Australian Strike Activity in an International Context: 1964-85

JOHN J. BEGGS AND BRUCE J. CHAPMAN*

The relative level of strike activity delivered by the Australian industrial relations system is central to current debate. The most simple method of addressing this issue is to make international comparisons of average working days lost per employee from industrial disputation. This paper reports these data for fourteen OECD countries for 1964–85. Simple comparison of strikes is far from an ideal method for judging the relative efficacy of countries' industrial relations systems, for two main reasons. The first is that different criteria are used across countries for inclusion or collection of strike data. Australian statistics are relatively comprehensive, implying that some part of Australia's relatively high level of strike activity is attributable to measurement. Second, macroeconomic variables influence the incidence and duration of strikes. This simple observation renders suspect the use of international comparisons of these disputes data as reflections only of industrial relations systems, since differences in macroeconomic experience will manifest themselves, to some extent, in these data. Through control for inflation and unemployment, among other things, a more accurate assessment of the Australian industrial relations system in an international context is made possible. The Australian system apparently delivers lower, or about the same, strike activity as culturally and politically similar countries. Overall there is no reason to believe that Australia is markedly different from the international norm.

The relative level of strike activity delivered by an industrial relations system involving a Conciliation and Arbitration Commission is central to current Australian policy debate. International comparisons of strikes provide important (albeit imperfect) insights into this issue. Simple comparisons of average working days lost are frequently reported and used to support arguments about the efficacy of the Australian system. A more accurate and different picture emerges when judgements make allowance for definitional differences in data collection and in the general macroeconomic conditions of countries. This paper addresses the question in the light of these factors.

The first section considers the issue of international comparisons of strike activity statistics. It is rarely recognized[1] that industrial disputes data differ markedly between countries in terms of methods of compilation and the criteria used for inclusion of stoppages, a fact that makes suspect strong

* Department of Statistics, The Faculties and Centre for Economic Policy Research, Research School of Social Sciences, Australian National University, GPO Box 4, Canberra, ACT 2601. Bob Gregory, Keith Hancock and Ric Simes assisted with some perceptive observations, and Eva Klug supplied excellent research assistance. The research benefited from discussion generated in the Treasury Seminar Series, the Economics Department at the University of Newcastle, and the Economics Seminar Series, Research School of Social Sciences, Australian National University. Marti Pascall was her normal wonderful efficient self in production.

1. Creigh (1986) and Fisher (1973) are refreshing exceptions to this rule.

conclusions of the relative efficacy of industrial relations systems based on such data. We document the differences, note some biases and report average annual time series data for fourteen OECD countries for 1964–85.

The second section makes a second methodological point. To be meaningful reflections of industrial relations environments, international dispute data must control for (independent) influences on strikes. Multiple regression techniques, holding constant the effects of inflation and unemployment, among other things, allow more useful analysis. The major findings are as follows. If the Australian industrial relations system had been *hypothetically* transposed to other countries, the English-speaking and southern European countries in the sample would have experienced fewer working days lost per employee from strikes than was their actual historic record. Conversely, northern European countries and Japan would have experienced higher levels of industrial disputation in comparison with the Australian system than was the case.

This counterfactual experiment, in conjunction with features of the data to be explained, leads to the conclusion that the Australian industrial relations system has performed at about the international norm, at least with respect to its ability to deliver low levels of strike activity. The progress made in dealing with the complexities of data and method in international comparisons of industrial disputation is summarized in a concluding section.

Aggregate comparisons of international strike activity

Strike activity may be measured in several different ways. This point is clarified by considering the following identity:

$$WDL/E = WDL/SF \cdot SF/E \quad (1)$$

where WDL/E is working days lost from strikes per employee and SF is strike frequency. It follows that WDL/SF is the average duration of a strike. Thus WDL/E measures the influence of both strike frequency and average strike duration. Because of its composite nature we have chosen to focus on this variable for the analysis following.

