WHAT DO AUSTRALIAN UNIONS DO?*

by

Paul Miller
Department of Economics
University of Western Australia
Perth, Western Australia
Australia

and

Charles Mulvey
Department of Industrial Relations
University of Western Australia
Perth, Western Australia
Australia

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Paul Miller and Charles Mulvey*
University of Western Australia

I INTRODUCTION

Unions are generally perceived to be influential economic agents in the Australian economy. However, little has been known of their economic impact until quite recently. In this paper we survey the literature on trade union activity in Australia. The survey is primarily concerned with empirical research which estimates the impact of unions on economic variables. However, the empirical literature must be grounded in a body of theory and it is to that issue that we first turn our attention.

In the century which preceded the 1980s the economic theory of trade unions was developed only sporadically, the most notable advances being due to Marshall [see Marshall (1920)], Dunlop [e.g. Dunlop (1950)] and Cartter (1959). By the end of the 1970s, however, the body of theory was still rudimentary and lacked a general framework at a time when theory in labour economics generally had become sophisticated and coherent. An empirical literature, mainly estimating union relative wage effects, had emerged but made little reference to theory.

The 1980s witnessed a rapid development of the theory of trade unions and an associated empirical literature. It would be convenient for us if a single, all encompassing, theory of unionism had emerged so that our survey of the empirical literature could be contained within a single model. However, the theoretical advances of the 1980s addressed a number of issues with two main, complementary, avenues providing the most important advances.

The first main theoretical advance concerns the distinction between the so-called 'right-to-manage' [RTM] model of trade unions and the 'efficient bargaining' [EB] model [McDonald and Solow (1981), Nickell (1982), Oswald (1985) Farber (1986), and Manning (1992)]. The analysis of the RTM and EB models of unions is mainly concerned with the microeconomics of collective bargaining - whether bargaining between unions and employers is about both wages and employment or only wages, and therefore whether the wage settlement is on or off the demand curve. While the interpretation of the empirical research must take account of the possibility that the wage/employment combination is off the demand curve, the

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hypotheses investigated in the empirical literature which is the focus of this survey relate primarily to the exit/voice model and very little of this work explicitly addresses the implications of the EB model. [Crockett, Dawkins and Mulvey (1992) is the only exception.] Accordingly, we discuss the theoretical basis of only the latter model, and then only very briefly, and concentrate for the rest on the empirical work.

The exit/voice model of union behaviour [Freeman and Medoff (1984)] encompasses a view of union activity which includes two broad dimensions, 'monopoly' and 'collective voice'. These two dimensions provide an analytical framework within which most of the *outcomes* of trade union activity can be considered. However, while they constitute a broad general framework there are a number of other issues which are incorporated into our survey which draw on other theoretical sources - strikes and the union membership decision for example.

The Exit Voice Model

The Monopoly Face of Unionism

Freeman and Medoff distinguish between 'two faces of unionism', the monopoly face and the collective voice/institutional response face. The monopoly face of unionism refers to the ability of unions to raise their members' wages above their competitive levels by use of market power. There is a vast empirical literature which shows that, for a wide range of countries and in many different periods of time, unions have raised significantly the wages of their members relative to non-members. Recent estimates of the union/non-union wage differential, using consistent data sets, range from 26% in the US to 13% in Australia, 8% in Hungary and 7% in Germany [Blanchflower and Oswald (1989)]. However, it remains the case that statistical and economic problems concerning causality, simultaneity and sample selection bias have not been satisfactorily resolved to date and estimated union/non-union differentials must be treated with some caution [see Robinson (1989)]. Nevertheless there is a strong consensus that unions do raise their members' wages above competitive levels. The economic implications of this are clear. Distortion of the structure of relative factor prices by unions brings about a misallocation of labour and other factors of production. National output will be reduced as a result and the welfare of society as a whole diminished. (Note that all monopolies have similar negative effects, not just unions.)

The monopoly face of unionism, therefore, is one which reduces social output and welfare. It will do so broadly in proportion to the extent and degree to which unions

actually raise wages above competitive levels. The monopoly face of unionism may also be manifest in relation to variables other than wages. Unions may use their power to impose non-wage constraints on employers. Most restrictive work practices, for example, would come into this category. Moreover, there are a number of grey areas where it is unclear whether particular phenomena are the consequence of union monopoly power or some other factor. Some of these will be mentioned as we proceed.

Note here that union monopoly power will depend in considerable measure on the force of the 'strike threat' [see Dufty and Mulvey (1987)]. Hence, the theory of strikes is in part the underlying theory of the monopoly power of unionism. We discuss this theory in relation to the empirical literature on strikes.

The Collective Voice Mechanism

Freeman and Medoff (1984) identify another, socially positive, face of unionism - the collective voice face. The Hirschman (1970) exit/voice model identifies two main mechanisms of social and economic adjustment - exit and voice. Individuals '..respond to a divergence between desired and actual social conditions by exercising freedom of choice or mobility..'.¹ Dissatisfied customers go to another supplier; dissatisfied workers quit and seek alternative employment. This is the classical adjustment response assumed in most theoretical models of the labour market. An alternative mechanism of response is 'voice'. Instead of responding to dissatisfaction by exiting - going to another supplier or employer - the dissatisfied customer or worker can complain and seek to have the dissatisfaction addressed.

It is fairly evident that in a modern economy where employers often have large investments in the specific skills of their workforce, turnover costs are potentially very high. Exit may therefore be a very costly way for employers to learn that their employees are dissatisfied. Conversely, voice directly and specifically brings to the attention of the employer the sources of dissatisfaction and any subsequent turnover costs incurred due to worker dissatisfaction are presumably the result of calculation. Freeman and Medoff argue that exit will tend to be the predominant response of non-union labour to dissatisfaction while voice will tend to be the predominant response of unionised workers. Why is this ?

First, the individual, acting alone, is vulnerable to employer victimisation and being branded a trouble maker. This may discourage non-union workers from voicing complaints. Unionised workers, however, are generally protected by their collective

¹ Freeman and Medoff (1984), p.7.

organisation from employer retaliation and will tend to express complaints through 'collective voice'.

Second, many of the issues which give rise to dissatisfaction in the workplace are of the nature of public goods. Safety provision and work environment are examples. A complaint by one individual, if successful, will bring change which benefits all. However, since it is the individual who will bear the costs of complaining (in terms of the previous point), there will be a tendency to hold back and wait for someone else to complain or to quit and seek better conditions elsewhere.

The proposition that unionised workers will tend to respond to dissatisfaction through collective voice while non-union workers will choose the entry/exit response has some important implications for firms and for the economy as a whole. We noted earlier that turnover costs in modern industry are likely to be high. The exit/entry response will therefore be costly to firms relative to the voice response, *ceteris paribus*. Since unionised firms are likely to experience voice rather than exit/entry responses, it follows that unionised firms are likely to incur lower turnover costs than non-union firms. On this count, therefore, unionised firms may be expected to display lower costs of production (higher productivity) than non-union firms, *ceteris paribus*.

The collective voice activities of unions within the firm are expected to lead to reduced quit rates and longer job durations and thus to result in greater stability in the employment relationship. Consequently the firm will be encouraged to undertake greater investments in its workforce in the form of training and education and workers will be encouraged to make greater investments in the firm by self-financed training and education, and perhaps also by shareholdings, but most especially by a greater commitment to improving the firm's efficiency.

