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See table of contents

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Article abstract

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This paper examines the importance employers attach to a variety of potential costs and savings which might be incurred in the course of a work stoppage.

Strikes create costs. While hardly a novel statement, it is surprising how little information actually is available on the nature and severity of strike costs incurred by individual companies and employees. This lack of attention to micro-level strike costs perhaps reflects an assumption that such costs are self-evident: to the employee the major cost lies in foregone wages; the employer's costs are measured in lost production or special expenses incurred attempting to continue operations in the face of a work stoppage.

Systematic review of strike costs is rare, however. Most discussion occurs during the treatment of other subjects and is mainly illustrative in nature. For example, Chamberlain and Kuhn (1965) cite a number of potential management strike costs (*e.g.*, loss of public favour, post-strike drop in employee morale and productivity) in developing the concept of costs of agreement/disagreement and their theory of bargaining power. There are numerous case studies of strikes, but these are typically written from a social, political, historical, or legal perspective (Abella, 1975; Chamberlain and Schilling, 1954; Shick and Courtourier, 1977). Furthermore, studies that do examine strike costs at the micro level, as do the articles on airline strike insurance schemes (Unterberger and Koziara, 1975, 1980), tend to

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measure costs fairly narrowly, neglecting such things as loss of customer goodwill or special administrative and legal expenses.

This lack of attention has left some important questions unanswered. Most studies on strikes and industrial conflict, particularly at the aggregate level, make assumptions about how employers and employees calculate the consequences of a work stoppage. Typically, consequences are couched in broad economic terms: for example, employer decision making is assumed to be driven by future profit considerations and calculation of the impact of loss of production; employee decisions have been viewed in terms of an investment, in which strike costs are compared to the potential of higher wages (Ashenfelter and Johnson, 1969; Eaton, 1972; Shalev, 1980). At the same time, it is well known that strikes produce consequences and involve many costs that go beyond loss of output or profit and that costs may vary considerably depending on the circumstances surrounding the work stoppage. It certainly is conceivable that strike costs deemed relevant by the combatants will vary from strike to strike, across firms, and across industries. This suggests that some caution should be exercised both in assuming which strike related costs are most crucial and in generalizing about employer and union motives in making strike decisions. It further suggests the need for a more thorough examination of strike costs at the micro level.

This paper will examine the importance employers attach to a variety of potential costs and savings which might be incurred in the course of a work stoppage. Costs (and savings) are defined to include both monetary and non-monetary costs associated with a strike or lockout. Non-monetary costs include such items as loss of goodwill and reduced confidence by external groups. Attention will be directed specifically toward: (1) identifying major potential work stoppage costs; (2) determining the importance attached to these various costs by firms which had recently experienced a strike or lockout; (3) analyzing variation in strike cost assessment, and factors influencing this variation. The research was conducted among more than 100 Canadian mining and manufacturing firms, all of whom had undergone a work stoppage in the previous two year period.

PREVIOUS RESEARCH

Although there has been little discussion of specific costs of work stoppages in the industrial relations literature, the subject has received attention in business and accounting journals. These studies fall into two main groups: those concerned with categorizing or establishing a framework for assessing strike costs and empirical studies which actually measure costs.

With respect to frameworks, Nelson (1973) distinguished among three types of major costs that arise in connection with a strike: (1) cash expenses to be paid out of working capital, including the costs of additional security staff and start-up costs at the termination of the strike; (2) the profits or contribution margin which are lost due to inability to fill customer orders; and (3) fixed overhead costs associated with unused plant capacity during the period of strike. He argued that only the first two should actually be considered as strike expenses because fixed overhead costs continue to exist whether the plant is on strike or in production. Bennison (1976) essentially agreed with Nelsen's framework, but added that post-strike costs might be incurred in a period of poor industrial relations and that there might well be possible gains arising from the strike that ought to be included in any cost analysis.

More ambitious frameworks were developed by Gandz, DuMont, and Lord (1980), Tang and Jensen (1981), and Lau and Nelson (1981). After interviews with twenty companies that had recently experienced a work stoppage, Gandz *et al.* devised a three-by-three costing matrix with cost categories (margin loss, disruption costs, and overhead costs) on one axis and time periods (pre-strike, during strike, and post-strike) on the other axis. With this typology they identified and discussed twenty-four separate cost items. The authors also noted that «few companies in our study know what their strikes cost. These costs are not measured or reported for many reasons ...» (Gandz *et al.*, 1980, p. 39).

