflict situations arise with some regularity in collective bargaining: (1) union certification and decertification, (2) contract renewal, and (3) the processing of grievances. The procedures for dealing with these situations will be discussed in turn below.

Union Certification and Decertification

The Wagner Act places responsibility for union certification and decertification with the NLRB. By law, a majority of the proposed bargaining unit must elect to be represented by the union seeking certification. This can be done in two ways:

1. The union and management can agree to honor the results of a petition drive wherein a majority of the bargaining unit sign authorization cards pledging support for the proposed union representative; or
2. The union or a group of interested employees can petition the NLRB to sponsor an election.

Since it is generally easier for a union to win a petition drive than an election, management usually opts to let the NLRB conduct an election.[5] Once a petition for an election has been filed, the NLRB conducts an investigation to determine the following:

1. Whether the Board has jurisdiction to conduct an election;
2. Whether there is a sufficient showing of interest to justify an election;

3. Whether a question of representation exists;
4. Whether the election is sought in an appropriate unit of employees;
5. Whether the representative named in the petition is qualified; and
6. Whether there are any barriers to an election in the form of existing contracts or prior elections (NLRB, 1978, pp. 11-12).

Since the NLRB's jurisdiction includes most firms engaged in or affected by interstate commerce,[6] most large beef slaughtering, processing, and distribution firms fall within its jurisdiction. The primary question investigated by the NLRB is whether 30 percent of the proposed bargaining unit supports the organizing drive. If so, then an election date is set to occur within 30 days on the job site. If the union receives majority support, then it is certified as the sole bargaining agent for the unit and contract negotiations commence. In either case, NLRB rules forbid the holding of an election for a year and, once a contract has been signed, for three years (NLRB, 1978, p. 10-18). These restrictions are important because they shelter the new relationship from undue interference while problems are resolved. If problems are not adequately resolved, however, future elections are possible.

The NLRB's investigation also determines the size and composition of the bargaining unit. The bargaining unit can be based on a craft or plant jurisdiction and it may or may not include the personnel key to the operation of the firm, such as technicians, white collar workers, and repairmen. Since the numerous classes of workers have differing attitudes towards collective bargaining, the definition of the bargaining unit affects the union's probability of success in an election and its bargaining power in later contract negotiations. For these reasons, labor and management both have an incentive to influence this decision.

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Attempts to certify or decertify a union often incite a labor dispute. These disputes frequently arise following a strike or a change in ownership when the old workforce had a bargaining representative but the new one does not. Under these circumstances, the previous representative typically claims jurisdiction over the new workforce and the company typically rejects this claim.

In a recent example of this kind of dispute, a beef packer assisted a union in organizing the employees of a newly-acquired plant. The previous owner had an agreement with a competing union which also sought to organize employees of the plant but its efforts were actively frustrated by plant managers. As a consequence, the union filed a complaint with the NLRB. In its decision, the NLRB threw out the company's recognition of the favored union and ordered that union to reimburse employees for the dues it had collected. Following an appeal, the U.S. Court of Appeals affirmed the NLRB ruling.[7]

Contract Bargaining

The negotiation process is much more flexible in format and diverse in execution than the recognition process. Once a union has been certified by the NLRB as the sole bargaining agent for the bargaining unit, the key legal obligation of the negotiators of both sides is "to meet at reasonable times and confer in good faith with respect to wages, hours, and other terms and conditions of employment." (Cox, 1977, pp. 33-34). This obligation and the procedures normally employed in the beef packing industry are discussed below. The additional obligation to notify the Federal Mediation and Conciliation Service in the event of a breakdown in negotiations and other third party

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interventions in dispute settlement will also be discussed.

The obligation to bargain in good faith is a difficult legal requirement to define and to police but it is instrumental to the success of collective bargaining. As a result, it is easier to define what it is not than what it is. The NLRB and the Courts have cited four classes of violations: (1) the nature of bargaining issues; (2) specific bargaining actions; (3) totality of conduct; and (4) successor employer bargaining obligation. Only the last class is a source of controversy in the beef packing industry so it alone is discussed below. The other classes are discussed elsewhere (Holley, 1980, pp. 191-96).

"Successor employer bargaining obligations" exist when a new employer acquires a plant and makes few changes in personnel, operations, or products. Under these circumstances, the majority status of the union may be maintained and the employer has an obligation to bargain in good faith. Since a number of beef packing firms have recently been spun-off from parent food conglomerates, successor obligations are an area of renewed controversy.[8]

Just as the obligation to bargain in good faith is difficult to define, it is difficult to provide a neat classification of collective bargaining procedures in the beef packing industry. Some contracts are viewed as pace-setters for a firm, for a geographic region, or for an industry sub-group. Other contracts are patterned after the pace-setting agreements. The high cost of gathering information required for bargaining, of bargaining, and of power relations appears to provide the incentive to concentrate efforts on the pace-setting agreements and to abide by the negotiated outcome (Williamson, 1979). Interviews

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conducted in this study suggest that the contract negotiated at Dakota City, Nebraska between IBP and UFCW has become the chief pace-setting agreement in the beef packing industry. Previously, the first master agreement settled by an Old Line packer with the UFCW became the pace-setting contract for the industry (USDL, BLS, 1970; Cook, 1981). Although master agreements are still negotiated in the pork packing industry, the last of the master agreements in the beef packing industry was terminated in 1982 (Flannery, 1983; Meat Industry, 1982).

As revealed in interviews undertaken in this research, formal negotiation begins when the union serves 60 days notice on the firm that the contract is about to expire. Bargaining committees are formed within the firm and the union and arrangements are set for a series of meetings between the two committees.

The first meeting is generally formal and proposals are exchanged between company and union dignitaries with a minimum of discussion. Some posturing may take place, but bargaining is normally deferred until less formal follow-up sessions.

In the follow-up sessions, negotiation begins. The character of negotiations varies substantially depending on the attitudes, experience, and freedom to compromise enjoyed by bargainers and on the mix of common and conflicting interests. Proposals to compromise may be made in bundles or each item may be considered independently. In either case, small concessions are normally made first as a means of demonstrating good faith and the ability to make progress in bargaining. For this reason, contract provisions dealing with "due process" issues are generally negotiated before economic provisions.

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Negotiating is a learning process. Disagreement over issues of fact--company profitability, labor productivity, the cost of particular contract provisions--often arise because employees, particularly in packing, have limited access to information about broader firm operations and limited contact with managers. Labor and management negotiating teams can, accordingly, be evaluated relative to the extent of their acquaintance with the facts pertinent to the issues being negotiated. This information is useful both in exacting concessions at the bargaining table and in building a concensus among constituents for reasonable proposals.

Considerable variation in the extent of preparation for bargaining exists among firms and among unions. In the interviews conducted by the author, some firms set bargaining goals years in advance of negotiations as part of an overall competitive strategy. These firms kept accurate personnel records; they surveyed the industry to gather detailed information about trends; and they calculated precise estimates of the cost of most contract provisions. No part of the total labor-management relationship went unresearched. They entered negotiations with specific proposals to change the wording and content of contract provisions. Other firms undertook few of these activities.

The preparations made by local unions for collective bargaining also appeared to show wide variance. Some locals were well prepared. These locals surveyed the bargaining unit to learn about membership concerns; they reviewed grievances to uncover contract flaws; they conferred with the national office on legal and economic issues; they established committees to advise the bargaining committee on specific contract provisons, constituent concerns, and specific firms; and

they maintained data processing units to keep accurate records. Given these sources of information, such locals drafted proposals to submit to the membership for discussion and approval. Once ratified, these proposals were then brought to the bargaining table. Other local unions interviewed undertook few of these activities and relied heavily on international union representatives to assist them with their bargaining.

Grievance Procedures

Grievance procedures are an important component of every collective bargaining agreement. There are, however, few legal guidelines for the handling of grievances. The manner of grievance handling is negotiated between the union and management.

A grievance is defined to be a perceived violation of the labor agreement. Although Section 9a of the Taft-Hartley Act stipulates that employees be allowed to present grievances to their employers without the intervention of a union representative, the union and management are typically the chief parties to a grievance with the employee looking on.

A grievance procedure typically has three components:

1. Assigned responsibilities for handling grievances and an explicit appeals procedure which normally ends in appointment of a paid, impartial arbitrator who has final authority;
2. A definition of what is and is not a grievance;
3. A point in the appeals procedure in which grievances must be submitted in writing; and
4. A deadline for resolution of grievances.

Other agreements add or delete a step from this procedure, depending mostly on the size of the firm, and they will have different time limits. Each of the more than 30 agreements reviewed for the beef

slaughtering, processing, and distribution industries called for arbitration in the final step. A sample grievance procedure is given in Appendix A.1. Provisions found in the master agreements and in retail contracts often deviated from this sample procedure. The master agreements typically had grievance procedures longer than the above sample and they often contained one or more of these additional provisions:

1. Separate or abridged procedures for handling specific categories of grievances, such as safety violations, disciplinary actions, and "emergency" issues;
2. Provisions governing the selection of arbitrators and limiting the authority of arbitrators to the issues and contracts at hand; and
3. Provisions that guarantee employees certain rights, such as access to personnel files, job security in the event of garnishments, limits on the use of personnel files, the presence of a union representative during disciplinary action, and prohibition of polygraph tests.

Since the master ageements typically involve older companies, the language of these agreements often differs substantially from more recent agreements even when the intent appears to be the same.

The retail agreements typically had grievance procedures shorter than the sample procedure, but they often contained these additional provisions:

1. An understanding that if an arbitration decision or a no strike--no lockout provision is ignored, then court action or picketing will follow;
2. Guaranteed access of union representatives to the work place during working hours and prohibitions of lengthy, on-the-job grievance discussions;
3. Specific wage claims that can be grieved; and
4. A statement stressing the right of the employer to accept an informal settlement and the obligation of both parties to settle disputes promptly.

These procedures and provisions reflect the fact that many different companies in a market or region will sign the same agreement and that

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they are not all equally cooperative in complying with or in understanding the agreement. There does not seem to be standardized language in retail agreements--some agreements do nothing more than specify that the union and management will submit their grievance disputes to arbitration when they go unresolved after a given period of time. These procedures adopted for workers in meat processing plants operated by the retail chains typically resemble those found in their retail contracts.

The manner in which grievances are approached will usually reflect the nature of the overall labor-management relationship. If both parties approach grievance handling in a cooperative, informed manner and resolve disputes in good faith, then little cost is imposed on either party. If either party takes a legalistic approach or attempts to use the grievance procedure to express other goals, such as retaliation for past disputes or posturing for future negotiations, then the process can become costly in terms of time, resources, and depletion of good will.

As a final note, a grievance should be distinguished from a complaint which involves no violation of the labor agreement. A non-union firm will not have a grievance procedure, but it will often have a similar procedure to handle employee complaints. This procedure is often known as an "open door policy." An open door policy differs from a grievance procedure in the beef packing industry in four respects. First, the employee argues his case without third party assistance. Second, the final step in this procedure is an appeal to the company president rather than to an arbitrator. Third, each step in the procedure is verbal while grievances are typically written down after

the first step. Finally, this procedure places no time constraints on resolution of complaints as is typically done in a grievance procedures.

Power Relations and Conflict Resolution

Power relations define the character of collective bargaining and, when the production process is labor intensive, the character of firm competition.[9] Collective bargaining and firm competition both affect market structure. As a result, the manner in which power relations are expressed interests both policy analysts and participants in the relationship.

Power relations are defined as the exercise of an option by one party designed to exact concessions from the other. The options employed may be limited by law, by custom, and by agreement. As long as the number of options available to either party are recognized and limited, market structure is stable or predictable in its change. If these limitations are altered or reduced, however, market uncertainty rises and market structure is prone to change unpredictably. For this reason, risk-averse parties are motivated to honor limitations and to seek new limitations by agreement so as to reduce uncertainty. Risk-loving parties, in contrast, are motivated to ignore old limitations and to frustrate the formation of new ones. Since collective bargaining can be viewed as a process of negotiating new limits on power options, it is more acceptable to risk-averse than to risk-loving employees and employers.

The number of potential ways in which to express power relations is limited primarily by the imagination of union and management leaders.

As a result, labor legislation can be viewed as an attempt to limit the options open to expression of power relations and, thereby, to channel such expressions into those options least likely to escalate a conflict and most likely to lead to a convergence of opinion. If collective bargaining leads to outcomes unacceptable to labor or management, then peaceful strikes and lockouts are the preferred modes of power expression. The law forbids all forms of violent expression, blacklisting, sabotage, discrimination against labor members, slow-downs, threatening job-loss, sit-down strikes, spying, secondary boycotts or "hot cargo" agreements, goon squads, and featherbedding (NLRB, 1978). Other modes of expression include: the threat of sale of a plant in order to win concessions, wildcat strikes, subcontracting work to nonunion firms, legalistic interpretations of a contract provisions, encouraging a strike in order to hire a new workforce, registering a complaint with a regulatory agency, arranging to displace a more serious representative, prohibitions on the use of certain products or technologies, and use of particular products or technologies designed primarily to reduce employment or employee bargaining power.

Third party interventions in dispute settlement in the beef slaughtering, processing, and distribution industries normally take three forms: mediation, fact-finding, and arbitration. Each requires the mutual consent of the parties in dispute. Formal mediation and fact-finding efforts originate with Sections 203 to 208 of the Taft-Hartley Act and their primary focus is on settlement of contract bargaining disputes. The practice of arbitration grew up out of the tradition of grievance handling in collective bargaining: arbitration

decisions are generally respected in the courts, but no explicit founding legislation can be cited.[10] A mediator provides a form of nonbinding, consultation to both parties to a dispute and generally does whatever is necessary to assist them in reaching an acceptable settlement. A fact-finding panel essentially is an impartial study group that attempts to advise negotiators on questions of fact. An arbitrator adjudicates specific points of conflict between labor and management in view of stated contract provisions and the tradition of their relationship. When arbitration is applied to settlement of bargaining disputes, it is referred to as interest arbitration.[11]

The Practice of Collective Bargaining

This section analyzes the practice of collective bargaining in beef packing and retailing in terms of pattern bargaining conventions, contract provisions, and performance implications.

Pattern Bargaining Practices

The chief convention guiding use of power relations has been the use of pattern bargaining. Pattern bargaining is the tacit agreement that contract provisions adopted in one agreement will be applied to plants in the firm or other firms in the industry. A master agreement is one form of pattern bargaining; a "most favored nation" clause is another; a bargaining council is a third form. Several forms may exist side by side in an industry: some firms or unions could follow one agreement or procedure while other follow another.

Since bargaining is costly even in the absence of a dispute, following the pattern set by another agreement lowers firm costs.[12] The form of pattern bargaining employed, therefore, may reflect the market structure since weaker firms have an incentive to follow patterns set by their stronger rivals. Three scenarios emerge. First, since pattern leadership involves a cost, consistent leadership by one firm implies that the firm has accepted a lower profit margin, maintains a lower cost of production, or possesses superior market power. Second, a rotating leadership position implies an implicit agreement to spread the cost of pattern setting among firms able, but reluctant, to bear the costs. Third, the use of a bargaining council implies that no single firm is able to bear the costs of pattern setting or the risk of an inferior agreement. The first case suggests the existence of a dominant firm oligopoly; the second case suggests that of a cartel arrangement; and the third case suggests the existence of a competitive market structure.

The primary objective of pattern bargaining is to remove labor costs from the competitive field. If firms in the industry share a common technology, standard operating procedures, and competitive strategies, then the effect will be to stablize market structure. This outcome is most acceptable to firms in a competitive industry or a cartel. If firms do not share these commonalities, then the effect will be to reinforce the advantages held by leading firms. This

outcome is probably unstable since only the leading firms have an incentive in the long run to participate.

The Meat Packing Industry

From 1941 to 1982 the dominant form of pattern bargaining was the master agreement (USDL, BLS, undated). A master agreement is an agreement between a firm and a union to negotiate the major terms of individual plant contracts on a company-wide basis. Plant contracts would then be tailored to local conditions. In the packing industry, it was additionally agreed that the first master agreement firm to settle an agreement would set the pattern for the agreements to follow with other firms. Armour set the pattern in 1967; Swift set it in 1970 and 1973; Morrell set it in 1976 and 1979; and Armour set it in 1982 (Meat Industry, 1982, p. 25; USDL, BLS, 1979, p. 2). Since the language and terms of the agreements were similar among firms, the union(s) served to police competition in the industry. Until the 1960s, the master agreements covered the major pork and beef packing firms since the technologies of both industries were similar and the leading firms had plants in both industries.

In the 1960s the concensus in support of the master agreements began to break down. The conversion of plants from bed to on-rail slaughter and the movement into the cattle production areas brought many plant closings which motivated the union(s) to offer concessions from the master agreement (Juris, 1969) in an attempt to keep old plants open. On-rail slaughter was also adopted by numerous independent packers who specialized in beef slaughter and who were ideologically opposed to unions and refused to honor master agreement contract terms once organized. The beef packing industry divided into firms that

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honored the master agreement (Old Line Packers) and those that did not (New Breed Packers). This dichotomy lasted until the elimination of the last of the master agreements in 1982.

The cost advantage enjoyed by the New Breed packers relative to the Old Line Packers attributable to their leaner labor agreements was substantial. Not only were their contracts briefer and written to current technologies and practices, they contained fewer fringe benefits and restrictive provisions. As an illustration, Table 3.2 compares sample New Breed and Old Line Packer contract provisions. The common labor rates paid under these agreements in January 1981 were $7.90 (fabrication) and $8.20 (kill) for the New Breed Packer and $10.20 per hour for the Old Line Packer (UFCW, Packinghouse Division, 1982a, p. 19). Since fringe benefit costs differ by as much as $7.50 per hour[13] and they reinforce the wage differential, the total labor bill (i.e. wages plus benefits) of the Old Line Packers put them at a substantial disadvantage in competing with New Breed packers. These figures pre-date the changes made later in 1982 when these contracts terminated: the New Breed Packer took a strike and the Old Line Packer shut-down its plant (Shellenarger, 1982; Guyon, 1982).

The Retail Beef Trade

Since the structure of the retail beef trade and its problems differ substantially from the beef packing industry, collective bargaining practices also differ.[14] David Brody (1964, p. 37), in writing an historical account of the Meat Cutters' role in the retail trade, described these differences:

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Table 3.2. Comparison of New Breed and Old Line Packer Contract Terms, 1981 1/

Common Provisions	
Recognition	Grievance procedure
Authorized dues deductions	Military service
Purpose of agreement	Military summer encampment
Employment policy	Jury duty
Management rights	Funeral leave
Hours of work	Insurance benefits
Guarantee	Bulletin boards
Vacation	Wage rates
Rest periods	Cost of living
Meals	Wage rate classification
Holiday pay	Safety committee
Equipment furnished by company	Duration of agreement
Overtime work	
Seniority	
Leave of absence	

Distinguishing Provisions	
New Breed Packer (1)	Old Line Packer (2)
Advice of reason for discipline	Automation fund
Company and union responsibilities	Clothes changing time and clothes allowance
Sub-contracting	New plants
Waiver, entire agreement, and separability	Pension
	Preservation of local practices
	Severance, plant and department closing
	Sick leave
	Transfer
	Union security
	Warm-up
	Work by supervisors

1/ The New Breed packer contract is used by numerous other firms as a model agreement. Old Line packer agreements, while this dichotomy was valid, were all patterned after a single master agreement.

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Sources:

1. Agreement, Iowa Beef Processors, Inc. and Amalgamated Meat Cutters and Butcher Workmen of North America, AFL-CIO Local 222, Dakota City, Nebraska, May 1, 1978 through April 31, 1982.

2. Agreement, John Morrell & Company and Local 79, United Food and Commercial Workers International Union, AFL-CIO & CLC, Estherville, Iowa, September 1979 through September 1, 1982.

> ...The retail trade differed from meat packing in important respects. The work involved craft skill, not the production line, control was minutely divided among thousands of shopowners, not confined to a handful of great firms; competition was entirely local in the retail trade, and employment was relatively insensitive to business fluctuation.

In a similar context, Michael Harrington (1962, pp. 10-12) described the chief problems of the Retail Clerks as:

> ...it might be well to sketch out some of the main factors at work in the RCIA...
>
> First, the changes in retailing are of paramount importance in understanding the development of the Clerks Union. In a sense, the RCIA does not have one, but has several jurisdictions...
>
> Second, there are now powerful tendencies working to destroy local variation within the RCIA. The trend is toward larger units, toward dealing with chain stores and in many cases toward uniform contracts in different areas of the country...
>
> Third, as briefly noted before, retailing is still different in structure from other mass production industries. Even with all of the concentration in the distribution process, it is still not possible to speak of any one area which is the life-blood of retailing...
>
> Finally, it is important to note that relations with other unions occupy a most important position in the union's history...The union must be fearful of competition or rivalry, particularly with the Teamsters, the Butcherworkmen, the Retail, Wholesale, and Department Store Union, and the Amalgamated Clothing Workers...

For purposes of this analysis, the most important distinction is that retail meat cutters' locals are organized on a craft basis while packinghouse locals are organized primarily on an industrial union basis.

The retail beef trade differs from the packing industry in two ways which directly affect the nature of pattern bargaining. First, beef is only one of the products cut and sold in meat departments and the meat department is only one of many departments in retail stores. As a result, decisions affecting the distribution of beef

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at retail are often made by managers with other preoccupations (Hamm, 1983b, pp. 7-10). This fact is reflected also in the problems cited by the UFCW, the chief retail union. Among the problems cited were: foreign investment, scanners/computers, boxed beef, store design, union busters, store and plant closings, and health/safety (Lee, 1981, p. 20; UFCW, Research Office, 1980). Issues other than meat clearly affect meat distribution. Second, in the retail trade, the competition is local. Local, rather than national, bargaining patterns therefore typically emerge. Meat cutter contracts are therefore more likely to be modeled after another local agreement, albeit outside the trade,[15] than after a national pattern.

The behavior of retail unions is affected by these two characteristics in several ways. First, strategic alliances have developed among the unions and their constituencies because of the structure of skilled and strategic occupation groups and because of manager rules-of-thumb.[16] Martin Estey (1955, p. 42) writes:

> The strategic alliance...refers to an alliance between a "dependent" union (one dependent on outside assistance for achievement of its goals) and a union that is economically self-sufficient and able, because of strategic position in the same industry or process as the dependent union, to provide it with economic aid....Those with little power, such as the retail clerks, are the dependent unions. They have allied themselves with groups which possess strength by virtue of their command of positions having strategic power--drivers, warehousemen, and retail butchers.

Chief among the retail unions are the UFCW with its Retail Clerk and Meat Cutter locals, the International Brotherhood of Teamsters representing drivers and warehousemen, and the Retail, Wholesale, and Department Store Union which occasionally represents warehousemen in food retailing. Strategic alliances are seen by Estey as

primarily influencing union organizing efforts.

The second way in which retail union behavior is affected comes from the emulation of unskilled workers of the wages of skilled and strategically situated workers. If a chain has a Teamsters agreement, for example, then it typically becomes the ceiling for Meat Cutter and Retail Clerk wage demands. For this reason, the Master Freight Agreement comes the closest to providing a nationally recognized reference point in retail bargaining (Vaughn, 1977, p. 151). If the chain has no Teamsters agreement, then a warehouse or a Meat Cutter contract may play the pattern-setting role for the chain. Since the proportion of the nation's freight moved by the Teamsters is declining through time (Business Week, 1979b), the importance of Teamster contracts in pattern setting has probably also declined[16] and the importance of Meat Cutter contracts in setting local patterns has probably increased correspondingly. Nevertheless, no union dominates the pattern-setting role. It is traded back and forth through time as unions and companies attempt to improve their competitive position (Business Week, 1976).

A third problem caused by strategic alliances is known as "whipsawing." Whipsawing occurs when contract terms reached in one agreement are used as a floor in beginning negotiations with another firm in the same market area. Whipsawing is inflationary and it is a source of unstable wage competition in retail markets. For these reasons, it has received considerable attention in government efforts to stabilize wages and prices. The chief means of dealing with the issue have been efforts to encourage area bargaining rather than company bargaining. This was the approach adopted by the Tripartite

Food and Salary Committee which was set up in 1973 to advise Nixon's Cost of Living Council (Rees, 1975, pp. 251-56). It has also been adopted by the Joint Labor-Management Committee which was formed in March 1974 as a joint effort by the retail industry and retail unions to deal with the problem (Rees, 1975, p. 258; Chain Store Age, 1978a, p. 26). Another means of dealing with the issue is the inclusion of most-favored-nation clauses in individual agreements which allow companies to adjust their policies automatically in concert with concessions granted by the union to their competitors.

Several observations emerge in taking a broad view of this decentralized retail bargaining process. First, individual agreements often cover all the stores in a chain within a particular area (such as a state or geographic region) or all of the stores whose owners participate in an employer bargaining council in a metropolitan area. The city of Chicago, for example, has two employer bargaining councils (i.e. representing chains and independents[18]) which have negotiated master agreements for their memberships. Second, economic provisions from particular agreements frequently influence neighboring agreements in a domino effect across regions of the country which may or may not occur in a consistent fashion. The desirability of the agreement, the state of the economy, and the contract termination dates appear to influence such relationships. Finally, the greatest number of contracts fall due every third year which creates a three-year cycle of negotiations. This year, 1985, begins a new cycle (Wrightman, 1982, p. 1).

Finally, having demonstrated the usefulness of common effort, strategic alliances often prove to be a step towards formal union

merger. In the retail industry, merger talks in the 1970s led to merger of the Retail Clerks and the Meat Cutters in 1979. This merger was designed to pool resources and reduce expenses, to end jurisdictional disputes and whipsawing, to establish a base for organizing in the service industries, and to improve lobbying and research activities.[19]

Specific Bargaining Provisions

Contract provisions are the center of most collective bargaining controversies. Specific provisions often become obsolete or excessively costly when unanticipated changes in the market or technology occur. This section analyzes these provisions: job descriptions; compensation, colas, and fringe benefits; seniority, transfer rights, and job security; and health and safety. Each provision is of current interest in beef packing.

Job Descriptions

Job descriptions affect worker incentives, labor productivity, management flexibility, and job security. The essence of collective bargaining lies in the ability of labor and management to determine job descriptions jointly and to judge where tradeoffs between its different provisions can be made.[20]

The focus of much debate with respect to job descriptions is often on work rules which restrict management flexibility. One author, as an illustration, writes:

> Restrictive practices in the supermarket industry include rules and regulations which prevent management from utilizing the most efficient method, from taking advantage of innovations or new technology, or otherwise from utilizing manpower most effectively. In addition, these rules restrict the ability

> of management to regulate store hours in accordance with the desires and needs of the customers; they force the employment of personnel when not needed; they require the employment of skilled workers to do unskilled work but inhibit the utilization of supervisory skills and prohibit companies from taking advantage of the skills of outside vendors. They obviously add to cost, reduce productivity, and worsen customer relations (Northrup, 1967, p. 71).

An extreme example of a restrictive practice was a 1930 resolution of a Meat Cutters convention which forbade "all members of the Union to handle pre-packaged, self-service, or frozen meats" because it was felt that such products would dispense with the need for retail meat cutters (Harris, 1956, pp. 45-46). More common examples were cited in a study of restrictive labor practices in the food system by Jack McEowen. Among them were:

1. Restricting work to the bargining unit;
2. Limitations on work, output, or supervisory work;
3. Full crew requirements;
4. Specified ratios of apprentices to journeymen workers;
5. Restrictions on use of outside suppliers and subcontractors; and
6. Requiring skilled rates for work in new jobs that do not require such skills (McEowen, 1982, pp. 51-86).

McEowen's examples covered most of the restrictive work rules found in beef packing contracts but the issue extends beyond written contracts. Discussion of restrictions typically arise whenever conflicting objectives are present in negotiations and the expectations of managers go unsatisfied.

An important example of how legitimate objectives may clash has come in the discussions about "carpal tunnel syndrome." This ailment has been described, as follows:

> The carpal tunnel is a wrist structure formed by bones on three sides and a ligament on the fourth. Through this tunnel pass a nerve that helps control finger-grasping and tendons that allow the fist to close. Constant, forceful hand exertion with the wrist bent can cause the tendons and ligament to press and damage the nerve.
>
> Victims, usually women, most often feel aches and numbness at night at the palm and every finger but the smallest. After diagnosing the problem, doctors try to relieve the nerve pressure through splints, anti-inflammatory drugs and surgery on the ligament.
>
> But work place changes are required to ensure against recurrence, say many union officials and occupational-health authorities, because medical remedies often prove short-lived for workers who resume their repetitive jobs...(Lublin, 1983).