The countries for which data are available are Australia, the United States, Canada, the United Kingdom, Japan, Italy, Sweden, Finland, France, West Germany, Norway, New Zealand, Ireland and Spain. No consistent criteria are used across countries for inclusion or collection of strike statistics, a fact that makes simple comparisons of strike levels an inappropriate indicator of relative industrial disputation. This point can be highlighted by considering table 1, which presents information on the collection basis for each of the countries concerned.

Table 1 shows marked inter-country differences in the meaning of published disputes data. The following points are important. First, in France, Japan, New Zealand, the United Kingdom and the United States, so-called 'political' stoppages are not counted. If this was the case for Australia, for example, the major strikes related to the Clarrie O'Shea (1969) and Medibank (1976) conflicts would not be included. It is difficult to assess the impact of this

criterion without a case-by-case consideration of each country. However, it is clear that Australia, Canada, Finland, West Germany, Ireland, Italy (since 1975), Norway, Spain and Sweden have higher reported strike activity than would be the case if their data inclusion was similar to the other countries in this respect.

Second, the statistics of Canada, France, West Germany, Italy, Japan, Norway and Sweden do not include lay-offs of indirectly affected workers in the same firm.[2] Again, no information is available to allow useful insights into the quantitative significance of this issue, but it is clear that countries including such workers in industrial disputes data inflate relatively the dimensions of the stoppages. The countries in this category are Australia, Finland, Ireland, New Zealand, Spain, the United Kingdom and the United States.

Third, the minimum size criteria for inclusion of industrial stoppages in the strike statistics vary greatly. It would be fair to say that Australia, Canada, Finland, France, West Germany, Ireland, Italy, Spain, Sweden and the United Kingdom are relatively stringent in inclusion requirements, while Japan, New Zealand, Norway and the United States are not.

In summary, considerable caution is appropriate in comparisons of international strike activity data. Importantly, however, for the major issue of this paper, it is apparent that the Australian data are relatively comprehensive. It follows that collection and inclusion criteria are such as to exaggerate industrial disputation in this country compared with most other countries.[3] To put the point differently, some component of identified relative Australian strike activity is a reflection of measurement and collection stringency and is not attributable simply to the nature of the industrial relations system.

With these observations in mind, it is useful to consider average data for each of the countries for particular sub-periods from 1964 to 1985. They are presented in table 2, and the aggregate data are represented in figure 1. The data of table 2 and figure 1 illustrate the following. First, for the period as a whole, Australian strike activity was about 20 per cent greater than the (unweighted) average of the other thirteen countries, WDL/E per annum being 0.475 and 0.396 respectively. Australia had the tenth highest level of the fourteen countries. From these data it appears that Australia experienced relatively high WDL/E.

Second, apart from Ireland and Japan, the 1971–82 period was characterized by increased levels of disputation relative to 1964–70, a point that is particularly apposite for Australia. Although Australia's ranking was the same as for 1964–70, WDL/E increased by 123 per cent in 1971–82, compared with other countries' average increase of about 40 per cent.

2. Secondary lay-offs (that is, workers stood-down outside the firms involved in the strike) are not included in the data of any of the countries in this study.
3. Finland, Ireland and Spain are the other countries with equivalently comprehensive collection criteria to those used in Australia.

Table 1 Industrial disputes: international comparisons of coverage and methodology, 1985

	Minimum criteria for inclusion in statistics	*Are political stoppages included?*	*Are indirectly affected workers in the same firm included?*	*Sources and notes*
Australia	Ten or more working days lost.	Yes	Yes	Information gathered from arbitrators, employers and unions.
Canada	Ten or more working days lost or of more than a half day's duration.	Yes	No	Reports from Canada Manpower Centres, also Press and Provincial Labor Depts.
Finland	More than four hours duration unless one hundred or more working days lost.	Yes	Yes	Returns from mail questionnaires to employers and employees.
France	No restrictions on size. However, public sector and agricultural employees are excluded from statistics.	No	No	Labour inspectors' reports.
West Germany	More than ten workers involved and more than one day's duration unless one hundred or more working days lost.	Yes	No	Compulsory notification by employers to Labour Offices.
Ireland	Ten or more days lost or of more than one day's duration.	Yes	Yes	Reports from local employment offices.
Italy	No restrictions on size.	Yes since 1975	No	Local police reports sent to Central Institute of Statistics.
Japan	More than half a day's duration.	No	No	Interviews by Prefectorial Labour Policy Section or local Labour Policy Office of employers and employees.

