PERFORMANCE AND GROWTH IN ENTREPRENEURIAL FIRMS: REVISITING THE UNION-PERFORMANCE RELATIONSHIP

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INTRODUCTION

A substantial body of research has examined the relationship between unions and firm performance. It generally has found a positive relationship between unions and productivity and a negative relationship between unions and financial performance (Freeman & Medoff, 1984; Addison & Hirsch, 1989; Belman, 1992; Freeman, 1992). The exit/voice model is most commonly used to explain this paradox (Freeman & Medoff, 1984). Freeman and Medoff argued that the "monopoly power" of unions leads to high union wages and restrictive work rules, both of which raise the costs of production and lower profit margins. The presence of unions, however, also lowers production costs by reducing turnover (exit) and providing incentives for employee effort through "collective voice." Thus, unionized workplaces may be at once more productive but less profitable because employees share in productivity gains through higher wages.

There are a number of reasons, however, why the findings from prior research may not generalize to firms in the 1990s, particularly, high tech and entrepreneurial firms. First, under the exit/voice model, the relationship between unions and firm performance is an empirical question that depends on the net effect of opposing forces. Most of the empirical evidence on this topic, however, draws on data from U.S. manufacturing firms in the post-World War II period, when mass production models dominated the approach to organizing work, union power was at its height, and union-management relations were largely adversarial. In the 1990s, however, several forces have changed. First, U.S. firms, particularly high tech and entrepreneurial firms, have adopted much more flexible approaches to organizing work, such as "high performance work systems" (Appelbaum & Batt, 1994), which reduce status differences between workers and managers. Second, union power has dropped significantly, with union membership falling from 24% of the private sector workforce in 1973 to about 10% in 1995 (Bureau of Labor Statistics). Third, mutual gains and win-win approaches to bargaining (Walton & McKersie, 1965) have transformed union-management relationships in many instances, leading to greater cooperation and less zero-sum conflict.

For these reasons, we decided to revisit the question of the relationship between unions and firm performance by drawing on a unique set of 464 entrepreneurial firms at the time of their initial public offering (IPO) in 1993 and their subsequent financial performance through 1996. This is an important context to examine because entrepreneurial firms are a major source of economic growth in the U.S. They are known for their innovation and flexibility in responding to rapidly changing market demand. Unions are conventionally viewed as barriers to change and anathema to the type of flexibility and quick response needed to compete in entrepreneurial markets. Thus, it is important to know whether unions pose a negative threat to financial performance and economic growth in this important sector of the economy.

This is also an appropriate context for exploring the topic of unions and financial performance because most entrepreneurial firms are small and young. They are less likely to have the kind of "monopoly union power," conflictual labor management relations, or rigid work rules traditionally found in large U.S. mass production enterprises - the context of much prior research on unions and financial performance. In this context, firms and unions have more opportunity to adopt new forms of work organization and labor-management relations.

In this chapter, we first review the prior literature on this topic, including theoretical frameworks and the empirical evidence on the union-performance relationship. Then, we present our quantitative case study of unions and financial performance in entrepreneurial firms. In the final section, we consider our findings in the context of the prior literature and suggest avenues for future research.

PRIOR LITERATURE

Theoretical Perspectives

In the exit/voice framework, as applied to the employment relationship by Freeman and Medoff (1984), the relationship between unions and firm performance is the net result of opposing forces (see Fig. 1). On the one hand, the "monopoly power" of unions allows unions to negotiate wages and benefits that are above the market rate. In addition, unions may use their power to negotiate work rules that limit flexibility in the deployment of labor. In U.S. manufacturing firms, for example, many unions adopted a strategy of "job control" unionism in order to gain job security for members. That is, because there was no implicit or explicit employment security for workers, unions fought for seniority rights in layoff procedures and for job descriptions that prevented management from substituting supervisors for workers in direct production. These types of work rules tended to increase production costs.

On the other hand, high wages may attract a higher skilled and more productive workforce, and union presence may also reduce certain types of production costs, particularly the costs of recruitment, selection, and initial training related to employee turnover. In theory, workers in union settings quit less for two reasons: because their pay and benefits are higher than comparable non-union jobs and because they have opportunities for "collective voice," which allow them to express dissatisfaction and participate in correcting problems in the workplace rather than quitting.

Unionization institutionalizes the collective voice of employees with the support of labor law and creates a governance structure that replaces the unilateral authority of management. As a result, historically, union workplaces developed internal labor market rules that provided workers with some protection against external labor market competition (Jacoby, 1985; Doeringer & Piore, 1971). Union workers quit less and accrued more tenure than otherwise comparable non-union workers. In addition, with lower turnover, firms are more likely to invest in firm-specific training (Doeringer & Piore, 1971), which may raise productivity. Higher wages also may induce firms to take a higher productivity approach (Slichter, Healy & Livemash, 1960) or invest more in labor saving technology. Thus, union presence may contribute to higher productivity both by lowering production costs and by raising productivity.

Industrial relations theory provides a fuller explanation for the contingent relationship between unions and performance outcomes. In their seminal book on the transformation of U.S. industrial relations, Kochan, Katz and McKersie (1986) argued that union-management relations are contingent on many factors, including market and institutional factors, managerial and union strategy, the history of collective bargaining, and the level of trust and cooperation between management and labor (Fig. 2). First, external factors, such as the degree of competitiveness in the market and the state of existing union institutions, will affect union-management relations inside the firm. Second, Kochan, Katz and McKersie argued that the "strategic choices" of the actors play an independent role in shaping the degree of cooperation or adversarialism that exists in the union-management relationship, which in turn, influences firm-level outcomes. Third, they noted the importance of union and management strategies and actions at three levels of the relationship - at the level of business strategy, at the level of HR policies and collective bargaining, and at the level of the workplace. Thus, within certain constraints imposed by external market and institutional forces, the individual actors have considerable latitude to construct alternative approaches to solving problems, including those that maximize the benefits for all stakeholders involved. In keeping with this transformation thesis, industrial relations experts have

developed "mutual gains" or win-win approaches to bargaining based on identifying the "integrative" issues in which

both parties have mutual interests (Walton & McKersie, 1965). Mutual gains approaches tend to reduce

