

The Impact of Unions: on Economic Welfare: A Short Survey*

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Abstract

This paper examines a number of aspects of the economic impact of unions with particular emphasis on the exit/voice model proposed by Freeman and Medoff. It examines the reported effects of unions in quit rates and job tenure; productivity; wage dispersion and merit pay; employment; fringe benefits; technological change and profits.

1. Introduction

The 1980s witnessed a great upsurge of interest in the economics of unions. New theoretical approaches were explored and much empirical work was undertaken to test the hypotheses thrown up by the theorists. The most influential theoretical innovation was the so-called exit/voice model of unionism proposed by the Harvard School led by Richard Freeman and Jim Medoff. Furthermore, much of the empirical literature of the 1980s could be said to fall within the framework of the exit voice model. The exit/voice model has been influential for a number of reasons but one of the most important has been its relevance to the central issue of the net impact of

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unions on the welfare of society. This is a question of some philosophical interest but also raises a number of important practical policy issues.

The exit/voice model of the labour market is an adaptation of the more general model proposed by Hirschman (1971). Its best known application to the labour market context is that of Freeman and Medoff (1984). A brief summary of its main features are presented here and most of the following discussion concerns the findings of empirical research designed to test its validity. The literature on this topic is vast so that it is my intention to point the reader in the direction of the relevant work with some indication of its content rather than to attempt anything resembling a literature review. Since much of the research output on this topic is very recent and is in the form of working papers, mimeos etc., I have often had to rely quite heavily on literature reviews produced by others. In particular, Blanchflower and Freeman (1990) and Metcalf (1990) have been valuable sources of information on recent research.

2. The Freeman and Medoff Model

2.1 *The Monopoly Face of Unionism*

Freeman and Medoff distinguish between the '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 are estimated to have significantly raised 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 wages and relative factor prices by unions bring 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.

2.2 The Collective Voice Mechanism

Freeman and Medoff (1984) identify another, socially positive, face of unionism - the collective voice face. The Hirschman 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..'. 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 and this may discourage non-union workers from voicing complaints. Unionised workers, however, are generally protected by their collective 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*.

To the extent that greater stability is introduced in the employment relationship by reduced quit rates and longer term job durations by the collective voice activities of unionism within the firm, 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 the 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 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 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 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 term, 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.

3. A Review of the Empirical Literature

There is a very considerable international literature on the relative wage effects of unions, including a number of estimates for Australia. [See Miller and Mulvey (1989a) for a discussion of Australian estimates and Blanchflower and Freeman (1990) for an international perspective.] This represents the quantification of the monopoly face activities of unions. (There are no doubt others, such as restrictive work practices, but these are extremely difficult to quantify.) The conventional method of such quantification involves the use of cross-section regression analysis, usually employing a large data base with detailed information on individuals. The method used is to estimate a regression equation in which the individual's wage is the dependent variable, with union status as an independent variable and a large number of variables which might be expected to influence the wage independent of union status used as additional independent variables. In this way, the effect of being a union member on wages can be estimated independent of other personal and job related characteristics.

There has been a considerable amount of empirical research into the collective voice aspects of union activity, most of it in the US but also some in the UK, Canada, Japan and Australia. There are a number of aspects of the collective voice hypothesis which are very difficult to test empirically because suitable data are not available. However, there are a number of specific hypotheses which are amenable to testing with available data and, largely following Blanchflower and Freeman (1990), we discuss these under seven headings below.

The effects of unionism on:

- quits and job tenure
- productivity/productivity growth
- wage dispersion and merit pay
- employment
- fringe benefits
- technological change
- profits

3.1 Unionism, Quits and Job Tenure

A central hypothesis of the exit/voice model is that unionism reduces quit rates relative to non-unionism due to the availability of collective voice as an alternative to exit in unionised establishments. A straight regression of quit rates or job tenure on the presence of unionism or on individual union

status is not appropriate as a test of this hypothesis since the relative wage effect of unionism may affect quit probabilities directly. It is therefore necessary to control for the relative wage effect of unionism in estimation. It is also desirable to control for a number of other characteristics of individuals or groups which may influence quit probabilities independent of unionism - human capital characteristics, experience, age, sex, location, size of establishment and occupation for example.