Table 1 (continued)

	Minimum criteria for inclusion in statistics	*Are political stoppages included?*	*Are indirectly affected workers in the same firm included?*	*Sources and notes*
New Zealand	More than ten working days lost. Statistics exclude public sector strikes.	No	Yes	Information gathered by district offices of Dept of Labour.
Norway	More than one day's duration.	Yes	No	Questions to employee and employer organizations.
Spain	No restrictions on size.	Yes	Yes	Monthly return made by local province delegates of Ministry of Labour Statistics. Figures exclude Catalonia.
Sweden	More than one hour's duration.	Yes	No	Press reports compiled by State Conciliation Service are checked by employer organizations and sent to Central Statistical Office.
United Kingdom	More than ten workers involved and of more than one day's duration unless one hundred or more working days lost.	No	Yes	Local unemployment benefit offices make reports to Department of Employment headquarters, which also checks press, unions, and large employers.
United States	More than one day's or shift's duration and more than one thousand workers involved.	No	Yes	Reports from press, employers, unions and agencies, followed up by questionnaires.

Source: Employment Gazette, July 1986, p. 268.

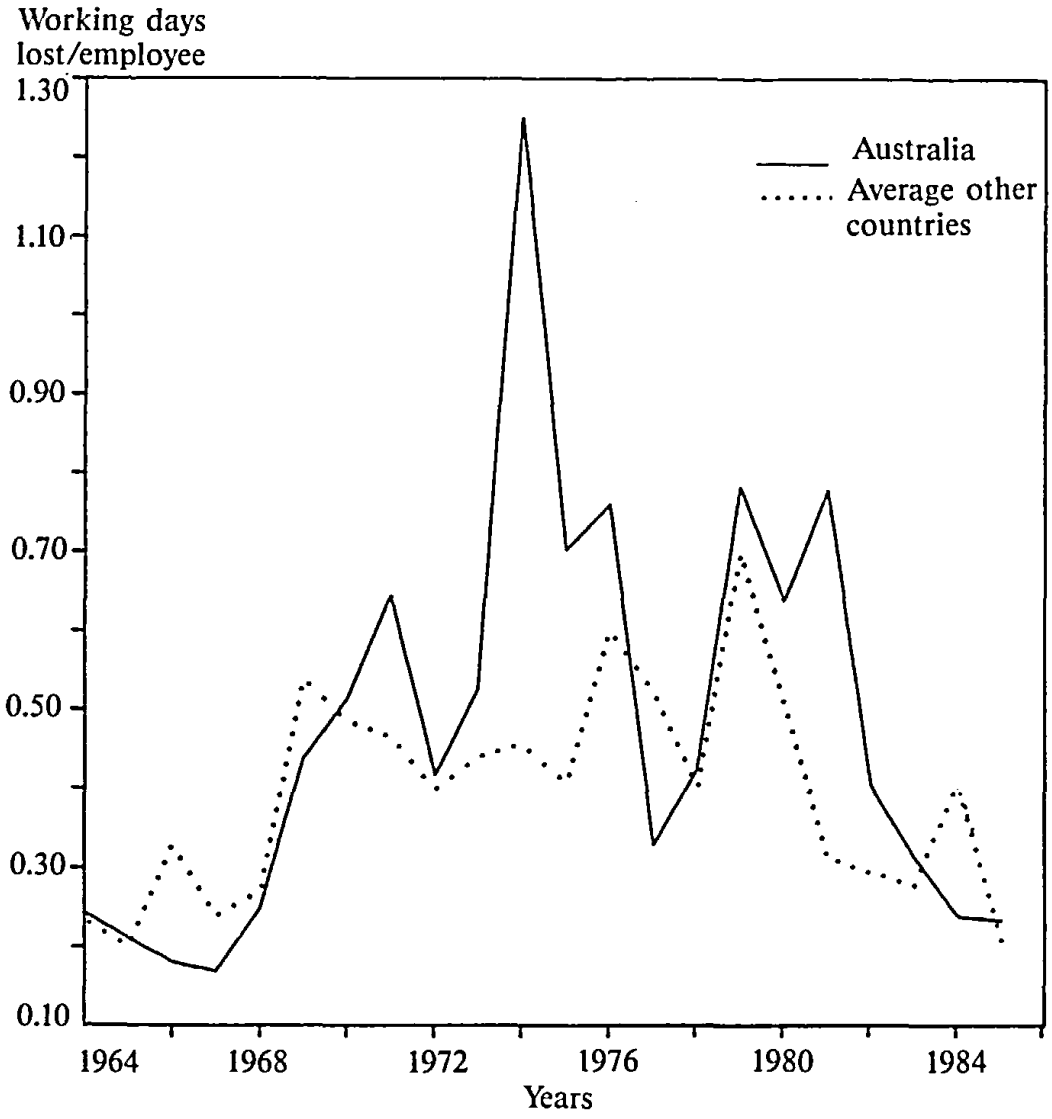
Table 2 Average annual working days lost per employee for fourteen OECD countries

