THE CAUSES OF DECENTRALIZATION OF THE BARGAINING STRUCTURE IN THE CONSTRUCTION INDUSTRY IN THE STATE OF OHIO

DISSERTATION

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By

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To My Parents
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CHAPTER I
INTRODUCTION

Introduction

There are indications that a major change is taking place in the collective bargaining structure in the construction industry in Ohio. Employers' Bargaining Associations, which in the past have been instrumental in centralizing bargaining demands among local area contractors, appear to have been losing members over the past several years. In leaving the Associations, the contractors have made a choice to negotiate with the construction unions on a single-employer, rather than multi-employer basis. Accordingly, the major question to be addressed in this study is: what economic and organizational factors have been associated with employer demand for single-employer as opposed to multi-employer bargaining in the construction industry in Ohio, over time. Secondarily, the implications of the move toward a more decentralized bargaining structure for the construction unions in the industry will be explored.

Significance of the Change in Bargaining Structure

The "troubled future of American unionism" has been a popular subject of speculation in the last several years (Kassalow, 1984). The continuing drop in union membership as a percentage of the total labor
force, the increased openness and sophistication with which employers are resisting unionism, and the rise of avowedly nonunion firms are some of the signals that analysts have been pointing to as evidence of weakening union strength. The construction industry is not exempt from these observations. Construction unions have been trying (to little avail), to stem the rising tide of nonunion and double-breasted contractors. The AFL-CIO fought a losing battle in 1981 against the Reagan Administration over a change in the administration of the Davis-Bacon Act. This crucial wage governance Act has dictated wage rates on federally funded construction projects since 1931 -- and concurrently worked to the advantage of construction unions in wage bargaining by establishing base wage rates relatively equal to union wage rates in local labor markets. Thus, the manipulation of collective bargaining structure, another aspect of the industrial relations system that once was utilized by construction unions as a bargaining tool, appears to be also falling into the purview of employers.

In general, bargaining structure in the construction industry has experienced, and is continuing to exhibit, significant amounts of change. During the late 1960s and through most of the 1970s, labor negotiations in construction moved toward local area centralization as contracts were forged between associations of contractors (representing specific trades and/or a geographic region of the state), and the local branch or district council of each national union. In contrast, over the last seven to eight years, bargaining has become increasingly decentralized as individual contractors have left the employer's
associations in order to negotiate separate agreements with union locals or district councils. For example, in the late 1970s, the Carpenters' District Council of Dayton, Ohio (representing several local carpenters' unions in the Dayton area), essentially had one master contract with the West Central Ohio Division of the Associated General Contractors, (the AGC is the major association of unionized contractors in Ohio and nationally); this master contract covered nearly all of the unionized contractors who had business with the Dayton area carpenters. Today, the Carpenters District Council of Dayton, Ohio has approximately 85 separate agreements covering 100 contractors—the AGC agreement covers only 16 of those 100 contractors. This reversal appears to be part of a larger nationwide trend in many unionized sectors of the economy toward concession bargaining and the breakup of established bargaining structures (Freedman and Fulmer, 1982).

The significance of the role bargaining structure plays in many aspects of the industrial relations system can not be over-emphasized. First, union success in organizing employees, and employer ability to resist unionization, are affected by both NLRB determination of bargaining unit scope and public policy. Thus, the heterogeneity of employee groups targeted by Labor for unionization, and NLRB definition of the occupational units eligible for certification, impact both the ease with which unions can organize employees and the ability of employers to exploit diversity to their advantage in a certification campaign. Second, the "scope of the formal bargaining structure determines the diversity of individual and organizational interests
that must be accommodated during the negotiation of a bargaining agreement", and consequently it can impact the degree and effect of intraorganizational and interorganizational conflict experienced by both union and employer during negotiations (Kochan, 1980, p. 85). Third, both the union's and employer's bargaining power are affected by the broadness or narrowness of the bargaining structure and its degree of centralization. Influenced in particular are the organizational resources available to withstand a strike, and the potential impact of a strike on employers and the public. Fourth, the existence of pattern bargaining is thought by some to have a crucial role in the wage determination process and the containment of wage inflation. Lastly, bargaining structure may also significantly impact the flexibility with which either employers or unions can implement change, either in the workplace or between the parties—the broader the structure and the more employees encompassed in a bargaining unit the more difficult it is to create agreement among all parties to the change (Kochan, 1980).

Objectives and Relevance

The determinants of the recent change in construction industry bargaining structure are the primary focus of this study. Although there has been a substantial amount of research which speaks to the outcomes of unionization, such as influences on wage levels, there has only been a limited amount of systematic research addressing the determinants of multi-employer and single employer bargaining units. Of the handful of research studies concerned with this issue published over the last twenty years, almost all have utilized cross-sectional
samples, very few have addressed the non-manufacturing sector, and none of the quantitative studies have examined the determinants of change in bargaining structure.

Consequently, a research design which would attempt to identify the cause of change in employer demand for bargaining structure would contribute in an unique way to the relatively small body of literature on the determinants of bargaining structure. Such a study would also add to our general understanding of the collective bargaining process, and give us further insight into the construction industry itself. From an applied perspective, the results of the proposed study should be of interest to both union and management leaders and negotiators seeking to strengthen their bargaining positions and organizational strength vis-a-vis the opposition, and to policy makers concerned with the economic and political implications of alternate bargaining structures, (these can include strikes and wage inflation). Lastly, further clarification of the forces changing the face of union-management relations today will be welcome in light of the amount of speculation surrounding what appears to be the "troubled future of American unionism." These issues and further background on the construction industry, and an examination of bargaining structure research, will be explored in the next chapter.
CHAPTER II
LITERATURE REVIEW

Collective Bargaining in the Construction Industry

Introduction. To fully understand and appreciate the system of collective bargaining in the construction industry, the particulars of the industry itself need to be explored. The construction sector's influence on the labor relations of other sectors, its size, and its diversity have made it the focus of a considerable amount of industrial relations research. In addition, there has been a long tradition of unionism in the skilled trades and crafts which has played a role in setting an example for subsequent unionization in other sectors and in shaping the union movement in America. In the following section, the sector's influence and size will be briefly reviewed. Diversity, the one aspect of the construction industry's character which has probably influenced the bargaining arena more than any other, will be examined in more detail. A brief comment on the implications of alternate bargaining structures in construction will conclude this discussion.

Influence on Industrial Relations in Other Sectors. There are two particular characteristics of the construction industry which have contributed to the influence of this sector on the labor relations of other sectors in the American economy (Mills, 1980). First, the construction industry is not limited to one specific area of the
country; construction activity is found in virtually every community—which means contractors and labor organizations are an integral part of the economy in most localities. Second, construction activity is often contracted for and found in a variety of other industries and sectors. Construction workers are frequently in constant contact with employees of other industries as they complete projects in, for example, steel mills, manufacturing plants, or government facilities. This interaction of workers employed in construction and maintenance, with those individuals of similar skills employed in the sector of construction activity, fosters awareness and comparison of wages and working conditions by both sets of workers. Thus, "through the processes of mobility and comparison of wages and conditions, industrial relations in construction and other sectors interact continually with each other" (Mills, 1980, p. 49).

Size and Economic Health. The construction industry constitutes approximately 11%-14% of the total Gross National Product, employs 4%-6% of the National (and Ohio) labor force and comprises 12%-15% of the nation’s skilled blue collar workers (Mills, 1980, p. 50). These figures vary from year to year as industry activity is subject to seasonal cycles and wide fluctuations in product demand. In the past ten years, the construction industry has experienced a roller-coaster ride of economic downturns and recoveries. Starting with a severe downturn in 1975, the industry made a slight recovery from 1976-1979, which was followed by another severe downturn in demand from 1979-1981, particularly in residential construction activity. Since 1982, however, there has been a gradual recovery in the sector in some
geographic areas of the country, namely in the South and West (Moody, 1982; Construction Review, 1983; 1985 U.S. Industrial Outlook, 1985). In Ohio, construction employment between 1969 and 1981 dropped from 223,000 jobs to 204,000; projections for 1990, however, foresee an increase in this figure to 247,000 jobs (Construction Review, 1983, p. 12). In 1984, the increase in construction activity in the private non-residential sector, (over the 1983 level), set a Post WW II record (1985 U.S. Industrial Outlook, 1985). Furthermore, the recent fall in interest rates is expected to spur a boom in the construction industry, which may be unsurpassed in the past twenty years. "The fastest growing market...will be private nonresidential construction. In the aggregate, construction will increase at an average annual rate of about 2.5 percent between 1984 and 1989" (1985 U.S. Industrial Outlook, 1985, pp. 1-1,1-2).

This recent increase in construction business, however, has not been felt in all areas of the country. Population growth, growth in aggregate purchasing power, and the nature of the industrial base in a region, are the major determinants of the strength of construction activity in an area (Construction Review, 1983). Thus, it comes as no surprise that the Mid-West and North Central States not only felt the effects of the 1979-1981 downturn more than other areas of the country, but also have not experienced the recent upturn in construction activity to the same degree as the Southern and Western states (Moody, 1982; Construction Review, 1983; 1985 U.S. Industrial Outlook, 1985). Ohio has also endured this intensification of downturns, and only partial upturns, as it falls in the North Central region.
Additionally, the construction industry in general not only suffers high rates of seasonal slowdown, but also tends to have a high degree of frictional unemployment—so much so that the overall construction unemployment rate is consistently higher than that of every other major industry group (Mills, 1980). The personality and shape of collective bargaining in the construction industry has in part been molded by this volatility in its environment, but of equal or greater influence is the sector's most distinguishing characteristic—its great diversity.

Diversity and Constituents. The construction industry has been aptly described as "a very complex ecology of submarkets" (Bourdon and Levitt, 1980). There exists four major types of construction activity: residential construction, which includes homes and apartment houses; commercial construction, of which stores, factories, and service stations are examples; industrial construction, composed primarily of power plants and large factories; and heavy and highway construction, which encompasses streets, roads, and bridges and is chiefly publically financed (Northrup, 1984). The residential sector of the construction industry is almost wholly nonunion—95% of residential housing is built by nonunion contractors (Northrup, 1984). Most unionized contractors operate in the commercial, industrial, and heavy and highway sectors of the industry. Although unionization of the product market in each sector varies by geographic area, with higher rates in the North and lower rates in the South, the commercial sector is approximately 60% unionized (Bourdon and Levitt, 1980, p. 13); while the industrial sector is composed of 60%-80% union contractors (Northrup, 1984, p. 237). The heavy and highway sector varies radically from one region of
the country to another, however, Northrup estimates unionization to be somewhere between 40% and 60% on the average (1984, p. 276).

The "actors" in the construction industry consist of hundreds of thousands of general and specialty contracting firms, approximately fifteen building trades and craft unions, a few non-craft unions who have organized segments of the labor force (such as the Teamsters), a variety of associations (both contractor and union), and the government. The building and construction trades unions are organized along craft lines, and jurisdictional disputes have long been pervasive in the construction industry despite the efforts of the AFL-CIO Building Construction Trades Department (Northrup, 1984). The "basic trades" are the carpenters, laborers, operating engineers, teamsters and ironworkers; while electricians, structural ironworkers, plumbers and pipefitters, boilermakers, and sheet metal workers are called the "mechanical trades." Plasterers, bricklayers, and cement masons are often designated the trowel or "wet trades". It is not uncommon for the local unions of one craft to form District Councils (in a geographic area which may encompass a city, county, or several counties) for bargaining purposes; although the local retains autonomy in almost all functions except that of bargaining. Membership in the construction unions, like union membership in general, has been dropping. In 1976, it was reported that approximately 36.5% of the total construction labor force was unionized (Mills, 1980). The latest Department of Labor figures indicate that about 33% of the construction industry labor force is unionized. Northrup (1984), however, considers these percentages to be overestimates, and puts the figure between 20
and 25%. Ohio, however, is one of the most highly unionized states.

Small contractors (those with less than 4 employees and less than one million dollars in annual receipts) predominate in the construction industry (Bourdon and Levitt, 1980, p. 11). Large firms (those with more than 50 employees), however, while comprising only .02 percent of the total number of firms, account for almost fifty percent of the employment of the construction labor force (Bourdon and Levitt, 1980). The majority of contractors specialize in one product or craft, while general contractors must subcontract for particular skills. And although there are some nationally based contracting firms, the geographically fixed nature of the construction product tends to necessitate a local labor market. There is considerable movement of employees among local area work sites and employers, and consequently construction workers have historically identified with their craft, rather than with one employer (Mills, 1980). Since 1959, the union hiring hall has played the role of an employee referral service in the procurement process of skilled workers in the construction industry (Ross, 1972). In recent years, the open shop sector, or non-union sector of the industry, has been growing and encroaching into even traditional union areas of strength—namely the industrial and commercial activity arenas. Open-shop contractors have also become increasingly sophisticated in their recruiting and training practices; many even have their own apprenticeship training programs—which has taken the skill development of craftsmen out of the once exclusive jurisdiction of the union. An accompanying development has been the rise of the "double-breasted" contractor, or one who has both a union
business arm and a nonunion operation.

Mills reports that in 1980 there were approximately 6,000 collective bargaining agreements in the construction industry, most between local unions (or district councils), and employer's associations (Mills, 1980). There exist some national agreements, but they are not prevalent. Employer's bargaining associations (not to be confused with employer's associations of non-unionized contractors who do not bargain), may be either wholly composed of unionized contractors or consist of both unionized and non-unionized contractors. Membership in a multi-employer bargaining association is legally binding only for the term of the contract. Once a contract expires, a firm has the option of remaining or leaving the association. Contractor's associations are typically organized by sector of the industry and geographic area; many also have regional and national bodies (Mills, 1980). Most association bargaining is done on a craft-by-area basis. Multi-craft bargaining is far less common (Hartman and Franke, 1980).

Many multi-employer bargaining associations were initially formed to offset union strength in negotiation. The federal government encouraged the formation of employer's bargaining organizations in the 1970s specifically to balance the power of employers and unions in the hopes that this move would control wage inflation (Hartman and Franke, 1980). In many ways, however, employer's associations are peculiar alliances in that the member firms are ordinarily competitors. Bargaining associations, in general, tend to experience high levels of internal conflict and leader turnover, and, as a result, they are inclined to be very loose organization, with low levels of member
commitment (Northrup, 1984). According to union leaders, however, the drop in bargaining association membership in the last few years has been unduly precipitous.

The final "actor" in this cast of characters is the federal government. The decentralization of bargaining structure in the industry at this time may, in part, be due to a change in administration of a crucial wage-governance act—the Davis-Bacon Act—which in turn may have altered the balance of power in construction industry collective bargaining. The Davis-Bacon Act (1931) "requires that contractors working on most federally financed construction projects must pay wage rates and fringe benefits at least equal to those prevailing in the locality of the projects" (Goldfarb, 1981, p.). The "prevailing wage" in most localities, until 1982, has generally been interpreted as the union rate for that craft. Hence, non-union contractors working on federally financed projects have been required to pay union wages to their workers—which in essence has prevented non-local or non-union operations from undercutting union strength in wage setting in a local area. The Davis-Bacon Act has been credited with helping unions to take "wages out of competition" in a large portion of industry activity, and in some opinions has contributed to wage inflation in the industry, (which has been considered a serious problem in the past).

In 1982, however, the Department of Labor changed the formula for calculating the prevailing wage rate, effectively lowering it below the union established rate in each craft. This has enabled non-union contractors to bid competitively on federally funded projects.
Increased non-union contractor competition for construction markets, in turn, has presumably altered the bargaining relationship between unionized contractors and the unions in the construction industry (both theoretically and realistically). In particular, the continued dominance of unionized firms in certain sectors of the industry is now dependent upon how competitive they can be with regard to non-union firms; whereas their previous competition was primarily composed of unionized contractors. The conditions needed for survival are clear—unions must be an integral part of making the unionized firms competitive in the industry, which implies concessions and a change in the bargaining relationship.

**Collective Bargaining Implications.** This great variety of employee and employer organizations in the construction industry has contributed to the complexity of its bargaining structure—and has added to its volatility (Northrup, 1984). In general, changes in collective bargaining structure not only have major implications for the nature of the relationship between the two parties and their intra-organizational effectiveness, but also impact bargaining outcomes and have implications for the local and national economy. The consequences of decentralized bargaining in construction have historically included: (a) high levels of union rivalry, as evidenced by the prevalence of "whipsawing", (which characterized the early 1960s period of decentralization), whereby each local union attempted to outdo its neighbor local by achieving a better settlement, thus driving wages up to uneconomical inflationary levels; (b) high numbers of contractual and jurisdictional strikes, which can severely damage the construction
industry in a particular area; and (c) heightened hostility between local unions and contractors, as the contractors attempt to use non-union labor (in response to whipsawing or strikes), occasionally having led to sabotage, violence, and a drop in product quality and productivity (Hartman and Franke, 1980; Mills, 1980). Centralized bargaining among employers can and has counter-balanced union power at the bargaining table. On the other hand, centralized bargaining further enables the union to take wages out of competition by "equalizing the wage costs of competitive bidders on the same project" (Kochan, 1980, p. 99). Control of the labor market strengthens the union's hand in bargaining and organizing.

