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The effects of trade unions on the  
economic performance of the Australian  
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1984-1996

Warren B. Knight  
University of Wollongong

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**UNIVERSITY OF WOLLONGONG**  
**DEPARTMENT OF ECONOMICS**  
New South Wales  
AUSTRALIA



**THE EFFECTS OF TRADE UNIONS ON THE ECONOMIC  
PERFORMANCE OF THE AUSTRALIAN BUILDING AND  
CONSTRUCTION INDUSTRY: 1984-1996**

A thesis in partial fulfilment of the requirements for the  
award of the degree

**HONOURS MASTER OF COMMERCE**

MCom (HONS)

by

**Warren B. Knight**

1997

## DECLARATION

I, Warren B. Knight, certify that this thesis has not been submitted previously as part of the requirements of another degree and that it is the product of my own independent research.

Signed: \_\_\_\_\_

Warren B. Knight  
1997

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# ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACAC	Australian Conciliation and Arbitration Commission
ACTU	Australian Council of Trade Unions
AFCC	Australian Federation of Construction Contractors
ASC&J	Australian Society of Carpenters and Joiners
AWIRS	Australian Workplace Industrial Relations Survey
B-P-G	Bruesch-Pagan-Godfrey
BISCOA	Building Industry Specialist Contractors Organisation of Australia
BTG	Building Trades Group
BUS	Building Unions Superannuation (scheme)
BWIU	Building Workers' Industrial Union
CBD	Central Business District
CFMEU	Construction, Forestry, Mining and Energy Union
CIDA	Construction Industry Development Agency
CPA	Communist Party of Australia
D-W	Durbin-Watson
FEDFA	Federated Engine Drivers and Firemens' Association
FIA	Federated Ironworkers' Association
FMBAA	Federal Master Builders' Association of Australia
GDP	Gross Domestic Product
GOS	Gross Operating Surplus
MBA	Master Builders Association
MBFA	Master Builders' Federation of Australia
MEU	Metals Engineering Union
NBCC	National Building and Construction Council
NPWC	National Public Works Council
OLS	Ordinary Least Squares
PGEU	Plumbers' and Gasfitters' Employees Union
PWD	Public Works Department
RBA	Reserve Bank of Australia
RDO	Rostered Day Off
RWP	Restrictive Work Practice
SPA	Socialist Party of Australia

## ABSTRACT

In order to estimate the effects of unions on the economic performance of the Australian Building and Construction Industry for the period 1984-1996, an OLS regression is performed with union density acting as the measure of industry unionism. Output, profits and productivity are the industry performance measures under investigation. This paper finds that higher levels of union density are associated with increases in output and profits, a result that may have been surprising if the union voice function had been excluded from all reckoning. No significant result was recorded for the indicator of productivity. Voice, it is argued, was the key factor in producing the estimated results. The voice expressed by unions in the period under review (1984-1996) differed markedly from the voice expressed in the period immediately before it. It was this alteration in the expression of voice that represented the changing role of unions in the industry. From being overtly militant and anti-capitalist, they moved towards a position where at times they were incorporated into the greater movement of the neo-corporatist ethic. It is from this standpoint that it is argued that the estimated significant union positive influence on output and productivity in the Australian building and construction industry is a likely and non-spurious result.

# **CHAPTER 1**

## ***AN INTRODUCTION***

### **BACKGROUND, AIMS AND OBJECTIVES**

The Australian Building and Construction Industry has traditionally been one of the more turbulent industries for industrial relations and union involvement. Unions have been militant, communist (or socialist) and often in a strong position relative to many employers and ready to act on that perceived advantage. Australian Building and Construction Industry industrial relations disputes have captured newspaper headlines through their intensity, or because they have targeted high profile sites (for example the World Square project in Sydney) or because of their, at times, high frequency. It is perhaps the nature of the disputes that have taken place that has produced the perception that unions are a negative influence on the economic performance of the industry. This paper has set out to determine empirically whether this is the case.

To do this we employ a combination of research methods which we will overview shortly, however at the heart of our investigation is our econometrics. We employ the Ordinary Least Squares technique to estimate the affect that trade unions have on the economic performance of the industry. We use three models, one for each performance indicator, with those indicators being, output, profits and productivity.

The question of whether trade unions are a detrimental force on the performance of a firm or industry or economy is not unique and has probably been asked and answered many times before. In the context of this industry, it is not unreasonable to

suspect that a head contractor, when their building site has been shut down by a strike of labour, and who is now facing penalties for the late completion of the project, has thought that trade unions are an impediment to the industry advancing, in the economic sense. However it is just these types of opinions which this study has sought to investigate. We are setting out to determine, on an industry wide basis over a period of 13 years (1984-1996) if the fictitious head contractor's opinions, drawn above, are correct. It should also be noted that given the media coverage spoken of, it is not unreasonable to suspect that many of the opinions of the industry were formed in the 1970's and early 1980's when industrial mayhem *appeared* to be the norm.

## UNIQUENESS OF THE RESEARCH

This study is unique because we employ a time-series approach to examine the effect of trade unions on the economic performance of the Australian Building and Construction Industry. We have employed comprehensive and accurate data in order to conduct a detailed investigation of union influence which has rarely been seen in the literature both from an Australian or international perspective. The majority of the previous research conducted into the union influence on economic performance has involved cross-sectional or short term panel investigations. However, we believe that to better measure the affect of unions on the economic performance of an industry or economy, it is necessary to observe their actions over a lengthy period. We expand on why this is the case in Chapter 5.

This study is unique because we incorporate **demand** and **supply** as well as **process** type factors into our analysis. These terms are comprehensively explained in

our results and methodology chapter (Chapter 5), however what it means in practice is that we do not only examine the inputs to production. We had to examine more than just the inputs into the production process because production is partly determined by demand factors, as well as the interaction of inputs in the process of production. For instance, with the industry being so open to the cyclical nature of the greater economy, we had to include variables such as Gross Domestic Product (GDP) so as to better isolate the actual union effect. And finally, this study is unique amongst some Australian, British and Japanese research because we have attempted to use meaningful measures of economic performance, not just the perceptions of management. We have set up in an econometric model the actual outcomes of the industry's endeavours, and this alone helps generate a place for this research.

\* \* \* \* \*

If we find that unions in the industry have impacted upon its economic performance, we want to explain why, and through what process they have been able to influence the level of economic performance. This brings us to our methodology.

## **OVERVIEW OF METHODOLOGY**

We will approach the problem of identifying whether trade unions are a factor in the economic performance of the Australian Building and Construction Industry from two discrete analytical angles. First, we will generate statistical results based on an econometric study (found in Chapter 5). This study will examine the period stretching from the March 1984 quarter to the December 1996 quarter. We will use this entire

period for our examination of the economic indicators of output and productivity. For the economic indicator of profits, we employ a time frame beginning in March 1984 but ending in June 1996. Therefore our profit investigation will employ 50 quarterly observations and our output and productivity regressions will use 52 observations.

The starting point for our study marks the division between high and low levels of recorded working days lost per 1,000 employees through industrial dispute. However we selected the beginning of 1984 as our starting point because it allowed for a consistent run of statistical series, and not because of the change in industrial dispute patterns.

Where possible, we tried to follow the research which found prominence with such authors as Freeman, Medoff, Brown, Clark, and Allen from the United States. It was the paper by Brown and Medoff in 1978 which set in train this line of research, with those that followed, no doubt inspired by their findings of a substantial productivity advantage accruing to firms that were unionised. We were not able to replicate their techniques due to data limitations, however we have, as stated above, improved upon some of the body of research by considering such influences as the general state of the economy, or industrial dispute or the price of the wage and so on. We explain this in more detail in Chapter 5.

We also examined research from countries other than the United States and found that Britain also had conducted a substantial level of research into this area. Australian research on this matter is relatively underdeveloped, despite some good attempts at interpreting the data gained through the Australian Workplace Industrial Relations Survey (AWIRS). As we note in our literature review in Chapter 2, there has been a



tendency in Australian research to use managerial impressions of economic performance as a proxy of performance rather than actually measuring that economic performance. This we argue, considerably weakens the findings of much Australian research.

Having produced our own econometric evidence we need to interpret it. To do this we will employ the **exit/voice** (and response) theory as originally expressed by Hirschman (1970) and then developed for the industrial relations sphere by Freeman (1976) and then later still, employed by Freeman and Medoff (1984) amongst others. For reasons which we will later explain, we discount the exit side of the theory and concentrate upon the contributions of union voice. But before we can examine the use of union voice, we need to develop an understanding of what forms it might take, where it comes from, and what may have shaped it. Questions such as these are examined in Chapter 3 and further advanced in Chapter 6.

In Chapter 3, we provide a brief history of the industry with a specific slant towards industrial relations and trade unions. Concentrating on the period from the 1960's onwards we show that the industry has changed substantially during that period, and no less so than in the way that employers and employees/unions interact. It is here that we find a great deal of evidence to suggest that unions have moved from a militant, confrontational footing to a position where there is a greater degree of restraint when the union's objectives are presented to employers.

Continuing along this evolutionary path, we arrive at Chapter 4. In this chapter, we examine the current period. We examine the industry in its contemporary setting by presenting information about employment, output, the various sub-sectors of the industry and so on. We get a better 'feel' for the industry when we see that it is largely

comprised of small businesses, generally employing less than twenty people, yet appears to be greatly influenced by the few larger businesses which control a significantly disproportionate amount of output. Thus we reveal one of the great dichotomies of the industry.

We have already identified Chapter 5 as our models and results chapter, so we will skip ahead to Chapter 6. Here we begin the task of determining whether or not the results generated in the previous chapter are valid. By valid, we do not mean if they are 'econometrically sound' because we run tests on the results to see if they were econometrically 'impure' or biased. In this case when we refer to the word 'valid' we mean 'Do the empirically derived results reflect the actual circumstances of the industry?'. We argue in Chapter 6, that simply generating the data and results is not enough and we must heed the wisdom encapsulated in that famous utterance attributed to Benjamin Disraeli: 'There are three kinds of lies: lies, damned lies and statistics.'<sup>1</sup> It is for this reason that in Chapter 6, we attempt to reconcile our econometric results with what has actually been occurring to union voice, and to the relationship between employers and employees/unions.

We acknowledge the importance of neo-corporatist structures to the industry, and the importance of the changing role of unions. Because of the small amount of research devoted to the union affect on output, we have little basis for comparison in the literature although our more general discussion which forms the basis of the second half of Chapter 6 helps to place our output econometric results into context. More discussion and comparison is made with our profits results. These are somewhat

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<sup>1</sup> Attributed to Disraeli by Mark Twain in *Autobiography*, 1924, V.1, p.246, from the Oxford Dictionary of Quotations, 1996.

surprising, although given the particular contextual variables of the period, we argue that the econometric results that we have obtained may in fact be correct.

## CONCLUSION

The problem with reconciling econometric results with real world occurrences, is that the effects of real world occurrences are not always obvious. We do not know if greater union cooperation with employers actually leads to improvements in the economic performance of an industry. We can only argue from an intuitive basis and assume that an industry characterised by mistrust, militant unionism and uncertain financial futures, *ceteris paribus* will have an economically poorer performance than an industry which exhibits higher levels of cooperation between employers and employees/unions, is less overtly militant and which has a greater level of financial security.

## **CHAPTER 2**

# ***REVIEW OF THE THEORETICAL AND EMPIRICAL LITERATURE***

### **INTRODUCTION AND THEORETICAL SCENE SETTING**

Unionised labour, historically, has been seen in two distinct lights. It has either been a help or hindrance to the economic performance of a firm or industry. The classical literature generally illustrates its weaknesses, highlighting the more costly outcomes of union activity, and generally portraying it as a cost to the firm and by extension, to the industry and economy. Contrasting this, we may also observe a perspective that is sympathetic to the complex face of the union/management relationship. Under this perspective we may observe unions acting as a potentially positive force within the employment relationship, and perhaps a necessary protector if not an extender of the long term viability of the labour resource.

Having touched upon the two main lines of argument, we will now examine each in more detail. Beyond that, we will proceed with an empirical literature review focussing on the literature which is relevant to each performance indicator that we investigate in our empirical research, namely: output, profits and productivity. The review is wide ranging and takes in both international and domestic empirical analyses, with emphasis on the research that has evolved since the pioneering work of Freeman,

Brown, Medoff and the Harvard School.<sup>2</sup> We generally limit our review to works that are econometrically founded in order to provide a greater base for comparison with our own. We do not, however, only concentrate on the production function approach used by many studies because much research has developed outside of this limited model form. And finally, specific attention is drawn to Australian evidence.

## ORTHODOX THEORY OF UNIONS

In introducing the 'orthodox' view of unions, we need to look no further than Booth when she states that:

The standard view of trade unions is that they are organisations whose purpose is to improve the material welfare of members, principally by raising wages above the competitive wage level. (1995: 7)

The 'standard' or 'orthodox' view holds that unions are a monopoly force within the labour market.<sup>3</sup> Allocative costs are imposed upon the firm through the distortion of wages by the bargaining power of the monopoly labour group. Along with factor price distortion, consumption efficiency will also be impaired if the cost to the firm through higher wages is passed onto consumers. Higher labour costs may (where possible and desired) induce a capital/labour substitution. Unemployment is a likely outcome of the union wage premium/rigidities. Because of the inefficient factor mix, the firm/industry suffers relative to its position before the use of the monopoly labour power. Beyond this, the firm may suffer union induced losses brought on by 'strikes, inefficient work

<sup>2</sup> The 'Harvard School' can be loosely classed as those researchers which apply the Exit/Voice theory to productivity (or like) phenomena, and often employing a Cobb-Douglas production function technology in their investigations.

<sup>3</sup> For a good analysis of the orthodox school of thought, see Booth, 1995, or Hirsch and Addison, 1986.

rules, decreases in managerial discretion, and a standardized compensation structure that does not provide optimal work incentives' (Hirsch and Addison, 1986: 22).

A surplus of value produced must exist before a union can obtain benefits derived from their monopolistic position. The union wage and condition premium subsequently reduces the surplus. This can occur in both perfectly competitive markets and non-competitive markets, however it is more likely to see unions organise in non-competitive markets. This is so, because unions can only successfully organise firms in a competitive market if those firms have the lowest cost structures, allowing the union cost premium to occur without driving the firm out of business. But with a competitive market with few barriers to entry or exit, the scope for unionisation is less because in the longer term, only those firms with the lowest cost structures will survive. Firms which have employed unionised labour at a cost partly determined by labour's use of its monopoly position will suffer higher costs than competitors and in the longer term, fail. If they are to survive, the union will not be able to gain long term improvements to wages or conditions. (Booth, 1995: 52-55).

We can summarise the classical views of unions by saying that, apparently, the universal effect of unionisation on a firm or industry is higher labour costs. Business becomes more expensive to conduct and allocative, technical and social inefficiencies result. In terms of our study, the increasing presence of unions should mean that profits will fall, output will fall and productivity will fall. But these outcomes are not the only possibility. A line of argument has developed that suggests that the negative effects of unionisation can be wholly or partially mitigated, if not nullified, by the possible

benefits resulting from a unionised work force. We will now examine arguments supporting this view.

## **RE-APPRAISAL OF UNION EFFECTS - EXIT, VOICE, AND THE SHOCK EFFECT**

**Voice** and **Loyalty** are the mechanisms by which employers can benefit from dealing with a coherent and cohesive employee bargaining unit, with that bargaining unit often taking the form of a union. Hirschman (1970) was the first to identify the issues of voice and loyalty, as well as a mechanism called **exit**. Simply, exit, in the employment relationship sphere, is the point at which a worker decides to leave a firm rather than express his or her discontent. Hirschman did not specifically tailor his theory to the union/firm relationship, yet the principles articulated have been taken on by the 'Harvard School' in order to partially explain the benefits that may accrue to a firm that employs unionised labour. Researchers such as Freeman, Medoff and Brown have been at the vanguard of this new thinking, aided and shaped by this analytical doctrine.

The chief processes within the theory are voice and exit. When workers are dissatisfied with their working conditions, contract of employment or remuneration, they can elect to either seek work elsewhere that better satisfies them through improvements in the above job/employment/wage conditions, or they can make it known to the employer that they are not happy with the present situation and want a change. The central tenant within the exit/voice theory is that if employees choose to leave their employment the firm will suffer costs. This is exit behaviour.

Exit is a cost to employers. Assuming the factor mix is correct, then the firm/employer will need to replace workers who have departed (exited). This involves a

cost. Search costs, training costs, experience and supervision costs are only some of the costs a firm will face when exit takes place. The concept of exit can also be expanded to include non-institutional forms of protest against a firm. Such forms of protest may include shirking, absenteeism, pilferage and so on. And although the employee remains with the firm, they are exiting at the same time because they are not correctly performing their duties. By including these other forms of exit, the line between exit and voice can become blurred at the margins as these non-institutional forms of protest may also be thought of as a silent form of voice.

The alternative to exit is voice. Voice is generally perceived to be an institutional response to grievances within the workplace. Voice does not have to involve an institutional response, but given that the individual generally cannot affect a great change in his/her working environment, it is common to find voice expressed in an institutional setting. Individuals may be dissuaded from initiating change because they may suffer negotiation costs, yet their co-workers through the free-rider principle will gain the benefits of the change without incurring these costs. Individuals are generally in a vulnerable position and may fear dismissal from employers if they try to raise the cost of employing labour. It is for these reasons that voice is more commonly recorded as an institutional response. If all workers are represented by a bargaining unit, then the negotiation costs are shared by all, and there is a lower possibility of dismissal since the cost to the firm of dismissing its entire labour force may be greater than the cost of the bargaining outcome. By 'voicing' their wishes, workers elect not to exit. However the voice example above still leads to an increase in costs to the firm. So, for the voice argument to offer a contribution to the view that unions may be associated with



improvements to firm/industry performance, we need to explore the mechanisms by which a positive outcome may be expressed.

Brown and Medoff (1978), and Freeman and Medoff (1984) employ empirical evidence relating to lower quit rates among unionised workers as an indicator that collective voice produces a positive economic benefit to the firm/industry/economy. Lower quits may result when workers feel that their grievances are being supported by their elected representatives and are being dealt with in a more or less 'fair' manner. If their grievance is proved and rectified, then they are more likely to stay, compared to the situation where no mechanism for the expression of a grievance exists. Alternatively, if the grievance again goes through the system as just indicated, and the grievance is overruled, then the worker may still feel as though they have received a procedurally fair hearing and stay with the firm. Once again a costly quit has been avoided. Finally, if after progressing through the grievance channels and the grievance is not rectified then the worker may elect to quit, but because that quit had been postponed, overall quits for the period before this quit took place are reduced (Freeman and Medoff 1984: 105). Thus there is a cost saving for the firm.

Unions therefore, fight for a mechanism which allows their members' grievance to be 'fairly' heard and by serving their members' wishes they also produce a cost saving for the firm.

Unions may also raise the morale of workers through their ability to win improved working conditions or remuneration. Initially, there will be costs to the firm/industry, but in the longer term, the improved morale may result in a more productive work force. Cost saving would flow from the enhanced productivity of

labour (Brown and Medoff 1978, after Slichter et al. 1960; Vroom and Deci 1970; Lawler 1973; and Bok and Dunlop 1970).

Flowing on from the morale issue is the concept of the shock effect. In order to raise morale, unions gain concessions from management. The firm is then faced with a higher cost structure. Management may also believe that they have lost some of what they consider as 'their managerial prerogative'. In other words, they have lost a degree of control over the production and resource allocation process. The shock effect explains the response by management to attempt to gain greater control after they have lost it through the collective bargaining process.

The shock effect relies on a window of opportunity (Leibenstein's X-inefficiency, 1966) for efficiency improvement. The X-inefficiency is a result of the 'simple fact'... 'that neither individuals nor firms work as hard, nor do they search for information as effectively, as they could' (Leibenstein, 1966: 407). After organised labour gains remuneration/condition improvements (or generally any labour derived cost to the firm) the reaction from management will be an attempt to remove all or part of the inefficiency (Brown and Medoff, 1978: 359 after Slichter, et al., 1960) in order to return costs of production back to the previous level. Firms may take the opportunity to alter the way the factors of production interact so as to produce a lower cost outcome (Booth, 1995: 183-184).

Brown and Medoff also note that collective bargaining opens a 'potentially important channel of communication between workers and management' (1978: 359). The importance of that channel is clear when we understand that unions will often bargain over issues that are relevant to the collective as a whole, for instance public

goods, and firms having been told what will keep a large section of their work force contented, can tailor their personnel policies to the bulk of the workers without having to second guess the workers' preferences. This is one potential cost saving for the firm. Other union induced cost savings for the firm/industry may be from the elimination of practices which reduce the productive capacity of the labour unit and hence the productive capacity of the firm as a whole. Workers themselves may see that any policy which reduces their ability to work, also reduces their chances of accumulating human capital, which in turn reduces their ability to increase the value of their labour resource.

Furthermore, collective bargaining/union representation aids in the policing of workers. In personal discussions with Construction, Forestry, Mining and Energy Union (CFMEU) (building and construction division) union officials, it was often mentioned how they (the union) had to keep certain sections of the unionised (and non-unionised) work force 'in line' in order to successfully negotiate important agreements. If sections of workers engaged in unofficial non-union industrial action, then employers would have lost faith in the ability of the union to hold to an agreement. By keeping to agreements, the union induced greater certainty over labour usage practices, allowing firms to seek longer term optimal outcomes from their productive resources because they know how labour will generally act. Thus a collective labour contract may allow employers to make gains in efficiency.

Finally, the union may also act on unsafe working practices, not necessarily encouraged or supported by employers. Individual workers can be 'brought into line' by union influence. This produces cost savings for the firm/industry by holding or lowering

worker insurance payments, not to mention reducing the incidence of injury and hence the associated costs of finding a new employee and training them.

We have seen from the above discussion that voice can have both positive and negative affects on the cost structure, resource allocation and efficiency of a firm, industry or economy. The nature and extent of each relies heavily on the particular contextual variables which exist within each firm and union, which in turn are influenced by many external environmental factors which interact with the relative bargaining positions of unions and firms. Our study does not measure the influence of voice, or for that matter the influence of exit or the shock effect. In fact, few studies attempt to measure the relative benefits of the exit/voice trade off. Instead, what we have set out to do with the above is to provide the reader with a theoretical basis for understanding how union institutions commonly seen as a monopoly force within an industry can potentially have a positive effect on that industry. When we begin our analysis of the regression results, we will be drawing from the theoretical discussion presented above. But beyond this, we will be analysing those contextual variables operating during the period of our study in order to explain the union effect on output, profits and productivity.

The significance of voice analysis within the Australian Building and Construction Industry is not wholly clear. Voices' ability to reduce exit may not produce the cost savings expected for all industries (see Freeman and Medoff, 1984: 96-101). Our industry is a case in point. The building and construction industry has at its heart a series of short term employment relationships. The limited term of the tenure is a feature that should have allowed the industry to adapt to exit behaviour, as workers

move from firm to firm depending on the availability of work, with the result being that exit costs may not be a high cost for this industry. Workers are more employees of the industry or their trade than employees of any one employer (Freeman and Medoff, 1984: 98). It follows then, that the benefits accruing to voice resulting from its ability to mitigate exit may be lessened. Freeman (1976) acknowledges this point in a footnote in his pioneering theoretical analysis of the usefulness of the exit/voice model to the labour market. Naturally, if employees accrued firm specific skills, or found that the costs associated with changing firms were high, then there would be a disincentive for them to do so. We have previously discussed the costs of exit to employers and clearly, where these costs are prevalent in an industry, employers will try to reduce them when it is of benefit to do so. However given the evidence provided above about the nature of skills of many in the industry, it would appear that there are relatively few costs associated with exit in the Australian Building and Construction Industry.

It needs to be remembered that the benefits of voice do not stop with its ability to reduce exit behaviour. We have outlined many other potential benefits to voice, and as such, we can employ voice analysis in our explanation of our result.

## **EMPIRICAL LITERATURE REVIEW**

The question most studies have tried to answer is ‘Is organised labour a net cost or net benefit to business?’. Clark (1980b) notes that early studies on the impact of trade unions on productivity and firm performance ‘were not followed up with empirical analysis’ and ‘without evidence, discussions in the literature rarely rose beyond an inconclusive exchange of opinions’ (Clark 1980b: 613). Opinions, regardless of their

theoretical underpinnings had not solved the questions regarding the net effect of a unionised work force on a firm. To this end, a number of studies have been undertaken in an attempt to quantify the effects of trade unions. These range from the simple (straightforward union wage premium descriptions) to the more complex (multi-variant production function econometric analysis); little conclusive evidence has been uncovered concerning the net effect of trade unions. What has been in evidence is that:

Unionization works through more than one mediating factor, and the impact of the union on a given measure of firm performance depends on the particular context in which bargaining and production take place. (Clark 1984: 894).

Clark is arguing that, under certain circumstances, a union may well have a positive impact on firm performance, and under other circumstances, the opposite outcome may be observed. The following empirical literature review echoes these experiences even though more than a decade of further empirical analysis has taken place in many countries, on many industries, at varying levels of aggregation. Clark's words are no less relevant today than when they were published in 1984. There is no universal view of the effect of unionised labour on the performance indicators under investigation, with the possible exception of profits.

With this knowledge we must now briefly turn to a discussion on what has been investigated and beyond this, we must examine how the investigations were carried out. To achieve that, we will look at the level of analysis whether at the level of the firm, industry or economy.

## WHAT HAS BEEN INVESTIGATED

Two performance indicators have generally been investigated, these being: profits and productivity. The effect that unions have on profits has traditionally been the prime area of investigation. Unions absorb profits. It has been that simple. But is it a problem for the capitalist firm? In terms of profit maximising behaviour it may be, but it is fair to say that it is only when capital has faced competitive pressures that there is an outcry over the numerous leakages from the potential profit pie. Labour costs are an easily identified source of leakage because senior management may have recently spent two bitter months negotiating a wage increase with the union, and they can say that before the agreement, the wage bill was \$X million, but now the bill is \$X million + \$1.2 million. An employer may think 'If we can't pass that cost onto consumers, it will be coming out of our profits'. Leaving aside the debate over whether the returns accruing to capital can be described by management as 'our profits', the point is that the apparent union effect on immediate profit is highly visible.

A key question to be considered is concerned with how unions may influence profit levels. The monopoly labour analytical approach is the most obvious starting point. Under this theory labour can exercise a degree of market control and receive in the long term, remuneration above what they would otherwise have achieved without the use of that monopoly power. For long term gains to be made the firm should be generating above normal profits due to the structure of the market which favours the generation of above normal profits. Hence the union will be drawing from this surplus profit, and in turn, the firm will suffer a lower profit level. Therefore, the labour monopoly will be benefiting from the structure of the market that the firm is operating

in. Alternatively, higher profits may result from the improvements to productivity brought on by the unions as previously accessed. Productivity advances will offset the higher labour cost and return higher profits.

Analysing profits has one obvious difficulty, and that is assessing its level. In other words 'How much?'. For our empirical investigation we have employed Gross Operating Surplus (GOS) as our proxy for profits, while other researchers have employed any number of other measures including: reported share price levels, returns on investment, operating ratios, and actual reported profit outcomes.

The second phenomena under investigation is productivity. Intrinsically difficult to measure beyond the simple labour/output calculation, many analysts choose not to embark upon a total or multi-factor productivity analysis. However the earlier studies using the Cobb-Douglas production function assigned relative productivity shares to capital and labour (the average product of labour).

The effect of unionisation on output has rarely been examined in the literature. Output has generally only ever been used as a component of the productivity figure. Measures of output are usually reported in monetary terms, owing to the heterogeneous nature of the output of many industries. However where physical measures of output can be found, they are preferred. Output measures include value added, real gross private domestic product, as well as an abundance of physical output measures such as output in tonnes (tons), square metres of floor space, and so on. We employ the measure of the value of work done, a value added measure of output.



## **LEVEL OF ANALYSIS**

Regardless of the subject of analysis, be it productivity, profitability or output, two main levels of analysis can be discerned. Those are the economy wide approach, usually examining all manufacturing establishments, and the industry level investigation.

## **EMPIRICAL RESULTS**

The majority of the studies listed below deal with productivity, a few examine profitability and only a small number look at output. Our review initially examines the productivity debate from evidence collected from the United States. We follow this by reviewing the productivity evidence from a broader range of countries, namely: the United Kingdom, Germany, Japan, and South Korea. Many of the United States Continental, and Asian studies also examine output as a component of their productivity analysis, and as such we merge the two reviews of this performance indicator. We split the United States review into two components based on the level of analysis; firstly, either at national or economy wide level, and secondly, at the industry (and regional industry) level. For our review of the 'other' international literature we do not differentiate based on the level of analysis due to its smaller volume.

Like the productivity (and output) literature, the review of the profit literature separates the United States and other international evidence. Unlike the productivity review, the other international literature for profits review relies almost solely on British data.

Having reviewed the international literature, we then move onto the domestic (Australian) evidence. Like our review of the international scene, we systematically

examine the domestic data according to the phenomena under investigation. An examination of the productivity (and output) evidence is undertaken, followed by a review of the profit literature.

## INTERNATIONAL LITERATURE

### Productivity (and Output)

We commence our productivity literature review by examining United States evidence for the union effect on productivity at the *national*, or *economy wide* (cross industry) level. The pioneering study in this field was produced by Brown and Medoff in 1978. This investigation employed a Cobb-Douglas production function technology to estimate the union effect on productivity for 1972 on economy wide manufacturing industries. Brown and Medoff's dependent variable consisted of value added divided by employment. The study reported a significant productivity advantage to unionised firms, in the order of 20%. Subsequent follow up work between these two authors and Leonard (cited in Freeman and Medoff 1984), shows a smaller estimated productivity advantage for 1972, but a 27% productivity advantage for 1977. By altering the assumptions on the productivity of capital, the union productivity figure altered dramatically. Subsequently, Brown and Medoff concluded that an important determinant of the productivity of unionised labour related to how capital was employed.

With a 20% total factor productivity premium accruing to unionised firms, but only an estimated 13% union wage premium in the Brown and Medoff study, Hirsch and Addison (1986) argue that profitability should be substantially increased, yet

empirical evidence does not show this to be the case. This fact alone casts doubt on the findings of Brown and Medoff. Freeman and Medoff (1984) explain how these apparently contradictory finding could have come about. Essentially, the authors point out that profits are a relatively small income flow for an industry... 'so that percentage changes in costs or in productivity translate into larger percentage changes in profit' (Freeman and Medoff, 1984: 184).

Alternatively, assuming the union wage premium and a substantial union productivity advantage, firms may take the cost savings brought on by the improvement to productivity and attempt to gain a larger market share. Thus, firms may have invested some or all of the productivity improvement into partly paying for the higher wages and into lower product prices in order to increase market share. Firms therefore may have chosen to forgo profit gains from the productivity advancement. This scenario though was not tested by Brown and Medoff.

Hirsch and Addison highlight further doubts about the validity of the Brown and Medoff results by questioning the limitations of the estimation technique, namely the Cobb-Douglas production function. Principally, they draw the readers attention to the fact that identical production function parameters are used for both unionised and non-unionised firms.

Moving on, Clark's 1984 United States industry wide survey of manufacturing establishments between 1970-1980, found a consistent 2-3% negative union impact on productivity. A wide cross-section of large manufacturing establishments, 902 in all, were used in the survey, with a data set of 4,681 observations; slightly more than five observations per establishment. Clark employed one primary measure of unionisation (a

dummy variable) as well as three other measures (a percentage of unionisation; a triple categorisation of the percentage of unionisation, i.e. 0-30%, 31-60%, and >60%; and a third measure which splices the first two alternative measures). The primary measure of unionisation shared fairly consistent results with the other three (a negative union/productivity relationship). Even so, productivity was found to be positive in one part of the study; that component which related to the triple categorisation of unionisation. Here, Clark found in the unionisation range of 30-60% a small positive but insignificant relationship between unionisation and productivity. Clark's study is clearly at odds with the previously mentioned economy wide investigation because there has been a productivity turnaround in the order of 23%.

Bemmels (1987) engaged in a cross industry study by examining forty six manufacturing plants in 1982, which had a turnover of more than one-half million dollars. With value added being used as the output measure Bemmels decided to exclude those firms which have a high market concentration ratio, as their monopoly position may have fed back into price effects. Using a translog production function modified to include the characteristics of management and organisations as well as the unionisation observations, a negative correlation between unionisation and productivity was found. Other studies of an economy wide nature to report negative trade union impacts on productivity include Lovell, Sickles and Warren's 1988 paper which incorporates an annual time-series element to it, and the study by Hirsch (1990).

Economy wide, multi-industry studies do not provide a clear answer to the question of the union effect on productivity, as the above contradictory evidence suggests. Such studies can be considered to be overly general and lacking in industry

level subtlety. They generally assume that unions exhibit a comparable behaviour across industries. Furthermore, they generally assume that managerial responses to unionisation will not differ by industry. These assumptions are perhaps unrealistic as individual industries often have quite distinct characteristics, and as such should not be lumped together in a global industry test. Therefore, industry studies may provide a more realistic picture of the 'union affects economic performance' question, and to this end, this important source of literature requires examination.

*Industries* which have been analysed for union productivity effects include: the cement industry (Clark, 1980a, 1980b), the public service (Hoxby 1996), bituminous coal mining (Connerton, Freeman and Medoff, 1979), and paper mills, (Ichniowski, 1984). Productivity responses to unionisation differ as much with industry level studies as they do with general economy/cross industry studies. The contrasting nature of union effects on productivity will be highlighted with an examination of the literature of industry level productivity research.

One advantage of industry level studies lies with the type of output measure used. Physical measures of output are generally employed to avoid price and productivity distortions of a value added measure (Hirsch and Addison, 1986: 199). Connerton, Freeman and Medoff (1983) rely on the physical measure of tons of output from coal mining. Employing Hirsch and Addison's report of these results, we find that a major shift in productivity has occurred over time. Unionised mines were significantly more productive in 1965, marginally more productive in 1970, and significantly less productive in 1975. Connerton et al., argue that this fall in productivity could have resulted from a reduction in managerial experience, internal union disorders, and a rigid

national bargaining structure unable to meet the demands of localised areas (Connerton, Freeman and Medoff, 1983, cited in Hirsch and Addison, 1986: 200).

Clark, in two articles published in 1980 on the cement industry, had found positive union effects on output in the range of 6-10%. His 1980(a) time-series study of six cement plants which changed from being non-unionised to unionised over a twenty three year period, is based on annual data collected within a single region. A physical measure of output was employed owing to the homogeneous nature of the product. Clark notes that results from regression analysis alone do not tell the story of the productivity difference. To this end, he incorporates case study material because: 'A complete analysis requires not only measurement, but identification of the channels of union influence.' (1980a: 463).

Clark develops an analysis based on management and union responses to changes to union/management contracts. Contrasting those responses with the actions of management before unionisation, Clark was able to identify 'channels of influence', especially with regards to management responses, although he was not able to distinguish a clear picture for changes to management and labour attitudes. Given this evidence, Clark has perhaps described a type of shock effect operating at these previously non-unionised, but now unionised cement plants.

Clark (1980b) conducted further research into the cement industry which showed a small positive, union associated productivity effect in the order of 6%. Clark noted that the small sample size of the non-union plants demands caution when interpreting his results. Perhaps the most important point to come of this paper is the lack of influence of new technologies, worker quality, and individual firm effect on

overall results. And like his earlier published research (cited above), Clark argues that the changes to internal firm operation, stemming from the effects of unionisation brought on the change in productivity. In other words, the mechanism by which a union productivity advantage operates, relates back to the responses of management to the labour contract and the process of negotiation of that same contract. Naturally, the policies created by this mechanism will be specific to unionised sites.