Country	*Period*									
	1964–85		*1964–70*		*1971–82*		*1983–85*		*1964–70 to 1971–82 change %*	*1971–82 to 1983–85 change %*
	Level	*Rank*	*Level*	*Rank*	*Level*	*Rank*	*Level*	*Rank*		
Australia	0.475	10	0.286	10	0.638	10	0.262	7	123.1	−58.9
Canada	0.751	13	0.704	12	0.869	13	0.390	8	23.4	−55.1
Finland	0.419	8	0.110	5	0.605	9	0.399	9	450.0	−34.0
France	0.158	5	0.140	7	0.191	5	0.070	4	36.4	−63.4
Ireland	0.694	12	0.893	13	0.639	11	0.453	10	−28.4	−29.1
Italy	1.238	14	1.273	14	1.379	14	0.592	13	8.3	−57.1
Japan	0.095[a]	4	0.112	6	0.098	3	0.010[a]	2	−12.5	−89.8
New Zealand	0.285	6	0.150	8	0.314	6	0.486	11	109.3	54.8
Norway	0.038	1	0.012	2	0.055	2	0.034	3	358.0	−38.2
Spain	0.541	11	0.049	4	0.803	12	0.640	14	1538.8	−20.3
Sweden	0.087[a]	3	0.029	3	0.134	4	0.009[a]	1	362.0	−93.3
UK	0.426	9	0.207	9	0.514	8	0.584	12	148.3	13.6
USA	0.375	7	0.583	11	0.318	7	0.119	6	−45.5	−52.6
West Germany	0.038	1	0.006	1	0.045	1	0.088	5	650.0	95.6
Average,	0.396[a]		0.328		0.459		0.298[a]		39.9	−36.1[a]
excluding Australia	0.451[b]						0.322[b]			−29.9[b]

Notes: a. WDL/E data for 1985 were unavailable for Japan and Sweden. We assumed 1984 experience was repeated in 1985.
b. Excluding Japan and Sweden.

Source: International Labour Organization (1986) and information offices of embassies.

Figure 1 Strike activity: Australia and thirteen OECD countries



Third, while strike activity decreased markedly on average for these OECD countries in 1983–85 (about 36 per cent), the decrease for Australia was relatively great (about 59 per cent). This is (weak) evidence that the environment generated by the Prices and Incomes Accord contributed to decreases in industrial disputation,[4] an issue addressed more rigorously in Beggs and Chapman (1987). The relative decrease in Australian WDL/E in 1983–85 is reflected in a change of ranking from tenth in both 1971–82 and 1964–70 to seventh in the most recent period.