There have been a variety of such studies, some involving estimates of the effect of unionism on individual quit probabilities (using microdata sets) and some involving comparisons between quit rates in unionised establishments with those in non-union establishments. Almost all of the studies reported in the literature, both those based on individual data and those based on establishment data, find a significant negative relationship between unionism and the probability of quitting or the quit rate, after controlling for the wage and various personal and job-related characteristics of the sample. A large number of such studies are surveyed by Freeman and Medoff (1984) and the results set out in convenient tables. [Tables 6-1, 6-2 and 6-3 pp 96 - 100.] An extensive survey of this literature, from a more critical perspective, can be found in Hirsch and Addison (1986). The early studies focussed on industry cross-section data, due mainly to the fact that suitable microdata sets were unavailable at the time. [Pencavel (1970), Stoikov and Raimon (1968), Burton and Parker, as revised by Freeman, undated, cited in Freeman and Medoff (1984) p 100, and Brown and Medoff (1978)]. [Brown and Medoff (1978) is discussed in the next section.]

The industry studies of quit rates find that unionism reduces the quit rate by between 35% and 49% after controlling for wage differentials. [Freeman and Medoff (1984), Table 6-3, p 100.] Studies which make estimates of the union impact on quits for the USA based on microdata sets find that unionism reduces the quit probability by between 15% and 94%. [Freeman and Medoff (1984), Table 6-3, p 100.] In contrast, Clark (1980), who observed six cement plants in the US before and after unionisation found that in three plants quits either increased or remained the same after unionisation.

For Australia, Miller and Mulvey (1991) using the Australian Longitudinal Survey data, found that for young workers (the ALS sample was restricted to workers under 26 years of age in 1986), unionism reduces the quit rate by 10% and increases job tenure by 20%. This finding is paralleled by Kornfeld (1990), also using the ALS but with differently specified equations. In contrast Drago and Wooden (1989) do not find evidence of any significant relationship between labour turnover and union density in a study based on plant level data. However, there was some evidence that

collective voice effects were operating where 'the quality' of union representation was measured. The measures of the quality of union representation used were ratio of shop stewards to employees, number of full-time workplace stewards per union and the presence of a joint union-management committee. Where union activity so measured was high, the turnover rate was reduced but non-union workplaces were '... also found to have much lower turnover rates than comparable unionised plants where the level of union activity is low' (p. 85).

There have been relatively few studies of the relationship between unionism and quits in the U.K. due mainly to the paucity of suitable data. Elias and Blanchflower (forthcoming in 1990) are reported to have found that unions raise job tenure. [Freeman and Blanchflower (1990)] In an unusual approach, Wilson, Cable and Peel (1990), using multivariate regression analysis found that quit rates in a sample of 52 engineering firms were reduced in the presence of strong unionism, as measured by a composite index of union density, closed shop and multiple staff and shop-floor unions, and where workers perceived there to be a relatively high degree of employee participation in decision making. In addition quit rates were reduced where there existed profit sharing and/or share ownership schemes. Evidence supporting the general proposition that quits are lower amongst union members than non-unionists is also to be found in Stewart (1987).

Few studies of the impact of unionism on quit rates exist for other countries. However, two Japanese studies reported by Blanchflower and Freeman (1990) have found evidence that unionism lowers the quit rate. [Muramatsu (1984) and Osawa (1989)]

3.2 Unionism and Productivity

Perhaps the largest literature of all concerns the impact of unionism on productivity. Since the discussion which follows will only scratch the surface of this literature, the reader is referred to excellent surveys as follows: Freeman and Medoff (1984), Hirsch and Addison (1986), Metcalf (1990), Nolan and Marginson (1990), Blanchflower and Freeman (1990).