To facilitate cost-benefit analysis for a potential strike, Tang and Jensen (1981) developed a matrix-type taxonomy, distinguishing costs according to time period and whether the costs were quantifiable or non-quantifiable (*e.g.*, loss of employee morale). Using this approach, they identified 33 separate costs as well as seven potential cost savings. The framework proposed by Lau and Nelson (1981) for internal financial reporting included both a time dimension and a strike cost typology: (1) actual strike costs, (2) traced out-of-pocket costs, and (3) allocated fixed strike costs. Examples of traced out-of-pocket costs included shutdown and start-up costs and excess inventory carrying costs due to a strike. Finally, Smallwood (1981) simply stated that strike costs should be assessed by time periods; namely, pre-strike, during strike, and post-strike costs.

Only two empirical studies of employer strike costs at the level of the firm have been reported. Alfino (1959), in an early study, reviewed the results of a Conference Board survey of 94 companies. The two most frequently cited costs were loss of production and continuation of fixed costs during a strike (including salaries to office staff, supervisors, and management). Other economic costs mentioned were demurrage costs, construction

delays, and special warehousing costs; non-economic costs included sales staff demoralization, post-strike employee resentment, and loss of company prestige. Alfino found that almost half of the companies made no specific effort to assess strike costs and those that did used a variety of methodologies.

More recent work was carried out by Imberman (1979) who examined 28 American strikes in the late 1970's. Imberman identified 18 separate strike costs which he classified as pre-strike, during strike, and long term (post-strike), and uncommon (*e.g.* sabotage). Major costs were found to be post-strike overtime; loss of sales due to customer switching before, during, and after the dispute; and security costs. The author noted considerable variation from company to company in terms of the relative importance of specific costs and stated that «there are many strike costs that companies are not aware of or that they disregard» (Imberman 1979, p. 133).

Taken together, the foregoing studies provide a useful starting point for the current research by suggesting specific strike costs and a framework for analysis. More systematic work clearly is needed, however, as the two existing empirical studies suffer from an absence of systematic reporting, contain little statistical analysis, and provide no information on sample selection.

RESEARCH METHODOLOGY

Data were gathered in 1980 via mail questionnaires. The sample was composed of manufacturing and mining companies which had experienced a strike or lockout involving more than 100 workers in the previous two years, a total of 278 firms (Labour Canada, 1978, 1979)[1]. Companies which had experienced more than one strike were asked to report on the dispute that had accounted for the most persondays lost.

The questionnaire listed twenty potential strike costs, categorized by time period (pre, during, post), and three potential strike savings (or benefits) and was sent to the chief industrial relations officer of the firm. Respondents were asked to rate the importance of each cost or saving item in terms of its financial impact on the company. The categories ranged from extremely important (coded 4) to not incurred (coded 0).

The decision to assess strike costs in terms of importance, rather than actual dollar amounts, was made for several reasons. First, there are no generally accepted standard accounting procedures for calculating strike cost dollar figures, raising the potential for large measurement error. Se-

1 Government owned enterprises were excluded from the sample because of an overt, political dimension to some decision-making (See THOMPSON and PONAK, 1984). Mining and manufacturing firms typically account for between 50 and 60 percent of total time lost due to work stoppages in Canada.

cond, it was believed that dollar figures on individual strike costs would not be available in many cases, but that employers would be able to provide reasonable estimates of which costs were important and which were not. Furthermore, negotiating behavior and strike decisions are likely to be made on strike cost perceptions, particularly if no hard figures have been tabulated. Third, not all cost items in the survey were monetary in nature. Finally, even if available, actual dollar figures would have made comparison between companies very difficult because of variation in company size. Focussing on the concept of importance to the firm placed costs into a common and hence more comparable framework.

Of the 278 firms surveyed, 127 returned usable questionnaires, yielding a response rate of 46 percent. Eighty percent of the respondents were manufacturing firms, median annual revenue was approximately 50 million dollars, median staff was 500 employees, the firms dealt with an average of three unions, and one third of the companies were controlled by American investors. A comparison of the respondents' strikes to all mining and manufacturing strikes during the time period under review showed no important differences in terms of median strike duration (22 days), the ratio of legal to illegal strikes (18% illegal), and the provincial distribution of the disputes (majority in Québec and Ontario)[2]. Following Oppenheim (1966), non-response bias was further assessed by conducting a chi-square test of homogeneity to compare early respondents and late respondents. Late respondents were assumed to hold opinions comparable to non-respondents (Oppenheim 1966, p. 34). No significant response bias was found using this procedure.