Ehrenberg, Sherman, and Schwartz (1983) addressed the union/productivity issue as it related to a component of the public service. Cross-sectional data for 1977 was applied to both a reduced-form output equation and a production function. No appreciable productivity alteration due to collective bargaining was forthcoming with either approach. From Ehrenberg et al.'s work, we cannot draw firm conclusions about the effect of unions on productivity in the public sector, however we may begin to form an opinion based on Hoxby's 1996 study.

Hoxby used panel data for the years 1972, 1982, and 1992, as well as population survey data for non-corresponding years, which represented 95% of all school districts, to measure the union effect on productivity which was couched in terms of student achievements. Hoxby found that unions were associated with lower student achievements even though they were also associated with increases in school inputs, an increased wage, and increased budgets. The education industry does not lend itself readily to the measurement of inputs and outputs, and as a consequence the concept of productivity is an even more nebulous concept than usual. Even so, Hoxby believes that the study illustrated the effects of unionisation rather than those factors which cause unionisation given the wide points of survey (1972-1992) which correspond to periods

where there was little unionisation (in Hoxby's narrow definition) in 1972, and wide unionisation, 1992. However little discussion exists regarding the changes to the public/private education system in the United States, nor was evidence provided which discussed the actual needs of the various sections of the unionised and non-unionised education systems. Unionised schools may well have been able to gain more resources but was this enough for them to produce the required level of student achievements?

Staying within the public education system but skipping to the tertiary sector, Meador and Walters use an Ordinary Least Squares (OLS) pooled regression procedure to estimate the effect that unionisation has on two measures of output within departments granting Ph.Ds. A simple count of journal articles produced formed the first measure of output, with the second being a rating of the department by board of research councils based on 'scholarly competence and achievements'. Meador and Walters concluded that: 'We find no support in our data for the hypothesis that unions enhance productivity in academe.' (1994: 382). Leaving aside the fact that the authors report *output* rather than *productivity*, the authors themselves note the use of imprecise measures of academic output, which is perhaps why they reject the notion that unions raise productivity. The methodology employed fails to demonstrate the process by which unions reduce output.

Given that our work is based on the Australian Building and Construction Industry, it is prudent that we examine much of Allen's work given that he has examined components of the building and construction industry in the United States.

Allen reports a significant positive relationship between unions and productivity in the construction industry in the United States in the order of 17-22%. His industry



appears to have the same definitional boundaries that our building and construction industry does. The United States industry incorporates road building and engineering construction, residential construction and non-residential construction. Allen's study does not explain the reasons for the observed productivity gap, but highlights a number of possible sources. A production function is employed, with value added as the measure of output. Allen though, is wise to the problems associated with the use of such a measure (1984: 260) given the often localised market structure for construction, lack of market competition, and thus, the ability of the employer to pass on higher unionised labour costs to the consumer hence increasing valued added. The ability of the employer to pass these higher costs on will be enhanced where the locality is highly unionised, thus compounding the problem. This in turn will positively favour the unionised sector's productivity figure in that productivity is measured as value added divided by some measure of labour. Allen deflated the measure of value added through the use of a price/cost index thus negating the criticism of a labour cost enhanced productivity figure. In deflating the measure of value added, the observed productivity gap between unionised and non-unionised workers, in favour of the unionised sector, fell from over 40% to between 17 and 22 %. Our need to do likewise is mitigated by the differing econometric approach adopted in our study.

Allen's 1986 study of sections of the construction industry is a more refined examination of the issue. Here he isolates the components of the industry which can be more readily compared. This is because:

broad geographic and industry aggregates are used...which may mask considerable market segmentation and again bias estimates upwards (Allen, 1986: 187).

Allen investigates two sectors of the industry during specific periods. First, he estimates union productivity differences in the construction of commercial office buildings in 1973-74, and then examines the sample of 68 school buildings completed in 1972. A reported minimum productivity advantage accruing to the unionised sector of 30% is found in the commercial office building sector, and between 0 and 20% productivity improvement in school building. Allen employs a production function and uses two measures of output; value added and square feet of floor space. The problems of using value added have already been discussed, whereas the use of the square feet measure needs some attention.

There is an assumption that each square foot of floor space produced will be the same. Allen acknowledges that quality requirements are not always uniform, and so tests for variations in floor covering and exterior wall construction as indications of quality differences. He finds that floor covering increases the union productivity effect, while the exterior wall control variable produces a fall in union productivity. He goes on to point out that even though unions are more frequently associated with larger and taller buildings, they are relatively more productive than non-union workers on building with smaller floor areas.

Allen also reports in the same study results relating to school construction. His results for this investigation were inconclusive. For a discussion on the reasons for this see Allen (1986: 197-198).

Other notable features of Allen's research is that the value added figure, when not properly deflated, may overestimate the union productivity effect by more than 35%. Another point worth mentioning is that the measure of labour input, actual hours

worked, does not take into consideration job stoppages which a union may have induced and which would lead to more expense for the head or sub-contractor. Actual hours worked does not equate to actual hours employed. A person on strike is still employed but not working. Thus a measure of labour employment which does not take into consideration all the hours that a worker is supposed to have worked, will lead to an upward bias in the productivity figure, if unionised and non-unionised labour exhibit differences in their actual hours worked and their actual hours employed. Should non-union labour be employed for the same amount of time, but work more hours, and produce the same amount as unionised labour, to the contractor, then *ceteris paribus*, unionised and non-unionised labour's productivity will be the same. The only difference is the work intensity of the unionised labour when it is actually working.

One last point with regards to Allen's 1986 work is that he clearly points out that the theoretical advantages of unionism, if evident, will largely be found contained within the derived union coefficient (1986: 195). This coefficient embodies union quality advantages, union self management advantages, union hiring advantages and for that matter, basically whatever theoretically perceived union advantage to the extent that those perceptions are intuitively supported by knowledge of actual union practices within the industry.

The question of whether unions raise or lower productivity is a question that is asked wherever it is thought that unions impede business interests. While the above analysis has concentrated on the United States, the following will look at Britain, touch on Germany, Japan and then South Korea.

From the evidence originating in Britain, it is not possible to say whether, given the circumstances that British employment relations operate under, unions are a net positive or net negative influence on productivity. The prevalence of conflicting results, much like the evidence stemming from the United States, is a hallmark of the British experience.

Nolan and Marginson (1990) give a thorough overview analysis of much of the literature in Britain, with the main argument of their article focussing on the refuting of claims that the British evidence on unions and productivity is conclusive. We accept their view on this matter, and seek to follow their examination in our critique.

Beginning our commentary on British economy wide/multi-industry studies, we see that Davies and Caves (1987), find no consistent union productivity effect, be it positive or negative. Their research for the year 1968 found a negative union effect, but for the year 1977, a positive effect was recorded. This study also tested for the impact of strikes on productivity, and found that they had no impact at all. Ball and Skeoch (1981) also employ a multi-industry analysis and find a negative relationship, however their findings are questionable due to the data which they employ. Nolan and Marginson specifically consider Ball and Skeoch's labour and capital data 'very crude', as they fail to 'control for different capital-labour mixes across industries' (Nolan and Marginson, 1990: 235).

Turning to industry and firm level analysis, we again find no consistent result, with, again, much of the data and hence the results called into question. Edwards' 1987 study has been criticised heavily by Nolan and Marginson (1990) for its mismatched treatment of company and plant level data. Even so, Edwards finds only a weak

correlation between unions and productivity. The results suggested that low unionisation was associated with low productivity, while high levels of unionisation were associated with higher productivity.

Machin's research fails to reveal a coherent union productivity effect. The sample period for Machin's research stretched from 1978 to 1982 and surveyed 52 engineering firms. Unionisation was found to be higher than the national average, and only one of the firms sampled had no unions present. Value added was used as the output variable and deflated by an industry level time varying price index in order to avoid significant union-induced price effects which could be passed onto consumers and crudely interpreted as a productivity effect. Using a production function test, Machin concludes that union effects on small firms are inconclusive 'and that any negative effects are confined to the larger firms in the sample' (1991: 486). Machin does not make a bold statement on this last point, and if true, the effect is possibly related to the degree of market power that larger firms enjoy, even taking into account the price deflation mechanism used.

Wilson and Cable (1991), employ an augmented Cobb-Douglas production function in order to estimate the union effect on productivity in fifty two engineering firms. Five measures of the union are tested: density; a dummy for a closed shop; an index of union presence; an indication of multi-unionism; and a three level break down of the degree of unionisation. The authors conclude that a non-linear union effect is present. It is non-linear in the sense that firms with less than 50% unionisation exhibit no union productivity effect, firms with between 50 and 80% unionisation have a

measured positive outcome and those firms with greater than 80% unionisation operate with a negative union influence on productivity.

Given that high coverage unionisation is more prevalent in larger firms, and this coverage is associated with a negative union-productivity correlation, then we may say that Wilson and Cable's finding give tacit support to Machin's earlier tentative findings.

Moreton (1993), cited in Booth (1995), using aggregate industry level data, is reported to have found a negative relationship between union density and productivity. We are not able to comment further, having not seen the study.

Moving beyond the English speaking world, we can find evidence of the union/productivity relationship in countries as diverse as Germany, Japan, and South Korea.

Germany has built up a considerable body of literature on the subject. We must note that strong institutional arrangements operate giving rise to the use of voice in the German system. Obviously unions are considered as institutional actors in the system, but so too are the works councils which operate in parallel with trade unions. Legislation giving workers a voice at the highest levels of decision making within industrialised firms, ensures that they have a forum to air their grievances. But as Schnabel reports, given the range of studies, both economy wide/industry level and firm level, there is little evidence to suggest that unions have a net positive effect on productivity. At best...

A very tentative conclusion from these studies would be that trade union density seems to exert a negative, but quantitatively small, influence on labour productivity in Germany (1991: 18).

Yet, even this statement must be considered in light of the many problems associated with much of the data, the techniques (or methods) used to analyse the data, and the underlying theory. Schnabel cites a study by FitzRoy and Kraft (1985) to illustrate the difficulty of applying the theory of voice to the German context. In FitzRoy and Kraft, we find that where voice is strongest, that is at the firm through works councils, a negative relationship was found to exist between works councils and productivity, however a positive relationship was found between unions and productivity. In other German evidence this positive effect was reversed, and as a general comment on the German evidence we must conclude that a real union effect cannot be discerned from the results presented so far.

The German evidence demonstrates the problems associated with taking a general theory and applying it in a specific context. German research shows that the theory is not always applicable, which only heightens the need for any analysis of this issue to take into consideration the relevance of the exit/voice theory to their economy/industry/firm data.

Japanese evidence may suffer similar theoretical problems to those identified in the discussion on Germany. Principally, the industrial and union culture of the country varies considerably to the home of the exit/voice theory. Like the evidence from Britain and the United States, Japanese productivity evidence is variable. Muramatsu's (1984) study employed a modified production function and found a distinct productivity advantage to unionised firms for 1978, and an insignificant positive result for 1973. However Benson (1994) reports an unclear union/productivity result after expecting a strong positive outcome.

The Muramatsu study, on a nation wide, manufacturing industry cross-sectional basis, attributes much of the productivity advantage in 1978 to large firms, employing a work force of high quality. It is assumed that larger firms employ more modern and efficient management than do smaller firms (Muramatsu 1984: 112), and that workers of a higher quality (more educated) are attracted to larger firms because of the higher wages, lifetime employment, and better working conditions. The author acknowledges that many of these premium conditions are attributable to union influence in the past and then speculates on a lagged and perhaps long term effect, where currently observed productivity advantage owe their position to past union activity.

Muramatsu adds substantially to the literature by incorporating a non-labour centric understanding of the union-productivity nexus by including the effects of broader economic circumstances into his understanding of productivity determination. Specifically, he takes into consideration the business cycle on productivity (1984: 108). He argues that cyclical changes within the economy may help to explain the differences in observed productivity in the years 1973 and 1978, just five years apart.

Given the widespread adoption of the lifetime employment principle amongst larger firms, it is assumed that firms will not adjust the size of their work force as quickly as economic conditions change. Firms will carry a work force through more demanding economic periods and hence their productivity levels will fall. Of course, we do not know of the downstream effects of this policy on smaller, feeder/peripheral firms. Their work force requirements may well be more in tune with the general economic environment as well as the economies forced upon them by larger, core firms.



Benson (1994) employs an ordered probit model to estimate the results for three performance indicators, namely productivity, profitability, and capital intensity, for manufacturing establishments within a single economically dynamic Japanese region. The data was obtained from a 1991 survey with a response rate of 26% and which was representative of the firms' sizes within the region, with control variables included within the estimation model. All measures were based on management's view of their relative position regarding the set performance indicators relative to other firms in the region. There are obvious problems associated with an attitude based assessment of economic performance and those problems are explored in detail in the Australian section, nevertheless, Benson chose to use this type of measurement and found that non-union firms are more likely to have higher productivity. We view the Benson evidence with suspicion given the data on which it is based, and because the impact of the economic downturn afflicting the region (and others) at the time, was not fully investigated.

We already know from above discussions that unionisation is more likely to be associated with larger enterprises and that unionisation is also associated with lifetime employment. Therefore we can also speculate that during an economic downturn, those firms which employ unionised labour, that is, larger firms, who also employ the policy of lifetime employment, must by virtue of their commitment to lifetime employment suffer lower productivity. This is because they are carrying a section of their work force that cannot be fully utilised in the production process. Hence, larger unionised firms may suffer lower productivity compared to smaller non-unionised firms during the downturn. We must therefore conclude that an in-built bias exists in Benson's

methodology which does not take into account the impact of a economic downturn on productivity.

If Benson's results can be explained by the larger firm's labour usage schedules, then we may conclude that lower productivity may be associated with unionisation during periods of economic downturn however firms were aware of this eventuality when they signed lifetime employment contracts. Therefore the reduction in productivity is just as much associated with management compliance as it is with unionisation. If Benson's work teaches anything, it is that even if a link between unions and lower productivity is found, it is wrong to automatically assume that the union has brought about the lower productivity.

Conventional theories as to why firms may carry or hoard excess labour during periods of slow, stagnant or negative output growth can explain the position identified by Benson. Bowers et al. (1982: 18, after Taylor, 1974) suggest six reasons why firms may hoard labour.<sup>4</sup> Perhaps the reason most applicable to the Japanese experience contends that there are legal and contractual constraints preventing the offloading of excess labour capacity. The contractual constraint in the Japanese context, with lifetime employment, is perhaps more a contract of expectation and duty than of strict codified legal requirement.

Brunello's (1992) Japanese study uses a second order approximation of a two factor CES technology. Capital and employment are those two factors. The production function is augmented to capture the impact of a range of labour and market effects, some of which include labour quality, technological change, and union status. A

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<sup>4</sup> See Bowers et al. (1982) for the complete list of reasons behind the practice of labour hoarding.

substantial negative union effect is reported. This effect differs substantially between large firms (more than 300 employees) and small firms (less than 300 employees), where small firms show only a small negative result (-1.6%) and large firms are reported to exhibit a 28% productivity disadvantage. The size of this result is as questionable as any similar sized positive relationship reported in the early United States literature. Brunello argues that small firms are under strong pressure to be efficient. Being feeder producers to the larger firm ensures that they are in a weak bargaining position, and thus are unable to pass on the costs of unionism. Therefore, unions cannot achieve as great a gain in a smaller enterprise as they can in a larger firm. There is some question over the measure of labour input in Brunello's study, but when he estimates the productivity outcome with an improved measure, the measured negative union effect only improves slightly.

Evidence from South Korea is far from extensive. The one study that was found, reported a negative union/productivity outcome. Using time-series and cross-sectional data on eight manufacturing industries for the period, 1972 to 1989, Lee and Rhee (1996) employed an augmented Cobb-Douglas production function to determine the productivity question. Results show that unions were found to both raise and lower productivity (see results of equations 4 and 5 respectively), but when combined with the 'bonus' variable, consistently demonstrated falling productivity.

From the above European, American and Asian evidence, we can say that no distinct trend for all circumstances appears to exist. Market conditions, industrial relations processes and the 'culture', the type and location of production, if not the technologies used in it, all conspire to produce an environment where no sure prediction

can be made with regards to the impact of unions. We conclude by saying that each situation must be dealt with individually.

## **Profitability**

Empirical studies which demonstrate that unions are associated with an increase in profitability are rare. Hirsch and Addison (1986) cite more than half a dozen studies, none of which conclusively show a positive union profitability effect. Clark, (1984) and Karier (1985) found examples of where unions have little or no impact on profits, however the vast majority of American, British, Japanese or Australian research, using many different techniques and data sources, have found no evidence to suggest that unions do not have a detrimental impact on profits.

Within the United States literature, we observe that Freeman (1983), Clark (1984), Hirsch and Connolly (1987), Connolly, Hirsch and Hirschey (1986) and Becker and Olson (1992), have found negative union effects on firm/industry profits. Generally, there appears to be little conjecture regarding the 'unions-reduce-profits scenario', even so, some researchers have found, if not a contradictory, then at least a questionable relationship between the effects of organised labour and a firm or industry's profit outcome. For example, Mandelstamm (1968), employing a bi-regional case study approach, found there to be little effect on profits regardless of the degree of unionisation. And of significance on this issue is Clark's mature interpretation of the issue as expressed by his statement that 'The large body of evidence on the union wage

effect,... is not sufficient to establish a union effect on profits' (1984: 893).<sup>5</sup> However this does not suggest that profits cannot be depressed by means other than higher wages. Clark (1984) found that when splitting the data for firms with a high concentration and those with a low concentration, those firms with a high concentration of the market had no real observable profit reduction associated with union presence. Firms with a low market share recorded a very negative union impact.

Clark's findings appear to contradict those of Karier (1985) who argues that the union impact on profits is greatest on highly concentrated industries and virtually a zero effect for unions associated with non-concentrated industries. Karier's results support Freeman and Medoff (1984) who use results from the Freeman (1983) research paper to argue that more highly concentrated industries are associated with lower profitability under unionism. The monopoly profit argument is used to explain how unions capture those profits (often through higher wage outcomes). Clark provides a limit pricing explanation to his findings of less union effect for higher market shares.

Hirsch and Connolly (1987), use a share market price as a measure of profitability and find that there is little evidence to suggest that unions take the profits of highly concentrated firms, and only weak evidence to support the view that unions reduce the profits of firms with a high market share. Other American studies to have used a company's share market value include: Salinger (1984) and Ruback and Zimmerman (1984). The question with this measure of firm performance is 'Is the share price related to actual profitability changes, or perceived profitability changes?'. With

<sup>5</sup> For a more complete summary of the international literature dealing with union effects on firm performance debate, see the tables presented in Addison and Hirsch (1989) and Freeman and Medoff (1984).

the connotations of union activity often being in the negative, then any union activity which investors become aware of, will more than likely result in a sell off of shares, which in turn drives the price down. This may happen regardless of the impact of the union on firm performance, as opposed to perceived firm value as measured by the share price.

British evidence on the unions/profitability question is problematic owing to the measure of profitability/firm performance which has traditionally been employed. Generally, at the firm/plant level, subjective measures have been used, involving managers estimating the performance of their company relative to others. We critique this method of measurement when we turn our attention to the Australian evidence, however at this juncture it is sufficient to say that we are dubious of any results stemming from this form of measurement.

Mindful of the difficulties of employing highly subjective measures we can report the results of the British studies. Conyon and Machin (1991), Blanchflower and Oswald (1988), Machin and Stewart (1990), Machin (1991b), and Machin, Stewart and van Reenen (1993) have reported negative union/profitability results. Industry level studies generally point to a less conclusive link than do firm/plant level investigations. It is perhaps important to note that they also fail to employ the highly subjective measure that the plant/firms level studies use. Of the industry studies reported by Booth (1995), only Conyon and Machin's (1991) investigation into manufacturing industries report a negative union affect. Cowling and Waterson (1976) and Haskel and Martin (1992) find no union profitability effect at the industry level.

British firm/plant level research has produced consistently negative results. To what extent this is related to the problematic data source, we cannot say, however even the Machin (1991b) study which employed a less subjective measure of profits to sales ratio, found a negative association. Realising that most of the studies cited above study union effects over a short period generally in the 1980's, for instance, Conyon and Machin looked at the period 1983-1986, and Blanchflower and Oswald examined only one year, 1984, we feel some empathy with Booth (1995) when she observes that the studies do not address the possibility that the union impact has undergone a change from the 1970's to the 1980's. In fact, this view is at the crux of our argument, because we believe that the union effect in the 1960's, 1970's and early 1980's was substantially different to its effect in the mid to late 1980's and 1990's in the Australian Building and Construction Industry.

Turning to one other international study, we observe Benson (1994) employing a profitability dependent variable in his 1991 regional Japanese study. He found that non-union firms were more likely to have higher levels of profitability as assessed by the firm's management. However the management perception driven nature of the profitability measure is, like the British (and Australian) use of this measure, problematic.

We can conclude our international profit discussion by stating that although there is a significant body of evidence to suggest that unionisation is negatively correlated with profitability, the actual picture is not absolutely clear. Conflicting British evidence, as well as informed comment by Clark (1984), places doubt in the

analyst's mind which suggests that we cannot categorically declare that unionisation is correlated with lower profits.

With a wealth of international literature on productivity/output and profits, we now need to examine the Australian research in order to better ground our study in a local contextual environment. We begin by examining the evidence on productivity and output and then move onto the profit evidence.

## **THE AUSTRALIAN EXPERIENCE**

### **Productivity (and Output)**

Unlike American and British investigations, Australian research is relatively underdeveloped in its attempts to identify and/or quantify the union effect on the economic performance of a firm/industry(s). To date there have been few attempts at studying this phenomena. Considering the prevalence of union influence in Australian industry, and the commonly held perception that unions are an intransigent entity in the working environment which do nothing more than increase costs and reduce employment opportunities, it is somewhat odd that more research has not been undertaken in an effort to uncover the real or true (if there is one) union impact.

Productivity analysis has been the area of most interest to Australian researchers, not withstanding the difficulty in accurately measuring the elements of productivity. Perhaps driven by reports of Australia having experienced a productivity slowdown and having a poor record in comparison to other countries (see Dowrick 1990, Prasada Rao et al., 1995) it is readily understandable that the focus has been on this element of firm performance. The marriage of the concern over what is essential to the health and



competitiveness of the Australian economy (productivity) and what is suspected to be one of the major causes of its ill health (organised labour) was inevitable and quite justifiable. However it has been the methods and data used to investigate the output/productivity issue with which we have some difficulty. For example, the use of highly subjective managerial responses to the question of productivity performance means that any analysis is undermined by the lack of precision of this measure. We also believe that there has generally been a lack of attention given to factors other than those concerning the employment relationship. For example, the state of the economy must be included in almost any analysis of output/productivity or profitability.

Phipps and Sheen (1994) have attempted to faithfully follow the Freeman and Medoff approach by using a production function technique applied to Australian Bureau of Statistics and Australian Workplace Industrial Relations Survey (AWIRS) data. Endeavouring to explain output, they include supply side variables (e.g. capital stock and employment), along with proxies of what may constitute 'good' or 'bad' industrial relations. This work assumes that a good industrial relations environment may well lead to an increase in productivity or output, a view which is emphasised when the authors cite the Blanchflower and Freeman (1990) conclusion that it may be 'the state of industrial relations rather than unions *per se* which affect productivity' (1990: 56, original emphasis). The authors find that trade union density is associated with strong total factor productivity *growth*, while union density and multiple awards were associated with negative outcomes in total factor productivity *levels*.

The main difficulty associated with Phipps and Sheen's paper is their failure to identify the demand side variables which are exogenous to the operation of output. The

model used in our research tests for a range of demand side variables in addition to the equally important supply side factors. By capturing all relevant determinants of output, we are able to identify the more exacting associations between the output and the range of exogenous arguments.

Moving away from the classical United States production function technique, Crockett et al. (1992) chose to analyse the AWIRS data through the use of the relatively sophisticated Ordered Probit Model estimation technique for relative productivity estimation. They found a negative relationship between unions (measured in a number of ways) and productivity.

The weakness in this investigation is that the data used for productivity estimation is highly problematic. The data is attitudinal and perception based (much like some of the British work, and as used by Benson) and thus fails to accurately represent the actual productivity change in firms. Clearly such data is open to the vagaries of subjective estimation, consequently any results stemming from such a measure should be treated with caution. In defence of the authors, they duly note the need for prudent interpretation of the results given the problematic nature of their data source.

In a similar vein to Crockett et al. (1992), Drago and Wooden (1992) employ an ordered probit model to examine a data set which also suffers from subjective productivity analysis. The authors generate results which support the contention that unions have a negative impact on productivity, and like Crockett et al. (1992), caution the reader on the problems of their data set and hence their findings.

Alexander and Green (1992) approach the study field from a different perspective, relying on a range of performance indicators which may be affected by an

extensive agglomeration of explanatory variables of productivity, ability of the firm to change, output quality or the relationships between employees and management. Using an accepted regression technique (LOGISTIC), they undertake the analysis by employing qualitative econometric techniques to both their endogenous and exogenous variables.

Although they find that good communication between management and the labour force produces a better firm performance result, which is supportive of some United States and British studies, the lack of a readily definable productivity measure appears to limit the relevance of this work in the broader debate, because true measures of firm performance were not included in the study.

In the Australian context one further type of investigation requires attention, this being the specific industry/firm or production line case study approach based on microeconomic data. Lansbury (1992) produced a case study of the vehicle component industry, which focused on one part of the plant's output and compared this with a Swedish plant. The significant benefit of such a study is that it allows for an in depth focus on microeconomic factors, yet conceivably, its strength is also its weakness because macroeconomic factors are somewhat excluded from the investigation. However, Lansbury does acknowledge the effects of a significant macroeconomic factor in the recession of 1991-92 on firm level performance. A positive feature of this study is that real measures of input and output (or close proxies) are used, providing for a rudimentary productivity analysis. The relevance of such an approach to other firms or other industries is limited, although for a more general commentary on microeconomic factors affecting output and firm performance, this type of study has much to offer.

In summary, the Australian literature in this field is still at a developmental stage, nevertheless, research outcomes can provide a valuable lesson for policy makers. All Australian studies have their problems and in essence these may be grouped into two categories. Firstly, the data from which the analysis has sprung may not provide an accurate picture of the actual circumstances found at firm or industry level. Secondly, all important determinants of firm performance need to be included in the analysis so as to avoid any unnecessary bias. Our work aims to improve on the second of these failings by including demand side factors, while rectifying the first problem by including actual firm performance information rather than subjective managerial derived opinions.

### **Profits**

Australian empirical evidence on the union effect on profitability is scarce. Profitability in Australian studies is measured by the rate of return on capital employed. Miller and Mulvey (1993) identify only two papers which deal with the issue. Crockett, Dawkins and Mulvey (1992) test for the influence of market power and find that unions reduce profits in firms which face a more competitive environment. The profitability of firms with few competitors is not greatly effected by unionisation. Crockett et al. (1992), also test a variable which represents a right for unions to bargain over employment. With the inclusion of this variable, it was found that the presence of the union may actually improve the profitability of the firm.

Drago and Wooden's study is of significance because of its comprehensive nature and attention to the testing of alternative hypotheses. The authors acknowledge problems with the data employed as it only represents 62% of the total sample. What do

the missing observations say that the included observations do not? The authors exclude workplaces which operate outside of a commercial capacity in order to lend greater meaning to the observed responses. Employing 'Returns on Investment' as their endogenous profit proxy, this variable is measured by a...

a long list of potential explanatory variables divided into three groups: industrial relations variables, economic incentives, and the characteristics of the relevant firm, workplace and industry (Drago and Wooden, 1992: 148)

The authors realised the potential of finding correlated variables in such a long list, and set about producing composite variables where correlations existed.

As mentioned, three groups of explanatory variables were used. The first group includes industrial relations variables. These included descriptions of union presence, union voice, trade union structure, award structures, and the industrial relations 'climate'. Variables representing union-management cooperation, and management derived programmes which may alter the industrial relations climate were also included. The second group related to economic incentive indicators, such as the types of remunerative and ownership incentives found within the sample. Examples of this grouping include a performance related pay variable, and variables representing profit sharing and share ownership which may relate more to "the bottom line" and hence affect the profit outcome. A variable proxying the level of monetary reward was included along with the rate of dismissals. Both are assumed to provide a degree of incentive for workers to perform.

The third category of explanatory variables relates to workplace, firm and industry characteristics. Workplace characteristics were proxied by the ratio of labour costs to total costs, the age of capital, the degree of capital utilisation, workplace size,

work force quality, the proportion of older workers, the extent of shift work, a measure of the amount of on the job training in the average job and a proxy for management quality, which is represented by a dummy variable for whether or not there was a formal management training programme in place in the last year.

Firm level characteristics include: firm size (defined by employment, with large firms employing more than 20,000 workers and small firms employing less than that amount of labour); private and foreign ownership; the intensity of competition; and a variable representing the level of workplace autonomy (low or completely). The workplace size variable is perhaps of greatest concern as other studies have found important distinctions in economic performance in different sized firms. For example, Brunello (1992) divides firms into large and small in his productivity analysis but uses a figure of 300 employees as the dividing line. Perhaps, given the Drago and Wooden division between small and large firms as those under or over 20,000 employees, they will not so much be picking up difference between large and small firms, but will estimate differences in firms with large and small market power, assuming that the size of the work force corresponds to the degree of the market which the firm may control. So if the results of this variable are analysed in this context, then the results will be more comparable to studies which have also examined the effect of market power (allied with a union focus) on performance indicators.

Employing an Ordered Probit Model in line with the categorical nature of the data, twelve of the forty six explanatory variables employed in the Return on Investment equation proved significant at the 1, 5 or 10% levels. Of the industrial relations variables to prove significant, the variable capturing a reduction in union

membership in the last year was negatively significant at the 1% level, suggesting that a fall in Return on Investment was correlated with a fall in unionisation. It was expected that this variable would be positively related to Return on Investment, not negatively correlated. The authors explain away the negative result partly by industry decline which negatively affects both the union variable and profits. At the 5% level of significance, the variable capturing the management's rating of the relationship between management and unions proved positive (an expected sign). At the 10% level, ongoing joint consultative committees influenced profit in a negative fashion. The negative response was unexpected and only marginally significant.

Share ownership and the efficiency wage were the only economic incentive variables to prove significant. The results were as expected.

The endogenous variables employed under the banner of 'Workplace, Firm and Industry characteristics' produced two 1% level responses; capacity utilisation and profitability within the last year. Both positive responses were as expected. Three variables were significant at the 5% level; those being the degree of competition (negative), labour costs being less than 20% of all costs (positive), and newer establishments (negative). All signs are as expected. The result of the competition variable mirrors Clark's (1984) observation which suggests that greater competition may reduce profitability in the unionised firm (1984: 900). Of marginal significance at the 10% level are the variables which relate to the number of employees in a workplace (positive) and where a new employee can reach a set standard of work within a month (negative).

The authors reconfigured the specification, dropping variables with inappropriate signs and then choosing 'marker' variables to approximate a number of other variables which are broadly similar in nature. The specification was in total reduced by fourteen explanatory variables. The  $R^2$  fell (as expected), but proportionally so, if not less than the decrease in the number of explanatory variables, and the reconfigured results broadly follow the original specification. Of significant note is that the variable representing the number of unions present at the workplace became mildly significant and negative (at the 10% level), although no real conclusion can be drawn from it. The significance of this variable increased to the 5% level when short term profitability was excluded.

The important finding is that unions as measured in almost all of their guises by the AWIRS survey were not found to be especially significant in influencing profitability. Only multiple unionism was reported to have a reasonably significant negative affect on profitability.

Once again, contradictory evidence has been presented on the profits issue. Consequently it is difficult to make any overarching statement regarding the Australian position on profits, let alone overrule the prevailing international opinion.



## CONCLUSION

We have seen in this chapter how there are different views on the impact of unions on performance indicators for firms, industries or economies. It was the coherent expression of the view or theory more sympathetic to unionism which sparked the methodological and analytical approaches covered in this review. The evidence developed is far from compelling.

We still do not know, for certain if unions are a help or hindrance to the firm/industry/economy. We can tentatively say that the negative effects of unionisation are subdued when the firm finds itself in a competitive market. Constraints external to a firm's ability to generate income also constrain the aspects of unionism which may reduce productivity or profitability. We have also found that industrial relations characteristics are an important determinant. Where collective labour and management have a good relationship, we find that the union is more likely to be associated with higher productivity.

Profits appear to be negatively associated with unionisation, however we must be cautious in accepting this as a given because as we have seen, well researched contradictory evidence has emerged. The actual mechanisms by which unions may reduce profits have not been well explained except through the monopoly derived wage premium theory.

And finally, much of the Australian research is encumbered by a basic flaw. The data employed by many studies relies on subjective management opinion rather than measurable results. The researchers using this flawed data acknowledge the difficulties

associated with it, and we cannot but state that subjective management responses are problematic in the extreme.

Much of the research presented above has relied on a model which fails to take into account factors affecting productivity, output or profits beyond the production process. Our model, presented in Chapter 5, incorporates production side variables as well as demand and process variables; terms which will become clearer in that chapter.

We feel that we improve upon many of the studies presented above and as such, our work is a worthy inclusion in the debate on the union-performance indicator effect.

# CHAPTER 3

## *HISTORICAL OVERVIEW OF THE INDUSTRY*

### INTRODUCTION

In understanding the role that history has played in shaping the perception of the Australian Building and Construction Industry, one needs to look no further than Frenkel and Coolican's (1980) opening paragraphs, where the tumultuous early 1970's are sketched. Here, the industry is portrayed as though it was an industrial relations minefield, dominated at times by hard line Left ideological influences. However, the authors make it quite clear that this philosophy of industrial action was not to continue in that form into the later 1970's, yet the 'reputation for aggressive attitudes and militant behaviour' carried on (Frenkel and Coolican, 1980: 24-25). The following seeks to give attention to the industry through a historical time-line approach, paying particular attention to its industrial relations. We do not limit ourselves to the past, as we also consider its present industrial characteristics which we argue are quite distinct from the industrial relations experienced in the 1970's or early 1980's. We believe that the altering of union views and tactics has helped drive this change in industrial relations. With the change in industrial relations and the changing characteristics of the unions, we argue that there is the potential for unions to exercise **voice** without it being harmful to the economic position of the industry.

## **HISTORICAL PERSPECTIVE - 1788 TO 1996**

This thesis focuses on the 13 year period from the middle of 1984 to the end of 1996 and employs a mathematical model to help illustrate the relationships between our economic performance indicators and the variables we use to explain their movements. But we cannot fully understand the significance of these relationships, especially the influence of the union variable without first investigating the long term historical associations and linkages within the industry. In doing this, we employ a time-line approach stretching from the earliest point of European settlement to the end of 1996. Because we are only looking at a 13 year period for our study, we will concentrate most of our investigations on that period and the period immediately preceding it. Arbitrarily, perhaps, the 15 years before 1984 deserves detailed coverage for this reason.