4. It is important to note that there is no reason to believe this change to be permanent in Australia. More recently, WDL from strikes have increased somewhat: by about 11.5 and 7.5 per cent comparing the year ending August 1986 with the years ending August 1985 and August 1984 respectively (ABS, *Industrial Disputes*, Cat. No. 6321.0).

As has been pointed out, however, it is important to be wary of strong conclusions drawn from the data of table 2. Measurement and reporting factors tend to overstate Australian strike activity relative to the average of other countries. As well, the information presented takes no account of country-specific macroeconomic influences, independent of the industrial relations environment, that affect disputation. This issue is examined below, and a solution to the problem is proposed and implemented.

Controlling for the influence of non-institutional strike determinants

The data presented above have the potential for seriously misrepresenting comparisons of countries' industrial relations environments. Many economic factors affect strike incidence and duration, and these have differed between the countries concerned. Because average statistics hide the influence of these variables there is a need for caution in assessing strike activity differences as manifestations only of country-specific employee-employer relationships.

Economic theory (Hicks 1932; Aschenfelter & Johnson 1969) and econometric analysis (Bentley & Hughes 1970; Phipps 1977; Creigh 1986; Beggs & Chapman 1987) support particular hypotheses concerning the role of macroeconomic variables as strike determinants. In this research it is argued typically that measures of both labour demand (such as the unemployment rate) and informational uncertainty (such as the rate of price inflation) are explanators of strike activity. Because theoretical perspectives differ in emphasis, it is wise to be circumspect in interpreting results (Phipps 1977; Beggs & Chapman 1987). Nevertheless, there is general agreement that macroeconomic variables influence industrial disputation.

It follows from the above that if there are international differences in macroeconomic conditions, these will be manifested to some extent in strike activity data. Clearly, distinguishing the impact of the industrial relations environment from these conditions is important, a challenge that can be approached in the following way. The method is to estimate an Australian strike equation and use it to predict other countries' disputation on the basis of the latters' macroeconomic experience. If predicted strike activity exceeds that actually experienced, this suggests that imposing the Australian industrial relations environment would have increased industrial disputation in the country concerned, the opposite being the case if predicted outcomes are less than actual. Implicitly, but clearly, this approach interprets the intercept and coefficients of the strike equation as a reflection of the impact of the industrial relations environment on disputation.

In adopting this method we estimated the following model with annual Australian data for the period 1964 to 1985:

$$WDL/E_i = a + bINF_i + cUN_i + dTIME_i + eACCORD + \epsilon \quad (2)$$

where, for year i, WDL/E is working days lost from strikes per employee, INF is the percentage change (from the previous year) in the consumer price index, UN is the aggregate unemployment rate, TIME is self-explanatory, and Accord is a dummy variable equal to 1 for the Accord period (1983–85), and

equal to zero otherwise. Theory and other empirical analyses suggest that $b>0$, $c,e<0$ and $d \gtrless 0$. Estimation of equation (2) in log-log form gave:

$$\begin{array}{lllll} WDL/E = -1.867 + 0.583INF - 1.00UN + 0.107TIME - 0.621ACCORD \\ \qquad\qquad (9.53) \quad (3.71) \qquad (3.19) \qquad (3.12) \qquad (2.28) \end{array}$$

$$\bar{R}^2 = 0.66 \qquad D.W. = 1.98$$

where absolute heteroscedastic consistent t-statistics are in parentheses.

Several comments on this result are in order. First, the equation passed a RESET2 (Ramsey 1969) functional form test and exhibited no sign of serial correlation in the disturbances up to fourth order lags. The absence of evidence of functional or dynamic mis-specification, coefficient significance and the consistency of signs with theory suggest that the model is statistically adequate. Second, the estimated relationships are very similar to those obtained in a much more tested analysis of Australian quarterly data for the 1959(1) to 1986(2) period (Beggs & Chapman 1987). For example, the decrease in WDL/E for the period of the Accord is almost identical in the two estimations (i.e. 62 per cent).