The benefits of collective voice, and therefore unionism, to firms do not end there. Unionism opens up communication channels between workers and their managers - through collective bargaining, grievance and disputes procedures etc. - which provide for orderly industrial relations and for information flows which may modify the behaviour of all parties. Such communication channels are unlikely to be found in non-union settings, even where management positively tries to create them through such devices as 'open door' policies, because non-union workers will always be inhibited in their responses by their vulnerability to managerial

retaliation. On this count too, it is a prediction of the exit/voice model that unionism will tend to raise productivity and thereby enhance the efficiency of firms. Moreover, unions tend to perform a number of functions which can be described as regulatory in nature. One of these involves unions playing a role in monitoring the work performance of their members. The union will, for example, create rules which govern such things as benefits resulting from seniority and work rules which discourage shirking by individuals. Generally these rules reduce rivalry among workers and encourage co-operation between them and assist in the process of passing on skills through on-the-job training. However, they may also reduce the degree to which merit is the basis for promotion, which will tend to lower efficiency.

One example of the benefits which may flow to the management of unionised firms through enhanced communications is that they are better informed in relation to worker preferences on the balance between the various elements in the compensation package. It is argued that non-union employers target the worker who is at the hiring/quitting margin in formulating compensation packages. Such workers are likely to be young and potentially mobile. The package which suits such workers may not in fact suit the majority of the firm's workforce. In unionised establishments the union will communicate to management the preferences of the median voter and negotiate compensation packages which more closely match these preferences. The result will be a more satisfied - and therefore co-operative and productive - workforce so that both private efficiency and social productivity are increased.

More generally, Freeman and Medoff argue that management can use the information flowing through the channels of voice to '... learn about and improve the operation of the workplace and the production process, ..(so that).. unionism can be a significant plus to enterprise efficiency' [Freeman and Medoff (1984) p.12]. However, beneficial results depend on management responding positively to unionism. Management are quite capable of responding negatively, by asserting managerial prerogatives or by agreeing to restrictive work practices for example, and this would have the effect of reducing efficiency. Moreover, the beneficial effects which are held to flow from the presence of unionism are dependent on the industrial relations climate being good. A poor industrial relations climate will generally negate the potential for efficiency to be enhanced by the better communications between workers and management which are generated by the presence of unionism.

The main thrust of the exit/voice model, therefore, is that unionism can enhance the productivity of the workforce and thereby contribute to increased efficiency in the firm and increase the welfare of society as a whole. (In this last regard, Freeman and Medoff refer to the effects of unionism on wage inequalities. They argue that the impact of unionism is to reduce inequalities in the dispersion of wages and that that is a socially positive outcome. It is not obvious that this would be so in Australia.) As we shall see there is a considerable amount of empirical evidence to support this general proposition in the US. We must therefore ask whether there are any reasons why we should expect unionism to be associated with high productivity which do not depend on the collective voice phenomenon.

One source of increased productivity in unionised firms is to be found in their hiring policies. When the union establishes a positive union/non-union wage differential the unionised firms will be paying a higher wage than the non-union firms for the same type of labour. Non-union workers will presumably prefer to work for a higher rather than a lower wage and will therefore form a queue at the gates of the unionised firms. Many of those in the queue will, of course, already be in jobs in non-union firms but others will be unemployed. Employers in the unionised firms will then be faced with a rationing problem - how to filter workers out of the queue and into the firm when vacancies arise. Since rationing by price is not available by definition in this situation, profit maximising employers will seek to hire the highest quality workers from the queue. Over time this will result in a redistribution of labour in the market so that the highest quality workers are concentrated in the union sector and the lowest quality workers are concentrated in the non-union sector. This will in itself ensure that the unionised firms display higher productivity than non-union firms. However, the Harvard School of Freeman and Medoff (1984) claim that they have controlled for labour quality differences between union and non-union sectors in their empirical work so that the observed association between unions and productivity is held to reflect some other causal relationship.

The source of many of the productivity augmenting changes at the level of the firm may be found in the response of management to the increase in the union wage. It is often assumed that there exists widespread inefficiency - sometimes known as 'organisational slack' or in Liebenstein's terminology, X-inefficiency - in the unionised firms prior to unionisation. Unions 'shock' management into eliminating any such margin of inefficiency. This association between unionism and high productivity does not reflect the operation of the collective voice mechanism. [See Hirsch and Addison (1986) for a discussion of this issue.]

Notice at this point that any increases in productivity which result from union collective voice activity will be offset in some measure by the higher costs which result from the union monopoly face activity. In terms of private costs and benefits, unionism will only offer net benefits to firms if the productivity augmenting effects of unionism outweigh the cost increases imposed by union wage-raising effects. In terms of the social calculus, other factors such as the social benefits of reduced wage inequalities due to unionism as well as the social costs of factor misallocation would have to be taken account of.

Within this broad theoretical framework we review the empirical literature on trade union activity in Australia. First, there is a brief description of the institutional aspects of unionism in Australia. Second, we consider the determinants of trade union membership within the context of a supply and demand for union services model. Third, we review the literature on the microeconomic aspects of union impact on labour market outcomes within the framework of the exit/voice model. In particular we consider the effects of unions on relative wages, fringe benefits, quits, layoffs, job tenure and income inequality. Fourth, we consider the macroeconomic aspects of union activity, specifically, the impact of unions on strikes, wage inflation, productivity and profitability. Finally, we summarise and draw some conclusions.

II

THE INSTITUTIONAL SETTING

Australia has a unique institutional framework for the conduct of industrial relations. The provision for compulsory arbitration of disputes between unions and employers coupled with the legally binding character of the awards handed down by the arbitration tribunals marks Australia out from the rest of the world where predominantly voluntary systems of collective bargaining prevail. While compulsory arbitration and the legalism which it has spawned are a fundamental influence on the nature of the industrial relations process, it must not be forgotten that a more or less voluntary system of collective bargaining also operates below the surface, at all levels of activity, is substantial, and defers to the arbitral system only in a formal manner.² Hence the reality of the Australian industrial system is that it is a mixture of a formal system of compulsory arbitration and an informal system of voluntary collective bargaining.

² Deery and Plowman (1991 p. 380) estimate that about 90 per cent of Federal awards are made fully by 'consent', i.e. as a result of a voluntary agreement by an employer and a union and brought to the Industrial Relations Commission only for ratification.

Howard (1977) has argued that Australian unions are primarily products of the system of compulsory arbitration. The arbitration system could not function efficiently without trade unions to represent employees and effectively extended its patronage to unions as a result. The provisions of the *Commonwealth Conciliation and Arbitration Act (1904)* permitted unions simply to register in order to become eligible to obtain a legally enforceable award for their members. Moreover, the Commonwealth Court of Conciliation and Arbitration had as one of its primary objectives the encouragement of unionism and many of its early decisions supported the establishment and growth of unions. Between 1901 and 1921.. 'Trade union membership grew from virtually zero to more than half the Australian workforce..' [Deery and Plowman (1991) p.219]. By 1989 there were 299 trade unions in Australia and they had 41 per cent of the workforce in their membership. The ten largest unions had 37 per cent of the total membership while the smallest 215 unions had just 7 per cent of the total membership. Union density is highest in the public sector, among males and in the manual occupations.