Conceptually, it is necessary to take an institutional focus in the examination of the history. We are after all examining the effect of unionisation on the economic performance of the industry. Owing to limitations in recorded histories of the industry, we must necessarily draw heavily from information published about the industry from an East and South East Coast perspective (Sydney and Melbourne) as even the official history of the major union in the industry (Mitchell's 1996 history of the Builders' Workers' Industrial Union (BWIU)) relies heavily on Victorian and New South Wales information. We draw extensively from the New South Wales Royal Commission into Productivity for a broader view of the industry and an insight into other States. The Royal Commission also provides information relating to the institutional arrangements of employers which is generally unavailable from other secondary sources.

\* \* \* \* \*

European building and construction began when the tents of the first fleet were pitched on arrival in 1788. This was not the beginning of the industry as Aboriginal building and construction existed for tens of thousands of years before that. However for reasons of continuity, we will be concentrating on the next 208 years of Australia's history not the preceding millennia.

The first construction and engineering works were undertaken by convict labour under the supervision of military authority, although it did not take long for freed convicts and free labour to undertake building and construction work. Free and assisted immigrants brought skills to the industry from as early as the 1820's (Turner, 1983: 12,14) and with skilled immigrants came the idea of regulating skilled employment. Carpenters and joiners were one of the first labour groups to associate in an industrial manner (Turner, 1983: 31-50). Mitchell makes note of various associations within the building trades forming from the mid 1830's (1996: 7).

A feature of the early trade and friendly societies was their shortness of life. Hume, (1960: 266) briefly details the moderate rise in the number of all such societies and then the dramatic collapse in the 1840's followed by another increase in numbers. Mitchell (1996: 7-8) catalogues the many births and at least one death (although alluding to others) of friendly societies and other forerunners to unions, and provides the impression that the period from the mid 1830's and especially from the mid 1840's witnessed a solid increase in the representation of workers in the building and construction trades.

The question of whether the early friendly societies and craft alliances were actually industrial organisations and therefore antecedents of more modern trade unions

was raised by Hume (1960: 265). He argues that these early societies were in fact trade unions owing to the fact that they excluded employers from their membership and recognised differences in worker status. (1960: 265). Hume goes on to argue that:

Some students of the trade societies have commented that first and foremost they were benefit societies, performing much the same insurance function of modern friendly societies. In part this rests on a misunderstanding. It is true that the provision of sickness, out-of-work, and sometimes funeral benefits to their members was one of their important functions. But their concern with these matters did not imply that they were not equally concerned with wages and working conditions. Nor have trade unions been exclusively concerned with strikes, wages and conditions of employment (Hume, 1960: 267).

The industrial nature of these forerunners to the more modern societies is important because it shows a time when these unions were moderate in their industrial campaigns relative to today's more radical associations (or even the unions that followed in the 1850's). Even so, there is evidence to suggest that industrial campaigns were conducted, with the carpenters and joiners striking at least once in 1840 (Turner, 1983: 16).

Gradually, the building industry's workers' and trades' associations began to place more emphasis on economic objectives, marking a distinction between the newer trade unions and the earlier trade associations (the comments of Hume, above, notwithstanding). Plumbers were known to take action to further their economic interests and so too did stonemasons when they fought for and won the eight hour day in 1856 (Turner 1983: 23, 24). The building trades started to recognise a commonality of interest and so began to form organisations representative of the individual unions which created them. The Building Trade Council (1886-1895) was one such organisation (Mitchell, 1996: 8), and before that, the Eight-Hour-Day League (formed in 1869), was reported to be 'a direct antecedent to the Sydney Trades and Labour Council' (New South Wales Royal Commission V. 7, 1992: 143).

Early unions in the building trades were associations of skilled tradesmen that attempted to regulate the employment, hiring and firing of their members (Mitchell, 1996: 5). Strict rules of entrance applied (Mitchell, 1996, 5; New South Wales Royal Commission, V. 7, 1992: 143-144), which centred on the quality of that tradesman's production. Thus if a tradesman could not work to a satisfactory standard, they were not admitted to the union, a policy which ensured that the members of unions remained distinct from lower skilled occupations in the building sector. Being organised along craft union lines, they had obvious templates to follow with early English unions having been organised in a similar fashion (Mitchell, 1996: 8).

Even though the tradesmen's unions segregated the more skilled from the less skilled, it did not stop general semi-skilled labourers and builders' assistants from forming organisations of their own. The New South Wales Royal Commission's history of the industry makes note of a general labourers union for craft assistants forming before 1870, (1992: 144). Sheldon (1989: 45) argues that this union, the United Labourers' Protective Society (ULPS), acted as a craft union owing to the nature of its membership.

Consisting of relatively skilled tradesmen's assistants and excluding the less skilled 'pick and shovel' workers as well as general construction labourers, the ULPS was able to enforce a craft like structure which gave it a distinct negotiating base closely resembling other building craft unions. Other more general labourers' unions formed before the turn of the century to organise building and construction workers although their stay was short lived with only the ULPS surviving the 1890's (Sheldon, 1989: 46,

47). In short, craft or craft type unions predominated in the century or so after European settlement, leaving general, lower skilled labourers without ongoing representation.

Employers added to the 'organising spirit' with the formation of separate associations for various trades. Plumbers, plasterers, painters and slaters' associations formed, although these were not to last as long as the Master Builders' Association (MBA) (although under a different name) which formed in 1873 in New South Wales. The formation of the MBA 'heralded a change in the industry, namely the widespread adoption of subcontracting' (New South Wales Royal Commission, V.7, 1992: 146).

A different way to organise work, subcontracting shifted the focus of employment from single trades to the master builders (New South Wales Royal Commission, V.7, 1992: 145). Builders tendered for whole projects and then subcontracted work out to tradesmen who often employed a labourer as an assistant. This was a method of work organisation that was to have great longevity as it continues through to this day.

From just before the turn of the century (1899) structural changes to demands on the labour market were to have profound affects on unionisation, especially amongst the semi and lower skilled labourers in New South Wales. Sheldon (1989: 49-52) notes that the Public Works Department, under the leadership of the Minister for Works, E.W. O'Sullivan, ushered in a host of changes designed to improve the remuneration and working conditions of the lower skilled labourers. Large spending initiatives saw employment levels jump and with increasing prosperity, so too did union membership levels. Day labour hiring furthered job security, and the Minister increased rates of pay paid by private contractors working on public sector jobs. A change of government



introduced massive cuts to public expenditure on building and construction, and changes to the minimum wage guarantees and labour hiring practices (Sheldon, 1989: 54).

Unionism in New South Wales went through various upheavals in the next half decade, but was especially affected by legislative changes to arbitration in 1908. Wages boards set up along industry lines helped distribute the building and construction labouring work force between several unions (Sheldon, 1989: 54-7). Competition for coverage, judicial decisions and membership misrepresentation saw the largest union in the industry cede considerable influence to one of the smallest (at the time of the granting of exclusive membership coverage for workers under a particular wages board). The ULPS, lost members to the more exclusive Builder' Labourers' Union (later the Australian Building Construction Employees and Builder's Labourers' Federation (BLF)) which sought to represent those labourers who aligned themselves with the artisans on building sites. The irony of this is clear in Sheldon's coverage of this matter as he points out that that was what the ULPS originally did (1989: 53).

The early part of the second decade of this century enjoyed the benefits of an improving economy with demand for building and construction output increasing alongside employment. Union density rose. At the same time, unions sought to improve the position of workers through the strategic power they could wield through direct action (Sheldon, 1993). Federal registration of building unions progressed with 4 covered by 1911 (New South Wales Royal Commission, V.7, 1992: 148).

The industry continued its cyclical boom-bust nature with the advent of war time (World War I) expenditure cuts, which in New South Wales saw many employees lose

their jobs or have their hours reduced by half (Sheldon, 1993: 120). Better times for the industry returned later in that decade, with a rise in domestic home production. This naturally created more employment for building and construction workers. Depression brought an end to the effervescence that largely characterised the industry from the end of the war.

Unionism amongst labourers was still a relatively infrequent occurrence in the early part of the century (Sheldon, 1993: 119). Even so, direct industrial action was not unknown by those not in a formal, registered union. Groups of employees not in unions were known to withdraw their labour if not satisfied with their working conditions or remuneration. At the time, labouring conditions in building and especially construction was often filthy work, and carried great risks to personal safety and health. Where workers had labour market conditions in their favour they were often able to achieve substantial gains. The Rockchoppers are a prime example. In this case, local autonomous actions galvanised this skilled group so much so that they formed a formal registered union in January 1908, splintering in part from the ULPS (Sheldon, 1989: 55). Militancy also existed within unions that attempted to portray themselves as non-militant. Unofficial mass meetings, deputations and industrial action occurred without input or sanction from the formal union structure (Sheldon, 1993: 126). The willingness of workers to exercise some control over their employment relationship through direct action has obviously lasted in the industry considering the use of direct action in the 1970's and 1980's.

Even in light of these reports of radical industrial behaviour, the 1915 Federal MBA conference recognised the improving nature of industrial relations in the industry

with negotiated voluntary agreements being made into satisfactory awards. And in referring to the trades of bricklaying, masonry and plastering, it was said that 'a more friendly feeling has ... been created between the employer and the workmen in these trades' (New South Wales Royal Commission V.7, 1992: 148, quoting from the 14th Federal Masters' Builders Association of Australia (FMBAA) conference minutes). So even though militant union behaviour existed, it was not necessarily seen as unnatural or wholly destructive by employer groups at this time.

Throughout the 1920's building activity increased (New South Wales Royal Commission, V. 7, 1992: 148). The union movement was concerned with the issue of the One Big Union, and building unions even considered a single union structure. Even though the proposal received wide support in New South Wales it did not succeed (New South Wales Royal Commission, V.7, 1992: 149). The other major issue of the 1920s was the beginnings of communist influence in the industry. From an employer's perspective the issue can be traced back to the 1917 Federal conference of MBA's, where it was noted that the masons and bricklayers who previously were happy to negotiate agreements with the New South Wales MBA were now pursuing claims through arbitration (New South Wales Royal Commission, V.7, 1992: 148). The Royal Commission, (after the Federal MBA conference) noted that it was...

a 'red-rag element' in these unions [that] had led them to seek arbitration in New South Wales before going to conference over a new award (New South Wales Royal Commission, V. 7, 1992: 148).

Considering that the 1917 October (November) Russian revolution had only recently taken place, it may be argued that the MBA overreacted somewhat in labelling it a communist inspired move.

The depression years of the late 1920's and 1930's witnessed a rise in communist membership (New South Wales Royal Commission, V.7, 1992: 149), and a corresponding slump in the numbers of people unionised. Markey, for New South Wales, tables the level of union membership for the period 1903-1990 and we can see that union membership continuously fell between the years 1927 and 1933 with the only exception being the year 1932 where a slight rise was recorded (Markey, 1994: 565). The percentage of Trade Union members unemployed across the Commonwealth reached 30% in 1932 and New South Wales witnessed a high of 33.2% in the same year (Markey, 1994: 569). Not all unions shared these hardships equally, for example, the Federal body of the Amalgamated Society of Carpenters and Joiners (ASC&J) ceased to exist in 1933 (New South Wales Royal Commission, V.7, 1992: 149). Whether this made it easier for communists to accede to positions of power in the industry is unclear, however by 1945 communists led the major construction unions (Turner, 1983: 98).

Stepping back three years to 1942, we witness the birth of the dominant union of today - the Building Workers' Industrial Union (BWIU) (now part of the CFMEU). It was formed by workers with Communist Party of Australia associations, and was to be an *industrial* union rather than a *trade* union (Mitchell, 1996: 1).

The BWIU wasted little time in attempting to gain advances for their members. The union commenced campaigns designed to directly target employers rather than pursue these advances through the various State and Federal industrial tribunals. The BWIU was not alone in engaging in direct industrial action, as the Victorian 1945 go-slow showed. Here the union pursued a Federal award through combined action. The unions involved included the BWIU, the Plumbers and Gasfitters Employees' Union of

Australia (PGEU) (Victorian Branch), and the BLF (Victorian Branch), (New South Wales Royal Commission, V. 7, 1992: 149-150). Eventually an award was passed covering...

nominated respondents in Victoria, South Australia, and Tasmania and restricted the payment of the disability allowance, won in the Federal Building Trades of Victoria Award to 'outside' workers (New South Wales Royal Commission, V. 7, 1992: 150).

Once again, we can identify styles of actions which although occurring well before the 1984-1996 period are well recognisable. Direct industrial action occurred, and united fronts of unions were common in many of the industrial actions taken during our specific sample period.

All unions that were a party to the above award were able to extend the disability allowance to 'inside workers' through their State awards (largely Victorian) except for the BWIU. This ensured a campaign of direct action which the New South Wales Royal Commission argues resulted in the deregistration of the union Federally and in Victoria (New South Wales Royal Commission, V.7, 1992: 150-151). Mitchell, in documenting the history of the industry with special reference to the BWIU tells a different story. Mitchell places the deregistration in the context of the outbreak of the cold war and the anti-communist union policy of the United States (Mitchell, 1996: 42-45). The BWIU at this stage was communist dominated, and Mitchell argues that it was not just the direct disruptive industrial action which stimulated the Federal deregistration.

Radical union leaderships of the late 1940's and early 1950's were coming under pressure. Pressure, not just from state controlled institutions but also from within the

ranks of the union movement, with factions with more conservative laborist bents attempting to weaken communist influence (Markey, 1994: 294). With a conservative labour Catholic Movement having greater influence in Victoria than in New South Wales, (Markey, 1994: 300), the 'Groupers' as they were known were influential in the formation of the break-a-way conservative building union, the ASC&J after the BWIU deregistration in 1948 (Mitchell, 1996: 57-60). The ASC&J subsequently applied for and was granted permanent Federal registration in 1952, to which the BWIU was bitterly opposed (Mitchell, 1996: 61). BWIU sentiment was no less moderated when the ASC&J affiliated with the Right Wing controlled New South Wales Labor Council in 1953 (Markey, 1994: 311).

The BWIU retained a presence outside of the Federal system through its State offices, principally New South Wales, which it needed as inter-union rivalry was rife in the 1950's. The ASC&J for instance was especially active in its fight against the BWIU (New South Wales Royal Commission, V.7, 1992: 151). Employer associations, perhaps reacting to the radical leadership of the BWIU, also moved to weaken the organisation during this period. The New South Wales MBA on two occasions sought to have the New South Wales Branch of the BWIU deregistered (Mitchell, 1996: 99-101). The New South Wales BWIU actually had its registration cancelled in 1957, but this order was quickly rescinded after the union gave assurances that it would not wilfully engage in disruptive industrial activity (Mitchell, 1996: 103-104).

Building unions across the nation were not inactive during the 1950's. Advances in building technology prompted widespread industrial campaigning. Special allowances was the method favoured by unions, by which building workers would be

compensated for the changing nature of conditions on building sites (Mitchell, 1996: 112). The forerunner to the industry allowance, which was to be written into a number of awards, was the Melbourne Building Industry Agreement of 1955. Parties to the agreement covered the major interests of the time including the BWIU, the Melbourne Trades Hall Council, the MBA and the Victorian Employers' Federation (New South Wales Royal Commission, V.7, 1992: 151-152).

The more tradesman orientated BWIU, and BLF which represented the less skilled building workers began an alliance on an informal level in the 1950's when a progressive element showed itself within the ranks of the BLF. Until that time, the BLF leadership had been characterised as being 'thugs' and corrupt (Mitchell, 1996: 122-123; Burgmann, 1981). The industry had a reputation of violence and aggression, with the BLF in particular being connected with both intra- and inter- union rivalries (Frenkel and Coolican, 1980: 24). The alliance between the BLF and the BWIU stemmed from the latter's desire to form an industry union through amalgamation. Mitchell suggests that much of the cooperation between the two was later revealed to be not much more than an illusion even though the BWIU provided the moderates in the BLF camp with financial and administrative assistance (Mitchell, 1996: 143).

The BLF began to find its industrial strength with the weeding out of the corrupt leadership. Evidence for this can be found in Burgmann's (1981) work where she cites figures for decisions from industrial tribunals won by the BLF. In the 18 year period before 1961, only five decisions were granted in their favour, yet between 1961 and 1969 more than eight times as many favourable decisions were granted. The BLF was fighting against its perceived lower class status amongst building workers (Mitchell,

1996: 131-132), which the BWIU with its tradesmen members did not encounter to the same degree. Even with the BLF's new found strength, industrial unionism was close to fruition in the 1960's, with the BLF and BWIU agreeing in principle to amalgamate (Mitchell, 1996: 144).

The industry in the 1960's enjoyed a buoyant period, with almost uninterrupted growth occurring. Changing technology characterised the 1960's with new building materials and techniques altering the way that labour was employed. Pre-fabrication was a continuing theme as was the use of off-site construction which was then transported to the site (Mitchell, 1996: 148). The use of such technologies when combined with the increasing construction activity occurring within the CBD's of major cities, led to a spatial concentration of employment in the 1960's. A spatial concentration of employment makes it easier for the union to organise membership and concerted industrial campaigns.

Although industrial disputation was said to be lower in this period than in either the 1970's or the 1940's-1950's (Mitchell, 1996: 150), Mitchell argues that 'building firms experienced industrial disputation of no lesser inconvenience in this period than in previous times' (1996: 164). The BWIU achieved re-registration in 1963, but continued to operate in a militant fashion, pursuing claims through direct action. Building companies and the MBA failed to seek a further deregistration owing to the increased industrial disputation that would have eventuated. Given the growth of output in the 1960's, building companies believed it was better to use the machinery of the state through arbitration procedures and the like, rather than deal with unions and especially the BWIU through the unions' direct action (Mitchell, 1996: 164).



Sub-contracting, an ever present labour arrangement in the industry, took on even greater prominence over the 1960's and into the 1970's. Frenkel and Coolican (1980) cite ratios of 1:4.8 of sub-contractors to wage earners in 1962. In 1978 this ratio had come down to 1:2.6 (1980: 27). Figures from Commonwealth Year Books show a ratio of sub-contractors to wage earners of 1:5.2 for 1961 and 1:3.5 for 1970. Using any of the above data, an obvious and distinct trend is observable for the industry. The issue was to raise its head time and again with special significance in the 1990's with the *Troubleshooters* case.

In understanding the industrial relations of the industry, it is important to be aware that the principal unions of the building industry, the BLF and the BWIU, were strongly influenced by the political leanings of their leaders. While each union could be said to be broadly communist, stark ideological differences generally existed between the two (Frenkel and Coolican, 1980: 24-25) which would manifest itself in the approaches taken during industrial campaigns. The BLF in the 1970's took a more radical approach, seeking gains outside of the state administered conciliation and arbitration system. By contrast, the BWIU resorted to conciliation and arbitration after taking advice to the extent that they would win by coming back under the wing of the state system. The accident pay strike is a case in point (Mitchell, 1996: 174-195).

This dispute centred around two issues; firstly, a margins increase and secondly payments for accidents. Mitchell argues that although a campaign by the Federal and Victorian branches of the BWIU provided the impetus for the push for greater safety (1996: 175), the actual campaign itself was organised and fought through the New

South Wales Labour Council Building Trades Group (BTG).<sup>6</sup> A noticeable feature of this strike was the generally cohesive behaviour of the building unions (the BLF excepted). The BLF stood alone amongst the building unions in the early to mid portions of the dispute and only joined the campaign quite late (Mitchell, 1996: 188).

According to Mitchell, the employers (through various representatives - the MBA and the Employers' Federation being two such groups) appeared to be uniform in their defence against the claim, which, when combined with the resolve of the unions brought about an ongoing stoppage of work. The ongoing stoppage prompted national building unions to conference and pledge support for the strikers (Mitchell, 1996: 185). The dispute brought massive disruption to the industry with up to '30,000 building tradesmen in Sydney, Newcastle, Wollongong and Gosford' attending meetings (Mitchell, 1996: 184).

The BLF wanted the dispute to continue, with employers falling over and granting the accident pay because they had no other choice but to (Mitchell, 1996: 187). The union not only wanted to win better terms and conditions of employment, it also wanted to win by setting the rules of engagement, fighting along those rules and emerging victorious. The rules of engagement did not include asking for an umpire's decision, a tactic that was tried again in the 1980's, which, as we will see later on in this chapter, was less successful on that occasion.

The ideological nature of the tactic, the attack on the very heart of the system that existed, may have influenced others' views of the BLF more than the fact that a dispute existed at all. Perhaps the concern about the industry stems more from the

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<sup>6</sup> For an understanding of the Building Trades Group, see Markey, 1994, 418-419, or Frenkel and Coolican, 1980, 54.

ideologically driven nature of the dispute *process* rather than the *nature* and *issues* of the dispute itself. This allied with the naked use of strategic power - the withdrawal of labour - in an industry where pressure to complete projects on time is often intense, may have produced the overtly hostile responses from the state, employers and even the general public we were to see in the coming years.

Evidence of the ideological nature of the principal unions can be found in the sources of support that flowed to the unions and political organisations that their leaders belonged to. For instance, the BLF gained support from organisations such as the Worker-Student Alliance (See Mitchell, 1996: 192) and its leaders in New South Wales, Victoria and Federally, generally belonged to the Communist Party of Australia (CPA). The BWIU on the other hand was by this time (1971) moving away from the CPA, and with Pat Clancy becoming the president of the Socialist Party of Australia (SPA) (New South Wales Royal Commission, V. 7, 1992: 152-153), a rival to the CPA, the BWIU and the BLF were considered to have an ideological gulf separating them going into the mid to late 1970's.

The tactics of the BLF in its industrial campaigns in the early to mid 1970's were internally described as 'vigilantism'. Externally, the broader union movement and specifically the members of the BTG saw the tactics as 'the one-out line' (Six Turbulent Years, Undated: 6)\*. The two are not necessarily mutually exclusive. The BLF chose to forsake the tradesmen dominated BTG organising function and instead acted independently, initially gaining widespread support, but finally attracting approval for its actions from only a small minority of its members, for example in the 'self

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\* Probably written in 1976 or 1977.

destructive strike in 1975 which brought the New South Wales leaders to final disaster' (Six Turbulent Years, Undated: 23). This is in contrast to the collective action campaigns waged by the BTG over the same period which saw many gains, including long service leave based on industry service (won in 1974), and the National Building Trades Construction Award in 1975.

Militancy, largely unsupported or isolated from the general push of other unions within the industry (Six Turbulent Years, Undated: 41) set the New South Wales BLF up as destroyers of private enterprise. In fact, the leadership called for 'violence against the bosses property' (Six Turbulent Years, Undated: 53; Federal and Victorian Royal Commission, 1982: 333-378). Employers countered such calls and tactics including amongst other tactics, the occupation of offices both on-site and in the MBA's headquarters, with deregistration procedures (New South Wales Royal Commission, V.7, 1992: 153). The MBA was successful in having the Federal Office of the BLF deregistered in 1974 (Mitchell, 1996: 238). The New South Wales government under the leadership of the conservative Premier Askin, sought to use various state powers to limit the influence of the New South Wales BLF, including the use of police (Thomas, 1973: 8). Federally, the BLF was deregistered in 1974, 'with the activities of the New South Wales branch being cited as the major reason' for the deregistration (Royal Commission, V. 7, 1992: 153). The BLF was subsequently re-registered in 1976 with the MBA lending support to the action (New South Wales Royal Commission, V.7, 1992: 154).

Not all building industry militancy was confined to the BLF in this period. Mitchell documents many occurrences nationally where unions other than the BLF

engaged (sometimes in concert with other unions and sometimes singularly), in so called 'green bans'. The term describes militant action by unions acting in concert with interested parties from the community in order to prevent development (destruction?) of natural and human environments. These environments are judged to be of importance not by the state but by concerned industrial and citizen groups. Actions like the BLF's green bans (although they were not the first industrial organisation to engage in such action - see Mitchell, 1996: 223) gained national exposure and were carried on in States other than New South Wales by unions other than the BLF (Mitchell, 1996: 225-226).

Just how much damage the actions of the unions produced in this period is unclear and not within the scope of this inquiry. Whatever the suspected short term damage, the longer term improvement to building and construction worker's lives needs to be considered in conjunction with the results we report later on. By merely focusing on the obvious unrest within the industry and being guided by negative attitudes developed immediately prior to the period under review, we would obviously bias our analysis of the 13 year period from 1984 onwards. It is possible that union activities in the 15 or so years prior to 1984 were detrimental to profits, productivity, and output, but to assume that the activities of that period must necessarily negatively affect the union/economic indicator nexus of the period 1984-1996 prejudices the outcome.

To continue this theme we must continue detailing the major events within the industry in the period 1976-1984. Once again the BLF takes a leading role during this period.

Under the leadership of the Federal BLF, a rival New South Wales Branch was established as a replacement for the existing New South Wales branch. The Federal

Office lead by Norm Gallagher wielded industrial muscle, usually relying on the strategic power of the workers on site. Direct action remained a feature with notable disputes occurring at a shopping centre site in Wheelers Hill, Victoria, another shopping centre site at Birkenhead, Sydney, and with the building company, Costain Australia Limited (Mitchell, 1996: 256-259).

The industrial muscle being wielded by the BLF prompted a joint Victorian and Federal Royal Commission investigation into the activities of the BLF. The investigation found that a number of payments had been made to the BLF from construction companies in order to maintain a degree of industrial peace (Federal and Victorian Royal Commission Report, 1982: 31-78). The BLF was accused of 'empire building' during this period with the strictest enforcement of the compulsory unionism cry of 'no ticket-no start' (Federal and Victorian Royal Commission Report, 1982: 285-332). The practice of 'no ticket-no start' was said to be strongest in the Eastern and South Eastern States (Victoria, and New South Wales) and in West Australia, even though it was opposed strongly by the MBA of the western State. Even so, some employers considered a unified unionised work force an advantage when it came to work force harmony. For example the joint Federal and Victorian Royal Commission of 1982 notes that:

The Master Builder organizations (at least the National Federation and the Associations of Victoria and New South Wales), and the Union Movement, each take the view that the "no ticket, no start agreements" promote a semblance of harmony on building sites, which was not apparent when non-unionists were permitted to work at those sites alongside unionists (Federal and Victorian Royal Commission, 1982: 289).

Damaging demarcation disputes between the BLF and both the Australian Workers' Union (AWU) and Federated Ironworkers' association (FIA) were flaring at this time (New South Wales Royal Commission, V.7, 1992: 154). The BWIU continued to pursue an amalgamated industrial union strategy, in obvious sharp contrast with the approach of the BLF. Under the BWIU system, such demarcation disputes were to be resolved internally with little disruption to the work process and the incomes of workers (Mitchell, 1996: 235).

Once again the disruptive tactics alienated state authorities which coincided with the Federal conservative government initiating deregistration procedures against the Federal BLF. Employer support for deregistration was patchy, with only the New South Wales MBA and major national contractors aligning themselves with the Federal government. Other State MBA's refused to join the action. Reasons for the lack of employer support are alluded to in the findings of the joint Federal and Victorian Royal Commission into the activities of the BLF, which found that BLF officials were associated with graft and corruption which also 'involved some of Australia's largest construction companies.' (Mitchell, 1996: 288). Criminal prosecutions of BLF officials followed. However national support for the deregistration was not forthcoming owing to the generally good relationships between the BLF and employers beyond the States of New South Wales and Victoria. Hence, there was no real imperative for employers from other States to support the deregistration of the BLF.

Even with the lack of nation-wide employer cohesion, the industry had many identifiable characteristics which would suggest that it had grown beyond the narrow confines of State borders. The National Building Trades Construction Award, 1975, the

influence of the Federal offices of the BLF and the BWIU, the national focus of many building and construction companies and improved transport between States, giving workers greater mobility in order to follow work interstate (Mitchell, 1996: 254), all conspired to make the industry truly national.

At the beginning of the 1980's, employer associations had a minority of coverage of potential members, but those employers that were affiliated contributed the vast majority of industry output. In other words, the companies affiliated with employer associations were generally the largest producers, employers and contractors. This gave employer associations a significant bargaining right. Employers though, were not able to capitalise on their powerful position within the industry owing to their sometimes contradictory interests (Frenkel and Coolican, 1980: 28-29; New South Wales Royal Commission, V. 7, 1992: 154). The Royal Commission also notes the fragmented nature of employers as evidenced by the vast number of representatives at award hearings compared with unions (1992: 154). The end result allowed employees through their representatives an opportunity to press their needs through collective action.

Employers and unions, despite the fragmentation, were still able to achieve considerable outcomes for the industry. Superannuation was one example. Continuing on from the gains made in the 1970's with long service leave and the National Award and accident pay, superannuation was seen as providing workers in the industry with economic security after retirement (Mitchell, 1996: 294). The Building Union's Superannuation (BUS) scheme, introduced in 1984, provided unionists with a degree of control over their contributions rarely seen before. It also gave unions a role to play in the face of centralised wage fixation, when the traditional focus of unions, that is wage



increases, was largely removed. However in the lead-up to the superannuation agreement the BLF had failed to see the benefits of the scheme and wanted a pay increase in lieu of superannuation. Industrial action followed but with the ensuring pressure from the Federal government, the ACTU and other unions, the BLF acceded and actually began the push for their own superannuation scheme, even after Norm Gallagher had stated that, 'BL's didn't understand bloody superannuation--they wanted fucking cash in hand!' (Mitchell, 1996: 296). The BLF initiated further industrial action, this time specifically targeting MBA members, and in exerting pressure on the employer associations, Norm Gallagher was hoping to have the criminal charges against him dropped.

To continue to detail all of the BLF's excesses, double-takes and unsupported industrial militancy (even by other left wing unions) is beyond this paper. What is important to note is that other unions were now prepared to take on BLF members if the union was deregistered (Mitchell, 1996: 309), an action which they were previously unwilling to take. The Federal Labor government took this as an indication that other unions in the industry would not protest too loudly about any deregistration procedures that were to be initiated. It is now a record of history that the Hawke Labor government deregistered the BLF Federally by an act of parliament, and the State branches of Victoria and New South Wales suffered the same fate of deregistration along with the branch in the Australian Capital Territory.

Even after deregistration, the BLF continued to operate as an industrial organisation. The New South Wales Royal Commission identified a \$99 wage increase and thirty-six hour week campaign as continuing into 1987 (V.7, 1992: 157), months

after deregistration. Trade unions operating outside of the formal system are nothing new; the BWIU operated for fourteen years as a deregistered organisation (Mitchell, 1996), but the BLF campaign had less chance of success because of two principal reasons. Firstly, the Prices and Incomes Accord (the Accord) was supported strongly by both the Federal government and the ACTU. The cohesiveness of these two bodies ensured an outcome which would have seen the building industry excluded from the Accord and the institutional protection afforded by it. It is important to note that the BLF was not the only organisation pursuing claims of this magnitude. The PGEU also had an ongoing claim which was outside of the Accord guidelines. The second reason why the BLF's claim did not succeed was by virtue of the fact that the BLF did not last long as an industrial organisation after deregistration. Mitchell notes that:

In New South Wales, the back of the union was broken within two weeks, where it became a very tiny rump by the end of the decade; in Victoria where the union commanded greater rank-and-file loyalty than anywhere else, the process took many months; in the ACT, the union was largely finished within months-it did not exist within two years; and in other states, such as West Australia, South Australia and Queensland, it pulled back and continued as a state-registered industrial organisation. (Mitchell, 1996: 309)

The PGEU campaign ceased after state sanctions were invoked in the form of injunctions under the *Trade Practices Act (Cth)* and the union was fined for contempt after failing to comply with the injunction. The BWIU moved back into the spotlight with a campaign for a wage increase and a severance payment. Direct action followed, with negotiations taking place between the union on one side and the MBA and the Australian Federation of Construction Contractors (AFCC) on the other. Arrangements were made for the wage increase and an 'in principle' agreement for the severance payment followed. The industrial action ceased and the Australian Conciliation and

Arbitration Commission (ACAC) granted the wage increase under the wage fixing principles of the time (New South Wales Royal Commission, V. 7, 1992: 157-158).

Employer associations throughout the 1980's were quite dynamic. Their roles were almost certainly increased by the growing national focus of unions and the institutionalised wage fixing procedures of the time. Splits within associations and the growing importance of previous lesser lights on the employer association spectrum characterised the industry. The Master Builders' Federal Association (MBFA) lost the membership of major contractors who chose to be represented by the AFCC. This occurred after the amalgamation proceedings between the MBFA and the AFCC broke down (New South Wales Royal Commission, V.7, 1992: 158). The AFCC subsequently appeared to become the more significant employer association for the building unions to deal with. In 1988 a group consisting of the AFCC, the building unions and the ACTU joined together to investigate award restructuring and the like (New South Wales Royal Commission, V. 7, 1992: 158). The AFCC clearly had a national rather than State based agenda on its mind, leaving the State based MBA's to represent builders in the non-residential sector with State based interests (New South Wales Royal Commission, V. 7, 1992: 158). The sub-contractor's employer's association (BISCOA), became a player in the mid to late 1980's with their defence of their members objections to the severance pay dispute (New South Wales Royal Commission, V. 7, 1992: 158).

We stated earlier that employer cohesion was not at its strongest during times in the 1980's. The splitting of employer associations is an example of that, however there were some forms of employer cohesion which also gave insights into the structure of the industry and practices which mitigate competition. We are speaking of the practice

of collusive tendering and the making of Special Payments and distribution of Unsuccessful Tender Fees amongst some employers. The New South Wales Royal Commission found extensive evidence of collusive tendering and the payment of Special Fees from 1974 onwards inside the New South Wales MBA (New South Wales Royal Commission, V.2, 1992: 25).

To quote Royal Commissioner Holland on the issue:

The evidence abounds with grounds for concluding that the agreements were made with dishonest intent (New South Wales Royal Commission, V.2, 161).

And further to that:

The agreements were made in private and kept private by deliberate lack of records, false invoicing and abstention from legal action if repudiation by a successful tender occurred (New South Wales Royal Commission, V.2, 1992: 161).

The Victorian Parliamentary Economic Development Committee inquiry into the tendering process found that: 'In regard to Victorian Government works, corrupt practices have been in existence for many years...' (Economic Development Committee, First Report, 1993: 60). The Committee then lists a number of corrupt practices, such as collusive tendering, and cover pricing. The practices were not limited to the public sector according the Victorian Committee of Inquiry (First Report, 1993: 61) and thus we can assume that the practice was widespread, at least in the States of New South Wales and Victoria. The practice appears to be costly as well. The Victorian Inquiry estimates losses similar to those suffered by New South Wales. Something in the region of 4% of the capital works budget of those States may have been absorbed by these illegal practices.

The obvious upshot of collusive practices is that the industry's competitive pressures are mitigated. We present evidence in Chapter 4 to suggest that intense competition may still apply to sections of the industry (notably among smaller employers) however, given the above evidence, it would appear that intense competition has not always been a bother for larger contractors and that allied to the information we provide in Chapter 4, the market is oligopolistic in its nature with a small number of larger firms dictating terms to the smaller feeder firms.

Looking for other significant influences on the industry in the 1980s/1990's, we need go no further than the sub-contracting issue and the prominent *Troubleshooters Available* case. In short, the issue stemmed from the hiring of sub-contract employees from a labour hire firm by builders, which unions (principally the BWIU) took offence to. The controllers of the *Troubleshooters Available* had faced difficulties in the 1970s (Underhill and Kelly, 1993), largely from unions who saw sub-contracting as undercutting the rights of employees. Sub-contractors being placed by *Troubleshooters Available* were not considered to be employees of either the builder or *Troubleshooters Available*, and were defined as not being employees after Federal Court action.