RESULTS

Respondent assessment of the importance of strike costs and savings is presented in Table 1. Consistent with previous empirical studies, fixed overhead (Item 9) and loss of sales (Item 4) were viewed as the most important costs. These were the only two costs which were cited as extremely or very important by a majority of the firms. Least important costs included advertising to inform public (Item 13), customer penalties (Item 12), additional insurance coverage (Item 10), and sabotage (Item 11).

2 The one significant difference that did show up was the over-representation of strikes lasting more than 50 days and the under-representation of strikes of less than 5 days duration. This occurred because the questionnaire instructed respondents who had experienced more than one strike in the time period to report on the strike which had accounted for the most person-days lost.

It can also be seen from Table 1 that there are substantial differences among the respondents in terms of how they view the importance of certain costs. High standard deviations can be noted for costs connected with customer order splitting (Item 1), inventory buildup (Item 3), loss of sale (Item 4), related production losses (Item 5), and loss of customer goodwill (Item 19), indicating that a cost deemed crucial by one company may be seen as inconsequential by another. For example, while one third of the firms saw customer order splitting as extremely or very important, almost half reported that they either did not incur this cost or rated it as «not at all important». The findings of the interfirm variation is consistent with the results Imberman (1978) obtained from a sample of American firms.

There are several additional interesting aspects of the data. An unexpected finding was the high relative importance attached to the time spent by company executives in contract negotiations both prior to (Item 2) and during (Item 8) a work stoppage. Such costs have not usually been viewed by researchers as very important, and certainly not a potentially significant element in the employer's strike calculus. In this study, they were rated ahead of such traditional cost items as pre-strike inventory buildup (Item 3), extra security (Item 7), and post-strike productivity decline (Item 15) and exhibited among the lowest standard deviations.

Second, costs incurred before a work stoppage, such as customer order splitting, were generally seen as relatively important. It might be argued, however, that these costs would have been incurred whether or not a strike actually took place and might more appropriately be viewed as part of the general costs of bargaining in a system where the possibility of a strike exists. Conversely, it could be argued that experienced firms and some of their customers are able to predict with some accuracy (though not certainty) the likelihood of a work stoppage occurring. Thus, inventory buildup and executive time spent in negotiations before the strike would be different in a situation where a strike was perceived as highly likely. Testing these two competing propositions and their effects on pre-strike costs would be a fruitful area for further research.

Third, it is interesting to observe how little importance was attached to potential savings that might result from a work stoppage. Even savings on labour costs were considered highly important by only one quarter of the firms and were not seen as nearly important enough to counterbalance, for example, overhead costs (Item 9). Furthermore, if firms take strikes to realize significant wage bill savings in the post-strike period, it was not evident in this survey. Only thirteen percent of the respondents believed that savings on labour costs due to union concessions were an important benefit of the strike.

TABLE 1

Importance of Strike Costs and Savings
(N = 127)

	Costs of work stoppages	*Mean*[a]	*SD*	*Percent Important*[b]
I.	Costs incurred before a work stoppage			
	1. Loss of sales due to order splitting by strike-sensitive customers	1.7	1.41	31
	2. Time spent by legal counsel and company executives on contract negotiations	2.2	.94	33
	3. Cost of building inventories in anticipation of a strike	1.7	1.32	28
II.	Costs incurred during a work stoppage			
	4. Loss of sales due to inability to fulfill orders	2.7	1.48	66
	5. Loss of production in related manufacturing plants	1.5	1.46	27
	6. Overtime costs for administrative or supervisory personnel	1.4	1.08	12
	7. Costs for additional security arrangements	1.6	1.02	15
	8. Time spent by legal counsel and company executives on negotiations	2.3	1.02	40
	9. Fixed overhead for idle plant capacity	2.8	.99	66
	10. Costs of increasing insurance coverage for production facilities and other property	0.8	.96	5
	11. Damages caused by sabotage	1.1	1.25	14
	12. Penalties paid to customers for delay in delivery or inability to meet other contract provisions	0.9	1.14	11
	13. Advertising expenses to inform the public of your case.	0.6	.72	2
	14. Costs incurred in the process of conciliation, mediation or arbitration	1.6	.86	10
III.	Costs incurred after a work stoppage			
	15. Loss in production due to low productivity in the early post-strike period	1.8	1.29	28
	16. Start-up costs	2.1	1.02	36
	17. Overtime costs to rebuild inventories	1.5	1.09	15
	18. Recruiting and training expenses for newly-hired employees to replace those leaving the company for good	1.1	1.04	8
	19. Loss of goodwill from present and potential customers	1.7	1.31	27
	20. Bad publicity and reduced confidence from investors, creditors and government agencies	1.2	1.15	14
	Savings from work stoppages			
1.	Savings on labor costs during the work stoppage	1.8	1.13	27
2.	Savings on other variable or semi-variable costs during the work stoppage	1.4	1.03	12
3.	Savings on labor costs after the work stoppage due to concessions made by the union	0.9	1.14	13

[a] Based on a 5 point scale with 4 extremely important and 0 not incurred.
[b] Percentage of firms indicating the item was either extremely or very important.