Australian unions are accorded a special place in the legal environment governing industrial relations. Unions registered under State or Federal legislation enjoy a number of privileges, the main ones being that they obtain access to the industrial tribunals, they are entitled to be recognised by employers, they obtain a legal personality and they are accorded privileges in recruiting members and rights to continue representing members. The principle of exclusive jurisdiction, whereby an established union is protected from competition for its members from new unions or changes to the rules of existing unions, is also a benefit of registration under the Act [see Borland (1989) for a discussion of these and related issues].

Another important feature of the Australian system of industrial relations is that the law requires that the terms of awards apply to all workers within covered employments - both union and non-union. This clearly raises some problems for unions wishing to generate a pay-off to union membership.

III

UNION MEMBERSHIP

Union membership has been declining steadily in Australia in recent years. In 1990 41 percent of employees were members of a trade unions³. Eight years

³ See Australian Bureau of Statistics (1990a).

previously the membership rate was 50 per cent, and in 1986 it was 46 per cent. The decline in union membership is apparent for both male and female employees, and for members of the public and private sectors. What determines union membership? And what factors are responsible for the pronounced decline in membership in the last decade ?

Membership of a trade union is just one of the many services that an individual may purchase out of his or her limited income. The major benefits of union membership include the negotiation of wages, fringe benefits and working conditions, and the processing of grievances. The price paid for these services comprises mainly the membership dues. Where individuals are not favourably disposed towards unions, however, there may also be a psychic cost attached to membership.

The empirical research on union membership undertaken by economists in Australia has been based largely on a simple demand and supply model of union services [see Hirsch and Addison (1986, Ch. 2)]. This provides a clear analytical framework that incorporates the general benefits and costs outlined above. Consider first the demand for union services. This may be formulated following Lee (1978) who suggests that each worker has a reservation wage and will join a union only if the net benefits offered by the union exceed this. The reservation wage reflects the monetary and non-monetary costs associated with unionisation and the characteristics of the worker that affect his/her receptivity of unions. Net benefits from union membership include the expected wage gains and additional fringe benefit entitlements associated with union membership. Thus, demand for union services (U^d) may be expressed in general form as a function of the cost of membership (P), the price of substitute goods (S), permanent income (Y^P), taste factors (T), the expected wage gain from union membership (λ), and net non-pecuniary benefits from union membership (Z). That is:

$$U^d = f(P, S, Y^P, T, \lambda, Z) \quad (1)$$

The Australian cross-section studies by Crockett and Hall (1987), Miller and Rummary (1989), Deery and De Cieri (1990) and Christie (1992) implicitly assume that all workers face the same price of union services and of substitutes, and that variables for these factors may therefore be omitted from consideration. Only Crockett and Hall (1986) include a measure of income in the estimating equation, though they use contemporary income rather than a measure of permanent income

or wealth. Christie and Miller (1989), Miller and Rummery (1989) and Christie (1992) include estimates of the expected wage gain from union membership in the membership equations. They also model the endogeneity between union membership and wages. However, none of the Australian studies relate differences in union membership to the net non-pecuniary benefits from union membership, even though Miller and Mulvey (1992) show that trade unions have an important impact in this regard.

Finally, all studies include a range of variables for taste factors, including location and personal characteristics, such as educational attainment and gender. These taste factors will reflect attitudes towards the union movement. For example, it is often suggested that rural dwellers are not as favourably disposed towards unions as city dwellers. The taste factors may also act as a proxy for personal preferences towards bargaining. For example, the better educated are often argued to prefer to use their own initiative rather than working through the formal mechanism of a union. Finally, the taste factors may capture preferences for leisure (which will be important where there is a negative trade-off between wages and employment). In the studies by Christie and Miller (1989), Deery and De Cieri (1990) and Christie (1992) direct measures of attitudes towards unions are included in the model.

The supply of union services (U^S) is generally seen as being determined by the cost of membership (P), the cost of organisation (CO), the cost of providing services (CS) and union goals (G). In turn, the cost of organisation and of providing services are seen as functions of characteristics of the workplace such as firm size, dispersion of the workforce, legal structure and the attitudes of the firm and of government towards unions. That is:

$$U^S = g(P, CO, CS, G) \quad (2)$$

Christie (1992) includes measures for firm size in some of her specifications (discussed but not reported). Typically, however, an attempt is made to capture cost considerations through the inclusion of variables reflecting the type of work undertaken, for example, industry and occupation of employment, and more importantly, sector of employment and whether employed on a full-time or a part-time basis.

The reduced form is thus:

$$U^* = U(P, S, Y^P, \lambda, Z, CO, CS, G) \quad (3)$$

Table 1 lists details on five major cross-section studies of union membership in

mechanism. But where unions bargain at different times, and where wage comparisons are important (i.e., there is a wage round), then a wage increase in one (high productivity) sector can spread to other (less productive) sectors. In this circumstance, 'flow-on' from an award determined for a high productivity group to awards for low-productivity groups becomes a key mechanism propelling wage inflation.

The Prices and Incomes Accord, introduced in 1983, was a means of circumventing this 'flow-on' problem. Thus, the institutional framework, and the manner in which wage bargains are struck, are important.

The general characteristics of the Australian data are summarised statistically in two recent studies by Alston and Chalfant (1987) and Boehm and Martin (1989). Alston and Chalfant (1987) estimate a model of multi-variate causality between the money supply, wages and prices for the period 1972(2) to 1983(4). Their results suggest that money is exogenous, whereas wages are related to lagged money and current prices, and prices are related to lagged money and current wages. Thus, there was a bi-directional and instantaneous link between wages and prices. Boehm and Martin (1989) estimate a vector autoregression model comprising six variables (prices, wages, unemployment rate, money supply, government expenditure and an import price index) over the period 1956(2) to 1985(2) (2 shorter periods were also examined). Their results show that wages are exogenous to both domestic and foreign factors. Thus, there was a uni-directional link between wages and prices: an increase in money wages leads to an increase in prices.¹⁸ The lack of consensus between the studies by Alston and Chalfant (1987) and Boehm and Martin (1989) on this issue is disconcerting. It may be due to the three additional variables considered in the Boehm and Martin study, or due to the different sample periods. Alston and Chalfant (1987, p.116) exclude the 1950s and 1960s from their estimation period due to the possibility of structural change between this era and that used in their estimations. Different conclusions concerning exogeneity would be expected over different sample periods if the objectives of government had altered.

One other result reported by Boehm and Martin is of interest. They show that the pattern of influence is from wages to unemployment, as suggested in classical theory, rather than the other way around. This position, which echoes earlier work

¹⁸ Boehm and Martin (1989, p. 13) conclude: 'Thus, if there is to be reasonable price stability, there is a need for an effective wages policy that limits both the *rate* and *size* of increases in money wages'.

by Boehm (1984), appears to be inconsistent with the emphasis in the Australian Phillips curve literature. Thus, the most popular version of the Phillips curve in Australia is a 'demand-pull' approach that posits a link from excess demand or unemployment to wages [see Parkin (1973)]. A similar link is evident in the studies that examine some aspects of the cost-push thesis [see Perry (1978a), Phipps (1977)]. The results reported by Boehm and Martin (1989), while focusing attention on wage changes, leave unanswered the channel of influence through which unions can have other than a short-run influence on the aggregate level of wages [see, for example, Hossain (1991)].