The overall impact on output, productivity and profitability directly attributable to the use of *Troubleshooters Available* labour is probably mild for the period under review as the company only ever had a maximum of 2,000 sub-contractors on their books. The damage done to industrial relationships, although not able to be measured, would have witnessed the greatest impact. The 'bad blood' associated with the case and subsequent court costs and fines as well as the clear deception of unionists and other workers can only have added to the feeling of animosity within the industry. That the

BWIU lost the case against Troubleshooters Available, and the associated costs may have had a dampening impact on their ability to pursue gains within the industry even though the year was 1989 and output was at its height in the industry (see Figure F4.2, Chapter 4). Interestingly, the BWIU was not wholly opposed to contract labour. It saw how employers may need it from time-to-time and decided that it was better to be part of the system with some influence than to not have any say at all. It signed an agreement with a contract labour firm in 1991 ensuring full-time employment by the contract labour firm and that the workers would be paid award rates (Underhill and Kelly, 1993: 405, after the Australian Financial Review, 20 September 1991).

The above industry difficulties should be read in conjunction with the hard-line right wing employer sentiment of the times. A general shift to the right by employers, governments and the union movement in general and associated ideas of individualism reduced the ability of the union movement to make significant inroads for employee rights.

At roughly the same time as the Troubleshooters dealings came the New South Wales Royal Commission into Productivity. The Royal Commission did not look at the engineering construction side of the industry, instead it only concentrated on the cottage and non-residential sectors. Charges of political point scoring (Mitchell, 1996, Barda quoting Senator Cook, 1995: 24) abounded, with little result coming from the recommendations presented by the \$21 million study. Interestingly, the BWIU was not found to be corrupt or violent, even though it was likened to the BLF industrially (New South Wales Royal Commission, V. 7, 1992: 24).

Most of the criticism reported in the Royal Commission's finding surrounded the union's role on large projects. Yet for our analysis, large projects form only one component of non-residential construction, which in turn forms only one third (averaged over the thirteen year period, 1984-1996) of the entire industry's output, in just one State (New South Wales). Thus, notwithstanding the observed industrial arrangements within this State, the evidence presented to the Royal Commission has very little bearing on the overall outcome of our nation-wide, full industry analysis.

Preceding the New South Wales Royal Commission were a number of research reports which identified problems within the industry that sprang more from the industry's contractual arrangements than from industrial disputation. Two such reports were 'Strategies for the Reduction of Claims and Disputes in the Construction Industry - A Research Report' and 'No Dispute - Strategies for improvement in the Australian building and construction industry'. The industry has also continued to reform itself in the period after the New South Wales Royal Commission. In a major initiative, the Federal government sponsored the development of a national reform strategy - its name being the Construction Industry Reform Strategy. Working groups representative of the industry were formed in order to propose strategies to deal with the problems within the industry, specifically, the industrial relations problems. An 'in principle' agreement, stemming from working group reports (groups set up in early 1991) received a mixed reception from some quarters within the industry, notably the professionals, (Barda, 1995: 40), and it was decided to form an agency whose goal it was to help transform the industry over five years. CIDA (Construction Industry Development Agency) was that agency.

CIDA's initial problems were grounded in an unrepresentative board. For example, there were no unionists or sub-contractors on the initial board (although this was to change quickly). Employer associations played a prominent role at this stage with the members of both the National Building and Construction Council (NBCC) and the National Public Works Council (NPWC) consulted over the composition of CIDA's board.

From the establishment of CIDA in late 1991 to 1993, teams were set up comprising representatives from all sections of the industry. The teams addressed specific components of CIDA's business plan. Research and reports produced by the teams found their way into a number of publications including: the Australian Construction Industry Pre-qualification Criteria; the Project Initiation Guide; the Building Best Practice Guide; and the Enterprise Bargaining Guide (Barda, 1995: 67-68). In an industry as divergent as the Australian Building and Construction Industry, criticism of the research was soon to follow. CIDA's overriding philosophy of 'Best Practice' was sought and subsequently written into its policies. (Barda, 1995: 91-92).

Policies surrounding workplace change and industrial relations provided the greatest challenge. Barda (1995) makes it clear that the industry, and especially clients and contractors, sought a quick fix from the government which was never going to be available given the industry's tortuous history. CIDA focused on guiding the industry towards a more internationally competitive position with fixes for the industrial relations woes of the 1970's and 1980's unavailable unless employers changed the way they managed (Barda, 1995: 94). Unions also came in for criticism. Specifically, unions were criticised for their approach to enterprise bargaining. Lacking skills to implement



true enterprise bargaining which may have produced model outcomes, both unions and employers largely fell into a pattern agreement regime (Barda, 1995: 96-99).

The CIDA process was not without its critics. For example, Thompson and Tracy (1993), see it as diverting attention away from the...

continual class conflict which occurs daily at all levels of the industry, the requirement for exploitation (in the strict Marxian sense) to enhance capital accumulation, and the recognition that goals of efficiency and productivity require centralisation of authority and the extension of managerial prerogative (Thompson and Tracy, 1993: 73-74).

The centralised nature of the CIDA process most likely helped to incorporate unions into the mainstream ideological 'system', albeit on one of the outer flanks, however, we argue that it is because of actions like this, that we are able to generate the econometric results that we do (reported in Chapter 5). We do however agree with Thompson and Tracy's suggestion that the neo-corporatist (or tripartist) approach may have the affect of reducing the union movement's ability to militantly bargain for what it considers to be a rightful return for its members' labour input. The authors present evidence of CFMEU officials being briefed (inculcation?) about the need for reform and that distinct class division existed at a seminar on industry reform (Thompson and Tracy, 1993: 72, 73), however none of this criticism removes the fact that unions were being included in high level discussions about the future of the industry and that that inclusion may help the industry achieve better economic performance. This writer agrees with the sentiments behind Thompson and Tracy's likely question 'But at what cost to the militant industrial heritage of the unions?', however in this study we are only examining the role of unions in the economic performance of the industry, not the correct role of the union for its members.

We must conclude that reform of the industry was certainly a high priority in the later part of the period under review. It was a high priority for governments, for employers, for clients and for unions at least at the higher levels. But the difficulty of getting everyone to agree, even in principle, to the way things should be is nearly impossible.

To begin, to even get an agreement requires wide industry consultation and input. Divergent views which often overlap, and occasionally contradict, hinder any agreement negotiation process. Nevertheless the take-up of the reform policies has been described as 'extremely encouraging' (Barda, 1995: 104). This is especially so in government circles through the various elements of public works. Minimum standards of competency in management and employment relations was encouraged in the private sector, which competes for the public sector contracts. The 'client down' approach is meant to filter down through the web of contractors, builders, sub-contractors, and employees. If minimum standards are followed at each step, then all will be competing from a similar base, and part of the destructive nature of open competition will be moderated, improving the margins of all contractors. In turn, it is believed that the less 'cut throat' nature of the industry will ensure an improvement to the industrial relations environment as contractors will be under less pressure to cut costs and reduce safety.

Historically of course, this approach is not new. In fact, in the construction industry, clients have had the opportunity to influence the procedures and employment practices of those further down the line in a number of circumstances. In terms of this brief review of the industry, the circle would appear to have turned full when we consider that in the early years of this century, in New South Wales, the Public Works

Department (PWD) Minister (O'Sullivan), stipulated that the private sector which worked on government jobs had to improve the conditions of employment of their work force. Clients, especially in the public sector, have a very powerful influence owing to their sizeable construction budgets, more so than the private sector which is more dispersed and less coordinated

## CONCLUSION

This brief history has outlined the more significant issues of influence within the industry. We have seen the beginning of the industry and the beginning of unionisation in the 1840's. We have seen work organisation shift from the trades to the master builders with an attendant altering of the employment relationship. The unionisation of the less skilled is another milestone, as was the employment practices insisted upon by O'Sullivan as Minister of New South Wales public works just after the turn of the century. The eight hour campaign in the mid to late 19th century was as galvanising an influence amongst unionists as was the continued militancy of unions to this day. The radical nature of the building unions owes some of its heritage to ranks of communists who took leading roles in the hierarchies of those unions, but they were not the only influence on militancy as the example of the militant and independent Rockchoppers showed.

Employer cohesion has varied considerable, however it is fair to say that the Master Builders for much of the time has been the prime employer association, with the larger contractors assuming greater prominence only in a more recent period. As a

general statement, we can say that employers have only come together on an 'immediate needs basis', owing to their inherent product market conflict.

Reform of the industry has been a long time coming. Stability has been sought by many players in the industry, but little has been achieved until the 1990's, and especially after the deregistration of that disruptive element, the BLF. Wide consultation, aligned with a genuine attempt to find workable solutions was a feature of CIDA, with its mid to long term outcomes yet to be appraised. The CIDA process highlighted the important fact that the problems within the industry cannot be simply fixed by eliminating the industrial relations woes. Looking at the research reports generated within the industry, many of the industry's problems relate back to contractual arrangements, which in turn place pressure on contractors and sub-contractors to reduce costs which then flow into industrial relations issues.

The starting point for many of the negative views of the industry and the union's role in it are grounded in the industrial relations confrontations of the 1960's, 1970's and early to mid 1980's. Our study examines only a small part of this acrimonious period, and thus our results should be considered in the light of our generated results as well as the real changes that the industry underwent during the period under review, rather than by any preconceived notion of the industry. In short, we say that our 13 year period is different to the previous 15 year period, which in turn is dissimilar to the period that preceded it, and so on.

In the next chapter, we will examine the competitive position of the industry in terms of the product and labour market as well as detail some of the more descriptive statistics of the industry. Beyond that, in Chapter 6, we draw from what we have learnt

about the industry, the way the role of unions have changed and consider this in light of the econometric results we generate.

## **CHAPTER 4**

### ***THE STATE OF PLAY (1984-1996)***

#### **INTRODUCTION**

In this chapter, we will outline the basic structure of the industry over the 13 year period 1984-1996. We will highlight many of the key descriptive statistics such as, output, employment, firm size and firm numbers. The construction industry will be divided into three main sectors: residential construction; non-residential construction; and engineering construction. The distinction between these sectors will become apparent with the discussion which follows. Each sector can be further divided into its component parts, or sub-sectors. Where appropriate we will also examine those sub-sectors.

In order to understand the differences between sectors, we need to provide them with a recognisable 'face'. We do this by examining what they produce. The output of the first two sectors (residential and non-residential) consist largely of buildings as well as the associated inputs which go towards not only building the external structure, but also making them functional. For example, the output of the residential building industry does not only consist of the value of the external walls, the roof and the floor of a house which go towards making it a structure, but also includes the plumbing, electrical and carpet inputs which make the structure functional. Engineering construction, our third sector, departs somewhat from the previous two sectors in that

buildings are not significantly represented in the value of output. Its exact nature is more clearly expressed below.

## **THE SECTORS**

### **Residential**

Three distinct sub-groups can be identified within this sector. They are: residential building (houses), residential building (other), and alterations and additions. Residential buildings (houses) are in the form of a house, a town-house or some similar structure which is separate, detached and used largely for residential purposes. Examples that form the bulk of the grouping 'residential building (other)' include flats, units and other residential complexes of this ilk .

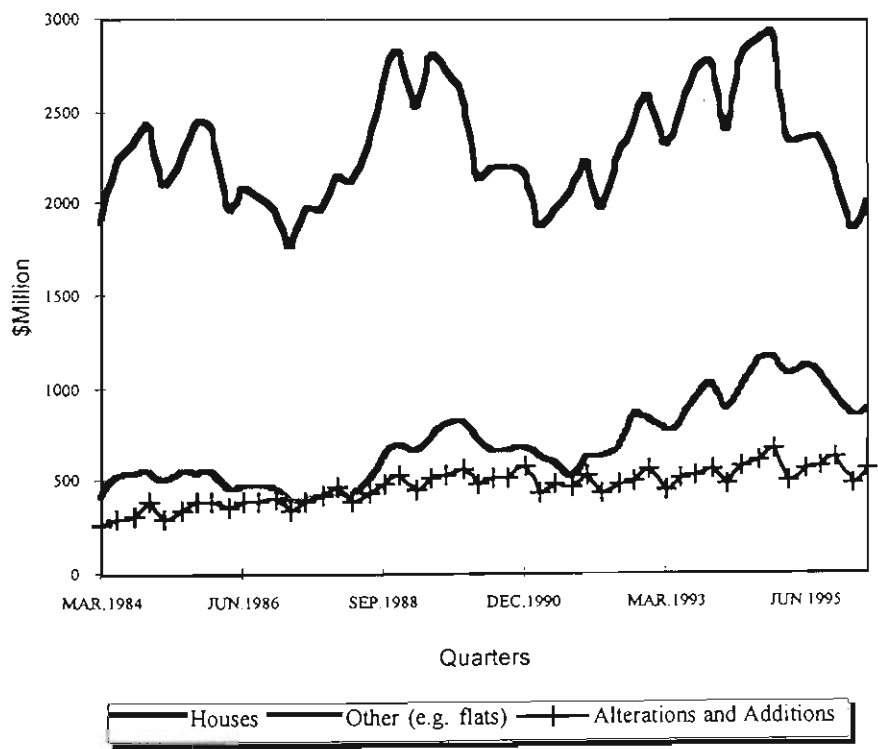
Detachment is the condition which differentiates the products of the above two sub-groups. Houses are usually detached, separate structures, whereas in the 'other' category, the dwelling units are not detached. They are joined, somehow, with other dwelling units.

Alterations and additions are associated with both sub-groups but are considered as a separate group as they do not involve the building of new residential units, only the refurbishment of existing ones.

The Figure below (F4.1) represents the output of the sub-groups expressed in 1989/90 dollars. House construction is clearly the most variable of the three sub-groups and forms the bulk of construction work as expressed in the value of work done. The traditional detached house on its own block of land forms the lion's share of this sub-

grouping (1994 Australian Housing Survey - Housing Characteristics , Costs and Conditions (4182.0)).

The ‘Other’ sub-group has not shown the variability of the Houses group but still appears to mimic the rises and falls of the House sub-sector. We can see this clearly for the period March 1987 to December 1991, where, after a rise or fall in the ‘Houses’ sub-group, there appears to be a lag of approximately one quarter before the ‘Other’ sub-group’s rise or fall in output. We can see that trend even more clearly for the period from December 1991 through to the end of the survey where the lag appears to be less obvious. In the absence of detailed analysis, it would be fair to conclude that those two sub-sectors appear to be affected by the same or similar phenomena.



**Figure F4.1** Value of Building Work Done: Sub-sectors of Residential Construction (Constant 1989-90 Prices) - 1984-1996



Alterations and Additions output has been rising over the period with only slight degrees of variability. At times, for example from September 1986 through to December 1988, this sub-sector has been almost as important a contributor as the 'Other' sub-sector.

Overall, the Houses sub-sector contributed 66.3% to the residential sector's total output over the period. The 'Other' sub-sector contributed 20.1% and 'Alterations and Additions' added the remainder (13.7%).<sup>8</sup>

### **Non-Residential**

This sector deals with all construction activity that is not residential, as defined above, and which is not considered engineering construction work (defined below). Examples of work in this sector include: hotels; shops; factories; offices and the like. We examine this sector a little more closely when we compare our three sectors.

### **Engineering Construction**

In the above two building sectors, the main emphasis of classification has been on some form of enclosed, or semi-enclosed structure. In classifying output as being engineering construction, it is easier to show the types of construction undertaken rather than give a textbook definition of this building activity. Examples of engineering construction include: roads; railways; pipelines; bridges and so on.

This sector, even more so than non-residential construction is responsible for providing capital to business. The level of activity in this sector is considered of

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<sup>8</sup> Note: rounding error of 0.1%.

paramount importance to the rejuvenation of public and private capital stock. Construction in this sector often forms the base layer in a firm's or country's infrastructure, and allows all other inputs of production to be used more efficiently.

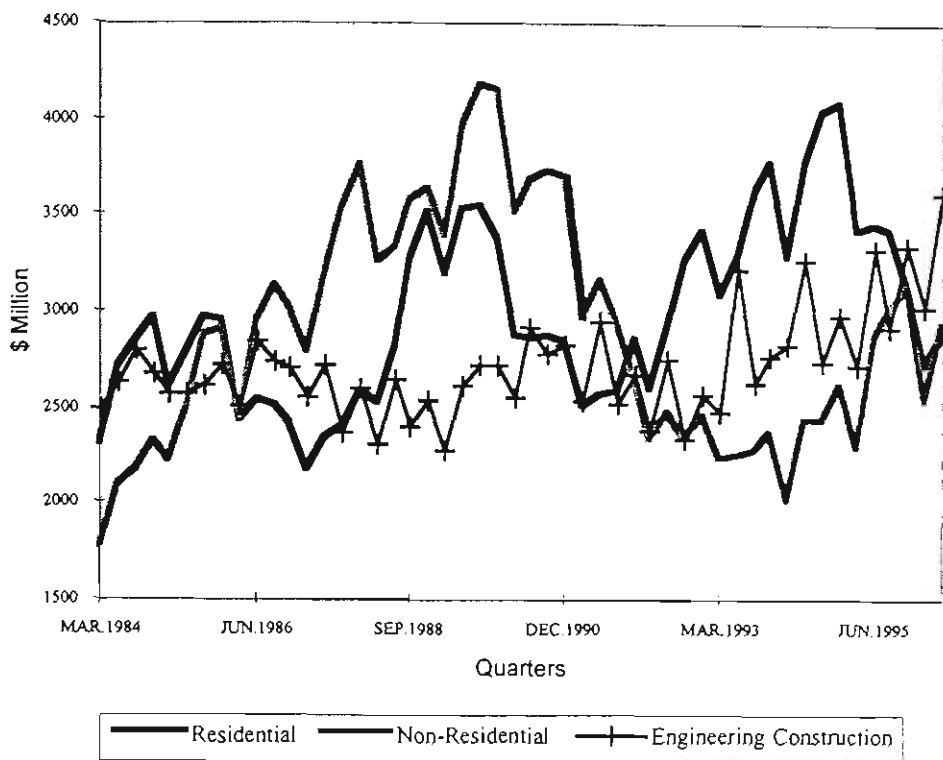
### **Comparisons of Sectors**

From Figure F4.2, we can clearly see that engineering construction activity exhibited the lowest degree of variability over the sample period, whereas both the residential and non-residential sectors had a great deal of variability associated with their output. Even so, by the end of the period, the contribution of each sector to total construction output in terms of the value of work done comes out to be approximately even. Of the total output, residential construction contributed 34.8%, non-residential construction supplied 33.6% and engineering construction added the remaining 31.7%.<sup>9</sup>

At the end of the period the ranking of the contributions were the same as at the beginning. Engineering construction produced the most output, with residential and non-residential construction following in that order. Engineering construction increased only 1.6% on its mid 1982 figure in constant prices, but by comparison, non-residential construction improved 27.6% and splitting the two with an increase of 12.4% was residential construction. However, averaged figures do not illustrate the variability of the results. Both the residential and non-residential sectors recorded repeated significant peaks, deviating wildly away from the average. Significant troughs below the average were also recorded, with non-residential construction plumbing the greatest depths.

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<sup>9</sup> Note: rounding error of 0.1%.



**Figure F4.2 Australian Building and Construction Industry: Three Sector Comparison of the Value of Building Work Done (Constant 1989-90 Prices) 1984-1996**

From the Figure F4.2, we can see that for most of the period up until around the September 1992 quarter, residential and non-residential construction activity mirrored each other in terms of peaks and troughs with only their intensities and minor lags differentiating them. However from that point, residential construction activity grew significantly with relatively minor setbacks, whereas with non-residential construction, each major period of growth was more than offset by subsequent and adjacent falls in output. A significant gulf opened between the two sectors up until the March/June period of 1995 quarter where non-residential construction rose significantly while at the same time residential output fell. The two sectors have been out of synchronisation since. These varying oscillations suggest that these sectors do not always share a common group of determinants. For example, the glut of office space in Sydney's CBD

(non-residential) may have contributed to the sluggish recovery from recession that this sector suffered at the end of the 1980's.

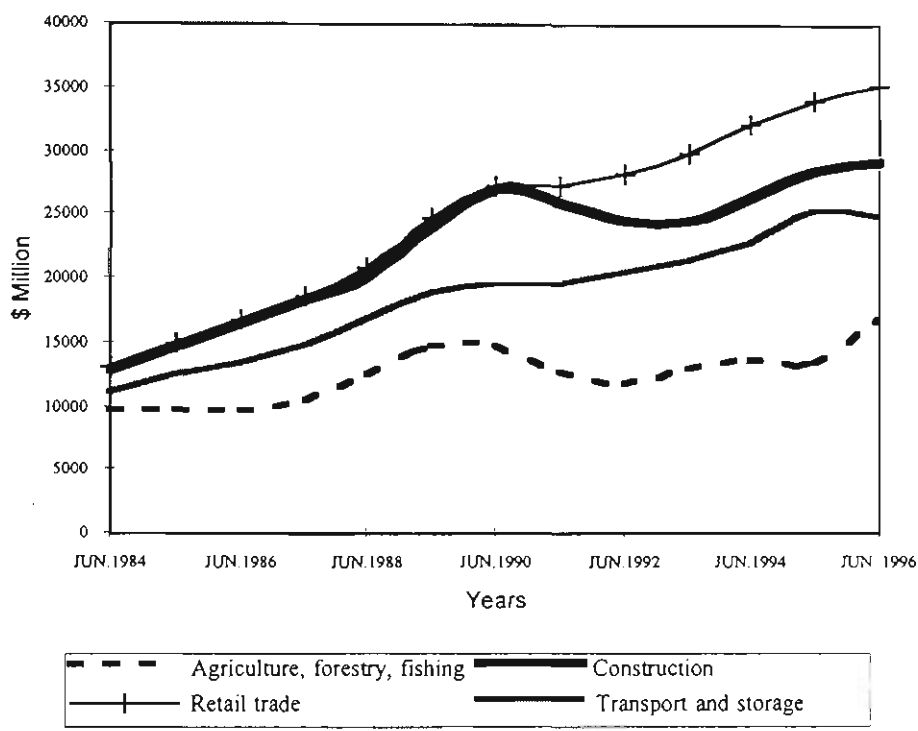
The relative stability of the engineering construction curve contrasts sharply with the greater variation shown by the other two sectors. Engineering construction may be more dependent on longer term planning and budgetary constraints, whereas residential and non-residential construction output may be driven more by the particular economic circumstances of the day.

## **OVERVIEW OF CONSTRUCTION INDUSTRY—RELATIVE ECONOMIC IMPORTANCE**

### **GDP and Industry Ranking**

For 1995-1996, the Australian Building and Construction Industry ranked seventh out of seventeen industries in terms of Gross Product in 1989/90 dollars (Australian Bureau of Statistics, *Australian National Accounts: National Income, Expenditure and Product* (5204.0) and has only dropped one place in the rankings since the beginning of our sample period where it was ranked sixth. From the Figure F4.3 we can see how Construction compares to a select group of industries. In terms of Gross Product, 1990 proved to be a crucial year for the industry which saw a sustained three year fall, although it retained its middle ranking amongst all industries. The industry was not alone in recording a fall as Agriculture, Forestry and Fishing suffered a similar fate. Construction Gross Product continued to fall until 1993 where it remained steady for two years until the 1994 financial year where it recorded a rise. GDP in the period 1990-1992 recorded only a modest rise of 4.4% but construction fell a massive 9.5% over the same period (Australian Bureau of Statistics, *Australian National Accounts: National*

*Income, Expenditure and Product* (5204.0). Clearly, the industry was hit hard by this economic slowdown, which in turn suggests that the industry is sensitive to movements in GDP. We empirically find this result through our econometric investigations reported in Chapter 5.



**Figure F4.3      Selected Industries and Gross Product - 1984-1994**

### Employment<sup>10</sup>

The size of a particular industry’s labour force relative to others gives an indication of the importance of that industry to the nation. For this reason it is necessary to examine the employment characteristics of the industry, beginning with how the industry ranks among others in employment terms, and following this, an analysis of the employment characteristics within the industry.

<sup>10</sup> These figures relate to private sector work forces only, even if they are being employed in publicly sponsored projects. 104,114 public (Federal, State and Local units of government) sector personnel were employed in construction related work.

Using the same industries as presented in Figure F4.3, Figure F4.4 (below) shows that construction employment falls far below retail trade yet produces a similar amount of Gross Product as seen in F4.3.

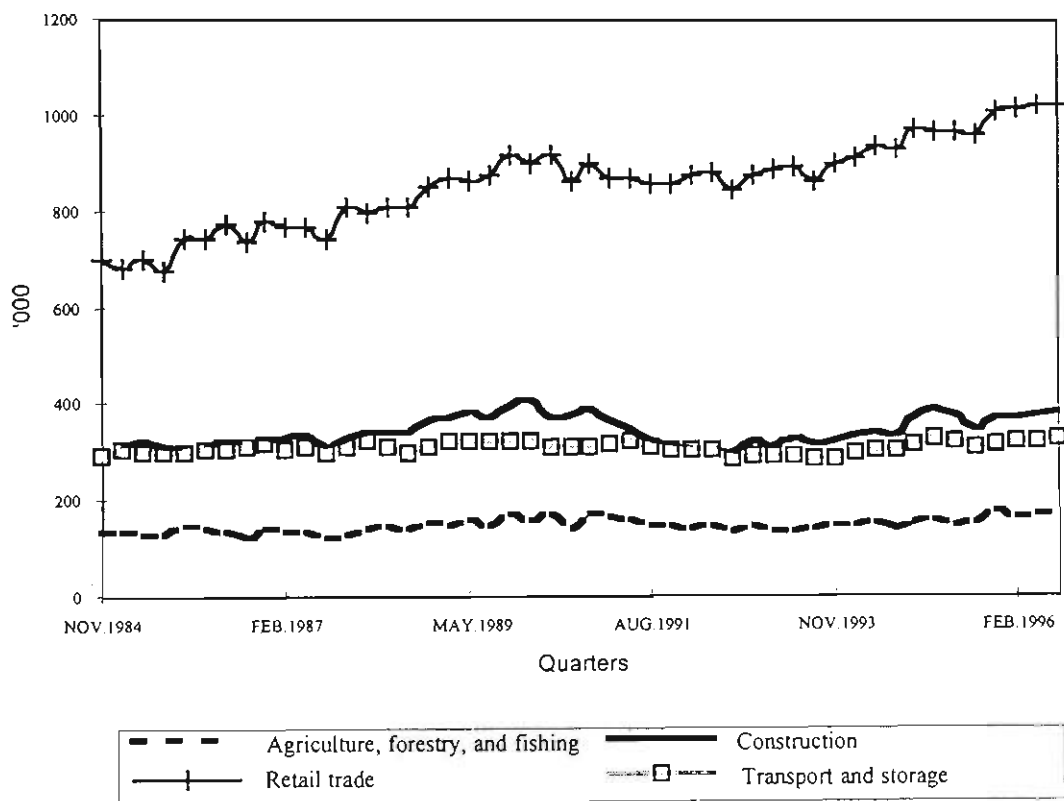


Figure F4.4 Employment for Selected Industries - 1984-1996

At the end of the period, 1996, construction was placed seventh out of all industries in terms of persons employed. For the 13 year period, 1984-1996, the lowest percentage of total industry employment that the industry enjoyed was 4.81% in 1992. This followed only two years after the highest recorded share at 5.83% in 1990.<sup>11</sup> In terms of actual people employed, the above percentage figures correspond to an average

<sup>11</sup> Calculations taken from Australian Bureau of Statistics, *Employed wage and salary Earners, Australia*, (6248.0). The Series only extends back to 1985. Relative employment shares are similar to information gained from Australian Bureau of Statistics, *The Labour Force, Australia* (6203.0)

for each year of 307,100 and 387,500 respectively. The downturn previously spoken of, was not only felt in Gross Product terms but also in human (unemployment) terms.

We can better understand the nature of the industry from an employment angle by looking at the relative size of the work forces for each sector of the industry. Using data from the 1988-89 Construction Industry Survey (Australian Bureau of Statistics, *Construction Industry, Australia: Summary of Private Sector Operations* (8771.0), the following table (Table T4.1) was constructed for those employed by the private sector.

Table T4.1  
*Private Sector Employment and Shares Within Sectors, 1988-89*

Special Trade		House and Residential		Non-residential Construction		Engineering Construction	
'000	%	'000	%	'000	%	'000	%
259.6	65.7	51.2	13.0	47.3	12.0	37.0	9.4

(Derived from table 2, ABS Cat. No. 8771.0).  
Note: Percentage figures have a 0.1 rounding error.

The sheer size of the ‘Special Trade’ category dominates the employment breakdown. Given the nature of the industry, it can generally be concluded that those with trade skills are relatively mobile between employers and across sectors and sub-groups. However governing the ability of employees/ tradespeople to shift between sectors is the sector specific information and human capital that is accumulated. By achieving a level of knowledge that gives a worker an advantage in gaining employment in one particular sector, it is conceivable that their desire to shift between sectors is

however aggregate employment figures differ owing to methods of survey and calculation. Refer to the publications listed for details on different methods of calculation.

diminished. Further on in this chapter we present evidence to suggest that there are a large number of firms in competition in the industry, an industry which is characterised by easy entry and exit. Therefore, any characteristic, given or earned, that confers a degree of certainty of employment in such a competitive product and labour market, will be received gratefully. Otherwise, the consequence might be uncertainty of employment, which brings with it, its own disadvantages.

The above figures and analysis only relates to private sector employment. We must now examine the position of public sector employment.

Using data from Australian Bureau of Statistics publication, *Public Sector Construction Activity, Australia 1988-89* (8775.0), we constructed Table, T4.2.

Table T4.2  
Public Sector Employment by Employment Type, 1988-89

Trade		Plant and Machine		Labourers		Mgrs.,Supvrs and Technicians	
'000	%	'000	%	'000	%	'000	%
73.7	45.0	28.2	17.2	41.3	25.2	20.4	12.5

(Derived from table 3, ABS Cat. No. 8775.0).  
Note: percentage figures have 0.1 rounding error.

In Table T4.2 we see that we cannot replicate the categories of employment that are found in the private sector. Nevertheless, the figures as supplied, demonstrate that trade qualified people form the largest component of all public sector construction industry employment (45% of total public sector employment). By comparison, the ‘Special Trades’ figure presented above in table T4.1 indicates that 65.7% of the total employment in the private sector is trades qualified. Without a careful comparison of



how both figures were derived, it is impossible to say that they are directly comparable, although other evidence from this period would suggest that these figures are correct. For instance, the AGB Australia survey, commissioned by the New South Wales Royal Commission into Productivity in the Building Industry, found that tradespeople accounted for 69% of workers on large sites, 64% of workers on medium sites, and 55% of workers on small sites. The definition of large, medium and small is not as important as the supporting evidence of the survey to the figures quoted by the Australian Bureau of Statistics (Discussion Paper, AGB Australia, Workforce Survey - Final Report, 1991).

Further discussion occurs below on the private/public issue, but what we can definitely state is that the private sector is easily the largest employer of the two and has a greater incidence of tradespersons.

### **Industry Linkages**

The many stages of production and the large numbers of businesses that operate within the industry suggests a highly complex set of interrelationships. But this is not always the case, as will be shown below.

The industry's linkages can be clearly illustrated by reference to industry structure. The first point to note is that work is organised in a sequential manner. Each trade takes its turn to complete a specific undertaking at a work site (Frenkel and Coolican, 1980: 27; Underhill, 1991: 117). Woodhead has noted that up to twenty specialist trades are required for the completion of a house (Woodhead 1978: 81, cited in Underhill 1991: 117-118). The client is often the starting point for the chain and can be either from the public or private sector. The private sector can, for the purposes of

this discussion include householders. At this point, the client takes on the services of a head contractor who may either be from the private sector or public sector. Although as will be shown in the next chapter (Chapter 5), very little private sector money is used by the public sector to produce output, so we can conclude that very few private sector clients will use a public sector head contractor.

Radiating out from the head contractor is a web of sub-contractors who may employ a work force themselves, or who may in turn sub-contract out further for more specialised services. At the peripheral fringes of the industry are the goods and services provided by architects, consultants and financiers. Finally, as an overarching influence/linkage on the industry, we must include unions and employer associations.

It is the contract/sub-contract nature of the industry, and the contractual arrangements which flow from it which distinguishes the Australian Building and Construction Industry from most others.

### **Employment Relationships and Contract Labour**

We know from the above discussion that the industry is characterised by a complex interconnecting web of working arrangements which leads us and others to conclude that simple employer/employee relationships are not an obvious characteristic of the industry (Frenkel and Coolican, 1980: 27). The sub-contracting issue is evidence of that, but the question remains as to why this industry employs labour differently to others. To examine that question, we need to know more about how work is organised and what factors drive employers to look beyond the traditional employee/employer relationship.

The actual process of building and construction -the *work process*- plays an important role in determining why the industry is a non-standard employer of labour.

The production process is labour intensive with a high level of autonomy exercised over work process by skilled and more experienced workers. Or as Underhill and Kelly argue:

Skilled and experienced workers customarily exercise a high degree of autonomy in the performance of their work, and the supervision of workers is correspondingly looser (Underhill and Kelly, 1993: 408).

For our discussion we have chosen to analyse the building system from two discrete angles. The *construction process* and work process. Frenkel and Coolican may make this distinction along the lines of ‘strategic’ and ‘immediate’ control of the labour process (1985: 55). For the construction process, we argue that the selection, organisation and timing of the employment of those who actually do the job of physical construction is the task of the employer or builder or construction process manager. But with the work process, individual autonomy becomes relevant and the actual organisation of how work on a particular job or task is to be completed, becomes the purview of those with the specific trade or work skills. Essentially, what we are arguing is that there is a splitting of control, and that those engaged in the work process have an enhanced ability to exercise a degree of control over their employment relationship by virtue of the fact that they have a degree of strategic power.<sup>12</sup> Naturally, this power is augmented by collectives of labour limiting the supply of their skills, either in the complete labour market or simply on a particular job site.

This union power may be enhanced by the process of competitive tender which reduces profit margins and makes firms sensitive to stoppages of work. Thus employers

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<sup>12</sup> See Keenoy and Kelly (1996) for a discussion on the power resources available to employees.

are willing to acquiesce to many of the union demands, and as Frenkel and Coolican add:

The vulnerability of construction firms to union pressure is underlined by the high degree of enterprise specialisation, considerable interdependence with other sectors and very limited product substitutability (Frenkel and Coolican, 1984: 55)

However is this union pressure consistent when firms face the real possibility of closure? To answer this we must assume that when there is an industry downturn, competitive pressures in both the product and labour market rise. Simply, there is less work for both firms and employees, thus even though there is an enhanced level of financial pressure on employers brought on by cutting tender prices so that they may win the tender, unions have even less room to bring pressure to bear because their members will be without employment if the firm folds due to the financial costs brought on by union demands and work stoppages. Therefore union pressure as measured by working days lost to industrial disputes may have more carry during the more buoyant economic periods than through the leaner periods. This is a concept which we develop later in this chapter.

We show later in this chapter that the industry exhibits both highly competitive tendencies as well as an oligopolistic nature. This dichotomy is brought on by the division between the relatively few but large contractor firms and the relatively many but small sub-contracting tradespeople and firms. Spatially, where there is not an agglomeration of smaller employers, unions will be constrained in how they may influence the employment contract by certain factors. Principally, they cannot organise the many small building sites around the country. It is relatively easy to establish union control in a densely populated construction environment like a city's CBD, however it

is more difficult to enrol potential members at the many individual housing sites scattered throughout the city or country. And even if they could organise such sites, they would not have the resources to police the working conditions and remunerations paid at such remote outposts. So unions tend to concentrate on the larger building sites and the public sector. They find it easier to organise and police those areas and it is from these strongholds where they attempt to improve the working conditions and remuneration of all workers. In the past, the award system was used to achieve this, however more recently, enterprise agreements which have a degree of similarity to them (i.e. pattern agreements) have assumed prominence (Economic Development Committee, Third Report to Parliament, 1994: 68-70; McGrath-Champ, 1996: 15).