Strike Cost Correlates

It was hypothesized that perceptions of strike costs (and savings) would be related to three factors: (1) firm characteristics; (2) internal industrial relations features of the company; and (3) the specifics of the work stoppage in which costs were incurred.

Firm characteristics were measured in terms of number of employees, annual revenue, whether the company was engaged in manufacturing or mining, and whether it was a subsidiary of an American firm[3]. Industrial relations features which were expected to affect strike cost importance were the number of different unions a firm dealt with, the number of unionized employees, the number of strikes it had incurred in the previous three year period, whether a financial executive was part of the negotiating team, and whether the company normally estimated strike costs (referred to as «strike costing»)[4]. Finally, it was posited that the nature of the strike itself would affect how costly the strike was perceived to be: was the strike legal; were operations continued; what was the strike's duration; how many employees participated; what percentage of the unionized workforce was involved; and how many persondays were lost? Because of the exploratory nature of this study, the diversity of the expected effects, and the complexity of the phenomenon under review, specific hypotheses were not made for each one of the independent variables.

The results of the analysis are presented in Table 2 (only statistically significant correlation coefficients are presented). As suggested, the characteristics of the firm, the firm's industrial relations context, and the nature of the strike itself, all were associated with employer strike cost assessment. Certain variables were more likely to be related to strike cost importance than others: the number of company employees, annual revenue, strike frequency, strike costing, and the proportion of employees on strike were related to a substantial number of the individual cost items. On the other hand, the presence of a financial executive in negotiations, the number of unions a firm dealt with, and total workers on strike, were only associated with two or less strike costs each.

The selected variables were far less likely to be associated with perceptions of strike savings. Very few relationships were statistically significant,

3 U.S. ownership is an important element in the Canadian context. For example, in 1981, foreign-controlled (mainly U.S.) corporations controlled 37.7% of the total assets of mining industry and 44.7% of the total assets of manufacturing industries in Canada. In the same year, these foreign-controlled corporations generated 49.3% and 49.1% of the sales of mining and manufacturing industries respectively. See details in Statistics Canada (1984).

4 For detailed discussion of the roles of accounting (or accountants) in collective bargaining, see AMERNIC (1985) and TANG (1985).

TABLE 2

Correlates of Industrial Strike Costs and Savings

	Company Variables				*Industrial Relation Variables*					*Strike Variables*					
Costs of Work Stoppages	*Manufacturing (= 1)*	*U.S. Ownership (= 1)*	*Annual Revenue*	*Total Employees*	*Number of Unions*	*Number of Unionized Employees*	*Strike Frequency*	*Finance Role in CB (= 1)*	*Strike Costs Estimates (= 1)*	*Illegal Strike (= 1)*	*Continued Operations (= 1)*	*Strike Duration*	*Workers Involved*	*Persondays Lost*	*% of Workforce Striking*
I. Costs incurred before a work stoppage															
1. Customer order-splitting			.21	.22					.17					.16	-.18
2. Pre-strike executive time	.20		-.17	-.16		-.20									.16
3. Inventory build-up		.31						-.16	.19		.20				
II. Costs incurred during a work stoppage															
4. Sales loss	.19														
5. Related production loss				.18		.23	.18		.19				-.27		
6. Supervisory overtime				.19			.19		.20		.19				
7. Security			-.18			-.22					.19				
8. Executive time	.20		-.24	-.21		-.26	-.20								.20
9. Fixed overhead	.24														
10. Additional insurance										-.21		.29			
11. Sabotage										-.26	.17				
12. Customer penalties				.17	.17		.18			-.22					-.15
13. Special advertising		-.17													
14. Mediation	.21		-.27	-.16		-.21	-.17						-.18		
III. Costs incurred after a work stoppage															
15. Productivity decline		.17								-.21		.21			
16. Start-up costs									.22						
17. Inventory re-building															
18. Strike induced turnover		.21	.15	.23					.27	-.29		.28		.24	
19. Loss of customer goodwill			.15	.20			.15		.20						-.22
20. Reduced investor confidence			.22	.29	.26	.17	.26								-.33
Savings (or benefits) from work stoppages															
1. Labour cost savings		.21												.15	
2. Non-labour cost savings									.20						
3. Union concessions															

Pearson correlation coefficients are reported. Only statistically significant relationships ($p < .05$) are listed.

suggesting that the kinds of factors that effect perceptions of strike savings are different than those that effect perceptions of strike costs.