Third, as a criticism of the simple equation it may be argued that the industrial relations environment itself influences inflation and unemployment and that the model is mis-specified. While this may be true in theory, we note two points. If union activity increases both inflation (through nominal wage increase) and unemployment (through real wages being higher than otherwise)—the common perspectives—these effects will have counter-balancing implications for WDL/E because of the positive and negative signs, respectively, of the regressors. And endogeneity tests in the quarterly estimations (Beggs & Chapman 1987) did not reveal any significant empirical problem in this regard. In short, the estimation appears to be useful for its intended purpose.

Fourth, a comment on the TIME variable is warranted. We interpret the time coefficient as a reflection of changes in industrial structure and their associated impact on strikes. Other views, however, are plausible, one of which is consistent with the basic thrust of the research. This is the possibility that time is correlated with exogenous changes in the industrial relations environment. On the other hand, TIME may be picking up systematic measurement errors in the other regressors, a potential difficulty that remains uncorrected.

The coefficients were used to predict strike activity for twelve OECD countries for which data were available for 1964–85.[5] The actual and predicted average WDL/E are presented in table 3, and the plots of the data are shown in figure 2.

The data and plots reveal some interesting results. Apparently, by this test the Australian industrial relations environment delivers lower strike activity than the other (mainly) English-speaking countries (the United States, the United Kingdom, Canada and Ireland) and the two southern European

5. New Zealand was excluded because of the low quality of the unemployment rate data. 1985 information on WDL/E was unavailable for Japan and Sweden, the analysis being restricted to 1964–84 for these two countries.

Table 3 Actual and predicted average WDL/E, 1964-85

Country	*Actual (i)*	*Predicted (ii)*	*(iii) (i)−(ii)*
Canada	0.751	0.268	0.483
United States	0.375	0.290	0.0851
United Kingdom	0.426	0.418	0.00804
Ireland	0.694	0.327	0.368
Italy	1.238	0.373	0.865
Spain	0.541	0.542	−0.00100
France	0.158	0.468	−0.310
Germany	0.0382	0.749	−0.710
Japan	0.0902	0.942	−0.852
Finland	0.419	0.618	−0.198
Norway	0.0384	1.081	−1.043
Sweden	0.0831	1.000	−0.918

countries (Italy and Spain). Greater strike activity is predicted in the northern European countries and Japan.[6] Canada, the country most like Australia in terms of economic and industrial structure, would have achieved a very substantial reduction in strike activity if it had been hypothetically endowed with the Australian industrial relations system. It is also remarkable that, hypothetically, the Australian system would have delivered very much higher WDL/E in Norway, Sweden, France, West Germany and Japan.

Interestingly, it is apparently the case that Australian strike activity was lower than, or not different from, the politically and culturally quite similar countries of the United States, the United Kingdom and Canada. These last two countries have about the same union coverage as Australia but, obviously, no Conciliation and Arbitration Commission. This poses a problem for the argument that the presence of the Commission has a marked deleterious effect on the Australian industrial relations environment. A cautious and fair conclusion is that the data offer no compelling evidence that the Australian system is more strike prone than similar countries.