labor-management conflict and create opportunities for union-management partnerships based on principles of shared
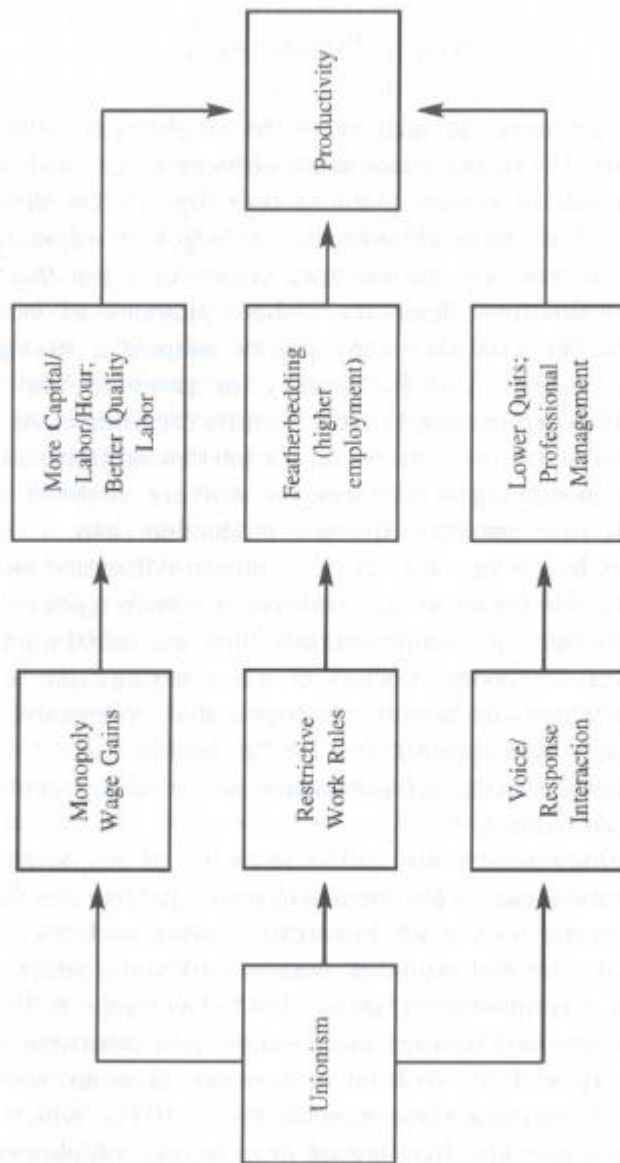
governance.

Fig. 1. Exit/Voice Model of Union-Performance Relationship.

Source: Freeman and Medoff (1984, p. 163).

Both the exit/voice model of Freeman and Medoff and the transformation thesis of Kochan, Katz, and McKersie provide a contingency framework for understanding the relationship between unions and firm performance. However, empirical studies over the last two decades have demonstrated a consistent negative relationship between unions and financial performance and a consistent positive relationship between unions and productivity. If the effect of unions is context-specific, why have researchers consistently found these results? Under what conditions might unionization contribute positively to financial performance as well? To explore these questions, we next turn to a review and critique of the existing empirical evidence and discuss the ways in which prior research may be contingent on specific historical factors.
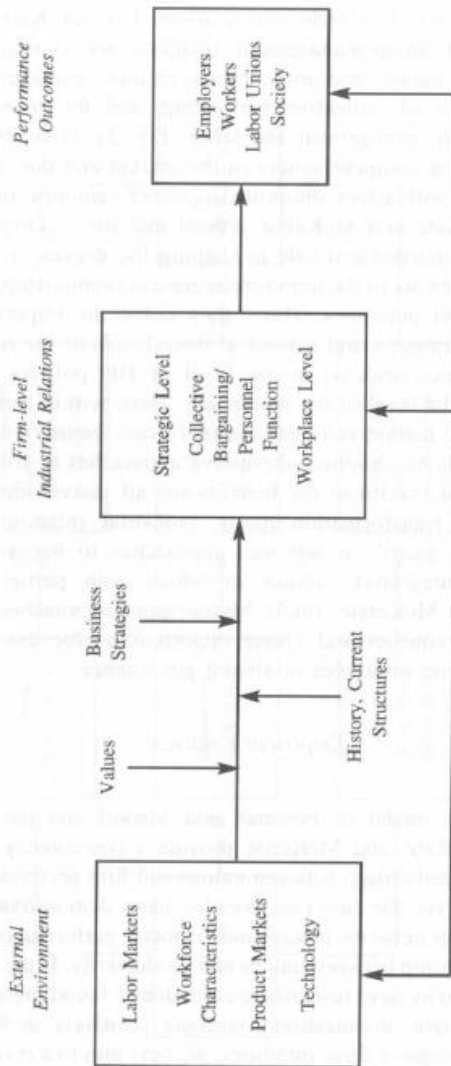

Fig. 2. Strategic Choice Model of Union-Performance Relationship.

Source: Kochan, Katz and McKersie (1986, p. 11).

Empirical studies that have found a significant negative relationship between unions and financial performance have used a variety of financial outcome measures, including price-cost margin, net revenues per unit of capital, Tobin's q, and stock market value. Addison and Hirsch's (1989) review of sixteen studies that used various methodologies and measures of profitability found a consistent large negative relationship between unions and financial performance. Freeman's review (1992) of studies in the U.K. and Belman's (1992) review of the literature reached similar conclusions. Bronars and Deere (1990) and Bronars, Deere and Stacey (1994) found that union elections were associated with significant declines in Tobin's q, the ratio of excess market value to sales, and the ratio of net operating income to sales.

Despite this seeming consistency, however, the empirical research also supports the argument that the relationship between unions and financial performance varies considerably by context. Hirsch (1991, 1992), for example, found a negative relationship between unions and profitability, but variation across industries. Allen (e.g. 1986, 1988) reported no negative relationship between unions and profits in the construction industry. Others have found that market conditions influence the extent to which unionized firms have lower profitability. One argument, that unions extract quasi-rents in monopoly markets with "abnormally high returns" (Freeman & Medoff, 1984), is supported by Karier (1985, 1988). He found that unions were associated with lower price- cost margins in industries with highly concentrated ownership structures (such as auto assembly) but had no such association in low concentration industries (such as construction). Hirsch and Connolly (1987), by contrast, found no variation in union effect by the degree of market concentration, but did find evidence that other market conditions such as the degree of foreign competition and a firm's market share were significant predictors of union rent-sharing.