Since carpal tunnel is related to the division of labor on a beef processing table, the workpace, the rate of labor turnover, the attitude of employers toward women, and job desirability, it is clearly a difficult issue. It is handled in some firms by rotating jobs, in others by output restrictions,[21] and in a few firms by encouraging labor turnover (Lublin, 1983).[22]

The survey work in this study did not pose a question directed at job descriptions but a number of pertinent issues arose. Among those issues were:

1. Is job performance evaluated on a job or a crew basis?
2. How many steps (or brackets or classes) are available in a crew to permit promotion and limit reassignment?
3. What is the production unit for purpose of job transfer and seniority bumping in the event of a layoff?
4. What kind of employee is ideally suited for a job in view of required strength, dexterity, height, and attitudes toward authority, working conditions, injuries, crew manning needs, and co-workers?
5. Have some job classifications evolved that inadvertantly screen out or disadvantage certain demographic groups? 23

6. Can or will the prospective employee perform the tasks that crew needs might dictate as a result of worker absences, vacancies, mechanical failure, sudden business rushes, technological changes, etc.? (Harwell, 1975, pp. 285-86).

A number of proposals have been put forth to deal with these issues. Among them are: quality circles, job enlargement, the Scanlon Plan, job sharing,[24] worker ownership,[25] and productivity bargaining (Holley, 1980, pp. 4411-15). Each of these proposals is potentially compatible with collective bargaining and each attempts to enhance productivity by increasing individual worker incentives, responsibilities, and/or participation in decisions.

Economic Provisions

Economic provisions are the center of most negotiations. The outcome of these negotiations determine the rewards of employment for workers and, oftentimes, the profitability of a firm. For these reasons, both labor and management invest considerable time and expense in researching economic proposals.

A typical economic proposal in beef packing contains four classes of economic elements: cash payments, conditional (i.e. incentive) cash payments, payments-in-kind, and deferred payments--such as pension benefits (Ehrenberg, 1982, pp. 229-327). Wages are cash payments. Supplemental benefits take the form of the other elements.[26]

Decisions affecting the provision of wages and benefits are complicated by the fact that wages and benefits are substitute goods. The extent of their substitutability is affected by employee and employer preferences, current and expected market values, the rate of time preference, and tax policies. Decisions concerning possible tradeoffs are, in addition, complicated by the fact that the level of

benefit utilization is often unknown (i.e. for pensions, sick leave, insurance, etc.), that benefit costs are often linked to the wage rate (i.e. social security, unemployment and workers' compensation and time-off with pay), and that some benefits have public good characteristics (i.e. clean washrooms, tasty cafeteria menus, and good employee relations). For these reasons, company benefits are often difficult to list and to place a value on in collective bargaining.

Figure 3.1 depicts the many activities that affect an economic proposal. An important determinant of job content, as it enters into a wage proposal in Figure 3.1a under the headings of job descriptions and job evaluation for the beef packing industry, is the division of labor within slaughtering and processing departments in a plant. The division of labor directly affects worker skill requirements, the need for supervision, the ease of quality control, training costs, and labor productivity. Among national packers, there are from 70 to 140 different job titles in a slaughtering department and from 66 to 172 different titles in a processing department.[27] Although a job title may have a number of employees and activities associated with it, the number of titles provides a rough measure of the division of labor in a department.

In labor contracts these titles are normally grouped into from 6 to 20 skill classes (or brackets) which determine the wage premium above the common labor rate associated with possession of specific job skills. As the worker is promoted by seniority to the more skilled jobs, he progresses into another skill class and receives a premium of $.05 an hour for each promotion.[28] As a result, skilled workers

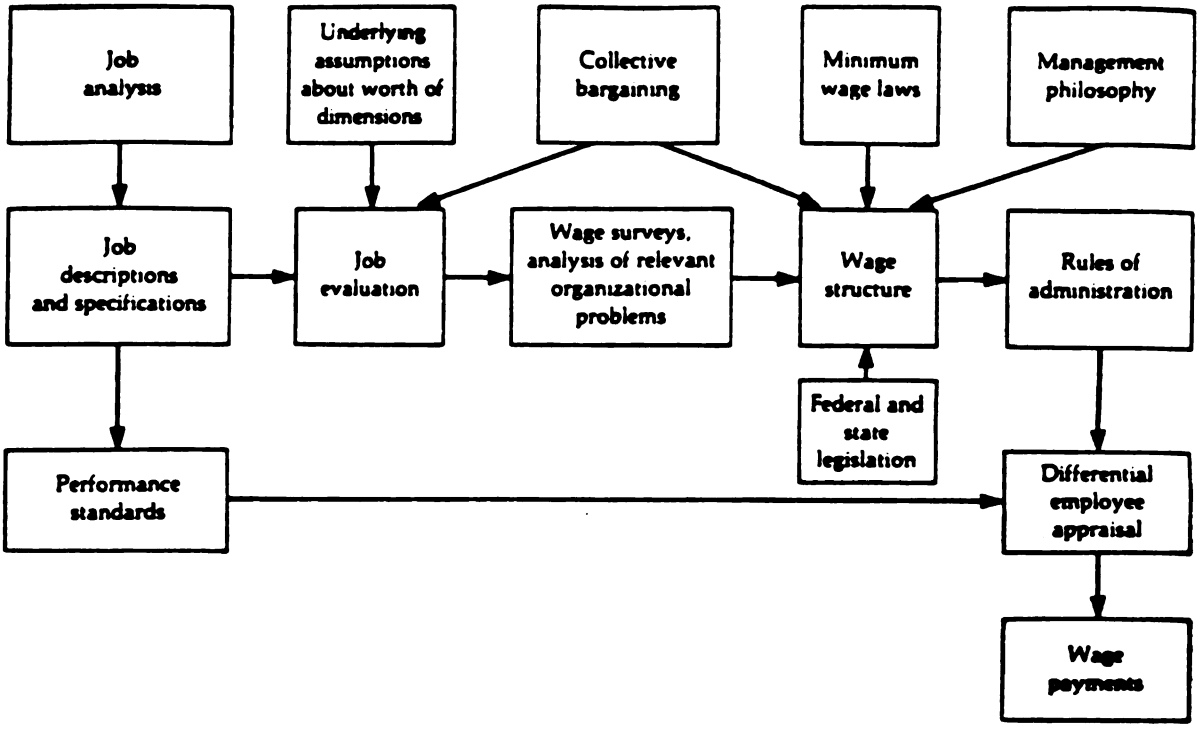

Figure 3.1.a. The Wage Determination Process

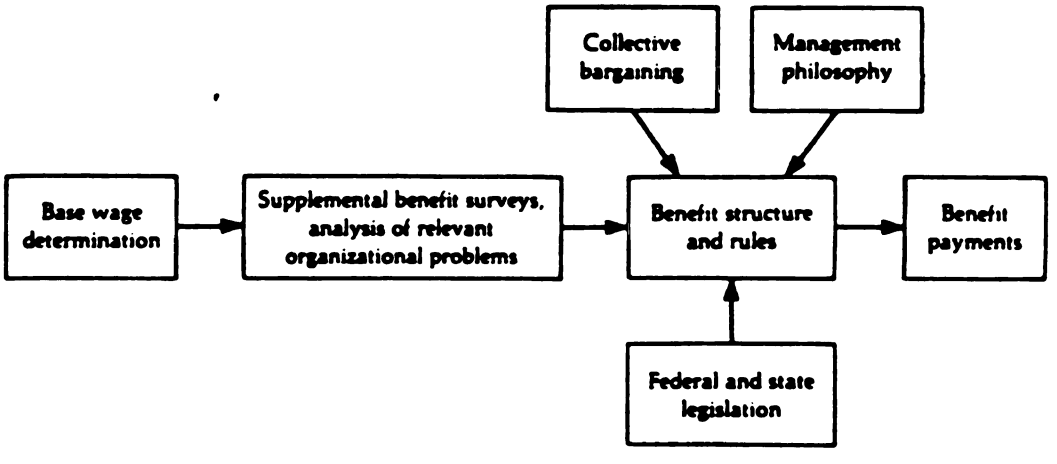

Figure 3.1.b. The Process of Determining Supplemental Benefits

Source: Wendell French, The Personal Management Process, Fifth edition, (Boston: Houghton Mifflin Company, 1982), pp. 420-455.

may earn up to a dollar above the common labor rate for the plant.[29]

Compensation. The vast majority of beef packers pay hourly wages. These wages are, however, often supplemented by group incentive plans designed to improve productivity. One such plan, the "sunshine bonus," offers workers eight hours pay and the opportunity to leave early if they complete their daily production quota in under eight hours. Although they can be occasionally found in smaller plants, formal piecework systems have largely been eliminated from beef packer contracts.

Wage bargaining has become more complex with the elimination of the master agreement contracts from the beef packing industry. Previously, a packer not on the master agreement need only be sure that his wages were equal or less than the master rate. Currently, since wage information is seldom published and no authoritative benchmark wage exists, wage information is gathered on an ad hoc basis and each packer strives to keep his wages less than or equal to the competition.

Cost of Living Adjustment. Cost of Living Allowances (COLAs) were a major issue in the 1982 contract negotiations in the beef packing industry. A COLA is a provision which adjusts wage levels automatically according to a negotiated formula tied to an agreed upon price index.[30] COLAs were introduced into the master agreement in the 1956 contract (USDL, BLS, undated), in part, to facilitate negotiation of multi-year agreements. They received relatively little attention again until the late 1970s when the rising rates of inflation made them a costly provision. At that point, they became troublesome because union leaders had to work hard to retain them in agreements while

the rank and file took them for granted (Holley, 1980, p. 417).

Since the 1982 talks, COLAs have largely been replaced by annual wage increases earmarked as compensation for expected or realized inflation. Annual wage increases are not new but their use has increased because they can take into account the firm's ability to pay as well as increases in the cost of living. They also have the advantage of allowing union leaders to take credit for their acquisition. The primary problem posed by annual wage increases is that they lock-in inflationary expectations for the duration of the agreement. By contrast, COLAs only react to inflation as it occurs.

Supplemental Benefits. Supplemental benefits may take the form of payments-in-kind, incentives to enhance productivity, and deferred compensation. They can be required by law, by agreement, or by custom.

A survey of the contractual benefits offered by midwestern beef packers in 1981 is outlined in Table 3.3. The benefits in the table are divided into two categories: those offered by a simple majority of the packers and those not. These are not mutually exclusive groups. The benefits not offered by the majority of firms were benefits most typically found in the master agreements and the master agreements offer all the benefits shown in the table. Loss of the master agreement accordingly meant both a loss of wages and a loss of benefits.

The cost of supplemental benefits and wages is compared in Tables 3.4 and 3.9 (pages 123 and 137). Several observations can be made. As shown in Table 3.9, meat packer wages and salaries declined and supplemental

Table 3.3. Supplemental Benefits Offered by Beef Packers in Iowa, Kansas, Missouri, Nebraska, South Dakota, and Texas, 30 Firms, 1981 1/

Benefits offered by a Majority of the Firms	Benefits offered by Less than a majority of the Firms
Major medical	Optical
Short-term disability	Clothes changing time
Life insurance	Profit sharing
Dental	Pensions
Rest periods	Long-term disability
Guaranteed hours and weeks	
Holidays	
Funeral and jury-duty leave	
Sick pay	
Vacations	
Night premiums	

1/ Contractual benefits

Source: IBP, Inc., Beef & Pork: Wage and Fringe Benefit Survey, by Ron Miller, Dakota City, Nebraska, December 1981.

benefit costs increased as a percent of total operating costs between 1970 and 1982. The total labor bill--wages, salaries, and benefits--declined from 54.7 to 50.8 percent of operating costs over these years.[31] This decline is likely a response to concessions made in beef packing because, as shown in Table 3.4, the labor bill is a smaller proportion of operating costs in cattle slaughtering than in pork slaughtering. The labor bill for pork packing is higher than for beef packing in these figures because pork packers had more master agreements than beef packers in 1981, because pork packers undertake more processing activities than beef packers, and because cattle carcasses--being larger--require less effort per pound to slaughter and process than hog carcasses.

As shown in Table 3.9, 1981 was a poor year for meat packers. Total sales remained constant from the previous year at $49 million, net earnings declined from $500 million in 1980 to $300 million in 1981, and the labor bill increased from 10.3 to 11.2 percent of sales. Although the labor bill was not high by historical standards--it amounted to 11.4 percent of sales in 1970--it was high relative to the most recent experience of the meat packing industry. Labor costs accordingly became an issue in 1981 even though the deflated wage cost per pound of red meat peaked in 1979 and declined rapidly through 1981 (Table 3.6).[32]

Job Security Provisions

Seniority refers to employee rights linked to the length of service in a plant, division, department, or job assignment. These rights include job rights--preference in promotions, layoff recalls job transfers, work assignments, shift preferences, and overtime selection--and benefit rights--vacations, pensions, severence payments, sick

Table 3.4. Sales, Raw Material Costs, Expenses, and Earnings of the U.S. Meat Packing Industry Broken Down by Species Slaughtered, 1980-81

Item	Cattle Packers 4/		Hog Packers 4/	
	1980	1981	1980	1981
	Percent			
Total Sales	100.0	100.0	100.0	100.0
Cost of Livestock	89.8	88.8	67.7	67.8
Operating Expenses:	8.8	10.1	30.2	31.0
Wages and Salaries	3.8	4.2	11.6	11.2
Employee Benefits	0.9	1.0	4.1	4.0
Pensions	0.1	0.1	0.8	0.8
Social Security	0.3	0.3	0.9	0.9
Insurance 1/	0.2	0.3	1.1	1.2
Leave 2/	0.2	0.2	1.1	1.0
Other	0.0	0.1	0.2	0.1
Interest	0.3	0.4	0.4	0.5
Depreciation	0.4	0.5	0.8	1.0
Rents	0.1	0.1	0.3	0.3
Other 3/	3.3	3.9	13.0	14.0
Gross Earnings	1.4	1.1	2.1	1.2
Income Tax	0.5	0.5	0.9	0.5
Net Earnings	0.9	0.6	1.3	0.7

1/ Includes Hospitalization.
2/ Vacation, holiday, and sick leave.
3/ Taxes not listed, supplies and packaging, etc.
4/ Packers whose specie liveweight slaughter is greater than 75 percent of their slaughter of all species.

Source: AMI, Annual Financial Review of the Meat Packing Industry, (Washington, D.C., 1981, p. 12).

leave, and insurance (Holley, 1980, p. 379). This section concentrates on job rights.

Almost all agreements in the beef packing industry contain seniority provisions. The language and details of these provisions vary considerably, but the idea behind them is the same: first come, first serve. Since in butchering and meat cutting productivity correlates reasonably well with experience--particularly when tied to a test of ability[33]--the seniority system is viewed as reasonable and relatively efficient (Rees, 1975, pp. 141-43).

Since job security and training costs increase with the size of the seniority unit, conflict between labor and management centers on the size of the unit specified. In the beef packing industry, the seniority unit has shrunken from the firm[34] to the plant to the division level. A two-tiered system (Agreement, Local 222, 1978, pp. 13-18) is, however, often used whereby a worker accrues seniority on a division and a department level simultaneously. The worker is, however, encouraged to use department-level-seniority in making voluntary job transfers because skills are more closely related at the department level and training costs are correspondingly lower. Plant or division seniority is reserved then as an option available should the department be closed. The two-tiered system, accordingly, strikes a balance between the interests of workers in job security and the interests of management in lower training costs.

The procedure typically employed to fill a job opening within the plant begins with a notice posted on a department bulletin board describing the job, its duties, and its pay class. Workers interested

in the job then have a specified number of days to bid for it. The bidder with the most seniority is then given the opportunity to learn the job within a specified time period. If the worker can perform the job adequately by the end of this period, it becomes his regular work assignment. He advances to the next skill class, received a promotion of $.05 per hour, and forfeits the right to bid on another job for 6 to 12 months (Agreement, Local 222, 1978).

The strength of the seniority system lies in its ability to promote fair treatment and to provide job security. Job security is a particularly important issue for older workers whose job prospects outside the firm are limited and whose influence inside the firm and the union could prove to be a formidable impediment to change if they fear the change will threaten their job. By promoting job security and allaying such fears, the seniority system facilitates the adoption of new ideas.

Problems arise with the seniority system when a firm hires only young employees in opening a plant. If labor turnover is low, then the labor force ages with the plant. After a few years, reductions-in-force and layoffs cause problems because seniority rules permit older workers to bump young workers. When large reductions in employment are necessary, this bumping sets off a chain reaction in the plant as senior workers bump their juniors who, in turn, bump their juniors. This process can take months as some contracts specify a restriction on the number of transfers per time period. With the large number of workers in training and many more disillusioned by demotion, the plant's productivity could suffer. If many older workers are involved, the average age of the workforce could increase and, with it, the

per unit of output cost of benefit programs tied to seniority. If the firm also has problems in competing because of deferred investment or maintenance projects, then such problems could threaten the survival of the firm.[35]

Health and Safety Provisions

Health and safety provisions have been an active concern in beef packing for many years because beef packing is one of the nation's most hazardous industries. As shown in Table 3.5, 26 percent of the workers in the meat products industry suffered an occupationally related injury or illness in 1980 which was three times the private sector average. The rising cost of medical attention has added to the controversy that surrounds these provisions.

Although packinghouse injury rates are high relative to other industries, the frequency and severity of injuries has clearly declined through the years. The most common injuries cited by managers interviewed by this author were knife cuts, carpal tunnel, falls, scalding, and back strains. Time-loss injuries rates of between 5 and 20 injuries per 200,000 manhours worked were reported.[36] In contrast to the time when Upton Sinclair (1906, pp. 100-102) was writing, amputations and fatalities are uncommon and blood poisoning, tuberculois, and rheumatism are a thing of the past. Alcoholism and drug use on the job, however, continue to be a problem. The improvements which can be cited are attributable to improved labor-management efforts to prevent accidents, technological change, protective labor legislation, strict federal meat inspection, and improvements in medical science and care.

Table 3.5. U.S. Occupational Injury and Illness Rates by Industry and Establishment Size

Year	Agricultural Production (SIC 01-02)	Food Products (SIC 20)	Meat Products Total (SIC 201)	Food Stores (SIC 54)	Eating & Drinking Places (SIC 58)	Private Sector
			Incidence Rates per 100 Full-Time Employees			
1965	---	37.0	23.4	15.5	10.4	---
1970	---	43.1	28.8	16.4	8.9	---
1975	7.9	26.8	18.2	10.2	6.8	9.1
1976	11.5	28.6	19.3	10.8	6.8	9.2
1977	11.9	28.8	19.5	11.4	7.3	9.3
1978	12.8	28.4	19.4	10.7	7.5	9.4
1979	12.4	27.7	19.2	11.7	7.4	9.2
1980	12.5	26.0	18.1	10.5	6.8	8.5
Establishment Size by Number of Employees (1978)						
Total	12.8	28.4	19.4	10.7	7.5	9.4
1-19	8.7	10.0	9.5	2.5	2.1	4.1
20-49	9.8	22.2	16.0	9.0	7.3	9.1
50-99	13.6	31.0	20.4	13.4	8.5	11.8
100-249	15.5	34.5	23.2	15.6	11.2	13.1
250-499	18.2	29.4	21.7	15.1	12.7	12.6
500-999	15.0	28.5	18.2	16.2	19.7	10.8
1-2,499	27.1	27.1	16.1	22.7	15.0	9.0
2,500 plus	---	17.0	12.7	19.0	20.1	7.2

SOURCE: USDL, Bureau of Labor Statistics, Occupational Injuries and Illnesses in the United States by Industry, Bulletin 2078, (Washington, D.C.: Government Printing Office, August 1980), and other years.

Collective bargaining has played an increasing role in health and safety discussions in recent years. Prior to a 1966 ruling by the NLRB that made health and safety a mandatory subject for collective bargaining, health and safety administrations was considered a management perogative (Chown, 1980, p. 2). OSHA reinforced this decision by expressly allowing union representatives to request an inspection (OSHA, 1970, p. 1600). Since both workers and manager can influence the probability of an accident and since union representatives are able to disseminate information about safety practices between firms in the industry, this is probably a desirable result.

The provisions of potential health and safety concern are as numerous as the ways in which industrial accidents occur. The probability of an accident is affected by job experience (Siskind, 1982, pp. 38-40), age and sex (Root, 1980, pp. 3-10; Dillingham, 1981, pp. 1-10), scheduling, technology, stress, overtime, plant capacity utilization, business cycles, and attitudes toward plant safety.[37] It is particularly affected by the attitudes of workers and managers toward plant safety. One of the few amputations cited in the interviews conducted by this author occurred when employees cleaning up in a packinghouse began to hose each other down and one of the employees stepped by accident into a floor auger and lost both legs. The only fatality cited occurred during a break when an employee was dragged accidentally into a bacon slicer while working alone. In both cases, plant regulations were ignored and an accident resulted.

The beef packing agreement provisions relating to health and safety can be classified into provisions concerned with accident prevention and health maintenance, the rights of sick and injured

workers, and the benefits accorded the sick and injured.[38] Although temperature extremes in the plants and exposure to livestock illnesses pose an obvious source of potential illness, accidents are clearly a bigger problem than illness in packinghouse work.

Provisions related to accident prevention and health maintenance include: establishment of a health and safety committee; warm-up and relief periods; company provision of safety equipment and tools; time-off for meals and company cafeterias; company-provided clothes and washing; clean-up and locker areas; and union access to health and safety rules/records/information, to the plant, and to bulletin boards. Provisions related to the rights of sick and injuried workers include: guaranteed job and seniority retention, treatment by a doctor of choice, and a doable job for returning handicappers. Contractual benefits for the sick and injuried include: sick leave; life, health, surgical, hospitalization, and major medical insurance; and disability benefits. Although the mix of provisions found in agreements varies, many of these items are routinely provided by companies with or without an agreement. It is normally the extent of their provision which is affected by collective bargaining.

The motivation for labor-management cooperative efforts to prevent illness and injury is obvious: the cost is enormous. For self-insured companies, the cost of workers compensation alone ranged from $100,000 to $500,000 ($.12 to $.60 per manhour) per plant per year in the plants visited in this study.[39] Other costs include: machine down-time, lost supervisor and employee time, costs of insurance and sick leave, increased wage demands, increased absenteeism and turnover,[40] medical

and disability costs, lowered morale and productivity, and administrative costs.

Performance Implications

This section analyzes the elements of performance that relate to collective bargaining in beef packing. A number of performance elements are discussed, but emphasis is given to labor productivity.

Labor Productivity

Labor productivity is measured by the ratio of output to labor input. As shown in Table 3.6, labor productivity in the meat packing industry (SIC 2011) increased from 62.4 to 171.8 pounds red meat per manhour between 1950 and 1981. Output per manhour in meat packing accordingly increased at an average annual rate of 5.7 percent during this period because red meat production was increasing while the number of manhours worked decreased.

Labor productivity is a good measure of performance in meat packing because meat packing is more labor-intensive and has a higher proportion of production workers than most U.S. manufacturing industries (Carnes, 1984, p. 38). This is not to say, however, that increases in output are solely due to improved employee performance. Comparing the figures in Tables 3.6 and 4.5, it can be observed that the output to capital ratio increased from 18.4 to 29.3 pounds of red meat to the gross value of fixed assets (1972 dollars) between 1965 and 1981. The meat packing industry has accordingly made more efficient use of both labor and capital in recent years.[41]

The productivity figures for meat packing in Table 3.6 understate the increases in productivity in beef packing. In the period since

Table 3.6. Red Meat Output, Output per Manhour, and Wage Cost per Pound of Meat in Meat Packing (SIC 2011), 1950-81.

Year	Production manhours per year	Commercial red meat production	Red meat output per manhour	Mean hourly production wage	Wage cost per pound of red meat	
	Millions	Millions of Pounds	Pounds	Dollars	Cents	1972 cents[1/]
1950	353.9	22,075	62.4	1.46	2.34	4.37
1955	364.9	26,895	73.7	2.05	2.78	4.60
1960	312.9	28,208	90.2	2.64	2.93	4.26
1965	285.9	30,636	107.2	3.09	2.88	3.87
1970	266.3	35,818	134.5	4.04	3.00	3.28
1975	257.1	36,213	140.9	5.71	4.05	3.22
1976	257.0	39,060	152.0	6.26	4.12	3.11
1977	237.2	39,172	165.1	6.85	4.15	2.96
1978	243.3	38,119	156.7	7.18	4.58	3.04
1979	241.3	37,225	154.3	7.82	5.07	3.10
1980	238.8	38,590	161.6	8.31	5.14	2.88
1981	225.1	38,672	171.8	8.95	5.20	2.66

1/ Deflated by use of the implicit GPN price deflator.

Sources:
1. USDC, Bureau of the Census, 1981 Annual Survey of Manufacturers: Statistics for Industry Groups and Industries, M81(AS)-1, (Washington, D.C.: Government Printing Office); and previous issues.
2. USDA, ERS, National Economics Division, Livestock and Meat Statistics, Statistical Bulletin 333, (Washington, D.C.: Government Printing Office, July 1963); and more recent supplements.

1950, the most dramatic technological changes in meat packing have occurred in beef packing. This is in part the case because the major technological advances which occurred in beef packing after 1950--on-rail slaughtering and on-line processing--were pioneered in pork packing before 1950 (National Provisioner, 1981). There has also been less new investment in pork packing because there has not been a regional shift in the location of hog feeding as occurred in cattle feeding. As a consequence, few new pork packing plants have been built in the last decade.

Meat packing productivity figures also understate productivity in beef packing because boxed beef was introduced after 1950. The integration of beef packing forward into beef processing after 1967 has two effects on measured productivity. First, more value is being added to the product. In counting only the pounds of beef produced and dividing it by production manhours, this change in the product produced is lost. Second, beef processing is more labor-intensive than beef slaughtering. Since more than twice as many hours of work are required to process than to slaughter a head of cattle, measured productivity is expected to decline. The observation that productivity has nevertheless increased suggests that productivity for the industry has shown an extraordinary increase.

Two hypotheses can be advanced for the apparent disparity between the performance of pork and beef packers after 1950. First, even if there were no compelling reason to invest in pork plants after 1950, pork packers may simply not have had funds to invest. Pork packers continued to honor the master labor agreements long after the beef packers gave them up. This observation accounts in part for the

higher cost of their labor bill, as shown in Table 3.4. Their higher labor bill may have prevented them from making the investments necessary to raise labor productivity. Second, pork packing has traditionally been closely tied to the prepared meats industry (SIC 2013). Sausage products are branded and they have a higher rate of return then fresh meats. This close association with sausage making may therefore have increased the ability of pork packers to pay higher wages and to accept lower rates of productivity advancement than beef packers. The recent decline in the number of pork packers honoring the master agreement, however, suggests that this hypothesis may be less true today than it was in 1981.

Beef price spread data reinforce the interpretation that the productivity performance of the beef packing industry has been good. The beef price spread for the beef packing industry declined from $.045 per pound in 1977 to $.033 in 1982 (1972 dollars), as shown in Table 3.7. No other beef subsector industry reduced the real cost of its product during this period. On the contrary, even the cattle feedlot industry, which is considered to have a competitive market structure, increased its real price spread by 11.1 percent over this period.

As shown in Table 3.8, increases in beef price spreads have not translated into increased earnings for the meat packing industry relative to the feedlot and supermarket industries. The increases in output per manhour experienced by the industry appear, therefore, to have been passed onto the industry's customers and, perhaps, beef consumers. Since packing industry profits and prices have not increased with industry concentration (Table 2.6) in recent years, these data suggest

Table 3.7. U.S. Choice Beef: Farm Value, Marketing Costs by Function and Retail Price, Constant 1972 Dollars, 1977-82.