An important aspect of the strike correlate data was their pattern. It can be readily observed in Table 2 that no two cost items have the same set of correlates. Furthermore, the direction of the relationship between a particular correlate and various strike costs may differ from item to item. For example, annual revenue is positively associated with the importance of reduced investor confidence (Item 20) but inversely related to the importance of additional security costs (Item 7). Thus, one cannot generalize about which strike costs are going to be important in a given situation without knowing the circumstances of the strike, the industrial relations features of the firm, and general company characteristics.

Finally, it is worth commenting on several of the more interesting specific relationships reported in Table 2. First, the data show that illegal strikes are viewed as producing lower costs on a number of dimensions than do legal work stoppages. This finding is not surprising. Illegal strikes are often spontaneous grievance related outbursts which are of short duration. In our study, illegal strikes lasted an average of seven days *versus* 60 days for legal disputes. Under these circumstances, one would expect certain costs (*e.g.*, start-up expenses) to be lower (Fisher, 1981).

Second, these data also confirm the conventional wisdom with respect to sabotage costs. The importance of sabotage is positively related to strike duration and continued operations. Industrial relations theory and experience suggest that violence is most likely to occur where employees feel threatened with job loss. Strikes which drag on interminably or where the employer is able to continue operating pose just such a threat, hence the positive relationship between the importance of sabotage and these variables.

Third, it is interesting to observe the inverse relationship between negotiation costs (Items 2, 8, 14) and company size (total employees and revenue), union penetration, and strike frequency. Previous research has found that larger firms with more unionized staff are likely to have specialized industrial relations departments and can expect to achieve certain economies of scale in their labour activities (Godard and Kochan, 1982, pp. 130-131). The inverse relationships in Table 2 are consistent with these findings. The same «routinizing» tendency also appears to be produced in situations where a firm experiences numerous strikes. Negotiation costs become less important presumably because in-house expertise has been developed (if only out of necessity).

Finally, it is interesting that companies which normally estimate strike costs perceived significantly higher costs on a number of dimensions. Strike cost estimation was included as a variable because earlier researchers have observed that few companies systematically calculate strike costs and that most companies are not fully aware of the costs they actually incur. Accordingly, it may be argued that companies that do not cost strikes are likely to underestimate (or be unaware of) certain costs, which would explain the positive relationship between strike cost estimation and strike cost importance reported in Table 2.

Factor Analysis

The strike costs literature proposes several different frameworks for distinguishing various types of costs. In this study, costs were categorized sequentially according to whether they occurred prior to, during, or following the work stoppage. An additional category was created for strike savings. Our framework, as well as those formulated by others, by and large reflect the perceptions of non-practitioners (in terms of labour relations). These frameworks are designed either to facilitate research or to build a strike cost accounting system. Such schemes may or may not be consistent with the way managers themselves view strike costs.

To determine how the respondents in this study conceptualized strike costs (and savings), all 23 cost and savings items were factor analyzed (principal components with varimax rotation). The results of the analysis are presented in Table 3. Four factors with eigenvalues greater than one emerged. These factors included thirteen of the 23 cost and savings items. Ten items failed to load unambiguously on any of the four factors.

Factor I included five cost items: additional insurance, sabotage, customer penalties, special advertising, and strike induced turnover. Although these costs appear fairly diverse, a common underlying thread is that each represents a special additional expense directly attributable to the strike. Together they are consistent with one of the major cost categories identified by Nelson (1973) which he descrived as «cash expenses to be paid out of working capital». Accordingly, the items in this factor were labelled as «Direct Expenses». Because the factor results will be used in the next section to form scales,[5] reliability scores were calculated for each factor. Chronbach's alpha for the Direct Expenses scale was .77.