Two Australian studies have attempted to integrate aspects of union behaviour into models of wage and price changes [Perry (1978a), Phipps (1977)]. Both use strike activity as a proxy for union militancy, and strike activity is related to economic variables such as the level of excess demand and the inflation rate. Strikes are a transmission mechanism in these models, that is, they are the means through which price changes are transferred into wage changes. A cost-push interpretation can be attached to the findings in Perry's work in that the link between strikes and the inflation rate has strengthened over time, and in Phipps' work there has been an unexplained (trend) increase in strike activity that has led to a greater change in money wages.

Thus, there is a range of positions in the Australian literature: from the extremes of Boehm and Martin and Alston and Chalfant, to the intermediate cases of Perry and Phipps. Why might there be an array of results? According to Carmichael (1990) whether a variable is exogenous depends upon the macroeconomic policy of the day. For example, he suggests 'At the risk of oversimplifying the point, wages under the Accord could be viewed as the primary determinant of base inflation, with monetary policy determining the path of real wages by the extent to which it accommodated the underlying trend'.¹⁹ Nevile (1990) also feels that the Accord determined real wages also, at least within a band. Thus, unions are an important component of wage fixation in Australia. In recent times they probably have been instrumental in affecting the aggregate level of wages. Prior to the floating of the exchange rate, the inflation in Australia may have largely been imported.

The fundamental role that unions can play in wage inflation in Australia has been recognised in recent examinations of the Prices and Incomes Accord. It is likely that both money and real wages were reduced by considerable amounts under the

¹⁹ Carmichael (1990, p.303)

Accord [see Chapman (1990) p.45], suggesting either pressure on wages from outsiders, or a reduction in union power. As union membership has been declining, the latter is a distinct possibility.

Unions and Productivity

The strength and direction of the union-productivity relationship is perhaps the key to understanding the overall influence of trade unions in the Australian economy. Yet it is clear from our introductory remarks that the direction of the relationship between unions and productivity cannot be predicted *a priori*. Simultaneously, unions' voice-face may be associated with productivity enhancing effects and their monopoly-face associated with reduction in productivity: the net effect of unions on productivity must therefore be viewed as an empirical matter.

Since hard data on measured productivity are not available in any data set which also contains information on unions, Australian research on this topic has been confined to the Australian Workplace Industrial Relations Survey [AWIRS] and to a Business Council of Australia (BCA) survey where data on managerial perceptions of relative productivity are available. Three studies have so far utilised these data: Crockett, Dawkins, Miller and Mulvey (1992), Drago and Wooden (1992) and Drago, Wooden and Sloan (1992).

Drago, Wooden and Sloan (1992) examine two indicators of relative productivity derived from the BCA data set. The first indicator is based on comparisons with similar workplaces in other Australian firms and the second is based on comparisons with similar workplaces overseas. Their results may be summarised succinctly: union power is generally used in a manner detrimental to productivity while union-management co-operation and employee participation have positive effects on performance. However, the authors suggest that, because of the presence of a number of perverse results in their analysis, one should not attach too much weight to just this one set of findings.

The AWIRS data were collected during 1989-90. Multivariate analyses of managements' responses to questions concerning productivity at the workplace relative to that at other workplaces in the same industry are reported in Drago and Wooden (1992) and Crockett *et al* (1992). These studies were conducted independently, adopt the same general approach, but differ in the details of the application of that approach. Drago and Wooden report that a co-operative industrial relations environment had a favourable impact on profitability while union

voice, as measured by a composite variable based on four industrial relations variables, was associated with reduced productivity.

The general tenor of the results reported in Crockett *et al* (1992) is the same as those in Drago and Wooden (1992). Thus, Crockett *et al* (1992) report that, whether measured by either the presence of a trade union, trade union density, or the number of unions present, trade unionism is associated with lower productivity in the Australian labour market. The negative union effect is most pronounced when measured by the number of unions. Crockett *et al* (1992) also show that where quality circles or productivity improvement groups are a feature of the workplace, or where employees have formal representation on the board of management, then productivity is improved. That is, employee involvement in decision-making can lead to enhanced productivity. Trade unions, however, appear to negate these effects. That is ‘.. the presence of unions is found to militate against a great deal of the productivity enhancing effects of employee involvement in decision-making.’ [Crockett *et al* p.136]

These results are in contrast to those produced by most US studies which show that trade unions are associated with higher productivity [Freeman and Medoff (1984), Table 11.1]. However, the Australian findings are broadly in line with those for the UK where almost every study finds that unionism is associated with lower productivity [see Metcalf (1990)]. This represents a major puzzle that future research must confront. One possible explanation of the difference in the findings of US researchers on the one hand and those in Australia and the UK on the other hand relates to two features of unionism in Australia and the UK which set them apart from unionism in the US. First the union wage premium in Australia and the UK at around 10 per cent is less than one half of that typically reported for the US [Blanchflower and Oswald (1989)]. Consequently, the impact of the union wage effect on average costs will be lower in Australia and the UK than in the US. Accordingly, the shock effect on management of increased labour costs which may force them to take measures designed to reduce non-labour costs by improving X-efficiency or reducing ‘organizational slack’, as hypothesised by Hirsch and Addison (1986), will be less and the consequent increase in productivity lower. Second, unions in Australia and the UK, but not to any extent in the US, are a source of restrictive work practices which will tend to lower productivity and offset increases in productivity resulting from the voice mechanism.

Unions and Profitability

Even where unions increase productivity/reduce costs through their collective voice activities, it is widely accepted that they increase costs as a result of raising their member' wages through the exercise of their monopoly power. The profitability of unionised firms will therefore depend partly on the net impact of unions on the firm's costs. [The issue is somewhat more complex than this. For a theoretical treatment which addresses the issue see Clark (1984).] Unusually, there is something of a consensus on the impact of unions on profitability. Both for the US and UK almost all studies find that unionism reduces profitability [see Mulvey (1992)]. Two Australian studies have investigated this issue. Drago and Wooden (1992) and Crockett, Dawkins and Mulvey (1992) both utilise the AWIRS data set to analyse the impact of unions on the profitability of Australian firms.

Profitability is measured by rate of return on capital employed. Drago and Wooden (1992) estimate equations using the same set of dependent variables as in their productivity equations discussed above. They find no significant union effect on the rate of return at all.

Crockett, Dawkins and Mulvey (1992) analyse the relationship between unionism and profitability in light of the theoretical model proposed by Clark (1984) where the effect of unionism is held to be mediated by the degree of competition in the product market and the nature of the wage-fixing process. The analysis proceeds by partitioning the sample of firms into two segments, one where the firm faces many competitors and another where the firm faces few competitors. As predicted in Clark's (1984) model, unions significantly lower the rate of return in those firms facing a competitive environment but appear to have no impact on the rate of return in firms in markets where there is little competition. However, when a variable which captures the ability of the union to bargain over the level of *employment* as well as the wage level is introduced into the model, the results indicate that unions can increase the rate of return through that mechanism. Hence the presence of unions in a competitive firm reduces the rate of return. But where the union is able to bargain over employment and the bargain becomes 'efficient', there is a positive effect on the rate of return. This is consistent with the Clark (1984) model, although it was somewhat surprising that the efficient bargaining effect was found to outweigh the union present effect.