Unions have faced challenges to their bargaining power from other sources. It is here that we introduce the issue of contract labour. Contract labour may not be covered by the award or by enterprise agreements. Contract labour is better thought of as a small business which has tendered for a job. The degree of contract labour, or sub-contracting has risen in the last forty years (Frenkel and Coolican, 1980; Various Commonwealth Year Books), motivated by the intense competitive nature of the industry amongst smaller firms, and is in recognition of the fact that labour costs are obviously a significant component of the cost of building and construction (Frenkel and Coolican, 1980: 38).

Contract labour is frequently cheaper than award labour (Underhill and Kelly, 1993: 401). The choice of contract labour obviously reflects the desire to minimise costs (Underhill, 1991: 120), and perhaps also the desire of the head contractor to increase their control over the work process. Contract labour is cheaper because the builder does

not have to pay for holiday leave, sick leave, or inclement weather stipulated in award conditions (Underhill and Kelly, 1993: 409). A cost advantage accrues to the user of this form of labour, as well as the intangible benefits of contract labour's perceived flexibility. Disadvantages of such labour are not as obvious. Safety is perhaps one downside to the use of contract labour, with Quinlan and Bohle (1991) noting the connection between poor occupational health and safety records and sub-contracting.

### Industrial Disputation

The construction industry is infamous for its industrial disputation. Present opinions of the industry were formed because of the disruptive and adversarial nature of the industrial relations environment, and perhaps, rightly so. The following Figure (F4.5), demonstrates the above average dispute prone nature of the industry.

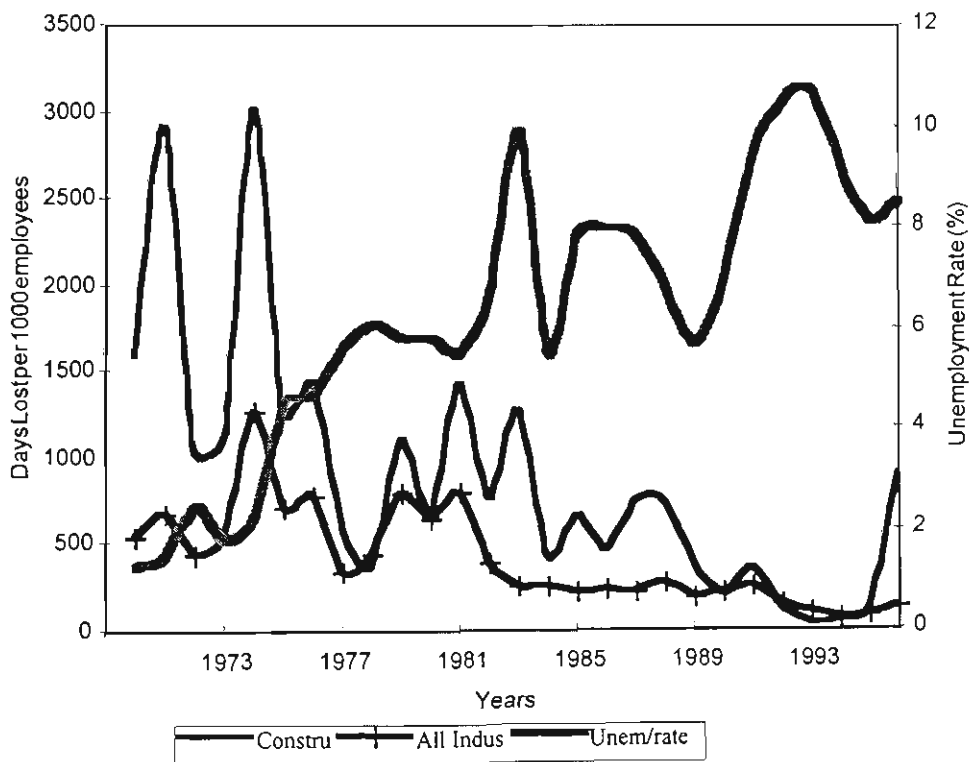


Figure F4.5 Working Days Lost per 1,000 Employees and the Unemployment Rate - 1970-1996

Figure F4.5 demonstrates that the industry reached something of a turning point in 1983. Far higher levels of industrial disputation were recorded on and before this year than after it. For much of the period 1970 to 1996, the construction industry recorded more working days lost per 1000 employees than the all industry average. However in the period 1990-1995, the industry actually recorded dispute levels around or even below the average for all industries.

If the measure of 'working days lost per 1,000 workers' is a reasonable proxy for the level of industrial harmony in an industry then we must conclude that the period specifically under review in this study, exhibits a far more harmonious industrial relations environment than the period directly prior to it. Subsequently, we must conclude that on the measure of industrial disputation, the industry of 1984-1996 is not the industry of 1970-1983. We must therefore treat the industry as two (or more) distinct environments, and should not let the preconceptions formulated in the pre-1984 environment cloud our understanding of the years 1984-1996.

If the year ending 1983 can be considered a turning point, then we should ask the question 'what made it such?'. We attempt to provide an answer for this in Chapter 6 where we discuss a whole raft of factors such as the coming of the new Labor government, the implementation of the Accord and the deregistration of the BLF, that may have influenced the role of unions and their militant activities. We use this information to explain our empirical findings reported in Chapter 5.

It is also important to note at this juncture, that 1983 may also be considered the year that Australia finally lost touch with the condition of full employment, and even

though unemployment rates rose to levels of greater than 5% in the 1970's there may have always been the idea that full employment would return. However with the passing of that notion came the issue of labour supply and demand. Without full employment, labour would always be in excess supply, and in an industry such as the building industry where less skilled workers may find employment, this imbalance between labour supply and labour demand may have been felt more sharply than in many other industries. This in turn results in pressure on those with jobs to not upset the status quo 'too much' otherwise they may find themselves replaced from the pool of unemployed. Anecdotal evidence given by employers to the 1993 Victorian inquiry into the Victorian Building and Construction Industry, supports this notion that less than full employment, brought on by a depressed economy has helped to dampen the industrially militant tendencies of the unions in the industry. B.C. Morrison of the Master Builders Association of Victoria narrows this view further by isolating the particular economy of the building and construction industry (specifically Victoria's) as being a key determinant in the level of disputation/militancy. Morrison states that: 'When the industry does overheat [buoyant economic conditions], then industrial activity comes to the fore' (B.C. Morrison evidence to the Economic Development Committee's Inquiry into the Victorian Building and construction Industry, 1994: 14).

There appears to be some empirical evidence for the assertion that industrial disputation is at least partly held in check by the prevailing economic conditions especially when they are expressed in the form of the general rate of unemployment. The Figure F4.5 incorporates the unemployment rate for the period and clearly shows



that while the unemployment rate trends upward, the level of industrial disputation per 1,000 workers trends downwards.

We argue that the unemployment rate alone is not wholly responsible for the checking of industrial disputation, but should be considered as another factor in the difference between the industrial disputation levels of the period 1970-1983 and the period 1984-1996.

**Size of Firms**

Small firms as measured by the number of workers per firm, are the most prevalent firm size within the industry. Naturally, we can only say this about the private sector, owing to the agglomerated nature of the public sector. Table T4.3 below, shows the average size of private firms engaged in various sectors and sub-sectors of the construction industry.

*Table T4.3  
Size of Private Firms per Sector or  
Sub-Sector in 1988-89, in Terms Employees per Firm*

House Construction	Other Residential	Non- residential	Engineering Construction
3.1	4.4	12.2	9.5

(Derived from ABS Cat. No. 8771.0, table 5)

Larger firms do operate in the industry, but their main function tends to be ‘the co-ordination of dozens or hundreds of these smaller firms through the contracting system

employed in Australian construction projects’ (New South Wales Royal Commission-- appendix. V. 2, II-V, 1992: 3).

The following table (T4.4) highlights the nature of the industry even more clearly in terms of numbers of firms, and the relationship between firm size and economic significance as measured by value added and turnover.

Table T4.4  
Firm Size, Numbers of Firms and Turnover

	Establishment size (No. of employees)					Total
	2 or less	3-4	5-10	11-20	21+	
No. of Firms	62,219	20,260	9,326	4,799	2,264	96,605
% of Turnover	15.1	11.3	14.0	59.6	49.4	100.0
% of Value Added	17.9	12.1	14.0	10.6	45.5	100.0

Derived from table 3, ABS Cat. No. 8771.0, 1988-89.

Table T4.4 clearly demonstrates the predominance of small firms (those firms employing twenty or less people) in the industry. Small firms comprise 97.7% of all firms in the industry. However by any other measure, small firms appear to be dominated by larger firms. Firms employing more than twenty people only make up 2.3% of the industry in terms of firm number but as table T4.4 clearly shows, they contribute nearly half of all turnover and 45.5% of value added. Not shown in Table T4.4, but recorded by the Australian Bureau of Statistics from the publication where the above table was derived, we find that the top 274 firms (employment size of greater than 100) which comprise only 0.3% of all firms in the industry, employ 13.3% of the

industry, pay 24.8% of the industry's wage bill, and contribute 21.7% and 19.3% of all industry turnover, and valued added respectively.

Clearly, this information is staggering. This industry appears to be dominated by an acute minority of firms at nearly every level of analysis. The obvious conclusion is that the industry is highly concentrated which we believe to be correct. This leads us to the conclusion that at the larger contract end of the market, the firms 'competing' for a share of that market may be considered to be operating either like an oligopoly, or where there has been an agreement to limit competition, then monopoly conditions may predominate. The Royal Commission into Productivity in the Building Industry in New South Wales identified collusive tendering practices (see Report 2, 1992 by the Honourable Kevin James Holland QC), as did the Victorian Inquiry into the Building and Construction Industry of 1993, and suggestions of this competition mitigation practice can be found in international literature, and indicating that the practice may at times be widespread.<sup>13</sup> Oligopoly like conditions can exist without a collusive tendering system operating. Hillebrandt identifies the situation where one builder (or contractor, or sub-contractor) lowers his/her tender price in order to gain market share. In a market where competitors can see that the market share has altered in favour of this builder, those other builders losing market share will follow, thus initiating a 'bidding war' and reducing margins and potential profits for all. All builders will see that by 'poaching' market share, they in turn become vulnerable to the same tactic employed by others. Thus in order to avoid such a situation, there will be a mitigation of the level of

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<sup>13</sup> See M. Hillebrandt (1974, p. 152) for suggestions of collusive tendering practices.

competition which results in a building price that is higher for clients than what would be if open competition existed. (1974: 152)

Geographic divisions also limit the degree of competition that larger firms face, because until recently, there has not been a great deal of interstate competition for large (or for that matter small) contracts, thus keeping the competition limited to one state. Areas of construction specialisation also seek to limit the degree of competition faced by employers, both large and small. The type of tender process may also act as a limiting factor in competition (Hillebrandt, 1974: 151). Essentially, some firms may not enter into open tender thus reducing the total number of firms which engage in competition for certain jobs.

Tender processes also contribute to the abatement of competition in the industry, through close ties between head contractors and clients and head contractors and sub-contractors. In the New South Wales context, we can observe this closeness by examining the tender process by which head contractors win a contract. In a ratio of 3.8:1, head contractors will be chosen by restricted tender over competitive tender (New South Wales Royal Commission, 1991, App. 3: 1). So at the beginning of the construction process, the competitiveness of the industry has been mitigated. Moving on down the line of contracts we see that sub-contractors had approximately a 50% chance of being selected by restricted tender or special relationship and that 70% of sub-contractors only work for four head contractors or less (New South Wales Royal Commission, 1991, App. 3: 1). We should note though, that the above figures relate to intermediate sized building projects and perhaps should not be taken as typical for the industry as a whole, especially for the cottage, or residential sector.

At the smaller end of the market (twenty or less employees), barring regional, and skill issues which may see various skill shortages or gluts, in a market which comprises 97.7% of all firms, we can state with some assuredness that in general, given the enormous number of firms, and the relative ease of entry into the market, there is substantial price competition for work.

Thus we might conclude that the building and construction industry could be said to be stratified. In the top strata, larger firms face relatively lower levels of competition than the smaller firms in the lower strata. Larger firms assume a disproportionate share of the market given their degree of employment and the number of them but also contribute a disproportionate share of value added and industry turnover. Larger firms could be said to be price leaders by virtue of their limited exposure to competition, while smaller firms, because of the often intense levels of competition that they encounter are price takers.

The following table, T4.5 compares some selected operating ratios for large and small firms.

*Table T4.5  
Selected Operating Ratios for Firms, 30 June 1989*

	Small (10 or less 'ees)	Large (11 or more 'ees)
Wages : Value Added	1 : 3.1	1 : 1.9
No. of 'ees : Value Added	1 : 300.7	1 : 524.5

Derived from table 3, ABS 8771.0.

The information in the above table shows that for every employee in small enterprise, \$300.70 of value added is produced. The corresponding figure for large enterprises is \$524.50, and, for each \$1.00 of wages, and salaries payed out by small firms, \$3.10 worth of value added is produced. For large firms, the figure is \$1.90. So even though large firms contribute more to value added per employee, they suffer a lower return of value added per dollar paid in wages.

There appears to be a contradiction with these figures, for on one hand, large firms enjoy a massive advantage (a 74% advantage) over small firms in terms of value added produced per employee, but on the other hand, produce only 61% of what small firms do in terms of wages per unit of value added. Are employees so much more productive in large firms, that they produce 74% more value added per employee than would be the case in small firms? And at the same time, are those same employees in large firms rewarded to such an extent that in terms of value added per dollar of wage, they produce 39% less than small firms?

We cannot begin to adequately answer these questions without understanding the accounting structures of small and large firms. For instance, we cannot know how much work is performed in the black economy. We do not know the degree of undisclosed (for taxation purposes) income generated by small firms through 'cash in hand' jobs. Obviously, this would underestimate the amount of value added that small firms produce and perhaps overestimate the ratio of value added per dollar of wage. Smaller firms may be more likely to hire workers on a short-term, cash-in-hand basis, which would obviously improve their value added per wage ratio, and of course, the relatively higher value added per employee figure recorded by larger firms may be

representative of their market position. They may be able to charge a premium for their input due to the reduced competition at their level of the industry. And following on from this, workers, seeing the premium charged may simply decide to take advantage of this by bargaining for higher remuneration, in turn, lowering the wage to value added ratio.

We suspect that a combination of the above hypotheses may be at work. This author’s personal experience from working in the industry and speaking with many tradesmen and labourers suggests that the black economy is a real and significant aspect of the industry. However these personal experiences have been confined to the small firm sector and no reasonable guess as to the policies of larger firms can be made as to their position in the black economy.

### Number of Firms<sup>14</sup>

With firm size having previously been discussed we should now turn our attention to the number of firms and their distribution across the sectors.

*Table T4.6*  
*Number and Percentage of Private Firms per Sector or Sub-Sector in 1988-89*

Residential Construction		Non-residential		Enginer. Construction		Sp. Trade Const. Indus.	
'000	%	'000	%	'000	%	'000	%
15.6	16.1	3.9	4.0	3.9	4.0	73.3	75.8

Derived from table 1, ABS Cat. No. 8771.0.

<sup>14</sup> Once again, only the private sector is represented here.

The above information of table T4.6 reflects the large number of firms employed on a sub-contracting basis, many of which consist of single trades people or small partnerships with 73,301 firms or establishments operating at 30 June 1989. The number of the firms employed in this sector impacts heavily on the average size of each firm as measured by employees per firm. Small or single operations are the norm in the construction industry (see Australian Bureau of Statistics, *Construction Industry, Australia: Summary of Private Sector Operations, 1988-89* (8771.0)). Those firms in the 'Special Trade Construction Industry' category engage in all types of construction activity.

The number of firms operating in the engineering construction and non-residential sectors is reflective of the generally larger average size of firms active in these sectors relative to the size of the firms operating in the residential sector. Compared to firms in the residential sector, engineering construction and non-residential construction firms are three to four times larger in terms of employees per firm.

## **PUBLIC AND PRIVATE**

The public sector is more representative in the industry than its employment share would suggest. This is because a feature of public sector involvement is that it may commission work and pay for the work, but will often employ the private sector to carry out that work, often, with only administrative roles within the particular job being directly linked to the public sector. Private sector construction (of whatever type) is almost exclusively carried out by the private sector. The following will give an

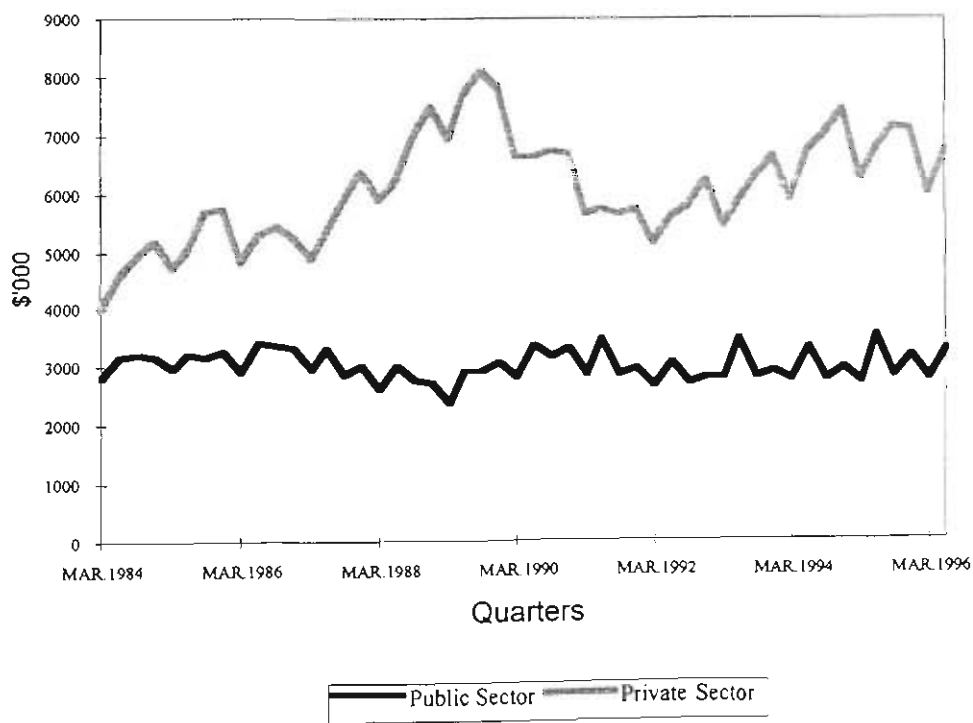


indication of the relative extents of private and public sector activity in the industry as a whole and specifically in each sector.

**Overall Industry Profile**

The industry, on average over the sample time frame, in terms of source of money for production is split approximately one thirds to two thirds in favour of the private sector. The private sector's contribution to the industry is 65.6%, with the public sector contributing the residual. At this stage we are only discussing the actual work performed, rather than the funding for it.

Over time, public sector contributions have remained relatively steady, whereas the private sector's addition to industry output has varied more in the short term as well as exhibiting longer term peaks. The Figure (F4.5) below, ably demonstrates this feature.



**Figure F4.6      Public and Private Building and Construction Activity, 1984-1996**

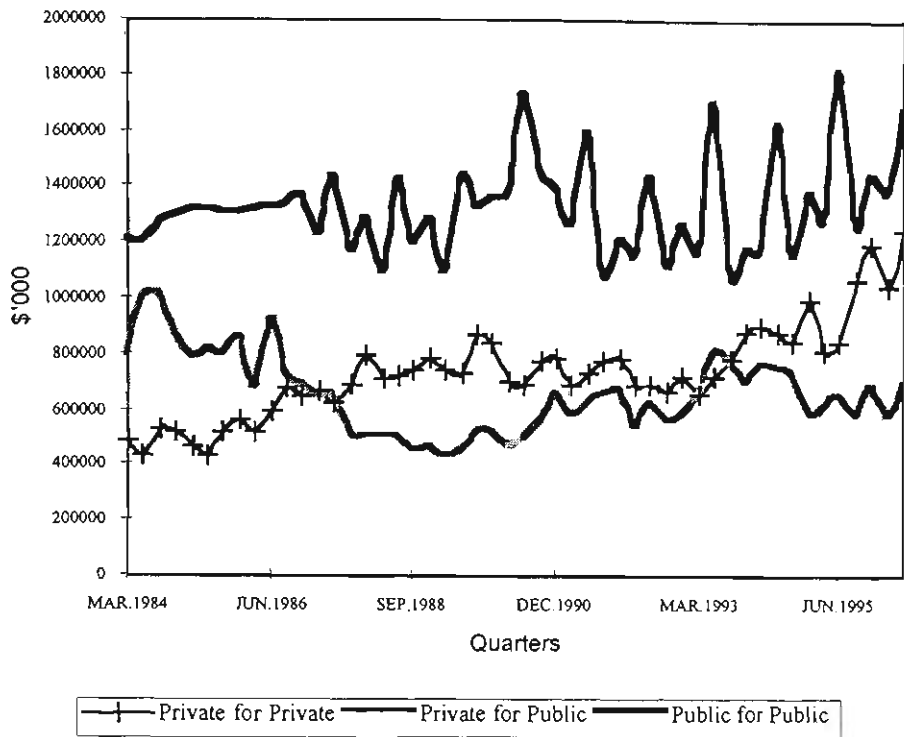
Private sector construction activity peaked in December 1989 after a rapid build up from March 1987. Beyond December 1989, this build-up fell as quickly as it rose. A more steady increasing trend in private sector contributions can be discerned from the Figure F4.6 beginning in December 1991 with what appears to be a drop-off in this trend from the December 1994 Quarter.

The high point of public sector contributions to total output came early in the period, in the first quarter of 1984, with a contribution percentage of 41.4%. Public sector's low point registered 25.6% in the March quarter of 1989. The low point was to be found in the middle of a non-residential building boom. And as stated above, with public sector spending relatively steady over the period, the reason for the change in public sector contributions to total commissioned output is dependent upon aggregate changes to private sector output.

On a sector-by-sector comparison of private versus public expenditure, we will concentrate mostly on the engineering construction sector because of the large public role. As for the other two sectors, the public spending role is small to minimal. For example, in residential construction, private sector spending outstrips public sector spending by a ratio of 17.4:1. For the non-residential construction sector we see a ratio in favour of the private sector to the tune of 2.4 : 1.

### **Engineering Construction**

Engineering construction activity differs considerably from residential and non-residential construction in that a relatively high proportion of work is performed by the public sector, using public sector employees.



**Figure F4.7      Engineering Construction Activity - Private/Public - 1984-1996**

The Figure above, (F4.7) illustrates the relationship between the private and public sectors within the engineering construction sector. As we can see in F4.7, over the period of March 1984 to June 1996, 48.8% of the value of all work done was by the public sector. The Australian Bureau of Statistics makes no mention of work done by the public sector for the private sector, and so we must conclude that very little engineering construction work of this nature occurs.

Private sector activity in engineering construction was fairly evenly split between work completed for the private and public sectors. The relative percentages for work done by the private sector for the private sector and work done by the private sector for the public sector are 27.2% and 24.1% respectively. This suggests that approximately 73% of all engineering construction work is commissioned either internally or externally (to the private sector), by the public sector.

With engineering construction accounting for approximately one third of total industry output and public sector spending accounting for almost three quarters of that sector, then it is obvious that public sector spending in the engineering construction sector has a significant impact on overall construction industry client derived demand, and therefore, output. In averaged figures, the contribution to the total construction industry output figure, stemming from public sector spending in the engineering construction sector is approximately 24%. Interestingly, public sector spending in engineering construction just surpasses the amount spent (private and public) on the 'Houses' component of the residential construction sector. In terms of overall contributions to the industry's output, housing expenditure, on average, added 23% over the period under review. It is clear then, that publicly funded engineering construction is an important element in industry's overall output.

## **CONCLUSION**

Three distinct sectors operate within the industry. The outstanding feature of all the sectors, is the average small size of firms in terms of employment. Even so, larger firms appear to play an important role in terms of overall output. The industry for the period of our investigation is far less strike prone than the period immediately before it, but perhaps even more outstanding, is the complex nature of the industry, discernible from the vast number of small firms, the interplay of public and private moneys and the apparent differences in the way the various sectors respond to exogenous shocks. It is perhaps this last point that will present the greatest difficulty for industry analysis along the lines that this paper seeks to pursue.

## **CHAPTER 5**

### ***MODELS, DATA AND RESULTS***

In this chapter, we provide empirical evidence associated with the relationship that exists between trade unions and the three endogenous variables under examination: output; profits; and productivity. In specifying the models, we choose to rely on our understanding of the industry, as well as borrow from the analytical framework developed by Freeman and Medoff. Both these areas have been developed in the previous three chapters. We use an OLS procedure which relies on explanatory variables derived from the supply, demand and process sides of production. Hence, we do not employ a production function, instead, an eclectic model determination procedure is used which we feel frees us from restrictions of other models. These restrictions stem from theories that do not accurately describe the 'real world' interrelationships between variables, especially over the time frame under review.

With this chapter, we report our empirical results but before that is done, the models employed are examined and justified, and following on from that, we examine the intricacies of the data set. Therefore, we divide the chapter into three sections. The first discusses the models, the second explores the types of data employed, collection methodology and manipulation, and finally we report the results.

## THE MODELS

As stated above, we employ three models in order to examine the effect that trade unions have on the economic performance of Australian Building and Construction Industry. Each model employs a single endogenous variable, with those being: output, Gross Operating Surplus (profit) and productivity. Each model is discussed below.

### OUTPUT

The ideal measure of output is a physical measure. That is, a measure that can quantify the outcomes of the building and construction process in actual physical units. Two of the benefits of a physical measure is that it allows for actual physical comparisons between building activities as well as representing a conscious relationship between various factor inputs and output. However, owing to the heterogeneous nature of output within the industry, physical measures of performance could not be used. The following example illustrates why physical measures are inappropriate. Take motorway construction activity, roads are built, traffic lights are installed, and pedestrian crossings are erected, yet none of those physical outcomes of motorway construction can be immediately compared to the physical outcomes of, say, port construction. With port construction, harbour dredging and jetty construction are likely, but these activities cannot be directly compared to motorways, even though both activities are construction related and are grouped within the same sector of the industry. In short, the aggregation of these diverse activities, and more importantly, the aggregation of the endogenous variables used in our model means that physical measures of work done could not form the basis of our output variable.

Clearly, to overcome the problem of quantification, we must use a value measure of building and construction activity. That measure as used in this investigation is the 'value of building work done (constant dollars)', a deflated value measure which is a proxy for volume for the entire construction industry.

### **Justification of Endogenous Variable**

As an economic measure of firm performance, output is worthy of investigation on a number of grounds. Output makes up one half of the productivity measure, and with productivity being the relationship between inputs and outputs, output is considered one of the key indicators of a firm's health. Output is a measure of total activity within the industry (value of building and construction work done) as judged by market acceptability with acceptability defined as the extent to which the market's needs are fulfilled. And finally, output adds to the total value of the nation's infrastructure, which, when applied commercially, increases the capacity of our economy to produce wealth. This study does not seek to differentiate between productive and unproductive applications of construction activity. To do so would require the use of extensive cost-benefit analysis and externality investigations, which lie beyond the scope of this work.

The following sub-sections detail how we have modelled output, and provide justification for the use of the exogenous variables employed in that model.

### **Model Specification and Expected Signs**

Our model employs nine exogenous variables. These seek to cover all major sectoral determinants of output, namely supply, demand and process determining factors. A

broader model including more determining variables was considered, but was scaled back for reasons of data availability and parsimony. The exogenous variables used only include those that are theoretically consistent and considered to have a significant impact on output. And because the explanatory variables are the same for both the output and profit models, a basis for comparison exists.

Below, we see the model in its mathematical form. With an explanation of each variable and their expected sign following.

$$QC = \beta_0 + \beta_1 UD2 + \beta_2 GDPI + \beta_3 D1 + \beta_4 D2 + \beta_5 D3 + \beta_6 PMATO \\ + \beta_7 AWEALLM + \beta_8 OTC + \beta_9 IDC + \mu$$

where UD2 is union density (+ve or -ve), GDPI is gross domestic product (+ve), D1, D2 and D3 are dummy variables relating to major agreements between trade unions and sections of employers within the industry (+ve), PMATO is the price of materials used in the construction process (excluding the residential sector) (-ve), AWEALLM is the average weekly earnings of all males within the industry (-ve or +ve), OTC is the average amount of overtime worked (+ve) and IDC is the number of working days lost due to industrial action (-ve).

Our knowledge of relevant theory and practice allows us to suggest expected signs. The following section deals with model justification, and will address the issue of expected signs.



## **Justification of Model Specification**

Having outlined the model, we must now explain the reasons for choosing this particular expression. As stated above, we group exogenous variables according to their nature, with one or more included in each grouping. The groupings are: Demand, Supply and Process. So under headings of Supply, Demand and Process we explain why each exogenous variable is a just inclusion in the model, and hence, why the model is a valid expression.

### **Supply Side Variables**

The model's supply side variables which are believed to affect the course of decisions taken by firms and the State significantly are: AWEALLM, PMATO, OTC and IDC. In determining the sign of the effects that these variables have on output, we would expect that high input (supply) factor costs will be a constraint to activity. AWEALLM and PMATO would fall into this category. OTC on the other hand is expected to have a positive sign. We make the assumption that the quality of those factors remain constant and that the costs associated with production cannot be immediately passed on to consumers. In essence, we argue that high costs of production reduce a producer's ability to make a profit, which is likely to lead to a reduction in output.

Having justified the inclusion of variables as a group, we will now look at each in greater detail.

*Average weekly earnings of all males* (AWEALLM) is assumed to have a significant bearing on the cost structure of the industry. Since building and construction is, in many of its facets, a relatively labour intensive industry, then we argue that labour costs will influence output levels. Positive changes in average weekly earnings will thus

have a significant bearing on the cost structure of building and construction firms in general. With at least part of this factor cost being passed on to consumers, even in a relatively competitive market, a lowering of output will eventuate, owing to the market reacting negatively to increased costs.

The second supply side variable that may affect the cost of output and thus its acceptance in the market place is *the price of building and construction materials used in construction* (excluding residential construction)(PMATO). The price of materials has a comprehensive effect on many of the factors that determine output. When material prices rise, these costs are either absorbed by the firm or released, either partly or wholly, into the price of the output. And consistent with the logic above, output will fall if the price of materials rise, *ceteris paribus*. Moreover, when costs such as building materials rise, firms attempt to initiate some form of substitution to lower cost materials, so that they may retain their ordinary output cost. A result of such a shift may cause productivity and/or output quality to suffer. PMATO maps all such material substitution activity. It is because of these qualities that PMATO was included in the specification.

*Overtime* (OTC), it is argued, is likely to contribute greatly to output. Why this is so, requires the reader to think of overtime as non-ordinary hours work. In this context, it is construction work which occurs outside of 'normal' hours so as to reduce public inconvenience, or to fit in with supply or demand schedules. Beyond this, we could speculate that some aspects of work can only be done during certain parts of the year, such as road building in the tropics which means that more work has to be done each day leading to greater overtime hours worked. In short, from anecdotal evidence, it would appear that a significant amount of building and construction activity occurs

during the hours that are additional to the 'normal' working week. One only has to drive around a city at night to witness a profusion of road work activity that would cause massive traffic congestion in the day time, and because overtime hours pay a higher rate than normal time, workers who are willing to trade off leisure for higher wages are more willing to work overtime in order to supplement their normal wages. It is conceivable, although not supported with empirical evidence, that workers may actually cause work to be performed in overtime hours (or outside normal hours) so as to increase their wages. Additionally, employers may find it more attractive to have employees work overtime than employ additional workers during normal time. The attraction comes from lower marginal labour costs, where the working of current employees longer is cheaper than hiring more employees for 'normal' hours. The employer does not incur additional non-wage labour costs that a new employee working normal hours would.

The number of working days lost due to *industrial disputation* (IDC) is considered a supply variable because working days lost are an obvious disruption to the supply of labour. In the short term IDC should have a negative affect on output (nothing is being produced). Although, in the longer term, because IDC is a voice mechanism, output may actually improve because terms and conditions of employment may have changed for the better. With better conditions, workers may be more productive, and hence greater output may result. The shock effect of industrial disputation cannot be ignored either, with Freeman and Medoff (1984) putting great faith in the shock value of industrial disputation. They see it as a spur to employers to change labour relations procedures. Employers are given a valuable opportunity to re-assess factor management

and perhaps make changes which benefit the firm in the longer term. Also, with the annunciation of discontent, the employer has an opportunity to prevent costly exit.

By analysing IDC in this fashion, we could easily include it as a process variable. However, its exact location under whichever heading is not as important as its inclusion in the model.

### **Demand Side Variables**

In our model we also identify a variable that affects the demand for building and construction output. We use *Gross Domestic Product* (GDPI) to proxy the overall level of economic activity within the economy. GDPI is used in each of the three models presented in this paper, although the reasoning for its just inclusion differs somewhat from model to model. Those differences will become clear as each model is examined.

The general well-being of the economy as proxied by GDPI will have an effect on the output of the building and construction industry. The general level of demand within an economy reflects the level of demand for building and construction services. Increasing wealth and expectations will see a growing level of confidence within a society that will lead to an increase in demand for many products and services. These periods of economic expansion will, in turn correspond to an improvement in the demand for building and construction products and services. Changes to output will not always be a result of national economic activity due to various market response times or the counter cyclical policies pursued by governments. Such policies may involve greater expenditure on public housing or the implementation of loan schemes to induce an increase in the general level of demand for building and construction output. Similarly, major public works may be undertaken within the confines of an expansionary fiscal

policy in an attempt to increase the general level of demand within the economy with the attendant flow-on effects acting to increase output.

### **Process Variables**

Shifting to what we term process variables, *union density* (UD2), and *three dummy variables* (D1, D2, D3) will now be examined. We use the term 'process', because we see these variables as aiding, or hindering the production *process*. Having brought labour and capital together, these process variables help to determine how well labour and capital are combined, and hence their effect on output, productivity and profits.

The economic impact of unions is central to our studies, so the union density variable (UD2) is included. Even so, the questions of 'if' and 'how' unions affect output, is not clear. This study makes no prior assumption as to the impact of trade unions on output in the building and construction industry. This is in contrast with other exogenous variables in our model where we can say that given the movement of an exogenous variable in a certain direction, the endogenous variable will move correspondingly in a predictable manner. Conflicting strands of theory and evidence surrounding this issue prevents us from assigning a positive or negative assumption.

Another reason to include the UD2 variable stems from the belief that unions negatively affect the economic performance of the industry. This was typified by the investigations into the industry in New South Wales, through the establishment of a Royal Commission that was to investigate productivity in the industry. More widely, through the 1980's and 1990's, the practices of organised labour have been intensely scrutinised in all industries, so the inclusion of union density in our analysis is a just one, if not for economic reasons than perhaps for political motives.

Our model employs three dummy variables (D1, D2, and D3). Each represents a major agreement between employers and unions within the industry. We assume that each will have a positive influence on output because of the greater dialogue between often warring parties, and the subsequent better understanding of each sides' views.