Item	1977	1978	1979	1980	1981	1982	Change 1977-82
	----------1972 cents----------						Percent
Farm Value 1/	61.0	73.9	86.2	81.2	70.8	67.8	11.1
Slaughtering	4.5	3.7	4.0	3.8	3.6	3.3	-26.7
Intercity Transport	1.2	1.8	1.9	2.1	1.9	1.8	50.0
Warehousing & Delivery	5.0	7.2	8.2	8.3	7.6	7.3	46.0
Fabrication	4.9	4.9	5.1	5.3	5.3	5.3	8.2
Retailing 2/	29.3	29.5	33.1	32.8	32.8	31.7	8.2
Retail Price	105.9	120.9	138.5	133.1	122.0	117.0	10.5

1/ Includes cattle assembly.
2/ Retail cutting and merchandising.

Sources:
1. USDA, ERS, National Economic Division, Developments in Farm to Retail Price Spreads for Food Products in 1982, by Denis Dunham, Agricultural Economics Report No. 500, (Washington, D.C.: Government Printing Office, May 1983); and previous editions in this series.
2. Council of Economic Advisers, Economic Report of the President, (Washington, D.C.: Government Printing Office, February 1983), Table B-3: Implicit Price Deflators for GNP, 1924-82, p. 166.

Table 3.8. Selected Measures of Net Earnings of U.S. Cattle Feeders, Meat Packers, and Supermarkets, 1970-82.

Year	Cattle Feeders[1/]	Meat Packers	Supermarkets[2/]
	$Hundredweight	------Percent of Net Worth------	
1970	---	10.0	14.4
1971	---	12.3	12.0
1972	-2.43	8.2	8.0
1973	-6.37	10.5	5.5
1974	-7.92	11.1	8.6
1975	1.04	10.6	14.1
1976	-6.84	9.8	11.8
1977	-5.09	7.4	9.5
1978	1.98	8.3	12.2
1979	1.53	13.3	13.3
1980	-4.85	12.2	---
1981	---	9.3	---
1982	---	10.4	---

--- = Not reported or unavailable.

1/ Breakeven price minus the price of choice Omaha steers. Computed from a simple average of quarterly data.
2/ Supermarkets with a sales volume between $100 and $500 million annually.

Sources:
1. USDA, ERS, National Economics Division, Livestock and Meat: Outlook and Situation, LMS-4,(Washington, D.C.: Government Printing Office, May 1983b); and other issues in this series.
2. AMI, Annual Financial Review of the Meat Packing Industry, (Washington, D.C., August 1980).
3. Wendell Earle, et al., Operating Results of Food Chains, (Ithaca, New York: Cornell University), Selected issues.

that the productivity performance of the beef packing industry has been reasonably good in the post WWII period.

Other Measures of Performance

Distribution Effects. The distribution of costs and benefits is an important attribute of industry performance with respect to labor relations. The distribution of costs in the meat packing industry is shown in Table 3.9.

Several observations can be made from the table. The first observation is that employee earnings (wages and salaries) in meat packing have declined relative to other operating expenses between 1970 and 1982. Total labor costs (earnings plus benefits), however, remained relatively stable since 1975 because of the compensating increases in employee benefits. A second observation is that employee supplemental benefit costs have risen because the cost of existing benefits have risen rather than because new benefits have been added. A third observation is that the large decline in employee earnings which occurred in 1981 was offset in part by increasing benefit costs that year and by increasing earnings in 1982. Fourth, the real value of net earnings in meat packing declining from $0.3 billion in 1980 to $0.2 billion in 1981 (1972 dollars). This decline, however, merely brought industry earnings back in line with those which had prevailed before 1979. In 1982, earnings remained at this level. This return on net worth (10.36) exceeded the rate of return for manufacturing (9.08) for the year (AMI, 1983, p. 25). Although this was a normal rate of return for the meat packing industry, 1982 was a recession year for manufacturing as a whole.

Table 3.9. Sales, Raw Material Costs, Expenses, and Earnings of the U.S. Meat Packing Industry, Selected Years 1970-82.

Item:	1970	1975	1976	1977	1978	1979	1980	1981	1982
	Billions of Dollars								
Total sales	24.4	36.7	37.5	37.5	43.6	47.7	49.1	49.4	49.5
	Percent of Total Sales								
Livestock	77.0	79.0	78.7	77.5	78.9	79.5	78.4	76.1	78.8
Operating expenses	20.9	19.1	19.5	21.2	19.7	18.9	20.0	22.7	19.8
Labor bill	11.4	9.7	9.9	10.9	10.2	9.6	10.3	11.2	10.1
	Percent of Operating Expense 4/								
Wages and Salaries	45.3	40.3	39.7	39.8	40.0	39.2	39.5	37.1	38.7
Employee benefits:	9.4	10.7	11.0	11.7	11.8	11.7	12.1	12.4	12.1
Pensions	1.9	2.1	2.2	2.4	2.4	2.5	2.5	2.3	1.7
Social Security	2.1	2.5	2.6	2.6	2.8	2.8	3.0	2.9	3.0
Insurance 1/	1.9	2.5	2.7	3.0	3.1	3.0	3.3	3.7	4.0
Leave 2/	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.9	2.9
Other	0.6	0.6	0.6	0.7	0.6	0.5	0.5	0.5	0.5
Interest	1.8	2.0	1.5	1.4	1.6	1.8	1.7	1.8	1.6
Depreciation	3.6	3.5	3.3	3.4	3.6	3.3	3.2	3.3	3.3
Rents	1.4	1.5	1.5	1.4	1.5	1.2	1.1	1.2	1.3
Other 3/	38.7	42.4	43.0	42.3	41.4	42.8	42.2	44.2	42.9
	Billions of Dollars								
Gross Earnings	0.5	0.7	0.6	0.5	0.6	0.8	0.8	0.6	0.7
Income Tax	0.2	0.3	0.3	0.2	0.2	0.4	0.3	0.3	0.3
Net Earnings	0.2	0.4	0.3	0.3	0.3	0.5	0.5	0.3	0.4
1972 Dollars	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2

1/ Includes hospitalization.
2/ Vacation, holiday, and sick leave.
3/ Taxes not listed, supplies and packaging, etc.
4/ Parts may not sum to 100.0 because of rounding error.

Source: AMI, Annual Financial Review of the Meat Packing Industry, (Washington, D.C., selected issues).

Work Stoppages in the Meat Products Industry. Extensive time lost due to strikes is counter-productive for both labor and management. The number and length of strikes, accordingly, provides an inverse measure of the success of collective bargaining.[42] Table 3.10 summarizes the record of work stoppages for the meat products industry.[43]

Several observations can be drawn from the table and the data used to construct it. The first observation is that important strikes (i.e. involving a loss of 400,000 man-days or more) occurred in 1948 (3,780,000 man-days), in 1959 (994,000 man-days), in 1973 (450,200 man-days), in 1976 (474,500 man-days), and in 1977 (646,200 man-days). The 1948 strikes involved an attempt to defeat the UPWA and the master agreements signed during WWII. The 1959 strikes occurred as many beef packing plants were closed in the switch to on-rail slaughtering technologies. The 1973 and 1976 strikes came during contract negotiations for the master agreements. The 1977 strikes centered around an attempt to bring the New Breed Packers, particularly IBP, up to master agreement wages levels (Wall Street Journal, 1977).

Second, the number of workers involved in work stoppages grew substantially in the 1970s and reached a level roughly double what it had been in the 1960s. The mean number of days idled from 1960 to 1969 was 156,500 man-days and it was 344,900 man-days in the period from 1970 to 1978. The 1970s were accordingly a relatively turbulant period in the history of the meat products industry. By contrast, for all nonagricultural employment in the U.S., the number of man-days idled in the 1970s continued a long-term downward trend falling from 0.37 percent of total working time in 1970 to 0.17 percent in 1978 (USDC, Bureau of the Census, 1982, p. 410). The meat products industry, accordingly, had more work stoppages than other U.S.

Table 3.10. Work Stoppages in the Meat Products Industry (SIC 201), 1927-82 1/.

Years	Stoppages		Man-days Idled	
	Number	Workers Involved 2/	Number	Portion of Total Working Time
	Number	----------Thousands------		Percent
1927-29	9	1.1	11.4	NA
1930-34	69	26.4	337.4	NA
1935-39	125	33.9	450.8	0.18
1940-44	183	32.6	328.5	0.04
1945-49	215	250.8	5,138.1	1.51
1950-54	234	158.0	815.7	0.20
1955-59	170	100.1	1,532.3	0.43
1960-64	169	67.2	684.7	0.18
1965-69	195	48.1	853.2	0.20
1970-74	223	82.9	1,486.7	0.34
1975-79	216	58.7	2,068.8	0.46
1980	38	6.2	312.7	0.34
1981	26	2.7	50.8	0.06
1982	2	4.8	200.8	NA
1983	2	7.0	19.2	NA

1/ Figures for 1927-81 include only stoppages that last a full day or shift or longer and that involve 6 or more workers. Beginning in 1982, figures include only stoppages involving more than 1,000 workers.

2/ Double counting may occur if workers are involved in more than one stoppage.

USDL, Bureau of Labor Statistics, Collective Bargaining in the Meat Products Industry, Report 569, (Washington, D.C.: Government Printing Office, July 1979), and other issues in this series.

industries in the 1970s.

Third, since the number of work stoppages and the number of workers involved in them declined in the meat products industry after WWII, it seems apparent that pattern bargaining has played an increasingly important role in the industry. As was true in 1973 and 1976, the pattern setting firms opened negotiations, contested strikes, and settled negotiations to provide the contract terms which were then more generally adopted by many other firms in the industry. This pattern-setting role provides an incentive to both labor and management to expend more resources on such strikes which may account for the trend towards lengthier strikes which has emerged in the post WWII period (USDL, BLS, 1979, p. 3).

The data in Table 3.10 do not document the breakdown of pattern bargaining and the increased incidence of work stoppages which have occurred in the 1980s because of changes in statistical reporting. For this reason and because there has been rapid technological change in beef packing since 1960, these data are difficult to interpret. It does, however, seem to be true that a new form of pattern bargaining is emerging to replace the master agreements. Labor agreements negotiated with IBP at its Dakota City and Amarillo plants appear to play a leading role in providing contract terms and language to other agreements in the industry. The establishment of these relationships implies that a common labor policy has reemerged in the beef packing industry.

The Effects of Contract Terms on Performance. Since labor agreements vary by plant in the beef packing industry more today than has been true in the recent past, it is difficult to generalize about the

performance implications of individual contract provisions. The most that can authoritatively be said is that the workability and cost of an agreement depends on the attitudes taken by representatives of labor and management. A poorly written document accompanied by a willingness to work out issues that come up on a mutually agreeable basis is probably going to be more workable and cheaper to implement than a tightly worded document accompanied by an uncompromising or confrontational attitude. In this sense, a labor agreement is more like a marriage contract than a future's market contract because labor and management must work together day-in and day-out in a manner not required by a commodity transaction.

Nevertheless, these rules of thumb[44] may be helpful in evaluating the likely performance of various contract provisions:

General

1. The older the contract, the more likely that it is to contain provisions that are outmoded in view of changes in organization, technology and market conditions;

2. Since each plant and organization is unique, contracts patterned after other agreements need to be tailored to local conditions;

Job Descriptions

3. Job performance is most easily measured, managed, and rewarded when jobs are narrowly defined;

4. Inasmuch as a greater volume of work permits a greater division of labor, job descriptions should be narrowed as the volume of work increases. Likewise, as the volume of work declines, job descriptions should be broadened. The greater the variation in the volume of work, therefore, the greater the need for flexible job descriptions;

Economic Provisions

5. The relative value of supplemental benefits to employees rises with wage rates because benefits are not taxed like income;

6. Supplemental benefits which accrue in the future, such as pensions, build employee loyalty and encourage improved performance, ceteris paribus. Their value to employees, however, depends on the rate of time preference;

7. A high wage policy is appropriate when training costs and skill levels are high and when labor turnover is expensive. Since these parameters vary with technology, wage policies can be an important design parameter with respect to plant and equipment. If technology varies significantly within an industry, a common industry wage policy may be inappropriate;

8. Since many supplemental benefits do not vary with the hours worked, per unit total labor costs may decrease as the number of hours worked increases. This relationship exists when average benefit costs decrease enough to swamp increased wage costs due to overtime wage bonuses. As the proportion of benefit costs to wage costs rises, therefore, the incentive to increase the work-week may also increase;

Seniority and Transfer Provisions

9. Since many supplemental benefits, such as paid annual leave, are tied to the length of service, plant labor costs tend to rise with the average age of the work force, particularly when labor productivity increases level off with increased on-the-job experience;

10. Training costs tend to rise with the employee's freedom to switch jobs in the plant;

Health and Safety Provisions

11. The incentive to be careful, to maintain a safe work-place, and to keep medical expenses reasonable is strongest when responsibility for accident-prevention and health care costs are shared between employer and employee; and

12. When informal work-place standards exist in a plant, it is often due to perceived workplace safety hazards. Production equipment designed with safety features, accordingly, tends to increase labor productivity, ceteris paribus.

These kinds of rules of thumb cannot be applied easily to the evaluation of an entire industry. They are useful, however, in examining individual contract provisions and plant conditions.

Labor Mobility Concerns.

General Concerns. Employee resistance is an impediment to adoption of new technology and other innovations in the food system. Since many of the skills acquired by food system employees are learned on the job and are not of great value to other employers, alternative job opportunities often involve a substantial loss of income and status in the community for unemployed and laid off workers. This problem is particularly acute for older employees whose formal education is often not extensive and whose ties to existing technologies and procedures are the strongest. More often than not, resistance to change is a rational response on the part of employees.

The need for new policies to promote labor mobility between jobs in the firm and between firms stem from three sources. First, increases in labor productivity over time have pushed wages high enough that income tax rates encourage employers/employees to take additional compensation in the form of fringe benefits instead of increased wages. The high level of fringe benefits relative to wage compensation in some industries has had two effects: since fringe benefits often pose a fixed cost to employers, employers are increasingly motivated to work existing employees longer hours--in spite of over-time bonuses--rather than hire additional workers; and since many fringe benefits accrue only after a number of years of service (such as pensions and vacations), these benefits tend to discourage employees from switching employers.

Second, the rise in interest rates makes it expensive for employees to move to new locations because they must refinance housing at higher and variable interest rates. This problem is compounded when employees leave areas experiencing a net decline in population and move to areas experiencing a net increase in population. Under these circumstances, the old home is sold in a market with falling prices and the new home is bought in a market with rising prices. Employer locational decisions accordingly have an enormous impact on employee incentives to relocate.

Third, the increasing participation of women in the labor force complicates job transfer decisions because two jobs must be transferred instead of one. As more women work, the availability of quality child care, good schools with supervised after school activities, and public transportation are increasingly important considerations in employee job location decisions.

These elements increase the reluctance of employees to switch jobs and to relocate even when a promotion is offered. If the incentives to resist change are increasing, then resistance to change may also increase. If the adoption of new ideas and technologies is to be promoted, then there is a need for public policies to alleviate these underlying problems in the labor market.

Part-Time Work.[45] Agricultural and food markets are characterized by severe peaks and troughs in the intensity of the work performed. Farm labor is seasonal; consumer shopping patterns vary widely during the week; and meals are eaten primarily at mealtime. As a consequence, food system firms require large numbers of part-time workers. In beef packing and retailing, part-time work rather than part-time workers is the primary concern. Part-time work issues arise

in these contexts: the division of labor, scheduling, union jurisdiction, and the composition of seniority units.

The division of labor is a part-time issue in the sense that economies to size arise as part-time activities in small plants are converted into full-time jobs in large firms. Firms are motivated to reduce the number of part-time activities individual employees perform so as to enhance labor productivity. As long as different activities carry equal pay and status, employees, by contrast, usually prefer to perform a variety of part-time activities on the job so as to increase both their job satisfaction and the number of skills they learn on the job. Since labor productivity is a function of both the division of labor and the degree of employee job satisfaction, productivity is maximized at some point between complete specialization and complete sharing of activities. One processor reported, for example, that labor productivity increased on his production line when he permitted his meat cutters to bone-out complete carcass quarters rather than dividing up tasks because his employees, former retail meat cutters, missed the satisfaction of completing the entire job.

Scheduling is a part-time issue whenever the work to be done cannot be divided up into eight-hour work shifts. Evening work in retail stores is a prime example. If retailers are prohibited under contract from hiring part-time employees, then they must choose between losing evening sales and paying full-time wages for part-time work.

The jurisdication of local unions is a part-time issue whenever enterprises are small and jurisdictions are defined on a craft rather than an enterprise basis. When this happens, large plants have an advantage over small plants because the work which falls into a

particular craft's jurisdiction is often less than a full-time job. This problem arises in small beef packing plants with respect to work by engineers/mechanics, government inspectors and graders, and managers--managers are often forbidden under contract from doing pick-up work. When retail meat cutters and clerks belong to separate unions a similar problem arises both because workers may not cross jurisdictions to work and because meat cutters are increasingly paid to do stock work and clerking as new pre-packaged meat products are introduced into meat departments.

The composition of seniority units is likewise a part-time issue whenever the jurisdiction of local unions is on a craft basis. Whenever the work in one seniority unit is insufficient to justify employing the last full-time worker, the manager is presented with the choice between laying off a worker or paying the worker a full-time wage. The options of shifting this worker part time into another activity or bumping an employee with less seniority in another unit are not available.

Part-time work deserves the attention of policy analysts for several reasons. First, the composition of activities constituting a job changes with changes in technology and firm organization. In order to understand the effect of technological change, it is therefore necessary to understand the changing configuration of activities in jobs. Second, the jurisdiction of local unions is subject to NLRB approval in the certification process. If the NLRB's policies in approving union jurisdictions are leading to inefficiencies in firm organization, then these policies need to be reviewed. Third, the problems of part-time work and part-time workers are not well understood. There is

accordingly a need for research which will clarify issues and articulate policy alternatives.

Chapter Summary

Collective bargaining functions both as a governance mechanism and as a communication channel linking the production worker with top management. Greater efficiency in setting objectives and an increased flow of information within the firm are products of a successful bargaining relationship. Since the success of the bargaining relationship hinges on the attitudes of labor and management, the obligation to bargain in good faith is the key obligation set forth in the Wagner Act. Bargaining in good faith is difficult, however, because it requires the willingness and the ability to deal with firm problems, internal conflicts, and other obstacles objectively so that goals can be set and communication lines between labor and management remain open.

Collective bargaining in one plant, firm, or area is seldom carried out in isolation from other agreements. Due to the high cost of labor negotiations and conflict, agreements reached with leading firms tend to be adapted for use by their weaker rivals. As a consequence, the type of pattern bargaining to emerge often reflects the structure of the product market and to evolve into new types of pattern bargaining as the structure of the product market changes. The decline of the master agreements in beef packing during the 1970s as the market share of leading packers changed provides one example of this relationship.

The declining importance of the master agreement in the beef packing industry in the late 1970s and early 1980s has meant a loss

of both income and benefits for production workers. During this period, it was common for wages to fall by 20 percent or more (from roughly $10 to $8 per hour) and for benefits to decline in value by greater than or equal amounts. The most important benefits lost were pensions, transfer rights, cost of living adjustments, and severence benefits. In many contracts, seniority clauses were rewritten to limit the size of the seniority unit within which employees are permitted to bid for new jobs and to bump co-workers with less seniority in the event of a layoff. The objective of these changes has been to reduce the cost of the labor bill and to promote an increase in production line speeds.

A less tangible byproduct of the decline of the master agreements has been the increase in the antagonism between labor and management. This antagonism has increased as a consequence of labor policies adopted by some new breed packers designed to: (1) eliminate the master agreements; (2) reduce the status and pay of meat cutter jobs; (3) encourage increased line speeds and labor turnover; and (4) discourage union affiliations. The increase in the number of work stoppages since the 1960s [46] has also contributed to a growing antagonism between labor and management in beef packing.

Technological change in the form of plant relocations and the automation of slaughtering and processing lines has substantially altered the context of labor relations in the beef packing industry in the post WWII era. Jobs have been redefined, contracts rewritten, and labor productivity has more than doubled over the past three decades in meat packing and the incidence and severity of on-the-job injuries has declined. Technological and organizational changes in food

retailing and food service have likewise tended to create more part-time jobs and fewer full-time jobs in food distribution.

NOTES -- CHAPTER III

[1]These items may or may not be discussed openly in particular contract talks and they often are not explicitly written down when they have been agreed upon.

[2]General references on the objectives of labor and management are provided by (Welch, 1965, pp. 1-2; Berg 1979, pp. 116-124).

[3]"In large organizations, union voice provides central management with information about local conditions and operations that is likely to differ greatly from that obtained from the organizational hierarchy." (Freeman, 1979, p. 365).

[4]The author sees three types of transactions: bargained, administrated, and status transactions (Schmid, 1978, pp. 10-18).

[5]The use of authorization cards is an area of much abuse in the beef packing industry. Three NLRB decisions have recently been devoted to his area: (176 NLRB 42, June 1969; 231 NLRB 102, August 30, 1977; and 256 NLRB 98, 1981).

[6]A more precise description of the jurisdiction of the NLRB is given in:(NLRB, 1978, pp. 45-49).

[7]Decisions of the National Labor Relations Board, 256 NLRB No. 98, (1981) and U.S. Court of Appeals, 683 F. 2d-305 (1983). Also see (Meat Industry, 1982).

[8]See, for example: Decisions of the NLRB, 231 NLRB No. 102

(1977) and (USDL, BLS, 1979, p. 2).

[9]Labor costs as a portion of total operating costs were 40 to 50 percent in beef slaughtering and 55 to 60 percent in beef processing in the firms surveyed in this study.

[10]Sections 203(d) and 301(a) of the Taft-Hartley Act express a preference for private settlement of disputes and for honoring contract terms, but do not explicitly mention arbitration (Holley, 1980, pp. 269-99).

[11]On May 8, 1974, a contract settlement between IBP and Meat Cutter Local 222 was arbitrated. Wages, a Cola clause, and the contract's duration were in dispute. The settlement called for a three year agreement during which time the wage differential between the firm's contract and the master agreement would be cut in half. Although IBP came close during these years to paying master agreement wages, other New Breed Packers did not follow the firm's leadership and this policy was abandoned (Gill, 1974).

[12]Rosemary Mucklow, executive vice president of the Western States Meat Association, makes the point that pattern-setting firms have the advantage of tailoring the agreement to their particular needs. If this was a major advantage, however, there would be no incentive for other firms to accept the terms of such an agreement (Meat Industry, 1982, pp. 24-25).

[13]Managers interviewed in this study cited supplemental benefit costs ranging from $1.00 to $5.00 per hour under new agreements and up to $8.50 per hour under previous agreements (1982).

[14]The economic context of the retail trade is discussed in detail in Chapter IV.

[15]Meat cutter contracts in Akron, Ohio, for example, are modeled after agreements reached in the rubber industry.

[16]Managers may, for example, view Teamster wages as a ceiling for Meat Cutter contracts and Meat Cutter wages as a ceiling for Retail Clerk contracts. When these kinds of conventions are used repeatedly, an incentive is created for the affected groups to act in harmony with one another which reinforces the convention in future negotiations. This is the basis for Dunlop's (1982) concept of wage contours--see Chapter I.

[17]Deregulation of the trucking industry has tended to make collective bargaining in the industry more decentralized.

[18]Although only about one third of the retail industry (mostly chain stores) is unionized, this third accounts for more than 60 percent of industry sales.

[19](Business Week, 1979a), (U.S. News & World Report, 1979), and (Chain Store Age, 1978a).

[20]In highlighting the traditional view of job descriptions, Wendell French cites six uses:

> ...Preliminary drafts can be used as a basis for productive group discussion...
>
> A second use of job descriptions is in the development of job specifications...

> Third, the job description itself can be useful in work-force planning and recruiting...
>
> Fourth, job descriptions can also be used to orient new employees toward basic responsibilities and duties...
>
> Fifth, job descriptions can be used as basic documents in the development of performance standards and performance-appraisal forms...
>
> Sixth, and finally, job descriptions can be used for job evaluation, a wage and salary administration technique...

This definition is inadequate for use in this study because it is too formal and it implies a unilateral decision process alien to collective bargaining. See: (French, 1982, p. 189).

[21]Related injuries were a big problem around the turn of the century and they, in part, motivated output restrictions of the order of 30 percent in cattle slaughtering after unions were organized (Brody, 1964, pp. 6-7 and 44-45).

[22]Job descriptions come up with respect to the above example because an attitude often expressed in the interviews conducted was that sore wrists are "just part of the job" that butchers and meat cutters do. The fact that women are more likely to be permanently disabled by such things has, as yet, not entered into the informal job description. One solution proposed to reduce the incidence of carpel tunnel is to redesign butcher knives (Salazar, 1983).

[23]Some beef packers pay lower wages in their processing than in their slaughtering divisions. Since women work primarily in processing, a correlation is occasionally alleged (UFCW, Packinghouse, 1973, pp. 5 and 10).

[24]These proposals are summarized in: (French, 1982, pp. 159-85).

[25]The Rath Packing Company implemented this idea (Huntly, 1981; Business Week, 1982a).

[26]Wages and benefits together are the components of total direct labor costs. Indirect labor costs include administrative, supervisory, and training costs.

[27]This range is bracketed by two agreements. They are: (Agreement, Local 431, 1982) and (Agreement, Local 577, 1981). Note that in 1904 a study done by the Bureau of Corporations reported that cattle slaughter required the efforts of 157 men (Chandler, 1977, p. 392).

[28]Since promotion between skill classes is by seniority, an internal job market or job ladder appears to exist within beef packing plants (Dunlop, 1982; Thurow, 1975).

[29]As job transfers require the training of at least two workers, cost-conscious firms often limit the number of skill classes and transfer options so as to reduce the incentive to transfer and the cost of job training. Note that the $.05 per hour pay raise for movement between two job classifications is a remnant of the master contracts.

[30]These things are taken into account in administering a Cola:

(1) Selection of a price index and base year,

(2) The frequency and timing of wage adjustments,

(3) The formula of adjustment,

(4) The effect of the Cola on other provisions, and

(5) The limits to adjustment (Holley, 1980, p. 416).

[31]This represents an increase in total labor expense from $2.8 billion in 1970 to $5.0 billion in 1982 (Table 3.9).

[32]The deflated wage cost per pound of red meat has declined almost continually since the 1950s both because of increases in labor productivity and because of inflation (Table 3.6).

[33]"Four basic types of seniority clauses are used in promotion and transfer decisions:

(1) Seniority as the sole factor,

(2) Seniority used after ability to perform the job is demonstrated,

(3) Seniority and ability as two determining factors, and

(4) Relative ability used before seniority."

(Holley, 1980, p. 381).

[34]The 1959 Armour master agreement provided workers laidoff in plant shutdowns the right to transfer to new plants (USDL, BLS, undated, p. 4).

[35]This is evidentally the situation currently faced by the Rath Packing Company (DPRA, 1978, pp. 1-7). Note also that the UFCW has attempted to discourage planned obsolescence by monitoring each firm's investment expenditures (UFCW, Packinghouse Division, 1982a, p. 13). Also see: (Porter, 1980, pp. 237-74).

[36]One labor relations director reported that the national average for the beef packing industry was 14.4 time-loss accidents per 200,000 manhours worked. Another said that a plant with more than an average of 5.2 time-loss accidents per week could expect an OSHA inspection.

[37](French, 1982, pp. 573-602), (Smith, 1976, pp. 5-7), and (Carver, 1928, p. 162).

[38]For a thorough discussion of the numerous contract provisions which have been associated with health and safety concerns, see: (Chown, 1980).

[39]A list of the firms visited is given in the appendix.

[40]"In accounting for their absences from work, U.S. workers reported that illness and injuries kept them off the job twice as much as personal or civic reasons." (Hedges, 1977, p. 16). Also see: (Miner, 1977, pp. 24-31).

[41]This is apparent when looking at the relationship between labor and capital. Although the ratio of the gross value of fixed assets (1972 dollars) to production manhours is roughly constant between 1965 and 1981 at $5.8 worth of assets per manhour, the ratio of new capital expenditures (1972 dollars) to production manhours increased from $0.47 to $0.75 worth of assets per manhour over this period. The improved performance of capital and labor in meat packing is accordingly at least partially due to new investment in plants and equipment.