5 Scales were formed by simply summing the responses of the individual items composing the scale.

TABLE 3

Factor Analysis of Strike Costs and Savings
(N = 112)

Individual Costs and Savings	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*
1. Customer order-splitting	.15	**.61**	.29	-.01
2. Pre-strike executive time	.11	.04	-.04	**.96**
3. Inventory build-up	.20	.27	.35	.18
4. Sales loss	.12	**.52**	-.02	-.09
5. Related production loss	.16	.30	.10	-.06
6. Supervisory overtime	.31	.24	.02	-.01
7. Security	.15	-.01	.12	.29
8. Executive time	-.01	.05	-.08	**.76**
9. Fixed overhead	.09	.06	.01	.19
10. Additional insurance	**.72**	.21	.05	.09
11. Sabotage	**.60**	.07	-.01	.07
12. Customer penalties	**.69**	.18	-.01	-.01
13. Special advertising	**.48**	.11	-.07	.01
14. Mediation	.25	.07	.04	.21
15. Productivity decline	.37	.36	.17	.14
16. Start-up costs	.21	.23	.25	.06
17. Inventory re-building	.31	.05	.14	.04
18. Strike induced turnover	**.51**	.16	.13	.01
19. Loss of customer goodwill	.12	**.76**	-.01	-.05
20. Reduced investor confidence	.30	**.66**	-.03	.06
S1. Labour cost savings	-.09	.01	**.87**	-.08
S2. Non-labour cost savings	.04	.05	**.80**	-.09
S3. Union concessions	.45	.15	.40	.40

Principal components with varimax rotation was used. Missing data reduced the sample from 127 to 112 for the factor analysis. Eigenvalues of the factors are as follows: Factor 1 — 5.4; Factor 2 — 2.0; Factor 3 — 1.5; Factor 4 — 1.2. The four factors together explain 82.5 percent of the variation.

The second factor included costs incurred due to customer order-splitting and sales loss, loss of customer goodwill, and reduced investor confidence. This factor was labelled «Customer and Investor Damage». The scale formed from these four items had a Chronbach's alpha of .77. The third factor was comprised of two savings items: labour cost and non-labour cost savings. The scale formed from these two items was called «Strike Savings» and had a Chronbach's alpha of .87. Factor IV also comprised two items, pre-strike executive time and during-strike executive time. The scale formed from this factor was named «Executive Time», and it had a Chronbach's alpha score of .87.

The results of the factor analysis do not conform closely to any of the frameworks previously suggested in the literature. Nelson's (1973) categorization (described earlier) is perhaps the best approximation as his first two categories partially capture the elements in Factors I and II. Furthermore, the cost savings category, proposed by several researchers, did emerge from the analysis. What failed to emerge, however, was support for classifying strike costs sequentially according to their incurrence before, during, or after the strike. The respondents did not distinguish strike costs in these terms. The factors cut across time periods; Factor II for example included cost items from all three time periods. In addition, none of the *a priori* frameworks had identified executive time as a distinctive cost category.

Though different from previous typologies, the factor structure possesses certain logic from an industrial relations perspective. The results indicate that strikes involve both costs and savings, and an employer distinguishes between the two in assessing the overall cost implications of a work stoppage. Further distinctions are made about particular kinds of costs which may be incurred by the firm. One group of costs are those resulting from direct expenditures such as additional insurance or special advertising brought on by the strike. A second group of costs concern the firm's short and long term market competitiveness and include sales loss and reduced investor confidence. The third group of costs reflects executive time considerations. Managers see the additional time spent dealing with what in most instances is a crisis (the strike) as a separate and identifiable dimension to overall strike costs. Finally, little distinction seems to be made as to when the cost is incurred — a cost is a cost whether it occurs before, during, or after the work stoppage.

Strike Scale Correlates

To complete the analysis, an attempt was made to determine correlates of the four strike cost scales identified through the factor analysis. The results of the analysis are reported in Table 4. Overall, it can be seen that each of the scales has a different set of correlates (although some overlap exists). Company size, whether measured in terms of revenue or employment, and the estimation of strike costs are the variables most frequently associated with the four strike cost scales.

Three variables were positively associated with a company's *direct expenses:* total employees, strike cost estimation, and strike duration. Direct expenses were perceived to be less when the strike was an illegal one. *Customer and investor damage* also was positively related to total employees, strike cost estimation, and strike duration. As well, these costs were more likely to be incurred by companies with greater annual revenue. Surprisingly, there was an inverse relationship between the proportion of the workforce on strike and the degree of customer and investment damage.

Only two variables with significant relationships to *strike savings* were identified: U.S. control and strike cost estimation. Again, companies which routinely assessed their strike costs had a different picture of the resultant savings (*i.e.* they believed savings were greater) than the companies that did not make an assessment of strike costs. American-owned firms, possibly because they were able to transfer production to United States, also experienced greater savings as a result of the strike compared to their Canadian counterparts.