## Summary

In summary, when modelling output in the building and construction industry, variables from both the **supply** and **demand** sides need to be included. We must also factor in **process** variables that may impact on production. What is of specific interest to this researcher is the impact of unionisation in the industry. Thus the union density variable needs to be considered. The model could have been made more complex with the inclusion of many other variables, however this was thought to unnecessarily complicate the regression and in the pursuit of a more parsimonious relationship we have settled on the model as described.

## PROFITS

The profit level of an industry is dependent upon a multitude of factors and relationships. Simply stated, profits are contingent upon the income that an enterprise makes from 'doing business' and the costs associated with that business. We employ GOS as the measure for profits within the industry.<sup>15</sup>

The measure chosen, although not without its problems, still allows for the direct comparison and aggregation of 'profits' from both the private and public sectors. For the

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<sup>15</sup> See Australian Bureau of Statistics, *Australian National accounts: National Income, Expenditure and Product (5204.0)* for a more complete definition of Gross Operating Surplus.

Public Sector, the measure of consumption of fixed capital is taken by the Australian Bureau of Statistics to mean profit. Generally, there is little profit contribution from this sector (see Australian Bureau of Statistics, *Australian National Accounts: National Income, Expenditure and Product*, (5204.0) various additions).

This discussion will begin by outlining and justifying the use of the endogenous variable profit. It will then proceed to an explanation of the model specified for our regression. Within this component, the expected signs of the exogenous variables will be expressed. A third section will proceed to justify the model specification, and a summary will overview and conclude this discussion and presentation of results.

### **Justification of Endogenous Variable**

The profitability of the industry is considered by this researcher to be a crucial indicator of this industry's economic performance, but why?

In answering the above question, it is not sufficient to simply draw attention to the obvious role that profit making plays for a private enterprise in a capitalist system. For we must also mention the potential employment opportunities that flow from profit making and highlight the creation of financial reserves used in the expansion of the industry. In short, there is a multiple of reasons why profits should be examined in this study.

### **Model Specification and Expected Signs**

To determine profit, we have chosen to use the same specification and model as the one used for estimating output. As with that model, ten variables are employed. Profits (GOS) being the single endogenous variable and nine exogenous variables. We employ

the same specification because, intuitively, the determinants for profits are broadly similar to those that determine output. We attack the problem of estimation by including variables from supply, demand and process perspectives. The consistent argument here is that any model that does not take into account all major influences on the endogenous variable distorts the relative importance of the included exogenous variable.

Below, we see the model in its mathematical form. With an explanation of each and their expected sign following.

$$\begin{aligned} \text{PROF} = & \beta_0 + \beta_1 \text{UD2} + \beta_2 \text{GDPI} + \beta_3 \text{D1} + \beta_4 \text{D2} + \beta_5 \text{D3} \\ & + \beta_6 \text{PMATO} + \beta_7 \text{AWEALLM} + \beta_8 \text{OTC} + \beta_9 \text{IDC} + \mu \end{aligned}$$

We know from our discussion of the output specification what each variable is, and we expect each to have the same directional impact, either positive or negative, that we expressed at that output specification discussion.

Supply side variables (PMATO, AWEALLM, OTC and IDC) should generally (with perhaps the exception of OTC), reduce a firm's ability to make profits. They may be considered costs to the firm, and in aggregate, the industry. The demand factor (GDPI) should raise the overall level of activity in the industry, thus making for greater production, and an overall greater level of profit. Judging by the wealth of debate within the literature regarding the impact of these types of process variables (UD2, D1, D2, D3), we cannot assume either a positive or negative influence on profits for all occasions.



## **Justification of Model Specification**

Why were these explanatory variables chosen? Simplicity of model specification is the key. As with the preceding output specification and the following productivity expression, the model is not designed to capture and explain all factors which impact upon the phenomenon under observation. Only the most important explanatory variables are included.<sup>16</sup> The model specified incorporates the essential variables that influence the level of profits in the construction industry. Supply side variables are included, demand side variables are included, and what is being termed here as process variables (union density and industrial disputes) have also been included.

## **Supply Variables**

Since profit and output specifications are the same, the discussion here will be brief, as the exogenous variables interact with both endogenous variables in a similar manner. Even so, a short summary of the variables used and their interrelationship with profit will aid later analysis. The variables within this part of our model are; PMATO, AWEALLM, OTC and IDC.

*Wage costs* (AWEALLM) were considered an essential cost variable. Many elements of construction are labour intensive, and the costs of employing this input into the production process must be considered a rightful inclusion in the empirical model.

Presumably, some of the increases in costs will be absorbed by the firm, with the actual amount absorbed depending on the elasticity of demand. Whilst some of the increases in wages can be passed on to consumers via higher product prices, other parts

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<sup>16</sup> Importance being determined intuitively and by reference to the literature.

of the wage increase must be paid for out of potential profits or through increases in productivity. For five of the twelve and a half years of our profits study, negotiated wage increases were supposed to be paid completely out of increases in productivity. In other words, wage increases were supposed to be cost neutral. We include the wage cost variable so as to determine its actual effect on profits even though wages are supposed to have had no effect for a considerable period of time. Even so, it is expected that it will have a negative influence on our endogenous variable.

Wages though, are only part of the labour cost associated with building and construction. Because of the sub-contract nature of the industry many who work at a building site work for themselves, as small business people. So their salary (paid for out of a percentage of their profits) was not regulated by the neo-corporatist framework of the Accords, nor was it regulated by various wage setting tribunals at either State or Federal level. In short, we do not fully factor in the possible effect that the non-wage sector has on profit levels.

The use of the *Price of Materials* (PMATO) explanatory variable can be defended by adopting the reasoning expanded upon in the wage costs section above. As wage costs are reflective of the cost of employing labour, then material costs are partly reflective of the cost of consumables. When this cost rises, firms may absorb the cost (which reduces profits), pass it on to consumers (which may see a fall in their share of the market as consumers look to lower cost options, which again may reduce profits) or they may switch to lower cost materials. The resulting reduction (presumably) in quality may shift the firm into a different market altogether which may see them prosper or

flounder. The conclusion is that profits can suffer if the price of materials used in building and construction rise.

*Overtime* (OTC) work invokes a higher than normal labour cost for the firm. A decision needs to be made regarding the marginal benefits of employing this more expensive labour resource when marginal revenues are taken into consideration. Clearly, overtime may both reduce or increase profits depending on how it is used. For example, the higher wage effect may lead to workers slowing the pace of work so as to prolong the gaining of this benefit. Assuming the firm is able to make a decision on the use of overtime free from political or industrial persuasion, then the variable OTC should have a positive effect on profits.

*Industrial Disputation* (IDC) operates similarly to when it is associated with output, that is, nothing is produced when work stops. But IDC is more of a cost to profits than output because it is not just the one-off shift in completion time that is experienced for a single strike, and hence a one-off lowering of output and therefore profits (assuming profit is linked to output). IDC is more of a cost to profits because with lengthening completion times for jobs comes additional costs, or penalties, usually written into building and construction contracts, for late completion of work. For example, if a building is not completed on time, then, obviously, the contracted tenant of that building cannot move in when they were expecting to. They may suffer costs because of it. However the tenant's contract will have compensatory clauses, which, given the above circumstances will see the builder 'fined'. Therefore, not only is the builder producing less due to the delays caused by industrial disputation, but they may

also be fined because of the delay. These delays and fines reduce the amount of profit earned. Hence, it is argued that IDC is a just inclusion to our variable mix.

Alternative thinking may see IDC being a positive to profits. Following the voice and exit argument presented elsewhere in this chapter (in the output and productivity sections), it is conceivable that the voicing of complaints gives the firm/industry an opportunity to react and make changes that may provide an opportunity to produce higher profits. The shock effect, explained elsewhere, also follows this line of argument.

### **Demand Variable**

GDPI describes the growth (positive or negative) in the economy as a whole. Assuming more income is generated, we conclude that the market will demand more product. The connection between an increase in income (greater demand for output/product) and a rise in profits is not always clear. For this link to exist, we must assume that the profit margin on output remains the same. Additionally, we must assume that demand for output rises faster than the introduction of competing firms able to supply that output/demand. Therefore, more units of output will be supplied by any given firm in the industry. And so, with more output per firm and a stable profit margin, aggregate profits (which is what is being measured by Gross Operating Surplus) will rise.

Rising GDP often leads to greater expectations within the market, thus generating more demand for the output and services of this industry. For example, with growing expectations and increasing wealth and confidence comes the possibility of increased investment in new construction projects, the revamping of outdated buildings, and so on. With a declining or stagnant GDP the opposite reactions will be observed.

## Process Variables

The process variables *Union density* (UD2) and *Dummy variables* for collective agreements (D1, D2, D3) are the only process variables included. It is necessary to include union density data to generate results which will be used to answer the central question posed throughout this thesis: 'Is a unionised work force an economic help or hindrance to the industry?'. We cannot compare firms by their union status. But by orienting our methodology to the industry perspective, our measure of unionisation, the rate of unionisation within the industry as a whole, becomes a valid exogenous variable.

The inclusion of this variable provides an opportunity for comparison with an abundance of literature on the subject. For as Hirsch and Addison so conclusively point out:

Despite substantial differences in methodology, data sources, units of observation, and measures of profitability, all studies of which we are aware find unionism to be associated with lower profits. (Hirsch and Addison, 1986: 211)

The reasoning for the inclusion of the dummy variables (D1, D2, and D3) representing agreements within the industry follows closely the reasoning for including the union density term. Each agreement involved unions bargaining with employer groups and we presume that both parties were satisfied with the outcome, although we acknowledge that the outcomes may not be optimal for either side. Their inclusion represents a stabilising influence within a troubled industry. In turn, this influence may affect profits in both a positive and negative fashion. profits may be positively effected because the working environment is more stable and firms can plan jobs on the basis of that stability. On the other hand, profits may be negatively effected because the

additional rules brought in by the agreement may constrain business activity and drive up costs.

## **Summary**

Our model attempts to explain the movements in profit by including variables that are expressive of its multi-dimensional nature. Not only are demand side issues dealt with, but supply and process variables are included. With the effects of unions being a prime area of investigation, the union density variable had to be included. Its theoretical necessity is somewhat debatable, although that inclusion opens the door for analysis that is directly comparable with a wealth of literature (see references cited above).

Overall, our model specification captures the essential elements of profit making. The model is complex enough to offer explanatory power to the endogenous variable under consideration, yet not so complex as to be unusable from a practical standpoint. The model specified captures the essential elements that explains the changes in profit levels over the period under review.

## **PRODUCTIVITY**

Productivity is the relationship between the flow of output produced and the things which are used to achieve that flow of output (Jackson and Silver 1979: 1).

Here we see Jackson and Silver neatly defining productivity. The flows spoken of illustrate the dynamic nature of productivity as it cannot exist only at a single point in time. Productivity analysis is a measurement of the dynamics operating in the production process over time.

At first glance, it appears easy to observe a finished product rolling down the production line and then look back along that line to see the five employees and the equipment that was used to make the product, and then decide that if one more employee was added, production could be doubled by speeding up the production line. *Viola!* An increase in productivity stemming from a labour input. But what if that additional employee did not lead immediately to a doubling of output? What if that employee could only function effectively if they were wearing ear muffs to reduce din from the sped up line? Where did that doubling of productivity come from? From the employment of the additional worker, or from the employment of a piece of capital: the ear muffs? It would seem that both are responsible, but in what proportion?

This short-round of hypothesising illustrates the advantages of analysing the relative impact of both capital and labour on the production process over time in a total factor productivity setting. As an abstract concept, total factor productivity is the ideal measure but in a world where there are difficulties in accounting for all forms of labour and capital, this productivity measure is problematic in the extreme. So we use a partial productivity measure. We look at output, and then divide it by the labour resource. This is not labour productivity. This is a measure of productivity that uses an output index and a labour index. To determine labour productivity, the marginal physical product of labour has to be differentiated from the marginal physical product of capital. This was not able to be achieved given the available data.

The output section of our productivity measure was expressed as the *value of work done*. Physical measures are ideal owing to the fact that they are directly comparable when of a homogeneous type. However physical measures of output within

the industry rarely take a homogenous form (see the example given in the output section), so we must use a value of work done measure (our output endogenous variable). Our labour measure is based on the average number of hours worked each week. A uniform quality is assumed for each hour worked by any employee within any section of the industry. We considered other measures such as the numbers of employees, and average normal time hours worked, but settled on the average total hour figure because it represented all the hours that employees were employed for. It is important to not move too far from the ideal and we believe that by using this measure we maintain a link to a real, physical measure of one element of the production process.

We feel that given the nature of the industry, a simple productivity measure based on labour inputs is reasonable because it is labour intensive, and there has been no widespread use of new machinery or tools or technology within the industry over the period under review.

### **Justification of Endogenous Variable**

Productivity was chosen as a measure of industry performance for a number of reasons. Firstly, there is a wealth of literature on the subject which incorporates the unionised labour element, and so a motivation for comparison exists. Secondly, productivity was a most discussed issue for much of the sample period. Productivity slowdowns had been reported in both the United States and Australia, and the actions of organised labour and their political representatives often had a productivity focus. The Accord from 1987 is one example of this. In short everyone was talking about productivity, and many tried to do something about it. The third reason why it is a just inclusion stems from a perception that existed which viewed unionised labour as a hindrance to Australian



productivity in general, and the Building and Construction Industry in particular. This attitude was typified by the forming of a Royal Commission in New South Wales that closely observed the activities of the participants in the Building Industry in that State. Thus productivity was topical, comparable and timely (especially so, given the Royal Commission's productivity research).

Productivity is also an essential element to the well-being of a firm. If the cost of inputs into the production process rise faster than the returns to production then *ceteris paribus*, the firm will eventually lose money in the longer term. Labour and capital inputs, effectively, take a greater share of the surplus product, resulting in a squeeze on what is available to the capitalist. When there is not enough surplus product (which we may loosely term profit) available for re-investment then production will cease to exist. And by extension, the problems of the firm will then become the problems of the industry if the process is repeated across enough firms. Clearly, healthy productivity growth within an industry not only staves off that industry's decline, but may free up resources so that they may be better utilised in other sections of the economy.

### **Model Specification and Expected Signs**

Seven exogenous variables are employed in the pursuit of productivity estimation. As with the output and profit specifications, the productivity model seeks to explain the shifts of the endogenous variable by examining the issue from more one side of the production process. By looking at Supply, Demand and Process variables, we have aimed to produce a balanced appraisal of the phenomena under investigation.

We see below the mathematical form of the productivity model.

$$\text{PROD} = \beta_0 + \beta_1\text{UD2} + \beta_2\text{GDPI} + \beta_3\text{D1} + \beta_4\text{D2} + \beta_5\text{D3} + \beta_6\text{AWEALLM} + \beta_7\text{IDC} + \mu$$

Once again, the specification is largely the same as for the previous two performance indicators and expected signs remain the same also.

The Supply variables are AWEALLM and IDC. The single Demand variable is GDPI, and the process variables are UD2, D1, D2, and D3. Most variables as specified should raise productivity with only UD2 and IDC, possibly bringing forth a decline. Alternatively, UD2 may be associated with a positive outcome.

### **Justification of Model Specification**

The productivity model differs slightly from the profit and output specifications by not including the PMATO and OTC variables. No rationale could be used to include PMATO and the overtime variable (OTC) because, if included, we would experience problems of collinearity as the productivity variable has a measure of working hours in it and overtime hours are part of that figure.

What is left is an amorphous, if not eclectic collection of variables that we hope will largely explain the shifts in productivity levels within the industry. And to do this, we again identify variables that fit into one of three categories (Supply, Demand and Process).

### **Supply Variables**

We assume, on balance, that when the *average wage earned* (AWEALLM) per worker improves then so too will productivity. The worker will work harder, more skillfully, or take less breaks. In short, more work will be done per labour resource applied to that

work. However we do not discount the possibility that a wage increase will not lead to a productivity improvement owing to the issue of relative wages. That is, workers may have demanded a wage increase based on what they perceive as fair treatment relative to other workers' wages in other industries. Thus wages may rise but productivity may remain static, because workers may see it as their right to receive that wage increase based on general wage expectations within the wider economy, and not because they are working harder within their industry. If wages rise faster than productivity, then the labour cost will rise faster than the ability of the firm/industry to pay for it. This will feed back into the costs of the firm/industry, which returns us to the analysis presented in the output section. Namely, production costs rises will be passed partly onto consumers in the form of higher product prices, with the chief consequence being that demand may fall. With lower demand, and the same amount of labour input, we will see a decline in labour productivity. Hence, higher wages may produce lower productivity.

The number of working days lost due to *industrial disputation* (IDC) is included because of its effect on output. Obviously nothing is being produced during strike action, and even though we assign an expected negative influence to IDC, the fact that industrial action is taking place suggests that employees are disgruntled with present terms and conditions of employment. This disgruntlement alone may negatively influence output and productivity, so, in turn, where employees are able to voice their problems and perhaps have those problems rectified, output and productivity may actually improve post strike. Thus IDC may actually have a positive affect on productivity in the longer term. We include IDC under the supply heading, but like its use in the output and profit models, it could easily be used under the process banner.

## **Demand Variable**

*Gross Domestic Product* (GDPI) is included because it represents the possibility that firms will start to use their resources more productively. It is argued that in times of lower economic activity firms will not shed all those productive resources that are not being utilised to their full capacity, thus during the upswing period, those retained but under utilised resources will become more productive. We consider this industry to have some form of organisational slack, or x-inefficiency, and thus the measure of overall economic activity is a just inclusion.

## **Process Variables**

*Union density* (UD2) is included because it is the focus of our investigation, but can its inclusion be justified? We believe so, considering that the union has significant social, industrial and economic roles to play within the industry, all of which influence productivity outcomes. Unions have been severely criticised for what has been seen as their role in reducing the ability of employers to deploy labour resources efficiently. Yet their positive role in disciplining members and enforcing unified agreements and so on, have not been widely quantified. Our study does not seek to quantify those individual elements which are attributable to a union influence, but instead we assume that the UD2 variable captures and measures the effects of those individual elements.

Without going into great detail at this point (because it has been covered elsewhere), it is sufficient to say that unions may provide employers with efficiency gains across the spectrum of the employment relationship: from the hiring of workers through to disciplining and job control, to the retaining of those workers through the use

of a voice mechanism when they may consider exit as an option.<sup>17</sup> Alternatively, unions may have a detrimental affect on productivity by slowing work down, by insisting on overstaffing, or any such practice that encourages a less than efficient mix of labour and capital resources.

Our *dummy variables* (D1, D2, D3) are not to be treated as a homogeneous group. They represent major agreements between organised labour and employers within the industry and it is assumed that they will have a positive influence on productivity, as it is unlikely that either employers or unions would knowingly negotiate agreements that would be personally detrimental. D1 represents an agreement made early in the piece (1984) which sought to 'normalise' relationships within the industry, as well as introduce a range of measures which dealt with various employee/employer/union issues. The D2 (1987) agreement was born out of the directives of the Australian Conciliation and Arbitration Commission and effectively dealt with what was prescribed in the Accord of that year (Mk III). Our D3 variable represents an industry agreement on redundancy signed in mid 1989. Effectively, this agreement gave workers a form of assurance that if a firm was ailing and had to shed workers, then there would be compensation paid to those workers being put off. This agreement brought some certainty to the industry (from an employees point of view) when property speculators were finding it increasingly difficult to sell or find occupants for buildings that had already been built. It is assumed that each variable in this group will have a different level of influence on productivity within the industry.

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<sup>17</sup> Although this last gain, we argue, would at best be small - the reasons why, we have expanded upon elsewhere. See Chapter 2 for a discussion of the likely limited effects of exit in the Australian Building and Construction Industry.

## Summary

Our productivity specification, like the output and profit specifications has attempted to capture much of what may affect the way that work is done. With an emphasis over the period on microeconomic reform of the labour market, and reform of the relationship between organised labour and management, a need existed to include the union variable. The dummy variables also needed to be included because they represented attempts to improve the employment relationship. But we were also required to look at factors beyond the labour/management relationship, and by including variables that impact on the costs of production, and the general level of demand, we were able to produce a balanced expression.

## DATA SOURCES

Having detailed the models we will employ, we must explain some of the more important features of the data used in the regressions. To this end, we show where and how the data was originally collected by the collection agency (typically the Australian Bureau of Statistics (ABS)), how we manipulated it and the problems associated with that manipulation.

Table T5.1 groups the variables according to their source origins. The following will briefly describe the intrinsic characteristics of the raw data as defined by their method of calculation. To do this we will group the variables according to their origin, that being the Australian Bureau of Statistics, the Construction, Forestry, Mining and Energy Union (CFMEU) and the Reserve Bank of Australia (RBA).

*Table T5.1*  
*Variables Grouped According Source Origins*

ABS	Union (CFMEU) Evidence	Calculations From Previously Identified Variables	RBA
PMATO	D1	PROD	R1
AWEALLM	D2	UD2	
AHW	D3		
OTC	BWU		
IDC			
QC			
GDPI			
UNEM			
IUN			
IUR			
EP			

The most common way that our data was constructed by the Australian Bureau of Statistics involved a population survey. This involved the interviewing of approximately three fifths of one percent of the entire population of Australia. The reporting of the results may be made monthly (UNEM), or quarterly (AHW, IUN, IUR, EP). The information for material prices (PMATO) is in the form of a weighted average for six State capitals. Index numbers are used, with the collection point occurring in the middle of the month.

Our labour cost variable (AWEALLM) deals with average weekly wages. To collect these figures the Australian Bureau of Statistics surveys approximately 5,000 workplaces to determine the sum of all pay periods in the calender quarter collected in the middle of the month in the middle month of the quarter. A further survey is used to calculate overtime (OTC, AHW and EP).

Industrial disputes (IDC) are reported to the Australian Bureau of Statistics where there have been ten or more working days lost. The information is largely obtained from employers with additional information gained from government agency reports and unions. Although not stated, it is assumed that the information is collected at the end of the month, as the figures used are aggregates for any particular month.

Output (QC) is survey based data that asks for an estimation of the anticipated value of the work done when sold. Previously collected by separate publications (now in the same publication), the figures that we have used are an amalgamation of the two data series (Building Construction and Engineering Construction).

Gross Domestic Product (GDPI) and profits (PROF) are collected at the same time. Our GDP figure is a consolidation of all production representing the payments side of the GDP. The PROF data measures the GOS of all private corporate trading enterprises, public trading enterprises and unincorporated enterprises.

Our union density information is crucial to the mathematical portion of this study. Clearly then, the data we gained from the CFMEU had to be of high standard, that is, free from collection bias or manipulation. We believe this to be the case. The reason is that only state based BWIU membership data for New South Wales, Victoria and Queensland is included in the BWIU variable (used in the construction of the UD2 variable). Of the members reported, only active members are included. Active members include those that are financial (paid up dues) or those who have been unfinancial, but for less than 18 months. The CFMEU data is sophisticated enough to distinguish between members who would be BWIU and those who would be BLF (and subsequently any members from amalgamations). Therefore we are only using union



membership data that relates to those who could have belonged to the BWIU even though the BWIU absorbed BLF members. As such, we are using BWIU membership data as a proxy for all union membership in the industry.

The Dummy variables used (D1, D2 and D3) represent the reported starting dates for significant agreements between the union and employers within the industry. This information was also collected from the CFMEU.

In addition to the above variables, we collected a borrowing interest rate variable for small to medium sized firms (R1). The RBA compiles this series from information supplied by all banks on the last working day of the month. We did not use R1 in any of our regressions.

## **DATA MANIPULATIONS**

Much of our data needed to be manipulated in some way so as to provide for quarterly observations. The most common manipulation (and the least problematic) was the conversion of monthly data into quarterly observations. One biannual series had to be converted into quarterly information, while still even more problematic is the converting of yearly data into quarters. This occurred with one variable.

Table T4.2 categorises variables according to their basic form of manipulation (or not). From table T5.2, we also note that two variables had to be constructed. This was usually achieved through simple divisions of one set of data by another to form a third variable which was then used in our model. And finally, some of the data required no manipulation at all.

*Table 5.2*  
*Variables Grouped According to Type of Manipulation*

Monthly to Quarterly	Annual to Quarterly	Calculation	Already Quarterly	Dummy	Biannual to Quarterly
PMATO IDC AHW UNEM R1	PROF	PROD UD2	AWEALLM OTC GDPI QC IUN IUR EP	D1 D2 D3	BWIU

Having outlined the transformation of the form of the data, we will now detail how it was transformed. For example, data may have been compressed from monthly to quarterly observations, or expanded from a biannual observation period to fit a quarterly data regime.

When converting *monthly - non percentage* data - we compressed three months into one quarter through a process of aggregation. With data expressed in percentage form an average was taken of the three observations.

Annual data was replicated over the four quarters of the year. GOS is the only variable requiring this form of manipulation. The Australian Bureau of Statistics also publishes actual profit information although this tends to ignore much of the unincorporated sector. It is for that reason we discounted the use of it.

We gained confidential and accurate biannual financial membership figures (BWIU variable) from the leading union in the industry for three states (New South Wales, Victoria and Queensland) at six monthly intervals (February and August). From here we converted it into quarterly data by replicating the figures for two (2) quarters.

Variables requiring *calculation* involved bringing two variables together and dividing one into the other to form a new series. For example, with productivity, we simply used output (QC) as the numerator, and average hours worked (AHW) as the denominator. The union density variable was calculated in a similar fashion. We took the CFMEU data and divided this figure into the Employed persons variable (EP).<sup>18</sup> This gave us a proxy for union density in the Industry.

Three dummy variables have been included in all three of our models. As already explained above, they represent significant agreements within the industry between employers and employees. We assign values of 0 to the period preceding the introduction of the agreements and values of 1, on and after the agreement has come into force.

## EXCLUDED VARIABLES

Our models do not use all of the variables outlined in either table 4.1 or 4.2. Obviously some of those variables are used to calculate others and hence do not appear in their own right. But some variables were left out of the specification in order to achieve a parsimonious result.

The variables excluded are: UNEM, IUR, IUN, and R1. UNEM records the unemployment rate for the society as a whole. IUN details the number of people unemployed whose last job was in the industry. IUR records the unemployment rate for the industry. This rate was calculated by taking the industry's total employment and

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<sup>18</sup> Although the Employed Persons (EP) variable appeared in the preceding tables, it does not do so in the following tables because it was not directly used in any of the regressions. EP data like AHW data can be found in the February, May, August and November issues of the monthly Australian Bureau of Statistics, *Labour Force, Australia* (6203.0).

dividing by IUN. R1 is the borrowing interest rate for small/medium sized business. Largely, their omission stems from their collinearity with GDP and so it was thought best not to employ them lest our results are biased in some way.

\* \* \* \* \*

In summary, it should be noted that much of the data used in our study required some form of manipulation. Most of the manipulations have little effect on the intrinsic nature of those variables, although problems may be encountered with variables that may not have responded well to changes in their structure. The problems that may be encountered with the manipulations are dealt with below, but to better understand these problems, we should first examine just how the data was originally collected, prepared, and in itself manipulated.

**PROBLEMS OF DATA MANIPULATION**

The most problematic variable in terms of how it was manipulated is union membership (BWIU). We have 'stretched' the variable by replicating it over two quarters to make it fit into the quarterly observation regime as used. We can justify this by drawing the reader's attention to the process of becoming a union member. This involves members buying a 'ticket' (membership of the union) which lasts for six months, with ticket payments due in February and August. Hence, financial membership lasts for six months, and statistical membership lasts four quarters beyond that. So we foresee few problems associated with the manipulation of the BWIU variable.

The other problem associated with the BWIU variable relates not to how we have manipulated it, but how it represents union membership. As stated previously, we only use the BWIU membership figures from the CFMEU which are detailed enough to exclude occupations which would otherwise mean that the member would have been a BLF member. Hence, we are using only one group of members from one union within the industry to represent all union membership. And this is in an industry where workers in various sectors of it may belong to a union other than the CFMEU (BWIU). For example, the AWU or the Municipal Employees Union (MEU) may organise workers. There are potential problems associated with excluding these members.

The main problem this researcher can see relates to tenure within the industry. Given the transient nature of the industry's work force (examined in previous chapters), it may be concluded that those with greater industry specific skills are more likely to remain in the industry during less prosperous periods. These workers outlaid time to learn industry skills and would suffer a cost if they moved to another industry where those skills would be inappropriate. BWIU classified workers would fit into this category. Workers without those industry specific skills are more free to leave because there are less costs in doing so. BLF type workers, may be considered to fall into this category. Thus the BWIU type worker numbers will be more stable than the BLF type worker numbers. Hence, during more prosperous times, BLF type workers will flood into the industry increasing in proportion relative to the BWIU workers. During less prosperous times the reverse will occur. Therefore, the BWIU variable and by extension, the UD2 variable possibly over-represents union density during less prosperous times and under-represents it during more prosperous periods.

The alternative to our union density calculation is to use officially published (Australian Bureau of Statistics) industry union density data, however that only appears biennially, which would require data to be stretched from one observation to eight. This would cause more problems than the system implemented. We attempted to gain union membership figures from other state organisations including industrial registrars (or the equivalent), however the data was far from complete and no meaningful series could be developed.

Moving on from the potential difficulties associated with biannual extrapolation, we do not foresee any problems of condensing monthly observations into quarters. Equally, we envisage no major irregularities regarding the transformation of annual data to quarters owing to the nature of the variable in question, namely profits (PROF). By taking a brief look at the variable it will be shown that there are few methodological errors associated with the conversion.

We replicate the year's profit figure for all four quarters. We believe we can do this because much of the industry's output is controlled by only a few firms. We know this from Chapter 4. Therefore their output and we assume profits, are partly predictable by virtue of the degree of market concentration that these large firms enjoy. In essence, we assume that many of the larger firms in the industry have a reasonable understanding of what their level of profits will be in the coming year. Smaller firms may also have a degree of understanding of their profit levels because even though there is a high level of competition in the industry at the smaller firm end of the scale, we know that this competition can be mitigated by a range of factors discussed in Chapter 4. Therefore,

we believe that the method of data manipulation we have chosen for PROF will not adversely affect its essential characteristics.

In short, there are few problems with the variables as specified and modified, and should, in turn, produce an unbiased outcome.

## **ESTIMATION METHODOLOGY AND RESULTS**

### **Estimation Methodology**

The Cobb-Douglas production function is one functional form used when estimating the productivity or profitability impact of unions. And when employed by Brown and Medoff (1978) a positive union productivity effect was discovered. Subsequently, it has been used in many econometric studies into the effect of unions on productivity. It is therefore important to analyse the function and its limitations, and by doing so, we will better understand the result obtained from its application.

The function which appears below has been modified to incorporate unionised and non-unionised form of labour;

$$Q = AK^{\alpha}(L_n + cL_u)^{1-\alpha}$$

where  $Q$  is output,  $K$  is capital,  $L_u$  and  $L_n$  are union and non-union labour respectively,  $A$  is a constant of proportionality and  $\alpha$  and  $(1-\alpha)$  are the output elasticities with respect to capital and labour.

Logs are taken of the function in order to make it linear. Constant returns to scale is assumed (labour and capital elasticities summing to 1). The function is used to isolate the relative marginal productivity effects of unionised and non-unionised labour.

The modified Cobb-Douglas production function is not without its limitations. The first relates to the function's homogeneous nature. In reality the proportional increase in labour and capital applied to the production process is not mirrored by an equal proportionate increase in output. A further limitation has been noted by Shepard:

This qualification [the qualification that each factor of production is necessary for output] is a serious limitation, because none of the factors of production can finitely be substituted completely for another, implying limited alternatives in the technology (Shepard, 1970: 124).

In employing the Cobb-Douglas production function a difficulty arises in discriminating between the actual productivity effect and measured productivity effect, when using the valued added measure (Addison and Hirsch, 1989: 74). That is, higher prices in the unionised sector, may feed into the measured productivity effect, upwardly biasing the result. Another criticism relates to the situation which sees profit maximising firms adjust their mixture of capital and labour in order to take into account the union wage effect. More capital will be employed at the expense of labour, and as output will have remained the same, all that has happened is that there is lower employment, and thus a higher labour productivity figure (Reynolds, 1986)<sup>19</sup>. Addison and Hirsch (1989) observe another potential problem with the production function, that being the assumption of identical functions for both unionised and non-unionised firms. Do union

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<sup>19</sup> For a detailed discussion of Reynolds' criticism, see Addison and Hirsch, (1989, 74-76)



and non-union production technologies differ? Are there different management responses to the two forms of labour? We cannot ignore the possibility of different functional effect on output.

Addison and Hirsch (1989: 77) also raise the issue of simultaneity problems occurring when estimation of the production function is conducted by OLS. This leads to a biasing of results. Addison and Hirsch note that Allen (1987) resolves this problem by establishing separate cost and profit functions in order to measure the relative efficiency of unionised and non-unionised firms.

Moving away from the production function test, the use of cost functions, especially in industry level studies have the advantage of isolating industry specific variables, which in turn may give a clearer view of the actual union effect. But by moving to the industry level study a degree of generality is lost.

Another form of analysis involves direct firm on firm comparisons. Lansbury's (1992) case study directly compares two manufacturing plants in two separate countries, producing a product which is essentially the same. Mandelstamm (1965), offers a similar insight into an industry at the regional level. The case study approach, although not econometric, can be very useful because it pinpoints the areas in which a union can foster or hinder production. However the usefulness of the research beyond those plants or regions under investigation is questionable.

The use of the Cobb-Douglas production function along with cost functions may justly be criticised because of their biased estimation of the effect that the union has on the particular economic indicator under investigation. The determinants of output or profits cannot be explained solely by the phenomena that relate only to costs or

production. Studies that attempt to explain the determinants of these endogenous outcomes can only be overestimating the effects of the production or cost side variables employed.

We argue that output does not solely occur because inputs to the production process have been manipulated to produce a good or a service. Certainly, this is the basis of producing a good or a service but it also occurs because of the perceived needs or wants of the market. Therefore market demand should also be a crucial consideration when developing any model which purports to explain a firm's, industry's or economy's economic indicators.

We introduce market variables to our estimation function, which also incorporates cost and production input variables. By doing so we hope to capture the true essence of the whole production process. We believe that our specifications improve upon those functions that only examine production side variables, or those functions which limit themselves to cost variables. We now turn to the method we use in the estimation of our models.

We seek to regress the exogenous variables on the endogenous variable in question, be it productivity (PROD), profits (PROF) or output (QC) using the *Shazam* (No Co-processor version), statistical estimation package. The regression technique employed will be the OLS procedure. In this technique, certain assumptions are made, with the most important assumption being that there is a linear relationship between random variables. Other assumptions include: that the expected value of the disturbance terms is zero; there is no auto-correlation between disturbance terms; homoscedasticity exists (equal variance of disturbance terms); that there should be no covariance between

the disturbance terms and the explanatory variables; that the model assumes that no specification bias or error has been made; and that the correct variables are included.

With the OLS procedure, as samples change, then so will estimates. We estimate outcomes for the 13 year period, from 1984-1996. Even so, the model should be predictive outside of the sample time frame. Thus whilst the estimations are only true for the period under review, assuming exogenous conditions do not alter radically, the same model as used for the period above should also be useful as a predictor for the immediate years pre- and post- sample time frame. The actual testing of this hypothesis in relation to the study presented here, is subject to the availability of comparable observations.

OLS makes no assumption of probability distribution, but if we want to infer relationships, then an assumption must be made. That assumption states that the disturbance terms will follow some form of probability distribution. From this assumption, tests are then made on equation outcomes so as to determine the significance of the results. The  $t$  test is the most significant estimator of partial regression coefficients.