The exit/voice model predicts, for reasons set out earlier, that unionism will raise productivity *ceteris paribus*. A large number of US studies, most of them reviewed in Freeman and Medoff (1984) have lent support to this hypothesis. A small number have either contradicted it or proved inconclusive. The 'production function studies', which have been pioneered by the Harvard School, have produced estimates of a union productivity effect for the economy, manufacturing sector and some individual industries in a

range from -20% to +39%. A very convenient presentation of many of these findings is contained in Hirsch and Addison (1986) Table 7.1 pp 196-7 and in Freeman and Medoff (1984) Table 11-1, p 166. The evidence is fairly strongly in favour of a generally positive union impact on productivity in the US although the highly sceptical Hirsch and Addison (1986) concede only that '... unionism need not necessarily detract from productivity ..' (p 215). While Freeman and Medoff (1984) interpret the evidence as support for the collective voice hypothesis, Hirsch and Addison (1986) are inclined to see it as reflecting the shock effect of unionism on management.

Brown and Medoff (1978) is a good example of a 'production function study' of the impact of unionism on productivity. They assume a Cobb-Douglas type of production function with two kinds of labour inputs, union and non-union. From the production function they derive an estimating equation in which value added per worker is the dependent variable. Independent variables are proportion unionised, the capital/labour ratio, regional and industry dummy variables, a variable to allow for non-constant returns to scale and a variable to measure the 'recentness' of the capital stock. They also include in certain regressions a quit rate variable. The regressions were run on a sample of 20 two-digit manufacturing industries cross-classified by 29 state groups. The data are drawn from the Current Population Survey and the Census of Manufactures for 1972. The estimated equations showed that unionised establishments displayed higher productivity (in a range of 20%-30%) than non-union establishments and that the introduction of the quit rate as an independent variable reduces the union productivity coefficient by about 20%. The implications of this are that the quit rate in a unionised establishment will be approximately 27% lower than that of a comparable non-union establishment.

Serious criticisms of this type of study are raised in Hirsch and Addison (1986). The main criticisms are that price and quantity effects are indistinguishable in the value added variable; the assumption of identical production functions in the union and non-union sectors may be inaccurate; unmeasured organisational factors specific to firms and independent of unionism may affect productivity; and indirect effects of unionism, which force management to respond to higher costs due to unionism, rather than collective voice, may be the source of any observed higher productivity. Hirsch and Addison (1986) declare themselves highly sceptical of Brown and Medoff's (1978) findings.

A recent US study by Belman (1989) is reported to have found that the effect of unionism on productivity is positive in some industries but not in others. Presumably this has prompted Blanchflower and Freeman (1990) to draw the rather remarkable conclusion that 'The preponderance of US

studies do indicate a positive union productivity effect but there are enough counter-examples to suggest that it is the state of labor relations rather than unionism and collective bargaining *per se* that determines productivity.' (p 16) We must await a definitive pronouncement on the matter from Freeman.

Greater controversy surrounds the UK studies of union impact on productivity. These studies are summarised and very conveniently presented in Metcalf (1990), Tables A-1, A-2, A-3, A-4 and A-5, pp 259-65. The matters at issue in the controversy are well illustrated by reading Nolan and Marginson's (1990) critique of Metcalf's approach and Metcalf's reply, Metcalf (1990). At one level the debate simply concerns the appropriate interpretation of the results of the various empirical studies, at another it relates to the capacity of the neoclassical economics to provide an adequate theoretical framework for the analysis of the economic impact of unionism. In relation to the latter point, the critics of the neoclassical model (Nolan and Marginson in this case) argue that a dynamic perspective which stresses the role of the power relationships between the parties is required to properly evaluate the role of unionism and that the assumption that '... the employment relationship would be characterised by shared interests, harmony and co-operation in the absence of unions' [Nolan and Marginson (1990) p 230] is incorrect and misleading. Metcalf (1990) responds with a spirited defence of the neoclassical position.

Metcalf (1990) lists twelve studies which attempt to estimate the impact of unionism on productivity *levels* in the UK and seven relating unionism to productivity *growth*. All of the studies are essentially 'production-function studies' like those undertaken in the US. The studies of union impact on productivity levels utilise various industry and workplace surveys. Almost all of these studies utilise as the dependent variable some measure of value added per head or net output per head. One used turnover per head [Edwards (1987)], another uses coal output per manshift [Pencavel (1977)] and another the degree to which management is constrained in work organisation [Machin and Wadhvani (1989)]. Almost all employ union density or extent of collective agreement coverage as a dependent variable and almost all control for the capital/labour ratio. The level of strike activity is used in two studies [Caves (1980) and Davies and Caves (1987)] and union recognition in another [Machin and Wadhawani (1989)] to proxy the union presence.