[42]The loss of 100,000 man-days in slaughtering amounts to a loss (or diversion of trade to another plant) of roughly 1 million head of cattle. If the profit per head is $10, then this represents a loss to the firm struck of $10 million.

[43]The meat products industry includes meat packing plants (SIC 2011), sausage and other prepared meat products (SIC 2013), and wholesale

poultry and small game dressing and packing (SIC 2016, 2017, and others).

[44]These rules of thumb summarize the experience accumulated by the author in the course of this research.

[45]The issues facing part-time workers are summarized in (Business Week, 1985, pp. 62-63).

[46]See the number of man-days idled, Table 3.10.

CHAPTER IV

CHANGES IN BEEF PACKING AND RETAILING BROUGHT ABOUT BY BOXED BEEF

Introduction

The term "boxed beef" is ambiguous in common usage because packer-processed beef has long been an area of controversy. As early as 1930, the Meat Cutters Union restricted its members from handling pre-packaged beef products (Harris, 1956, pp. 45-46). In the 1960s, more than 30 metropolitan union locals[1] began to permit centralized beef processing by retail food chains with the stipulation that all meat cutters be hired from within the locals' membership and that these cutters would be given the same wages and benefits as retail meat cutters. In the late 1960s and throughout the 1970s, unions in one metropolitan area after another began to permit retail chains to purchase at least some packer-processed primal and subprimal beef cuts. By 1979 virtually all jurisdictions permitted purchase of these products. In an attempt to avoid the restrictions and controversies which have arisen, packers and retailers have found it convenient to use a loose definition of boxed beef.

Boxed beef is a vacuum-packaged carcass primal or subprimal which has been boxed by the beef packer for shipment. The vacuum packaging makes boxed beef unique because it facilitates transportation and handling, it improves sanitation, extends product shelf-life, and

reduces product shrinkage that accompanies exposure to open air.[2] Beef packers are the primary firms to use vacuum packaging because the largest packers are located far from the major metropolitan markets and boxed beef permits them to deliver a product of a quality comparable to locally slaughtered and processed beef.[3] Local packers and processers are more likely to clear-wrap or plastic-wrap their primals and subprimals because they can deliver beef more promptly and because vacuum packaging is relatively expensive. Boxed beef is therefore best defined as a product of integrated beef packers that specialize in interstate commerce.

This chapter is divided into four sections. The first section reviews the history of boxed beef's introduction. The second section describes the process of boxed beef's adoption as reported by firm and union leaders interviewed in the course of this study. The third section analyzes the special problems that arose in the process of boxed beef's introduction. The fourth section describes the reaction of the retail meat trade to boxed beef. The objective of this chapter is to analyze the changes induced in beef packing and retailing by the introduction of boxed beef.

The History of Boxed Beef

Fresh beef processing has traditionally been a retailing activity.[4] In the last century, cattle were slaughtered and processed by the retail butcher. Processing included both the breaking of the carcass into primals and the further processing of primals into retail cuts, ground beef, and sausage products. With the establishment of beef packing, packers took over the slaughtering function and broke carcasses into quarters. The breaking function remained, however, primarily a

retail activity[5] because breaking carcasses at the packing plant increased product-shrinkage during shipment. As a consequence, most packinghouse beef was shipped in the form of a carcass quarters or halves until the early 1960s.

Following the leadership of Safeway (Hall, 1980, p. 1), many retail chains opened centralized meat processing plants in the early 1960s. These plants performed a number of functions, including carcass-storage, carcass-breaking, hamburger-grinding, sausage-making, and preparation of pre-packaged, retail cuts, but the mix of functions varied by plant. The layout of early plants consisted of several independent work stations like those found in retail stores. This arrangement was advantageous for several reasons:

1. Plant design was tailored to optimize production efficiency;
2. Increased output permits better utilization of equipment and personnel;
3. An independent plant is easier to expand than one attached to a retail store; and
4. A plant location can be selected which minimizes land and other costs (USDA, AMS, Transportation & Facilities Research Division, 1963, p. 4).

This arrangement also permitted full-time supervision of meat cutters (a problem for retail stores) and it allowed retailers to market carcass-parts rather than carcasses within the marketing area of individual plants. By 1974, 42 retail firms had opened a centralized beef processing facility (UFCW, 1980, Appendix V).

The first integrated beef packing-processing plant was opened in 1967 by Iowa Beef Packers (now--IBP, Inc.) at Dakota City, Nebraska (Cook, 1981, p. 34). Beef processing in this facility differed from early retail processing operations in four respects. First, processing tasks were divided among meat cutters stationed around long processing

tables rather than performed by individual cutters working at autonomous work stations. Conveyor belts were later added to pass product among the cutters who stood around the processing tables. Second, the end product in this process was a vacuum-packaged, partially boned, subprimal cut placed in a cardboard box for storage and shipment. By contrast, retail plants shipped their beef clear-wrapped or plastic-wrapped in plastic trays stacked in aluminum carts. Third, packer-processed products required an active market promotion program which was unnecessary for retail chains. Boxed beef was promoted at trade fairs, through the establishment of sales offices in the major metropolitan areas, by offering free educational programs for retailers willing to try boxed beef, and through the provision of financial inducements, such as discounts for purchase of boxed beef in carcass-equivalent lots, and low prices (Cook, 1981, p. 34). Fourth, unlike the retail-processors, packer-processors were beef specialists.

The market for primal and subprimal beef has grown steadily since the 1960s. In 1974, roughly a quarter of all beef entering retail stores were boxed and another third was processed in retail plants (USDA, ERS, National Economics Division, 1977, p. 70). By 1977, this relationship between packer and retail processed beef was reversed (Hall, 1980, p. 1). As shown in Table 4.1, boxed beef's share of total beef production has grown from under 10 percent of commercial beef production in 1971 to over 40 percent in 1982. According to a study published by the Cryovac Company,[6] the amount of beef entering retail stores vacuum-packaged by packers and by retail plants rose from 31 percent in 1973 to 79 percent in 1982.

Table 4.1. Estimates of U.S. Boxed Beef Production, 1971-82

Year	USDA[1/]		UFCW[2/]		Hall Study[3/]	
	Millions of pounds	Percent of steer and heifer slaughter	Millions of pounds	Percent of commercial production	Thousands of head [4/]	Percent of steer and heifer slaughter
1971	--	--	1,978	9.1	3,043	12.1
1972	--	--	2,618	11.6	4,026	15.8
1973	--	--	3,274	15.5	5,036	20.8
1974	--	--	3,803	16.6	5,850	22.7
1975	--	--	4,588	19.4	7,057	27.7
1976	--	--	6,409	25.0	9,857	34.7
1977	--	--	6,996	28.0	--	--
1978	--	--	7,583	31.6	--	--
1979	4,706	43.5	8,169	38.4	--	--
1980	5,068	49.0	8,916	41.5	--	--
1981	5,810	52.9	--	--	--	--
1982	6,495	58.1	--	--	--	--

1/ Production of fed beef into boxed beef by packers reporting to the Packers and Stockyards Administration.
2/ As cited from various USDA sources.
3/ Derived from data published by the National Provisioner.
4/ Excludes beef processed by retail processing plants.

Sources: 1. Tables provided by USDA, AMS, Packers and Stockyards Administration, dated January 12, 1984.
2. UFCW, 1981 Fact Book, as presented to the National Packinghouse Conference, October 21-23, 1981, Chicago, Illinois, p. 4.
3. Lana Hall and Maurine MacBride, Boxed Beef in the Meat Marketing System: A Summary Appraisal, A.E. Report 80-14, (Ithaca, New York: Cornell University, July 1980), p. 2.

The effects of boxed beef on the evolution of the beef packing industry are hard to separate from other changes occurring in the industry. The leading boxed beef producer, IBP, Inc., not only introduced boxed beef, it also pioneered construction of on-rail slaughtering plants in country locations, direct feedlot purchasing of cattle, and a tough new stance in collective bargaining (Cook, 1981). During the same years that boxed beef was gaining wider acceptance, the cattle feedlot industry grew and cattle feedlots became more concentrated geographically in the areas where boxed beef plants were being built. As a consequence, changes occurring as a result of the introduction of boxed beef have often been confused with changes occurring for other reasons.

An important source of controversy has been boxed beef's contribution to the increased market share of leading packers. As shown in Table 4.2, firms--such as IBP, Excel, Land O'Lakes (Spencer), and Dubuque--which led in the adoption of boxed beef have experienced a rapid growth in market shares during the 1970s. Four-firm concentration (CR-4) in fed cattle slaughter rose from 26.1 percent in 1970 to 45.8 percent in 1981. Concentration among boxed beef producers is even higher. It rose from over 32.1 percent in 1974 (Williams, 1979, p. 136)[7] to 60.3 percent in 1979 and 65.8 percent in 1982.[8] Boxed beef accordingly appears to have been an important factor in the changing structure of the beef packing industry in recent years.

A Description of Changes Made in Adopting Boxed Beef

This section reviews the observations gathered in the field interviews.[9] Interviews were taken with packers, wholesalers, and retailers and with the local unions associated with them. The observations

Table 4.2. Market Shares of the Leading Steer and Heifer Slaughters, 1970, 1978, and 1981

Firm	1970	1978	1981
		Percent	
IBP, Inc.	7.8	16.1	24.2
Excel 1/	2.5	5.9	11.3
Land O'Lakes 2/	3.4	2.3	5.4
Swift Independent 3/	8.1	6.9	4.9
Dubuque 4/	1.0	3.7	4.2
Armour	6.2	3.1	0.0
Wilson	4.0	2.3	0.0

1/ Formerly MBPXL

2/ Formerly Spencer Beef

3/ Formerly Swift

4/ One of Dubuque's beef packing plants was sold to FDL Foods, Inc. in 1982

Sources: 1. Willard F. Williams, The Changing Structure of the Beef Packing Industry, Tara, Inc. Lubbock, Texas, 1979, p. 52.

2. William Blair & Company, "Food and Agri-Business, Swift Independent Corporation," Chicago, Illinois, March 29, 1982, p. 6.

discussed here follow from the primary question: what were the adjustments required to switch to boxed beef production and utilization in your organization?

Regional and National Packers

In the field interviews, beef packers of many sizes and descriptions were visited. The smallest regional packers employed bed-killing technologies and specialized in supplying carcass beef to local retailers. In return for custom services, these packers often received premium prices. The largest national packers employed on-rail slaughtering and on-line processing technologies and specialized in supplying boxed beef to national supermarket chain stores. A range of beef packing firms fall between these two extremes. The degree of product standardization, the timeliness of the technology, and the proportion of sales transacted at nationally reported prices, nevertheless, distinguish national from regional packers.

For purposes of exposition, changes in the beef packing industry brought about by the introduction of boxed beef are discussed under these headings: procurement, technology, organization, merchandising, and shipping.

Procurement

Several factors worked together to change the attitude of packers towards cattle procurement following integration into beef processing. First, the USDA new grades to measure carcass-cutability in addition to existing quality grades. Cutability (or yield) grades measure the external fat on carcasses which affects the yield of processed beef cuts from a carcass of a given weight. This information aids beef processors who must bear the cost[10] of trimming excess carcass fat in

fabricating and processing beef. The USDA began its research on yield grades in the early 1960s as retailers began to open processing plants and they implemented preliminary standards in 1965 just before packers made their entrance into boxed beef production (McCoy, 1979, pp. 290-94). In 1975, the Agricultural Marketing Service further introduced a set of standards for boxed beef.[11] The main effect of these standards has been to change the attitude of packers towards procurement of heavy cattle.

A second factor influencing cattle procurement practices was that the packers who integrated into beef fabrication and processing quickly learned that yield grades 4 and 5 grade cattle are usually the most expensive to process and market. Three problems contributed to this outcome:

1. The labor cost of processing yield grade 4 and 5 cattle can be as much as 10 to 20 percent higher than for yield grade 1, 2 or 3 cattle;
2. Yield grades 4 and 5 carcasses have not only excessive amounts of external body fat but also additional internal fat which makes ultimate carcass yields much less predictable; and
3. Maintenance of a standard-sized box requires both predictable yields and a standardized carcass size.

For these reasons, packers began to concentrate on buying cattle that yield a 400 to 600 pound carcass and a high "good" grade carcass, rather than the more traditional "choice" grade carcasses [12] which allow them to lower their processing costs. Instead of processing heavy cattle at a loss, most packers continued to market such inadvertent purchases through wholesale carcass markets. The result of these practices has been the consistent discounting of yield grades 4 and 5 cattle and the provision of incentives to cattle feeders able to deliver yield grade 2 cattle.[13] Most often it has been the commercial feedlot which has benefited from such incentives because these feedlots are better

managed and better equipped to produce large number of consistent, lean cattle and to sort them off for truckload shipment.

A third factor influencing procurement is that early entrants into processing quickly learned the economics of beef processing and located these plants in production areas most heavily populated by commercial cattle feeders. Two advantages resulted:

1. Location near commercial feedlots provided these packers with large numbers of relatively uniform, high-quality cattle which allowed them to produce a more acceptable product at lower cost, other things equal; and
2. Access to larger numbers of cattle permitted, by itself, construction of larger plants with enough processing lines to match carcass batches with specialized labor in a way that enhances both product quality and labor productivity.

These advantages have not been available to late entrants into beef processing because the competition for cattle becomes keen when they attempt entry by new construction and the benefit becomes capitalized in plant values when they attempt entry by acquisition.

The distribution of carcass yield grades received by a plant is a critical measure of its likely success in beef processing. As processors use yield grades 2, 3, 4 and 5, their processing costs rise at an increasing rate due to the need to remove increasing amounts of external and internal fat in the carcass. This observation is usually reflected in the prices paid for the different grades and in the special attention several packers have given to encouraging production of yield grade 2 cattle. As a consequence, it has been suggested that the availability of high-quality cattle places a natural limit[14] on the profitable expansion of the boxed beef trade and on the market share of leading firms (Table 4.3).

Table 4.3. The Distribution of Quality and Yield Grades Awarded to Beef Carcasses in 1981.

Quality Grades	Yield Grades 1	2	3	4 & 5	Total	
	Millions of pounds					Percent
Prime	19.3	122.3	347.6	135.0	624.2	5.2
Choice	155.8	3,228.4	6,425.7	1,143.9	10,953.8	90.4
Good	39.9	263.3	121.7	6.2	431.1	3.6
Other	14.1	57.1	33.3	4.3	108.8	0.8
Total:						
Quantity	229.1	3,671.1	6,928.3	1,289.4	12,117.9	--
Percent	1.9	30.3	57.2	10.6	---	100.0

Source: USDA, ERS, National Economics Division, Livestock and Meat Situation, (Washington, D.C.: Government Printing Office, January 1982)

Technology and Technological Change

Technological change is the advance of technology as embodied in new production methods for existing products, new products, and new methods of management, marketing, and distribution. In beef processing, three recent changes appear to qualify immediately as technological changes: (1) the switch from independent work stations to a common cutting table with tasks divided among numerous meat cutters; (2) the addition of a conveyor belt to the common table to carry carcass-parts from one cutter to the next; and (3) the adoption of Cryovac and other vacuum-packaging systems to replace the shipment of carcass beef. These changes were accompanied by organizational changes--movement of cutting tasks from the retail store to the processing plant to the packing plant, by changes in labor and wholesale markets, by changes in warehousing and distribution, and by changes in tools (i.e. power knives and saws) and in accessory equipment (i.e. automated packaging, greater mechanization of rendering operations, computer-assisted monitoring and recordkeeping, and automated scales).[15] A list of the changes cited in interviews with beef packers in the fall of 1982 is given in Table 4.4.

As technological change, boxed beef is an amalgamation of numerous changes in beef processing which have occurred in the past two decades. One study provided this progression of changes in beef processing:

1. Carcass beef,
2. Carcass beef supplemented by quarters or primal cuts,
3. Boxed primals or subprimals with varying cuts and specifications which can be:
   a. CO_2 snow-packed,
   b. Vacuum-packaged,
   c. Bone-in, or

Table 4.4. Technological Changes cited by Beef Packers, 1982. 1/

Introduction Date		Description of Change
Early 1960s	I.	Cattle slaughtering plants are constructed nearer to cattle feedlots
		A. On-rail slaughter replaces bed-slaughter
		1. Introduction of hide-pullers, power tools and equipment, moving platforms, electric stimulators, cattle restraining chutes, and hydraulic knockers
		2. On-rail carcass grading stations
		B. Multi-story plants replaced by single-story plants
1964	II.	Thermo-king refrigerated trailers replace reefer railcars
1967	III.	Construction of large, integrated slaughter-processing plants
		A. Fabrication of carcasses into carcass-parts
		B. Vacuum packaging and boxing for shipment
		1. Stacker cranes installed in coolers with conveyor systems to replace forklift operations
		2. Computer inventory-control and record-keeping
		C. Introduction of hamburger grinding and further processing of byproducts
		D. Moving processing tables
		1. Use of wizard knives and other power tools
		2. An improved division of labor
		--Better quality-control and management
		--Improved carcass-batching potential
		E. Introduction of "walking beams" to move carcasses more rapidly through plant coolers
1969	IV.	Introduction of forklifts (buggies) designed to load carcass quarters into trailers
1976	V.	A chlorine spray is introduced to disinfect carcasses while cooling off
Late 1970s	VI.	Greater use of computer-assisted technologies

1/ A list of the packers interviewed is provided in the appendix.

Source: Plant Interviews, Fall 1983.

d. Boneless or semi-boneless,

4. Complete fabrication to retail counter-ready cuts either:
   a. Fresh in many possible alternative packages, or
   b. Frozen (Moncrieff, undated, pp. 4-5).

In this view, boxed beef is one step in a continuum of changes beginning with the establishment of the beef slaughtering industry in the last century and continuing in this century as increasingly more processing activities are transferred from the retail store back to the packing-house.[16]

As described in detail in the previous chapter, the most dramatic change in the beef packing industry's performance has been the increase in output per manhour. As shown in Table 3.6, red meat production per manhour increased from 62.4 pounds in 1950 to 171.8 pounds in 1981. Since on-rail cattle slaughtering and on-line beef processing were introduced during this period, they both have presumably contributed to this outcome. This is an important result because beef processing is about three times as labor-intensive as cattle slaughtering and its addition to the industry should both increase industry employment and decrease industry output per manhour. Nevertheless, the employment of production workers in the meat packing industry has declined from a high of 169,700 in 1956 to 114,999 in 1980 (USDC, Bureau of the Census, 1983a). Explanation of this decline in employment accordingly provides a focal point in discussion of technological change in the beef packing industry.[17]

Two related explanations for the decline in meat packing employment can be given. First, employment may have declined because of labor-saving investments in plant and equipment, such as on-rail slaughtering,

larger plants, and multi-shift operations. As shown in Table 4.5, the gross value of fixed assets in meat packing adjusted for inflation displayed an upward trend through the 1960s, reached a high in the early 1970s, and declined after 1975. Since employment declined most rapidly between 1954 and 1970,[18] these investments probably contributed much to the decline.

Second, the geographic concentration of cattle feeding may have permitted fewer large plants to increase their output at the expense of large number of smaller, more labor-intensive plants. This view is supported by these observations:

1. The market share of the top seven cattle-producing states increased from 35.9 percent of the nation's cattle stocks in 1954 to 43.7 percent in 1981;[19] and
2. Large slaughtering and processing facilities utilize labor and equipment more efficiently than small plants (Cothern, 1978, p. 6). Also see Tables 4.5 and 4.6

Since the large plants now found in the meat packing industry were built as the move was made to cattle-producing areas, these two explanations are related. It is however useful to separate location and size effects in analysis because they are independent sources of efficiency gains and employment effects.[20]

The density of the cattle population and plant location affect the efficiency of beef packing plants in several ways. A high-density cattle population lowers the cost of feedlot purchases and cattle shipment, increases the utilization of plant capacity, and may increase the quality of cattle purchased. As shown in Table 4.6, the number of meat packing plants generally decreased in the Mid-atlantic, East North Central, and Pacific (except California) regions and increased

Table 4.5. Capital Expenditures and Assets of U.S. Meat Packing Plants (SIC 2011), Selected Years, 1950-81.

	New capital expenditures	Gross value of fixed assets	New capital expenditures	Gross value of fixed assets
	------Millions of Dollars-----		---Millions of 1972 Dollars---	
1950	66.5 1/	--	124.2	--
1955	65.1	--	107.0	--
1960	77.2	--	112.4	--
1965	101.0	1239.0 1/	135.8	1666.2
1970	153.8	1644.0	168.2	1797.7
1971	162.1	1607.3	168.8	1674.1
1972	167.7	1783.1	167.7	1783.1
1973	182.2	1843.9	172.3	1743.6
1974	216.0	1938.2	187.7	1684.2
1975	248.4	2152.3	197.5	1711.0
1976	210.6	2205.8	159.1	1666.8
1977	236.7	2286.1 1/	169.0	1632.3
1978	230.9	2366.3 1/	153.5	1573.1
1979	234.8	2446.6	143.4	1497.1
1980	299.7	2550.2	167.8	1427.6
1981	330.3	2578.7	168.9	1319.0

-- = Not reported.

1/ Extrapolated from census data.
2/ Deflated by GNP deflator.

Sources: 1. USDC, Bureau of the Census, 1977 Census of Manufacturers, Volume II--Industry Statistics, (Washington, D.C.: Government Printing Office); and previous issues.
2. _____, 1981 Annual Survey of Manufacturers, M81 (AS)-4, (Washington, D.C.: Government Printing Office, 1983a); and previous issues.

Table 4.6. Plant Numbers and Employment in U.S. Meat Packing by Region, 1954 and 1977.

Regions:	Packing plants		Employment		Beef as a percent of red meat production	
	1954	1977	1954	1977	1954	1977
	-----Number-----		-------Thousand------		-------Percent--------	
Mid-Atlantic	352	267	19.9	7.6	27.4	28.4
E. North Central	585	501	59.1	28.5	30.2	32.0
Ohio 1/	193	137	11.6	7.1	33.1	29.9
Illinois 1/	106	105	26.5	6.1	30.9	29.9
Wisconsin 1/	57	77	8.9	8.5	26.2	43.4
W. North Central	268	390	75.5	47.2	34.8	60.8
Minnesota 1/	29	35	15.4	8.1	28.3	42.1
Iowa 1/	43	88	25.5	20.2	28.5	45.2
Nebraska 1/	49	69	11.1	6.5	50.1	85.2
Kansas 1/	51	64	9.5	5.2	51.5	89.2
South Atlantic	286	338	16.0	15.5	14.0	12.9
Virginia 1/	40	43	3.0	4.7	8.7	4.8
E. South Central	142	235	9.2	12.5	24.6	19.0
W. South Central	259	380	15.7	16.8	28.0	61.1
Texas 1/	153	201	10.5	12.7	30.2	70.5
Mountain	147	198	7.1	5.5	60.7	90.2
Pacific	244	201	15.0	9.2	47.7	67.0
California 1/	122	127	10.8	5.9	49.3	63.2
United States 2/	2,367	2,590	220.2	146.2	31.8	37.8

1/ Top 10 states according to 1977 employment in meat packing.
2/ States not listed within each region are as follows: Mid-Atlantic--NJ and PA; East North Central--IN and MI; West North Central--MO and SD; South Atlantic--MD, NC, GA, and FL; East South Central--KY, IN, AL, and MS; West South Central--AR, LA, and OK; Mountain--CO, AZ, and UT; Pacific--WA and OR. States not listed in the table or above are summed in U.S.

Sources: 1. USDC, Bureau of the Census, Census of Manufacturers, Volume II--Industry Statistics, (Washington, D.C.: Government Printing Office, 1954 and 1977).
2. USDA, Yearbook Statistical Committee, Agricultural Statistics (Washington, D.C.: Government Printing Office, 1955 and 1978).

Table 4.7. Employment and Output of Beef Packing Plants, 1982.

Plant Number	Employment			Weekly Production		
	Slaughtering	Processing	Total	Slaughtering	Processing	Total
	Number			Head of Cattle		
1	16	---	16	350	---	350
2	16	30	46	---	---	800 1/
3	95	---	95	---	---	6,400
4	---	---	400 1/	---	---	8,000 1/
5	101	230	331 1/	---	---	5,000 1/
6	---	---	600 1/	---	---	8,500 1/
7	177	---	177	---	---	8,727
8	---	---	750 1/	---	---	16,000 1/
9	190	---	190	---	---	6,030
10	215	962	1,172	---	---	6,259 1/
11	238	---	238	---	---	4,050
12	247	---	247	---	---	8,322
13	---	---	1,000 1/	12,000	15,000	---
14	---	---	1,000 1/	16,500	15,000	---
15	---	---	850	---	---	19,500 1/
16	---	---	1,100 1/	---	---	13,000 1/
17	295	---	295	---	---	9,514
18	300	---	300	---	---	8,500
19	422	1,260	1,682	---	---	16,610 1/
20	498	1,787	2,285	---	---	20,306 1/
21	533	1,534	2,067	---	---	25,187 1/

1/ Slaughtering and processing combined.

Source: Plant interviews, Fall 1982.

in the other regions cited in the table. Packinghouse employment decreased in most regions even when the number of plants increased and when there were increases in beef production. Efficiency is also affected because the density of cattle production correlates well with the level of meat packing employment: five of the top seven cattle producing states are also among the top ten states in packinghouse employment.[21] The increasing market share of the largest cattle producing states may therefore lower the cost of slaughter in those states relative to other states and motivate further centralization of the feedlot industry. This mechanism provides a possible explanation for the negative correlation which can be observed between the market share of leading cattle producing states and employment in the meat packing industry.

Organization

Since the beef packing industry has experienced many organizational changes in recent years, it is difficult to ferret out those directly attributable to boxed beef. Some changes have had an evolutionary character and might properly be linked to the earlier adoption of on-rail slaughtering techniques. Other changes should properly be associated with individual firms because they facilitated the fulfillment of a special need or objective of that firm. Nevertheless, the introduction of boxed beef required some organizational changes of its own and it provided an occasion for other changes which might otherwise have been delayed until a later date.

In interviews with managers in beef packing, these changes were said to have accompanied the introduction of boxed beef:

1. New production and management jobs were created with the addition of processing lines;
2. Seniority and job transfer provisions were amended in many labor agreements following the experience of plants which shut down their fresh beef operations and suffered a loss of labor productivity throughout the plant as older employees from the fresh beef operations transferred into other divisions;
3. Many plants eliminated piecework incentives and the bracket system of wages from their labor agreements in return for recognition of the local union's right to represent employees in the new processing division;
4. Firms had to develop new storage, inventory, and distribution systems to cope with the variety of new processed beef products;
5. The interface between slaughtering and processing divisions and batching of carcasses through processing increased management requirements:
6. The cost of poor workmanship in processing is higher than in slaughtering which motivated firms to implement improved quality-control procedures; and
7. New skills and attitudes were required of both managers and workers.

The key problem which emerged with boxed beef was that it required a great deal more sophistication in management and merchandising: more knowledge of customer demand was required to market boxed beef than was true of carcass beef and greater attention must be paid to quality-control. As a consequence, beef packers which attempted to maximize the number of carcasses processed per manhour, a good strategy to minimize labor costs in beef slaughtering, often encountered problems with quality-control and customer acceptance.

Merchandising

Boxed beef is more difficult to market than carcass beef for several reasons. The most obvious reason is that boxed beef is a large set of heterogeneous products rather than a small set of well-defined commodities. At a minimum, boxed beef entails the merchandising of the four major primal cuts, numerous minor cuts, variety meats, ground

beef, and trimmings. By contrast, with carcass beef only carcass quarters and variety meats are marketed independently.

A second reason is that carcass beef is a federally-graded commodity while boxed beef is a packer (or customer) defined product. Albeit institutional meat purchase specifications covering boxed beef were approved by USDA[22] in January 1975, they are utilized primarily in federal purchases. As a consequence, boxed beef differs significantly in specification, cutting-quality, and cutting-consistency among packers. Boxed beef is therefore often purchased on the basis of the seller's reputation much like a branded product.

A third reason is that the markets for some carcass-parts are more competitive while others are less competitive than the market for carcass beef. The possibility of increased competition stems from the fact that (1) beef can be processed in packinghouses, retail processing plants, and retail stores although this is not the case in many market areas; (2) boxed beef has a longer shelf-life than carcass beef; (3) the demand for some carcass cuts is more elastic than for the carcass as a whole; and (4) economies to size allow large firms to undercut their competitors in some market areas. Whenever two markets are not equally competitive, merchandising activities require more attention and there is a potential for arbitrage.