Other researchers have found that the relationship between unions and financial outcomes varies over time. For example, Kendrick and Grossman (1980) reported a negative relationship between unions and productivity growth from 1948-1966, but a positive one between 1967 and 1978. Connerton, Freeman and Medoff (1983), cited in Belman (1992), found that union mines were 30% more productive than non-union mines in the 1960s, but only 15% more productive in the 1970s. This variation across industries and over time may be attributed to many factors including variation in union power, market conditions, and the changing strategies and relations between union and management.

A large literature also demonstrates that the relationship between unions and firm performance varies by the degree of labor-management conflict rather than union presence per se. Kendrick and Grossman (1980), for example,

noted that when they included measures of strike activity, the positive relationship between unions and productivity between 1967 and 1978 was eliminated. Connerton et. al. (1983, cited in Belman (1992)) attributed the reduction in productivity in unionized mines in the 1970s to increased labor-management conflict and strike-related activity. Kochan, Katz and Gobielle (1983) found that a better industrial relations climate led to improvements in quality (but not output) is a study of eighteen General Motors plants in the mid-1970s. Similarly, Keefe (1992) reviewed empirical studies of unions and technological innovation and found that the outcomes were context specific. Martinello et al. (1995) conducted a study of the effects of union certification on expected financial performance of firms. They reported no strong negative reaction to certification in general, but found increased negative returns where the certification process was more conflictual.

Given the importance of industry and the labor-management context for firm performance, therefore, it is reasonable to examine whether there are certain contexts in which unions may be associated with better financial performance. The existing research on unions and financial performance, for example, may be limited because it is based on data from U.S. manufacturing in the 1960s through early 1980s (e.g. Addison & Hirsch, 1989; Belman, 1992; Becker & Olson, 1989, 1992; Hirsch, 1991, 1992). This represents a specific historical context in which oligopolistic markets and national bargaining agreements gave unions considerable monopoly leverage for extracting quasi-rents. At the same time, U.S. labor-management relations were highly adversarial and industrial unions engaged in "job control unionism". Under job control unionism, unions bargained wages for specific jobs and enforced adherence to job descriptions in order to increase job security in the absence of explicit security agreements. This approach resulted in arguably greater inflexibility in work organization, thus constraining productivity and process innovations (some empirical research has found that combining job classifications modestly improves economic performance, Keefe & Katz, 1990). In sum, much of the evidence showing a negative relationship between unions and financial performance may be understood as the result of oligopolistic markets, mass production approaches to work organization, and conflictual labor relations in a particular historical period.

In fact, more recent studies have found that the negative relationship between unions and firm performance fell in the 1980s. Menezes-Filho (1997), for example, analyzed data on unions and firm financial performance in the U.K. in the 1980s and demonstrated that the negative union effect declined sharply over the course of the decade. Hirsch and

Morgan (1994) found an overall negative relationship between unions and shareholder rates of return between 1973 and 1987; but the differences in shareholder risk in union and nonunion firms were small and insignificant by the mid-1980s. Becker (1995) found that shareholders' average returns from takeover activity in the 1980s were higher for unionized target firms compared to non-union target firms, with unionized workers losing the equivalent of 50% of the wage premium normally associated with union coverage. The results of these studies could reflect declining union power and concession bargaining over wages and work rules, or changes in union-management relations and the introduction of new work systems. In either case, we would expect the patterns found in the 1980s to continue in the 1990s.

A perhaps more serious issue is whether unions are associated with lower economic growth or firm investment in research and development (R&D). Hirsch and Connolly (1987), among others, argue that measuring profitability in terms of price-cost margin (PCM), as is common in many studies, is a limited and static indicator. They argue that stock market valuations such as Tobin's q (the ratio of a firm's market value to replacement value) and investment in R&D are more important indicators of firm value and dynamic growth. A negative relationship between unionization and Tobin's q is interpreted to mean that unions negatively affect intangible rents. In this area, researchers have found mixed results as well. Some studies found that unionized firms in the U.S. have lower Tobin's q and lower R&D investment (e.g. Connolly, Hirsch & Hirschey, 1986; Hirsch & Connolly, 1987). By contrast, Wadhwani (1989) found no effect for British unions; and in a recent study, Menezes-Filho et al. (1998) found that a negative association between unions and R&D investment became statistically insignificant in the presence of controls for industry and cohort effects.

In sum, while researchers have found a consistent negative relationship between unions and financial performance, they have also found that the magnitude of the relationship depends on market and union institutional conditions. Moreover, some studies suggest that the magnitude and significance of the relationship have declined over the same time period that union power has been declining in North America and Britain.

Unions, Collective Voice, and High Performance Work Systems

The positive association between unions and productivity rests in part on studies of turnover, which consistently demonstrate that union facilities have lower turnover rates than non-union facilities, both in the United States and other countries (Cotton & Tuttle, 1986; Miller & Mulvey, 1991; Wilson & Peel, 1991; Lincoln & Kalleberg, 1996; Delery, Gupta,

Shaw, Jenkins & Ganster, 2000;

Batt, Colvin & Keefe, 2002). Moreover, other studies suggest it is the collective voice of unions, rather than high wages alone, that account for lower quits among union members. For example, unionized workplaces have lower quit rates even after controlling for wages, (Freeman, 1980; Batt, Colvin & Keefe, 2002). In addition, due process (grievance and arbitration) procedures negotiated by unions significantly lower quit rates (Ichniowski and Lewin, 1987), with stronger procedures having stronger effects on quit rates (Rees, 1991).

The more controversial issue is whether the presence of unions also raises operational performance, based on the argument that long term employment relations induce firms to invest in firm-specific training and higher productivity work systems. Some research does support this view, with Norsworthy and Zabala (1986) finding a direct relationship between higher turnover and lower total factor productivity. After reviewing 30 studies investigating the union effects on productivity, Belman (1992) concluded that the majority of studies found that unions were associated with higher productivity. In a more recent study, Batt (2002) examined sales growth in a nationally representative sample of service and sales establishments and found that unions significantly lowered quit rates and that lower quit rates led to higher sales growth.