The current economic and political environment, however, is encouraging non-union contractor competition for jobs. The conditions which formally led to union contractors forming multi-employer bargaining associations appear to have changed; as a result, these organizations appear to be slowly dissolving. It has yet to be determined whether this event signals a return to the unrest which characterized earlier years of decentralized bargaining, or whether it is an indication of a new and different pattern of relationships developing between the construction unions and contractors. In the next section, theory and research on bargaining structure will be explored.
Theory and Research on Bargaining Structure

Definition and Theoretical Determinants. Most definitions of bargaining structure applied in Industrial Relations research today are based on Arnold Weber's (1964, 1967) seminal works on the composition of bargaining structure. He writes:

A given bargaining structure is comprised of a multiplicity of units tied together in a complicated network of relationships by social, legal, administrative and economic factors. The basic element of any bargaining structure is the informal work group whose members are unified by common aspirations and a common interpretation of their environment. The election district ... is superimposed upon the structure of informal work groups by the NLRB for purposes of employee self determination in regard to union representation. The election districts, in turn, may constitute the building blocks for the negotiation unit, or the unit within which formal collective bargaining occurs. Beyond the negotiation unit, it may be possible to distinguish the unit of direct impact, a set of individual negotiation units whose decisions are directly affected by the terms of a bargaining agreement (Weber, 1967).

The election district has been the focus of research concerned with voting preferences in certification elections and union growth; while most research studies on preference for multi-employer bargaining units have defined bargaining structure as the negotiation unit. Research on pattern bargaining has focused on the "unit of direct impact", as Weber defines it. For the purposes of this study, bargaining structure will be interpreted as the negotiation unit, that is, those employees and employers covered by the formal bargaining agreement.

Linked closely to the concept of bargaining structure is the concept of bargaining power, which is the ability to secure agreement on one's own terms (Chamberlain and Kuhn, 1965). Building on this definition, Kochan writes that bargaining power is "the motivational force that induces the parties to compromise their goals in order to
achieve an agreement" (1980, p. 309). Bargaining power is thought to be influenced by: macroeconomic and microeconomic forces, such as the business cycle and industry concentration in the product market; organizational characteristics, for example, management ability and willingness to take a strike; the negotiations process itself, particularly the right to strike (or not to strike); and bargaining structure, both the formal bargaining structure and informal bargaining patterns (Kochan, 1980, pp. 314-315). Thus, bargaining structure can be both a source of bargaining power, and a consequence of bargaining power. For example, centralization of bargaining in the construction industry by local area contractors in the 1970s enhanced management's ability to control "whipsawing", and thus stabilize wage rates among contractors. On the other hand, the more unionized an industry's labor market, the more leverage the union has to impose its structural preferences on the bargaining process. Virtually all models of the bargaining process incorporate the idea of bargaining power in one form or another, although there has been little consensus on how to empirically measure it (Hicks, 1932; Chamberlain and Kuhn, 1965; Dunlop, 1944; Levinson, 1968; Kochan, 1980). Likewise, bargaining structure appears in both theory and research as one variable which affects bargaining power, and consequently bargaining outcomes (Weber, 1967; Gerhart, 1976; Kochan and Block, 1977).

From a conceptual perspective, bargaining structure is generally considered to be a reflection of environmental variables (economic, political, and legal) and organizational variables (both union and employer characteristics). Weber (1967) identified five conceptual
determinants of bargaining structure. First, market factors, in particular the scope of the product and labor markets in an industry, are credited with being critical influences on bargaining structure. In general, Weber states, unions will seek to adopt bargaining structures that encompass the markets they have organized in order to "take wages out of competition" (1967, p. 15). For example, while industrial unions will tend to press for broader bargaining structures that are related to the scope of the product market; craft unions, which are most sensitive to local labor market conditions, will more likely have localized bargaining. Second, Weber predicts that the nature of bargaining issues will influence bargaining structure. When local bargaining issues predominate, bargaining will be more decentralized, and when issues are national in scope (such as wages), pressures for centralization will be foremost. Third, representational factors, such as the degree of homogeneity or heterogeneity of union membership or the diversity encompassed by management organizations, will particularly affect preference for centralized bargaining versus decentralized bargaining. Fourth, government policies, such as NLRB determination of "appropriate bargaining unit", further delineates possible structure configurations. And finally, tactical maneuvering in the negotiations process and the power quotient each party brings into the bargaining arena affect desire for certain bargaining structures. These five factors have been and continue to be a basis for much current research, and will be explored further in the following discussion on research.
Research and Results. There is little published research on the determinants of bargaining structure, despite the delegation of bargaining structure to an important role in determining bargaining outcomes (Weber, 1967; Gerhart, 1976; Kochan and Block, 1977). Of the small number of studies conducted over the last twenty years, slightly more than half have been quantitatively based cross-sectional studies, while the remainder have been qualitative case-studies. Most of the quantified investigations have focused on the manufacturing sector. The most commonly used dependent variable has been a dummy coded measure of whether a firm is part of a multi-employer bargaining unit or a single-employer bargaining unit. Among the independent variables, there has been considerable focus on concentration measures (both industry seller concentration and geographic/spatial concentration). Other frequently utilized independent variables include measures of union density, labor costs, and industry scale. Most studies, however, have neither utilized nor yielded a general theory of bargaining structure determination. A brief review follows of the most significant studies conducted in the last 20 years.

In 1967, Greenberg published a study which has been frequently credited with being the first to attempt to quantitatively categorize various industries by bargaining structure. Utilizing cross-sectional data, from both the manufacturing and non-manufacturing sectors, Greenberg attempted to classify 52 United States industries by two structural dimensions: (1) bargaining pattern strength, ranging from no pattern to an industry-wide pattern; and (2) employer bargaining structure, which extended along a continuum from pure single employer
bargaining to pure multi-employer bargaining. Utilizing chi-square tests and t-tests on the differences in means, Greenberg placed each industry into this two dimensional grid. One of his principal findings revealed that the higher the degree of firm level concentration there was in an industry the more likely the industry was to have pattern bargaining, and the less likely individual employers would be members of employer bargaining associations. He additionally found high labor costs, a high degree of spatial proximity among firms, and the presence of a union hall to be positively related to multi-employer bargaining, and large industry scale to be negatively related to multi-employer bargaining.

Research studies on bargaining structure do not appear in the literature again until the late 1970s and early 1980s. Feuille, Maxey, Juris and Levi (1978), investigated multi-employer bargaining in the hospital industry, in a case-study most notable for its conceptual contributions. In an non-random sample of 36 hospitals, 6 hospitals from each of 6 cities, they interviewed hospital managers, union leaders, and labor-relations professionals in an effort to identify the history and structure of bargaining in each city. They concluded that in a broad sense, high union strength, high union coverage, high employer geographical concentration, and high employer homogeneity were important positive influences on the development and stability of multi-employer bargaining structures in voluntary hospitals. Conceptually, they concluded that the primary forces acting on both parties' demand functions for multi-employer, as opposed to single-employer bargaining units, were: (1) the desire to increase bargaining
power, (2) administrative convenience, and (3) protection against competitive disadvantage.

Hartman and Franke, in 1980, published a study on the construction industry which was methodologically similar to the work of Feuille, Maxey, Juris and Levi (1978). The focus of this study was on the history of federal intervention in construction industry bargaining from 1969-1977. The aim of federal intercession was to control wage inflation in the industry by strengthening the employer's bargaining power; Hartman and Franke state the intervention was largely successful to the extent that larger bargaining units were established--primarily the formation of multi-employer's bargaining associations. They interviewed more than forty union business agents, local building trades council officials, and contractors' association directors from bargaining units in the Mid-West. They concluded that both unions and contractors were in favor of centralized bargaining in order to avoid strikes and leap-frogging, to better cope with non-union competition, and to strengthen one's own bargaining position. No attempt was made in this study to conceptually model or empirically identify the determinants of bargaining structure.

Also in 1980, the results of a study on the determination of multi-employer bargaining units in British manufacturing were published (Deaton and Beaumont, 1980). This study was a follow up to an unpublished investigation into the determinants of bargaining structure in British manufacturing and non-manufacturing (Beaumont, Thomson and Gregory, 1978, as cited in Hendricks and Kahn, 1982). Deaton and Beaumont, citing Feuille et.al. (1978), identify three "motivating
forces" which underlie the cost/benefit decision of employers to join or not join multi-employer bargaining associations; (1) the desire to increase one's bargaining power, (2) the desire to facilitate administrative convenience, and (3) to protect oneself against competitive disadvantage (1980, p. 203). Deaton and Beaumont examined 970 British manufacturing establishments, across industries, gathering their data over a period of two months (12/77 and 1/78). Using discriminant analysis, they regressed (a) technical and market factors, and (b) institutional factors on not only multi-employer and single-employer bargaining units, but also on multi-plant versus single-plant coverage for single-employer bargaining units. They found multi-employer units to be associated with low industrial concentration, high geographic concentration, small plant size, high union density, and multi-unionism. Deaton and Beaumont point out that their results cannot "be interpreted as providing evidence on the bargaining structure for individual establishments" because they explored negotiation levels covering wages only, and as Weber points out, different subjects are often negotiated at different levels by one firm (Deaton and Beaumont, 1980, p. 204). Furthermore, bargaining structure in Britain is deemed to be more of a management choice that it is considered to be in the United States. Finally, as Deaton and Beaumont point out themselves, the overall explanatory power of their model is only of moderate strength, with "a considerable amount of the power coming from the non-substantive industry dummies"(1980, p. 213). They conclude by calling for more in-depth case studies on specific industries to capture some of the more idiosyncratic determinants of
bargaining structure.

The final two studies on bargaining structure to be reviewed were published by Wallace E. Hendricks and Lawrence M. Kahn (1982, 1984). These studies are the most methodologically sophisticated and comprehensive ones to-date. In their 1982 study, Hendricks and Kahn focused on the determinants of bargaining structure in U.S. manufacturing industries. Utilizing a cost/benefit choice function, they conceptualized bargaining structure as a bargaining outcome that can be traded off against other bargaining outcomes. They were interested in determining: (1) the probability that a given contract was multi-employer as opposed to single-employer, and (2) the probability that a single firm contract in a multi-plant firm was less than firm wide in coverage. The independent variables included: dummy variables representing a moderate level of industry unionization (between 50 and 80%) and a high level of industry unionization (greater than 80%); the percentage of unionized workers in the industry organized by the largest union; dummy variables representing national product markets with geographically concentrated firms, national product markets without geographically concentrated firms, and heterogenous product markets; dummy variables representing high and moderate firm concentration; the number of unions representing workers in the industry; a ratio of labor costs to total costs for each industry; average plant size; and the percentage of industry workers who are skilled. Their sample of 3,056 observations (individual collective bargaining agreements), was drawn from 1975 BLS data on blue collar workers in manufacturing only. Using probit analysis, they
found multi-employer bargaining units to be primarily associated with:
low concentration measures, small firm size, lower levels of inter-
union rivalry, low geographic dispersion, and high labor intensity.
Note the concentration results, both product market and spatial, and
plant size results, are similar to both Greenberg's (1967) and Deaton
and Beaumont's (1980) findings. Hendricks and Kahn's results, however,
do not reflect change in bargaining structure.

Hendricks and Kahn's 1984 investigation was an extension of their
previous work (1982). In this study, their interest was in attempting
to identify separate union and employer demand functions for bargaining
structures, specifically multi-employer units as opposed to single-
employer units. Borrowing from the economic literature on risk-averse
and risk-neutral firm behavior, and from the literature on the economic
determinants of regulation, they hypothesized that (1) "employer demand
for multi-firm units is a function of the price (forgone profits),
price and wage uncertainty under each type of unit, risk aversion, and
negotiation costs", and (2) union worker's demand for multi-employer
units is a function of price (forgone wages), negotiation costs, and
worker's risk aversion (Hendricks and Kahn, 1984, p. 431). Multi-
employer bargaining is a proxy for the institution of regulation in
that it serves to insulate the parties from chance in the marketplace.
In other words, for the union, forgone wages for some local unions are
traded off against centralized bargaining in order to establish wage
parity across all like trade locals in an area; while on the employer
side forgone profits are accepted in exchange for centralized
bargaining in order to "take labor costs out of competition", thus
reducing the risk of price competition in the industry. The measured independent variables used to predict employer demand for multi-employer bargaining included: the differential between the predicted base hourly wage of janitors or laborers given multi-employer bargaining and single firm bargaining; dummy variables representing different levels of geographic concentration in national product markets and heterogeneous product markets; dummy variables representing moderate and high industry concentration; and the size of the negotiations unit (average number of workers per plant in the industry in which the contract is negotiated). Union demand for multi-employer bargaining was hypothesized to be a result of the following measured independent variables: the differential between the predicted base hourly wage of janitors or laborers given multi-employer bargaining and single firm bargaining; the percentage of union workers in the contract’s industry organized by the largest union, the number of unions in the contract’s industry; dummy variables representing different levels of industry unionization; and dummy variables representing different levels of geographic concentration in national and heterogeneous product markets. Utilizing probit analysis, the model was tested on a sample of 3,486 individual collective bargaining agreements drawn from a 1975 BLS data set. They found employer demand for multi-employer bargaining units to be inversely related to predicted wage levels under a multi-employer agreement, and inversely related to industry concentration, geographic dispersion, and size. Union demand for multi-employer bargaining units was found to be positively related to predicted wage levels under a multi-employer
bargaining agreement, positively related to the percentage of workers in the industry covered by the largest union, and negatively related to the number of unions in an industry, industry unionization, and industry concentration. Controlling for industry and worker characteristics, they found that on average, multi-employer bargaining units led to higher wage levels than single-firm units.

Hendricks and Kahn's studies (1982, 1984) go further than any of the previous projects to quantify and test determinants of bargaining structure. However, they applied their model to only the manufacturing industry, and utilized only janitor and laborer wage categories in constructing their principal independent variables (predicted wage levels under alternate forms of bargaining units). Although their findings are similar to those previously published, the above limitations along with the cross-sectional nature of the data, limits the generalizability of their results. Hendricks and Kahn's studies, however, provide an excellent basis on which to build.
CHAPTER III
THEORETICAL MODEL AND HYPOTHESES

Introduction

The primary objectives of this study are: (1) to predict contractor demand for multi-employer versus single-employer bargaining units, and (2) to determine if bargaining structure in the construction industry is reverting to a more decentralized arrangement, and why. To accomplish this, a model has been developed to predict employer demand for multi-employer versus single-employer bargaining units. The same cross-section of union/employer agreements in Ohio will be examined at two different points in time. Time Period One will be representative of conditions existing prior to the ordered changes in the administration of the Davis-Bacon Act, which were decreed in January of 1982. Time Period Two will be representative of conditions existing subsequent to the order changing administrative of the Davis-Bacon Act. In the following section the model which will be used to analyze employer demand for bargaining structure is developed. A discussion of why change is expected in employer preference for multi-employer bargaining units, and why change is expected in the coefficients of the model from Time Period 1 to Time Period 2, will also be discussed.
Contractor Demand for Multi-Employer Bargaining

The collective bargaining process is, at its core, a transaction (Commons, 1934). Not only does bargaining structure define the parties to this transaction, but it also governs the process of exchange and circumscribes its agenda. Different bargaining structures pose different costs and benefits to the involved parties. The model developed in this study is predicated on the assumption that demand for alternate bargaining structures is based on union and management consideration of the costs and benefits imposed by different bargaining structures not only on the process of transaction, but also on subsequent organizational effectiveness as it is affected by the final terms of agreement. Considerations of environmental context, the bargaining process, and organizational characteristics influence demand for bargaining structure. Specifically, the utility of different negotiation units is assessed on (1) the need to protect the firm against competitive disadvantage, (2) consideration of how various structures will impact one’s own bargaining power, and (3) transaction characteristics, which include economies of scale (and/or administrative convenience) different negotiation units entail (Feuille, et. al., 1978; Deaton and Beaumont, 1980). The level of bargaining structure of concern here is the negotiations unit. The active focus of the study is on management’s preference for bargaining structure, in as much as it is employers, through their actions, who appear to have expressed a desire for a decentralized bargaining structure; preliminary evidence indicates that the unions are not in favor of the move toward decentralization. The following model
(depicted in Figure 1), and hypotheses are derived from the assumed relationship between bargaining structure and the three determinants mentioned above, and are grounded, whenever possible, in the previously cited research.