VI

CONCLUSION

Unions are major political and economic institutions in Australian society. Many view them as obstacles to economic efficiency which impose considerable costs on society as a whole while for others they are championed as defenders of the living standards of working people. However, there has, until recently, been very little quantitative evidence to assist us in making judgments about the overall contributions of unions to the welfare of Australian society. Now a body of empirical literature has emerged and is beginning to permit some judgments to be made. In this paper we have tried to review and summarise that literature.

The Freeman/Medoff 'two faces of unionism' model provides a convenient framework for the analysis of much of the literature. The 'monopoly face' of unionism is most clearly manifest in the wage-raising activities of unions. Various studies have estimated that Australian unions raise the wages of their members relative to non-members by about 10 per cent. This is broadly in line with estimates for most European countries but is about half that generally estimated for the US. However, the mystery of the source of the union/non-union wage differential, in an environment where the law requires both union and non-union workers to be covered by the terms of awards, has not been solved.

While the finding that unions raise their members wages above those of their non-union counterparts may appeal to the proponents of unionism, the economic judgment is that it is evidence that unions bring about a distortion of relative factor prices and a consequent misallocation of resources. The result is, *ceteris paribus*, a net reduction in social welfare.

The 'collective voice' face of unionism is a mechanism for positive union impact on welfare. The work of the 'Harvard School' in the US finds evidence of such a contribution in that country. A central prediction of the collective voice hypothesis is that unionism will reduce quit rates and thereby reduce costs. While the evidence on this issue in Australia is not unambiguous, the majority of studies find that unionists display significantly lower probabilities of quitting than non-unionists. Moreover, unionists are found to exhibit longer job tenures than non-unionists and are associated with lower lay-off rates. These findings are broadly in line with those of US work and are supportive of the existence of a significant collective voice mechanism in Australian industrial relations.

A further prediction of the collective voice model is that unions will increase the importance of fringe benefits in the compensation package. Australian evidence is again supportive of this prediction. In respect of another prediction of the collective voice hypothesis, that unions will reduce wage inequality, the evidence is inconclusive.

The impact of unions on productivity and profitability is of considerable importance. While more work is required to establish any firm conclusions, preliminary studies, using data from the Australian Workplace Industrial Relations Survey, suggest that unions have a small but significant negative influence on productivity and on the rate of return to capital in firms in competitive product markets. The negative productivity finding is in contrast to the findings of most US research but is in line with the British evidence.

Freeman and Medoff (1984) draw the following general conclusion from their review of the US research: 'On balance, unionization appears to improve rather than to harm the social and economic system.' (p.19) Because of the tentative finding that unionism impacts negatively on productivity, we cannot draw such a conclusion. Indeed, the evidence points, if anything, in the other direction.

We have also reviewed the literature on the determinants of union membership, unions and strikes and unions and wage inflation. The literature on the determinants of union membership has produced few clear findings and various studies contradict each other. This is an area in which further work is called for. The literature on strikes has produced clearer conclusions. Strike activity is negatively related to unemployment, positively to inflation, positively to company profits and is responsive to changes in an index of trade union militancy. The relationship between union activity and wage inflation is examined in a number of studies but no unambiguous conclusions have emerged. However, analyses of the effects of the Accord on wages growth suggest that unions play a role in the wage inflation process.

The Australian industrial relations system is becoming increasingly decentralised and the locus of bargaining in the future will probably be the workplace or the enterprise. Is there anything in our survey which points to the likely impact of unions in this new environment?

We have seen that there exists evidence that the collective voice mechanism is

effective in Australian industrial relations. And if it is effective within a centralised bargaining system, it is likely to become more effective within a decentralised one. This is because the transmission of collective voice is essentially in the nature of communication between workers and their unions and management at the place of work. While much informal bargaining activity already exists at workplace level, a refocussing of the formal system at this level has the potential to greatly strengthen the expression of voice. Accordingly, the potential for unions to make a positive impact on enterprise efficiency will be enhanced under a decentralised industrial relations system.

However, we noted that unions appear to have negative effects on productivity. Although there is no direct evidence which would permit us to identify the nature of this problem, one likely contributing factor is restrictive work practices (which are an aspect of union monopoly power). The elimination or dilution of such practices would go a long way to creating a situation in which unions made a highly constructive contribution to economic efficiency. Once again there is promise in the trend towards a decentralised system of industrial relations. Over the last few years, with strong encouragement from the Commonwealth and the Industrial Relations Commission, productivity-enhancing measures have been part and parcel of the structural efficiency process which has been a moving force behind the decentralisation of the industrial relations system. Further decentralisation is likely to continue to emphasise the need to address workplace productivity in the context of local bargaining.

References

- Alston, J.M. and Chalfant, J.A., (1987). 'A Note on Causality Between Money, Wages and Prices in Australia', *Economic Record*, 63 (181), 115-119.
- Ashenfelter, O. and Johnson, G.E., (1969). 'Bargaining Theory, Trade Unions and Industrial Strike Activity', *American Economic Review*, 59, 35-49.
- Ashenfelter, O. and Pencavel, J., (1969). 'American Trade Union Growth: 1900-1960', *Quarterly Journal of Economics*, 83 (3), 434-448.
- Australian Bureau of Statistics, (1990a). *Trade Union Members Australia*, August 1990, (Catalogue No. 6325.0), Canberra: Commonwealth Government Printer.
- Australian Bureau of Statistics, (1990b). *Employment Benefits, Australia, August 1989*, Canberra: Commonwealth Government Printer.
- Bain, G. and Elsheik, F., (1976). *Union Growth and the Business Cycle: An Econometric Analysis*, Oxford: Basil Blackwell.
- Beggs, J.J. and Chapman, B.J., (1987a). 'An Empirical Analysis of Australian Strike Activity: Estimating the Industrial Relations Effect of the First Three Years of the Prices and Incomes Accord', *Economic Record*, 63 (180), 46-60.
- Beggs, J.J. and Chapman, B.J., (1987b). 'Declining Strike Activity in Australia 1983-85: An International Phenomenon', *Economic Record*, 63 (183), 330-339.
- Bentley, P. and Hughes, B., (1970). 'Cyclical Influences on Australian Strike Activity: The Australian Record 1952-68', *Australian Economic Papers*, 9, 149-170.
- Blanchflower, D.G. and Oswald, A.J., (1989), 'Working Internationally', in *British Social Attitudes: The International Report*, by Jowell, R., Witherspoon, S. and Brook, L. (ed.), Gower.
- Boehm, E., (1984). 'Money Wages, Consumer Prices and Causality in Australia', *Economic Record*, 60 (170), 236-251.
- Boehm, E. and Martin, V., (1989). 'An Investigation into the Major Causes of Australia's Recent Inflation and Some Policy Implications', *Economic Record*, 65 (188), 1-15.
- Booth, A. and Cressy, R., (1990) 'Strikes with Asymmetric Information: Theory and Evidence', *Oxford Bulletin of Economics and Statistics*, 52 (3), 269-291.
- Borland, J., (1989). 'Trade Unions in Australia', *Australian Economic Review*, 1st quarter, 66-73.
- Borland, J. and Ouliaris, S., (1989). 'The Determinants of Australian Trade Union Membership', Research Paper No. 226, Department of Economics, University of Melbourne.