If union workplaces have lower turnover and higher productivity than their non-union counterparts, then under what conditions do these operational advantages translate into higher financial performance? In the exit/voice model, this might occur if competitive market conditions limit the extent to which unions are able to extract "monopoly rents" or if union institutions are too weak to extract monopoly wages.

The strategic choice model of industrial relations offers a different argument. By raising relative wages, unions provide incentives for firms to compete on the basis of quality and customization (Streeck, 1991), rather than cost alone. Because firm competitiveness in current markets rests significantly on the ability to compete on quality, customization, time-to-market, and innovation (Appelbaum & Batt, 1994), the presence of unions may induce firms to adopt a more effective approach to competing in current markets. To do so requires investment in new technologies and production systems, often defined as high performance work systems. These work systems provide employees with high relative skills and training, opportunities to participate in workplace decisions, and incentives to induce discretionary effort (e.g. Appelbaum et al. 2000). A classic example is GM's Saturn plant, which became a financial success through much of the

1990s due to its adoption of a high performance work system and joint labor-management governance structure (Kochan & Rubenstein, 2000). The union role in co-management of operations was a significant predictor of better quality and problem solving (Rubenstein, 2000).

Another example is Coming's Blacksburg plant, where the union and management negotiated a contract that reduced job classifications to 2 (eliminating job control unionism), created a self-managed team-based system of production, and linked pay to performance through a skill-based pay system and goalsharing (a combination of gainsharing and profit-sharing). The company and union then used Blacksburg as a model for union-management relations and high performance work systems at most other U.S. manufacturing plants (Batt, 1997).

A growing body of empirical research documents a significant positive relationship between high performance systems and firm performance, both in terms of organizational metrics such as productivity, quality, time-to-market, and sales growth (e.g. Appelbaum et al., 2000; Becker & Gerhart, 1996; Ichniowski et al., 1996; MacDuffie, 1995; Batt, 2002); and financial metrics (Baker, 1999) such as Tobin's q and the accounting measure, GRATE (Huselid, 1995; Huselid & Becker, 1996), and return on equity and return on assets (Delery & Doty, 1996; Snell & Youndt, 1995).

While many unions resisted these types of work innovations in the 1970s and early 1980s, unions have increasingly embraced such practices in the 1990s in order to save jobs. The AFL-CIO and many national unions have official policies supporting union-management partnerships, employee participation, and "high performance work practices" (e.g. AFL-CIO, 1994; International Brotherhood of Electrical Workers, 1993; Communications Workers of America, 1994).

In addition to influencing the *adoption* of high performance systems, unions may also make *implementation* of such systems more effective by mobilizing members to fully participate in workplace innovations. Union support for high performance systems often results in better and more sustainable implementation and greater acceptance of change on the part of workers (Eaton & Voos, 1992; Kochan & Osterman, 1994; Batt, 1997). This may occur, as in the Saturn and Blacksburg cases, because the union negotiates the terms and conditions for employee participation, including an employment security pledge that frees up employees to offer suggestions without worrying that their suggestions will lead to job loss. Thus the interactive effect of unions and high performance work systems may lead to gains over and above those produced by high performance systems alone. In a study of a nationally representative sample of

establishments surveyed by the Census Bureau, for example. Black and Lynch (1998) found that the use of high performance work systems was associated with 10% higher productivity in non-union establishments, but 20% higher in unionized workplaces.

A more recent study provides evidence of a direct link between unions, operational performance, and financial performance in the U.S. airline industry between 1987 and 1999 (Gittell, Von Nordenflycht & Kochan, 2001). The authors found that unionization and shared union-management governance structures were significantly positively related to operational performance and financial outcomes, as measured by operating margins and return on assets (ROA). In addition, operational performance mediated the relationship between shared governance and unionization on the one hand, and financial performance on the other. Labor conflict, by contrast, was negatively associated with service quality, productivity, and financial outcomes.

In sum, there is a growing body of research that suggests that firms that compete on quality and customization and adopt high performance work systems will have better operational and financial performance, and that union support for adoption and implementation of these systems can lead to particularly positive outcomes.

UNIONS AND ENTREPRENEURIAL FIRMS:

THE CURRENT STUDY

Prior research, therefore, supports the idea that the relationship between unions and firm financial performance is an empirical question that depends upon market and institutional context. In this study, we examine a set of privately held firms that have recently gone public. Thus, we essentially are exploring the financial results of privately held firms with unions, as well as what happens to them after they go public. We could find no prior research on unions and financial performance in this type of firm. However, we do know that on average privately held IPO firms differ from other publicly traded firms in that they are younger and smaller. For example, in our sample, the average firm at the time of its IPO was 4.79 years old. The median firm was 6 years old, and over 80% of the sample was less than 10 years old. The average firm in the sample employed 1,107 people, while the median firm had 190 employees.

These differences suggest a couple of ways in which unions may behave differently in IPOs compared to publicly traded companies more generally. First, because they are younger, they are less likely to have developed a system of job

control unionism of the kind found in traditional U.S. mass production manufacturing. They are more likely to be in a position to adopt high performance work practices because they are not saddled with a legacy of traditional mass production systems or investment in outmoded technologies. Moreover, privately held firms do not have the pressure to meet the short-term financial expectations of investors, and they are not under the scrutiny of Wall Street. Thus, the union-management relationship has the potential to develop in a more cooperative vein because the firm is not under intense pressure from outside shareholders to meet financial expectations or risk a fall in stock price.

Second, as small independent enterprises, they are less likely to be part of national union contracts, or subject to industry-wide pattern bargaining. In enterprise bargaining, the monopoly power of unions is likely to be moderated. Third, unionization is likely to be a relatively recent phenomenon; and research shows that unions generally make modest economic gains in negotiating early contracts. Instead, the voice effects in early contracts are more important, including grievance and third party arbitration, seniority rights, and just cause and due process procedures (Freeman & Kleiner, 1990).