There were six variables associated with the importance of *executive time* as a strike cost. Manufacturing firms viewed this as a more important cost than mining companies, and the higher the proportion of the workforce on strike, the greater the cost of executive time. On the other hand, lost executive time was less important the greater a firm's revenue and total employees, the greater the number of unionized employees, and as strike frequency increased. These results reinforce the suggestion made earlier that larger firms and firms which experience greater degrees of labour unrest are more likely to professionalize their industrial relations function. This reduces the amount of time that financial and accounting executives have to devote to labour issues.

DISCUSSION

This paper examined the nature of strike costs experienced by a sample of Canadian manufacturing and mining firms. A list of twenty-three

TABLE 4

Correlates of Strike Cost Scales

	Direct Expenses	*Customer & Investor Damage*	*Strike Savings*	*Executive Time*
Company Variables				
Manufacturing (= 1)	.03	.06	-.08	.21*
U.S. Ownership (= 1)	.06	.10	.16*	-.11
Annual Revenue	.06	.18*	.08	-.21*
Total Employees	.16*	.22**	.01	-.19*
Industrial Relations Variables				
Number of Unions	.06	.10	-.10	-.13
Number of Unionized Employees	-.08	.13	-.01	-.25**
Strike Frequency	.13	.14	-.03	-.16*
Finance Role in CB (= 1)	-.01	-.06	-.01	-.13
Strike Costs Estimated (= 1)	.19*	.20*	.18*	-.05
Strike Variables				
Illegal Strike (= 1)	-.29***	-.03	.02	-.03
Continued Operations (= 1)	.10	.07	-.10	.08
Strike Duration	.18*	.16*	-.07	.11
Workers Involved	-.04	-.01	.07	-.13
Mandays Lost	.09	.12	.13	.03
% of Workforce Striking	-.06	-.20*	.13	.19*

Correlates reported are Pearson correlations.
* $p < .05$; ** $p < .01$; *** $p < .001$

separate cost and savings items was developed and participating firms indicated the importance attached to various costs (and savings) from a work stoppage their firm had recently undergone. The results showed that most of the twenty-three items on the list were considered of major importance to some firms. Surprisingly, only two costs (fixed overhead and sales loss) were viewed as of major importance in a majority of the strikes. The findings also were able to suggest an alternative framework for classifying strike costs that differs from frameworks used in previous studies of strike costs.

That only two items were considered of major importance to a majority of firms highlights one of the most important finding of this research — namely, the degree of variation that exists from firm to firm in terms of which costs are deemed important and which costs are not. The nature of this variation was assessed through correlation analysis which showed that the importance attached to strike costs varied according to company characteristics, a firm's internal industrial relations features and the nature of the strike itself. The analysis also revealed that the correlates were different for each one of the twenty-three individual strike cost and savings items, as well as for the strike cost scales, suggesting that a complex interplay of factors contributes to the ultimate perception of a work stoppage is impact on any particular firm.

The degree of variation in strike cost importance and its correlates has implications for our understanding of employer motivation and behaviour with respect to work stoppages. While recognizing that employers will endeavour, in general, to reduce costs (in order to maximize net income), it is presumably relevant to inquire — «which costs». If most firms incurred more or less the same strike costs most of the time, some reasonable assumptions could be made about how firms could be expected to act to reduce these costs. This study demonstrates, however, that perceived strike costs are not more or less the same from strike to strike. The degree and nature of costs incurred vary considerably and the variation is related to both external and internal variables. The perceived strike costs of Firm A may well be very different than the perceived strike costs of Firm B and their strategic views of negotiations and conflict could be expected to differ accordingly. Strike costs and the nature of the behaviour that could reasonably be expected to flow from the recognition of strike costs are complex phenomena. Researchers should be extremely cautious, therefore, in making macro level assumptions on the basis of micro level observations and *vice versa,* a view consistent with that expressed by Wheeler (1984).

In assessing the foregoing, this study's limitations as well as the need for substantially more work in this area need to be recognized. First, the

preliminary nature of this study should be stressed. Given the absence of previous empirical research on the subject of strike costs, an exploratory approach was adopted with few explicit hypotheses stated in advance. In the future, researchers should be able to develop and test predictive models in a fashion the current authors were unable to do.