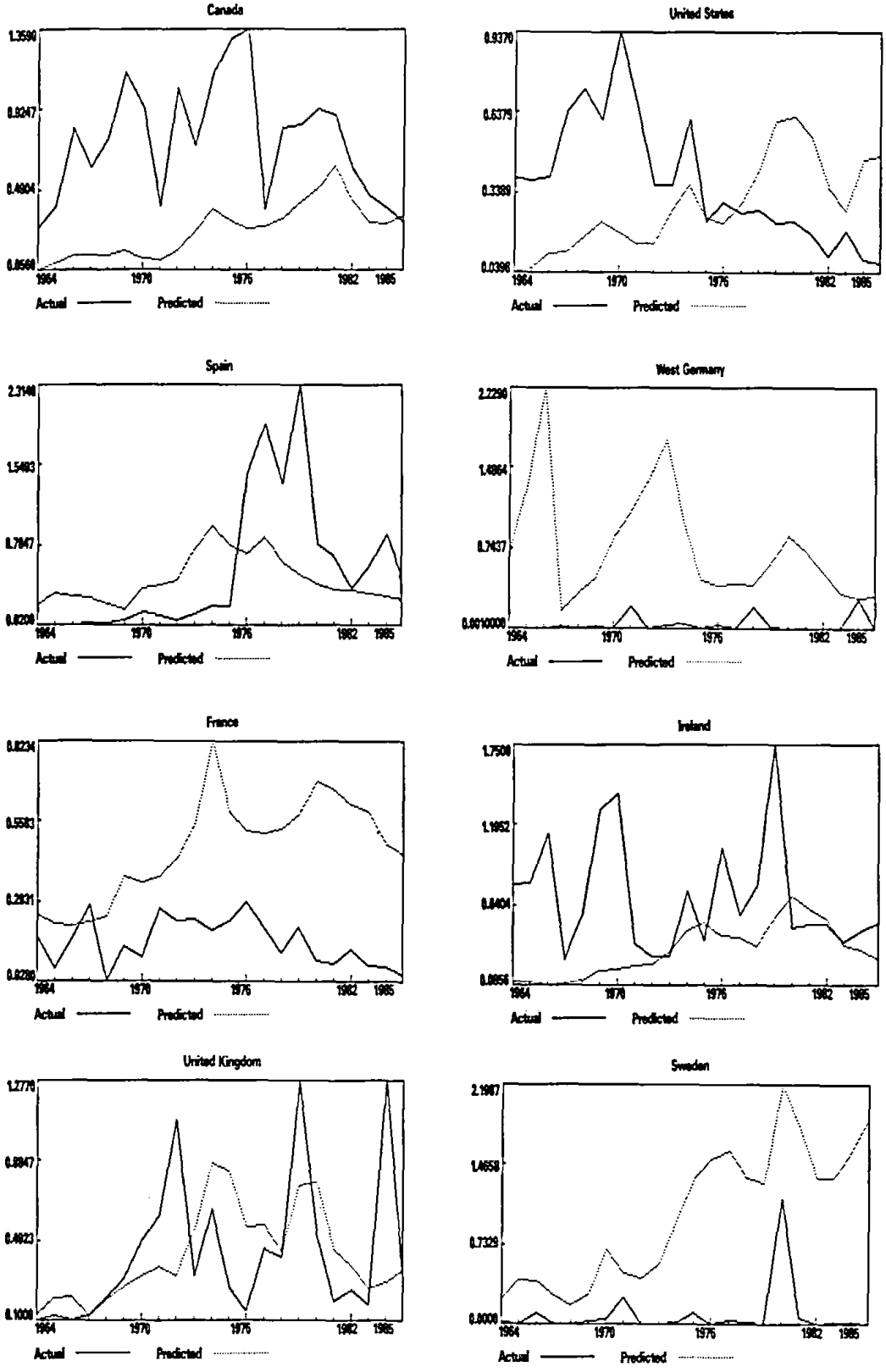
It is important to keep in mind that the above conclusions are reinforced by the cross-country differences in the measurement and collection criteria for strike activity outlined in the previous section. The general point from this analysis is that Australian statistics are relatively comprehensive or, to put the issue differently, some part of measured (higher) Australian industrial disputation levels are a consequence only of the data. This means that the regression exercise exaggerates Australian relative strike-proneness since the measurement factor is most likely captured in the intercept term, implying that the use of the Australian equation in predictions of other countries' strike activity overstates the relative disharmony of our industrial relations environment.