Our analysis of information in the corporate perspectus provided some support for these arguments. For those companies that provided information on labor management relations, for example, we found that only about 20% were organized by powerful national unions such as the United Steelworkers, the Teamsters, or the United Auto Workers. Other unions in the sample include: The United Brotherhood of Carpenters and Joiners of America, Graphic Communications Union, International Alliance of Theatrical Stage Employees, Association of Flight Attendants, Office and Professional Employees International Union, Amalgamated Clothing and Textile Workers Union, and the Moving Picture Machine Operators Union. For these unions, collective bargaining often occurred at the enterprise level, and many companies reported that they had never had a work stoppage.

Thus, the labor relations context in these privately owned firms appears to be one in which the monopoly power of unions is moderate and the labor relations climate is cooperative. In this environment, union wage gains are likely to be moderate, and union benefits for workers are likely to accrue in areas related to collective voice: employee participation in workplace decisions, procedural justice, and employment security. These collective voice benefits support the implementation of high performance work practices by helping to create an environment of trust and employment security that reduces worker resistance to process innovations. These contextual factors lead us to

hypothesize that in this group of firms, unions will be positively associated with firm financial performance and growth.

Methods

Our research strategy involved selecting a specific cohort of IPO firms that went public in a given year and then tracking those same firms over time to study the effects of their early organization structure (whether unionized or not) on subsequent firm performance. We selected a sample of firms that went public in 1993 so that we could study performance over time after the IPO (e.g. performance from 1993 to year-end 1996). The number of firms that went public in 1993 and that produced a good or service (we excluded real estate trusts and financial groups with no employees) was 585; of those companies we were able to obtain the prospectuses (which are one of our primary data sources) for 535 firms. The sample was further reduced to 476 as a result of missing data. Fifty-nine firms no longer reported data for two of the dependent variables - stock price and earnings per share in (1996). Of these firms, we found that 50 had engaged in a merger or acquisition, two filed for bankruptcy, one went private, and six had no information available. In order to examine potential survival bias (the firms that dropped out were in some way inferior performers), we conducted an ANOVA to determine how those firms for which we did not have complete data (that dropped out of the sample) differed from the overall sample. We found that there were no significant differences in any of the variables used in the analyses for this research (e.g. risk factors at time of IPO, age of firm, size measured by sales and number of employees, and net profitability). The lack of significant differences, we speculate, is due to the fact that mergers may be conducted for healthy as well as financially troubled firms, and most of the firms for which we could no longer find data had engaged in a merger or acquisition. Our final sample was reduced to 464 due to missing data that were randomly distributed among the variables used in the analyses.

Data Collection and Coding

The primary data source was the prospectus of each firm. The prospectus is the document provided to the Securities and Exchange Commission (SEC) prior to the public offering, and it is also the document circulated by the underwriter to assess demand for the firm's stock. The SEC requires that firms follow strict guidelines in the format. In fact, the firm is legally liable for any information that might mislead investors (O'Flaherty, 1984). As noted by Beatty and Zajac (1994), top management is accountable to the SEC and to stockholders regarding the contents of the prospectus. The Securities Act of 1933 sets the requirements for the prospectus, thus assuring consistency in the type of information

that is included in the document. The typical prospectus writing process involves at least three lawyers (one for the company and one for each of the investment bankers), two investment banking firms, and at least one certified public accountant. Each party has a vested interest in providing the public with an honest view of the company. Thus, we can be reasonably assured that the prospectus is a useful data source (Marino, Castaldi & Dollinger, 1989).

The coding strategy was developed and refined in earlier research (see method used by Welboume and Andrews, 1996). Each coder received a coding handbook and attended an initial training session. A total of five coders worked on the data, and attended weekly meetings with the principal researchers to go over problems and/or inconsistencies in the prospectuses. Finally, we randomly cross-coded prospectuses (every 10th prospectus). For the variables used in this study, agreement was 90% or higher among the coders. Financial data were also obtained from COMPUSTAT, *Going Public: The IPO Reporter* (for financial data at the time of the IPO), and from a database obtained from the Securities Data Corporation.

Sample Characteristics

Table 1 provides the distribution of firms by industry and geographic location. For each industry and location, it also reports the percentage of firms that are unionized. The most striking observation is that IPO firms are located across a wide range of geographic locations and most major industrial sectors. They are not concentrated, for example, among high tech companies. The companies are located in all geographic areas within the United States with higher concentrations of firms in the Pacific (22%), South Atlantic (13%), Mid-Atlantic (11.7%), and Northeast (10.6%). In addition, 8% of the firms are based outside of the U.S. The sample firms are roughly equally divided between manufacturing (48.9%) and services (44.7%), with an additional 3.3% in extractive industries, and 2% in construction. Utilizing industry codes suggested by the U.S. Small Business Administration, we grouped firms into more detailed categories. The largest single category of firms was in apparel and accessory stores (26.9%), followed by industrial machinery (9.1%), utilities (8.7%), electronic equipment (8%), instruments and related products (6.5%) and chemicals and related products (6.5%).

A total of 95 firms (21%) reported having a union at the time of the IPO. This represents a higher rate of private sector unionization than the U.S. national average of 10% in 1995 (Bureau of Labor Statistics). This is due to the fact that 53% of the sample is the more unionized goods-producing sector, while in the economy as a whole, only 25% of

employment is in this sector (U.S. DOL, 1999). The sample's rate of unionization varies widely from none in

miscellaneous services to over 80% in stone, glass, and metal fabrication.

Measures of Variables

We coded union status from the company prospectuses. Because not all companies reported the percentage of

employees that were unionized, we coded union status as a dummy variable, where one equals union presence, else

zero. Of the 49 companies that did report more detailed information on unions, we found that on average 46.9% of

employees were unionized. The median is 40.5% with a minimum of 1.5% and maximum of 100%.

Table 1. Distribution of Sample Firms by Industry and Geographic Location.