Many retail meat managers expressed an interest in finding new ways to merchandise beef during the interviews undertaken. Beef packers, either formally through training programs or informally through personal discussions, appeared to be the primary source for merchandising ideas. IBP, for example, operates a Meat Management Center in Dakota City and regional training centers in places like Chicago to train retail

meat department managers and meat cutters in cutting and merchandising boxed beef.

Shipping

One of the obvious changes to occur with the introduction of boxed beef was that beef began to be shipped in boxes rather than in carcass form. Boxed shipment offers these advantages:

1. Beef is kept more sanitary and carcasses experience less shrink as packaging prevents loss of fluids;
2. Boxed beef can be palletized in storage and shipment;
3. More beef can potentially be shipped in a given trailer because the beef is more tightly packed in the trucks and because fat and bone have been removed before shipment; and
4. Since fewer luggers are required to load trucks, fewer workmen suffer back injuries.

In view of the fact that weight restrictions on trucks traveling on interstate highways prevent the capacity loading of trailers (Bloom, 1972, pp. 143-190), the advantages of boxed shipment have probably been overstated. Nevertheless, there are labor-savings in loading boxed beef.

As shown in Table 4.8, beef packers use four methods to load beef. The oldest technique is to employ a crew of up to a dozen men to lug carcass quarters on their backs into the trailers. Although few of the plants visited still used this technique exclusively, whenever a trailer needed to be loaded with mixed lots of boxed and carcass beef this technique must still be employed. More typically, packers prefer to ship only truckload lots and, whenever possible, twin lots wherein fore and hind quarters are sorted into separate trailers for ease of handling and for maximum use of space. For the most part, lugging has been eliminated by the use of forklift-type carcass buggies designed to carry carcass quarters into the trailer. Some plants also use

Table 4.8. The Relative Efficiency of Loading Operations in U.S. Beef Packing Plants, 1982.

Firm	Units	Equipment	Workers Required	Time Required	Total Manhours
			Men	Minutes	Hours
1	70 CH	unknown	3	20	1
1	50 CQ	unknown	6	60	6
2	T CQ	buggies	4	105	7
3	T CQ	buggies	5	30	2.5
4	T CQ	buggies	6	45	4.5
5	T CQ	buggies	7	40	4.6
4*	T CQ	buggies	6	30	3
6	40,000 lbs CQ	none	9	25	3.7
3	T BB	conveyor	2	20	0.6
5	T BB	conveyor	2	30	1
6	40-90,000 lbs BB	conveyor	5	30	2.5

Key: T - trailer, Q-quarter, BB-boxed beef, C-carcass, H-half, *-fore/hind quarter only

Source: Plant interviews, Fall 1982.

such techniques to load carcass halves. A final technique is to load boxed beef into trailers by use of a conveyor system which extends (or "snakes") a conveyor belt into the trailer to the point where a man can set individual boxes in place on a pallet. This conveyor system is typically the final stage of an automated system which takes boxed product off of the processing tables, stores it, and retrieves it for loading without any use of manual labor or forklift operations.

Calculations based on the observations in the table suggest that the switch from buggy to conveyor loading saved roughly 2.9 manhours per trailer loaded. This savings may or may not have been realized in most plants because many plants have found the conveyor system to be undependable and because in order to install such systems some firms had to agree to maintain standby lugging crews as a labor concession.

Processors

In addition to the processing done by beef packers, beef processing is undertaken by independent processing firms and by retail chains operating their own meat processing plants. The five processors visited during the course of this study fell into three categories. The first category were independent processors which specialized in fabricating beef quarters into primal cuts. The second category were processing plants/boxed beef distribution centers operated by retail chains which fabricated quarters into primals. The third catetory were processing plants operated by retail chains which specialized in processing retail-ready cuts from boneless, boxed beef. Each of these processors also processed trimmings into hamburger and some also made sausages from beef trimmings. Each also processed pork and other meat products. The diversification of these processors into other activities, such as the

processing of other meats and the greater use of facilities for cold storage, distinguish these processors from their counterparts in beef packing.

The one independent processor visited was unique because its employees were organized under a packinghouse contract rather than the usual retail contract. This processor purchased whatever beef could be acquired at discount, fabricated it into subprimals, and sold it to restaurants and local retail chains. The owners's chief concerns were the high cost of workmen's compensation insurance and the decline in consumer beef demand.

The two processing plants/boxed beef distribution centers visited were quite different in the market they served and the products they offered. The first plant served a growing market and it offered an increasing line of retail-ready beef cuts in addition to fabricated subprimals. The second plant served a declining market and through time it processed less carcass beef and distributed more boxed beef than previously. Both plants processed meats other than beef and made sausage. Employees in both plants were organized under retail labor agreements and had the option to transfer to retail stores. The manager of the first plant was concerned about finding new ways to merchandise beef and did not consider labor management a problem. The manager of the second plant expressed concern about excessive labor costs and observed that many meat cutters who transferred from retail stores to the processing plant missed the contact they formerly had with customers.

Two retail firms were visited which processed retail ready cuts from boxed beef in a central plant. One of the two plants gave up processing beef after roughly a year-long experiment because the Cryovac

packages used for the retail cuts received poor consumer acceptance and because the local meat cutter union and management were unable to agree on a labor agreement.[23] The other plant was unique in these respects:

1. The business began as a chain of warehouse supermarkets without a meat department to which a meat department was later added;
2. The plant processed only yield grade 2, "good" grade boneless boxed beef;
3. The employees in the plant were organized under a retail clerk rather than a meat-cutter contract;
4. No processing was done in the retail stores;
5. The majority of the workers in the plant were not skilled retail meat cutters and only about four per shift received normal, retail meat-cutter wages; and
6. The plant was substantially more automated than other facilities. Work stations were linked by a conveyor systems. A bacon-slicer replaced knife cutting of boneless beef subprimals. A computer was used both to record orders and to monitor plant operations.

After 11 months of start-up loses, this plant became profitable and the chain was expanded into a second metropolitan market area. The first plant, by contrast, returned to retail cutting of beef.

In looking to the future, processors in the more competitive market areas expressed concern about the continuation of their beef processing function because of the growth of boxed beef sales and increasing labor costs. In all market areas, processors expressed concern about the future availability of high-quality beef carcasses because of the increasing importance of direct feedlot sales of cattle to the integrated boxed beef producers.

Wholesalers

Although retail chains do their own wholesaling of fresh beef products, cooperative and voluntary wholesale organizations exist in many market areas to provide independent retailers with the same procurement

expertise and volume discounts that chain stores enjoy. Given access to these services[24] and given the advantages of better customer relations and a nonunion workforce frequently enjoyed by small retail firms, the independents are able to remain a strong competitive force in many metropolitan areas.

The wholesalers visited functioned primarily as jobbers for boxed beef and as brokers for carcass beef. They employed no meat cutters and they operated large metropolitan distribution centers which, among other things, included cold storage for boxed beef. Only one of the wholesalers visited took delivery of carcass beef at its distribution center. Nevertheless, this wholesaler actively promoted boxed beef among its membership.

Although wholesalers do not employ meat cutters and provide primarily buying services, they proved to be a valuable source of information about boxed beef because of their contact with a diverse strata of the retail industry--the independent retailers. These wholesalers promote new ideas among their membership through training sessions, arranging product promotions, and provision of merchandising tips and they provide processors/packers with feedback on product performance. Similar services are provided within retail chains by their procurement departments.

The three wholesalers visited reported these changes to have accompanied the introduction of boxed beef in retail stores:

1. A reduction in the time required to train meat cutters from 1 to 2 years to 3 months;
2. The removal of overhead rails;
3. The removal of restrictive clauses, such as overtime restrictions, from many retail labor contracts;
4. Reductions in the labor force through reassignment to service meat counters and delis or new stores, through layoffs;

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5. The reduced physical effort required to process boxed beef permitted an extended worklife for older employees and the employment of more women as meat cutters;
6. The reduced labor requirements of boxed beef freed up time to spend on filling orders, merchandising product, cleaning up, and planning ahead; and
7. The better use of cooler space resulting from use of boxed beef has allowed retailers to take better advantage of volume discounts and specials.

The wholesalers further reported labor-savings to have been of the order of six to eight percent of sales with boxed beef. The chief impediments to its adoption were poor management, a fear among meat cutters that their jobs would be lost or would suffer with its adoption, and union restrictions on on-site demonstrations of improved cutting techniques by the wholesaler.[25]

Retailers

The nine retail organizations formally interviewed reported the following changes to have accompanied the adoption of boxed beef not previously discussed:

1. The reduced physical effort required for beef processing reduced labor turnover;
2. One retailer reported the negotiation of storewide bumping provisions in his labor agreement;
3. Elimination of new hiring and apprenticeship training;
4. A reduction in beef spoilage, fresher beef displays, and less discounting of older product;
5. A reduction in cutting-skills and an increase in merchandising skills among store meat cutters; and
6. A decrease of 30 to 40 percent in the cooler-to-counter preparation time.

Retailers also reiterated many of the comments cited by wholesalers.

The typical retailer adopted boxed beef as a supplement to carcass beef long before committing himself to a total boxed beef program. Some retailers indicated that they continue to use boxed beef as a

supplement to cover themselves during rush periods even though they continue to use primarily carcass beef. When asked why they continue to use this approach, several reasons were given:

1. Although boxed beef is easier than carcass beef to use, the out-of-pocket cost is 6 to 7 cents more per pound and it is difficult to reduce labor use in the short run to cover this additional cost. Sales are likewise unlikely to increase enough to cover this additional cost;
2. A good manager is able to plan ahead well enough that carcass beef is not a problem (i.e. boxed beef is a partial substitute for good management); and
3. Unless all managers in a market area adopt boxed beef, the competitive balance among firms is disturbed.

The retailers that centrally process their own beef stressed that they used boxed beef, if at all, only as a supplement because they wanted to retain control over the quality of their beef cuts and to retain the option to process their own subprimals.[26]

Since virtually all of the retailers interviewed had experience with boxed beef, it seems unlikely that they would continue to use carcass beef if they knew that boxed beef would save them money. The typical method of calculating costs in the retail meat department--subtracting operating costs from gross revenues across product lines to calculate the value-added obscured the economic advantage of boxed beef because boxed beef increases direct and decreases indirect operating costs. Only the retailers who improved their accounting of costs and changed their labor management and merchandising practices therefore saw the advantages of boxed beef reflected in their bottom line.

In the absence of clear economic signals for retailers to follow in the early years of boxed beef's introduction (up until the late 1970s), boxed beef was not always sold on its economic merits. Boxed beef was described as more convenient, more sanitary, and more

sophisticated than carcass beef. Retailers who continued to use carcass beef were often labeled "traditional butchers" (implying an irrational attachment to carcass beef) when the option to use boxed beef product truly existed. Four arguments suggest that in these early years of adoption these traditionalists may, indeed, have acted prudently.

The first argument is based on calculation of a breakeven total labor cost per hour. Breakeven calculations assume a given volume of product sales and different labor productivities under carcass and boxed beef technologies. Table 4.9 compares the value of an hour's labor in processing boxed and carcass beef using 1976 assumptions about prices and productivities. Alternative assumptions are reviewed in Appendix A.2. Given such assumptions, there exists a breakeven labor bill below which carcass beef is economical and above which boxed beef is economical. In this example, the breakeven labor bill is $9.08 per hour. At $9.08 per hour, a beef carcass equivalent will cost:

Input	Beef cost	Labor cost	Total cost	Output
Carcass beef	$474.50	$106.24	$580.74	459 lbs Retail cuts
Boxed beef	520.80	59.93	580.73	462 lbs Retail cuts

For each $.10 per hour increase in the labor bill, a carcass-equivalent of boxed beef is $.51 cheaper than carcass beef to process. Alternatively, for each $.10 decrease in the labor bill, carcass beef is $.51 cheaper to process, assuming 1976 prices. If these assumptions reasonably reflect 1976 conditions, then it is unlikely that boxed beef saved retailers much money unless they had above-average wage costs (Table 4.10).

Table 4.9. The Retail Value per Manhour of Carcass and Boxed Beef, 1976 1/.

Item	Product	
	Carcass Beef	Boxed Beef
Time required to process a hundredweight of beef (hours)	1.8	1.3
Time required to process a 650 lbs. carcass or carcass-equivalent	11.7	6.6
Saleable beef per carcass-equivalent 2/	459	462
Cost of beef carcass equivalent	$474.50	$520.80
Pounds of saleable beef processed per hour	39.2	70.0
Value of beef processed per hour	$40.56	$78.91

1/ The strength of the retail industry is its willingness to meet the diverse needs of the consuming public. As a consequence, no one set of calculations can adequately describe the industry.

2/ The assumptions in these calculations are: (1) a 650 lbs. carcass (costing $.73 per lb.) yields 70% saleable beef and (2) a 420 lb. boxed equivalent (costing $.99 per lb.) yielding 80% saleable beef plus an additional 140 lbs. supplemental cuts (costing $.75 per lb.) yielding 90% saleable beef. More recent estimates of boxed beef's yield are higher because boxed beef is more highly processed today.

Source: Steve Dillard, A Case Study Favoring the Boxed Beef Concept, Southwest Missouri State University, August 16, 1976, pp. 14-18.

Table 4.10. Earnings[1/] of Union Meat Department Employees in Retail Food Stores in Selected U.S. Cities, 1973 and 1979 [2/].

City	Meat Cutters					Meat[5/] Wrappers
	Journeyman		First[5/]	Head		
	1973	1979	1979	1973	1979	1979
	Dollars per Hour					
Group I:[3/]						
Chicago	5.90	10.59	---	6.18	10.86	7.74
Detroit	6.02	9.86	---	6.34	10.25	7.76
Houston	5.15	9.35	---	5.53	10.10	7.61
Los Angeles	5.47	8.78	---	5.92	9.23	7.63
New York	5.05	8.89	---	5.63	9.83	7.35
Philadelphia	6.12	9.97	10.07	6.63	10.78	8.18
Group II:[4/]						
Boston	5.40	8.95	9.11	6.85	10.40	7.18
Dallas	4.78	9.42	---	6.11	10.67	7.97
Denver	5.58	8.89	9.01	5.95	9.26	7.08
Kansas City	5.81	9.91	10.06	6.76	11.05	9.12
St. Louis	5.41	9.53	---	6.33	10.55	7.48
Washington,D.C.	5.78	9.30	9.53	6.53	10.23	8.39

1/ Highest top wage rate.
2/ July 1, 1973 and September 4, 1979.
3/ Population over 1 million.
4/ Population from 500,000 to 1 million.
5/ This classification was first reported in 1977.

Source: USDL, Bureau of Labor Statistics, Union Wage in Grocery Stores: September 4, 1979, Report 627, (Washington, D.C.: Government Printing Office, March 1981); and previous issues.

A second argument is based on the observation that advocates stress the opportunities to improve meat department management offered by boxed beef when discussing its economic advantages. In the absence of better utilization of labor, increased attention to merchandising, and tailoring purchases of beef to consumer demand, it is unlikely that the average retailer would reduce his costs by using boxed beef because it costs more per pound than carcass beef.[27]

A third argument is that as retail meat managers adopted boxed beef and reallocated meat-cutter time to other duties they discovered that more money could be made selling other products, particularly pre-packaged or processed meats. Cost-savings made by more efficient beef processing were accordingly credited against the prices of other items and beef prices were not adjusted to reflect the new efficiencies. Beef consumers therefore experienced no cost-savings and retailers increased their offerings of the other meat items which experienced increased sales on account of reduced prices.

The fourth argument is a variant on the third. Up until the 1970s retail meat cutters processed poultry, pork, and beef in the retail store. As processed poultry and pork displaced poultry and pork processing from the backroom, retail cutters increasingly became beef specialists. Beef had therefore to cover a larger portion of the cost of maintaining meat cutters in the store and that cost became more obvious to retailers because of the increased specialization. Since few retailers are willing to fire meat cutters and labor contracts often restrict the alternative duties they can perform, the problem facing retailers was not a time constraint but rather a surplus of meat-cutter labor, particularly during the slack business periods during

the week. As a consequence, until meat cutters were lost through retirement and attrition many retailers could take advantage of labor-saving attributes of boxed beef only during the weekend rush (see Table 4.14).[28]

Local Packinghouse and Retail Unions

The introduction of boxed beef divided the interests of retail and packinghouse locals within the Meat Cutters union. The effect of boxed beef is to transfer beef fabrication and some beef processing activities from the retail meat department to the packinghouse. Since this transfer of activities also involves a transfer of employment, retail locals typically resist boxed beef while packinghouse locals welcome it.

The merger of the Retail Clerks with the Meat Cutters which resulted in the formation of the UFCW in 1979 was partially a response to the increasing use of boxed beef. The merger strengthened the position of retail locals in the UFCW but it came too late to have a material effect on the adoption of boxed beef. The strategy of the union had been to resist boxed beef's adoption at the retail level while negotiating master agreements at the packinghouse level so as to raise packinghouse wages relative to retail rates. If this strategy had succeeded, then the growth of the New Breed packers would have been slowed because the cost-savings based on a wage differential would have been eliminated. The strategy, however, failed. Faced with threatened plant closings in the early 1980s, packinghouse locals accepted contract concessions which had the effect of killing the master agreement. As a consequence, the New Breed packers continued to benefit from the wage differential between packing and retail processing.

The experience with boxed beef among packinghouse and retail unions varied by firm and by the attitude of the local towards it. The interviews conducted with union representatives, accordingly, yielded insights which reflect unique experiences rather than a body of knowledge from which to draw generalizations. Among the observations cited were:

1. Boxed beef was introduced in one state during a lengthy truckers strike which had cut off shipments of beef from local plants;
2. In one metropolitan market area, contract provisions restricting boxed beef were removed only after the negotiation of a job-security provision and a higher wage rate;
3. After stores in one area adopted boxed beef and removed their overhead rails, they found it advantageous to use portable rails whenever carcass beef prices fell;
4. One local representative observed that the incidence of carpal tunnel increased as meat cutters were transferred from retail stores to retail chain processing plants because the work-area temperatures were lower; and
5. The union in one market area was forced to permit chains to use boxed beef because restrictive contract provisions could not be adequately enforced among the independent retailers.

The union representatives also confirmed most of the observations cited in earlier discussions.

Special Problems Areas

The interviewing process revealed several problem areas which relate to the adoption of boxed beef and to the process of change generally. These topics have been discussed throughout the dissertation, but they have, as yet, not been individually analyzed. This section strives to elaborate on some of these earlier discussions.

Changing Skills and Training Requirements

Some of the most heated controversies with reference to boxed beef has centered around the level of skill required in the new jobs created. In beef packing, the adoption of boxed beef has motivated a progressively greater division of labor in plants, particularly in processing divisions, and increased automation, particularly in warehouse and shipping divisions. In the retail trade, use of boxed beef has freed up time from cutting tasks and permitted retail meat managers to spend more time on planning, merchandising, and managing. In view of these changes and the economic pressure on firms, the negotiation of changes in labor policy and procedures which have accompanied the introduction of boxed beef have not always been easy within the context of collective bargaining.

The following discussion is divided into two parts. The first part discusses changes in skills and training requirements in beef packing. The second discusses changes in the retail trade.

Beef Packing

The controversy with respect to production worker skills and training can be broken down into specific topic areas. Three topics are examined here: (1) initial plant start-up costs, (2) replacement training, and (3) labor turnover. Each is discussed in turn.

Plant start-up costs accrue when new plants (or divisions) are acquired or constructed and when old plants are reopened following a shut-down. Since the beginning of the 1980s a number of beef packing plants have been acquired, renovated, or reopened within the consequence that start-up procedures have had to be instituted. The principal costs of starting up a plant are: new investments, training, high on-the-job injury rates, low productivity and product quality, and errors in the

learning process. Strategies to reduce these costs include: cost-sharing with potential customers, transfer of experienced personnel from other plants to supervise and to initiate start-up procedures, and hiring management consultants to advise on or supervise critical aspects of start-up. Estimates of the time required to start up a medium-sized beef slaughtering and processing plant and to achieve acceptable levels of productivity and product quality reported by managers ranged from three weeks with an existing, experienced work-force to six months with a new, inexperienced workforce.[29] Employee training is, accordingly, an important aspect of the total cost of start-up.

The time required for training is a rough measure of its cost[30] and of the skills acquired. Training-time decreases with employee experience and with the division of labor within a slaughtering or processing division. It increases with the amount of general knowledge and flexibilty expected of employees. Plants with a comparable division of labor and similar equipment may differ substantially in the time taken to train employees, for example, because:

1. More time is spent on safety instruction in order to reduce on-the-job injuries during the early days on the job;
2. More time is spent in off-line cutting drills in order to reduce exhaustion during on-line entry due to poor skills--a common cause of early employee resignation;
3. Employees are expected to learn several jobs initially so that they can substitute for co-workers when absences arise; and
4. An attempt is made to match employee talents with plant jobs so as to reduce later discouragement.

Some jobs should, in addition, be credited to the time required for training because they are used as a screening device--if performance

is adequate during the first one to three months (i.e. during the probationary period), then the employee moves into a knife job; otherwise, other duties are assigned. Overall, training-time varies by location with the distribution of skilled workers in the local community and by plant size because larger plants are able to employ a full-time training staff--an advantage when turnover rates are high. Nevertheless, one month appears to be the minimum time required to train a new employee in the beef packing industry.

Labor turnover, the rate at which a given cohort of employees move through a plant, has been a problem for the packing industry since its inception. Turnover rates vary substantially, however, by firm and by location. One of the important changes that occurred with the introduction of boxed beef has been the elimination of master agreements from the beef packing industry which, in effect, has meant that some firms in the industry adopted a low-wage policy. A low-wage policy assumes that worker skill levels are low and, as a consequence, that training costs are low enough that labor turnover is not a large cost to the firm. Firms with such a policy, therefore, prefer high labor-turnover rates because it allows them to maintain higher productivity levels, to avoid fringe benefit costs associated with the length of service, and to minimize the allegiance of employees to the union, if there is one. Turnover is, in turn, indirectly promoted by low wage rates, heavy workloads, and the generally harsh working-conditions of the packinghouse. Some firms in the packing industry have turnover rates of 50 percent or more each year.[31] Other firms have experienced little or no labor turnover. Location also affects labor-turnover rates because plants in strictly rural areas offer the only available employment paying

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a manufacturing wage. Table 4.11 shows that labor-turnover rates for meat packing are generally high and that they fluctuate cyclically. Labor turnover, as measured by the number of new hires, was, for example, 25 percent of the work force in 1981.

The introduction of boxed beef has affected start-up costs, training-time, and labor turnover for two reasons. The first reason is that integration into beef processing increased the optimal plant size which has, in turn, increased the division of labor in slaughtering and processing divisions. Individual jobs have, accordingly, become more specialized which affects performance relative to start-up costs, training-time, and tolerance for labor turnover. The second reason is that integration into beef processing was viewed as a competitive tool in the overall strategy of the firms which paved the way for its adoption. Labor-cost reductions were another such tool. As a consequence, it is hard to distinguish the effects of individual policies on the overall performance of the industry in view of boxed beef's introduction.

The Retail Beef Trade

The debate over the changing skill-content of jobs in the retail trade as a result of boxed beef is much narrower than in beef packing. There is little turnover in the employment of retail meat cutters and start-up costs are seldom a problem because even new stores are able to draw on a large reservoir of skilled workers from within the retail chain and from within metropolitan labor markets.[32] Training is also not an issue because the apprenticeship programs, which have begun to disappear in many areas and to be shortened in others, were always viewed by retail unions as an excuse to pay lower wages long after the relevant skills had been acquired. The issues with respect to skills

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rest with the fact that boxed beef reduces the time spent cutting beef in the retail store and extends the shelf-life of the product.[33] As a result, meat cutters spend more time in activities for which other, lowered-wage employees can potentially be substituted and their work is less critical to maintaining overall product quality and profitability.

A second view of this question of skills begins with the observation that although the required cutting-skills have decreased in number, their value may have increased. Several factors contribute to this result:

1. Beef has become more expensive relative to other fresh meats; and
2. Since boxed beef has already been partially processed, its value per pound is greater than carcass beef.

This view follows from the recognition that, in the long run, meat cutter wages are a balance between the supply and the demand for skilled labor. Discussions which center around the skill-content of meat cutter jobs tend to ignore demand conditions.

Almost everyone acknowledges that the distribution of skills has changed with the introduction of boxed beef. Several retail managers reported that they now needed to train their cutters not only on how to cut beef, but also how to prepare the cuts they sell. Cutters must also be trained in customer relations. Customer relations today requires knowledge not only of how to select and prepare beef cuts, but also knowledge about a balanced diet, the nutritional value of beef, and a variety of related health concerns. The need to possess customer relation skills makes it more difficult to hire and train meat cutters. Even if boxed beef has lowered the cutting-skills required of meat department employees, the critical issue is the extent to which possession of cutting-skills improves employee productivity in the

Table 4.11. Labor-Turnover Rates in the Meat Packing Industry (SIC 2011), All Employees, 1958-81.

	Separations			Accessions			
	Quits	Layoffs	Total	New Hires	Recalls	Total	Net Change
			Percent				
1958	6.5	55.0	65.8	9.8	--	60.3	-5.5
1959	11.0	48.6	65.1	21.6	--	70.6	5.5
1960	9.8	53.2	68.3	16.5	--	66.1	-2.2
1961	8.1	56.1	69.8	15.3	--	67.9	-1.9
1962	9.6	49.5	65.1	16.7	--	62.7	-2.4
1963	10.1	43.0	59.0	16.7	--	58.6	-0.4
1964	11.1	43.7	60.1	19.9	--	62.0	1.9
1965	12.0	45.6	63.8	18.0	--	59.3	-4.5
1966	18.4	39.7	65.7	26.9	--	67.3	1.6
1967	20.0	39.4	66.7	30.5	--	67.3	0.6
1968	21.7	39.0	69.0	32.0	--	70.7	1.7
1969	24.5	39.3	71.9	30.8	--	70.7	-1.2
1970	23.2	44.9	77.0	34.0	--	75.9	-1.1
1971	19.9	49.5	77.4	27.0	--	75.0	-2.4
1972	20.2	47.4	75.3	25.3	--	71.6	-3.7
1973	26.6	40.8	76.8	36.8	--	74.3	-2.5
1974	26.1	24.7	60.8	38.0	--	62.9	2.1
1975	17.0	32.3	58.6	25.2	--	55.0	-3.6
1976	19.7	20.6	49.8	30.3	15.6	52.2	2.4
1977	19.7	25.1	53.5	29.3	16.2	50.6	-2.9
1978	22.5	24.4	56.1	30.4	17.1	52.3	-3.8
1979	25.8	21.7	58.4	36.9	16.3	58.2	-.02
1980	18.9	22.3	50.8	27.1	17.5	50.0	-0.8
1981	19.7	24.0	53.7	24.9	18.5	48.8	-4.9

Source: USDL, Bureau of Labor Statistics, "Labstat Series List Program," Washington, D.C., December 16, 1982.

new activities to which meat cutters are being assigned.[34]

The Process of Integration into Beef Processing

A variety of observations emerged out of interviews with representatives of firms, unions, and government agencies which provide a backdrop for understanding the problems encountered by packers and retailers that integrated into beef processing. These observations are divided into two categories: attitudes with respect to integration and economic concerns.

Several attitudes with respect to integration into beef processing are worth reviewing. The most striking of these is that the attitudes of packers and packinghouse unions both differed from the attitudes of retailers and retail unions. There was as much difference in attitudes among firms[35] and among unions as there was between firms and their respective unions.

In simple terms, integration into beef processing was an act of diversification for packers and an act of specialization for retailers. Packers viewed it as diversification because they began selling carcass-parts in addition to carcasses. Retailers viewed it as specialization because it limited the number of tasks for which individual meat cutters were responsible. Since the diversification meant expanded employment and the specialization meant reduced employment, packinghouse unions favored integration and retail unions resisted it.

The goals of integration expressed above are reflected in the wage rates offered by packers and retailers to production workers in their plants. Packers viewed processing as more labor-intensive than slaughtering and, at least initially, they discounted the wages of processing division workers relative to their slaughtering division.