- Carruth, A. and Disney, R., (1988). 'Where Have Two Million Trade Union Members Gone?', *Economica*, 55 (217), 1-20.
- Carmichael, J., (1990). 'Inflation: Performance and Policy', in S. Grenville (ed), *The Australian Macro-Economy in the 1980s*, Sydney: Reserve Bank of Australia.
- Cartter, A.M., (1959). *Theory of Wages and Employment*, Illinois: Irwin.
- Chapman, B., (1990). 'The Labour Market', in S. Grenville (ed), *The Australian Macro-Economy in the 1980s*, Sydney: Reserve Bank of Australia.
- Christie, V.C., (1992). 'Union Wage Effects and the Probability of Union Membership', *Economic Record*, 68 (200), 43-56.
- Christie, V.C. and Miller, P.W., (1989). 'Attitudes Towards Unions and Union Membership', *Economics Letters*, 30 (3), 263-268.
- Clark, K., (1984). 'Unionisation and Firm Performance: The Impact on Profit, Growth and Productivity', *American Economic Review*, 74(5) 893-919.
- Creigh, S. and Wooden, M., (1985). 'Strikes in Post-War Australia: A Review', *The Journal of Industrial Relations*, 27 (2), 131-157.
- Crockett, G., Dawkins, P., Miller, P. and Mulvey, C., (1992). 'The Impact of Unions on Workplace Productivity in Australia', *Australian Bulletin of Labour*, *Australian Bulletin of labour*, 18 (2), 119-141.
- Crockett, G., Dawkins, P., and Mulvey, C., (1992). 'The Impact of Unions on Workplace Profitability', paper presented to the 21st Conference of Economists, University of Melbourne, Melbourne.
- Crockett, G. and Hall, K., (1986). 'Why Do Salaried Professionals Join Unions: An Australian Perspective', WA Labour Market Research Centre Discussion Paper No. 14.
- Crockett, G. and Hall, K., (1987). 'Salaried Professionals and Union Membership: An Australian Perspective', *The Journal of Industrial Relations*, 29, 49-65.
- Deery, S. and De Cieri, H., (1991). 'Determinants of Trade Union Membership in Australia', *British Journal of Industrial Relations*, 29 (2), 59-73.
- Deery, S. and Plowman, D.H., (1991). *Australian Industrial Relations*, (3rd edn.) Sydney: McGraw-Hill.
- Drago, R. and Wooden, M., (1989). 'Trade Unions and Workplace Efficiency in Australia: Some Preliminary Results' in Bray, M. and Kelly, D. (eds) *Issues and Trends in Australasian Industrial Relations*: Proceedings of the 4th Biennial AIRAANZ Conference, Sydney: AIRAANZ.

- Drago, R. and Wooden, M., (1990). 'The Determinants of Strikes in Australia', *The Journal of Industrial Relations*, 32 (1), 32-52.
- Drago, R and Wooden, M., (1991). 'Turnover Down Under: Trade Unions and Exit Behaviour in Australia', *The Journal of Industrial Relations*, 33, 234-248.
- Drago, R. and Wooden, M., (1992). 'The Australian Workplace Industrial Relations Survey and Workplace Performance', *Australian Bulletin of Labour*, 18(2), 142-167.
- Drago, R., Wooden, M and Sloan, J., (1992). *Productive Relations? Australian Industrial Relations and Workplace Performance*, Sydney: Allen and Unwin.
- Duncan, G.J., (1976). 'Earnings Functions and Non-Pecuniary Benefits', *Journal of Human Resources*, 11 (4), 462-483.
- Duncan, G.M. and Stafford, F.P., (1980). 'Do Union Members Receive Compensating Wage Differentials?' *American Economic Review*, 70, 355-71.
- Duffy, N.F. and Mulvey, C., (1987). *The Sources of Union Power*, Perth: AIPP.
- Dunlop, J.T., (1950). *Wage Determination Under Trade Unions*, New York: Kelley.
- Farber, H., (1986). 'The Analysis of Union Behaviour' in O.C. Ashenfelter and R. Layard (eds.) *Handbook of Labor Economics*, Vol 2, Amsterdam: North-Holland.
- Freeman, R. and Medoff, J., (1984). *What Do Unions Do?*, New York: Basic Books.
- Griffin, G., (1983). 'White-collar Unionism 1969 to 1981: Some Determinants of Growth', *The Journal of Industrial Relations*, 25, 26-37.
- Hatton, T. J. and Chapman, B.J., (1987). 'Post-School Training in Australia in 1900-1980', Working Paper in Economic History No. 94, Australian National University.
- Hicks, J., (1963). *The Theory of Wages*, (2nd edn), New York: Macmillan.
- Hirsch, B.T. and Addison, J.T., (1986). *The Economic Analysis of Unions*, Boston: Allen and Unwin.
- Hirschman, A. O., (1970). *Exit, Voice and Loyalty*, Cambridge, Mass: Harvard University Press.
- Hossain, A., (1991). 'Trade Unions and Inflation: The Case of Australia', *Economic Papers*, 10 (2), 60-68.
- Howard, W.A., (1977). 'Australian Trade Unions in the Context of Union Theory', *The Journal of Industrial Relations*, 19, 255-273.
- Kenyon, P. and Lewis, P., (1990). 'Trade Union Membership and the Accord',

Working Paper Number 44, Economics Programme, Murdoch University, Murdoch.

Kenyon, P. and Lewis, P., (1992). 'Trade Union Membership and the Accord', *Australian Economic Papers* (forthcoming).

Kornfeld, R., (1990). 'Effects of Unions on Young Workers in Australia', mimeo, Harvard University.

Lee, L.F., (1978). 'Unionism and Wage Rates: A Simultaneous Equations Model with Qualitative and Limited Dependent Variables', *International Economic Review*, 19, 415-33.

McDonald, I.M. and Solow, R.M., (1981). 'Wage Bargaining and Employment' *American Economic Review*, 71, 896-908.

Manning, A., (1992). 'How Robust is the Microeconomic Theory of the Trade Union?' London School of Economics, Centre for Economic Performance Discussion Paper No. 65.

Marshall, A., (1920). *Principles of Economics*, (8th edn.), London: Macmillan.

Metcalf, D., (1990). 'Union Presence and Labour Productivity in British Manufacturing Industry: A Reply to Nolan and Marginson', *British Journal of Industrial Relations*, 28 (2), pp 228-49.

Miller, P. W. and Mulvey, C., (1993). 'Does Compulsory Arbitration Neutralise Union Power ?' *Industrial Relations*, forthcoming.

Miller, P. W. and Mulvey, C., (1991a). 'Australian Evidence on the Exit/Voice Model of the Labour Market', *Industrial and Labor Relations Review*, 45 (1), pp 44-57.

Miller, P.W. and Mulvey, C., (1991b). 'Trade Unions and the Distribution of Paid Overtime', *The Journal of Industrial Relations*, 33, 220-33.