According to Metcalf (1990) 'The weight of the evidence suggests that around 1980 union presence was associated with lower levels of labour productivity ...' (p 249). However, Machin (1987) finds that in some firms unionism is associated with higher productivity but in others is associated with lower labour productivity. In general large, unionised firms displayed

the lowest productivity levels. The firms displaying an adverse association between unionism and labour productivity employed ten times as many workers on average as those displaying higher productivity. Wilson (1989) found that the effect of unions on productivity varied with the density of unionism. Firms with 50% union density have 20% lower productivity than non-union firms, firms in the range 50-80% union density yield 4% higher productivity and those where density exceeds 80% have 16% lower productivity than non-union firms. Edwards (1987) also shows that labour productivity varies with the density of unionism, the higher the density up to 80%, the more productivity is reduced. Hence, while the general thrust of the evidence points to a negative association between unionism and labour productivity, the relationship is apparently quite complex. Further complexities are revealed in the work of Davies and Caves (1987) and Knight (1989).

In contrast Metcalf (1990) concludes that the studies of the impact of unionism on the growth of labour productivity show '... that in the first half of the 1980s strongly unionised work-places and industries had faster growth in labour productivity than their non-union or less unionised counterparts.' (p. 250). As Metcalf points out, permanent differential growth rates between union and non-union establishments are implausible since this would imply an ever increasing gap between their productivity levels. Hence, estimated differences in growth rates are likely to be short-term in duration. Accordingly, it is suggested that the estimated rapid growth rates of productivity in unionised relative to non-unionised companies during the first half of the 1980s were a reversal of the situation which had applied in the late 1970s. [Nickell, Wadhvani and Wall (1989)] In addition, the industry studies reveal higher growth rates in labour productivity in more highly unionised industries relative to less unionised ones in the first half of the 1980s. Again this is held to have reversed the experience of the mid-1960s and mid-1970's. [Wragg and Robertson (1978), Oulton (1989), Bean and Symons (1990) and Davies and Cave (1987)] Reasons suggested for these findings do not have much to do with the exit/voice model. Instead the relaxation of restrictive work practices in unionised firms during the early 1980s, greater product market competition, reductions in negative aspects of multi-unionism and the impact of industrial relations legislation have been suggested as explanations. [Metcalf (1990)]

Hirsch and Link (1983) found for the US a negative relationship between growth in total factor productivity and changes in union density in manufacturing industry over the period 1957-73. Previously, Mansfield (1980), Terleckyj (1980) and Link (1981) each found that unionised firms or industries displayed lower rates of total factor productivity growth than their

non-union counterparts. Belman (1989), in a recent US study, also finds that unionised firms and industries display slower productivity growth.

Almost all of these studies utilise change in value added or net output per man or total factor productivity as the dependent variable. Machin and Wadhvani (1989) is an exception, their dependent variable is whether organisational change was experienced between 1981 and 1984. Independent variables normally include union density and/or collective agreement coverage and a set of control variables, which in two cases includes changes in the capital/labour ratio. [See Metcalf (1990) Tables A3, A4 and A5 for detailed information on the independent variables.]

Recent Australian studies, based on analysis of the Australian Workplace Industrial Relations Survey, suggest that unionism reduces productivity [Crockett, Dawkins, Miller and Mulvey (1992) and Drago and Wooden (1992)].

3.3 Unionism, Wage Dispersion and Merit Pay

We noted earlier that Freeman and Medoff (1984) argue that social welfare will be improved by reductions in wage inequalities. A number of empirical studies have been undertaken to investigate the impact of unions on the dispersion of wages. The principal findings of US studies are that:

- unions lower wage inequalities within establishments
- unions promote equal pay for equal work across establishments
- unions reduce the blue-collar/white-collar wage differential.