THE NEED TO PROTECT THE FIRM AGAINST COMPETITIVE DISADVANTAGE

1. Ease of Entry of Non-Union Firms into the Employer's Product Market (−)
2. Volume of Business in the Employer's Local Product Market (+)

BARGAINING POWER CONSIDERATIONS

3. Union Percentage of the Labor Market (+)

4. Extent of Centralization of Bargaining by the Union (+)

TRANSACTION CHARACTERISTICS

5. Economies of Scale Associated with Multi-Employer Bargaining Units (+)

6. Homogeneity of Membership of Multi-Employer Bargaining Association (+)

FIGURE 1

CONTRACTOR DEMAND FOR MULTI-EMPLOYER BARGAINING
Protection Against Competitive Disadvantage. Both firms and unions seek to insulate themselves against market uncertainties and limit the strategies and activities of competitors, while attempting to maximize their own market standing. Thus, it is assumed that employers will seek a relationship with organized labor which will not only put them on the same or more advantageous footing with competitors, but will also limit the union’s influence on their own operations. Restrictions on a firm’s autonomy and freedom of decision-making are presumed to be an anathema to the decision maker. Membership in a bargaining association, however, requires individual firms to limit their freedoms in some situations, accept terms of agreement that may not be totally in line with their individual preferences, and perhaps share operations information with competitors -- an action they would be unlikely to do if they were non-union. Correspondingly, firm membership in a bargaining association is assumed to be tolerated only in return for other gains that may be associated with the characteristics and competitive state of both the product and labor markets.

Previous research has found that multi-employer bargaining is more likely to occur in local product and labor markets, than in industries where employers are geographically dispersed (Greenberg, 1967; Feuille et.al, 1978; Deaton and Beaumont, 1980; Hendricks and Kahn, 1982, 1984). Multi-employer bargaining is also more prevalent in industries where there are high labor costs (Greenberg, 1967; Hendricks and Kahn, 1982), and a high degree of industry unionization (Feuille et.al., 1978; Deaton and Beaumont, 1980). The construction industry of the 1960s and early 1970s exhibited all of the above characteristics
associated with the appearance of multi-employer bargaining associations. Indeed, contractors found that centralized bargaining in unionized, local product and labor markets did control whipsawing by the union -- thus reducing the risk to the individual unionized firm "that its competitive position will be undercut by [unionized] competitors with a lower labor cost" (Hendricks and Kahn, 1982). Multi-employer bargaining has been found to stabilize wage levels in the construction industry across local area unionized contractors (Hartman and Franke, 1980). And, although wage levels associated with being a unionized contractor may be higher than those of non-union contractors or non-local contractors, during the 1960s and 1970s non-union/non-local contractors composed a minority of the employers in three out of four product sectors of the industry. Consequently, the higher cost of wages associated with multi-employer bargaining could be passed onto the consumer. Thus, in the event the contractor's labor market is primarily unionized and the product market local, competitive footing among unionized contractors can be retained (due to wage parity between contractors bidding on the same construction jobs).

However, the 1982 order to change the administration of the Davis-Bacon Act has opened the door for non-union contractors to bid on federally funded construction projects (the exception to this is in heavy and highway construction). The prevailing wage rate, which establishes the lowest wage rate that can be paid to workers employed in federally funded construction, is no longer always comparable to the union rate in the locale of activity (Northrup, 1985). This means that it is now possible for non-union contractors to underbid unionized
contractors with regard to the wage component of their estimate. It is assumed that this would encourage non-union contractors to enter the market, and make it increasingly difficult for unionized contractors to pass on the cost of higher wages to consumers.

Consequently, as more non-union contractors begin to bid on construction jobs, the competitive position of the unionized contractor becomes more tenuous. Although multi-employer units can have a stabilizing influence on wage levels (since they control the whipsawing which can lead to differential and escalating wage levels across contractors), employer's bargaining associations are associated with overall higher wage levels than single-employer bargaining units (Hendricks and Kahn, 1982). In a product market increasingly being penetrated by non-union employers, unionized contractors are likely to find themselves at a disadvantage due to the higher wages associated with multi-employer bargaining units; thus, normal competitive tendencies, subordinated to the needs of the employer's association, will reemerge as it becomes increasingly necessary for unionized employers to cut wage costs and request work rule concessions from the union. Employer's associations, which to begin with tend to be very loose organizations with low member commitment, must base their bargaining demands on a composite of their members' interests. Since differences exist between contractors, the contract bargained by the employer's association can not meet the needs of all members. In an environment where local unions no longer have a monopoly in the labor market, gains associated with the ability of the multi-employer bargaining association to control whipsawing and establish wage parity
among unionized employers, at the expense of higher wage levels, are no longer acceptable. Thus, it is expected that unionized firms would be interested in seeking concessions from the union in the form of wages and/or work rules that would meet their individual needs. Consequently, it is hypothesized that increasing numbers of non-union contractors in the unionized contractor's product market would lead to a preference for single-employer bargaining, as the cost of multi-employer bargaining may put unionized contractors on equal footing with other unionized contractors, but not on a par or competitive with non-union contractors. This argument suggests the following hypothesis.

Hypothesis 1: Employer demand for multi-employer bargaining units will drop where there is greater ease of entry of non-union firms into the contractor's product market.

Given the relationship between the prevailing wage rate in an area and the ability of non-union firms to bid on construction projects, according to Hypothesis 1, it is expected that a greater disparity between the prevailing wage rate in a craft and the union rate in the same craft, will be negatively related to demand for multi-employer bargaining.

A drop in the level of building activity (or product demand) in the employer's product market is also hypothesized to be a strain on a contractor's continuing membership in an employer's bargaining association. During the late 1960s and early 1970s, construction activity in both the private and public sector was relatively stable. In a stable market, the relative wage parity established between unionized contractors by multi-employer's bargaining associations meant that competition for available construction dollars was based on
other non-wage factors under the control of the contractor. Furthermore, competition from non-union contractors could be tolerated as the market was strong enough to support a diversity of employers. However, as the level of product demand in the employer's product market drops, one would expect competition for remaining market share to intensify. In periods where product demand is high, unionized contractors could expect to remain competitive in the market due to their ability to be competitive on factors other than wage costs; however, in a declining market the non-union contractor and the unionized contractor who bargains on a single-employer basis, both of whom could be expected to have lower wage costs, are at a distinct advantage over the unionized contractor who belongs to a multi-employer's bargaining association. Therefore, it is expected that in periods of economic decline in the construction industry, unionized contractors interested in seeking relief from unions in the form of contractual concessions would be inclined to leave the employer's bargaining associations. This argument suggests the following hypothesis.

Hypothesis 2: Employer demand for multi-employer's bargaining associations will drop when product demand in the employer's local product market drops.

Accordingly, a net decrease in the dollar volume of construction business present in the local product market (adjusted for inflation) should correspond to a decrease in employer demand for multi-employer bargaining.
Bargaining Power Considerations. Each party to the collective bargaining process is assumed to prefer a bargaining structure which will maximize their own bargaining power, and so enable them to reach agreement on terms most in line with their own goals. Thus, desire for alternate bargaining units is tied not only to the organization's ability to impose their preference for bargaining structure on the opponent, but is also linked to the organization's estimation of which bargaining unit will accord them the most power to maintain their own bargaining position in the face of conflict. When the union dominates the labor market, as it did in construction in the 1950s and 1960s, it has the capability to whip saw firms and press for higher wages (particularly through the use of the strike). Employers put themselves at a disadvantage in this type of situation by independently negotiating contracts -- thus allowing the union to "divide and conquer". Joining an employer's bargaining association, in the face of union strength in the labor market, strengthens the employer's hand in bargaining because it eliminates one union area of advantage -- the exploitation of a divided opponent. Individual employers in predominantly non-union labor markets, however, have more bargaining power than those in highly unionized labor markets. In highly unionized labor markets, strikes are costly to employers due to the lack of substitutes for labor. But, in a relatively non-union labor market, the incidence of whipsawing and striking by union locals could be expected to drop because the individual employer can easily hire non-union replacements. Therefore, the cost of membership in a multi-employer's bargaining association, (which is the trade-off of higher
wages for industrial peace and wage parity), becomes too high for the individual employer in an increasingly non-union labor market. Since unions are less likely to strike, the advantage of belonging to the association disappears. The previous argument suggests the following hypothesis.

Hypothesis 3: Employer demand for multi-employer bargaining units will increase when the percentage of the labor market that is unionized increases, and will decrease when the percentage of the labor market that is unionized decreases.

Due to the established negative relationship between unemployment levels and union membership (Ashenfelter and Pencavel, 1969; Bain and Elsheikh, 1976), a corollary to Hypothesis 3 is that an increase in unemployment in the construction industry in the local product market will be associated with a decrease in employer demand for multi-employer bargaining units.

There is also evidence to suggest that centralization of bargaining by one bargaining party will eventually lead to centralization of bargaining by the opposing party, as each organization is interested in dealing with only the critical decision-makers at the negotiations table (Kochan, 1980, pp. 102-103). For example, the Communications Workers of America in the 1960s and early 1970s worked to centralize bargaining within the union in order to engage in bargaining with the Bell Telephone System at comparable levels, as Bell Telephone had historically centralized its industrial relations policy-making in its corporate headquarters. These efforts culminated in a national contract in 1974, and again in 1977. Another example is the National Truckers Association (employer's association), which developed in response to centralization of bargaining power in the Teamsters Union.
by President James Hoffa in the 1950s (Kochan, 1980, pp. 102-103).

This suggests the following hypothesis.

Hypothesis 4: Employer demand for multi-employer's bargaining associations is positively related to centralization of bargaining by the union.

Thus, firms that must bargain with Union District Councils should be more likely to prefer multi-employer bargaining units, than those firms which bargain with individual locals.

Finally, individual employer ability to withstand strikes is expected to be related to demand for multi-employer bargaining units. Those employers who have the resources to individually maintain their bargaining demands in the face of union resistance would be less likely to join bargaining associations than those employers who would benefit from the pooled resources of a multi-employer organization. Information to test this hypothesis is unfortunately not available.

Transaction Characteristics. Lastly, the characteristics and circumstances of the transaction itself influence preference for bargaining structure. In particular, the economies of scale associated with alternate negotiating units have been found to be related to demand for bargaining structure. For example, centralized structures may reduce the legal costs incurred by individual employers during the negotiations process. This sharing of costs associated with negotiation with members of an association is assumed to offset the autonomy lost by being a member of the association. Small employers are presumed to have less resources than large employers, and thus would stand to benefit from joining multi-employer's bargaining associations. In fact, multi-employer bargaining units are favored
more by small firms than large (Greenberg, 1967; Deaton and Beaumont, 1980; Hendricks and Kahn, 1982, 1984). On the other hand, in a geographically dispersed market, the transportation costs necessitated by centralized bargaining may reduce interest in multi-firm bargaining. By its very nature, the construction industry is geographically concentrated, thus transportation costs incurred in multi-firm bargaining should be minimal. Employer size, however, could be expected to be a significant factor in the decision to join a bargaining association. This argument suggests the following hypothesis.

Hypothesis 5: Employer demand for multi-employer bargaining will be greater in local product markets dominated by small firms, and less in local product markets dominated by large firms.

Lastly, research on groups suggests that organizations tend to be more cohesive when their members are homogeneous and have similar characteristics and goals (Shaw, 1981). Since the bargaining goals and policies of employer's associations are a composite of the interests of all their members, the more heterogeneous the individual contractors are the more likely it is that individuals will be dissatisfied and judge the costs of transaction with the organization to outweigh the benefits. Northrup states that employer's associations are, by their very nature, loose organizations with low member commitment. Thus, it can be assumed that individual characteristics of employers and the composition of the employer's association will play a role in the employer's decision to join or not join the association. Information on individual employers is unfortunately not available. However, the overall homogeneity or heterogeneity of the associations can be
examined. Some employer’s associations are composed exclusively of contractors who specialize in one trade, while other associations are composed of contractors who represent several trades and product markets. Associations which must coordinate the demands and interests of several different types of contractors and trades could be expected to have higher member turnover than associations which represent one trade exclusively.

This argument suggests the following hypothesis.

Hypothesis 6: Employer demand for multi-employer bargaining units will be greater where association membership is representative of one specialty trade, and will be less where association membership is representative of many trades.

Thus, the Associated General Contractors, an association which represents contractors in many different product markets and trades, could be expected to represent a smaller percentage of unionized employers than specialty trades contractor’s associations. It is also expected that the AGC will experience greater turnover than specialty trade associations.
Assessing Change in the Model

As stated in the introduction to the model development section, the primary objectives of the proposed study are to analyze employer demand for multi-employer versus single-employer bargaining units, and to determine if bargaining structure in the construction industry is becoming more decentralized and why. It is expected that employer preference for multi-employer bargaining units in the construction industry should be on the decline primarily due to the changes brought about by the Davis-Bacon Act, and the decline in the percentage of the labor market that is unionized. The above statement is argued in Hypotheses 1 and 3. It is further expected that the coefficients on the predictive model will change from Time Period 1 to Time Period 2. Time Period 1 (1979 - 1981) and Time Period 2 (1982 - 1984) represent the years before and after the changes made in the administration of the Davis-Bacon Act; changes which have made it easier for non-union firms to bid on federally funded construction projects. The difference between the prevailing wage rate and the union rate in Time Period 1 should be smaller than the difference between the two rates in Time Period 2. It will be argued that this change will have resulted in a change in the coefficients in the model. Specifically, in Time Period 2 (as opposed to Time Period 1), employer demand for multi-employer bargaining should be more a function of the disparity between the prevailing wage rate and the union rate in a trade, and of the percentage of the labor market organized by Labor, than of transaction characteristics and the extent of bargaining centralization by the local union.
Prior to the changes in the Davis-Bacon Act, unionized firms could bid competitively against non-union firms for federal construction projects because of the wage parity established by the Act. As the difference between the prevailing wage and union wage increases, unionized employers have to search for areas outside of wage costs in which to remain competitive with non-union firms. They can do this up to a certain point by emphasizing the quality of the unionized labor force, and by adjusting other factors of production. However, there comes a point when the differential between the prevailing wage and the union wage becomes so great that the unionized employer cannot overcome it. In other words, there is a "tipping point" at which unionized employers have to change their decision-making model with regard to being competitive in the market. In Time Period 1, since there was very little difference between the prevailing wage rate and the union rate, the decision to join or not to join an employer's association would be made on other important factors -- such as transaction costs, and the level of centralization of bargaining by the union. However, in Time Period 2, these factors should not play as important a role in the decision to join an association due to the increased importance of meeting the competitive challenge of non-union firms brought about by the change in the Davis-Bacon Act. Furthermore, the concurrent decline in the percentage of the labor market organized by Labor unions is hypothesized to contribute to the contractor's perception that employer's bargaining associations no longer are needed to protect against whipsawing. The above arguments suggest the following hypothesis.
Hypothesis 7: The estimated coefficient associated with the independent variable measuring the disparity between the prevailing wage rate and the union wage rate, will be greater in Time Period 2 than in Time Period 1.

Correspondingly, the coefficients of the other independent variables (except one) should decrease. With the exception of the extent of the labor market unionized, all other independent variables in Time Period 2 are hypothesized to have coefficients smaller than those of Time Period 1. This suggests the following hypotheses:

Hypothesis 8: The estimated coefficient associated with the independent variable measuring the percentage of the labor market unionized will be the same or greater in Time Period 2 than in Time Period 1.

Hypothesis 9: The estimated coefficients associated with the remaining independent variables will be smaller in Time Period 2 than in Time Period 1.

In summary, a model has been developed in this chapter which will be used to test the proposition that employer demand for bargaining structure is changing over time in the construction industry in Ohio.
CHAPTER IV

DATA, MEASUREMENT OF VARIABLES, AND METHOD OF ANALYSIS

Data and Sample

Data for this study were collected from organizational, governmental, and industry sources. In an individual year, the observations are cross-sectional; however, since the purpose of this study is to assess change over a number of years, data were gathered at two different points in time for each local union between the years 1979 and 1984. Therefore, there are two observations for each local union, one from the earliest bargaining round each local engaged in in Time Period 1 (1979-1981), and the second from the latest bargaining round the local had in Time Period 2 (1982-1984). All other data within an observation are pegged to the dates of these two bargaining rounds.