Miller, P. W. and Mulvey, C., (1992). 'Trade Unions, Collective Voice and Fringe Benefits', *Economic Record*, 68, 125-141.

Miller, P. W. and Rummery, S., (1989). 'Unionism and the Structure of Male Wages in the Youth Labour Market', *The Journal of Industrial Relations*, 31, 185-211.

Mulvey, C., (1978). *The Economic Analysis of Trade Unions*, Oxford: Martin Robertson.

Mulvey, C., (1986). 'Wage Levels: Do Unions make a Difference?' in J. Niland (ed), *Wage Fixation in Australia*, Sydney: Allen and Unwin.

Mulvey, C., (1992). 'The Impact of Unions on Economic Welfare: A Short Survey', *Economic and Labour Relations Review*, 2 (2) 45-64.

- Neville, J., (1990). "Comment on J. Carmichael's paper 'Inflation: Performance and Policy'" in S. Grenville (ed) *The Australian Macro-Economy in the 1980s*, Sydney: Reserve Bank of Australia.
- Ng, I., (1987). 'The Economic and Political Determinants of Trade Union Growth in Selected OECD Countries', *The Journal of Industrial Relations*, 29, 233-242.
- Nickell, S.J., (1982). 'A Bargaining Model of the Phillips Curve', London School of Economics, Centre for Labour Economics Discussion Paper No. 130.
- Oswald, A.J. (1985). 'The Economic Theory of the Trade Union: An Introductory Survey', *Scandinavian Journal of Economics*, 87, 160-193.
- Parkin, M., (1973). 'The Short-Run and Long-Run Trade-offs Between Inflation and Unemployment in Australia', *Australian Economic Papers*, 12, 127-144.
- Peetz, D., (1990). 'Declining Union Density', *The Journal of Industrial Relations*, 32, 197-223.
- Perry, L.J., (1978a). 'Trade Union Activity and Post-War Inflation in Australia', *Australian Economic Review*, 1st quarter, 40-50.
- Perry, L.J., (1978b). 'Measuring the Relationship Between Trade Union Militancy and Wage Inflation in Australia: An Empirical Analysis - 1962-1976', *The Journal of Industrial Relations*, 20, 191-201.
- Perry, L.J., (1979). 'Inter-War Wage Movements and Trade Union Militancy in Australia', *Australian Economic Papers*, 18, 229-242.
- Phipps, A.J., (1997). 'Strike Activity and Inflation in Australia', *Economic Record*, 53 (143), 297-319.
- Robinson, C., (1989). 'The Joint Determination of Union Status and Union Wage Effects', *Journal of Political Economy*, 97, 639-67.
- Sharpe, I., (1971). 'The Growth of Australian Trade Unions 1907-1969', *The Journal of Industrial Relations*, 13, 138-154.
- Sloan, J., (1985). 'The Unionization of Young People in Australia', *The Journal of Industrial Relations*, 27, 38-48.

TABLE 1**Summary of Major Australian Cross-Section Studies of Union Membership**

<u>Author(s)</u>	<u>Data</u>	<u>Type of Model</u>	<u>Independent Variable</u>	<u>Major Findings</u>
Crockett and Hall (1987)	Mail survey of all graduates from the Western Australian Institute of Technology 1970s (various years), 887 males and females.	Reduced Form	Gender, marital status and number of children, birthplace, full-time work experience, unemployment duration, industry, sector of employment, earnings, job satisfaction, job tastes.	Characteristics of the job (industry, sector of employment) are important determinants of union membership, with membership in wholesale and retail trade and manufacturing being relatively low and that in construction, transport and storage, communications and community service being relatively high for males (industry was not a very important determinant of female unionism) while unionism is lower in the private sector than in the public sector for both males and females. There is a positive link between a preference for job security and union membership for both males and females, while job experience was an important positive influence on male membership but not on female membership.
Christie and Miller (1989), Christie (1992)	1984 Australian National Social Science Survey - representative of population aged 18 years and over, 1316 males and females.	Reduced Form and Structural	Gender, marital status, education, location, experience, industry, occupation, expected wage gain, attitudes towards unions.	Unionism increases with experience and expected wage gain, and is lower among females. Union membership varies appreciably across industries; it is relatively low in agriculture, construction and wholesale trade, and relatively high in public administration and communications. Unionism also varies across occupations; it is relatively low in the professional and administration and sales occupations, and relatively high in production and clerical occupations. Individuals holding negative attitudes towards unions are less likely to be union members, and the attitudes variable is only weakly correlated with the other variables included in the analysis.

<u>Author(s)</u>	<u>Data</u>	<u>Type of Model</u>	<u>Independent Variable</u>	<u>Major Findings</u>
Miller and Rummery (1989)	1985 Australian Longitudinal Survey, 1904 males aged 19-25	Reduced Form and Structural	Education, qualifications, location, industry, occupation, full-time status, general labour market experience, duration of employment, expected wage gain, job satisfaction	Unionisation rates are relatively low in agriculture and wholesale trade and relatively high in the finance and transport industries. Unionisation rates are relatively low in the managerial and professional occupations and relatively high in the process and manual occupations. Individuals with qualifications are more likely to be union members than those without qualifications, satisfied workers are less likely to join unions than dissatisfied workers and membership and expected wages are positively related. The major findings are not affected by compulsory unionism.
Deery and De Cieri (1990)	1987 Australian Election Survey - nationally representative survey, 862 males and females aged 18 and over	Reduced Form	Gender, marital status, dependents present, education, age, location, white collar, full-time status, self-employed, supervisory status, sector of employment, social status, spouse in union, attitudes towards unions.	The groups significantly less likely to be union members are white collar workers, workers employed on a part-time basis, the self-employed, and those with a negative perspective towards unions. Individuals with leftist political ideology and those who favour wealth redistribution are more likely to be union members.

Note: Results reported for the first three studies are derived using a logit model; those reported in Deery and De Cieri are from ordinary least squares.

TABLE 2

Summary of Major Australian Time-Series Studies of Union Membership

<u>Author</u>	<u>Data</u>	<u>Estimation Technique</u>	<u>Dependent Variable</u>	<u>Independent Variable</u>	<u>Major Findings</u>
Sharpe (1971)	Annual 1907 - 1969	OLS	Annual growth in membership	Union density in highly unionised sectors, employment growth in highly unionised sectors, unemployment rate, dummy for favourable institutional environment, annual percentage change in real wages.	Union membership growth is positively related to employment growth and a favourable institutional environment, and negatively related to union density, the unemployment rate and real wages. Model explains around 75 percent of the variation in annual growth in membership.
Peetz (1990)	ABS survey data, 1976, 1982, 1986, 1988	Shift-share analysis applied to cross-tabulations	Union density	Industrial structure, sector of employment, occupational structure, full-time/part-time employment mix, public opinion towards unions.	Up to one-half of the recent decline in union membership is due to changes in the industrial structure, sector of employment and occupational structure. Changes in the part-time/full-time mix of employment are relatively unimportant. Changes in public attitudes towards unions do not appear to be important.
Borland and Ouliaris (1991)	Annual 1913 - 1989	Co-integration	Log of level of union membership	<u>Long run</u> : employment data disaggregated by gender and manufacturing/non manufacturing. <u>Short run</u> : union density, real wage and unemployment rate.	Main long-run influence on union membership is male employment in manufacturing and male employment in non-manufacturing, with the propensity to unionise of the former being greater than that of the latter. The real wage, union density and unemployment rates are negatively related to changes in union membership in the short run.
Kenyon and Lewis (1992)	Annual 1948 - 1990	OLS	Growth in Trade Union Membership	Growth in real weekly earnings, growth in employment in heavily unionised sectors, union density, unemployment rate, growth in female employment, growth in government employment. Labor in power dummy, Accord.	Trade union growth is positively related to real wage growth, the fraction of the workforce employed in heavily unionised sectors, growth in government sector employment, the unemployment rate, labour in power, and is negatively related to union density, growth in female employment and the Accord.