Two-Digit SIC Industry	Percent of Total Sample	Percent Unionized
Metal, mining, oil and gas extraction	3.3	11.8
General building contractors and heavy construction	2.0	11.1
Food and kindred products, textile mills and apparel, and other textile products	6.0	16.7
Lumber, wood products, furniture, paper products	1.7	60.0
Printing and publishing	1.7	37.5
Chemical and allied products	6.5	11.8
Rubber, plastics, and leather products	2.2	36.4
Stone and glass – Metal, fabricated metal	4.8	82.6
Industrial machinery and equipment	9.1	20.0
Electronic and other electronic equipment	8.0	15.4
Transportation equipment	1.7	40.0
Instruments and related products	6.5	5.7
Miscellaneous manufacturing industries	2.4	8.3
Railroad and other transit	2.4	57.1
Communication	3.9	20.0
Electric, gas, and sanitary	1.1	33.3
Wholesale trade and building supplies	8.7	17.0
Apparel and accessory stores	26.9	12.9
Miscellaneous services	1.3	0.0

Geographic Location	Percent of Total Sample	Percent Unionized
Foreign country	8.0	57.9
Northeast	10.6	13.0
Middle Atlantic	11.7	19.4
East North Central	8.7	45.5
West North Central	6.7	13.2
South Atlantic	13.0	16.2
East South Central	2.8	31.3
West South Central	9.8	14.5
Mountain	5.4	10.7
Pacific	22.1	10.2

For dependent variables, we used three measures of financial performance: Tobin's q at the time of the IPO, growth in earnings, and growth in stock price. Tobin's q is the ratio of market value to book value (replacement value) at the initial public offering. Because book value is historic, it is not an exact approximation of replacement cost (which is what is intended in the calculation of Tobin's q); but the IPO literature recommends stock price to book value as a measure of investor reaction to a firm (Smirlock, Gilligan & Marshall, 1984). Thus, Tobin's q indicates how investors value the firm, with a higher ratio indicative of higher value (Davis, 1991). At the time of the IPO, many factors influence Tobin's q, including information in the prospectus, how well the owners are able sell their company to investors (partly due to how many orders for stock are taken prior to the IPO), and how well the overall stock market is doing. Tobin's q is a good indicator of investors' assessment of the potential value of the firm.

Growth in earnings per share (EPS) is measured from the time of the IPO in 1993 to end-of-year 1996. EPS is a measure of internal performance that is often used by analysts and investors to assess future value of the firm. In the EPS analyses, we included earnings per share at the time of the IPO as a control variable. By conducting the analyses in this way, we eliminate measurement issues surrounding the use of change scores. However, we did run the analyses with change scores (percentage change from IPO to year-end 1996 as dependent variables), and the patterns of results (including significance levels) did not change.

Given that the primary reason investors choose to put money into an IPO is to make money when the firm's stock price increases over time, we also studied growth in stock price. Market-based measures represent the most prevalent and relevant firm performance measures in the IPO literature (for a review, see Ibbotson & Ritter, 1995). After controlling for initial stock price (adjusted for splits, buybacks, or any other events that affect unit price of the stock), our analysis reflects the increase in value of the firm in the first three years following the IPO.

We selected several control variables known to be correlated with unionization, including age, size, industry, and geographic location. Company age is based on the year the company was incorporated, as reported in the prospectus (calculated as 1993-date incorporated). Firm size is measured by the number of employees and by total sales at the time of IPO. For industry characteristics, we included nineteen (one omitted) dummy variables based on two-digit industry classifications as reported by the Small Business Administration. For location, we added nine geographic dummy codes (one omitted) (See Table 1 for industry and geographic categories used). We also used control variables

suggested in studies of human resources and firm performance and the initial public offering literature (e.g. Welboume & Andrews, 1996; Huselid, 1995; Beatty & Zajac, 1994). We included two measures of firm performance: total assets and net profit per share at the time of the IPO. For our analysis of stock price, we include an additional control for adjusted stock price (adjusted for splits, etc.) at the time of the IPO.

Although our sample of IPO firms consists of companies that are considered to be higher risk investments than companies currently in the public market (due to their having no prior stock price history), we expect that each firm will be subject to varying degrees of risk. Therefore, we added a measure of risk obtained from each prospectus. This measure is the number of paragraphs in the prospectus devoted to listing all risk factors faced by the firm. These risk factors must be disclosed to meet the requirements of the Securities and Exchange Commission. Prior research on initial public offering firms has found this measure to be a useful way to code risk (Beatty & Zajac, 1994; Rasheed & Datta, 1994).

Results

Table 2 provides the means and standard deviations for the entire sample, the means for the union and non-union sub-samples, and the results of one-way analysis of variance by union status. The results indicate that union and non-union firms are statistically significantly different on all dimensions except age. Compared to non-union firms, union firms are significantly larger (in sales and employees), have more assets and higher earnings per share at time of IPO, and have lower reported risk. Union firms also have significantly higher earnings per share and stock price in (1996). They have a lower value for Tobin's q, as anticipated, because Tobin's q reflects how investors value the firm, and investors typically interpret unionization as a signal that the firm will be less profitable.

Our examination of pairwise correlations (see Table 3) shows several expected correlations that are significant. Firms that are older and larger in size are viewed as "traditional" firms with lower growth potential, and therefore, have a negative correlation with Tobin's q (which reflects investors' assessment of a firm's potential for growth). Union firms are positively correlated with earnings per share and stock price in 1996.

Tests of Hypotheses

We tested the relationship between unions and financial performance by using ordinary least squares (OLS)

regression equations in a two-step hierarchical model. In the first step we included all of the control variables. In the

second step, we added the union variable to estimate the added significance of unionization for each of the three

dependent variables. As noted earlier, the first measure of performance (Tobin's q) is at Time-1 (time of the IPO). The

second two measures are longitudinal in nature, including controls for Time-1 and predicting performance three years

after the IPO (i.e. year-end 1996). These results are presented in Table 4.

Table 2. Means and Standard Deviations of Variables:
All Firms, Union Firms, and Non-union Firms Compared.