In contrast, retailers viewed processing an enhancing labor productivity in existing activities and they provided wage premiums to the meat cutters willing to leave retail stores to work in their processing plants. Up until the early 1980s when economic pressures began to erode the wage gains of retail meat cutters, there was a tendency for packing and retail meat cutter wages to diverge.

The attitudes of packers and retailers also affect their pricing policies. Packers use at least two conventions for arriving at boxed beef prices. The first convention is to use market carcass-prices plus a processing charge, adjusted for byproduct values, to define a carcass-equivalent price for boxed beef. The second convention is to sell carcass-parts separately at whatever prices the market will bear. Since the second method typically results in a higher carcass-equivalent price, the first method amounts to a subsidy for customers willing to purchase boxed beef in carcass-units. The pricing practices of retail processing plants, by comparison, reflects the practices of retail meat departments. Retail processors typically price primals and subprimals on a cost-plus basis (i.e. carcass-acquisition, material, and labor costs plus a percentage markup).

The specialized nature of packing plants poses special problems. The construction and resale value of plants have a wide spread between them because meat packing plants have few alternative uses. As a rule of thumb, plants typically resell for roughly 50 percent of their construction cost and rennovation of these plants typically costs an additional 25 percent of construction costs.[36] During interviews in the midwest region, plants with an annual capacity of 200,000 to 300,000 head were reported to cost $11 to $15 million to acquire and

$20 to $30 million to build. The two reasons most frequently cited for sale of old plants in this region were inadequate cattle supplies and excessive labor costs. Surprisingly, few packers cited plant obsolescence as the reason for a plant sale or shutdown.

The Environment of the Beef Trade in Retailing and Food Service

Although beef packers like to discuss their role in meeting beef demand, their immediate customers are the retail and food service industries. The ability of packers to meet the needs of these two industries is therefore an important determinant of firm success. The standard operating procedures employed in these two industries in the long run likewise determines how the distribution system performs. It is therefore useful to examine the environment and prospective trends in employment in these two industries.

Retailing

As important as the retail industry is to the success of the beef subsector industries, detailed statistics and studies of retail beef cutting practices are largely unavailable. The data available on food retailing suggest these trends:

1. Beef consumption increased after WWII up until a high of 95.7 pounds (retail weight) was reached in 1976 and leveled off after 1979 at roughly 77 pounds per capita (USDA, ERS, National Economics Division, 1983b);
2. Employment in retail meat cutting rose until 1976 and declined from 191,000 in 1977 to 178,000 in 1981 since then (Table 2.2);
3. The sales per manhour in food retailing (SIC 54) has declined since 1971 (Table 4.12);
4. Supermarket earnings were comparable to those of the meat packing industry in the 1970s (Table 3.8);

Table 4.12. Selected Measures of the Performance of U.S. Retail Food Stores (SIC 54), 1960-79.

Year	Sales	Hours Worked	Employees	Sales per Manhour	Sales per Employee
			1967=100		
1960	84.1	103.9	95.1	80.9	88.4
1965	96.4	102.8	98.6	93.8	97.8
1970	113.2	101.1	105.7	112.0	107.1
1971	115.0	102.0	107.0	112.7	107.5
1972	116.7	103.7	109.0	112.5	107.1
1973	113.8	105.3	110.7	108.1	102.8
1974	112.6	107.7	115.5	104.5	97.9
1975	113.2	108.0	117.2	104.8	96.6
1976	118.5	110.7	118.8	107.0	99.7
1977	119.3	112.1	121.3	106.4	98.4
1978	117.0	115.9	126.8	100.9	92.3
1979	117.8	117.6	130.3	100.2	90.4

Source: USDL, Bureau of Labor Statistics, Productivity Measures for Selected Industries: 1954-1979, Bulletin 2093, (Washington, D.C.: Government Printing Office, April 1981a, p. 191.

Table 4

Year	
1960	
1965	
1970	
1975	
1980	

NA =

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Table 4.13. The Percent of Store Sales by Departments in U.S. Supermarkets, Selected Years, 1960-80.

Year	Departments					Total meat sales
	Frozen foods	Bakery goods	Dairy products	Produce	Meats	
	----------Percent of store sales------					$Millions
1960	4.40	4.25	NA	9.60	24.25	6,184
1965	5.24	4.57	NA	9.69	25.11	7,955
1970	5.55	5.11	NA	10.34	24.13	14,165
1975	7.40	3.25	11.86	10.47	20.19	22,052
1980	7.99	3.12	11.13	10.76	16.62	33,247

NA = Not available.

Source: Chain Store Age, Supermarket Edition, July issues, selected years.

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5. Occupational injury rates in retail food stores (SIC 54) are roughly half those in the meat products industry and have declined throughout the late 1970s (Table 3.5);
6. The inflation-adjusted, wholesale-retail beef price spread increased 8.2 percent between 1977 and 1982 (Table 3.7); and
7. The contribution of the meat department to total retail sales has declined from 24 percent in 1960 to 17 percent in 1980 (Table 4.13).

These trends suggest that retail labor costs have increased since 1976, in spite of declining meat cutter employment, and that beef sales are no longer as important to retailers as they once were. There has therefore been an economic incentive to change the way that beef is processed and sold in retail stores at least since 1976 (Allen, 1982).[37]

The retail beef trade has, in fact, been changing. Although many of the retailers interviewed had experimented with boxed beef in the early 1970s, they expanded their product line or general use in the late 1970s. Chicago unions, for example, first admitted boxed beef products in 1979. Retailers cited these other changes:

1. Addition of a coarse-ground beef program;
2. Installation of automatic scales, packaging, and pricing devices;
3. Purchase of mixer-grinders and meat scrappers;
4. Construction of larger stores and new store formats designed to segment consumer markets;
5. Purchase of chill-pak rather than ice-pak chicken;
6. Experimentation with centralized meat processing, particularly processing of retail cuts from boxed beef;
7. Experimentation with UPC scanning of meat; and
8. Removal of restrictive labor contract provisions.

Although there is currently a strong economic incentive for the retail industry to try new ideas, a growing professionalism among meat department managers may also be contributing to the increased pace of innovation.

The productivity figures cited by the retailers interviewed reflected some use of boxed beef. Meat sales per manhour ranged from $98 to $175 and meat output per manhour ranged from 55 to 73 pounds retail weight.[38] This latter figure compares with figures cited earlier in this chapter. The Dillard study (1976, pp. 14-18) reported output per manhour to be 39.2 pounds for carcass beef and 70.0 pounds for boxed beef in 1976. A comparison of these two sets of figures suggests that the lower figure cited by retailers indicates substantial use of carcass beef and that the higher figure indicates substantial use of boxed beef.[39]

In spite of the progress and some indication of change, however, impediments exist to hold back further increases in retail efficiency. The retailers interviewed cited these impediments:

1. Lack of precise cost estimates for meat operations;
2. Poor technological research within the retail sector;
3. Sanitation problems;
4. Scheduling problems which lead to mismatched crews and which leave employees unsupervised in the meat department, particularly at night;
5. Poor store location;
6. Union restrictions and the vulnerability of retail stores to strikes; and
7. The need to interact with customers.

The wide number of activities performed and the relatively modest division of labor in the retail meat department make it difficult for retailers to obtain productivity levels comparable to those of beef processing plants. As shown in Table 4.14, retail stores are also plagued by weekly peak-load problems. The productivity disadvantage of retailers relative to processors provides an additional incentive to move increasingly more processing activities back to processing plants.

Table 4.14. Weekly Peak Business Hours for a Typical Retail Meat Department, Interviews with Retailers, 1982 1/.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
	----------Percent----------						
Portion of Weekly Sales	8	8	8	16	20	25	15
Portion of Daily Sales	100	100	100	100	100	100	100
Morning	20	20	20	40	10	30	10
Afternoon	20	20	20	20	30	30	60
Evening	60	60	60	40	60	40	30

1/ Also see: Progressive Grocer, May 1984, p. 54.

Although the retail industry has not been a recent growth leader in beef sales, several factors are likely to have significant effects on the packing industry. First, some of the new "no frills" supermarket store formats sell no fresh beef. One such store in the Milwaukee metropolitan area recently added a meat department which featured a complete line of pre-packaged, fresh beef products process in a central cutting facility. Since the chain previously had no meat cutters, it experienced no resistance from its employees in setting up this arrangement. Second, when Unit Product Code (UPC) scanning devices are perfected which will reliably scan meat products, retail meat managers will know for the first time the form in which their beef products are sold. Retailers currently lack this kind of information because many high-value products, such as steaks, must be ground into hamburger once the meat looses its bright red color. Such reprocessing and rewrapping distort profitability calculations based on average yields. Third, the introduction of pre-packaged pork and poultry has hurt beef sales by offering consumers cheaper substitutes for beef and by leaving meat cutters less fully employed when they are not cutting beef. Fourth, the growth of produce and general merchandise sales in supermarkets appears to have diluted the contribution of meat sales to total store profitability. Consequently, store managers no longer give meat departments the high priority they once did.[40]

Food Service

The food service industry provides an important market for boxed beef and for beef generally. As early as 1975, one third of IBP's output of boxed beef was sold to food service firms (McCullough,

1975, p. 2). In 1982, the food service industry accounted for 45 percent of all consumer expenditures for beef[41] and 50.6 percent of all consumer expenditures for meat (Table 4.15). Most importantly, the food service industry provides an important growth market for beef products: consumer purchases of food away from home increase on roughly a one-to-one basis with percentage increases in consumer income.[42]

The food service industry differs from the supermarket industry in a number of ways which affects beef production and consumption. First, meat purchases are a larger percentage of total consumer expenditures in food service than in retailing. In 1982, 43.1 percent of food purchases in food service and 21.8 percent of those in retailing went for meat products (Hiemstra, 1984). This observation implies that food service firms have even more incentive than retailers to pay attention to consumer perceptions and attitudes about meat products. Second, the farm value of meat products in food service is much lower than in retailing (Table 4.15). As a consequence, product prices are less likely to vary with changes in farm input prices than with labor costs.[43] Third, the strong relationship between consumer income and expenditures on food eaten away from home suggests that the food service demand for beef products will vary with fluctuations in the business cycle. Fourth, food service firms generally employ younger workers and more part-time workers than supermarkets. The greater labor turnover and lesser skill implied creates a greater demand for convenience foods, such as pre-portioned beef products, than exists in supermarkets. The small size and diversity of many food service enterprises, however, hamper them in getting suppliers to meet their needs. Fifth, food service firms seldom employ full-time meat cutters.[44] The beef not

processed by beef packers is processed by independent processors or purveyors.

The diversity of food service enterprises is illustrated in Table 4.16 and 4.17. Restaurants; hotels, motels, and tourist courts; hospitals; and nursing or care facilities each contribute in excess of five percent of the total demand for beef sold by food service firms. Nevertheless, about two-thirds of the beef sold by food service firms is sold by restaurants (Table 4.16) and about half of that is sold by restaurants with table service (Table 4.17). In 1979, 15.9 percent of the beef produced in the U.S. was sold in food service establishments.

Just as the growth of carcass beef appears to have been closely tied to growth in consumer acceptance of the supermarket industry, the growth in acceptance of boxed beef and frozen beef[45] has been greater in the food service industry. The primary reasons this has been true are that subindustries in the food service industry, such as fast food, place a high value on convenience foods and that the food service industry has, in general, few meat cutters whose jobs depend on the use of carcass beef. It is also possible that the food service industry is simply more innovative than the supermarket industry because, with an expanding market and a record of strong profit performance throughout the past two decades, it can afford to be.

The effect of the food service industry on the demand for beef is unclear. Nevertheless, these trends are apparent:

1. Many supermarkets have introduced deli service, salad bar, and service meat counters, in part, to meat the competition of food service firms;

Table 4.15. A Comparison of Consumer Expenditures, the Marketing Bill, and Farm Value of Meat Products for Food Sold in Food Stores and Food Eaten Away from the Home, 1982.

	Total	Food sold in food stores	Food eaten away from home
	$Billions	---------Percent-----	
Consumer expenditures	86.9	49.4	50.6
Marketing bill	56.4	37.4	62.6
Farm Value	30.5	71.5	28.5

Source: Stephen J. Hiemstra, Analysis of Technological Change in the Food Service Industry on Employment and Productivity, Purdue University, September 1984.

Table 4.16. Quantity of Beef and Veal Received at Establishments with Food Service, By Product and Kind of Business, 1979.

	Public Institutions			Private Institutions			Total	
	Separate eating places	Hotels motels, & tourist courts	Total 6/	Hospitals	Nursing or care facilities	Total 7/		
	Percent							Millions of Lbs.
Steak 1/	67.6	7.8	86.7	6.2	6.1	13.3	100.0	903.2
Roast	58.8	12.7	83.1	6.6	7.7	16.9	100.0	607.8
Processed 2/	44.7	18.5	80.3	9.4	7.8	19.7	100.0	96.1
Bulk beef 3/	81.5	3.4	88.4	3.0	6.6	11.6	100.0	157.1
Ground 4/	72.1	4.9	86.7	3.4	5.9	13.3	100.0	1,604.6
Other 5/	40.3	1.7	58.1	15.8	20.7	41.9	100.0	88.2
Total beef & veal	67.3	7.3	85.1	5.2	6.8	14.9	100.0	3,477.3 8/

1/ Includes sectioned and formed beef rolls, engineered steaks, and veal chops.
2/ Includes corned rounds, pastrami, dried beef, and products of this kind.
3/ Includes carcasses and primal & wholesale cuts.
4/ Includes meatballs, meat loaf, and unspecified ground meat products.
5/ Includes stew meat and short ribs.
6/ Also includes separate drinking places; retail shops; recreation, civic, and service organizations; and other public outlets.
7/ Also includes colleges, universities, professional, or normal schools; and other institutional facilities.
8/ Original text does not explain why this column fails to sum to the total.

Source: USDA, Economic Research Service, The Food Service Industry: Structure, Organization, and Use of Food, Equipment, and Supplies, Statistical Bulletin 690, By Michael G. Van Dress, (Washington, D.C.: Government Printing Office, 1982).

Table 4.17. Quantity of Beef and Veal Received at Separate Eating Places, By Product and Primary Type of Food Service, 1979.

	With Waiter/Waitress		Self-service	Drive-in carry-out, delivery	Cafeteria	Other	Total		Percent of Total
	Table	Counter						Millions of Lbs.	Percent
	Percent								
Steak 1/	57.2	6.0	15.0	7.1	13.4	1.3	100.0	610.8	26.1
Roast	54.6	11.0	7.2	6.5	19.2	1.5	100.0	357.2	15.3
Processed 2/	47.0	13.6	7.8	17.4	14.2	0	100.0	42.9	1.8
Bulk beef 3/	27.4	1.1	0.1	55.8	15.6	0	100.0	128.0	5.5
Ground 4/	48.9	3.7	28.4	14.0	4.5	0.5	100.0	1,157.5	49.5
Other 5/	42.5	1.6	2.4	9.3	44.2	0	100.0	35.6	1.5
Total beef & veal	50.6	5.4	19.3	13.3	10.6	0.8	100.0	2,340.8	100.0

1/ Includes sectioned and formed beef rolls, engineered steaks, and veal chops.
2/ Includes corned rounds, pastrami, dried beef, and products of this type.
3/ Includes carcasses and primal & wholesale cuts.
4/ Includes meatballs, meat loaf, and unspecified ground meat products.
5/ Includes stew meat and short ribs.

Source: USDA, Economic Research Service, Dining Out: Separate Eating Places Keep Customers Happy, Suppliers Busy, Agricultural Information Bulletin 459, By Michael G. Van Dress, (Washington, D.C.: Government Printing Office, 1983).

2. The need for large quantities of hamburger and lean steaks is relatively new and it has strengthened the overall demand for nonfed beef;
3. The food service industry appears to have adopted boxed beef earlier and to a greater extent than the supermarket industry; and
4. Younger age groups, particularly young couples, are more likely than their elders to eat out (USDL, BLS, 1983a).

Food service firms can also affect industrial structure: McDonald's, the leading fast-food chain, at one point came the closest of any firm in the beef subsector to having organized a distribution system integrated from the feedlot through to the ultimate consumer (Boas, 1976).

Prospective Employment in Beef Packing, Retailing, and Food Service

The employment of packinghouse workers, retail meet cutter, and food service workers has been projected to 1995 by the U.S. Department of Labor, Bureau of Labor Statistics (BLS). BLS projected the number of meat cutters and butchers in meat processing plants to increase from 54,600 in 1982 to 61,500 in 1995, an increase of 12.6 percent for the period. The number of butchers and meat cutters in the wholesale and retail trades is expected to decrease from 172,900 in 1982 to 164,300 in 1995, a decrease of 10.2 percent for the period. The number of cooks of all sorts[46] are projected to increase from 1,273,100 in 1982 to 2,001,300 in 1995, an increase of 57.2 percent (USDL, BLS, 1984, pp. 147 and 155).[47] The BLS accordingly anticipates that increases in packinghouse employment will not equal prospective decreases in retail employment in the occupations of meat cutters or butchers. Jobs lost in retailing will therefore only be made up by jobs gained in other growing industries, such as food service.

Chapter Summary

Beef processing for retail sale has traditionally been done in retail meat departments. Although beef primals and subprimals have for many years been processed by independent processors and purveyors for sausage-makers and the hotel-restaurant-institutional (HRI) trade, sales of primals and subprimals to retail stores only became a significant activity after 1960. Around 1960, however, some retail chains began to open their own meat processing facilities and beef packers began to experiment with processing beef primals and subprimals for sale to retailers.

Boxed beef is a vacuum-packaged product of the beef packing industry. Production of boxed beef as a percent of commercial beef production increased by at least 30 percent between 1971 and 1982. Roughly 79 percent of all beef entering retail stores was vacuum-packaged either by beef packers or by retail chain processing plants in 1982. Leading boxed beef producers have increased their market share in beef packing with the growth in boxed beef sales.

The introduction of boxed beef required a number of technological and organizational changes. In the packing industry, new plants were built in new locations, beef processing technology was transformed from a handicraft to a mass-production operation, new methods of cattle buying were implemented, government cattle and beef grading regulations were improved, and collective bargaining relationships were altered. As a consequence of these and other changes, output per manhour more than doubled between 1954 and 1981.

The technological changes which accompanied the introduction of boxed beef were labor-saving. Since on-rail slaughtering technologies

have also been labor-saving, the large increases in the labor productivity of packinghouse workers have been accompanied by long-term declines in packinghouse employment. This labor-saving characteristic of technological change in the industry has contributed to changes in the skill-content of butchering and meat cutting jobs in both beef packing and the retail beef trade. The primary means by which this has happened has been the transfer of processing activities from the retail meat department back to the packinghouse.

The rate of adoption of boxed beef by retail chains was slow during the period from 1960 to 1976 and accelerated after 1976 following the familiar S-curve pattern of technological diffusion. The initially slow rate of adoption is usually attributed to the reluctance of retail chains to give up their own meat processing plants and the resistance of retail meat cutter unions to labor-saving technological change. Although these and other institutional factors suggest reasons why the rate of absorption was initially slow, they do not provide an explanation of why the rate of adoption of boxed beef accelerated after 1976.

A possible explanation for the increase in the rate of adoption of boxed beef is that around 1976 the cost of processing beef in retail stores increased relative to poultry, pork, and other animal protein products. However, no clear evidence in support of this observation can be cited because reliable data on retail meat cutting operations are unavailable.

Food service firms were among the first to adopt both frozen and boxed beef products. As early as 1975, one third of IBP's boxed beef sales were to firms in the food service industry. This innovativeness may be due to the greater profitability of food service firms, a more

competitive market structure, or a more favorable labor situation in the food service industry than exists in retailing.

The introduction of boxed beef has been accompanied by substantial labor relations changes in beef packing and retailing. The loss of jobs and the transfer of processing activities from retail stores back to the packinghouse has been accompanied by strikes, contract concessions, plant closings, and the alienation of labor from management. The reorganization of work activities within packing plants and retail stores has, nevertheless, facilitated improved labor productivity and more moderate beef prices than would otherwise have been possible.

The growth of boxed beef sales has also affected the market structure of the beef packing industry. Thirty years ago, beef packing was one activity among many undertaken by the Big Four meat packers. During the years since then, a specialized beef packing industry emerged which focused on production of boxed beef. Initially, these changes led to a more competitive beef trade. More recently, an oligopoly structure has emerged and IBP has provided strong, innovative leadership within this new beef packing industry.

NOTES -- CHAPTER IV

[1]A 1974 survey cited 42 retail firms in 30 metropolitan areas processing beef in a centralized plant. A followup survey in 1980 reported that 8 of these plants had been closed and that 7 other plants had been converted into boxed beef distribution centers (UFCW, 1980, Appendix V).

[2]One packaging study reported that the cost-savings due to reduced product shrink were large enough to justify vacuum packaging when long distance shipment is required (Sporleder, 1972). An expanded list of the advantages of boxed beef is given by: (USDA, Science & Education Administration, 1978, p. 64).

[3]"On the average, boxed beef costs the same as if a retailer cut a carcass to primals and subprimals at his regional warehouse. However, as retailers and packers are further apart, 1,000 miles instead of 125, boxed beef becomes more attractive" (USDA, ERS, National Economics Division, 1977, p. 71).

[4]Fresh beef processing should be distinguished from cured beef processing (.e. sausage-making) which has been primarily a manufacturing activity since before the founding of the mid-western packing industry.

[5]The Hotel, Restaurant, and Institutional trade (HRI) also had its own specialized wholesalers (independent purveyors) who broke carcasses into primals, subprimals, and kitchen-ready cuts.

[6]Cryovac is a division of W.R. Grace & Company, Duncan, South Carolina.

[7]IBP's market share in 1974.

[8]Boxed beef production by packers reporting to the Packers and Stockyards Administration, AMS, USDA for 1979 and 1982.

[9]A list of the organizations visited in provided in Appendix A.3.

[10]Costs rise because the more the fat trimmed, the higher the cost of remaining beef due to reduced yield and increased labor costs.

[11]"Institutional Meat Purchase Specifications for Fresh Beef," effective January 1975, Livestock Division, AMS, USDA.

[12]Changes in USDA carcass quality grades have eliminated much of this distinction. What used to be a high "good" grade carcass is now considered a low "choice" grade carcass.

[13]The cost advantage of processing leaner cattle may have been passed on to consumers and stimulated a substitution towards leaner beef and away from consumption of choice and prime quality grade beef cuts. If so, the common perception that consumers demanded leaner cuts due to a change in preferences may be incorrect.

[14]Another limit is the willingness of retailers to do business with a limited number of boxed beef suppliers.

[15]Some of these changes are reported in (USDL, BLS, 1982, pp. 1982).

[16]Several studies have utilized this concept, however, rather than analyze the changes that have occurred, these studies have concentrated on cost and/or market structure implications. See, for example: (USDA, ERS, National Economics Division, 1977), (Weatherly, 1967), and (Williams, 1979).

[17]An alternative approach is to measure economies to scale in the industry (Ball, 1982).

[18]Employment declined at a rate of 1.8 percent annually from 1954-59, 1.3 percent from 1960-69, and 1.0 percent from 1970-80 (USDC, Bureau of the Census, 1983a).

[19]California, Iowa, Kansas, Missouri, Nebraska, Oklahoma, and Texas (USDA, Yearbook Statistical Committee, 1954-82).

[20]Attempts by cattlemen to invest in new plants in states disadvantaged by the closing of smaller packing plants may represent confusion over this point. The confusion in such cases comes from the assumption that the efficiencies generated by midwestern plants are due solely to innovations in technology rather than to the density of the local cattle population. See, for example: (Riley, 1984).

[21]Those states are: California, Texas, Iowa, Kansas, and Nebraska (See previous footnote and Table 4.6).

[22]Livestock Division, Agricultural Marketing Service.

[23]At the time the major retail firms began to set up processing plants, retail wages were lower than packinghouse wages and they insisted on retail contracts. With the decline of the master agreements in packing, however, this relationship was reversed and they found themselves paying premium wages to their meat cutters because of inflation and contract colas.

[24]"For example, Super Valu, one of the nation's biggest wholesalers, makes the following services available: computerized site selection; retail accounting; store engineering and design; consumer

research; market analysis; advertising and promotion; field rep/sic/ counseling; financing; group insurance; electronic data processing and computerized inventory control; tax counseling and estate planning; financial and budget planning; a labor relations advisory service and merchandising assistance in such areas as general merchandise, bakery, deli, meat, produce, dairy, grocery and frozen food. And, of course, the wholesalers pass along the economies of scale that big chains enjoy." (Burns, 1982, p. 38).

[25]A Canadian study of boxed beef observed that retailers were concerned about a possible loss of product quality, about the reduced opportunity to visually inspect beef before purchase, about the obsolescence of their own processing facilities, and about the pressure from unions as a result of lost meat cutting jobs (Agriculture Canada, 1983, p. 55).

[26]One industry analyst observed that after so many years of winding down their central meat processing operations, Kroger and Safeway have recently reopened and enlarged some of their old plants. In fact, Safeway has even experimented with operating its own beef packing plant in California. The reason given for this change was to retain the option not to buy boxed beef.

[27]Several retailers pointed out that boxed beef is only an advantage when consumers are willing and able to pay for a boneless or partially boned beef product. Metropolitan areas with a high proportion of blue collar workers (St. Louis, Chicago, and Detroit), have been slower to introduce boxed beef for this and other reasons.

[28]It is not clear how or whether the figures cited in the table account for overtime and Sunday wage bonuses which would alter these conclusions.

[29]The plant reporting the six month figure had hired and entirely new workforce after being shutdown for the two years. The previous employees were discriminated against in hiring and contract terms were substantially abridged once the local union was again recognized. As a consequence, the plant suffered from many incidences of sabotage and harassment of employees during the start-up period.

[30]The components of training cost include: employee labor costs, supervisor and co-worker time diverted to training, reduced productivity and product quality, lost product, and increased on-the-job injuries. Manager estimates of training costs ranged from $1,280 to $2,800 for a new employee.

[31]Plants with high turnover rates tend to hire young workers. This work-routine is therefore particularly hard on female employees because child care is not provided, because pregnancy makes working in a refrigerated environment difficult, and because female workers are more likely than male workers to develop carpal tunnel, a work-related wrist injury.

[32]This resevoir of skilled workmen is, in part, a result of the introduction of boxed beef and the reduced demand for retail meat cutters.

[33]A further issue arises because boxed beef is another step towards moving all cutting activities back to the packinghouse.

[34]In particular, it is worth knowing the extent to which consumers view meat cutters as a more credible source of information about meat issues than other store employees.

[35]One difference among firms that stands out: the integrated boxed beef packers tend to be run by individuals from the far west who seem to be more "risk loving" than their midwest counterparts (Washington Post, 1984, pp. C1-2).

[36]Terry Crawford, Economic Research Service, USDA.

[37]One measure of the retail productivity problem can be derived from price spread data. Retailers typically calculate their sales on a cost-plus basis. In 1982, retail beef prices averaged 27 percent of the wholesale price compared with 24 percent in 1978. By contrast, the wholesale price received by beef packers was 4.8 percent of the price of cattle in 1982 compared with 5.0 percent in 1978 (USDA, National Economics Division, 1983a, p. 33).

[38]This corresponds roughly to from 92 to 122 pounds (carcass weight) per manhour.

[39]Retailers also cited labor costs of from 3.5 to 10.0 cents per pound of beef or from 9.0 to 12.3 percent of operating cost (i.e. including meat purchases). Shrink costs were said to range from 1.2 to 2.0 percent of sales. In general for retail food stores, payroll costs were 58.1 percent of total expenses in 1981 (Progressive Grocer, 1984, p. 72). Note that the productivity figures reported by retailers may not be comparable because of differences in store design and product offerings.

[40]The market structure of the retail industry may also be a problem. See: (Hawkins, 1978).

[41]According to a study done by the Cryovac Division of W.R. Grace & Company.

[42]The income elasticity of demand is roughly equal to unity for food eaten away from home and roughly double that of food eaten at home (Hiemstra, 1984, pp. 20-26).

[43]This suggests that the demand for beef by food service firms is much more inelastic than the demand by retail firms.