All eight Metropolitan Statistical Areas (MSAs) in Ohio are represented in this study. Economic and industry data associated with the unionized sectors of the construction industry were gathered from state (Ohio) and federal publications. Organizational data on the local unions in these eight cities were collected through the administration of a questionnaire (Appendix A), through interviews with Building and Construction Trades council officials, from union records, and from annual reports the unions must file with the United States
Department of Labor (LM -2 and LM-3 Reports). Information on the contractors and contractor associations which bargain with the unions under investigation was also collected by questionnaires sent to the union locals. Finally, information regarding local union leadership responses to changes in bargaining structure in their area was collected by questionnaire.

The potential study sample includes 162 union locals. The number of unionized contractors in the subsets of employers associated with each local in the sample is not known.

Measurement of the Variables

The Linear Model. Based on the model presented in the previous chapter, the probability of employer demand for multi-employer bargaining units, STRUC, is a linear function of the following explanatory variables:

\[ \text{STRUC} = \beta_0 + \beta_1(\text{WAGCOMP}) + \beta_2(\text{DOLVOL}) + \beta_3(\text{UNMKT}) + \beta_4(\text{CNCL}) + \beta_5(\text{EE}) + \beta_6(\text{ASSOC}) + \varepsilon. \]

These variables are defined in the following sections.

Measurement of the Dependent Variable. Conceptually, the dependent variable is employer demand for alternate bargaining units. Ideally, the unit of analysis would be the individual employer, but information on individuals is not available. The unit of analysis employed here will be the subset of employers who have contracts with each individual local union contacted. Demand for multi-employer bargaining (STRUC) will be measured using the ratio of the number of employers the local has contracts with who belong to an employer's association, to the total number of employers the local has under contract; this results in
a figure which represents the percentage of employers that the local union has agreements with who belong to an employer's association. This information was obtained from the local unions by questionnaire. Each local union business manager was asked to indicate the total number of contractors under contract for every bargaining round between 1979 and 1984, and of that total the number of contractors covered by association agreement (s) for every bargaining round between 1979 and 1984. The year for the first observation was then pegged to the first bargaining round the local engaged in between 1979 and 1981; and the year for the second observation was pegged to the last bargaining round the local engaged in between 1982 and 1984. For statistical analysis purposes, the value of the ratio associated with STRUC was multiplied by 100.

Measurement of the Independent Variables. Measurement of the independent variables illustrated in Figure 1 and expounded upon in the hypotheses, are identified by hypothesis number in the following discussion.

1. WOCOMP, or "wage comparison", represents the ease of entry of non-union contractors into the contractor's product market. This variable was calculated by computing the differential between the established prevailing wage rate in a craft in the contractor's local market, and the union rate in that same craft in the contractor's local market, and was expressed as a ratio. WOCOMP, therefore, varies across individual local unions, and for purposes of statistical analysis, this ratio was multiplied by 100. Federal prevailing wage rates were obtained from the Federal Register, and were available for every year
in the study. Union wage rates for building construction (both commercial and industrial) are published in the Means Reports, annually.

2. DOLVOL, or "dollar volume", represents the level of activity in the employer's local product market, and was computed by calculating the annual net percentage change in the dollar volume of construction business in the contractor's product market (MSA), adjusted for inflation by the CPI. The value of DOLVOL was also multiplied by 100, (to be consistent with the other variables expressed as ratios multiplied by 100). The dollar value of permits authorized in commercial building construction and industrial building construction, on an annual basis, were available from the Ohio Data User's Center, Department of Development.

3. UNMKT, or "percentage of the labor market unionized", was approximated using the following information. The number of construction workers who belong to unions in the 8 MSAs was calculated from information contained in the LM2 or LM3 forms which each union has on file with the Department of Labor. The estimates of union membership obtained from the LM2 and LM3 forms were then compared for accuracy against the membership figures supplied by the local union business managers for those locals who returned questionnaires, and checked against limited information available from the Department of Labor on local membership levels in the 8 MSAs under investigation (Handbook of Wages and Benefits for Construction Unions, 1980, 1981). The total number of workers employed in the construction industry in each MSA was available from the Ohio Bureau of Employment Statistics,
(Labor Market Information Division), for every year in the study. The estimates of total union membership in each MSA were then divided by the total number of workers employed in the construction industry in each MSA; this yielded a percentage figure which is the "percent of the labor market unionized." This figure was multiplied by 100 to be consistent with STRUC, DOLVOL, and WCOCMP.

4. CNCL, or "council", indicates the extent of centralization of bargaining by the union. This information was converted into a dummy variable which specifies whether the local union bargains for itself in negotiations, or whether the local belongs to a district council which does their bargaining for them. This information was obtained through the questionnaire survey of local union officials.

5. ER, or "employer size", represents the extent to which a construction product market is dominated by large or small firms, and was determined from data available in the federal publication, County Business Patterns, (a yearly publication compiled by the U.S. Department of Commerce). ER is the ratio of the number of large firms (employers with 50 employees or more) to the number of small firms (employers with less than 50 employees) in the employer's product market in a metropolitan statistical area. ER varies by union trade affiliation within a MSA. The ratio of large employers to small was multiplied by 100 for the purpose of statistical analysis.

6. ASSOC, or "association membership", represents the homogeneity or heterogeneity of the employer's association in the contractor's trade and product market. This variable has three categories, which were dummy coded into ASSOC1 and ASSOC2. ASSOC1 is a dummy variable
representing employer's associations with heterogeneous memberships, and includes all general contractor's associations. ASSOC1 is a dummy variable representing employer's associations with homogeneous memberships, and includes all specialty contractor's associations. The third, non-coded category, represents locals who do not have any agreements with any employer's associations. This data was determined from the name of the association as listed on the questionnaires completed by each local union in the study sample.

Background Information on Union Subjects. Organization data on the characteristics and "health" of the local unions under investigation were collected for the purposes of providing control variables, and for presenting background information on the organizational vitality of construction and trade unions in Ohio over the study time period (1979 - 1984). The following additional information on each local union was taken from the completed questionnaires, and from LM2 and LM3 documents filed with the Federal Government: trade identification, leadership turnover, membership level, strike incidence, and the dollar value of local union assets. In addition the level of unemployment in the construction industry in the city the local operates in was obtained from the Ohio Bureau of Employment Statistics.

Method of Analysis

The Linear Model. As was noted previously, the dependent variable in the predictive model, employer demand for multi-employer bargaining, was represented by the following ratio: the number of employers each individual local union has contracts with who belong to an employer's
association divided by the total number of employers the local has under contract. Each observation \((i)\) is based on the subset of employers who have contracts with each individual local union in the sample. Two observations were made for each local union, representing the first and last bargaining rounds for that local between 1979 and 1984. Also recollect that, theoretically, the independent variables represent the employer's need to protect the firm against competitive disadvantage, consideration of bargaining power considerations, and transaction characteristics. In the following section, statistical techniques used to test the model and the hypothesized changes in the coefficients of the equations are discussed.

Statistically, the model predicting employer demand for bargaining structure is defined as follows:

\[
Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \epsilon_i \\
\text{where} \\
Y = \text{STRUC} \quad X_1 = \text{WCGCOMP} \quad X_4 = \text{CNCL} \quad (i=1,2,\ldots,n) \\
X_2 = \text{DOLVOL} \quad X_5 = \text{HR} \\
X_3 = \text{UNMIT} \quad X_6 = \text{ASSOC}
\]

and where \(\epsilon_i\) is a random error term and \(n\) is the total number of local unions in the sample. In addition, recall that there are two time periods under investigation: Time Period 1, which represents the years 1979 through 1981, and Time Period 2, which represents the years 1982 through 1984. The change model calls for an equation to be generated for each time period. The observations within each time period will reflect one bargaining round for each subset of employers, and will therefore represent employer demand for bargaining structure in each
Time Period. This yields the following two equations:

\[(2) \quad y_{1i} = \beta_{10} + \beta_{11}x_{11i} + \beta_{12}x_{12i} + \beta_{13}x_{13i} + \beta_{14}x_{14i} + \beta_{15}x_{15i} + \beta_{16}x_{16i} + \epsilon_{1i}\]

\[(3) \quad y_{2i} = \beta_{20} + \beta_{21}x_{21i} + \beta_{22}x_{22i} + \beta_{23}x_{23i} + \beta_{24}x_{24i} + \beta_{25}x_{25i} + \beta_{26}x_{26i} + \epsilon_{2i}\]

where the first subscript denotes time period 1 or 2. Thus, equation (2) represents employer demand for bargaining structure in Time Period 1 (1979-1981), and equation (3) represents employer demand for bargaining structure in Time Period 2 (1982-1984).

Initially, each equation can be estimated separately using ordinary least squares regression; this would yield cross sectional results pertaining to contractor demand for bargaining structure. However, recall that we are also interested in assessing whether the coefficients of the equations have changed from one time period to the next, (representing changing demand for multi-employer bargaining over time). This proposition necessitates making comparisons between the regression coefficients of each equation. Switching Regressions (Judge, et al, 1980) is a term given to a collection of statistical techniques which can be used to model changes in regression coefficients in separate equations which represent the same phenomena at different points in time.

In choosing a specific estimation procedure to analyze related equations, the distribution of the error terms must be considered. Ordinary least squares assumes the distribution of the error terms is homoscedastic. When the distribution of the true error terms is heteroscedastic, OLS estimation techniques can be inefficient. Given
the supposition that contractor demand for multi-employer bargaining is changing over time, and is hypothesized to be the result of a change in the decision-making model of the employer, and given the differences in the size of the observations in the sample, it will be assumed that the distribution of the error terms in equation (2) will not be equal to the distribution of the error terms in equation (3); that is, it is assumed that \( \text{Var}(e_{1i}) \neq \text{Var}(e_{2i}) \). Furthermore, it can be assumed that the error terms across equations are likely to be correlated; that is, it can be assumed that \( \text{Cov}(e_{1i}, e_{2i}) \neq 0 \). This non-zero correlation is presumed to exist due to common unmeasured variables (omitted variables in both equations that could be correlated). Generalized least squares techniques of estimation correct for heteroscedasticity and correlation of error terms. A switching regressions method which utilizes GLS (thus, taking into account correlations between the error terms of two related equations) is the Zellner estimation (Pindyck and Rubinfeld, 1976).

The Zellner estimation is a two-stage estimation procedure. The first step necessitates estimating each single equation using ordinary least squares. From this estimation, tests of the variances and covariances of the errors are then obtained. Assume that the \( \text{Var}(e_{1i}) = \sigma_1^2 \), the \( \text{Var}(e_{2i}) = \sigma_2^2 \), and the \( \text{Cov}(e_{1i}, e_{2i}) = \sigma_{12} \). If the cross equation covariance is identically 0 (\( \sigma_{12} = 0 \)), then OLS estimation will be efficient because the error terms are unrelated (Pindyck and Rubinfeld, 1976). However, if \( \sigma_{12} \neq 0 \), then we should assume the error terms to be correlated. To obtain efficient estimates under these conditions, the Zellner estimation procedure will be used. The Zellner
estimation "improves on the efficiency of ordinary least squares by writing the equation system as one combined equation, [then] estimating that equation using generalized least-squares estimation" (Pindyck and Rubinfeld, 1976, p. 281). Since it is assumed that the variance of the error terms across equations will be correlated, the Zellner estimation technique was utilized to estimate the regression coefficients in the two equations defined above.
CHAPTER V

RESULTS

Description of the Data Base

Characteristics of Local Unions in the Sample. 194 potential construction and trade local unions in the metropolitan statistical areas (MSA) of interest were identified from the Register of Reporting Labor Organizations. The Register catalogues local union by affiliation in each MSA. Both construction and trade unions and "shop" locals are listed under each National Union affiliation; however, they are not identified as to whether they are a shop or construction local. Three mailings of the questionnaires were sent to all 194 locals, 95 local union business agents completed and returned the questionnaires for a response rate of 48.9%. 31 of the 194 potential locals were eliminated because they were not construction and trade locals, had been dissolved, or were no longer traceable through the mail. The one Operating Engineers local in Ohio was eliminated because it services the entire state and is primarily engaged in heavy and highway construction (which is not the focus of this study). This leaves 162 local unions as the potential population sample of all construction and trade locals in the eight MSAs. Sixty-nine questionnaires of the ninety-five returned were categorized as usable. The study sample therefore comprises approximately 42.5% of the potential population
sample. In reality the study sample may be a higher percentage of the population sample because it is the author's opinion that the potential population sample of 162 still contains unidentified shop locals.

Table 1 reports the basic demographic characteristics of the study sample (see Appendix B). Of the 69 local unions in the sample, 13 trades are represented. The only building and construction trade not represented is the operating engineers. The Carpenters affiliated locals contributed the largest proportion of responses, 20% of the sample, while the IBEW and Sheet Metal Workers comprise the next largest trade affiliations at approximately 10% apiece. The largest percentage of responses from any one MSA were from the Cleveland area (20%), while the next largest percentage came from the Toledo area (15.7%). Southern Ohio (the Dayton-Cincinnati area), which is reputedly less unionized than Northern Ohio, contributed approximately 34.5% of the responses. In Time Period 1, 41.4% of the respondents belonged to locals with less than 250 members, while 14.3% were from locals with over 1000 members. In Time Period 2, the percentage of respondents from locals with less than 250 members increased slightly, to 44.4% of the sample, while only 12.9% of the respondents were from locals with over 1000 members.

Table 2 reports the basic bargaining characteristics of the local unions in the study sample (see Appendix B). A very large majority (75.7%) of respondents do not belong to councils for bargaining purposes. And of the 24.3% of locals who do bargain through a council, the Carpenters locals account for 76.4%. Approximately 33% of the locals have agreements with employer's associations which represent
several trades and product markets, while the majority (66%) bargain with associations which represent only one specialty trade. Among business managers, the local union officers responsible for bargaining in a construction union, there was very little turnover in Time Period 1 (1979-1981); however, turnover among business managers increased in Time Period 2 (1982-1984) to approximately 29% of all locals. Lastly, 11% of all the respondents engaged in a strike during Time Period 1, while 23.6% of the respondents engaged in a strike during Time Period 2 and 2.8% struck during both time periods.

Univariate Statistics. Tables 3 and 4, (see Appendix B) present the means, standard deviations, minimums, and maximums for the variables in the model for Time Period 1 and Time Period 2 respectively. Recall that the dependent variable, STRUC, is defined as the percentage of contracts that a local union has signed which cover employer's associations. Note that STRUC ranges from 0% to 100%, and that the mean drops from Time Period 1 to Time Period 2 (62.8% to 50.9%), suggesting that the percentage of contracts covering employer's associations is decreasing over time. A matched samples t-test on the difference in STRUC from Time Period 1 to Time Period 2 resulted in a significant T value of -3.41 (p=.0005), which supports the underlying assumption of this study that bargaining is becoming more decentralized in the construction industry in Ohio.

Observe that the independent variable, WOCOMP, (which is the difference between the prevailing wage rate and the union rate in a trade) shows very little variability in Time Period 1 or Time Period 2. This is evident when one compares the standard deviations associated
with WCOMP from Time Period 1 and Time Period 2 (4.47 and 4.36 respectively); they differ very little. Although the Secretary of Labor decreed that the change in the administration of the Davis-Bacon Act should take place in 1982, the actual implementation was delayed by legal challenges until 1983, when the elimination of the 30% rule was upheld by the Courts (Northrup, 1985). This may account for some of the lack of variability in WCOMP in Time Period 2. Furthermore, there is some question as to how extensively the Department of Labor’s determination of prevailing wages are based on actual wage surveys. An early study of the Davis-Bacon Act found that very few external wage surveys were completed, and that 80% of the Department of Labor determinations were automatically set at the union scale (Gujarat, 1967, as cited in Northrup, 1985, p. 40). Certainly the mean and standard deviation of WCOMP change very little from Time Period 1 to Time Period 2, suggesting that little change has occurred in the differential between prevailing wages and union wages in Ohio.

Examination of the standard deviations associated with ER also suggests that there was little variability from Time Period 1 to Time Period 2 in this variable (4.67 and 4.59 respectively). The results associated with WCOMP and ER imply that it is unlikely that these variables will be significant in either time period.