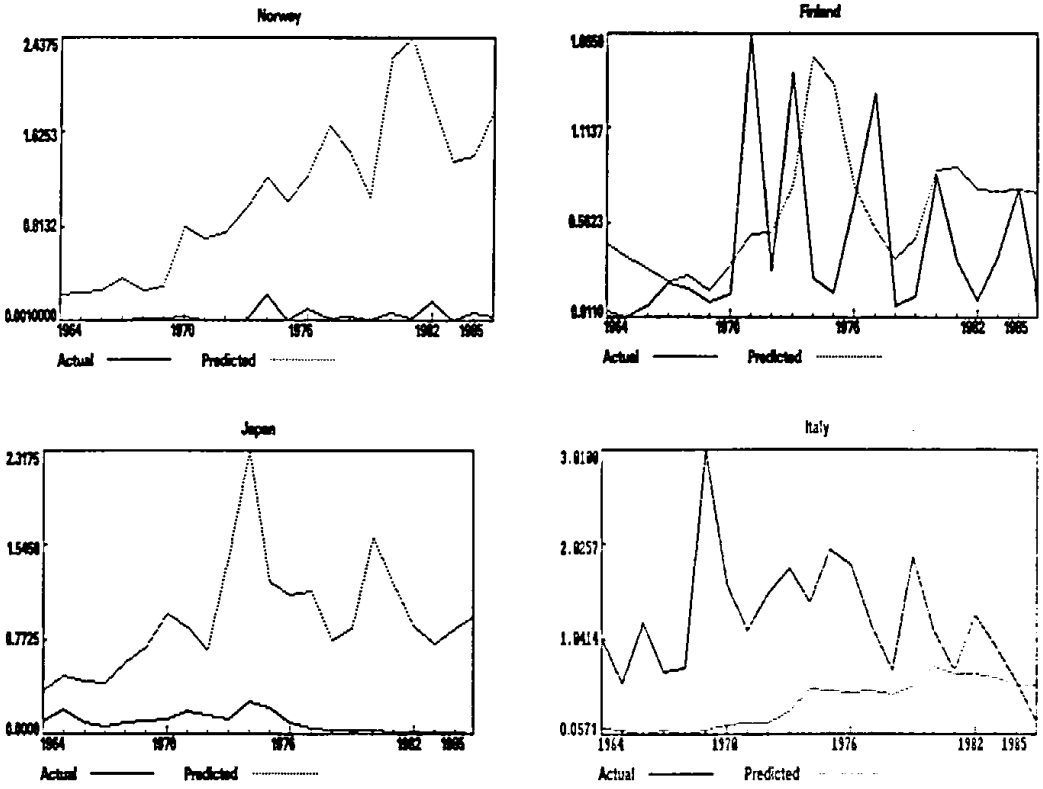
Conclusion

The use of aggregate statistics in assessments of the efficacy of countries' industrial relations systems reveals that Australia experienced high levels of

6. After the correction for macroeconomic conditions, Finland and Australia have approximately the same strike-proneness.

Figure 2 Actual and predicted strike activity using Australian regression coefficients





industrial disputation in the 1964–85 period. Of the fourteen OECD countries for which data are available, Australia had the tenth highest level of strike activity, although both the ranking and level fell significantly in 1983–85, the early period of the Prices and Incomes Accord. There are, however, at least two important reasons to be wary of the use of the aggregate comparative data as reflections of countries' industrial relations environments. The first concerns the inclusion criteria and coverage of strike activity statistics. Countries differ widely in both, and there is no doubt that straightforward comparisons of levels of strike activity have within them the potential for serious misrepresentation of the implications for industrial disputation in particular systems. Australian data, it appears, are relatively comprehensive. This implies that some part of Australia's relatively high level of reported strike activity is attributable to measurement. Second, macroeconomic variables influence the incidence and duration of strikes. This simple observation renders suspect the use of international comparisons of disputes data as reflections only of industrial relations systems, since differences in macroeconomic experience will manifest themselves, to some extent, in these data. Through control for inflation and unemployment, among other things, a more accurate assessment of the Australian industrial relations system's effect on industrial disputation in an international context has been made possible. An important point arising from the exercise is that the Australian system apparently delivers less, or about the same, strike activity as culturally and politically similar countries. Clearly, this result is of value to the current debate.

At the minimum, it renders dubious strong statements concerning the influence of Australia's idiosyncratic labour market arrangements on industrial disputation.

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Vol. 22	No. 2	October 1986

Articles

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Index of articles

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