TABLE 3

Summary of Major Studies of Union Wage Effect in Australia

Author	Data	Estimation Technique	Independent Variables	Major Findings
Mulvey (1986)	1982 ABS Special Supplementary Survey 4, 9323 males and 5542 females	OLS	Education, qualifications, experience, birthplace, marital status, duration of residence, multiple job holder, occupation, industry, location, part-time worker, union status.	Union status is associated with a 9.67 percent wage effect among males and a 7.4 percent wage effect among females.
Christie (1992)	1984 Australian National Social Science Survey, representative of population aged 18 years and over, 1316 males and females.	OLS, selectivity corrected	Education, qualifications, experience, marital status, gender, occupation, location, union status	Union status is associated with a 15.19 percent wage differential. Taking account of sample selection bias results in only a small increase in the union wage effect.
Kornfeld (1990)	Australian Longitudinal Survey, 1985-1988, 3082 young males and females	OLS, fixed effects model	Education, qualifications, experience, tenure, occupation, industry, firm size, marital status, part-time status, public sector, union status.	Union status is associated with a 7.3 percent wage effect in 1988; 11.3 percent for men and 2.1 percent for women. The union wage effect is greater in the private sector than the public sector. In 1985 the union wage effect was 8.3 percent, in 1986 8.9 percent and in 1987 it was 9.5 percent. The estimate of the union wage effect derived from a fixed effect model using data for 1985-88 is 8.5 percent.
Miller and Rummery (1989)	1985 Australian Longitudinal Survey, 1904 males aged 19 - 25	OLS, selectivity corrected	Education, qualifications, experience, tenure, occupation, industry, full-time status, union status.	Union status is associated with a 13.12 percent wage differential; selectivity-corrected results are broadly similar to OLS.
Crockett and Hall (1986) (1987)	Mail survey of all graduates from the Western Australian Institute of Technology 1970s (various years), 887 males and females	OLS	Experience, qualifications, occupation, gender, marital status, number of children birthplace, year of graduation, occupation, public sector, union status.	Union membership is associated with 4.8 percent higher wages.
Hatton and Chapman (1987)	1973 ANU Social Mobility Survey, 1681 males aged 30 years and over	OLS	Education, qualifications, experience, tenure, marital status, location, firm size, post-schooling training, union status.	Union status is associated with a 4.7 percent wage effect in a restricted specification, but is not a statistically significant determinant of wages in a regression where firm size and post-school training is held constant.
Blanchflower and Oswald (1989)	International Social Survey Programme, 1985 - 1987, 1363 males and females.	OLS	Education, experience, gender, marital status, part-time status, union status.	Union members receive a 13 percent wage premium.

Beggs and Chapman (1987a)	Quarterly 1959(3) to 1983(1)	OLS	<ul style="list-style-type: none"> ■ workers involved in strikes per unionist ■ days lost per worker involved (i.e. duration) 	inflation rate, inventories relative to GDP, overtime, corporate profit divided by the national wage bill, interaction between profits and overtime, job vacancy rate, seasonal dummies, time trend, political strike dummies	The proportion of unionists involved in strikes is positively related to overtime, inventory level and the inflation rate. Average strike duration is positively related to profits and the vacancy rate. The performance of the overtime variable was more satisfactory than that of unemployment and vacancy variables.
Beggs and Chapman (1987b)	Annual 1964 to 1985	OLS	<ul style="list-style-type: none"> ■ days lost per employee 	inflation rate, unemployment rate, time trend, dummy for prices and income accord of 1983 - 1985	Strike activity has a positive trend and is positively related to the inflation rate. It is negatively related to the unemployment rate and the prices and income accord. Cross-country comparisons show that the negative impact of the 1983-1985 dummy is unique to Australia.
Drago and Wooden (1990)	1988 Survey of Business Council of Australia firms	OLS	<ul style="list-style-type: none"> ■ number of work stoppages ■ number of days during which workplace was closed due to strikes 	variables covered the following areas: general economic environment; employer and workplace characteristics; workforce characteristics; union characteristics; union-management co-operation; award characteristics	Strike incidence is higher in unionised plants and in multiple union settings; the incidence is lower where there is the perception of union-management co-operation but is higher in work environments where there are joint union-management committees. The existence of company awards reduces the incidence of strikes.

TABLE 4

Summary of Major Australian Studies of Strike Activity

Authors	Data	Estimation Technique	Dependent Variable	Independent Variables	Major Findings
Bentley and Hughes (1970)	Quarterly, 1952(1) to 1968(4) disaggregated by sector	OLS	<ul style="list-style-type: none"> ■ industrial disputes per employee ■ days lost per worker involved (i.e. duration) ■ days lost per employee ■ number of workers involved per strike 	unemployment rate, change in unemployment rate, time trend, seasonal dummies	Negative relationship between strike frequency and unemployment rate in both coal and non-coal sectors, little evidence of a cyclical component in the duration and time lost data in the coal industry but some evidence that both duration and time lost in the non-coal sector are negatively related to the unemployment rate and positively related to the change in the unemployment rate.
Phipps (1977)	Quarterly 1960(1) to 1972(4)	2SLS 3SLS	<ul style="list-style-type: none"> ■ number of strikes per employee 	inflation rate, gross operating surplus of companies divided by national wage bill, seasonal dummies, time trend	Strike equation part of 3-equation simultaneous model (explaining strikes and price and wage inflation). The inflation rate and the ratio of gross operating surplus of companies to the wage and salary bill are positively related to the incidence of strikes. An excess demand variable defined as for Perry (1978a) was not considered due to its high correlation with the inflation rate.
Perry (1978a)	Annual 1953 - 1976, 1947 - 1961, 1962 - 1976	OLS	<ul style="list-style-type: none"> ■ days lost per employee 	inflation rate, vacancy rate minus unemployment rate, change in trade union density	The level of excess demand, as measured by the gap between the vacancy and unemployment rates, the inflation rate, and change in trade union density are positively related to strike activity. The latter variable is less important in the 1962 - 1976 period. The unemployment rate has a negative impact when used as a proxy for excess demand.
Perry (1979)	Annual 1919 - 1939	OLS	<ul style="list-style-type: none"> ■ days lost per employee 	inflation rate, unemployment rate, dummy variable for 1929 - 1932	Strike activity is negatively related to the unemployment rate and positively related to the inflation rate and the depression shift variable.

WHAT DO AUSTRALIAN UNIONS DO?

by

Paul Miller

and

Charles Mulvey

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