Finally, note the minimum and maximum values corresponding to the variable UNMKT in both time periods. The figures would indicate that the maximum value of the percentage of the labor market unionized in Time Period 1 is 96.7% and in Time Period 2 is 100%. Given the declining trend in trade and craft union membership in the United
States (Northrup, 1985), it is evident that these numbers are inflated. Recall that the variable \textsc{unmkt} is the ratio of union members in a MSA to the total number of workers employed in construction in the same area. It is likely that the estimation of the number of union members in a MSA, taken from the \textit{LM2} and \textit{LM3} forms, and returned questionnaires, contains a certain percentage of retired dues-paying union members. This would inflate the numerator of the ratio. Furthermore, the denominator in the ratio, the number of construction workers employed in the MSA, steadily decreased from 1979 to 1983 in most markets (Ohio Bureau of Employment Services, Labor Market Information Division, 1979-1984). This drop is reflective of the unemployment levels occurring in the same time period. The number of union members coincidentally fell off during the same years, however, the drop was not as large as the drop in employment levels. It is not uncommon for unemployed union members to retain their union membership during periods of unemployment. This situation would explain the high values associated with the variable \textsc{unmkt} in Time Period 1 and Time Period 2. It is important to note, however, that there is variability in the percentage of the labor market unionized across markets, (even though the variable \textsc{unmkt} is one which only changes over eight Metropolitan Statistical Areas); the \textsc{unmkt} figures are consistent with other estimates of the comparative rate of unionization between MSAs in Ohio. Cleveland and Toledo, which are reputedly the most highly unionized markets in Ohio, have the highest \textsc{unmkt} ratios. While Dayton, Columbus, and Cincinnati, which have the lowest \textsc{unmkt} ratios, are known to be less unionized than the Northern cities. The impact of
unemployment on the percentage of the labor market unionized, and it's relationship to bargaining structure, will be examined in the Discussion section of this chapter.

Bivariate Pearson Correlations. Tables 5 and 6, (see Appendix B), present the Pearson Correlation Coefficients for the variables in the model for Time Period 1 and Time Period 2 respectively. There are three relationships of note in Time Period 1. The correlation coefficients between council membership and association membership are both significant at p=.01. This suggests that local unions who bargain through councils are more likely to be negotiating with general contractor's associations, than those locals who do not bargain by council (r = .38, p = .001). Conversely, locals who do not bargain by council are more likely to negotiate with specialty contractor's associations (r = -.36, p = .002). This implies that centralization of bargaining among employer's of different trades corresponds to centralization of bargaining within the unions which represents those trades, whereas centralization of bargaining by employers who represent the same trade is not met by centralization of bargaining within the unions which represent those trades. The correlation between the dummy variables which represent association membership is also significant (r=-.96, p=.0001). Recall that there are three categories of association membership associated with the local union trade: general contractor's associations (dummy coded), specialty trade associations (dummy coded), and no association (not coded). In the sample of 69, there is only 1 respondent who does not have a contract with a bargaining association. This would account for the strong correlation
between the dummy coded variables representing the first two association categories.

The matrix of correlation coefficients for Time Period 2 is in Table 6 (see Appendix B). Aside from the previously discussed relationships, there are two other correlations which merit note. First is the association between the variable representing the percentage of large to small employers in a MSA (ER), and the dummy variable representing general contractor's associations. Although the correlation is not high \( r = -.19 \) it is significant \( p = .11 \), indicating that in metropolitan statistical areas where there is a predominance of small employers you will likely find a general contractor's association. Although previous research does, in fact, suggest that small employers are more likely to join employer's associations than large employers, to take advantage of economies of scale (Greenberg, 1967; Deaton and Beaumont, 1980; Hendricks and Kahn, 1982, 1984), note that this variable is not significant for specialty contractor's associations, or significant in Time Period 1. Lastly, the correlations between WOCOMP and the association membership variables would suggest that in trades where the prevailing wage approaches equivalence to the union wage, employers are likely to be bargaining in general contractor's associations; and in trades where the prevailing wage is not equivalent to the union wage rate, employers are likely to be bargaining in specialty contractor's associations.
Tests of Model and Hypotheses

Introduction. This section briefly reviews the rationale behind the hypothesized linear model and discusses the statistical results pertaining to the model in its entirety. The individual hypotheses from the model will then be reviewed separately, along with the outcomes of the statistical analysis. Finally the "change" hypotheses will be examined in light of the results of the cross-model comparisons. First, however, the results of the collinearity diagnostics will be discussed.

The collinearity analysis of the regression equation for the model in both time periods indicated that there was a moderately strong collinearity problem between the intercept and the variable WGOOMP. A condition number of 78.1 and 76.0 associated with the intercept and WGOOMP resulted in time periods 1 and 2 respectively. Moderate to strong relationships are associated with condition numbers of 30 to 100 (Belsey, Kuh, and Welsch, 1980). Thus, the collinearity problem between the intercept and WGOOMP bore further investigation. An examination of the raw data and descriptive statistics, associated with the ratio of the prevailing wage rate to the union wage rate, showed that there was very little difference between the two, and thus very little variability in the variable, both in Time Period 1 and Time Period 2. This was expected in Time Period 1, because the prevailing wage rate was essentially equivalent to the union wage rate at this time, and the change in the calculation of the prevailing wage had yet to take place. It was assumed that in Time Period 2, however, that there would emerge a difference between the prevailing wage rate and
the union wage rate. A number of reasons for the apparent lack of variability in Time Period 2 will be addressed in the Discussion section and therefore will not be covered here. Based on the fact that the hypothesized model called for the inclusion of the wage comparison variable, and that it was not expected that WGOOMP would show much variability in Time Period 1 anyway, the decision was made to leave the variable WGOOMP in the analysis. This decision was made knowing that the parameter estimates for the WGOOMP variable would not necessarily be interpretable ones, and that it would not allow for examination of the intercept.

Recall that the primary objective of the proposed study is to analyze employer demand for multi-employer versus single-employer bargaining units, and to determine employer demand for centralized bargaining is changing over time. To accomplish this a model was developed and presented in Chapter 3. The model proposes that employers are presumed to choose a bargaining structure which maximizes their ability to protect the firm against competitive disadvantage, takes into consideration the bargaining power of the union, and accounts for transaction characteristics. In addition, since there are two time periods under investigation, the standardized coefficients associated with the independent variables in the model are hypothesized to change from Time Period 1 to Time Period 2, due to changes taking place in the environment, specifically the change in administration of the Davis-Bacon Act and the decline in the percentage of the labor market unionized. Therefore, it was proposed that a generalized least squares regression technique be utilized to correct for
heteroscedasticity and correlation of error terms across the equations. In fact, the Zellner Estimation procedure resulted in a cross model correlation of .624, which suggests that the OLS estimation technique would be an inefficient estimation method. Consequently, the model and the change hypotheses were tested utilizing generalized least squares.

**Joint Generalized Least Squares Results.** Statistically, the proposed model predicting employer demand for bargaining structure is defined as follows:

\[ Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \epsilon_i \]

\( (i=1,2,...,n) \)

where:

- \( Y \) = STRUC
- \( X_1 \) = WGOEMP
- \( X_2 \) = DOLVOL
- \( X_3 \) = UNMKT
- \( X_4 \) = CNCL
- \( X_5 \) = BR
- \( X_6 \) = ASSOC

and where \( \epsilon_i \) is a random error term and \( n \) is the total number of local unions in the sample. Table 7 (see Appendix B) reports the results of the joint generalized least squares regression procedure for the model in each time period. For the model as a cross-sectional analysis instrument, only two out of six hypothesis were supported in Time Period 1, and two out of six hypothesis were supported in Time Period 2.
The first hypothesis, states the following:

H1: Employer demand for multi-employer bargaining units will drop where there is greater ease of entry of non-union firms into the contractor's product market.

That is, as the differential between prevailing wages and union wages widens, thus creating more opportunities for non-union contractors to enter the market place, employer demand for multi-employer bargaining units is hypothesized to decrease. This hypothesis was tested using the variable WGCOMP. This hypothesis was not confirmed in Time Period 1; the variable WGCOMP had a parameter estimate of .944, which was not significant (p = .159). In Time Period 1, however, it was not expected that this hypothesis would have been supported because the change in the administration in the Davis-Bacon Act had not yet been decreed, and thus it can be assumed that prevailing wages would still be equivalent to the union wage rate. It is in Time Period 2 that this variable was expected to be significant. The hypothesis, however, was not supported in Time Period 2. The variable WGCOMP had a parameter estimate of .396, which was not significant (p=.622). Therefore, the relationship between WGCOMP and employer demand for multi-employer bargaining was not confirmed. Furthermore, the collinearity problem between the variable and the intercept makes it difficult to interpret the results on this variable. The implications of this finding will be addressed in the discussion section.
Hypothesis 2 proposes the following:

H2: Employer demand for multi-employer’s bargaining associations will drop when product demand in the employer’s local product market drops.

Hence, increased competition caused by a shrinking demand in the product market would cause employer’s to leave the bargaining association in order to seek concessions. This hypothesis was tested using the variable DOLVOL. Although it might be foreseen that it is unlikely that DOLVOL would be significant because the measurements only vary across the eight MSAs, the analysis resulted in a parameter estimate of .078 for DOLVOL in Time Period 1, which is significant (p=.046). Thus, the relationship between product demand and bargaining structure in Time Period 1 was confirmed. In Time Period 2 the DOLVOL parameter estimate of .045 was not significant (p=.211). Thus, the results show Hypothesis 2 was supported in Time Period 1, but not supported in Time Period 2.

The percentage of the labor market unionized is assumed to have implications for the bargaining power of the union, and, in areas where there is a high percentage of unionized workers, employers are presumed to join employer’s associations to balance out the union’s bargaining power. Therefore, the third hypothesis proposes the following:

H3: Employer demand for multi-employer bargaining units will increase when the percentage of the labor market that is unionized increases, and will decrease when the percentage of the labor market that is unionized decreases.

The variable UNMKT, which was used to test this relationship, has a non-significant (p=.33) parameter estimate of -.196 in Time Period 1; thus, the hypothesis does not hold for this time period. However, UNMKT had a parameter estimate of .311 in Time Period 2 and was
significant (p=.10). This is a particularly important finding in light of the emphasis placed on UNMKT in the hypothesized change model; the results suggest that the percentage of the labor market unionized had little impact in Time Period 1 on employer decision making with regard to joining employer's associations, but in Time Period 2 multi-employer bargaining associations were more likely to be found in geographic areas with highly unionized labor markets. This finding will be discussed in more depth in the discussion section.

In the fourth hypothesis the following is proposed:

H4: Employer demand for multi-employer's bargaining associations is positively related to centralization of bargaining by the union. That is, centralized bargaining by unions in councils will result in centralization of bargaining by employers. This hypothesis was tested using the independent variable CNCL, a dummy variable which indicated local union membership in a council for bargaining purposes. A parameter estimate of 1.55 resulted in Time Period 1, and was not significant (p=.86); a parameter estimate of -13.7 resulted in Time Period 2, and was not significant (p=.209). Thus, Hypothesis 4 was not confirmed in either Time Period 1 or Time Period 2. Note however, the large reduction in the p value from Time Period 1 to Time Period 2, and the sign of the relationship in Time Period 2.

The fifth hypothesis states:

H5: Employer demand for multi-employer bargaining will be greater in local product markets dominated by small firms, and less in local product markets dominated by large firms.

This hypothesis suggests that employer demand for multi-employer bargaining units will be a function of the predominant size of the
firms in the area. Small firms would be more likely to join employer's associations than large firms, thus employer demand for multi-employer bargaining would be less common in markets dominated by large firms, than in markets dominated by small firms. The variable ER, which is the percentage of large firms in an area, had a parameter estimate of .487 in Time Period 1, which was not significant (p=.529) and an estimate of .701 in Time Period 2, which also was not significant (p=.438). This is not surprising in light of the fact that the mean and standard deviations associated with ER in time periods 1 and 2 show little variability within or over time. Thus, the hypothesis was not supported in Time Period 1 or Time Period 2.

The sixth and last hypothesis from the linear model states the following:

H6: Employer demand for multi-employer bargaining units will be greater where association membership is representative of one specialty trade, and will be less where association membership is representative of many trades.

In other words, employer demand for multi-employer bargaining units will depend on the homogeneity or heterogeneity of the association membership. Where association membership is heterogeneous, demand will be less for multi-employer bargaining units, and where association membership is homogeneous demand for multi-employer bargaining will be greater. This hypothesis was confirmed in both time periods. The two dummy variables, representing general contractor's associations (ASSOC1) and specialty contractor's associations (ASSOC2), were significant in Time Period 1 with parameter estimates of 73.7 and 82.7 (at p=.03 and p=.01 respectively), and had parameter estimates of 62.3 and 64.5 in Time Period 2 (at p=.13 and p=.11 respectively). To find
the direction of the relationship of the dummy variables to one another and the dependent variable, the parameter estimates are utilized (Pindyck and Rubinfeld, 1976, p. 79). To assess the direction of the relationship of ASSOC1 to structure, it is necessary to subtract the parameter estimate of ASSOC2 from the parameter estimate of ASSOC1; in Time Period 1 this yields −9.0, and in Time Period 2 this results in −2.2. Thus, employer's who are in trades represented by general contractor's associations are less likely to bargain in multi-employer bargaining units than employer's who are in trades not represented by general contractor's associations. Likewise, the comparison of ASSOC2 to ASSOC1 reveals that employer's in trades with specialty contractor's associations are more likely to belong to a multi-employer's association, than employer's in trades which do not have specialty contractor's associations.

Cross-Model Comparisons. To assess whether change has taken place in both overall employer demand for multi-employer bargaining, from Time Period 1 to Time Period 2, and in the significance of the estimated coefficients associated with the independent variables in the model, cross-model comparisons were executed. Table 8 (see Appendix B) reports the results of the comparison between the model in Time Period 1 and the model in Time Period 2, and between the estimated coefficients for the independent variables in the model in both time periods. The cross-model comparison test of the entire model shows that employer demand for multi-employer bargaining did change significantly (p=.041). Thus, the employer decision making model predicting demand for multi-employer bargaining associations has
changed from Time Period 1 to Time Period 2, confirming the underlying assumption driving this study.

With regard to the independent variables the following hypotheses were made:

H7: The estimated coefficient associated with the independent variable measuring the disparity between the prevailing wage rate and the union wage rate, will be greater in Time Period 2 than in Time Period 1.

H8: The estimated coefficient associated with the independent variable measuring the percentage of the labor market unionized will be the same or greater in Time Period 2 than in Time Period 1.

H9: The estimated coefficients associated with the remaining independent variables will be smaller in Time Period 2 than in Time Period 1.

The estimated coefficients of two out of the six independent variables compared over Time Period 1 and Time Period 2 changed significantly. The test of the comparison between the coefficients associated with WOCOMP in Time Period 1 and Time Period 2 was not significant (p=.59); thus Hypothesis 7 was not supported. Hypothesis 8, however, was confirmed. The change in the coefficients associated with UNMKT from Time Period 1 to Time Period 2 was significant (p=.005), confirming the prediction that the percentage of the labor market unionized would play a bigger role in employer demand for multi-employer bargaining in Time Period 2 than in Time Period 1. Hypothesis 9, which suggests that the remaining independent variables would have smaller coefficients in Time Period 2 than in Time Period 1 was not supported. The tests of the change in the estimated coefficients in the independent variables DOLVOL, ER, ASSOC1 and ASSOC2 were not significant (at a pre-established significance level of p=.15). However, the test of the change in the coefficient associated with the
independent variable CNCL was significant (p=.08). The parameter estimate for CNCL changed from 1.55 in Time Period 1 to -13.75 in Time Period 2. Although the variable CNCL is not significant in the linear model (at p=.15) in either Time Period, note that not only did the estimate increase, but the sign changed.

Exploratory Data Analysis

There are no a priori grounds for assuming that bargaining structure is unrelated to other independent variables. In fact, the correlation of the error terms across models resulting from the Zellner Estimation, and discussed in the previous section, would seem to indicate that there are common unmeasured variables which have been omitted from the model in both time periods. Therefore an analytical technique has been applied to assess the influence of other variables on the dependent variable bargaining structure. Stepwise regression is one estimation procedure commonly used in exploratory analysis. A stepwise procedure was invoked with several additional environmental and organizational variables supplementing the original model. These variables include: the total dollar amount of assets the local union owns (ASSETS); the number of members in the local (MEMBER); a dummy variable representing turnover of business managers (TURN); a variable representing the financial well-being of the local, which is a measure of the assets per member the union possesses (HEALTH); and the unemployment level in the MSA where the local is chartered to operate. ASSETS, MEMBER, TURN, and HEALTH were all chosen on the assumption that the size, political stability, and financial well-being of the local
union the employer had to bargain with would affect the employer's perception of the union's bargaining power. UNEMP is a variable which is presumed to affect the ability of the employer to find replacement workers in the event of a strike, and therefore impacts the employer's bargaining power. Since employer perception of bargaining power is hypothesized to be one of the factors firms consider when deciding whether to join an employer's association, these additional variables were deemed worthy of further investigation, and were added to the independent variable set already tested.