Unions do, of course, increase wage inequalities between union and non-union workers within given categories. However, Freeman and Medoff (1984) argue that the union wage inequality reducing effect outweighs their (monopoly) inequality increasing effect. Similar findings are reported by Blanchflower and Oswald (1988a) for the UK. Blanchflower and Freeman (1990) find that unionism is associated with lower pay dispersion in West Germany, Austria and Australia. Kornfeld (1990) however, finds no significant differences in wage dispersion between the union and non-union sectors in Australia.

The extent of merit pay or pay based on individual performance is also found to be less in the union relative to the non-union sector in the US and UK. [Freeman (1982) and Blanchflower and Oswald (1988a).]

3.4 Unionism and Employment

A number of studies have examined the impact of unionism on employment. I am aware of only two US studies on this topic [Pencavel and Hartsog (1984) and Leonard (1986)]. Pencavel and Hartsog (1984) use time series data over the period 1920-80 to estimate employment functions and although they find some evidence of a negative effect of unionism on employment they judge the association to be too weak to justify drawing any conclusions. According to Blanchflower and Freeman (1990), Leonard (1986) finds a negative association between unionism and employment. There have been a small number of studies for the UK. Blanchflower and Millward (1988) and Blanchflower, Millward and Oswald (1988) using establishment data from the UK WIRS 1984 (which allows employment change to be measured because the number of employees in each establishment in both 1980 and 1984 is recorded) both find a negative relationship between unionism and employment growth. In these British studies employment equations are estimated which control for the facts that declining industries are the traditionally highly unionised industries, small establishments have grown relatively more rapidly than large ones and unionism is positively associated with establishment size and that the most highly unionised regions are also those with the highest levels of unemployment. The union presence is indicated either by a dummy variable which shows whether a union is recognised at the establishment or a union density variable. Control variables include demand up/down, capacity high/low, financial performance, single product, industry dummy, county unemployment rate and whether the establishment is head office.

The theory which underlies these investigations is, at first blush, fairly simple but involves some complications. Unions raise wages above their competitive levels so that, assuming negatively sloped labour demand schedules, employment in unionised settings will be lower than in otherwise similar non-union settings. This does not however explain the estimated union impact on the growth of employment. Blanchflower, Millward and Oswald (1989) develop a model of firm behaviour which predicts that the employment effects of unionism - via the wage effect - bring about a gradual loss of customers and therefore to a gradual shrinkage of the unionised firm relative to an otherwise comparable non-union firm. The shrinkage may take '...years or decades...' [Blanchflower, Millward and Oswald (1989) p. 6]. I find this a somewhat unsatisfactory model but I have no alternative interpretation of the empirical results to offer. Note that the static effect of unionism on employment via the union wage effect could also arise as a result of higher labour costs resulting from any negative impact of unions on productivity.

3.5 Unionism and Fringe Benefits

One important prediction of the exit/voice model is that collective voice will convey to employers the preferences in relation to the compensation package of the whole workforce. Employers in the unionised sector will tend therefore to tailor the compensation package according to these preferences in contrast to the non-union employer whose package is targeted at young, mobile workers at the hiring margin.

There are essentially two empirical issues here: do workers really want a large fringe component in their compensation package and, if so, do unionised workers actually have larger fringe components in their compensation package? Addressing the second question first, Freeman and Medoff (1984) show that, indeed, unionised workers do tend to have a larger fringe component than non-union workers. However, it is of interest that in respect of the provision of sick leave, profit sharing, discounted meals and merchandise and paid maternity leave, (described as 'paternalistic fringes') non-union employers are found to be more generous than unionised ones. [The detailed results are set out in Freeman and Medoff (1984) Table 4-3, p 67.] Survey evidence is cited by Freeman and Medoff (1984) to support the notion that, within a compensation package of given value, workers will wish some proportion of it to be in the form of fringe benefits rather than cash. In turn it appears that unionised workers, with their higher proportion of fringes, are closer to the optimal package than non-union workers.