What is in the favour of OLS is that it is widely used, and is applicable to practitioners who are not familiar with more powerful estimation techniques. The OLS technique also allows for an application when more than one exogenous variable is influencing the endogenous variable. It is for these reasons that this estimation technique was selected.

## TESTS ON RESULTS

Having generated results from our regressions, we could, like many of the studies reported in the literature review, simply report our findings without testing their validity. It is to this end that we subject the results to the tests described below to give greater weight to our findings, which in turns adds a degree of uniqueness to the study. The tests employed consist of an examination of: the Durbin-Watson statistic, the RESET test, the  $t$  test, the correlation matrix, and finally, we apply the Bruesch-Pagan-Godfrey test.

The *Durbin-Watson* (DW) statistic is employed in order to detect any potential problems of first order serial correlation in the residual term. The problem of first order serial correlation may be a reflection of inherent serial correlation in the residuals or the omission of a variable which exhibits the same time-series properties. In the former case, the effect will be inefficient parameter estimates, however in the latter case, we face the problem of biased parameter estimates.

The test is conducted by comparing the calculated DW to a critical value derived from a set of uniquely determined DW tables. A calculated DW close to two implies no serial correlation problems, however if it is too low (close to zero) or too high (close to four), then positive or negative serial correlation appears to exist.

How correctly specified is the model? This is the question that the Ramsey *RESET* Test seeks to answer. We use the RESET test to determine if there are any 'bends' in the relationship between the variables. Predicted values of the model are fed back into the equation to determine whether they are significant. The newly formed prediction variable coefficients are tested to see if they jointly differ from zero in a

significant fashion. Mis-specification will be identified if the coefficients are jointly significantly different from zero. This is identifiable by comparing the relevant F-statistic to the critical F value. The predicted values when fed back into the model are squared ( $\hat{Y}^2$ ), sometime cubed ( $\hat{Y}^3$ ) and occasionally raised to the power of four ( $\hat{Y}^4$ ). As the model passes each test, it could be said to be 'better specified'.

The  $t$  test is used to test for the individual significance of variables. It helps determine 'whether the observed difference between the sample value and the population value hypothesised is real or due to a chance variation' (Maddala, 1992: 29). In other words, the test is used to 'quantify the strength of evidence in the data against a hypothesis expressed in a (0,1) scale' (Maddala, 1992: 32). The  $t$  test shows the probability of rejecting the null hypothesis.

Multicollinearity exists where two or more exogenous variables are linearly related. If multicollinearity exists it is difficult to separate the exogenous impacts of each variable on the endogenous variable. We can identify collinearity by using a *correlation matrix*, and by observing values within the matrix above 0.8 or 0.9 (Griffiths, Carter Hill, Judge, 1993: 435), we can suggest that a strong linear relationship exists between those two variables, and therefore suspect the presence of multicollinearity.

Heteroskedasticity is found where the disturbance term exhibits unequal variance. The major problem with heteroskedasticity is that it influences estimation efficiency. Another point to note is that heteroskedasticity is more likely to be present in cross-section data, as opposed to time-series data, although we still need to test for it when using time-series data.

We use the *Bruesch-Pagan-Godfrey* (B-P-G) test for examining whether or not heteroskedasticity is present in our time-series data. The B-P-G test works by regressing the squared residuals on some or all of the exogenous variables. Chi-Square tables are consulted to determine if the results fall below the critical level.

### LONG RUN PARAMETER ESTIMATES

The following tables (T5.3, T5.4, T5.5) illustrate the estimated coefficients produced by our models.

Table T5.3  
**Output Specification:** *endogenous variable - QC*  
*(Value of Building and Construction Work Done)*

Variable	Coefficient	t Value	Expected / Not Expected
Constant	2457.0	0.9466E-01	
UD2	106.90	2.152 *	Expected / Not
D1	472.81	0.9340	Insignificant
D2	-24.076	-0.4280E-01	Insignificant
D3	733.44	1.320	Insignificant
PMATO	-84.385	-2.123 *	Expected
AWEALLM	-2.7135	-2.122 *	Expected
OTC	676.24	3.581 **	Expected
GDPI	0.15948	3.084 **	Expected
IDC	-0.30877E-03	-0.1179	Insignificant

\* Significant at the 5% level.  
 \*\* Significant at the 1% level.

R<sup>2</sup> = 0.6564, Durbin-Watson = 1.7977 (upper = 1.86, lower = 1.156), Breusch-Pagan-Godfrey = at 5%, 9df = 3.638 (19.0228), RESET (2) = 1.0131 (4.08), RESET (3) = 0.54396 (3.23), RESET (4) = 0.37864 (2.84)  
 N.B. Critical values set in parentheses.

**Table T5.4**  
**Profit Specification: endogenous variable - PROF**  
**(Gross Operating Surplus)**

Variable	Coefficient	t Value	Expected / Not Expected
Constant	-2989.3	-4.006	
UD2	42.745	3.062 **	Expected / Not
D1	-13.482	-0.1086	Insignificant
D2	-60.581	-0.4305	Insignificant
D3	29.269	0.2119	Insignificant
PMATO	-3.2788	-0.2940	Insignificant
AWEALLM	-0.28598	-0.9189	Insignificant
OTC	112.04	2.207 *	Expected
GDPI	0.53531E-01	3.277 **	Expected
IDC	-0.10021E-02	-1.497	Insignificant

\* Significant at the 5% level.

\*\* Significant at the 1% level.

$R^2 = 0.9368$ , Durbin-Watson = 1.0611 (upper = 1.986, lower = 1.156), Breusch-Pagan-Godfrey = at 5%, 9df = 13.471 (19.0228), RESET (5%) (2) = 0.64643E-01 (4.08), RESET (5%) (3) = 1.4046 (3.23), RESET (5%) (4) = 1.1671 (2.84)

N.B. Critical values set in parentheses.

**Table T5.5**  
**Productivity specification: endogenous variable - PROD**  
**(QC/EP)**

Variable	Coefficient	t Value	Expected / Not Expected
Constant	70.693	1.041	
UD2	1.8383	1.539	Expected/Not
AWEALLM	-0.60467E-01	-1.647 *	Not
D1	10.927	0.7515	Insignificant
D2	-4.4156	-0.2774	Insignificant
D3	0.34946	0.3335E-01	Insignificant
IDC	0.55604E-04	0.7656	Insignificant
GDPI	0.18919E-02	2.339 **	Expected

\* Significant at the 10% level.

\*\* Significant at the 5% level.

$R^2 = 0.4535$ , Durbin-Watson = 1.6465 (upper = 1.875, lower = 1.246), Breusch-Pagan-Godfrey = at 5%, 7df = 6.412 (16.0128), RESET (2) = 0.24482E-01 (4.08), RESET (3) = 0.12262 (3.23), RESET (4) = 0.25907 (2.84)

N.B. Critical values set in parentheses.

## DIAGNOSTIC TESTS ON RESULTS

The results presented above were subjected to several diagnostic tests. The first test involved comparing the calculated Durbin-Watson statistics with the upper and lower boundaries published in the Durbin-Watson tables at the 5% level. For the output and productivity regressions 52 observations were used. For profits, 50 observations were recorded. As a result we used the 50 observation mark on the tables. Productivity and output fall within the upper and lower ranges, while profits fell just below the lower range. We can conclude that there is inconclusive autocorrelation evidence associated with the output and productivity models, although there is some degree of an AR(1) process operating in the profits model. We can conclude that for the profits specification there is some correlation in the error terms. This may result in a loss of efficiency of the specification and a degree of bias. It may be the result of omitted variables.

The Ramsey RESET test found all regressions falling below the critical levels. We can conclude that the models cannot be rejected based on functional form misspecification.

The  $t$  test which tests for the individual significance of variables was performed and reported in the tables. The output regression reported three variables significant at the 5% level (UD2, PMATO and AWEALLM), and two variables at the 1% level (OTC and GDPI). The profit regression had one variable significant at the 5% level (OTC) and two variables significant at the 1% level (GDPI and UD2). The productivity regression reported one variable significant at the 5% level of significance (GDPI) and one variable significant at the 10% level (AWEALLM). The union density variable fell just below being significant at the 10% level.



The test for multicollinearity involved examining the correlation matrix for each regression. In the discussion of the tests, it was found that there is a possibility of multicollinearity where numbers in the correlation matrix are found to be above 0.8 or 0.9. No figures of 0.9 exist within any of the three matrixes. But at the critical value of 0.8, in the productivity regression, the possibility of multicollinearity was found to exist between two sets of variables: D2 and UD2 (-0.84332), and GDPI and D3 (-0.80548). Likewise, at 0.8 in the output regression, multicollinearity may exist between GDPI and UD2 (0.81886). For the profit regression, two sets of variables indicated the possibility of multicollinearity at the 0.8 level. Those were: GDPI and UD2 (0.86536) and PMATO and GDPI (-0.87779).

If we choose 0.9 as the critical levels to accept the existence of multicollinearity then we have found none. But if we lower it to 0.8 then there may be some degree of multicollinearity and it will be difficult to accept that the sets of variables identified above are truly independent. If there is a lack of independence between the explanatory variables then we may be observing an understatement of the importance of the variables observed by the  $t$  test.

We also tested for heteroskedasticity using the Bruesch-Pagan-Godfrey (B-P-G) test. At the 5% level, all results comfortably fell under the critical level, and as such we can assume no heteroskedasticity in any of the three regressions.

**ESTIMATES OF UNION EFFECTS ON OUTPUT, PROFITS AND PRODUCTIVITY AND OTHER ESTIMATES**

From the regression results presented in tables T5.3, T5.4 and T5.5, we are able to determine the extent to which unionisation is able to affect output, profits and productivity.

The union density coefficient in table T5.3 registered 106.9. This suggests that for a 1% positive change in the density of unionisation in the Australian Building and Construction Industry, there will be a corresponding positive change of \$106.9 million in output. From our regression results it would appear that unions are positively associated with output.

Table T5.4 shows the union density variable recording a coefficient of 42.745. This means that a 1% positive change in union density results in a \$42.745 million improvement in profits in the industry.

Union density was not found to be significant in our productivity model, therefore we can not conclude that an increase in unionism leads to either a positive or negative change in productivity. However given the strong positive signal generated, and a result nearing significance at the 10% level, we would have to argue that if productivity and unionism are tentatively related then we suggest that that relationship is a positive one.

The following table, Table T5.6, presents the full list of variables that proved significant in our models and their estimated affect on output, profits and productivity.

*Table 5.6*  
*Dollar (\$) Effects of Changes in Statistically Significant Variables*

Perform, Indicator/ Variable	Coefficient	Estimated Effect of a 1 Unit Change
<b>Output</b>		
UD2	106.9	\$106.9m
GDP	0.15948	\$159,480
OTC	676.24	\$676.24m
AWEALLM	-2.7135	-\$2.7135m
PMATO	-84.385	-\$84.385m
<b>Profits</b>		
UD2	42.745	\$42.745m
GDP	0.053531	\$53,531
OTC	112.04	\$112.04m
<b>Productivity</b>		
GDP	0.0018919	\$1,891.9/ave.wk/hr
AWEALLM	-0.060467	-\$60,467/ave.wk/hr

For example, a one unit change in GDP will lead to a change of \$159,480 in output.

Since GDP is measured in billions of dollars then 1 unit equates to \$1 billion.<sup>20</sup>

## CONCLUSION

This chapter has outlined the method used to investigate the relationship between output, profits and productivity and their attendant exogenous variables. The data used in the regression equations have been discussed, and the results of those regressions have been presented along with the tests of those results.

We have reported that the output regression found five variables to be significant. Those being: UD2, PMATO, AWEALLM, OTC, and GDPI. The profit

<sup>20</sup> Caution must be exercised when reading these figures. This is because, say in the case of GDP, when there is a one unit change, output alters by only a small amount. However GDP may alter in a quarter by, say \$10 billion, thus producing a change in output of \$1,594,800.

model found UD2, OTC and GDPI to be significant, and the productivity model has AWEALLM and GDPI as significant variables. The profit model was suspected of having a small degree of autocorrelation. There is also possible evidence of multicollinearity in all three models, although if we accept multicollinearity to be present when the test statistic is set at 0.9, then there is unlikely to be multicollinearity present. Finally, we report that no heteroskedasticity was found.

We have sought to provide evidence by mathematical means in order to explain the relationships between the three endogenous variables and trade union density (as well as other exogenous variables). We now need to analyse the results, paying attention to other forms of evidence that may help to explain the role that trade unions have played in the determination of output, profits and productivity within the industry.

# CHAPTER 6

## *ANALYSIS OF RESULTS*

### INTRODUCTION

We now begin to answer the fundamental question posed throughout this thesis. In this chapter we will attempt to determine whether trade unions are a help or hindrance to the economic performance of the Australian Building and Construction Industry. To do this we will bring together our econometric results and the experiences that we have noted through our examination of the industry's history and its current circumstances. Our econometric results, which we will firstly recap, suggest that unions have either a positive or insignificant influence on the economic performance of the industry, depending on which economic performance variable is examined. It is a result which it could be argued was unexpected given the negative feelings surrounding the role of unions in the industry.

After presenting our statistical findings we will attempt to place this evidence in a context relevant to the industry as it stood during the period 1984-1996 and not to the industry of the 1970's or before. By examining our statistical results through the 'lens' of current industry circumstances, we hope to be able to develop an argument that demonstrates that our statistical results are a real and likely consequence of union involvement in the industry rather than a spurious association of irrelevant data producing an outcome of no real consequence.

We argued in Chapter 3 that the characteristics which defined unionism in the 1960's and 1970's, that is overtly militant and even industrial sabotage were not pursued by unions to the same degree from the mid 1980's. So while many studies and investigations have identified union associated inefficiencies when examining the industry during the 1980's and to a lesser extent the 1990's (see for example, the New South Wales Royal Commission into Productivity in the Building Industry, or various reviews by the Department of Industrial Relations), we believe that the unions have transformed themselves. We believe that some of the tactics that unions still employ do exert a negative influence on the economic performance of the industry, but that these negative tactics are more than outweighed by the positives associated with unionism.

In order to judge the effectiveness of the union transformations we must employ an analytical framework. The **exit/voice** (and shock effect) theory is the one that we have chosen. We argue (along the lines of Freeman, 1976) that exit is not a major cost to employers in this industry and therefore the type of voice which mitigates exit, if it is occurring, is not a large benefit to the industry. Voice though, can have benefits other than the mitigation of exit behaviour. Voice can positively influence the way that employees work and the industrial relationships that employees can have with employers. Voice though, can have another 'face'. Voice can also be destructive. We argued that a great deal of union voice in the 1970s and 1960's was possibly a net negative influence on the economic performance of the industry. We believe that overall, the type of union voice displayed in the 1980's and beyond is in marked contrast to the earlier stated period and it is this voice which may have allowed unions to become a positive influence on output and profits.

We do not expect to be able to categorically state that unions are a positive or negative force in this particular industry. We do however expect to provide enough evidence which will allow us to speculate with some degree of researched assuredness that the unions of the mid 1980's to the mid 1990's are quite likely to be either a positive or neutral influence on the economic performance of the Australian Building and Construction Industry.

## **ECONOMETRIC EVIDENCE**

The results of the econometric study are reported in the previous chapter, however a brief summary of the findings will now be presented.

Three economic performance indicators were tested for their response to changes in union density (amongst other variables). The three indicators are, output, profits and productivity. Of the three, our output model exhibited the greatest degree of predictive power by virtue of the fact that this model had the largest group of variables which proved significant at the 5 or 1% level. The variables which proved to be significant and to have a positive influence were: union density; GDP; and overtime. The price of materials used in construction and wages proved to have a negatively significant influence. All variables in this model, not just the ones proved to be significant had the expected signs except for a dummy variable representing an agreement made within the industry between unions and employers. That dummy variable's t value was insignificant. What our results for this economic indicator suggest is that output will rise because, GDP rises, overtime rises, union density rises, wages fall, and the price of materials fall.

Our profit investigation had less variables significant than the output model. Here, only union density, GDP, and overtime proved positive and significant at either the 5 or 1 percent levels. No variables were negative and significant. Most signs were as expected, with only the first two dummy variables recording signs that contradicted expectations. Interestingly, an increase in union density was found to have a positive effect on profits, an outcome which we elected not to place an expectation on. Even so, a positive union effect on profits would appear to run counter to much of the literature on profits reported in our literature review (Chapter 2).

Finally, our productivity model resulted in only two variables proving significant. But to achieve significance for these two variables, we had to stretch our acceptance level to 10 percent. At this level, wages proved negative and significant. At the 5 percent level GDP proved to have a positive effect. Union density had a positive sign although it just failed to prove significant at the 10 percent level. More unexpected signs were found in this model than in either of the other two models.

As reported in the previous chapter, we performed a number of diagnostic tests on the estimated specifications with the models proving to be well specified and largely devoid of econometric ailments. We believe for this reason, that our models and results are valid. Perhaps the only real concern lies with the productivity specification's poor reflection of the determinants of productivity, which is perhaps a function of the measurement employed - output divided by labour input (average product of labour). Capital inputs were not included which weakens the validity of this measure.

In terms of the monetary value of union density to the industry, for a 1% rise in union density, there will be a \$106.9 million positive change in output, and a \$42.7



million positive change in profits. We cannot accept the union density result for productivity because it falls well below the 5% accept/reject level, and even fails at the 10% level.

In conclusion, a rise in union density was found to have a positive 'sign' on all three economic indicators. The union variable was significant at or above the 5 percent level in two of the models and in the third, productivity, slightly below significance at the 10 percent level.

### **IS THERE SUPPORT FOR OUR FINDINGS IN THE LITERATURE?**

As our literature review showed, there is not a great deal of research devoted to the union impact on output. We are therefore left with a thin relevant body of research with which to compare our output regression results. There has however been far more research conducted into the question of the union effect on profits. There is even more research available to which we can compare our productivity results.

#### **Output**

As stated above, there is little international or domestic research with which we can compare our output results. In terms of methodology, parts of the literature on productivity may relate closely to our output investigation. We argue that studies which determine productivity by simply looking at output, or by considering the relatively simple labour/output ratio, are fundamentally similar to our output (and productivity) investigation. Studies which assign relative importance to capital and labour through some measure of the investment in capital or the costs associated with labour, employ a

fundamentally different methodology which generally precludes direct comparison of our output results with those studies.

We only found two studies which examine output as a measure of productivity. Both of these examined the public sector and both employed cross-sectional, rather than time-series data. The first (Meador and Walters, 1977) used output as its measure of productivity and found that unionisation was associated with a large reduction (between 17% and 9%) in output. The industry examined was public universities and the measures of output were published articles and peer survey evaluations. The second study using an output measure as the proxy for productivity found that collective bargaining and hence unionisation did not significantly affect public library output (Ehrenberg, Sherman and Schwarz, 1983). Given the disparate nature of the industries in these two studies and the building and construction industry, there is little basis for comparison.

The results of our output regression are perhaps more adequately explained by examining the changes made in the industry which affect the way union/employees interact with employers. We do this in the section: 'Overview of the Changing Union Influence', which follows our discussion of our productivity results. It is here that the reader will be able to see how the union's role in the industry changed significantly, and how employers even began to see that unions could be a positive force in the economic performance of the industry.

## Profits

As we saw in our literature review (Chapter 2) the majority of the literature has pronounced unions to be a negative influence on profits, however our empirical results suggest that there may exist a positive relationship between union density and profits in the Australian Building and Construction Industry. We are therefore at odds with the bulk of the research conducted on the union effect on profits issue, but not all of it. We reported that the British evidence on the union effect on profits was less than conclusive when the union effect was reduced down to the industry level - precisely the level of analysis which we have employed. Where there is a reported negative union effect in an industry in Britain, it has been in the manufacturing industry. This is a sector of the economy which may or may not have been in decline at the time of the investigation and which is generally heavily unionised. Thus if the industry was in decline for the period of the study and high levels of unionisation still remained then it is no wonder that unions would be associated with lower profits.

The degree of industry concentration has also been considered a factor in the union's ability to be associated with lower profit levels. Clark's (1984) observations aside, investigators in the United States (e.g. Karier 1985; Freeman and Medoff 1984) have found that unionism and lower profits are more associated when there is a high level of industry concentration. Our industry is highly concentrated, and as Chapter 4 illustrated, is characterised by a strong dichotomy. That dichotomy consists of a relatively small number of large firms who control a near majority of the market, and a vast number of smaller firms competing for a slice of what is left of the market. Our results do not reflect those of Karier or Freeman and Medoff, and find some support

from the research of Clark. However our results do suggest the opposite to what is generally considered, and even though the United States and British evidence which fails to find a link between unions and lower profits does not establish a positive causal link, we do find some freedom in their results to suggest that in the Australian Building and Construction Industry, greater degrees of unionism may result in higher levels of profit.

To further understand how we may have generated these results, we should revisit first principles and ask why unions are assumed to reduce profits. The most obvious source of this perceived negative effect is with the union's rent seeking. Unions, partly through their monopoly-like position, bargain for higher wages which must come from the surplus generated by firms earning supernormal profits (Booth, 1995: 211-212) otherwise all or part of the additional cost must be passed onto consumers. If the increased wage cost cannot be passed on, then firms will experience a reduction in the potential amount of profit. But does this case apply for our industry during the period of review?

For the first three years of our review (1984-1987), the Accord wage setting regime effectively caused real wages to fall. In other words, wages did not keep pace with inflation. Beyond that, until 1991 wage increases were meant to be at least cost neutral (Norris, 1990; W.F. Mitchell 1991; W.F. Mitchell, 1992), so that they were meant to be paid for by productivity improvements. Even after the breakdown of centralised wage fixation, a recession in the early 1990's continued to have a depressing effect on real wages growth. Therefore for more than half of the period under review, under the Accord wage fixing system, the wages of most employees who relied on award variations to gain wage increases were either reduced in real terms or were altered in such

a way that their effect would be cost neutral and not negatively impact on profits. We know from our review of the industry's history in Chapter 3 that even though building and construction unions placed considerable strain on that wage setting regime, it did manage to hold. As a consequence, we can say that real wage increases should not have been a factor in reducing the industry's profit levels at least for the period 1984-1991. This is supported in theory, as expressed by Freeman and Medoff (1984: 188) where they suggest that profits may rise in association with unionism where unions have been part of a bargain that reduces real wages or compensates for wage increases through productivity advances. This is precisely what the Australian Building and Construction Industry experienced.

With wage setting being decided at levels beyond the individual firm and its workers, and lasting for periods of a year or more, a degree of assurance existed regarding the cost of employees to a firm. There is some anecdotal evidence from the period immediately before our study which suggests that where both sides know what the wage outcome is, and the bargain has a degree of longevity, say two years, then productivity, harmony and presumably output and profits may benefit (Nicholls, National Construction Industry Conference, 1983: 34). However, it is unclear whether these were the exact outcomes during the period of falling real wages or cost neutral wage increases.

Wage increases though are not the only way that unions can drive up the cost of the labour resource. We know from Chapter 3 that a union induced redundancy scheme came into effect in the period under review, and we know that the superannuation issue gained prominence. Superannuation was actually thought of as payment to workers in lieu of wage increases, which in other words means that it is a deferred wage increase.

These two costs (the redundancy scheme and superannuation) would have reduced the potential profit level. The question is: 'Were they partly offset by the reduced real wage employers had to pay?'. We cannot answer such a question without examining detailed data on the issue, data which is difficult to come by. We can conclude that although real wages fell over much of the Accord period, labour costs may not necessarily have fallen. Superannuation and redundancy costs may have been in part or totally offset by the falling wage costs. Anecdotal evidence gained from speaking with tradesmen about this period suggests that insurance costs rose significantly over this period, which also contributed to the rising cost of employed labour.<sup>21</sup> Freeman and Medoff suggest that even if wages (or labour costs) rise through union action, profits may still improve through the extension of those labour costs to all firms in the industry. They state that union induced...

cost increases in an industry lead the industry to charge monopoly-level prices...[where] the union acts, indirectly, as the cartelizing agent in the sector, forcing all firms to act in such a way as to bring the industry closer to the price and output position of a pure product-market monopolist (Freeman and Medoff, 1984: 188).

Given that many industry costs have been centrally regulated by Accords, awards, and pattern agreements, it could be fair to say that the above theory above may operate in the context of the Australian Building and Construction Industry.

Unions may reduce potential profits by being associated with lower levels of productivity. They may reduce productivity in a number of ways, but primarily by

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<sup>21</sup> Information based on personal, informal discussions with a number of tradesmen over the period 1995-1997.

‘restrictive work practices’ and industrial disputation. We have already discussed these issues, and we have found that employers may be partially responsible for the restrictive work practices imposed by unions, and that industrial disputation in the period under review fell considerably compared to the preceding 14 year period. We have no data on the incidence of restrictive work usage, or the real damage that they may cause, however as CIDA argues:

Restrictive practices in any industry are usually a symptom of a poor relationship between employers and their employees. Concentrating on eliminating individual practices without at the same time improving the fundamental relationship is likely to lead to poor results (CIDA, 1995: 5).

With unions and employer representatives engaging in a more corporatist/institutionalist industrial relations approach, the conditions would appear to favour an attack on restrictive work practices. We argue that a corporatist approach can only operate within an environment of trust between both sides. Therefore, during the period under review, with generally increasing levels of trust, the possibility of a reduction in the use of restrictive practices ensued. Subsequently, as the incidence of restrictive practices fell, then it follows that the costs associated with them also fell. It would follow then that restrictive work practices had a correspondingly lower impact on profits during the period under review as that period progressed.

The level of industrial disputation generally fell during the period under review. In Chapter 4, the Figure F4.5 of working days lost per 1000 workers illustrates that after some variability in working days lost in the period 1984-1988 a long fall in the incidence of industrial disputation was recorded which only began to appreciably rise again in 1996. We must conclude that working days lost became an increasingly small

cost to employers during the period of review. This evidence alone does not allow us to state that industrial disputation became a less costly factor for employers because we cannot ignore the industrial tactics which promoted costly lightning work stoppages. These were generally employed in the earlier part of the period and often took the form of judiciously timed stop-work meetings which often delayed concrete pours, thus rendering the concrete unusable with the contractor generally bearing the cost of the wasted concrete. However these tactics appear to have become less prevalent with the passing of the BLF in New South Wales, Victoria, the Australian Capital Territory and Federally.

With a reduction in the number of working days lost and an apparent fall in other forms of costly dispute, we may conclude that the costs of overt industrial disputation to employers lessened during the period of review, and we can tentatively state that other forms of industrial disputation, perhaps those that are related to restrictive work practices and the like, also became a lesser cost to employers due to the growing evidence of improvements in the trust between employers and unionists. Thus industrial disputation in all its forms probably had less of an impact on the profit (and output) level of the industry as the period progressed.

We have already noted that it is unlikely that exit behaviour would be a great cost to employers because the industry is characterised by short term employment contracts and the industry is geared to a mobile labour force. Voice effects though are a different matter. We argued in Chapter 3 and above, that unions changed from following the overtly militant line to being more accepting of the Labor government's and ACTU's tripartite corporatist framework. We argue that this change, altered the way voice was



exercised. We may also tentatively suggest that voice was *heard* or accepted differently by employers because of the different way it was expressed. No more was there a call to smash the bosses' equipment, instead, unions were represented on industry wide, multi-viewed, neo-corporatist bodies (e.g. the CIDA process), and the BWIU pushed for adherence to the Accord principles at a time when other unions (BLF and PGEU) were looking for increases beyond the wage setting guidelines. The conclusion that should be reached is that voice was being expressed differently. As we argued in Chapter 3, the CIDA process saw the industry attempt to change its conflictual ways and the Victorian Building Agreement demonstrated that employers and unions could work out differences together. Voice was in operation and in a forum where it was being heard.

In concluding our remarks on the measured profit effects, the difficulty with our discussion stems from the results themselves: that they are positive for union density. If they were negative it would be easy to dismiss the results as confirmation of union rent seeking, or on inefficient labour usage practices, however we have found a potentially positive relationship between union density and profits.

In explaining our results, we have used a number of arguments. We have argued that empirically, there is inconclusive support for the 'unions reduce profits' assumption. We have argued that wages were held down during much of the period under review thus eliminating one potential avenue for union negative influence, although we did highlight the other mechanisms by which unions may have increased the cost of labour (superannuation and redundancy payments). We showed that unions were associated with much lower levels of industrial disputation (or at least strike levels) in the period under review, and that restrictive work practices were often an employer

induced problem which were being mitigated by a corporatist platform for negotiation with the participants consisting of peak employer and employee bodies in the industry. The use of union voice to reduce exit behaviour, we argued, was not going to have a great impact on costs and hence profits. However we did argue that a change in the way that union voice was exercised may have led to an improvement in the communication process between unions and employers at a time when both were looking at improving the operation of the industry.

In short we find only limited support for the notion that unions have negatively affected profits over the period, and perhaps more evidence with which we could argue that unions may have had a role in improving the profit performance of the Australian Building and Construction Industry.

## **Productivity**

Our literature review identified many competing views on the effect of unions on productivity. The United States evidence found, after price considerations were included, both small positive and negative union influences. The British evidence generally found a negative union/productivity relationship, although with some studies their methodology has been called into question (see Chapter 2). German evidence suggests a negative relationship although their system of employee representation in the form of unions is complicated by the presence of works councils which can be a competing institutional voice mechanism. Japanese evidence is variable. Muramatsu (1984) found both a positive and insignificant result for two different years, while Benson's (1994) research provided an unclear result. Brunello (1992) found a small negative effect in smaller firms.

The Australian evidence is variable with some research suggesting a negative relationship (e.g. Drago and Wooden, 1992; Crockett et al., 1992) with others determining a positive relationship between unions and productivity (Phipps and Sheen, 1994). The difficulty with some of the Australian research is the attitudinal measure of productivity. We believe that asking a firm's manager to rate their level of productivity relative to other firms is not an acceptable way of determining the productivity of that firm. In defence of the authors who have employed such a measure, acknowledgment has been made of the difficulties associated with its use and counsel for caution when interpreting their findings.

Our results suggest that unions do not influence productivity in the building and construction industry. Given our strong output result, we would have expected a stronger result for the productivity regression. Our union density variable was insignificant, albeit positive, and the general specification was quite weak. Our measure of productivity was not ideal. We were only able to examine the average product of labour, because meaningful measures of capital utilisation could not be found. If such capital measures were available, the inclusion of them into our calculations would have made our result more robust.

Nevertheless, the results show that unions are neither a positive or negative force in the determination of productivity during the period under review. Given the perception of the industry as being one wracked by inefficient work practices induced by unions, we might have expected to find a negative outcome for this performance measure. We therefore suggest that as with our output results, our productivity evidence

should be considered in light of the changes experienced by the industry. The overview section which follows will help to explain our empirically determined results.

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We have seen in the above discussions how our results compare with representative components of the literature. We found that there was very little in the way of comparison for our output results, but far more to compare with our profit and productivity outcomes. In our discussion on profits we examined some of the paths by which the result could have been achieved. What we must now do is extend that discussion to express the general characteristics that represent the changing role of unions in the industry. By doing so, we will show how changes in the way that unions relate to other actors in the industry has brought about circumstances which improve the potential of the industry to make improvements in its economic performance because of, rather than in spite of, a unionised presence.

In our examination of the industry in Chapter 3 we identified a movement towards a degree of peace between employers and unions. We argue below that improvements in the relationship between employers and unions has led to the results we have identified in our investigation. Much of the evidence we present below comes from the participants in the industry. We include evidence from employers, their representative organisations and from unions. The overriding impression from the evidence examined by this author is that the industry's industrial relations climate has changed from being highly adversarial, and characterised by militant behaviour, to being

an environment where both employers and employees recognise their differences, but better appreciate those elements which are held in common.

## **OVERVIEW OF THE CHANGING UNION INFLUENCE**

The relationship between unions and employers in the 1990's is markedly different from that of the 1970's. This is evident from the material presented in the historical overview (Chapter 3). But before we can examine the change between the 1970's and the 1990's we must step back to the 1960's, for it is here that we see the foundations being laid for the militant union behaviour observed in the 1970's.

In Chapter 3, we saw that from the 1960's onwards, a spatial concentration of labour occurred in the capital cities when city buildings began to be built larger and taller. We argued that this spatial concentration led to organising campaigns which saw unions grow in numbers and strength. And as noted, Mitchell argued that although industrial disputation levels were lower than the 1970's (or for that matter the 1940's/1950's), the disputes that did arise were no less of an inconvenience for employers.

The BWIU attained re-registration in the 1960's but still continued to operate in a militant fashion. Because of its actions we must also characterise its voice as being militant. Voice we argue can contribute a positive economic effect however at this point in the industry's history, voice was probably not a positive force on the industry's economic performance. Unions were pursuing improvements in wages and conditions in a confrontational manner, with that manner often being reflected by the employer's response of hostility (Mitchell, 1996: 147). This was hardly a situation where voice could act as a positive agent.

But it is from the beginnings of the 1970's where we can establish a stark contrast between that period (1970-1983) and the mid 1980's through to the 1990's. The two principal building unions began to operate in dissimilar fashions. The BLF took on what may be termed an ultra militant, direct action stance, whereas the BWIU sought gains through state sanctioned mechanisms (although it did not exclude the use of direct action). We know from Chapter 3, that the differences in union attitude can be explained in part by the differences in the political organisations with which the unions aligned themselves. The BWIU sat with the SPA and the BLF with the CPA. The Accident Pay dispute is a clear example of the divergent paths that these two unions followed during this period. Already detailed in Chapter 3, we need say no more, except that the BWIU and other building unions worked as a cohesive force, using arbitration and conciliation machinery to work through the dispute. In contrast, the BLF operated outside the system, using its strategic power over key positions on building sites to campaign directly, outside of conciliation and arbitration. Building unions began to present a cohesive voice to employers as evidenced by their actions through the BTG, however industrial chaos was not eliminated because of the rogue actions of the BLF. Thus, if one powerful union operates aside from all others, with its actions proving damaging to construction activity, then regardless of the degree of cohesion of the remaining unions, the more 'positive' and 'inclusive' forms of voice as displayed by unions operating through the BTG will be overshadowed by more militant manifestations of voice.

The industry throughout the 1970's can only be described as a highly disruptive industrial relations environment. The BLF continued to follow the 'one-out line', and

was ideologically driven to win industrial disputes on its own terms. It attacked the idea that employers had a prerogative in the distribution of the surplus value created through business undertakings. 'Vigilantism' was the order of the day, and a call was made to 'smash the bosses property'. Even in this circumstance, voice is in operation. Employees, through their representatives are indicating that they disagree with the political/economic/social system in place. However to call for an attack on the 'bosses' property' fails to address their underlying concerns about the 'system' beyond the building and construction industry and the voice expressed is operating in an environment, almost totally uncondusive to positive economic outcomes. If output, productivity or profitability had improved during this period, it could only have come about in spite of the union activity, rather than because of it. The BLF's use of voice could not have had any real positive influence other than to provoke a reaction or shock effect response from employers. Perhaps the greater reliance on sub-contractors which generally weakens the union position and reduces an employer's cost burden, may have been one response of the 'shocked' employer.

As a natural antithesis to the industrial mayhem largely conducted by the BLF, united union action through the BTG won the introduction of conditions valuable to many workers in the industry. Long service leave and a national building trades award in 1974 and 1975 respectively, are examples of what united voice acting through the mechanisms of the state was able to achieve. By working through state sanctioned arbitration and conciliation, both employers and unions are exposed to a forum which promotes the 'orderly' use of voice.