The stepwise regression procedure for Time Period 1 selected four variables for entry into the model at the pre-established significance level of p=.15. The selected variables are association membership (ASSOC1 and ASSOC2), wage comparison between prevailing wage and union wage (WGCOMP), and the ratio of large employers to small employers in a product market (ER). The variable DOLVOL was entered into the model at the first step, then removed later. This may be due to the significant correlation of .25 between DOLVOL and ER (p=.03). The R-Square for the final model selected was 17%; the system weighted R-Square from the joint generalized least squares analysis testing the hypothesized model is 16.7%. Note that of the large variable set, all the independent variables selected by the stepwise procedure are also contained in the hypothesized model.

The stepwise regression procedure for Time Period 2 resulted in the selection of the three variables ASSETS, HEALTH and DOLVOL at the established significance level (p=.15). The R-Square for the model is 15%. Recall that HEALTH is calculated by dividing ASSETS by MEMBER.
The positive sign on the parameter estimate for DOLVOL indicates that as the dollar volume of construction business in an area increases, bargaining becomes more centralized. This is also the directional relationship predicted in the hypothesized model. The negative parameter estimate associated with ASSETS suggests that the more assets a union holds the more likely bargaining structure is decentralized; yet, the positive sign associated with HEALTH would suggest that the more assets per member a union has the more likely bargaining is to be centralized. Although the selection of ASSETS and HEALTH by the stepwise procedure might imply that in Time Period 2 union specific characteristics may play a role in employer decision making about membership in multi-employer bargaining associations, the direction of the relationships between ASSETS and HEALTH, and bargaining structure, would appear to be conceptually contradictory. In addition, examination of the raw data show that some very large unions have less assets than smaller unions, thus their assets per member may be less than a smaller union, (although due to their larger size they may be taking in a great deal more money in the way of dues). In addition, perusal of the 1M2 and 1M3 forms shows some unions chose to use their dues receipts for member services, while others invest in the physical plant of the union hall, or in savings accounts. Consequently, it is the opinion of this author that there is no theoretical reason to add ASSETS or HEALTH to the hypothesized model.

Next, a second stepwise regression procedure was invoked, with dummy variables representing the trade affiliations of the local unions in the study added to the larger variable set discussed above. The
addition of a variable representing trade affiliation was based on the assumption that there may be factors associated with individual construction and trade unions which may affect an employer's decision to bargain with the union on a one-on-one basis, or to join an employer's association. This analysis resulted in a model in both time periods dominated by trade affiliation dummy variables. In Time Period 1, six variables were selected at the established significance level (p=.15): the Roofers Union, the IBEW, the Plumbers and Pipefitters, the Bricklayers, the Ironworkers Union, and ASSETS. The R-Square was 26% and the model was significant (p=.004). The analysis indicates that the unions most associated with decentralized bargaining in Time Period 1 are the Plumbers and Pipefitters, the Bricklayers, and the Ironworkers. The Roofers and IBEW are associated with centralized bargaining. In Time Period 2 the R-Square was 31.2% and the model was significant (p=.0003). The analysis resulted in five variables being selected at the established significance level (p=.15): the Roofers Union, the Bricklayers, the Painters, the Asbestos Workers, and HEALTH. The union affiliation associated with decentralized bargaining was the Bricklayers, a finding also indicated in Time Period 1. The Roofers, Painters, and Asbestos Workers are all associated with centralized bargaining. The fact that only one non-trade dummy variable was significant in either time period is telling. Apparently the trades selected by the stepwise procedure have a stronger relationship to bargaining structure than any of the other independent variables, with the exception of ASSETS and HEALTH. Obviously, some unknown variables which are predictive of bargaining structure, and which are associated
with the trade affiliations selected by the stepwise procedure, have been excluded from the original hypothesized model. There is little theoretical reason to enter the trade affiliation dummy variables into the model, however, the stepwise procedure suggests that an investigation into factors associated with the selected trades might be a fruitful avenue for future research.

In summary, the exploratory data analysis suggests that the independent variables already in the hypothesized model need not be supplemented by any of the additional variables tested. It is evident that the stepwise procedure, which excluded trade affiliation dummy variables, indicated that at least in Time Period 1, the only variables entering the model are those already included in the hypothesized model. And in Time Period 2, the only variable outside of ASSETS and HEALTH to enter the model was again a variable already included in the hypothesized relationship (DOLVOL). However, the stepwise procedure which includes trade affiliation variables suggests that there are omitted unmeasured variables, associated with specific trades, which are not included in the model which are potentially predictive of bargaining structure.

Discussion

In the following section the implications of the statistical results will be discussed. In general, the underlying assumption that a change in bargaining structure is occurring in the construction industry in the state of Ohio was supported. The statistical results also indicated that the factors upon which employer’s make the decision to join or not to join an employer’s association changed between 1979
and 1984. The most consistently significant variable associated with bargaining structure arising from this study was association membership, which suggests that characteristics of the association and characteristics of the firm may be the most important determining factor in the employer's decision making process. And finally, the results imply that the balance of power, between labor and management, based on the percentage of the labor market unionized, was perceived by contractors to be more in their favor in Time Period 2 than in Time Period 1. In the following section, interpretation concerning all the hypotheses will be discussed in light of the statistical analysis.

Review of Hypotheses. This section reviews the hypotheses, and for those which were not supported, discusses possible reasons for lack of support. The hypotheses are discussed in order.

The first hypothesis suggested that when it becomes easier for non-union contractors to compete in the market due to changes in the way the prevailing wage is calculated, employer demand for multi-employer bargaining will decrease due to a need to bargain concessions and receive individual treatment from the union. Despite a collinearity problem with the variable used to test this hypothesis, the decision was made to keep the variable in the model. Thus, the hypothesis was tested using the variable WGOOMP, which is the differential between the prevailing wage rate and union wage rate in a trade, and is expressed as a percentage; it was anticipated that WGOOMP would be positively related to employer demand for multi-employer bargaining. This hypothesis was not supported in Time Period 1 or Time Period 2. Examination of the univariate statistics on WGOOMP shows very little
variability either within the time periods, or between Time Period 1 and Time Period 2. The prevailing wage rate in both time periods appears to be comparable to the union rate. Obviously, the change in the administration of the Davis-Bacon Act, which should have resulted in an increase in the differential between the federal prevailing wage and the union wage rate in a trade, has not resulted in any appreciable difference in the calculation of prevailing wages between Time Period 1 and Time Period 2. This could be due to a number of reasons. First, it customarily takes time for the mandate for change in any administrative procedure to be implemented in a bureaucratic organization. The early finding by Gujuati (1967, as cited in Northrup, 1985), which found that the Department of Labor did not perform wage surveys extensively, would suggest that a change in the administration of the Davis-Bacon Act which requires each DOL office to administer a large number of wage surveys would require time to implement. Second, the change decreed by the Secretary of Labor was challenged in the Court System and took a year to be affirmed. Thus, although employer's could anticipate a decrease in the prevailing wage rate (as compared to the union wage rate) in the future, the actual change did not take place until 1983. Third, Ohio has one of the highest rates of unionization in the construction industry in the United States (Northrup, 1985). Since the calculation of prevailing wages is to some extent based on the percentage of the labor market unionized, geographic areas with higher levels of unionization could be expected to experience less change in the differential between prevailing wages and union wages. Finally, even if there was a
differential between federal prevailing wages and union wages in a trade, state prevailing wage laws in Ohio are still calculated in such a way that the prevailing wage rate is equal to the union rate. Therefore, contractors who bid on any state funded construction will have to pay union rates regardless of union status. Depending on the percentage of state versus federally funded construction in Ohio, the change in the federal prevailing wage rate may not have that large an effect on contractor behavior. The above results, however, do not necessarily suggest that the original argument is invalid. The very small variance of this variable has made it difficult to uncover any underlying relationship between WCOMP and employer demand for bargaining structure. It is possible that in the years since 1984 (which is the date of the last observation in this study), DOL calculation of prevailing wages have changed in response to the Secretary of Labor’s decree.

In the second hypothesis it was argued that a drop in the level of building activity in a product market (measured by the change in the dollar volume of business contracted for in the year a contract was bargained) would affect a contractor’s interest in membership in employer’s bargaining associations. It was anticipated that as building activity in a product market dropped off, competition for remaining market share would intensify, necessitating that unionized contractors seek relief from the unions they did business with, either by way of wage concessions or work rule changes, or both. It was assumed that employers would prefer to request concessions in a one-on-one relationship, rather than in an employer’s association, where
individual preferences must be subject to the will of the majority. This hypothesis was supported in Time Period 1, but not in Time Period 2. Recall, however, that the construction industry experienced a downturn in business between 1979 and 1981, and an upturn starting in 1982 (U.S. Industrial Outlook, 1985). This is confirmed by the dollar volume of business associated with Time Period 1 and Time Period 2 in this study. A matched samples t-test on the difference in the dollar volume of construction business contracted for in Time Period 1 and Time Period 2, showed that business did improve in Time Period 2 (p=.14). This would suggest that in Time Period 1, when there were fewer construction dollars available, and competition for market share in some MSAs was intense, Hypothesis 2 would hold true. But in Time Period 2, when business was on the upswing, the second hypothesis would not be supported because there were fewer geographic areas experiencing sharp downturns in business.

The third hypothesis proposes that in areas where the percentage of the labor market which is unionized is low, employer's will not feel it necessary to belong to employer's associations. And in areas where the percentage of the labor market which is unionized is high, employer demand for multi-employer bargaining associations will be high in order to balance the bargaining power of the union. This hypothesis was not supported in Time Period 1, but was supported in Time Period 2. These results imply that in Time Period 1 the percentage of the labor market unionized was not affecting employer demand for multi-employer bargaining units, but in Time Period 2 it was influencing employer decision making concerning membership in
employer's bargaining associations. One possible explanation for this could be that in Time Period 1 there was less variability in the percentage of the labor market unionized across cities than in Time Period 2. The construction industry in Ohio is known to be strongly unionized. However, the significance of the variable in Time period 2, and the non-significance of the variable in Time Period 1, could also be attributable to the finding that in Time Period 2 unemployment in the construction industry was, on the average, higher than in Time Period 1 (6.9% to 10.0%). A matched samples t-test on the difference in unemployment between Time Period 1 and Time Period 2 indicated that unemployment was significantly higher in Time Period 2 (p=0.00005). Unemployment has been shown to negatively affect union membership (Ashenfelter and Pencavel, 1969; Bain and Elsheikh, 1976). The increase in the dollar volume of business contracted for in Time Period 2 did not result in an increase in the number of workers employed in the construction industry until 1984 (Ohio Bureau of Employment Services, Labor Market Information Division). Furthermore, unemployment in the 1980s in the country as a whole hit its high in the years encompassed by Time Period 2. Northrup (1985) indicates that in periods of high unemployment union members seem more willing to work at non-union jobs, than when unemployment is low. Thus, it can be assumed that there were more unemployed construction workers willing to work for non-union wages in Time Period 2, than in Time Period 1, hence increasing the amount of non-union labor in the market. This relationship between unemployment and union membership levels often results in a shift in the balance of power in a bargaining relationship.
from union to firm, as it is easier for employers to hire replacements in the event of a strike. Therefore, it is suggested that in Time Period 2 the need for employers to belong to an employer's association in order to counterbalance the power of the union and to combat whipsawing no longer existed. This interaction between unemployment and union membership might explain why in Time Period 1, the variable UNMKT was not significant.

The fourth hypothesis proposed that employer demand for multi-employer bargaining would be associated with centralization of bargaining on the union side. That is, employers would choose to join multi-employer's bargaining associations when the union they were dealing with bargained through a district council. This hypothesis was not supported in either Time Period 1 or Time Period 2. This suggests that centralization of bargaining by the union has no impact on whether or not a contractor decides to join an employer's bargaining association. Accordingly, centralization of bargaining by the union must not be perceived by contractors as strengthening the union's bargaining power vis a vis the employers. It is likely that centralization of bargaining by unions mainly provides the local unions who belong with a way to minimize transaction costs.

The fifth hypothesis stated that employer demand for multi-employer bargaining would be greater in product markets dominated by small firms, than in product markets dominated by large firms. Employer's associations were presumed to allow the small firms to share the cost of bargaining and minimize transaction costs. This hypothesis was not supported in either Time Period 1 or Time Period 2. One possible
explanation is that the savings in transaction costs provided by the employer's associations do not offset the autonomy lost by being a member of an association.

The sixth hypothesis proposed that employer demand for multi-employer's bargaining associations would be related to the heterogeneity or homogeneity of the bargaining association membership. It was expected that in trades where there are general contractor's associations demand for multi-employer bargaining would be less than in trades where specialty contractor's associations exist. This hypothesis was confirmed for both Time Period 1 and Time Period 2. This suggests that the organizational characteristics of the association itself, and of the contractor, play an important role in whether an employer decides to join or maintain membership in an employer's association.

Lastly, it was argued in Chapter 3 that an increasing differential between the prevailing wage rate and the union wage rate, along with a decrease in the percentage of the labor market unionized, would cause employers to change their decision-making model with regard to membership in employer's bargaining associations. The assumption underlying the above argument was that a change in employer decision making had, in fact, taken place. The results of the cross-model comparison of the equation in Time Period 1, with the equation in Time Period 2, support this assumption. The test was significant (p=.041), which indicates that there are significant changes in the estimated coefficients in the model.
The seventh, eighth, and ninth hypotheses address assessing change in the estimated coefficients associated with the independent variables in the model, from Time Period 1 to Time Period 2. The coefficient associated with WGOOMP was hypothesized to increase, while that associated with UNMKT was expected to remain the same or increase. The coefficients associated with the remaining variables were predicted to decrease. The statistical results indicate that the differential between the prevailing wage rate and the union wage rate not only did not influence employer actions, either in Time Period 1 or in Time Period 2, but that there was no significant change in the parameter estimates between the time periods. This finding must be considered in light of the collinearity problems associated with the variable WGOOMP. The only hypothesis to be confirmed was that associated with UNMKT. UNMKT, which was not a significant variable in Time Period 1, was a significant variable in Time Period 2. The results suggest that it is the percentage of the labor market which is unionized which is effecting a change in employer demand for bargaining structure. Recall that the percentage of the labor market unionized affects the bargaining power of both unions and employers, and that the level of unemployment in the market also impacts bargaining power, by influencing the ability of the firm to hire replacement workers in the event of a strike. Although the results in Time Period 2 support the contention that in markets where union membership is high, employer's will be more likely to join employer's associations; the results of the cross-model comparison suggest that there may be a point where the balance of power, based on the percentage of the labor market unionized
and the level of unemployment in an area, suddenly shifts from union to management, thus changing the weight firms put on the value of belonging to an employer's association in order to balance the power of the union. Furthermore, the fact that the association variables remained significant in both periods, and their estimated coefficients did not change significantly between Time Period 1 and Time Period 2, would suggest that transaction characteristics still remain an important consideration in Time Period 2. Given that employer's associations were originally formed to offset the power of unions in the construction industry, it would seem that the retention of the association membership variables in the model indicates that the decision to stay or leave an employer's association, in an era of waning union power, would depend on the characteristics of the association itself.

Finally, inasmuch as the weighted R-Square for the model was only 16.7%, there are obviously other variables influencing employer demand for bargaining structure which were not included in the linear model. The cross-model correlation between the error terms of the estimated regression model from both time periods lends support to this observation. The years between 1980 and 1988 have unquestionably been a trying period for labor unions as a whole, and have been years in which employers have found support from the NLRB and the Court System for management actions taken to diminish the power and influence of the unions they deal with. The change ordered in the calculation of the prevailing wage rate may have been perceived as a signal to employer's in the construction industry that their voices were being heard.
Possibly the pro-business atmosphere of the Reagan years has influenced employers to become more aggressive in their relationships with labor unions. The reputed rise in the number of contractors who operate both union and non-union shops, called double-breasting, points to an increasing confidence by employers in their own bargaining power. Sixty-five percent of the union leaders surveyed indicated that they have seen an increase in the number of double-breasted contractors in their geographic areas between 1979 and 1984. The above observations imply that there are factors which have not been captured in the tested model which are affecting the decisions that construction contractors make with regard to how they will respond to the influence of unions in the construction industry. Suggestions for avenues for future research will be offered in the final chapter.