[44]More than half of all food service workers are waiters, waiter-assistants, counter and fountain workers, or dishwashers. Another third are cooks and bartenders. The remainder perform clerical, managerial, or administrative duties (Carnes, 1977, p. 68).

[45]The experience of food service and retail firms with adoption of frozen beef is documented in: (Martin, 1976).

[46]Restaurant cooks, short-order and speciality,fast-food cooks, and fast-food preparation and service workers.

[47]BLS provides a range of estimates. In each case, the larger figure in the range is cited.

CHAPTER V

SUMMARY AND CONCLUSIONS

Introduction

The labor bill in beef packing accounts for more than 50 percent of the operating costs exclusive of live cattle purchases. Changes in the relationship between labor and management accordingly have important effects on the course of technological and structural change in beef packing.

The objective of this dissertation is to study the relationship among changes in labor relations, technology, and market structure and its impact on the general course of changes in beef packing and retailing.

The research has centered around these questions:

1. What has been the history of labor relations, technological and structural change in U.S. beef packing and retailing?
2. What are the existing labor practices and regulations? Furthermore, how has the decline of the master agreements affected the structure and performance of the beef packing industry?
3. What role has boxed beef played in collective bargaining and the changing structure of the beef packing industry? and
4. What areas are in need of further research?

The chapters of the dissertation were organized around these questions with emphasis given to the roles of labor practices and the technologies associated with boxed beef as recent sources of change.

The research process involved these elements: literature review, interviews, and analysis. Each proved equally important. More than

50 representatives of beef packing, processing, wholesaling, and retailing firms, local unions, and government agencies were interviewed in the course of this research. The literature on the beef packing industry was reviewed before and after these interviews. Conclusions drawn from the interviews and from the literature were then discussed with industry observers in the USDA and national trade organizations.

The History of Labor Relations, Technological and Structural Change in U.S. Beef Packing

Technological change in the beef packing industry has often led to changes in labor organization and market structure. The switch from piecework incentive wages to an hourly wage with the introduction of on-rail slaughtering technologies provides an example of this relationship. Recognizing this effect of technological change, representatives of the groups adversely affected have sometimes attempted to influence the course and rate of technological change in the beef subsector. Three important examples of these phenomena can be cited:

1. Independent retail butchers were able to frustrate the growth of the beef packing trade in the late nineteenth century by joining with the railroads to prevent rail shipment of carcass beef into East Coast markets;
2. Although centralized processing of meat by retail chains were feasible in the 1930s, the retail unions helped to frustrate its growth until the 1960s; and
3. The adoption of boxed beef has been substantially delayed in many regions of the country because of the resistance of retailers and retail unions.

As a partial consequence of such efforts, a backlog of feasible technologies has periodically accumulated in the beef subsector.

The rapid introduction of on-line processing of beef following the introduction of on-rail slaughtering of cattle suggests the existance of such a backlog.

The idea that technological change is an antecedent of changes in market structure and labor organization has also been reflected in public policies. The enactment of antitrust legislation at the turn of the century and of labor legislation to promote collective bargaining in the 1930s appears to have been related to the wide dissemination of mass-production technologies and the rise of modern methods of corporate organization and management.

The passage of the Sherman Antitrust Act in 1890 may have discouraged further concentration of the meat packing industry at the turn of the century, but direct intervention in the industry did not occur until the signing of the Packer Consent Decree of 1920. From that point, the market shares of the Big Four packers declined slowly from the 1920s through the early 1970s. Market decentralization was most pronounced in the post WWII era as improvements in transportation, technology, plant location, and federal grading standards facilitated the development of national markets and the entry of new firms. These new firms had the largest effect on the market as they led in the building of plants closer to cattle feedlots, the introduction of on-rail cattle slaughter and on-line beef processing, and the drive to eliminate master agreements from the beef packing industry. The cost advantages provided to the new entrants by these changes allowed them to increase their market share and to assume a leadership role in the industry in the 1970s.

Collective bargaining began in the beef packing trade in the 1890s but it was not a continuing influence on the industry until after the enactment of the Wagner Act of 1935. Membership in the unions which now make up the United Food and Commercial Workers International Union grew thereafter from 31,800 in 1935 to 1,230,000 in 1979 (Table 2.9). This growth was due to organizing drives, union mergers, and the attraction of industry-wide, master labor agreements.

Maintenance of a common labor policy among firms appears to have been the key to maintenance of a stable market structure in the beef packing industry because of the labor intensity of cattle slaughtering and beef processing activities. An informal common labor policy existed among beef packers from the turn of the century which was formalized with the signing of the master agreements during WWII. The entry of new beef packers in the 1950s and 1960s which did not operate under the master agreements created a dual wage structure in beef packing. This dual wage structure, in turn, led to the gradual decline of firms operating under the master agreements and to a rapid increase in the market share of the new entrants.

Although changes in technology have often led changes in labor practices and market structure, labor practices and market structure have also often molded the technological changes which have taken place. Market conditions (i.e. relative factor scarcities and general economic circumstances) appear over time to dictate the kinds of changes which will take place and the speed of the adjustment. It is accordingly useful to review the structure of product and input markets in order to understand how relative scarcities can emerge and influence the changes which may take place.

Procedures and Practices of Collective Bargaining in Beef Packing and Retailing

Overview

Collective bargaining functions both as a governance mechanism and as a communication channel linking the production worker with top management. Greater efficiency in setting objectives and an increased flow of information within the firm are products of a successful bargaining relationship. Since the success of the relationship hinges on the attitudes of labor and management, the obligation to bargain in good faith is the key obligation set forth in the Wagner Act. Bargaining in good faith is difficult, however, because it requires the willingness and ability to deal objectively with firm problems, management of internal conflicts, and other obstacles so that goals can be set and the communication lines between labor and management remain open.

Collective bargaining in one plant, firm, or area is seldom carried out in isolation from other agreements. Due to the high cost of labor negotiations and conflict, agreements reached with leading firms tend to be adapted for use by their weaker rivals. The relationships which evolve out of these practices reflect the structure of the product market and they tend to change with changes in market structure. The decline of the master agreements in the beef packing industry during the 1970s as the market share of leading packers changed is one example of this phenomenon.

Technological change has also altered the character of labor relations in beef packing. Plant relocations and the automation of slaughtering and processing lines have changed job descriptions,

improved job opportunities for women and older workers, altered the allocation of work between white and blue collar workers, led to a rewriting of contracts, and changed the skills required of meat cutters. As a consequence, labor productivity has more than doubled over the past three decades in meat packing and the incidence and severity of on-the-job injuries has declined. Technological and organizational changes in food retailing and food service have likewise led to the creation of more part-time and less full-time work in food distribution.

Effect of the Decline of the Master Agreements

Introduction

A master agreement is an agreement by all the plants in a company or all companies in an industry to pattern important contract provisions after the provisions of the first agreement settled during each cycle of labor negotiations. Master agreements were introduced in the beef packing industry in the early 1940s as a means of insuring industrial tranquility as America engaged in World War II. Agreements were settled every three years after that until the early 1980s. The early 1980s marked the end of a 20-year transition during which industry leadership passed from the Big Four meat packers to the New Breed packers--a group of specialized beef packers. The change in leadership of the industry was marked by increasing sales of boxed beef, changes in market structure, and the decline of the master labor agreements.

Effect on Employees

The declining importance of the master agreements in the beef packing industry in the late 1970s and early 1980s has meant a loss of both income and benefits for production workers. During this period,

it was common for wages to fall by 20 percent or more (from roughly $10 to $8 per hour) and for benefits to decline in value by even greater amounts. The most important benefits lost were pensions, transfer rights, cost-of-living adjustments, and severence benefits. In many contracts, seniority clauses were rewritten to limit the size of the seniority unit within which employees are permitted to bid for new jobs and to bump co-workers with less seniority in the event of a layoff. The result of recent changes which have taken place has been to reduce the cost of the labor bill and to promote productivity increases.

A less tangible byproduct of the decline of the master agreements has been an increase of antagonism between labor and management. This antagonism has increased as a consequence of labor policies adopted by some New Breed packers designed to: (1) eliminate the master agreements; (2) reduce the status and pay of meat cutter jobs; (3) encourage increased line speeds and labor turnover; and (4) discourage union affiliation.

Effect on Market Structure

The decline of the master agreements would have been swift and without major market structure effects had all the beef packers abandoned them together. This did not happen. These explanations can be cited:

1. A common labor policy served to limit competition in the industry by eliminating labor cost differences among the firms. As long as technological innovation was slow and incrementally adopted, firms could accordingly expect to share a common cost structure and common market prices. Leading firms were accordingly motivated to encourage adherence to the master agreements as a means of limiting competition and protecting their established market position;

2. It was easier for new entrants to avoid the master agreements than for old firms to give them up. Firms participating in the market agreements could expect a coordinated strike in all of their plants if they attempted to gain concessions from their master contracts. New entrants in the industry, by contrast, had the option to attempt to remain nonunion or to sign contracts with unions which did not participate in the master agreements. The new entrants were therefore seldom faced with a company-wide strike and, as a consequence, they were consistently able to negotiate more favorable labor contracts than their established competitors;
3. The conversion to on-rail slaughtering and the construction of new plants in country locations in the late 1950s and early 1960s was more expensive for established firms than for the new entrants because of the severence payments, retraining and transfer rights provided by the master labor agreements. As these older firms developed financial difficulties, they were acquired oftentimes by conglomerate firms from outside the packing industry. Some of these conglomerates adopted a policy of planned obsolescence. Since these firms made no attempt to replace old plants and equipment, while beef demand was strong they could afford to pay a higher labor bill; and
4. The older firms were large and slow to respond to to new competition. They also operated a number of enterprises other than beef packing which could, if necessary, cross-subsidize beef operations. When new firms entered the industry in the 1950s and 1960s beef consumption was rising fast enough that they did not view the new entrants as a serious threat to their market position.

For these reasons, the Big Four packers operated under the master agreements after it was profitable to do so. As a consequence of this and their failure to position themselves properly in the market for boxed beef, the Big Four packers lost their market share in beef packing rapidly in the late 1970s and early 1980s to these new entrants.

The decline of the master agreements may have had one further effect on market structure. Firms which experience a cost-savings have an incentive to invest part of that savings in differentiating

their product from that of other firms. If such merchandising efforts are successful, then market prices are kept from falling the full extent of the cost-savings (Owen, 1983, Appendix 1). Since boxed beef was adopted at the time when participation in the master agreements first declined and boxing can be used to differentiate beef products, declining labor costs may have contributed to the growth of monopolistic competition in the beef packing industry.

Effect on Productivity

Two observations suggest a link between the decline of the master agreements and increases in labor productivity. First, since master agreement plants could not match the wage and benefit concessions provided under other labor agreements, these plants were motivated to make greater investments in labor-saving technology and to make other improvements so as to raise the productivity of their work force. Although this may not have been the strategy of the master agreement firms, the existence of a dual labor cost structure in beef packing clearly provided an engine for change in the industry. Second, if productivity is measured in terms of the value of inputs and outputs, then a decline in labor costs is by definition an increase in productivity.

The productivity of packinghouse workers has increased substantially in the post WWII period. Red meat output per manhour increased from 62.4 pounds in 1950 to 171.8 pounds in 1981 (Table 3.6). Decreases in packinghouse employment and increases in red meat output contributed to this trend (Carnes, 1984). Since most red meat produced (60 percent in 1982) is beef and the most important labor-saving technological advances to occur recently have occurred in beef packing, workers in beef plants appear to have accounted for the largest share of this

increase in labor productivity (USDL, BLS, 1982a).

An important problem besetting these data arises because increasing labor productivity in beef packing does not insure lower consumer prices--prices may only rise less quickly or fail to rise. A measure is needed which links the performance of the beef packing industry to consumer prices. Beef prices spread data adjusted for inflation come close to providing this measure. These data show that over the period from 1977 through 1982 (USDA, ERS, NED, 1983a):

1. Farm value increased 11.1 percent;
2. The cost of slaughtering declined 26.7 percent;
3. Intercity transportation cost increased 50.0 percent;
4. Warehousing and delivery cost increased 46.0 percent;
5. Fabrication and retailing costs each increased 8.2 percent; and
6. Retail beef prices increased 10.5 percent.

These figures show that over the period from 1977 through 1982 the cost of cattle slaughtering decreased 26.7 percent while the cost of processing (i.e. fabrication and retailing) increased 8.2 percent. Inasmuch as cost changes are associated with changes in labor productivity, this observation suggests that labor productivity improved more rapidly in slaughtering than in processing.[1] These figures do not take into account the changes in market structure brought about by the greater utilization of boxed beef and the shifting of processing activities from retailing to packing it made possible. Had boxed beef not been introduced, the costs of retailing may have been much higher.

The Role of Boxed Beef in Labor Organization and Industry

Introduction

Beef processing for retail sale has traditionally been done in retail meat departments. Although beef primals and subprimals have for

many years been processed by independent processors and purveyors for sausage-makers and the HRI trade, sales of primals and subprimals to retail stores only became a significant activity after 1960. At about that time retail chains began to operate their own meat processing facilities and beef packers began to experiment with processing beef primals and subprimals for sale to retailers.

Boxed beef is a vacuum-packaged product of the beef packing industry. Production of boxed beef as a percent of commercial beef production increased at least 30 percent between 1971 and 1982. By 1982, roughly 79 percent of all beef entering retail stores was vacuum-packaged either by beef packers or by retail chain processing plants. Leading boxed beef producers increased their market share in beef packing with the growth in boxed beef sales.

The introduction of boxed beef required a number of technological and organizational changes. In the packing industry, new plants were built in new locations, beef processing technology was transformed from a handicraft to a mass-production operation, new methods of cattle buying were implemented, government cattle and beef grading regulations were improved, and collective bargaining relationships were altered. In retailing, many of the changes which might have otherwise accompanied the introduction of boxed beef occurred earlier when centralized processing plants were opened. The primary effect of boxed beef on retail chains which have these processing plants was to motivate the chains to scale back on their own processing activities.

The technological changes which accompanied the introduction of boxed beef were labor-saving. This observation can be deduced from the capital expenditures (Table 4.5) and employment figures (Table 2.2)

of the meat packing industry. It is also reflected in labor productivity data (Table 3.6) and in data on the distribution of employment by plant size (Table 4.7). The labor-saving nature of technological change has contributed to changes in the skill-content of jobs in beef packing and retailing.

The rate of adoption of boxed beef by retail chains was slow during the period from 1960 to 1976 and more rapid after 1976. The slow rate of adoption is usually attributed to the reluctance of retail chains to give up their own meat processing plants and the resistance of retail meat cutter unions to labor-saving technological change. Although these and other institutional factors suggest reasons why the rate of adoption was initially slow, they do not provide an explanation of why the rate of adoption of boxed beef accelerated after 1976.

A possible explanation for the increase in the rate of adoption of boxed beef is that around 1976 the cost of processing beef in retail stores increased relative to the cost of poultry, pork, and other animal protein products. However, clear evidence in support of this hypotheses cannot be cited because reliable data on retail meat cutting operations are unavailable. Nevertheless, calculations comparing the relative value of carcass and boxed beef suggest that carcass beef was still likely to be more economical than boxed beef in 1976, especially for firms unable to reduce their employment of meat cutters.

Food service firms were among the first to adopt both frozen and boxed beef products. As early as 1975, one third of IBP's boxed beef sales were made to firms in the food service industry. This innovativeness may be due to the greater profitability of food service firms, a more competitive market structure, or a more flexible labor situation

in the food service industry than typically exists in retailing.

Changes in the Structure of the Beef Packing Industry

The growth in production of boxed beef has contributed to two changes in the structure of the beef packing industry. First, leading boxed beef firms, such as IBP, Excel, Land O'Lakes (formerly Spencer Beef), Dubuque, and Monfort, experienced a rapid growth in market shares during the 1970s. Four-firm concentration in fed cattle slaughtering rose from 26.1 percent in 1970 to 45.8 percent of the total market in 1981. Most of this increase occurred in the boxed-beef subindustry where four-firm concentration grew from 32.1 percent in 1974 to 65.8 percent in 1982 (Table 4.2).

Second, the integration of beef packing firms into beef processing to produce boxed beef appears to have contributed to a problem of excess-capacity in the industry. The problem of excess-capacity normally exists in the packing industry as the slaughtering industry reaches a low point in the cattle cycle when cattlemen are withholding animals from slaughtering for breeding purposes. The integration of leading beef packers into beef processing contributed to excess-capacity in the industry because savings brought about by innovative labor polices and by improvements in processing technology encouraged these firms to build new plants in important cattle-feeding regions adding to the existing slaughtering capacity. Although the primary business of these new facilities was processing, because an integrated plant offered advantages over a plant specialized in slaughtering or processing, some slaughtering-capacity was usually added. This new construction meant that excess slaughtering-capacity existed throughout the cattle cycle in the High Plains and Southwest regions. In other areas,

excess slaughtering-capacity developed as small and large firms alike competed in integrating forward into beef processing while local cattle and national carcass supplies declined.[2] This expansion into processing is often promoted by cattlemen who, fearful of loosing local markets for their cattle, encourage state and local governments to subsidize the construction and expansion of local beef packers.[3] Over-capacity in cattle slaughtering and beef processing is widely believed to be the cause of the weak profit performance of the beef packing industry.

The Effects of Boxed Beef on the Skill-Content of Jobs in Beef Packing and Distribution

The introduction of boxed beef has affected employees in beef packing and retailing in several ways. First, it increased employment of meat cutters in beef packing and decreased employment in retailing. Second, the increased rivalry among firms to maintain competitive labor costs and productivity levels has increased the pace of work. Third, the new technologies employed in boxed beef production have reduced the physical exertion and injuries associated with meat cutting and shipping. Use of boxed beef has facilitated similar improvements in working conditions in retail stores. These and other changes have led managers in beef packing and retailing to press for contract concessions. The chief argument used to support these requests is that boxed beef has reduced the skill-content of meat cutting jobs.

The skill-content of meat cutting jobs in beef packing and distribution has been affected in a number of ways. In the packinghouse, the further division of labor resulting from the use of mechanical assists, such as moving tables, has permitted employers to reduce the time

required to train new employees and to increase labor productivity. In the retail store, the use of boxed beef has reduced the time required to prepare beef cuts and make it possible for managers to spend more time supervising employees and merchandising products. For these reasons, the introduction of boxed beef is said to reduce the skill-content of meat cutting jobs.

Several observations can be made about this statement. First, the demand for labor and labor skills is derived from the demand for beef. If the demand for beef rises, then the wages paid for skilled work may rise. The extent that wages rise, however, depends on the supply of skilled workers and the time required to train new workers (i.e. the skill-content of the job). Discussions of the skill-content of jobs often dwell on the supply rather than the demand for these skills. Second, since the acquisition of cutting skills takes time, the average tenure of meat cutters is correlated with their average skill level. Since labor-turnover rates are higher in packing than in retailing, it is likely that retail workers acquire more skills cutting meat than packing-house workers.[4] Likewise, since labor-turnover rates in beef packing plants appear to have risen in recent years with the decline of wage rates and the increase in line speeds, it is likely that the average skill level of the work force in leading plants has declined.[5]

The controversy over employee skills has much in common with the controversy over the source of increasing productivity. If skill is thought of as equal to total productivity when quality is held constant, then an increase in total productivity is a per se increase in skill. The problem then becomes how to attribute the increase in productivity. If the increase in productivity is due to capital investment, then the

increase in skills is technological change. Unfortunately, it is in practice difficult to attribute increases in productivity to any single factor of production (Bonnen, 1983).

Topics for Further Research

Looking Ahead

Further research needs to deal with future problems. It is accordingly helpful to outline the trends that will likely shape the future.

The need to cope with a more uncertain, more volatile economic environment will be an over-riding concern during the coming decade. Uncertainty will likely increase as U.S. industries continue to adjust to the increasingly competitive world market. Increasing productive capacity, economic development, trade liberalization, and the diffusion of new technologies all have the potential to increase the uncertainty in world markets in coming years. Under these circumstances, firms with special access to limited resources and with low unit production-costs will have an advantage.[6] The beef packing industry will be affected by these developments chiefly through changes in consumer incomes, the structure of domestic employment, and the cost of inputs, such as labor.

In this new environment, beef consumption will increase--if at all--at a rate reflecting increases in U.S. population. Per-capita beef consumption may even decline with general declines in consumer disposable incomes and in the need for high-energy foodstuffs generally as employment shifts further away from traditional blue-collar occupations. Furthermore, per-capita consumption could decline with increases

in the cost of beef relative to other protein substitutes, such as pork and poultry. In spite of a general weakening of beef demand, the demand for beef among high-income groups and growing industries, such as HRI, may continue to increase. Firms willing to offer products tailored to meet these needs and to specialize in serving other market segments will likely continue to prosper in coming years.

In coming years, IBP will likely continue to exert strong leadership in the beef packing industry. This leadership will likely continue to affect the labor policies, product development, productivity, market structure, and profitability of competing firms for the next several decades. However, the leadership remains contingent upon IBP's economies to scale in production, plant location, technological innovativeness, and corporate structure. In this respect, future changes are possible over the course of the next generation if the comparative advantage of the High Plains in feed grain production is lost due to depletion of regional water supplies, technological change, and changes in federal agricultural programs.

The transfer of beef processing activities from retail food stores back to the packinghouse will likely continue although at a pace slower than the recent past. Further transferring of processing activities will likely be slower because retail and packinghouse wages have begun to converge, some consumer groups prefer retail-cut products, and some further-processed beef products will require the development of improved packaging in order to receive consumer acceptance.[7] In view of the economies inherent in large scale beef processing and the availability of partially-processed and pre-packaged beef products from beef packers, it may be feasible for retailers to open and operate large, specialized

meat markets in the near future.

The future of labor organizations in beef packing and retailing will likely continue to be affected by the need for a highly productive and flexible work force. Wage levels may rise in beef packing in coming years because of slowing population growth and the establishment of a stable market structure in the industry. Continued growth in the immigration of low-income groups, such as the Mexicans and Vietnamese, and increased U.S. participation in world markets will, however, tend to moderate the increase in wages. In order to maintain living standards, labor organizations will accordingly need to be open to technological advances, to encourage the further education and retraining of workers, and to maintain flexible work assignments. Provisions to maintain a safe work environment and job security will also need to be given priority consideration in adapting to the more uncertain economic climate of the coming decade.

Future Research Needs

During the course of the research outlined in this dissertation, several problem areas were identified which continue to stand in need of further research. Each of these areas will be addressed in turn.

Information Necessary for Collective Bargaining

In the absence of timely and accurate information about industry economic performance (i.e. wage and productivity levels, investment, etc.), considerable time and expense in collective bargaining have in the past been expended on disagreements over the validity of information. The lack of objective sources of information about key performance variables creates a situation in which the uncertainty created by changes

in market conditions is difficult to distinguish from the uncertainty created by posturing within the bargaining process (Williamson, 1979). Information transferred between participants in bargaining is clouded by distrust and deliberate attempts to confuse or mislead. As a consequence, participants must rely on external sources of information, such as technological change or market prices, to signal changes in bargaining relationship which may distort, delay, and raise the cost of joint efforts to cope with common problems (Gold, 1981).

There is a need for research to assess and improve the information used by the beef packing industry. These activities need to be considered:

1. How can current sources of statistical information be brought up to date and improved?
2. What new sources of information can be made available because of the expanded use of computer technologies? and
3. How can current research and information be assembled for more rapid access and review?

The provision of more timely and accurate information about the beef packing industry could improve the quality of decisions reached in collective bargaining and lower their cost. Without this information, the incentive is to centralize collective bargaining within the industry and to return to some sort of master agreement framework whereby the costs of bargaining fall on industry leaders.

Evaluation of Government Programs

A number of federal programs have important effects on the reorganization and performance of the beef packing industry. Some of these programs have targeted the beef packing industry. Others were designed to serve the wider needs of industry. A problem frequently cited is that federal programs fail to account for changes which have taken place

and the peculiar needs of the beef packing industry. Two programs have recently proven controversial.

The first program is a set of federal programs[8] designed to provide subsidized credit for rennovation and new construction of beef slaughtering and processing plants. Since these programs make it possible for troubled companies to continue operations and for small companies to expand operations, these programs are widely believed to maintain excess capacity in the livestock slaughtering and processing industries. Furthermore, it is occasionally alleged that even healthy companies are often able to receive loans which shifts the focus of competition from product markets to the loan application process.

The second program is the federal Job Training Partnership Act of 1981 which provides tax incentives to companies which hire and train new employees. This program is controversial because by subsidizing the training of new employees, the Act lowers the cost of firing workers on strike and provides an incentive to hire new employees even when experienced, unemployed workers are available. While the program lowers the cost of training to employers, it also tends to increase turnover in the packing industry which already has problems with labor turnover.

In view of these concerns, there is a need for research to determine the methods most appropriate for administrating these programs in the context of the beef packing industry.

Retail Meat Department Economics

The range of activities performed within retail meat department operations makes it difficult to measure and record labor productivity. The measurements made are, in turn, difficult to compare across firms because each firm includes a different set of products and activities

in its meat department. For example, a retail meat department may or may not include deli service, a service meat or fish counter, and other services in addition to operations with fresh and processed meats. As a consequence, retail managers have a difficult time measuring and evaluating the performance of their meat cutters. Similar problems arise when managers attempt to price beef and other fresh meat products. There is accordingly a need for research on the economics of retail meat operations which will lead to development of improved labor performance standards and pricing strategies. This study could begin with assembly of the new data becoming available with the introduction of UPC scanning and related computer operations. These data could be augmented by video studies of the work performed in meat departments and consumer shopping habits. These data could be used to construct a set of ideal meat department layouts, work procedures, and product placement/pricing strategies. This set of models could be used to instruct new managers and to provide categories for collection and distribution of data on meat department performance.

Labor Concerns about Job Safety and Security

There is a need for research to identify innovative, low-cost strategies to reduce workplace hazards, particularly in course of adoption of new technology and new construction. When employees enjoy a safe work environment, they are free to work faster without fear of injury.

In both beef packing and retailing there is also a need for research on innovative methods of organizing temporary and part-time work assignments. Temporary and part-time work assignments are an

important problem in beef packing and retailing because work loads vary with seasonal production patterns, variations in consumer demand, and the introduction of new products. The problem arises because these assignments often conflict with contract provisions designed to insure worker job security. Many of the restrictive labor practices found in the food system stem from a lack of attention to the needs of employees for a secure job.

NOTES -- CHAPTER V

[1]The measured productivity of retail workers has not increased as rapidly as was true in earlier years. Over the period from 1958 to 1982 output per hour of all persons increased at a rate of 1.1 percent per year while between 1977 and 1982 it slowed to 0.7 percent per year. This measure, however, applies to all retail food store employees and family workers, not just meat cutters (Carey, 1977).

[2]In the Eastern Corn Belt, local cattle supplies have declined as farmer feeders have planted their pasture land in row crops and given up cattle raising and feeding. National carcass supplies have declined as specialized cattle slaughterers nationwide have integrated into beef processing.

[3]Although the involvement of local, state, and federal agencies in the investment decisions of meat packers is extensive, it is not well documented. Two studies have, nevertheless, been done by the Congressional Budget Office (1981 and 1984).

[4]Studies of plant closings in the 1960s reported that displaced packinghouse workers required substantial retraining in order to find jobs cutting meat in retail stores (Schultz, 1966).

[5]These kinds of comparisons leave much to be desired because different jobs are being undertaken in retailing and packing. Even if a packinghouse worker cannot walk into a retail store and immediately begin cutting meat, the same is true of the retail worker who takes a job in a packinghouse.

[6]In a study of the effects of liberalization within the European Community, firms which attempted to cope with increased competition by increasing their market share through acquisitions and merchandising expenditures, by contrast, failed to maintain their market share even in domestic markets (Owen, 1983).

[7]This observation follows from the work of professors Jack Allen and Thomas Pierson of Michigan State University.

[8]These loans are administered by the Small Business Administration, the Urban Development Administration, and other agencies. See: (CBO, 1981).

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Labor Agreements and Related Documents

Agremeent. Iowa Beef Processors, Inc. and Amalgamaged Meat Cutters and Butcher Workmen of North America, AFL-CIO Local Union No. 222. Dakota City, Nebraska. May 1, 1978 through April 31, 1982.