Up till the early 1980's the industry was clearly characterised by industrial militancy. Even though much of the evidence presented above relates to the activities of the BLF and its use of overt pressure outside of the arbitration and conciliation arena, the other main building union, the BWIU, was not beyond the use of industrially militant tactics. The main difference between the two organisations was that the BWIU usually pursued its claims in a militant fashion only after negotiations at the arbitration or conciliation stage had broken down. Here, voice is used both in a state sanctioned institutionalised setting and in an industrial setting, contrasting with the BLF's characteristic use of voice which threatened the right of employers to resist the BLF demands.

To highlight the contrast between the 1970's/early 1980's and the period we have chosen to focus on (1984-1996), perhaps no more a stark statistic could be cited than the one which details working days lost per 1000 employees. In the 14 year period 1970-1983 inclusive, an average of 1324.58 working days were lost per 1000 employees each year.<sup>22</sup> In contrast, for the 13 year period 1984-1996 inclusive, the corresponding figure shows just 398.38 working days lost per 1000 employees. This represents a reduction in working days lost of over two thirds, and if these figures can be loosely taken as an indication of the level of mistrust and industrial relations damage being done, then the 1984-1996 figure demonstrates that the industry is far removed from the industry it was in the 1970's. And if the above caveat holds, we can conclude that the industrial relations climate had improved.

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<sup>22</sup> Figures based on statistics taken from various issues of Australian Bureau of Statistics, *Industrial Disputes, Australia* (6322.0)



Strike statistics alone, do not convey an understanding of the process of industry reform. They fail to show that greater cohesion existed within the union movement and between unions and employers, and they do not explain why the industry changed. In the following discussion we will show how the industry has attempted reform and in doing so, the increasing degree of cohesion between employers and employees will become evident. The reasons why the industry has changed will also be investigated.

We should begin by stating that the industry did not transform over night. It was already into the process of change in the early 1980's but still suffered what we might term 'setbacks' in the mid 1980's. We put the word 'setback' in inverted commas because it may be thought that a 'setback' is an industrial dispute. We do not equate industrial disputation with a 'setback', as industrial disputes can, under exit/voice theory be a spur or shock that improves the industry in the longer term.

Evidence that the industry was in a process of change can be found in the words of Stuart Hornery, the Managing Director of the Lend Lease Corporation. In 1982, in a speech to the National Construction Industry Conference, Hornery states:

However, when you talk to individuals on both sides,... there is a universal desire... for greater peace, greater co-operation and indeed for greater trust (National Construction Industry Conference, 1983: 5).

These sentiments were echoed by the new Federal Labor government, elected in 1983, when it attempted to 'put in place a reform program that would resolve the chronic level of disputation in the industry.' (New South Wales Royal Commission, V. 7, 1992: 155). Where before the main thrust of government was deregistration procedures, for example the BWIU deregistered Federally from 1948 to 1962, and the BLF Federally deregistered from 1974-1976 (Mitchell, 1996), the new government attempted to initiate procedures

which would bring the warring parties together for discussion (voice). Neo-corporatist in its approach, it was characteristic of the early years of the new Labor government. The full impact of the Neo-corporatist style was embodied by the nation wide Accord process.

Government initiatives of promoting a peace process were not limited to this early move to bring employers and unions together over the discussion table - a difficult task given the fragmented nature of the bargaining parties on both sides of the employer/employee divide. Other government initiatives included the development and insistence on a code of conduct which employers had to follow in their dealings with unions if they (the employers) were to be considered for government contracts. Later on in the period (1991-1995) an attempt was made to develop a mechanism to transform the industry through what was called the Construction Industry Development Agency (CIDA). Much like the Accord process, the CIDA process was neo-corporatist in its approach. As an industry body whose charter included the development of strategies for reform of the industry, we can surmise that the industry, led by the government was aiming for a best practice and internationally competitive position.

The CIDA process originally saw an In-principle Agreement (IPA)<sup>23</sup> signed by the major parties in the industry. This eventually led to the establishment of 'Action Teams' of industry representatives, discussing areas of concern as divergent as restrictive work practices, health and safety, future industry structure, and an area where unions received some criticism, enterprise bargaining. The IPA recognised:

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<sup>23</sup> To give the agreements its full title, we should note that it was actually called the *Construction Industry In-principle Reform and Development Agreement*.

the responsibility of all industry stakeholders, clients, contractors, sub-contractors, consultants, governments and unions and workers to create the environment for change, to create an industry striving to improve continually, to develop an industry that will become the world's best (CIDA, 1995: 2).

As a process, CIDA was a highly institutionalised form of voice. Voice not only flowed from the unions but also to them. The CIDA process was about more than just industrial relations issues. It dealt with a whole range of problems, which had their foundations set in the intransigent nature of many of the participants in the industry, and the contractual arrangements that govern the construction process. In some senses, the establishment of a best practice culture may influence the relationship between unions and employers. The CIDA process may have improved the industrial relations of the industry, which some analysts (for e.g. Phipps and Sheen, 1994; Blanchflower and Freeman, 1990) have suggested as one of the keys to seeing the union variable in econometric studies producing positive economic outcomes.

Continuing with the theme of government initiatives which may have affected the industry, we cannot ignore the most notable government initiative during the period, which involved the deregistration of the BLF Federally as well as in New South Wales, Victoria and the Australian Capital Territory. Deregistration was nothing new for the industry or the BLF in particular, however what gave these procedures more carry was that other unions (BWIU, PGEU and the Federated Engine Drivers and Firemens' Association (FEDFA)) agreed to absorb BLF members thus promoting the dissolution of the rogue union. The Government moved to prevent the BLF from maintaining a forceful active role by warning employers away from dealings with the BLF.

The Government's Accord process also brought a degree of reform to the industry. After the breakdown of the wholly centralised wage fixation system, a form of

decentralisation was instituted from 1987 onwards. During our discussion on the reasons behind our profit results, we identified that wage increases in the earlier years of the Accord's more decentralised structure had to be cost neutral. In order to make wage increases cost neutral, 'productivity' improvements would have to be made to offset wage increases. The Australian Building and Construction Industry achieved this by establishing many restructuring policies, some of which included the use of electronic funds transfer, changes to working practices and the altering of award classifications (Department of Industrial Relations, 1991).

Employer initiatives also played their part in damping down industrial unrest. State sanctions in the form of injunctions under the *Trade Practices Act (Cth)* were used by some employers against the PGEU for maintaining an industrial campaign even though wage setting guidelines of the time ran counter to the PGEU's claims. The union ignored the injunctions, incurred the ire of the judiciary and was subsequently fined for contempt. The PGEU after being fined, discontinued its campaign.

Assorted state sanctions and employer counter offensives have not been the only force driving the change of industrial relations practice in the industry. We have already identified the broad thrust of ideas behind the CIDA process, however there is a wealth of other evidence which supports the contention that closer working relationships and an understanding between employers and unions has produced positive results for the industry. Evidence from major projects completed in the late 1980's and early 1990's suggests that where unions and contractors/sub-contractors have formed local agreements and have continued to honour them, industrial disputation has been significantly reduced and as a consequence work output has increased. (Report by the

Parliament House Construction Authority cited in the New South Wales Royal Commission, V. 7, 1992: 158; New South Wales Public Accounts Committee 'Report on the Darling Harbour Authority', cited in the New South Wales Royal Commission, V.7, 1992: 159). We should conclude that where union voice is given a forum, contractors are more willing to institute practices that are sympathetic to the views expressed by organised labour. It could also be argued that unions are more willing to abide by agreements when they feel some degree of 'ownership' of the agreement and the terms and conditions within, because they were an intricate party in its negotiation.

The 'ownership' issue and its perceived benefits is not a mid to late 1980's - early 1990's phenomena. Even in 1982 at the National Construction Industry Conference, Trevor Nixon, Chairman of the National Industrial Executive argued that it was the 'close personal commitment' of the people who negotiated a particular Victorian agreement that had led to its success. However, shifting back into the period that we are concentrating on, W. J. Wallace from the MBA of Victoria expressed the belief that the Victorian Building Industry Agreement of 1987 was an important factor behind the improvement of industrial relations in the industry in Victoria. He argued that the *agreement* was 'owned' by the people who had negotiated it, and who had worked within its boundaries. He believed the *award* was not 'owned' by those same people and therefore there was less respect for it and the conditions laid out within it. Other reasons for the improvement in industrial relations, Wallace argues, were the slump in the economy and the lack of disruptive tactics from unions (Economic Development Committee, Inquiry into the Victorian Building and Construction Industry, 1994: 20).

As an aside, the agreement Wallace speaks of was negotiated under a relatively centralised wage fixing system, but this appears not to be the only system that agreements acceptable to both employers and unions can be negotiated under. In our discussion of the possible reasons for our measured profits result, we argued that both the centralised and decentralised systems of the 1980's offered advantages to the industry. Centralised wage fixing provided a degree of certainty to all concerned and the slightly more decentralised systems of the late 1980's and early 1990's locked wage gains into productivity improvements. Wallace argues that it is possible under enterprise bargaining to get satisfactory outcomes, while Denniss et al. (1997) believes that a relatively more decentralised approach is likely to produce a higher level of industrial action resulting in short term losses of output, however Wallace contends that: 'If you put energy and time into communicating with the work force and the union you get a good end product (Economic Development Committee, 1994: 67).

Wallace includes the union in the negotiation process and argues that it is possible to achieve a 'good end product'. Presumably, a 'good end product' is a result that provides the firm with a greater chance of achieving its stated economic goals. Whether this equates to a 'good end product' for employees and unions may be another question altogether, but given that negotiations with the union and a 'good end product' are mentioned in the same sentence by an employer representative must suggest that unions can have a positive role to play in a successful economic outcome for the industry. Perhaps more significant is the belief that genuine negotiations, as characterised by the input of 'energy and time' are the cornerstone of successful

agreements which may in turn lead to successful employment relationships which produce successful economic outcomes.

If the parties to the Victorian agreement of 1987 lost faith in each other, then the goodwill that has assisted the process of industry reform in that state would be lost. P. Donnelly, Chairman of the Victorian Building Industry Disputes Board believes that if his position and the Victorian Building Industry Agreement (VBIA) did not exist, then there 'would be a return to the status quo of the 1970's and the law of the jungle' (Economic Development Committee, 1994: 73).

If we can extend the principle beyond the State borders of Victoria to a conceptual setting, the above testimonies by industry representatives to the Victorian inquiry of 1993, the National Inquiry of 1982 and the statements by CIDA, demonstrate that the key to good economic performance in the industry is a good relationship between employers and unions. Specifically, this relationship is made good, in part by the idea of agreement 'ownership' and that unions are an integral part of the negotiation process.

Where that 'good' relationship has often broken down though, is in relation to Restrictive Work Practices (RWPs). However views on this particular source of industry inefficiency became clearer in the mid 1990's. Restrictive Work Practices, so often seen as a tactical weapon in a union's armoury against employers, were being partially regarded as an employer induced problem rather than simply as a union tactic. Barda lists the practices identified by CIDA (1995: 172-175), many of which result from employer neglect. Employers were seen to ignore award provisions, deviate from set occupational health and safety guidelines, as well as provoke industrial disputes,

amongst others. Unions though, were not beyond criticism when they were investigated for the use of RWPs. For example, an overly strict interpretation of inclement weather or the exploitation of Rostered Days Off (RDO's) were just two of the practices attributed to unions.

The clear point is that *both* employees/unions and employers are to blame for causing the industry to be less economically efficient through RWPs. When an employer breaches an employment condition, the retaliatory action by the union is just that. It is a response. Unions may then enforce RWPs until such time as the original problem brought on by the employer is solved. Naturally, some practices pursued by unions are not in response to something an employer did, they may just be part of a broader industrial campaign, but what is important is that employers can be blamed for some inefficiencies arising out of union related RWPs.

Union reaction to employer induced RWPs may prompt the employer to rectify those factors which promoted the RWPs action. The union reaction is an exercising of voice. The employer's action in rectifying those RWP inducing practices is a form of shocked response. The employer reverts back to the award conditions or the agreement, production resumes at the normal level, and the employer may be dissuaded from breaching the award or agreement, resulting in longer term stability of production. If the employer subsequently reduces the incidence of award or agreement violations which in turn results in harmful union retaliation then in the longer term, a greater amount of output will result than would be the case under a regime where the employer periodically induces harmful union action through such breaches. The use of voice by



unions may lead to a response by employers, which in turn results in an increase in output/profits/productivity.

By acknowledging that the problems are caused by both employers and unions at a national level forum like CIDA, the industry has been given the opportunity to learn how to reduce such behaviour. This is another example of how not only has the union changed from the 1970's, but so too did the industry itself.

## **CONCLUSION**

We have presented a view of the industry which demonstrates that the union tactics which characterised industrial relations in the 1970's and early 1980's was far removed from the tactics which characterised the industry in the mid 1980s through to the mid 1990's. Conflict though was not removed. This is clearly evident by the continuation of campaigns by unions to improve the terms and conditions of employment. It is the way that this conflict is expressed that has changed.

In the 1970's we saw a proliferation of direct action and destructive calls for damage to employer's property. In the period from the mid 1980's onwards, we see conflict being channelled through state sponsored arbitration and conciliation. We see industrial campaigns being held in check by overriding national objectives (the Accords) and we see unions incurring the wrath of governments (deregistration) and employers/the state (injunctions and fines). Forums for inter-actor participation on reform were in operation and unions generally saw that the mitigation of past direct industrial action campaigns could produce benefits to their members while still maintaining a relevance as an industrial representative.

The unions found in the 1970's are different to the unions we see in the period under investigation. It is in this context that we argue that our output regression results are not the outcome of spurious associations. The industry has quite clearly and dramatically transformed itself over the period of review and is in marked contrast to the industry of the 1970's. We have even observed employers stating that unions can be considered an integral part of the successful economic performance of the industry. Does this represent an ideological shift in employer thinking? Probably not. It is more likely that employers have realised that in this particular industry, in certain sections of it, unions have a significant degree of strategic power and therefore employers must be incorporative rather than play a game of exclusion. Even so, assuming this praise from employers for the role that unions play is not simply a sycophantic response to the perceived power of the unions, then we must conclude that unions do have a role to play in the successful performance of output in the building and construction industry.

If we were to base our conclusions only on the words of a few employers and their unquantified observations that unions can improve the economic performance of the industry, then we would be leaving ourselves open to the same criticism that this paper has made about the attitudinal responses of managers to the question of their productivity performance. However we only employ this evidence from management in support of our empirically determined findings: namely, higher union density is associated with higher levels of output and profits in the industry.

We can only concur with the sentiments of the signatories<sup>24</sup> to CIDA's

Restrictive Practices: A Compact for Change, when they agree that:

unionism plays a constructive role in the building and construction industry, and is an important factor in bringing about a more stable, safer and efficient industry (CIDA, 1995: 15).

We can therefore conclude that unions are associated with positive economic effects in the Building and Construction Industry in the period 1984-1996.

<sup>24</sup> The signatories represent organisations including, the National Electrical Contractors Association, the Metal Trades Industry Association, the Master Builders Australia, the CFMEA and the AWU - FIMEE.

## **CHAPTER 7**

### ***CONCLUDING REMARKS***

When the idea for this study was originally mooted, there was no way to know what results our econometric investigation would reveal. Suspicions were held as to the possible outcome, because it was difficult to ignore the 'bad press' that the industry had generated throughout the 1970's and parts of the 1980's. That 'bad press' has generated a preconception in many peoples' minds that unions were probably a negative influence on the economic performance of the industry.

As research began, one of the first sources examined was the New South Wales Royal Commission investigation into productivity in that State's building and construction industry. The New South Wales Royal Commission at first glance appeared to confirm the above preconceptions. However after coming across Runeson's 1992 paper on the research conducted by the Royal Commission, we felt that the story of the union effect on economic performance was not so 'cut and dried'. The surety of the negative union impact phenomena was challenged further by a careful examining of the industry's history with a focus on its industrial relations. As the history moved closer to the present the negativity that surrounded unions, enunciated by governments, employers and the like began to be replaced by quiet expressions of positive comment for the role that unions could and sometimes did play in the industry. Clearly, in the 1980's and 1990's there had been less overt conflict as gauged by any number of measures and there appeared to be a greater level of cohesion between the various unions

in the industry and between those unions and employers. It was becoming clear that the estimated results from our econometric investigation may reveal a positive union influence on the economic performance of the industry. That we have subsequently generated results which generally reveal a positive union role was, given the progress of our research, not wholly unexpected.

Empirical results based on a mathematical investigation of the 'data' that represents the industry do not in themselves determine the 'truth' of the investigation. We cannot categorically state that because our mathematical investigation has found a positive link between union density and output and profits that such a link genuinely exists in the workplace. This is because we are investigating a highly complex industry which has three quite distinct sectors within it and our mathematically based empirical findings do not demonstrate the whole answer.

That is why we had to examine the industry at the 'human' level rather than just rely on mathematics. We had to examine how the unions of the industry interacted with each other and with employers and government. In doing so we were able to show that the role and actions of unions over the 1984-1996 period we examined were in stark contrast to the period stretching back to the 1970's and even 1960's.

With the changing role of the unions in the industry came their incorporation as a positive contributor to the economic success of the industry as judged by the economic performance indicators we employed. That they have become at least partly incorporated into an overtly capitalist system may be cause for alarm amongst some readers however this work has not set out to judge the behaviour of unions - to judge this incorporation. We have refrained from commenting on the 'rights and wrongs' of a

less militant trade union presence. We sought only to investigate whether trade unions *are* a benefit to the economic performance of the industry, not whether trade unions *should* be a positive contributor to the economic performance of the industry.

In undertaking this study, it was thought that Australia had a limited understanding of the role of trade unions in the economic performance of firms/industries/economies, relative to the United States or perhaps even Britain. Two streams of thought appeared to prevail. One stream argued that trade unions were an imposition in the market place and produced inefficiencies and unemployment. We termed this the 'orthodox view of unions'.<sup>25</sup> From this view, trade unions were (and still are) seen as a cost burden to Australian industry. The second stream of thought appears to support unionism on the basis that it provides a social good.<sup>26</sup> Workers can be represented against employers who almost always have more resources and greater power over the individual. Unions are sometimes seen as the last hurdle before those that own and control the means of production finally control a worker's destiny. At least with a union there might be some small degree of control that the individual worker can exercise. Of course this dark scenario is unlikely given that workers have always maintained some control over parts of their work even if only in some small way, but the example is there in order to make the distinction clear between the two avenues of thought. It has even emerged in this stream of thinking that unions may have a positive role to play in enhancing the economic performance of a firm, or an industry or the economy.<sup>27</sup>

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<sup>25</sup> For a more detailed discussion of this, see Chapter 2, under the heading of "Classical Theory of Unions".

<sup>26</sup> As for the orthodox view, we suggest that the review in Chapter 2 be consulted.

<sup>27</sup> Essentially the 'Harvard School' research and the studies which followed.

In examining this issue, we have tried where possible to follow the lead set by the research conducted in the United States, which originally employed the **exit/voice** theory to explain their finding that unions could be responsible for productivity improvements (see Freeman and Medoff, 1979). We have not followed their methodology for determining the effect of unions on economic performance because the Cobb-Douglas technology employed by many United States studies could not be readily applied to our data set and because we wanted to include a wider set of determining variables into our models. Nor did we attempt to test whether there were positive gains to be made for the industry through exit/voice tradeoffs. We have already noted that exit should not be a large cost for an industry which has an unstable employment relationship structure. Voice has formed the main support to our argument following the view that voice, when expressed in a manner that is likely to be constructive to the economic well being of the industry will, in the longer term produce positive results. On the other hand, voice that is militant in its nature and which may be construed as overtly antagonistic will most likely produce negative outcomes for the union/economic performance question.

Our impressions of union voice came from a number of sources. Some of these included the views of employers in the industry, Royal Commissions, industry working parties (e.g. CIDA) and the unions themselves. Employer impressions of their relationships with unions were considered to be a very important source because they (employers) are the ones who experience the voice of unions first hand. They know if agreements (a by-product of voice) with unions are holding and if these agreements allow them 'to get on with the job' of production and making profits. Naturally,

employer impressions are not the most accurate way of determining the impact of positive or for that matter negative voice, however one needs to consider the views of the people who organise the productive resources of the industry in order to produce economic gains.

Other evidence of voice could be discerned from the way that unions organised and ran industrial campaigns. For instance, the 1970's witnessed a significant degree of direct action industrial campaigning by unions against individual contractors on individual worksites, which bypassed the state sanctioned machinery of arbitration and conciliation. What was even more telling about the form of voice employed, was that different unions pursued alternative strategies. For instance, the BLF chose what was called the 'One Out Line', whereas the BWIU urged for the formation of industry wide negotiating bodies, with the actions within the BTG being one example of this thinking. It appeared that the BLF during this period was trying to achieve all it could, when it could with an underlying philosophy of anti-capitalism. It called for the 'smashing of the bosses property' and instituted industrial warfare and vigilantism. Ideologically, it wanted to win on its own terms. In contrast, the BWIU and like minded unions pursued gains which they, like the BLF thought were deserved, but pursued them in such a way that the underlying economic/socialsystem was not under threat. We might term this type of action a moderate style of campaign compared to the more rogue like actions of the more militant unions.

By often eschewing the militant style of industrial relations pressure, the more moderate unions were moving towards a position where they could express their voice in a form where terms such as mediation and compromise had some meaning. This



alteration of the union's voice characteristics occurred throughout the 1970's and 1980's and into the 1990's. We cannot state that the unions had 'arrived' at a policy of mediation, conciliation or arbitration for two reasons. Firstly, they always remained capable of using direct action when necessary, such as when they began signing employers up for the redundancy scheme during the 1980's (see Chapter 2) which was outside of state sanctioned agreements at the time. And secondly, even during the 1970's when there was so much industrial conflict outside of conciliation and arbitration, those processes still were operational. Conciliation and arbitration would be used to 'lock in' agreements made in the informal bargaining sphere, with the intention being that those agreements would spread to other employees through awards.

For much of the 1980's and also for most of the period that we review, the industrial relationship between employers and unions moved even further into the state sanctioned realm, beyond the simple award system. The 1980's, witnessed a system of wage setting that was essentially an overlay of the existing award and which was based on national level peak body negotiations and Federal tribunal submissions. Simple wage setting procedures evolved into more complex award restructuring which dominated the macro industrial relations environment. The Accord wage setting system set wage increases for all Federal award covered employees (and many State covered employees too, through State extension of Federal wage setting principles), which the building and construction industry generally followed, even though there were attempts to break away from these standardised wage setting processes. Pressure exerted by the BLF, the PGEU, and even the BWIU and others led to the Federal Arbitration and Conciliation

Commission considering the exclusion of the Building and Construction industry from its wage setting system. We know that this consideration was not enacted.

The Accord, a neo-corporatist wage setting system involving peak union representation, the Federal government, and in the earlier years, peak employer groups was followed by an industry targeted neo-corporatist reform process involving a government funded agency whose job it was to chart a course for industry reform. The CIDA was brought into being and was broadly representative of all major players in the industry, even though initially, important boards of management excluded union representation.

CIDA provided all parties with a forum for discussion of the industry's problems. It provided all relevant parties with an opportunity to work more or less together in order to achieve broadly acceptable policies for all concerned. Its incorporatist nature is directly opposed to the militant and 'one-out line' adopted by various unions during the 1970's, and was another clear indication of the changing way that union voice had been expressed. It could be argued that it is the neo-corporatist, inclusiveness of the CIDA process which has promoted the change in the expression of union voice, however this would be wrong on a number of counts. To illustrate why, we need look no further than to the union policy of collective action through the BTG in the 1970's. Often led by the BWIU, building unions used the BTG to promote collective action and therefore collective voice for their industrial agenda, whereas previously, unions may have attempted to pursue their own specific industrial agendas based on the narrow skill divisions from which they drew members. An even more important example of how union voice has changed came with the introduction of the Accord, and even

though the building unions put the Accord wage setting principle under strain, the unions managed to remain part of the nation wage fixing system even though it appeared as though they could strike better deals with employers had they entered into direct negotiations with them.

Unions had already begun to see that the industrial mayhem of the 1970's was not a long term productive element for all concerned, least of all them. The evidence presented in Chapter 6 from the 1982 National Construction Industry Conference confirms that Tom McDonald, of the BWIU had already begun an attempt to resolve some damaging demarcation disputes the BWIU was having with the BLF, and that he believed a genuine and positive attitude to consultation with employers was a necessary precursor to industry success. Interestingly, McDonald also states that he did not believe that government established formal consultative structures are critical to the industry achieving some degree of industrial peace (National Construction Industry Conference, 1983: 27). Given this, it would appear that the BWIU has altered its beliefs somewhat over the 1980's as that organisation as the key union in the industry was an important part of the government funded CIDA project. But then this is just a further example of how a union's actions can and do alter over the course of time.

We believe that the changing face of unionism in the industry is reflected in our estimated results. We found that increasing levels of union density may be positively correlated with increasing levels of output and profits for the industry. We found no statistically relevant relationship existed when we examined the union density/productivity issue. Even though our results are at odds with much of the international and domestic literature we believe that they are sound because we examined not just the

input side to business, but also the demand side, and what we call the process element of production. By incorporating these additional variables, we hoped to better represent the actual major influences in the industry, which made for a more correctly specified model. Once this was achieved, the union density results were more indicative of the true influence of unionism because the model more closely represents some of the major economic influences in the industry, not just the supply side variables almost exclusively used in many other models.

By incorporating as many variables as possible while still retaining a parsimonious model, we were able to ascertain possible other important influences on the output, profits and productivity of the industry. For instance, the general level of economic activity in the industry was a key determining factor of all economic indicators under observation over the 13 year period 1984-1996. For our output specification, we found that the price of materials, the average wage level and the level of overtime were most likely to be important determinants of output. For profits, other than GDP and union density, overtime was found to be significant, and in our productivity model, we found that the wages variable was marginally significant (at the 10% level), and that union density was not significant (although positive and just outside of the 10% accept/reject range).

Our mathematical model did not allow us to identify how unions actually aided in the creation of output or profits. A similar situation was faced by Allen (1986) when he identified a positive union affect on productivity in the American building and construction industry. In his paper he argued that:

Unobserved labor quality changes, economies of recruiting and screening, managerial inputs and training are no doubt ... important, but their impact could not be quantified here (Allen, 1986: 199).

Instead, we argued that the changing face of union voice was the mode by which unions produced our measured results. Like Allen above, we cannot quantify this changing face of union voice, however we believe our econometric results are largely determined by the change in union voice, and that this change in voice has prompted an improvement in the industrial relations 'climate' of the industry. We cannot say that industrial relations are 'good' for this is a relative concept which changes depending on any number of industry specific variables, the best we can say is that industrial relations appear to be better.

We have presented evidence which suggests that unions are a positive force in the economic performance of the industry, and we have demonstrated that the interplay of unions, employers and the state changed significantly from the 1970's and early 1980's to the later half of the 1980's and the 1990's. This interplay became far less hostile and militant. We believe that it was by this change that unions became a positive economic force in the Australian Building and Construction Industry.

## DATA APPENDIX

*Table A.1*

*Data of Endogenous and Exogenous Variables Employed in Models*

Quarters	UD2	GDP	D1	D2	D3	OTC	IDC
Mar. 1984	7.60	73739	0.00	0.00	0.00	1.36	24101
Jun. 1984	7.60	75390	0.00	0.00	0.00	1.20	23498
Sept. 1984	9.60	75479	1.00	0.00	0.00	1.52	29368
Dec. 1984	9.60	76414	1.00	0.00	0.00	1.71	39336
Mar. 1985	8.90	76935	1.00	0.00	0.00	1.70	22774
Jun. 1985	8.90	78587	1.00	0.00	0.00	1.53	55237
Sept. 1985	9.40	80188	1.00	0.00	0.00	1.33	73652
Dec. 1985	9.40	79505	1.00	0.00	0.00	2.12	23646
Mar. 1986	8.00	80301	1.00	0.00	0.00	1.78	12909
Jun. 1986	8.00	79224	1.00	0.00	0.00	1.78	65754
Sept. 1986	13.30	80639	1.00	0.00	0.00	1.70	17156
Dec. 1986	13.30	81298	1.00	0.00	0.00	1.84	21889
Mar. 1987	14.70	81975	1.00	0.00	0.00	1.96	33021
Jun. 1987	14.70	83491	1.00	1.00	0.00	1.73	42314
Sept. 1987	16.60	84834	1.00	1.00	0.00	2.10	93351
Dec. 1987	16.60	86175	1.00	1.00	0.00	2.81	25863
Mar. 1988	18.00	86058	1.00	1.00	0.00	2.47	29577
Jun. 1988	18.00	86800	1.00	1.00	0.00	2.21	100508
Sept. 1988	18.00	88108	1.00	1.00	0.00	2.28	46442
Dec. 1988	18.00	89740	1.00	1.00	0.00	2.27	31326
Mar. 1989	16.90	90576	1.00	1.00	0.00	2.52	11234
Jun. 1989	16.90	91988	1.00	1.00	0.00	2.47	34391
Sept. 1989	17.20	92195	1.00	1.00	1.00	2.99	55809
Dec. 1989	17.20	92174	1.00	1.00	1.00	2.96	15533
Mar. 1990	17.50	93265	1.00	1.00	1.00	2.68	9663
Jun. 1990	17.50	93487	1.00	1.00	1.00	2.62	20661
Sept. 1990	18.90	92675	1.00	1.00	1.00	2.52	19130
Dec. 1990	18.90	92564	1.00	1.00	1.00	3.45	12705
Mar. 1991	16.80	92615	1.00	1.00	1.00	2.87	17764
Jun. 1991	16.80	91518	1.00	1.00	1.00	2.42	26215
Sept. 1991	17.50	91644	1.00	1.00	1.00	1.57	40305
Dec. 1991	17.50	92587	1.00	1.00	1.00	2.08	36425
Mar. 1992	16.30	93581	1.00	1.00	1.00	2.23	4829
Jun. 1992	16.30	93293	1.00	1.00	1.00	1.90	709
Sept. 1992	15.70	94313	1.00	1.00	1.00	1.80	1032
Dec. 1992	15.70	95018	1.00	1.00	1.00	1.99	31876
Mar. 1993	12.60	95941	1.00	1.00	1.00	1.95	703
Jun. 1993	12.60	97774	1.00	1.00	1.00	1.93	474
Sept. 1993	11.60	98461	1.00	1.00	1.00	1.91	7537
Dec. 1993	11.60	99361	1.00	1.00	1.00	2.60	4421
Mar. 1994	9.30	101458	1.00	1.00	1.00	2.48	1838
Jun. 1994	9.30	101434	1.00	1.00	1.00	3.43	6211
Sept. 1994	8.90	102794	1.00	1.00	1.00	3.73	2518
Dec. 1994	8.90	103617	1.00	1.00	1.00	3.32	9626
Mar. 1995	7.90	104171	1.00	1.00	1.00	2.06	16446
Jun. 1995	7.90	104616	1.00	1.00	1.00	2.66	9480
Sept. 1995	7.90	105782	1.00	1.00	1.00	2.33	4356
Dec. 1995	7.90	106320	1.00	1.00	1.00	2.45	12465
Mar. 1996	7.90	108325	1.00	1.00	1.00	2.64	16039
Jun. 1996	7.90	109184	1.00	1.00	1.00	2.96	202966
Sept. 1996	8.20	110466	1.00	1.00	1.00	2.05	100831
Dec. 1996	8.20	111721	1.00	1.00	1.00	2.05	14943

*Table A1*  
*Data of Endogeneous and Exogenous Variables Employed in Models*  
*(continued)*

Quarter	AWEALLM	PMATO	PROD	GOS	QC
Mar. 1984	389.60	64.0	198.61	1124.00	6852.10
Jun. 1984	386.60	65.1	208.56	1124.00	7737.60
Sept. 1984	411.40	65.7	219.46	1272.00	8142.00
Dec. 1984	409.40	66.4	231.21	1272.00	8369.90
Mar. 1985	399.40	67.2	206.49	1272.00	7702.00
Jun. 1985	402.90	69.0	223.08	1272.00	8209.30
Sept. 1985	415.10	70.2	242.27	1495.25	8867.00
Dec. 1985	428.10	71.7	239.54	1495.25	8982.60
Mar. 1986	432.10	73.2	202.27	1495.25	7747.00
Jun. 1986	428.70	74.4	239.27	1495.25	8733.20
Sept. 1986	459.00	76.1	244.27	1708.00	8769.30
Dec. 1986	474.60	77.4	231.63	1708.00	8547.10
Mar. 1987	467.70	78.5	209.22	1708.00	7845.90
Jun. 1987	477.40	80.1	233.87	1708.00	8629.70
Sept. 1987	491.30	81.4	237.39	1941.75	8736.10
Dec. 1987	492.50	83.7	247.61	1941.75	9409.30
Mar. 1988	491.50	86.1	219.95	1941.75	8490.10
Jun. 1988	508.90	88.2	242.77	1941.75	9225.10
Sept. 1988	514.20	89.8	256.33	2463.50	9740.40
Dec. 1988	543.60	91.8	265.99	2463.50	10214.00
Mar. 1989	521.60	93.5	258.94	2463.50	9321.80
Jun. 1989	55.20	95.5	280.27	2463.50	10622.40
Sept. 1989	580.40	97.4	286.64	2648.50	10978.50
Dec. 1989	603.40	99.2	285.79	2648.50	10831.50
Mar. 1990	591.30	100.8	247.99	2648.50	9448.40
Jun. 1990	604.60	102.6	260.94	2648.50	10020.10
Sept. 1990	615.30	103.6	271.54	2354.25	9911.20
Dec. 1990	635.60	104.9	266.61	2354.25	9971.30
Mar. 1991	623.40	105.7	230.08	2354.25	8490.10
Jun. 1991	595.00	106.2	249.63	2354.25	9186.30
Sept. 1991	607.10	106.1	235.36	2345.50	8520.10
Dec. 1991	616.60	106.0	236.47	2345.50	8702.20
Mar. 1992	624.20	105.6	212.68	2345.50	7762.90
Jun. 1992	617.40	105.2	239.27	2345.50	8637.60
Sept. 1992	618.60	105.5	234.75	2246.00	8474.40
Dec. 1992	637.60	105.7	236.57	2246.00	9037.00
Mar. 1993	617.90	106.1	223.74	2246.00	8278.40
Jun. 1993	637.70	106.5	242.13	2246.00	9297.70
Sept. 1993	653.10	107.0	242.04	2468.75	9100.70
Dec. 1993	664.90	107.2	244.80	2468.75	9424.90
Mar. 1994	642.90	107.5	233.66	2468.75	8785.50
Jun. 1994	690.00	108.4	256.27	2468.75	9712.60
Sept. 1994	669.40	109.2	256.12	2816.00	9988.80
Dec. 1994	664.00	109.9	266.39	2816.00	10389.30
Mar. 1995	684.50	110.9	234.46	2816.00	8956.30
Jun. 1995	701.30	111.6	273.44	2816.00	10254.10
Sept. 1995	697.20	112.4	260.43	2617.50	9948.50
Dec. 1995	702.20	112.7	267.50	2617.50	10272.00
Mar. 1996	716.80	112.7	231.31	2617.50	8789.80
Jun. 1996	717.20	112.7	267.12	2617.50	9883.40
Sept. 1996	724.10	112.7	242.84		9155.19
Dec. 1996	752.00	112.8	268.04		10239.16

Source for variables given in Text.

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