In summary, the overall decision making model used by contractors did change from Time Period 1 to Time Period 2, as expected. The characteristics of the association itself, its homogeneity or heterogeneity, were the only significant influences on employer demand for multi-employer bargaining in both time periods. The dollar volume of business contracted for was the only other significant variable in Time Period 1, while the percentage of the labor market unionized was significant in Time Period 2. These results are similar to those found by Feuille, Maxey, Juris and Levi (1978) which suggest that high union strength and employer homogeneity in the hospital industry were important positive influences on the development and stability of multi-employer bargaining associations. None of the remaining variables in the model were significant influences on employer demand.
for multi-employer's bargaining associations. In the following chapter, the responses by union leaders to changes in bargaining structure will be discussed.
CHAPTER VI

ASSESSING UNION LEADERSHIP RESPONSE TO DECENTRALIZATION

There has been relatively little research published in the last 10 years regarding union government, and the relationship between the dynamics of decision making in unions, and bargaining outcomes and strategy. In 1977, Strauss decried the lack of interest by labor relations scholars in pursuing research on union government, and suggested that even replication of older studies conducted in the 1950s and 1960s would further knowledge in this area, particularly since much has changed in industrial relations and the industrial relations environment since 1960 (Strauss, 1977). Consequently, there is little recent research to refer to when discussing union decision maker responses to changes in bargaining structure. At minimum, decentralized bargaining could be expected to have an effect on union bargaining strategy and resource allocation for bargaining simply because the union must separately negotiate with a larger number of employers than previously. Therefore, the aim of this section of the study was to explore union leader preferences regarding bargaining structure, and union responses to changes initiated by employers in bargaining structure. This was accomplished through the administration of a questionnaire (see Appendix A).
Implications For Local Unions

The perception of local union business managers is that bargaining structure is changing. Sixty-one percent of all respondents answered yes to the question "Are Contractor's pulling out of the employer's associations in your Area?". A close examination of the questionnaires reveals, however, that many of the respondents who indicated that contractor's were leaving the associations in their geographic area were not facing the problem in their own bargaining relationships. The cities with the highest percentage of respondents answering yes to the question were Columbus (85.7%) and Cincinnati (77.7%); cities, coincidently, which are on the low end of the of the unionization rate among all MSAs in Ohio. Cities with the lowest percentage of respondents answering yes to the question were Youngstown (25%) and Akron (57.1%); both cities are situated in the highly unionized North. Table 9 (see Appendix B) reports the responses business managers made to a checklist requesting their opinion on why contractors were leaving the employer's bargaining associations. Of those business managers indicating that the associations are experiencing membership decline, the reason indicated most frequently on the checklist was that "the small contractors feel the association is dominated by the large firms, so they leave". This corresponds to the opinion voiced by 50% of the respondents that "mostly small firms" are leaving the employer's associations. Only 20.5% indicated that they felt "mostly large firms" were leaving the associations, with 18.2% not responding to this question and 11.4% indicating both sizes of firms were leaving. The above reinforces the hypothesis that associations who have
heterogeneous memberships are more likely to be experiencing a turnover in membership, although in this situation heterogeneity is based on firm size, not the trade mix in membership.

One of the more important issues explored in this portion of the study is whether the unions experiencing decentralization in bargaining structure have changed their bargaining methods. Fifty percent of the respondents who indicated employers were leaving the bargaining associations in their area report that they have changed their bargaining methods with either the employer’s association or with individual contractors, or both; 43.2% report they have not changed their bargaining strategy, with 6.8% not answering the question. Table 10 (see Appendix B) reports the responses to the checklist requesting business managers to indicate any changes in bargaining activities. Of those business managers who have made modifications in bargaining, making concessions on wages to the employer’s association is the change most frequently checked (48.0%), with concessions in wages to individual contractors the next most frequently checked category (40%). This is probably as much a response to changes in the economic environment and labor relations climate, as it is a response to the change in bargaining structure. However, 36% have allocated more time and money to negotiations, which is likely to be a response to the increased number of contracts which must be bargained in a decentralized bargaining structure.

An overwhelming majority of all of the respondents (95.8%) indicated that they would rather bargain with employer's associations than with single firms. Hartman and Franke's study on the construction
industry also concluded that union leaders were in favor of centralized bargaining (1980). However, they also found that contractors were in favor of centralized bargaining to avoid strikes and leap-frogging. The trend toward decentralization revealed in this study suggests that employer's no longer find an advantage in belonging to employer's association in some areas and product markets. Table 11 (see Appendix B) reports the opinions of business agents on the pros and cons of bargaining with employer's associations and single firms. It is important to note that 80.6% agree with the statement that "agreements made with individual employers follow the wages bargained with the association", and 86.1% agree that "agreements made with individual employers in general have the same basic standards and work rules as those made with the association". This would seem to suggest that the decentralization of bargaining structure is unlikely to result in differing wage structures and work rules for employees of different firms, and that the motivation of employers to leave employer's associations is not tied to economic reasons associated with gaining concessions. 76.4% of the respondents indicated that there is generally more cooperation between union and management when bargaining with an employer's association, than when bargaining with individual firms. They also report that is harder to get individual firms to agree to a contract than to get the employer's associations to agree to a contract (59.7%). In addition, a larger number of respondents indicated that the strike rate over wage negotiations with individual firms is higher than the strike rate against employer's associations (33.3% to 22.2%), while 51.4% felt that individual contractors are more
likely to demand concessions from the union than employer’s associations. Thus, decentralization has obvious implications for the general atmosphere of cooperation between labor and management.

Finally, a majority of all respondents (59.7%) indicated that they did not strike during the years covering the study (1979-1984). 37.5% reported that they did engage in a strike resulting from collective bargaining between 1979 and 1984, with 38.9% striking in Time Period 1, 55.6% striking in Time Period 2, and 5.6% striking in both Time Periods. Of those respondents who indicated that the employer’s associations were experiencing membership turnover in their area, a slightly lower percentage (56.8%) indicated that they had not engaged in strike activity between 1979 and 1984; while of the 40.9% who did engage in a strike, 38.8% struck in Time Period 1, 55.5% struck in Time Period 2, and 5.5% struck in both time periods. Although more locals struck in Time Period 2 than in Time Period 1, there is little difference between the strike rates of the respondents who indicated that their area is experiencing decentralization, and those respondents who indicated that employer's are not leaving the employer's bargaining associations in their area.

In conclusion, the responses of the business managers indicate that, for local unions, a centralized bargaining structure is preferable to a decentralized one. Since the results of this study show that employers do not necessarily share this view, the question of whose preference will prevail is likely be based on the balance of power between the parties.
CHAPTER VII

DISCUSSION

In this chapter suggestions for future research will be offered, and the consequences of the move toward decentralized bargaining for the industrial relations climate in the construction industry will be discussed.

Suggestions for Future Research

The results from both the statistical analysis associated with the linear model and from the survey of local union business managers, suggests that there are other factors which may be influencing employer demand for bargaining structure which should be investigated. The fact that a large majority of local union business managers report that the contracts between individual employers and employer’s association do not differ with regard to wages and work rules would imply that the motivation for employers to join or not to join an employer’s association has little to do with an interest in receiving a ”better” agreement from the union. Thus, the section of the theory presented in this paper which suggests that firms will leave employer’s associations to bargain concessions in order to improve their competitiveness in the market is somewhat weakened. What the results do imply, however, is that the characteristics of the local union (particularly
characteristics associated with trade affiliation), characteristics of the individual firms, the composition and politics of the bargaining associations, and the bargaining power of the union based on the percentage of the labor market unionized have an influence on an employer's decision making process. Hence the arguments presented pertaining to the importance of transaction characteristics, and the perception of the balance of power between firms and unions, are reinforced.

The above observations point to several areas which could prove to be fruitful avenues for future research. Independent variables which bear further investigation include: employer size, the implications for employers of being in a particular trade (product market), leadership in the employer's association, the cost of belonging to an employer's association, employer double-breasted status, local union finances, and local union leadership. One of the limitations of this study was the usage of subsets of employers as the unit of analysis. Ideally, investigation of employer demand for bargaining structure should use individual employers as the unit of analysis. Finally, the perceptions of employers regarding the overall receptivity of the legal system to actions which strengthen the employer's hand against the union in a bargaining relationship, should be examined.

Consequences of the Current Trend Toward Decentralization

Decentralized bargaining in the construction industry in the 1960s was associated with wage inflation, a high level of strike activity, and indications of heightened hostility between contractors and unions
(Hartman and Franke, 1980; Mills, 1980). Recall that centralized bargaining among employers developed in the 1960s and 1970s in response to the above industrial relations climate, and was encouraged by the federal government as a way to control the wage escalation in the industry. Centralized bargaining was credited with strengthening the bargaining positions of employers and with reducing wage inflation and whipsawing.

These negative consequences of decentralized bargaining exhibited in the past, however, are not likely to occur in the present economic climate. Product and labor market conditions favored labor in the 1960s; the construction and trade unions were in a position to dictate employment terms to construction contractors due to a number of factors, including union dominance in the construction labor market, and a booming economy, which raised the cost to the employer of taking a strike. In the decentralized bargaining structure which existed in this earlier time period, union locals could engage in whipsawing tactics in support of bargaining demands because it was difficult for employers to find replacement workers. There is a substantial amount of research which concludes that both strike levels and wage levels are positively associated with employment levels and the business cycle respectively (Ashenfelter and Johnson, 1969; Kochan, 1980). When employment levels are high, the incidence of strikes increases as it is easier for union members to find work during the interim, and it is harder for employers to find replacement workers. When the business cycle is on the upswing, unions are in a position to demand higher wages as employers are better able to pay, and have more to lose during
a strike. Conversely, as unemployment increases strike levels decrease, and during lows in the business cycle, wage levels rise at more moderate rates.

The late 1970s and early 1980s have seen an erosion in the percentage of the labor market organized by the trade and craft unions, a rise in unemployment levels, and a series of economic downturns in the construction industry, particularly in the Mid West and North Central States. These factors, coupled with the afore-mentioned change in the administration of the Davis-Bacon Act, have changed the power balance between employers and unions such that tactics that might have been used by construction unions in the 1960s in support of wage demands in a decentralized bargaining environment, would be undercut by the use of non-union labor today. Therefore, it is not expected that the current trend toward decentralization would be associated with an increase in strike rates or a rapid escalation of wage levels, due in part to the existing macroeconomic conditions, and in part to the public policy environment and public opinion, both of which are currently favorable to business. Union leader responses to the questionnaires did indicate that locals were making concession on wages and work rules to both individual employers and to employer’s associations. Furthermore, although there was a higher strike rate among the respondents in Time Period 2 than in Time Period 1, the majority of locals did not strike in either time period. Despite the opinion of local union business managers that there is less cooperation between labor and management when contracts are negotiated on a decentralized basis, it is the opinion of this author that this will
not result in a higher strike rate, for the previously mentioned reasons. The current industrial relations climate is expected to be dominated by employer interest in concessionary bargaining and union acquiescence to management demands and actions.

Will employer demand for multi-employer bargaining units continue to decrease? Certainly the balance of power advantages of belonging to an employer's bargaining association may no longer exist in some labor markets. In an era of waning union power, it will probably be the characteristics of the transaction itself, in particular the attributes of the employer's associations and the individual firms and unions, which will play a determining role in whether employers decide to join a multi-employer's bargaining association.
LIST OF REFERENCES


APPENDIX A

1986 SURVEY OF CRAFT LOCAL UNIONS
1986 Survey of Craft Local Unions

PLEASE ANSWER WITH REGARD TO ONLY COMMERCIAL, INDUSTRIAL, AND HEAVY AND HIGHWAY CONSTRUCTION AGREEMENTS. WE WILL NOT BE EXAMINING RESIDENTIAL CONSTRUCTION IN THIS STUDY. YOUR IDENTIFICATION OF LOCAL NUMBER IS NEEDED ONLY FOR STATISTICAL PURPOSES AND WILL BE KEPT CONFIDENTIAL.

PART A

In this section, we'd like to know a little bit about your local and its structure.

1. IS YOUR LOCAL AFFILIATED WITH A DISTRICT COUNCIL? PLEASE CHECK YES OR NO FOR EACH YEAR
   YES ___ ___ ___ ___ ___ ___
   NO  ___ ___ ___ ___ ___ ___

2. IF ANY OF YOUR ANSWERS TO NUMBER 1 WERE YES, WHAT DISTRICT COUNCIL ARE (WERE) YOU A MEMBER OF? CITY, DISTRICT COUNCIL NAME AND NUMBER ____________________________

3. DID YOUR DISTRICT COUNCIL REPRESENT YOU IN BARGAINING IN ANY OF THESE YEARS? PLEASE CHECK: _____YES _____NO. IF YOU ANSWERED YES, PLEASE CHECK WHICH YEARS:

4. APPROXIMATELY HOW MANY DUES-PAYING MEMBERS HAS YOUR LOCAL HAD FOR THE FOLLOWING YEARS?
   NUMBER OF MEMBERS ___ ___ ___ ___ ___ ___

PART B

In this section, we'd like to ask you a few questions about bargaining.

5. IN WHAT YEARS DID YOU BARGAIN A CONTRACT? PLEASE CHECK THE APPROPRIATE YEARS:

6. HAS YOUR LOCAL (OR DISTRICT COUNCIL) HAD BARGAINING AGREEMENTS WITH ANY EMPLOYER'S ASSOCIATIONS BETWEEN 1979 AND 1984? PLEASE CHECK: _____YES _____NO

7. WHAT ARE THE NAMES OF THE EMPLOYER'S ASSOCIATIONS THAT YOU CURRENTLY HAVE (OR HAVE HAD) CONTRACTS WITH? __________________________________________
   __________________________________________
   __________________________________________
8. IN THE FOLLOWING QUESTION WE ARE INTERESTED IN FINDING OUT HOW MANY OF THE CONTRACTORS YOU HAVE BARGAINING AGREEMENTS WITH WHO ARE MEMBERS OF EMPLOYER'S ASSOCIATIONS. FOR EACH YEAR, PLEASE INDICATE THE TOTAL NUMBER OF CONTRACTORS COVERED BY ALL YOUR AGREEMENTS AND THEN THE NUMBER OF CONTRACTORS COVERED BY THE ASSOCIATION (S) AGREEMENT (S). FOR EXAMPLE, IF IN 1979 YOU HAD CONTRACTS WHICH COVERED 100 CONTRACTORS AND 75 OF THOSE 100 WERE COVERED BY AN ASSOCIATION AGREEMENT, THEN YOUR ANSWER FOR THE YEAR 1979 WOULD BE: 1979 100 75

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<td>1983</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1984</td>
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</tr>
</tbody>
</table>

PART C

In the following series of questions, we are interested in exploring your opinions on Employer's Associations.

9. ARE CONTRACTORS PULLING OUT OF THE EMPLOYER'S ASSOCIATIONS IN YOUR AREA? PLEASE CHECK YES NO

IF YOU ANSWERED YES TO NUMBER 9, PLEASE ANSWER 9A, 9B, AND 9C.

9A. WHY DO YOU THINK CONTRACTORS ARE LEAVING THE EMPLOYER'S BARGAINING ASSOCIATIONS? PLEASE CHECK ALL REASONS THAT APPLY. PLACE TWO CHECKS BY THE REASON THAT YOU THINK IS THE MOST IMPORTANT.

_____ THEY ARE DISSATISFIED WITH THE ASSOCIATION'S INTERNAL POLITICS
_____ THEY ARE INTERESTED IN BARGAINING CONCESSIONS THAT THE ASSOCIATIONS WILL NOT BARGAIN
_____ THE SMALL CONTRACTORS FEEL THE ASSOCIATION IS DOMINATED BY THE LARGE FIRMS, SO THEY LEAVE
_____ THE LARGE FIRMS LEAVE BECAUSE THEY FEEL THEY CAN BARGAIN BETTER CONTRACTS BY THEMSELVES
_____ CONTRACTORS ARE DISSATISFIED WITH THE ASSOCIATION'S LEADERSHIP
_____ THE MANAGEMENT OF THE CONTRACTING FIRMS HAS CHANGED
_____ DOUBLE-BREASTED FIRMS DON'T FEEL THEY NEED TO BELONG TO THE ASSOCIATION
_____ OTHER REASONS (PLEASE SPECIFY) ____________________________________________

IN YOUR OPINION, IS IT MOSTLY LARGE FIRMS (THOSE WITH OVER 50 EMPLOYEES), OR MOSTLY SMALL FIRMS (LESS THAN 50 EMPLOYEES), WHO ARE LEAVING THE EMPLOYER'S ASSOCIATIONS? ____ MOSTLY LARGE FIRMS ____ MOSTLY SMALL FIRMS
98. HAVE YOU CHANGED YOUR BARGAINING METHODS WITH EITHER THE EMPLOYER’S ASSOCIATION
OR WITH INDIVIDUAL CONTRACTORS IN ANY WAY DUE TO CONTRACTORS LEAVING THE EMPLOYER’S
BARGAINING ASSOCIATIONS? PLEASE CHECK ___YES ___NO

9C. IF YOU ANSWERED YES TO QUESTION NUMBER 98, HOW HAVE YOU CHANGED YOUR BARGAINING
ACTIVITIES? PLEASE CHECK ALL STATEMENTS THAT APPLY.