Variable	All Firms Mean (s.d.) (N = 464)	Non-Union Firms Mean (s.d.) (N = 369)	Union Firms Mean (s.d.) (N = 95)
Dependent Variables			
Tobin's Q at time of IPO	3.51 (9.13)	4.93*** (18.31)	-3.21 (51.41)
Earnings per share (1996)	-0.08 (1.56)	-0.24*** (1.54)	0.57 (1.48)
Stock price (1996)	12.04 (10.73)	10.87*** (10.35)	16.60 (10.86)
Independent and Control Variables			
Union Status	0.21 (0.40)		
Company age	4.79 (10.65)	4.35 (8.98)	5.13 (14.65)
Number of employees, time of IPO	1,107 (3,208)	674*** (2,394)	2,761 (4,791)
Sales at time of IPO	143,390,980 (335,243,460)	85,776,280*** (258,957,860)	368,887,000 (502,436,260)
Total assets at time of IPO	152,599,420 (446,778,780)	105,664,600*** (411,441,590)	344,661,540 (544,392,510)
Earnings per share at time of IPO	0.01 (1.70)	0.12*** (0.58)	0.41 (0.61)
Risk factors (total paragraphs in prospectus)	15.83 (4.88)	16.57*** (5.04)	13.38 (4.01)

Significant differences between union and non-union firms at $+p<0.10$; $*p<0.05$; $**p<0.01$; $***p<0.001$.

Table 3. Correlation Matrix.

	1	2	3	4	5	6	7	8	9
1. Tobin's Q (1993), Log	1.00								
2. Earnings/share, (1996)	−0.04	1.00							
3. Stock price, (1996)	−0.03	0.36	1.00						
4. Company age	−0.10	−0.09	−0.13	1.00					
5. Number of employees	−0.22	0.09	0.22	−0.01	1.00				
6. Sales, (1993)	−0.28	0.14	0.26	−0.07	0.75	1.00			
7. Total assets, (1993)	−0.14	0.12	0.17	−0.11	0.49	0.82	1.00		
8. Risk factors	0.08	−0.40	−0.37	−0.05	−0.20	−0.24	−0.17	1.00	
9. Initial stock price	−0.02	−0.04	−0.04	−0.04	0.16	0.17	0.13	−0.28	1.00
10. Union status (0/1)	−0.01	0.22	0.24	0.03	0.25	0.33	0.21	−0.26	0.24

Correlations above 0.07 are significant at the $p < 0.05$ level; correlations above 0.10 are significant at $p < 0.01$, and correlations above 0.12 are significant at $p < 0.001$. Industry and location dummies not shown.

For Tobin's q, the base case explains 18.6% of the variance. Once organizational characteristics are controlled for, unionization has a statistically significant positive and large relationship with Tobin's q. Unionized firms have a 15.2% higher Tobin's q than do non-union firms. The union variable increases the explanatory power of the equation by 1.3 percentage points. For the critical outcomes of earnings growth and growth in share price after three years, union presence is associated with 10.1% higher earnings per share and 17.1% higher stock price. The coefficient on the union is only marginally significant for growth in earnings per share. However, it is highly significant for growth in stock price, and raises the explanatory power of the model by 1.5 percentage points.

These outcomes control for important firm characteristics at Time-1, including size, age, industry, location, as well as assets, sales, level of risk, net income per share, and initial stock price adjusted for splits. Most control variables are statistically significant, indicating the importance of controlling for these factors. In most cases, they behave as expected. For example, assets are positively related to Tobin's q (investors' assessments of the potential long term value of the firm), but negatively related to stock price in 1996 (because larger firms tend to grow more slowly). Following a similar logic, initial stock price is negatively associated with stock price in 1996 - larger firms with higher assets and lower risk tend to have initial higher valuation in the stock market, but tend to grow more slowly. Earnings per share at Time-1 are positively associated with earnings and stock price growth. Higher risk firms have lower earnings per share and stock price in 1996.

Table 4. Relationship Between Unions and Financial Performance (standardized betas).

	(log) Tobin's q At IPO (1993)	Earnings Per Share (1996)	Stock Price (1996)
Step 1: Control Variables			
Company age	−0.122*	−0.072	−0.023
Number of employees	−0.005	0.076	0.097
Sales at time of IPO	−0.557***	−0.030	0.159*
Total assets	0.276***	0.066	−0.123*
Earnings per share at time of IPO	−0.128*	0.141**	0.166***
Risk factors	−0.062	−0.192***	−0.290***
Initial stock price			−0.234***
R^2 Step 1	0.186***	0.308***	0.337***
Union Status (0/1)	0.152**	0.101+	0.171**
Step 2: Change in R^2	0.013**	0.006+	0.015**
Total R^2	0.200***	0.314***	0.352***
Sample Size	444	434	460

Controls for industry and location not shown.
Significance: $+ p < 0.10$; $* p < 0.05$; $** p < 0.01$; $*** p < 0.001$.

In addition, in equations not shown, we controlled for other factors that we thought might be relevant, such as the percentage of the owner's compensation at risk, the percentage of the employees compensation at risk, and the presence of an HR department and statements concerning the value of human resources. Our findings above were robust to these alternate specifications (not shown).

Discussion

In this study we analyzed the relationship between unions and financial performance among entrepreneurial firms that conducted an IPO in 1993. After controlling for relevant organizational characteristics, we found a positive relationship between unions and Tobin's q at the IPO. We interpret this to mean

that all things equal, analysts' often negative view of unions did not translate into a negative general assessment of the firm's potential to produce shareholder value. Consistent with our main hypothesis, we found a strong positive relationship between unionization and financial growth over time (especially growth in stock price). These results are contrary to most prior empirical studies on this topic, which have found that unionization is negatively associated with strong financial performance.

The strongest alternative hypothesis for these findings is selection bias. That is, arguably the better performing privately held firms became the target of unionization as unions perceived they would be better able to extract rents from the more profitable firms. We cannot completely discount this argument, but we believe that it is less plausible for the set of entrepreneurial firms for a number of reasons. First, the profitability of privately held firms is not publicly available, making it difficult for competitors and unions to know which firms to target. More importantly, we are encouraged by the longitudinal findings of better financial performance after three years. If unions do have a negative effect on financial performance after they organize a profitable firm, then we would expect that negative effect to show in later years. For example, we would expect the profitability of unionized firms' after IPO to become worse relative to non-union firms. In this case, however, we find that earnings per share and stock price of union firms three years after IPO is higher, after controlling for profitability at the time of the IPO. Whereas the average initial stock price of non-union firms was $10.32 and rose to $10.87 (a 5.4% increase), the average for union firms was $13.63 and rose to $16.60 (a rise of 21.8%). Thus, at the very least we can conclude that unions do not have a negative effect on these entrepreneurial firms. For these reasons, we find the selection-bias argument to be less applicable to this study.