Note that the higher level of fringe benefits in the union compensation package could have been secured by the exercise of monopoly power rather than collective voice. Accordingly Freeman and Medoff (1984) estimate the effects of unionism on the composition of union and non-union compensation packages, holding total compensation constant. This ensures that only that part of the fringe element which is a trade-off against wages (i.e. arising from collective voice) is identified. On this basis Freeman and Medoff (1984) estimate that, of the total union impact on fringes, about 55% comes from reductions in wages (i.e. through collective voice) while the remaining 45% results in higher costs (i.e. reflects union monopoly power).

Miller and Mulvey (1992) find that union members amongst the youth labour force in Australia enjoy a significant advantage over non-unionists in respect of fringe benefits. Studies in the UK have also tended to support the US findings. Green, Hadjimatheou and Smail (1985) find that union workers enjoy better fringe benefits than non-unionists in the areas of sick pay, pensions and holiday entitlements. Millward and Stevens (1986) show that unions assist workers to have access to consultative arrangements and to health and safety committees. Blanchflower and Freeman (1990) report that a Japanese study has found that unions raise bonuses and severance

pay. [Nakamura, Sato and Kamiya (1988)] They also report that Kupferschmidt and Swidinsky (1989) find evidence that unions raise pensions in Canada. For Australia, Kornfeld (1990) shows that unionists enjoy better access to employer-sponsored superannuation schemes.

3.6 Unions and Technological Change

In seeking to protect their members' jobs unions may obstruct technological change. Conversely, unions may take a longer-run view and be supportive of technological change on the grounds that it will ultimately yield benefits for their members. Empirical studies produce very mixed results. In the US Keefe (1989) finds that unions affect the introduction of new technology differently in different industries and in relation to different kinds of technology. Belman (1989) finds that unionised firms undertake less R & D than non-union ones. For Canada, Betcherman (1988) reports no difference between union and non-union firms in the adoption of computer based technology. And for the UK, Daniel (1987) has produced evidence to show that unionism has actually had a positive effect on the introduction of microelectronic process technology.

3.7 Unions and Profitability

While unions may increase productivity/reduce costs through their collective voice activities, it is widely accepted that they increase costs as a result of raising their members' 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. Freeman (1983) and Clark (1984) both find significant and large reductions in profitability in US unionised firms and industries, measured both as price/cost margins and rates of return to capital. A more recent study by Belman (1989) confirms these findings for the US.

For the UK Machin (1988), Machin and Stewart (1988) and Blanchflower and Oswald (1988b) all find a negative union impact on profitability. The study by Machin and Stewart (1988) utilises data from the UK WIRS. A Question in the UK WIRS asked respondents to indicate whether their establishment's financial performance was 'better than average, average,

below average' by comparison with other establishments and firms in the same industry. The resulting data became the dependent variable in the regression analysis. Some independent variables were generated from within the WIRS database - market share, union recognition (in various forms, to take account of closed shops etc.), rise/fall in product demand and rise/fall in investment. Certain other variables were generated as industry averages from sources other than WIRS by matching the SIC category of the WIRS establishments with published data - price/cost margin, concentration ratio and collective agreement coverage.

4. Conclusion

A diverse and extensive literature is surveyed in this paper but the survey is far too brief to do justice to it. For this reason it is not appropriate to attempt to draw detailed conclusions from it. However, while it is clear that there is no consensus emerging from the empirical studies on the key area of the impact of unionism on productivity, there is a fair degree of agreement in relation to the impact of unionism on relative wages, quit rates, fringe benefits and profitability. Significantly, the evidence from the British and American studies appears to be in conflict in relation to many aspects of the impact of unionism through the voice mechanism. Moreover, as the literature has developed, both in the US and Britain, many of the earlier conclusions are being refined and, perhaps, substantially revised. In addition a number of studies for other countries, such as Canada, Japan and Germany, have now appeared and contributed to the development of an international perspective on the topic. All of this is relevant to Australia since an empirical literature on this topic is now emerging here and we can view the results in the context of the findings for other countries. The data set provided by the Australian Longitudinal Survey (ALS) has been most valuable in permitting some basic analysis to be undertaken but the Australian Workplace Industrial Relations Survey is now available and promises to permit quite sophisticated analysis of variables which are not in the ALS, particularly relative productivity.

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