___ WE HAVE ALLOCATED MORE TIME AND MONEY TO NEGOTIATIONS
___ WE HAVE TRAINED MORE NEGOTIATORS
___ WE HAVE INDIVIDUALIZED CONTRACTS TO ACCOMODATE THE NEEDS OF INDIVIDUAL
  CONTRACTORS
___ WE HAVE MADE CONCESSIONS ON WAGES TO THE INDIVIDUAL CONTRACTORS
___ WE HAVE MADE CONCESSIONS ON WAGES TO THE EMPLOYER’S ASSOCIATION
___ WE HAVE MADE SOME CHANGES IN WORK RULES FOR INDIVIDUAL CONTRACTORS
___ WE HAVE MADE SOME CHANGES IN HIRING REQUIREMENTS FOR INDIVIDUAL EMPLOYERS,
  (FOR EXAMPLE, ALLOWING THEM TO USE NON-UNION LABOR UNDER CERTAIN CIRCUMSTANCES)
___ OTHER CHANGES (PLEASE SPECIFY)

10. IF YOU HAD A CHOICE, WOULD YOU RATHER BARGAIN WITH EMPLOYER’S ASSOCIATIONS, OR WITH
SINGLE CONTRACTORS? PLEASE CHECK ONE: ___EMPLOYER’S ASSOCIATIONS ___SINGLE FIRMS
WHY?

11. FOR EACH OF THE FOLLOWING STATEMENTS, INDICATE WHETHER YOU AGREE WITH THE
STATEMENT (AGR), DISAGREE WITH THE STATEMENT (DIS), OR ARE UNCERTAIN (UN).

AGR DIS UN IT IS EASIER TO BARGAIN HIGHER WAGES FROM EMPLOYER’S ASSOCIATIONS
  THAN FROM INDIVIDUAL FIRMS

___ ___ ___ THERE IS GENERALLY MORE COOPERATION BETWEEN UNION AND MANAGEMENT WHEN
  WE BARGAIN WITH AN EMPLOYER’S ASSOCIATION, THAN WHEN WE BARGAIN
  WITH INDIVIDUAL FIRMS

___ ___ ___ THE STRIKE RATE AGAINST INDIVIDUAL FIRMS IS HIGHER THAN THE STRIKE RATE
  AGAINST EMPLOYER’S ASSOCIATIONS OVER WAGE NEGOTIATIONS

___ ___ ___ IT IS HARDER TO GET INDIVIDUAL FIRMS TO AGREE TO A CONTRACT THAN TO
  GET THE EMPLOYER’S ASSOCIATION TO AGREE TO A CONTRACT

___ ___ ___ IT COSTS MORE IN TIME AND MONEY TO NEGOTIATE WITH AN EMPLOYER’S
  ASSOCIATION, THAN TO NEGOTIATE WITH INDIVIDUAL FIRMS

___ ___ ___ INDIVIDUAL CONTRACTORS ARE MORE LIKELY TO DEMAND CONCESSIONS FROM
  THE UNION THAN THE EMPLOYER’S ASSOCIATIONS

___ ___ ___ AGREEMENTS MADE WITH INDIVIDUAL EMPLOYERS FOLLOW THE WAGES BARGAINED
  WITH THE ASSOCIATION

___ ___ ___ WAGES BARGAINED WITH INDIVIDUAL CONTRACTORS ARE LOWER THAN THOSE
  BARGAINED WITH THE ASSOCIATION

___ ___ ___ AGREEMENTS MADE WITH INDIVIDUAL EMPLOYERS IN GENERAL HAVE THE SAME
  BASIC STANDARDS AND WORK RULES AS THOSE MADE WITH THE ASSOCIATION

IF YOU ANSWERED YES, PLEASE CHECK OFF THE YEARS(S) IN WHICH THE STRIKE(S) OCCURRED.


PART D

In this section, we are interested in finding out about the double-breasted contractors in your area.


14. APPROXIMATELY WHAT PERCENTAGE OF CONSTRUCTION WORK WAS DONE BY DOUBLE-BREASTED CONTRACTORS IN YOUR AREA IN 1979 AND IN 1984?

1979 _ _% 1984 _ _%

15. IF A FIRM IS DOUBLE-BREASTED, DOES THIS POSE A PROBLEM TO YOU IN NEGOTIATING A CONTRACT? PLEASE CHECK: YES NO

16. IF YOU ANSWERED YES TO THE ABOVE QUESTION, WHAT IS (ARE) THE PROBLEM(S)? PLEASE SPECIFY

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

17. ARE THERE ANY DOUBLE-BREASTED CONTRACTORS IN THE EMPLOYER'S ASSOCIATION(S) THAT YOU DEAL WITH? PLEASE CHECK: YES NO

18. HAS THIS NUMBER INCREASED OR DECREASED BETWEEN 1979 AND 1984? PLEASE CHECK

INCREASED DECREASED

ADDITIONAL COMMENTS?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

THANK YOU FOR TAKING THE TIME TO FILL OUT THIS QUESTIONNAIRE
APPENDIX B

TABLES FOR CHAPTERS V AND VI
## Table 1

**Demographic Characteristics of the Study Sample**

<table>
<thead>
<tr>
<th>Trade Affiliation</th>
<th>Percentage of Sample</th>
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<tbody>
<tr>
<td>Asbestos Workers</td>
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<tr>
<td>Bricklayers</td>
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<td>Iron Workers</td>
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<td>Laborers</td>
<td>2.9</td>
</tr>
<tr>
<td>Painters</td>
<td>7.1</td>
</tr>
<tr>
<td>Plumbers and Pipefitters</td>
<td>8.6</td>
</tr>
<tr>
<td>Roofers</td>
<td>5.7</td>
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<tr>
<td>Sheet Metal Workers</td>
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<tr>
<td>Terrazzo and Tile Setters</td>
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<tr>
<td>Glaziers</td>
<td>5.7</td>
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### City

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<tr>
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<tr>
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<td>Columbus</td>
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<td>Dayton</td>
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<td>Toledo</td>
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<td>Youngstown</td>
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### Membership Levels in Time Period 1

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<tr>
<th>Membership Range</th>
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<tr>
<td>0 - 50 Members</td>
<td>4.3</td>
</tr>
<tr>
<td>51 - 100 Members</td>
<td>11.4</td>
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<tr>
<td>101 - 250 Members</td>
<td>25.7</td>
</tr>
<tr>
<td>251 - 500 Members</td>
<td>17.1</td>
</tr>
<tr>
<td>501 - 1000 Members</td>
<td>27.1</td>
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<td>1000+ Members</td>
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### Membership Levels in Time Period 2

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<td>2.9</td>
</tr>
<tr>
<td>51 - 100 Members</td>
<td>12.9</td>
</tr>
<tr>
<td>101 - 250 Members</td>
<td>28.6</td>
</tr>
<tr>
<td>251 - 500 Members</td>
<td>17.1</td>
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<td>501 - 1000 Members</td>
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<tr>
<td>1000+ Members</td>
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### TABLE 2

**BARGAINING CHARACTERISTICS OF THE LOCAL UNION SAMPLE**

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<th>COUNCIL MEMBERSHIP</th>
<th>PERCENTAGE</th>
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<td>Local belongs to a council</td>
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</tr>
<tr>
<td>Local does not belong to a council</td>
<td>75.7</td>
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<table>
<thead>
<tr>
<th>ASSOCIATION MEMBERSHIP</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locals with contracts with general contractor’s associations</td>
<td>32.9</td>
</tr>
<tr>
<td>Locals with contracts with specialty contractor’s associations</td>
<td>65.7</td>
</tr>
<tr>
<td>No contracts with any employer’s associations</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>TURNOVER OF BUSINESS MANAGERS IN TIME PERIOD 1</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover</td>
<td>7.1</td>
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<tr>
<td>No turnover</td>
<td>92.9</td>
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</table>

<table>
<thead>
<tr>
<th>TURNOVER OF BUSINESS MANAGERS IN TIME PERIOD 2</th>
<th>PERCENTAGE</th>
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</thead>
<tbody>
<tr>
<td>Turnover</td>
<td>28.6</td>
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<tr>
<td>No turnover</td>
<td>71.4</td>
</tr>
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</table>

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<thead>
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<th>COUNCIL MEMBERSHIP BY TRADE</th>
<th>PERCENTAGE</th>
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<tbody>
<tr>
<td>Asbestos Workers</td>
<td>0.0</td>
</tr>
<tr>
<td>Bricklayers</td>
<td>0.0</td>
</tr>
<tr>
<td>Carpenters</td>
<td>86.6</td>
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<td>IBEW</td>
<td>12.5</td>
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<tr>
<td>Iron Workers</td>
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</tr>
<tr>
<td>Laborers</td>
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</tr>
<tr>
<td>Painters</td>
<td>0.0</td>
</tr>
<tr>
<td>Plasterers and Cement Masons</td>
<td>0.0</td>
</tr>
<tr>
<td>Plumbers and Pipefitters</td>
<td>0.0</td>
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<td>0.0</td>
</tr>
<tr>
<td>Sheet Metal Workers</td>
<td>0.0</td>
</tr>
<tr>
<td>Terrazo and Tile Setters</td>
<td>0.0</td>
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<td>Glaziers</td>
<td>25.0</td>
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</table>
Table 2 (continued)

<table>
<thead>
<tr>
<th>LOCALS WHICH ENGAGED IN STRIKES</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Period 1</td>
<td>11.0</td>
</tr>
<tr>
<td>Time Period 2</td>
<td>23.6</td>
</tr>
<tr>
<td>Both Time Periods</td>
<td>2.8</td>
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# Table 3

Univariate statistics for the variables in the model in time period 1 (1979–1981)

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<thead>
<tr>
<th>VARIABLE</th>
<th>N</th>
<th>MEAN</th>
<th>STD DEV</th>
<th>SUM</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
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<tbody>
<tr>
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<td>62.898551</td>
<td>30.851706</td>
<td>4340.0000</td>
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<tr>
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<td>DOLVOL</td>
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<td>11.971728</td>
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<td>EACH</td>
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<td>0.431906</td>
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<tr>
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<td>0.000000</td>
<td>1.00000</td>
</tr>
<tr>
<td>ASSOC2</td>
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<td>0.478091</td>
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<td>1.00000</td>
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</table>

**Key**

**STRUC:** Percentage of employers who bargain with each local union who belong to an employer's association.

**WGCMP:** Ratio of prevailing wage rate to union wage rate for each local union.

**DOLVOL:** Percentage change in dollar volume of business in each product market.

**CNCL:** Dummy variable indicating local union membership in a district council for bargaining purposes.

**ER:** Ratio of large employers to small employers in the employer's product market, within the employer's MSA.

**ASSOC1:** Dummy variable indicating employer membership in a general employer's bargaining association.

**ASSOC2:** Dummy variable indicating employer membership in a specialty contractor's bargaining association.

**UNMKT:** Percentage of the labor market unionized in an employer's geographic area.
### TABLE 4

**UNIVARIATE STATISTICS FOR THE VARIABLES IN THE MODEL IN TIME PERIOD 2 (1982-1984)**

<table>
<thead>
<tr>
<th>VARIABLE</th>
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<th>MAXIMUM</th>
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<td>1.0000</td>
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<td>ASSOC2</td>
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TABLE 6

BIVARIATE PEARSON CORRELATIONS FOR THE VARIABLES IN THE MODEL IN TIME PERIOD 2 (1982-1984)

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<th></th>
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<th>WGCMP</th>
<th>DOLVOL</th>
<th>CNCL</th>
<th>ER</th>
<th>ASSOC1</th>
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### Table 7

Results of the Joint Generalized Least Squares Estimation Procedure Testing the Hypothesized Model

System weighted MSE is 0.985747 with 122 degrees of freedom
System weighted R-square is 0.167418

**Model: Time 1**
Dep variable: STRUC

| VARIABLE | DF | PARAMETER ESTIMATE | STANDARD ERROR | T FOR HO: PARAMETER=0 | PROB > |T| |
|----------|----|--------------------|----------------|------------------------|-------|---|
| INTERCEP | 1  | -95.5571185        | 79.49470042    | -1.202                 | 0.2340|
| WCOMP    | 1  | 0.94498177         | 0.66329689     | 1.425                  | 0.1593|
| DOLVOL   | 1  | 0.07828173         | 0.03854979     | 2.031                  | 0.0467|
| CNCL     | 1  | 1.55574823         | 9.08604932     | 0.171                  | 0.8646|
| ER       | 1  | 0.48722066         | 0.77048424     | 0.632                  | 0.5295|
| ASSOC1   | 1  | 73.77814358        | 34.84488268    | 2.117                  | 0.0383|
| ASSOC2   | 1  | 82.75499829        | 34.41687971    | 2.404                  | 0.0192|
| UNMKT    | 1  | -0.19670642        | 0.20433317     | -0.963                 | 0.3395|

**Model: Time 2**
Dep variable: STRUC

| VARIABLE | DF | PARAMETER ESTIMATE | STANDARD ERROR | T FOR HO: PARAMETER=0 | PROB > |T| |
|----------|----|--------------------|----------------|------------------------|-------|---|
| INTERCEP | 1  | -74.09198810       | 91.45582809    | -0.810                 | 0.4210|
| WCOMP    | 1  | 0.39660778         | 0.80053041     | 0.495                  | 0.6221|
| DOLVOL   | 1  | 0.04596357         | 0.03640173     | 1.263                  | 0.2115|
| CNCL     | 1  | -13.75063912       | 10.83773567    | -1.269                 | 0.2093|
| ER       | 1  | 0.70194280         | 0.90006828     | 0.780                  | 0.4385|
| ASSOC1   | 1  | 62.36862779        | 41.30539185    | 1.510                  | 0.1362|
| ASSOC2   | 1  | 64.56501506        | 40.08341635    | 1.612                  | 0.1120|
| UNMKT    | 1  | 0.31198931         | 0.16947600     | 1.647                  | 0.1048|
## Table 8

**Cross-Model Comparisons between the Model in Time Period 1 and Time Period 2**

### Cross-Model Comparison

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<th>Numerator</th>
<th>DF:</th>
<th>F Value</th>
<th>Denominator:</th>
<th>DF:</th>
<th>Prob &gt; F</th>
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<td>Contractors are dissatisfied with the Association’s internal politics</td>
<td>52.3</td>
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<tr>
<td>The contractors are interested in bargaining concession that the associations will not bargain</td>
<td>38.7</td>
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<tr>
<td>The small contractors feel the association is dominated by the large firms, so they leave</td>
<td>63.6</td>
<td></td>
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<tr>
<td>The large firms leave because they feel they can bargain better contracts by themselves</td>
<td>54.5</td>
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<td>Contractors are dissatisfied with the Association’s leadership</td>
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<td>The management of contracting firms has changed</td>
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<td>Double-breasted firms don’t feel they need to belong to the association</td>
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<tr>
<td>Other</td>
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<td></td>
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<tr>
<td>Allocated more time and money to negotiations</td>
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<td>Trained more negotiators</td>
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<td>Individualized contracts to accommodate the needs of individual contractors</td>
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<td>Made concessions on wages to the individual contractors</td>
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<td>Made concessions on wages to the employer's associations</td>
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<td>Made some changes in work rules for individual contractors</td>
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<td>Made some change in hiring requirements for individual employers (for example, allowing them to use non-union labor)</td>
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<td>It is easier to bargain higher wages from employer's associations than from individual firms</td>
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<td>25.0</td>
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<td>There is generally more cooperation between union and management when we bargain with an employer's association, than when we bargain with individual firms</td>
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<td>The strike rate against individual firms is higher than the strike rate against employer's associations over wage negotiations</td>
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<td>It is harder to get individual firms to agree to a contract than to get the employer's association to agree to a contract</td>
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<td>11.4</td>
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<td>It costs more in time and money to negotiate with an employer's association, than to negotiate with individual firms</td>
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<td>Individual contractors are more likely to demand concessions from the union than the employer's associations</td>
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<td>Agreements made with individual employers follow the wages bargained with the associations.</td>
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<td>Wages bargained with individual contractors are lower than those bargained with the association.</td>
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<td>Agreements made with individual employers in general have the same basic standards and work rules as those made with the associations.</td>
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