Agreement. Iowa Beef Processors, Inc. and Southern Conference of Teamsters and Its Affiliated Teamsters Local 577. Amarillo, Texas, March 1, 1981 through March 1, 1985.

Agreement. John Morrell & Company and Local 79, United Food and Commercial Workers International Union, AFL-CIO & CLC. Esterville, Iowa. September 1, 1979 through September 1, 1982.

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Occupational Safety and Health Act of 1970. Statutes at Large, Volume 84 (1970).

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APPENDIX

A.1: Example of a Grievance Procedure

Grievance Procedure

Section 1: Should the union or any individual employee desire to process a grievance pertaining to the violation of the agreement, or violation of the employee's working conditions, the matter shall be handled according to the following steps. In the event of disciplinary action involving a discharge, it is understood that a grievance which may be filled will commence at the step 3 level within ten (10) working days of knowledge.

Step 1

The employee involved, with a union representative if he so desires, shall present the matter (verbally), to his department or shift superintendent affected within three (3) working days of the knowledge of the incident. The department or shift superintendent shall answer the employee, within three (3) working days.

Step 2

If the matter is not settled in the first step, the union shall present the matter to the personnel director. Grievances in this step must be presented in writing within ten (10) days after the answer of the first step. The personnel director shall have five (5) working days in which to give an answer in writing to the union. The affected steward and employee shall present the grievance on their own time.

Step 3

If the matter is not settled in the second step, the union shall present the matter to the plant manager. Grievances in this step must be presented in writing within six (6) working days after the answer in the second step. The plant manager shall have five (5) working days within which to give his answer in writing to the union. The affected steward and employee shall present the grievance on their own time.

Pre-Arbitration Hearing

Section 2: If the matter is not settled in the third step, the union shall present the matter to the company industrial relations division. Grievances in this step must be presented in writing within (6) working days after the answer at the third step. The company industrial relations division shall have five (6) working days within which to give the union an answer in writing. The affected steward and employee shall present the grievance on their own time. If the grievance is not resolved in this step, the grievance may be submitted to an impartial arbitrator to be selected by mutual agreement of the parties. A written request for arbitration shall be made within seven (7) days of the pre-arbitration answer. If within five (5) days after such written request the parties are unable to agree upon an arbitrator, either party shall request a list of five names from the Federal Mediation and Conciliation Service and strike names to determine which one shall sit on the

arbitration. His decision in the grievance shall be final and binding upon the employee(s) involved and upon the parties to this agreement, provided he shall not have authority other than to apply the terms and conditions specifically set forth in the agreement. It is recommended that the arbitrator shall submit his decision, in writing, within thirty (30) days after the conclusion of the hearing or hearings as the case may be. The compensation and necessary expenses of the arbitrator shall be borne equally by the company and the union.

Section 3: The parties agree that the time allowed to process grievances is adequate. If the union fails to process a grievance in the time specified herein, the grievance is ended. However, if either party requests a reasonable extension, the time limit specified for any step of the grievance procedure may be extended by mutual agreement of the company and the union representative involved in that step. Such agreement must be in writing, for a definite time period, and signed by each representative. In the event the company fails to answer the grievance in the specified time period, the grievance shall automatically advance to the next step.

The company shall make every effort to release affected stewards and witnesses to attend the grievance meeting at the request of the union. It is understood that if an individual employee wishes to pursue a grievance, he may do so under the aforementioned procedure. Should an individual process his own grievance, a union representative shall receive copies of all grievance answers and shall have the right to be present at such meetings.

Source: "Agreement Between Iowa Beef Processors, Inc. and Amalgamated Meat Cutters and Butcher Workmen of North America, AFL-CIO Local Union No. 222," Dakota City, Nebraska, May 1, 1978 through April 31, 1982, pp. 19-22.

A.2. Carcass versus Boxed Beef: Breakeven Labor Costs under Alternative Price and Productivity Assumptions

Boxed beef is economical when total retail labor costs exceed a breakeven labor cost per hour. This breakeven labor cost varies with alternative labor productivity and beef price assumptions.

Alternative price and productivity assumptions are embodied in calculations shown in Table A.1. In the first set of figures, labor productivities for carcass and boxed beef are increased by ten percent. Breakeven labor costs were then calculated under each set of assumptions and compared to the estimate calculated under the original assumptions.

As expected, when labor productivity increased for carcass beef, the breakeven labor cost increased. When carcass beef prices rose, it decreased. The opposite result was obtained for adjustment of boxed beef labor productivity and prices. Several additional observations were obtained. First, the magnitude of the increase in the breakeven labor cost for an increase in carcass beef productivity is much greater than its decrease for an increase in boxed beef productivity. A ten percent increase in carcass beef productivity increased the breakeven labor cost by 30.7 percent ($11.87) while a ten percent increase in boxed beef productivity decreased it by only 12.1 percent ($7.98). Second, when both prices are increased by one percent ($9.17), the breakeven price also increased by about one percent ($.09). This observation implies that these calculations are not sensitive to inflation.

The first observation is significant. It implies that an error in estimating carcass beef labor productivity is much more serious than an error in estimating boxed beef productivity. If it could be demonstrated that retailers have systematically overestimated the

productivity of their meat cutters in processing carcass beef, then this would, in part, explain why boxed beef has not been more widely and rapidly adopted--retailers underestimated its economic attractiveness. Alternatively, as suggested by Tables A.2 and 4.10, only union meat cutters were likely to have been paid wages high enough (when added to benefits) to have exceeded the breakeven labor costs calculated in Table A.1 for 1976.

Table 5.1. Computation of Breakeven Labor Cost per Hour under Alternative Labor Productivity and Price Assumptions, Carcass Beef (CB) and Boxed Beef (BB).

	Base estimates 1/	Labor Productivity 10% up for CB	Labor Productivity 10% up for BB	Prices 2/ 1% up for CB	Prices 2/ 1% up for BB
		$Breakeven Labor Cost			
Base estimate 1/	9.08	---	---	---	---
Productivity:					
10% up for CB	---	11.87	10.07	10.64	13.21
10% up for BB	---	10.07	7.98	7.17	8.88
Prices:					
1% up for CB	---	10.64	7.17	8.15	9.17
1% up for BB	---	13.21	8.88	9.17	10.10

1/ It was assumed that carcass beef requires 11.7 manhours and boxed beef requires 6.6 manhours to process a carcass equvalent. It was further assumed that carcass beef costs $474.50 and boxed beef costs $520.80 per carcass equivalent.

2/ In these calculations, labor productivity was assumed to be the same as in the base estimates.

Source: Calculations by the author. Assumptions are taken from: Steve Dillard, A Case Study Favoring the Boxed Beef Concept, South west Missouri State University, August 16, 1976, pp. 14-18.

Table 5.2 Employment and Earnings of U.S. Retail Meat Cutters, Selected Years, 1950-82

	Employment			Hourly Earnings
	Female	Black 1/	Total	
	-------Percent------		Thousands	Dollars
1950	---	---	177	---
1960	---	---	186	---
1970	5.7	5.8	205	3.73
1972	3.5	7.5	201	---
1973	3.5	7.5	202	---
1974	5.4	6.4	204	---
1975	5.8	9.2	210	---
1976	5.6	9.8	218	---
1977	7.0	9.1	191	---
1978	6.4	9.8	208	---
1979	6.8	7.3	224	7.68
1980	6.6	11.0	186	7.72
1981	8.4	10.7	178	7.90
1982	6.6	9.8	198	8.11

--- = Not available.

1/ Black and other racial minorities.

Sources:
1. U.S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings, (Washington, D.C.: Government Printing Office, January 1983); and earlier issues.
2. _____. Labor Force Statistics Derived from the Current Population Survey: A Databook, Bulletin 2096, (Washington, D.C.: Government Printing Office).
3. _____. Unpublished data, Washington, D.C., August 19, 1983.

A.3 A List of Persons Interviewed or Consulted in the Course of This Dissertation

Ada Beef
Grand River Drive, Ada, Michigan
Tel. (616) 949-2350
John Vanderboon

American Meat Institute
1700 North Moore Street, Arlington, Virginia
Tel. (703) 841-2400
Ewen Wilson, Director of Economics and Statistics

Associated Grocers of Colorado
5151 Bannock Street, Denver, Colorado 80217
Tel. (303) 292-1155
Leroy Vickery, Meat Manager

Borman's Inc.
18718 Borman Avenue, Detroit, Michigan 48228
Sam Feig, Vice President of Meat Operations

Certified Grocers of Illinois
4800 South Central Avenue, Chicago, Illinois 60038
Tel. (312) 585-7000
Bill Bates, Director of Fresh Meats

Chatham Super Markets, Inc.
26300 Bunert, Warren, Michigan 48089
Tel. (313) 774-5810
Mike Francescutti, Meat Buyer

Detroit Veal and Lamb
1540 Division Road, Eastern Market, Detroit, Michigan
Tel. (313) 567-8444
Donald Hankins, General Manager

Eastern Market Beef Processing Company
1825 Scott Street, Eastern Market, Detroit, Michigan 48207
Tel. (313) 833-2700
Markus Rohtbart, President

Eberhard Company
4001 Three Mile Road, Grand Rapids, Michigan
Tel. (616) 791-0701
Glenn Younkers, Director Meat Merchandising
Betty Tarder, Personnel Director

FDL Foods, Inc.
701 East Sixteenth Street, Dubuque, Iowa 52001
Tel. (319) 588-5475
Gerald Trieweiler, Vice President of Beef Operations
Chuck Naylor, Vice President and General Counsel

First Presbyterian Church
723 First Avenue South, Estherville, Iowa 51334
Tel. (712) 362-4772
John Bowles, Pastor

Food Marketing Institute
1750 K Street, N.W., Washington, D.C.
Tel. (202) 452-8444
Doyle Eiler, Director of Research

Hormel Company
P.O. Box 800, Austin, Minnesota 55912
Tel. (507) 437-5744
Dave Larson, Corporate Manager of Labor Relations

IBP, Inc.
Dakota City, Nebraska, 68731
Tel. (800) 228-8680
Lou Havrille, Director, Meat Management Center
George Keller, Service Representative (Chicago)
Bruce Pautsch, Supervisor of Labor Relations

Industrial, Technical, and Professional Employees Union
400 Keeline Building, Omaha, Nebraska 68102
Tel. (402) 342-0260
Ray Zaporowski, Business Agent

Jewel Food Stores
1955 West North Avenue, Melrose Park, Illinois 60660
Tel. (312) 531-6039
James L. Svehla, Vice President for Meat Merchandising

John Morrell & Company
191 Waukegan Road, Northfield, Illinois 60093
Tel. (312) 441-4888
Lee Bishop, Senior Vice President for Administration
Dennis Howrey, Personnel Director (Estherville, Iowa)

Joint Labor-Management Committee
1625 I Street, N.W., Washington, D.C.
Tel. (202) 331-0950
William Bedell
Philip Ray

King Soopers
65 Tejon Street, Denver, Colorado 80223
Tel. (303) 778-3349
Paul Baker, Director of Retail Meat Operations
Jack Hildreth, Meat Plant Manager

Kroger Company
12701 Middlebelt Road, Livonia, Michigan 48150
Tel. (303) 523-2100
Mike Day, Meat Plant Manager
Bill Murphy, Meat Plant Personnel Manager

Land O'Lakes, Inc.
P.O. Box 116, Minneapolis, Minnesota 55440
Tel. (612) 481-2518
William Huron, Director Industrial Relations
Jeff P. Muckow, General Manager Slaughter Division
Dennis Newlin, General Manager (Oakland, Iowa)

Meijer Company
Walker Street and Three Mile Road, Grand Rapids, Michigan
Tel. (616) 453-6711
Darrell Steinke

Monarch Packing Company
2520 Orleans Road, Eastern Market, Detroit, Michigan
Te. (313) 567-3420
Steward and Simon Gottlieb

Monfort of Colorado, Inc.
Corporate Offices, P.O. Box G, Greeley, Colorado 80632
Tel. (303) 353-2311
Gene Meakins, Vice President for Public and Labor Relations

Murco, Inc.
P.O. Box 247, Plainwell, Michigan 49080
Tel. (616) 685-6886
Wayne Anderson, Vice President for Sales
Richard Ross, Treasurer

National Live Stock and Meat Board
444 North Michigan Avenue, Chicago, Illinois 60611
Tel. (312) 467-5520
John Huston, President
Jay H. Wardell, Vice President for the Beef Program

Oscar-Mayer & Company
P.O. Box 7188, Madison, Wisconsin 53707
Tel. (608) 241-2311
Ralph H. Johnson, Vice President for Personnel and Industrial Relations
Patrick J. Lubby, Vice President and Corporate Economist

Rath Packing Company
1651 Sycamore Street, Waterloo, Iowa
Tel. (319) 235-8900
Lyle Taylor, Executive Vice President

Ropak, Inc.
16655 West Glendale, New Berlin, Wisconsin 53151
Tel. (414) 453-8200
Ron Disher, Production Manager
Charles Suss, Plant Manager

Spartan Stores
76th Street, Grand River, Michigan
Tel. (616) 878-2311
Dick Stuekin

Swift Independent Packing Company
115 West Jackson Boulevard, Chicago, Illinois 60604
Tel. (312) 431-3510
Tony Harris, Personnel Director (Des Moines, Iowa)
Richard Knight, Senior Vice President
Robert Londgren, Plant Manager (Des Moines, Iowa)

Top Line Packing Company, Inc.
2101 Martinsdale, S.W., Grand Rapids, Michigan 49509
Tel. (616) 247-1721
Vern Slaugh, Owner

United Food and Commercial Workers International Union
1777 K Street, N.W., Washington, D.C. 20006
Tel. (202) 223-3111
Packinghouse Division
Lewis Anderson, Director
John Mancuso, Assistant to the Director
David Blitzstein, Researcher
Retail Division
Bill Burns
Bill Montrose

UFCW Local 7
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Tel. (303) 356-6673
Steve Thomas, Organizing Coordinator

UFCW Local 26
2550 West Grand Boulevard, Detroit, Michigan 48208
Tel. (313) 896-1600
Dean Hansen, Chief Steward

UFCW Local 79
421 First Avenue North, Estherville, Iowa
Tel. (712) 362-3222
George Kearis, President

UFCW Local 150
1111 Bluff Street, Dubuque, Iowa 52011
Tel. (319) 556-1130
Melvin Maas, President

UFCW Local 222
3038 South Lakeport, Sioux City, Iowa 51106
Tel. (712) 276-8510
Bill Schmidt, Business Agent

UFCW Local 431
1401 West Third Street, Davenport, Iowa 52801
Tel. (319) 323-3655
R.P. Edwards, Business Agent
Jerry Zillion, Business Agent

UFCW Local 538
2228 Myrtle Avenue, Madison, Wisconsin 53704
Tel. (608) 244-5653
Harry Acker, President and Business Manager
Frank Urschlitz, Business Representative

UFCW Local 539
30800 Montpelier Drive, Madison Heights, Michigan 48071
Tel. (313) 585-5980
Andy Johnson, Business Representative

UFCW 546
2980 River Road, Des Plaines, Illinois 60018
Tel. (312) 694-5460
Jack Boyd, President

UFCW Local 951
2449 Camelot Court, Grand Rapids, Michigan
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Joe Crump, Secretary-Treasurer

U.S. Department of Agriculture, Washington, D.C. 20250
Agricultural Marketing Service
Tel. (202) 447-7191
Harold Ricker
Food Safety and Inspection Service
Tel. (202) 447-4565
Mike Huggins, Director of Field Operations, Meat and Poultry Inspection
Dave K. Hallett, Chief Meat Grading and Certification Branch
Packers and Stockyards Administration
Tel. (202) 447-7455
J.C. Williamson, Director Industry Analysis Staff
Everett Stoddard, Deputy Director Industry Analysis Staff
Animal Products Branch, NED, ERS
Tel. (202) 447-9997
Terry Crawford, Lawrence Duewen, Section Leader, Red Meats Section

U.S. Department of Commerce
Office of Consumer Goods and Service Industries
Tel. (202) 377-2428
Cornelius F. Kenney

U.S. Department of Labor
Division of Industrial Productivity Studies, BLS
Tel. (202) 523-9150
Richard B. Carnes

A.4. Interview Guides Used in the Field Study

Organization _____

Address _____

Date _____ Telephone _____

Contact person _____

Title _____

Direct inquires to:

Stephen Wayne Hiemstra
Dept. of Agricultural Economics
Michigan State University
East Lansing, MI 48825
Telephone: (517) 353-9633

General Questionnaire

1. How long have you been associated with beef slaughtering, processing, or distribution and in what capacity?

2. What have been the three most important technological/organizational changes you have observed in the beef subsector since 1960, with particular reference to beef packing and supermarketing?

Change	Where did the idea originate	Objective	Impediments to adoption	Time required for implementation

3. What, in your opinion, is boxed beef and why is it important?

4. In your opinion, are labor relations an important issue in beef slaughter, processing, and distribution? Why?

5. Which labor contracts are you familiar with?

6. How has boxed beef affected labor relations with the industry?

Packing

Supermarketing

7. What are the attitudes of the major firms towards labor relations and how do they differ between firms?

Packing | Supermarketing

8. How do union and nonunion firms differ?

Packing	Union	+	Nonunion
		+	
Wages?		+	
		+	
Labor turnover?		+	
		+	
Fringe benefits?		+	
		+	
Labor productivity? Why?		+	
		+	
Employee background characteristics?		+	
		+	
Firm size/market power?		+	
		+	
Ownership?		+	
		+	
Market served/product line?		+	
		+	
Location?		+	
		+	
Other?		+	
		+	
Supermarkets		+	
		+	
Wages?		+	
		+	
Fringe benefits?		+	
		+	
Labor productivity? Why?		+	
		+	
Employee background characteristics?		+	
		+	
Firm size/market power?		+	
		+	
Market segment served?		+	
		+	
Location?		+	
		+	
Firm ownership/management?		+	

9. (a) How do you evaluate, in a quantitative or objective sense, the increase in labor productivity of a packer who switches to production of boxed beef?

   (b) What are the impediments to increases in labor productivity or firm efficiency that you have observed?

Packing	Supermarketing

10. Which are the most and least progressive firms? Why?

	Packing	Supermarketing
Most:		
Least:		

11. What are the most important ways that the major firms compete with one another?

Packing	Supermarketing

12. Who has more market power, packers or supermarkets? Is this relationship changing and why?

13. What government programs have had the largest effect on the industry?

Packing	Supermarketing

14. What changes in technology or labor relations do you see affecting the industry in the next 5 years?

Organization: _____

Address: _____

Date: _____ Telephone: _____

Contact: _____

Title: _____

Direct inquires to:

Stephen Wayne Hiemstra
Dept. of Agricultural Economics
Michigan State University
East Lansing, MI 48824
Telephone: (517) 353-9633

Packing Plant Questionnaire

1. (a) Briefly describe your plant's philosophy with respect to labor relations and contract negotiation.

   (b) Why was this approach adopted and how has it changed through the years?

2. What beef products do you sell?

3. (a) What yield grade cattle do you like to buy? Why?

   (b) What percent of your cattle are: Yield grade 1_____
   2_____
   3_____
   Do you process them all? 4_____
   5_____

4. What percent of total operating cost is made up by labor in your slaughtering division and your processing division?

5. (a) Does your plant have a union agreement? If so, with whom?

   (b) Describe, step-by-step, the bargaining procedure employed by your firm?

   (c) Who bargains for your firm? Name/title: _____

   (d) Is your firm under the master agreement? Why?

6. (a) How many divisions are there in this plant?

(b) How is productivity measured for each division?

Division	Employment per shift	Output per shift	Value of output	Basic Wage or piece rate
Slaughtering				
Processing				
Cooler				

(c) What is the total cost of the plant's fringe benefit package?

Percent of hourly wage _____

Dollar figure _____

(d) What is the average total labor cost per head slaughtered?

_____

(e) How has the wage structure in this plant changed since 1960?

7. (a) What have been the three most important technological/organizational changes made in this plant since 1960?

Change	Where did the idea originate and who authorized the change	Objective	Impediments	Time required for implementation

(b) What other changes have been made?

Slaughtering	+	Processing	+	Cooler	+	Management
	+		+		+	
	+		+		+	
	+		+		+	
	+		+		+	
	+		+		+	
	+		+		+	
	+		+		+	
	+		+		+	

8. (a) Describe the evolution of changes required to adopt boxed-beef processing.

(b) How did these changes affect the skills required of meat-cutters, the collective bargaining process, and the plant organization?

9. Describe the training program for a new employee destined to work in the:

(a) slaughtering division?

(b) processing division?

10. (a) How much overtime do you normally have to pay and for what activities?

(b) What practices hold back potential increases in labor productivity or plant efficiency?

(c) How are grievances handled? What are the common complaints?

(d) Has this plant ever had a strike? When? Previously?

11. (a) What, on average, was your firm's ROI (net worth) during the past 5 years?

(b) What have been your firm's major investment projects?

12. How would you describe the background characteristics of your production workforce?

13. (a) What is the average number of time-loss accidents (and duration of the average accident) per week in this plant?

    (b) How have the number and type of injuries changed through the years in this plant?

    (c) What is the cost of your worker compensation per week per worker?

Organization: _____

Address: _____

Date: _____ Telephone: _____

Contact: _____

Title: _____

Refer inquires to:

Stephen Wayne Hiemstra
Dept. of Agricultural Economics
Michigan State University
East Lansing, MI 48824
Telephone: (517) 353-9633

Multi-Plant Packer Questionnaire

1. (a) Briefly describe your firm's philosophy or approach with respect to labor relations and contract negotiations.

   (b) Why was this approach adopted and how has it changed through the years?

2. (a) What beef products do you offer?

   (b) What yield grade cattle do you like to buy? Why?

   (c) What percent of your cattle are: Yield grade 1_____
   2_____
   3_____
   Do you process them all? 4_____
   5_____

3. What percent of your total operating cost is labor in your slaughtering division and in your processing division?

4. (a) Describe, step-by-step, the bargaining procedure followed by your firm.

		Name	Title
(b) Who bargains for your firm?	(a)	_____	
	(b)	_____	
	(c)	_____	

   (c) Has your firm ever been under the master agreement? Why?

5. Where are your firm's beef slaughtering-processing plants located?

Location	Opening date	Head slaugthered in 1981	Number Employees in 1981	Date boxed-beef introduced	Union	Head per man hour in Processing	Head per man hour in Slaughtering
(a)							
(b)							
(c)							
(d)							
(e)							
(f)							
(g)							
(h)							
(i)							
(j)							

6. (a) What have been the three most important technological/organizational changes made in your most advanced beef packing plant since 1960?

Change	Where did the idea originate and who authorized it?	Goal of change	Impediments to change	Time required for implementation
(a)				
(b)				
(c)				

(b) What other changes have been made?

7. Describe the adjustments necessary to switch to boxed beef production.

   (a) At the firm level:

   (b) At the plant level:

   (c) With respect to labor organization, collective bargaining, and job training:

8. (a) Have you had to shut-down or relocate any plants?

Location	Date	Plant age	Primary product	Reason
(a)				
(b)				
(c)				
(d)				

   (b) How do you evaluate the labor productivity and/or plant efficiency when deciding whether to close a plant?

9. (a) What is the range of labor costs for the slaughtering divisions of your plants?

Item	High	Plant	Low	Plant
Basic wage				
Fringe benefit costs				

   (b) What is the range of total costs per head slaughtered of your plants?

Item	Cost per head slaughtered		
	Total	Labor	Plant
Low cost			
High cost			

(c) How has the structure of wages changed since 1960? Have you considered profit sharing?

10. Describe the training program for a new employee destined to work in:
(a) the slaughtering division; and

(b) the processing division.

11. What kinds of impediments hold back increases in labor productivity and/or efficiency in your plants? Have you considered forming quality circles?

12. How would you describe the background characteristics of your firm's production workforce?

13. (a) What are the common employee grievances in your firm?

(b) Has your firm ever had a strike? When? What were the issues?

14. (a) How does the average weekly number of time-loss accidents vary among your plants? Why?

(b) What is the cost of your worker compensation?

(c) How have the number and types of injuries changed through the years?

15. (a) What has been your firm's average ROI (net worth) over the past 5 years?

(b) What have been your major investment projects?

16. What changes in technology or labor relations do you anticipate making over the next 5 years?

Organization: _____

Address: _____

Date: _____ Telephone: _____

Contact: _____

Title: _____

Direct inquires to:

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Dept. of Agricultural Economics
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Chain Central Meat Cutting Questionnaire

1. (a) Briefly describe the reasons why your firm invested in central meat cutting? When?

   (b) What problems were confronted in opening this facility?

   (c) What changes in technology/organization have been made since the facility was opened?

2. (a) How many stores does this facility serve? Where?

   (b) What beef processing activities are undertaken in this facility?

   (c) What other activities are undertaken in this facility?

   (d) What is the cost per pound _____ and per carcass_____ of this beef processing?

3. (a) How large in this facility? Sales per week: _____

   Carcasses per week: _____

   Number employees: _____

(b) How long is beef aged or kept in processing? What is the cost of aging?

4. (a) Is this facility under union contract? If so, with whom?

(b) How were the butchers hired? What problems arose with respect to adoption and training?

(c) What is your total labor cost?

Position	+	Base wage	+	Fringe package
	+		+	
Manager	+		+	
	+		+	
Meat cutter	+		+	
	+		+	
Machine operator	+		+	
	+		+	
Cooler	+		+	
	+		+	
	+		+	

5. How many men are required to load beef on a semi-tractor trailer and how much time is required?

6. (a) How much overtime is most frequently paid? For what activities?

(b) What practices hold back potential increases in labor productivity and/or plant efficiency?

7. What changes in technology or labor relations do you anticipate making in the next 5 years?

Organization: _____

Address: _____

Date: _____Telephone: _____

Contact: _____

Title: _____

Direct inquires to:

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Supermarket Chain Questionnaire

1. (a) Briefly state your firm's philosophy with respect to labor relations and contract negotiation.

   (b) Why was this approach adopted and how has it changed through the years?

2. (a) How many stores does your firm operate locally?

   (b) What is the typical size of the meat department in dollar sales per week? _____ Range: From _____ to_____.

   (c) What is the typical size in terms of employment?

Title	Number		Base Wage	
	Fulltime	Parttime	Fulltime	Parttime
Manager				
Meat cutter				
Wrappers				
Other				

   (d) Are your meat department covered by a labor contract?

   (e) Who does the bargaining and how is it done?

3. (a) What have been the three most important technological/ organizational changes which have occurred in the meat department since 1960?

Change	Where did the idea originate and who authorized the change?	Objective of change	Impediments to adoption	Time required for implementation

(b) When did your firm (or its competitors) first adopt boxed-beef?

(c) What kinds of boxed-beef products do you use? (Boxed primals, subprimals, mini-subprimals, preportioned cuts, etc.)

4. What market do you serve and what services do you offer? Market share?

5. Do you use UPC scanning for your meat products?

6. (a) Describe the adjustments necessary to use boxed-beef.

(b) Did boxed beef reduce your labor requirements? If so, by how much?

(c) How did boxed beef affect the job descriptions of existing meat cutters and the training of the new ones?

7. (a) What is the cost of your fringe package? Dollars: _____

Percent of Wage: _____

(b) What is tht total labor cost per pound of beef _____ or as percent of total operating cost? _____

(c) What percent of total operating cost is due to shrink and what factor do you count as shrink?

8. (a) How much do your butchers process, on average, in an hour?

Carcass _____ Boxed _____ (pounds/dollars)

(b) What incentives do you provide to enhance labor productivity?

(c) What practices hold back potential increases in meat department efficiency or labor productivity?

(d) What percent of your fresh meat sales come from beef?

9. What percent of your weekly meat sales fall on:

	Morning	12-3:00	3-6:00	Evening
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				

When are your chief scheduling problems?

10. (a) Have you ever had to shut-down or relocate a store?

(b) What considerations generally lead you to consider such a move?

11. (a) What are the common employee complaints?

(b) Has your firm ever had a strike? When?

12. (a) What, on average, was your firm's ROI (net worth) over the past 5 years?

    (b) What have been your firm's major investment projects during this period?

13. What changes in technology or labor relations do you anticipate making in the next 5 years?

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