In sum, this is the first study that we know of that examines the relationship between unions and financial performance in entrepreneurial firms. While our data present limitations, we believe that our findings are suggestive, particularly given our longitudinal measures of growth in earnings and stock price. Our research suggests that the role of unions in entrepreneurial firms is a subject deserving of further research.

CONCLUSIONS AND FUTURE RESEARCH

In this chapter, we have reviewed the theoretical frameworks and prior empirical research regarding the relationship between unions and firm performance. Prior reviews of the literature have presented this relationship as an open and shut case: unions increase productivity but reduce financial performance.

Our review of the literature, however, challenges that view. The relevant theoretical frameworks - both the exit/voice and the strategic industrial relations perspectives - provide a contingency perspective on the role of unions in firm performance. In addition, when we reviewed prior empirical studies, we found a much more nuanced story about the association between unions and financial performance. The union effect was contingent on market, industry, and institutional factors, and the negative relationship between unions and financial performance appeared to be declining in the 1980s. We also drew on more recent research on high performance work systems, which suggests that unions have an important role to play in fostering the adoption and implementation of such systems.

In the context of our reading of the literature, we then examined the role of unions in entrepreneurial firms, and found that compared to non-union firms, unionization had a significant positive relationship to Tobin's q at the point of IPO, to earnings per share in 1996, and to stock price in 1996. Our results provide initial support to challenge the prevailing view found in the literature and suggest that unionization does not inevitably reduce financial performance. Rather new forms of organizing work and union-management relations hold the promise of maximizing shareholder wealth as well as employee welfare. There is not an inevitable zero-sum trade-off.

Our study is limited in a number of ways, however. We had a limited number of measures of financial performance, were only able to study the presence or absence of union, and we were not able to disentangle alternative interpretations regarding why unionization is positively related to financial performance in these firms. Thus, we conclude by suggesting an agenda for future research.

First, future studies need to examine a broader range of operational and financial performance outcomes, and the relationships between intermediate and final outcomes. Second, future studies need to examine external factors that influence the union-performance relationship and to penetrate the black box of unions. Researchers need to examine how variation in union density and union strategy affects firm performance. Some initial research in this vein, for example, has found that the capability of union leaders and their ability to mobilize support among their members are important predictors of the process of restructuring and better outcomes for union members (Frost, 1999). Also, as indicated in our review, there is a healthy tradition in Industrial Relations of examining the quality of union-management relations, rather than union presence per se; but with the exception of a recent study (Hoffer et al$_M$ 2001), this stream of research has not examined financial outcomes.

Third, future research needs to examine the causal links that mediate the relationship between unionization and firm performance and the external contingencies that moderate this relationship. In this study, we have elaborated two major arguments as to why unions may be associated with better financial performance. On the one hand, the exit/voice framework suggests that in this case, the collective voice of unions is strong relative to union monopoly power. Thus firms gain from greater employee effort without paying higher wages. On the other hand, strategic choice theory in industrial relations suggests that the higher profitability is the result of more productive work systems, not lower wages. Entrepreneurial firms represent a new context that is more conducive to union-management partnerships and the use of high performance systems. In this view, unions may support high performance systems by supporting adoption and better implementation and sustainability of such systems.

In order to accomplish this research agenda, there are a number of methodological challenges. A first challenge is to link operational and financial measures of performance. Financial measures are typically available only at the firm unit of analysis, but most firms involve multi-divisional structures and a multitude of operational locations. Because within firm variation in human resource practices is great, most studies of high performance work systems and union-management relations have taken the establishment as the unit of analysis and have only been able to assess operational performance rather than financial outcomes. This is where the study of high tech and entrepreneurial firms provide an opportunity for researchers because these firms tend to be small and have few branch operations. Making the link between operational and financial performance indicators is more feasible.

A second challenge is to develop a much richer understanding of the role of context and contingency in organizational research. This is a particularly difficult challenge in the study of entrepreneurial firms because market conditions, innovation, and growth create such a dynamic environment. Nonetheless, one solution is to pay greater attention to qualitative research to inform quantitative analyses. To unpackage the black box of unions requires researchers to focus on unions as organizations and to interview local union leaders and stewards as well as managers and employees during field research. Frost's (1999) study of alternative union strategies and organizational capabilities in the steel industry provides a useful methodological model. This type of research will provide us with a more robust understanding of the boundary conditions for a positive relationship between unions and financial performance.

Third, there are major methodological challenges to examining the causal links between variation in unions and

union-management relations, the adoption and implementation of high performance work systems, and organizational outcomes. Given the great variation in markets and institutional contexts, industry-specific studies provide a particularly useful research strategy. As indicated in our review, industry-specific qualitative and quantitative studies in autos, steel, apparel, semi-conductors, computers, telecommunications, and banking have provided some of the strongest and most rigorous research documenting the positive relationship between high performance work systems and organizational outcomes. These studies, however, have not done a sufficient job of unpackaging the black box of union strategies and union-management relations, and how variation along these dimensions interacts with the adoption and implementation of high performance work systems. The industry-specific approach combining qualitative and quantitative methods, however, provides a useful model for future research into these causal mechanisms.

Finally, this study of entrepreneurial firms has implications for research in human resource studies and industrial relations more generally. Much of the research in these fields has been conducted in large bureaucratic organizations. Our study shows the importance of questioning results of studies that have been conducted in the limited context of large organizations in highly institutionalized environments. Most prior research has focused on unions and firms with deeply institutionalized relationships that pose difficult barriers to change. Entrepreneurial firms provide a context in which to explore the role of unions without those embedded constraints. When we examined what was thought to be an 'accepted' conclusion - that unions have a negative effect on financial performance - in a sample that had not been studied before, we found different results. Lessons learned from research in these firms can supplement our current knowledge and create a richer understanding of labor management relations, the use of high performance work systems, and organizational outcomes across distinct contexts.

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