Second, there are several specific issues raised in this search that merit further exploration. One of the findings in the study was that most firms believed that they incur costs prior to a strike by engaging in activities designed to reduce losses if a strike occurs (*e.g.* inventory build-up). A question worth investigating is whether company behaviour differs in situations where a strike actually occurs; is a strike threat sufficient to induce certain costs, or do firms accurately anticipate the likelihood of a strike and only react in situations where a strike actually does take place? A second interesting issue raised in the study concerns the difference in strike cost importance observed between firms which actually estimate strike costs and firms which do not. Because the very fact of estimation is systematically related to perceptions of strike costs, it would be useful to know why some firms estimate costs and others do not and also the procedures employed by the firms that do conduct estimates. It would also be useful to compare employer strike cost perceptions to actual dollar costs to determine if in fact employers accurately estimate their strike costs and savings. The fact that strike cost estimation is a highly significant variable suggests that discrepancies may well exist. It was assumed in this study, however, that even if perceptions of strike costs are off-base, it is the perceptions nevertheless which determine strategic bargaining table behaviour. Finally, the very low importance attached to potential strike savings is intriguing and supports the notion that there are no winners, only losers as a result of a work stoppage. It would be worthwhile to develop a more comprehensive list of strike benefits and scrutinize the concept of strike savings more thoroughly.

Third, future research should give serious thought to inclusion of additional variables and to the use of a wider sample. Variables that might be considered include a firm's market position, its labour/capital cost ratios, and the gap between labour and the management's positions when the strike occurred. With respect to the sample, the study restricted itself to two sectors, manufacturing and mining, and the results may be less relevant to other parts of the economy. American readers should also be cognizant of the growing divergence between the Canadian and American industrial relations systems (Rose and Chaison, 1984), reducing the generalisability of the findings to the United States (although the fact that one third of the companies in this study were U.S. controlled may mitigate this issue to some extent). Ideally, further studies should include more industries and be conducted on both sides of the border.

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L'évaluation du coût des grèves du point de vue des employeurs

Les grèves comportent des coûts. Même s'il ne s'agit guère plus qu'un énoncé de principe, il est surprenant de voir combien peu d'informations sont disponibles à l'heure actuelle sur la nature et sur la gravité du coût des grèves subies par les entreprises prises individuellement. Le premier objectif de cet article vise à évaluer le coût des grèves subies par les employeurs au Canada. Aux fins du présent article, les coûts des grèves comprennent à la fois des coûts pécuniaires et des coûts non-pécuniaires qui sont reliés à une grève ou à un lock-out. Les coûts pécuniaires comprennent les pertes de vente attribuables à l'impossibilité de répondre aux commandes, aux coûts encourus dans le cours du processus de médiation et d'arbitrage et ainsi de suite. Les coûts non-pécuniaires peuvent inclure la perte de la clientèle, la mauvaise publicité et la dimunition de confiance de la part des investisseurs et des créanciers.

Les données de l'enquête ont été recueillies en 1980 à la suite de l'envoi de questionnaires par voie postale. L'échantillon comprenait des entreprises manufacturières et minières qui avaient subi une grève ou un lock-out impliquant plus de 100 tra-

vailleurs dans les deux années précédentes, soit un total de 278 entreprises. Les entreprises où il y avait eu plus d'une grève devaient faire rapport sur le conflit qui avait entraîné le plus de jours-personne perdus.

Le questionnaire répertoriait vingt coûts possibles attribuables à la grève selon qu'ils la précédaient, l'accompagnaient ou la suivaient ainsi que trois possibilités d'économie ou d'avantages qu'on pouvait en tirer. Concernant chaque point, on a demandé aux répondants d'indiquer si le coût (ou l'économie) avait été extrêmement important (code 4), très important, modérément important, sans aucune importance ou qu'il n'ait donné lieu à aucune perte (code 0) eu égard à la grève spécifique pour laquelle il était fait rapport.

Des 278 entreprises auxquelles on s'était adressé, 127 ont retourné des questionnaires utilisables pour un taux de réponses valables de 46 pourcent. Quatre-vingts pour cent des entreprises répondantes appartenaient à l'industrie manufacturière. Leur revenu médian annuel s'établissait approximativement à 50 millions de dollars, cependant que leur personnel médian tournait autour de 500 employés. Ces entreprises devaient négocier avec trois syndicats en moyenne et le tiers d'entre elles étaient contrôlées par des investisseurs américains.

En conformité avec les études empiriques antérieures, les coûts les plus importants qu'on attribuait à la grève consistaient en dépenses générales et en pertes de ventes. Seuls ces deux coûts étaient considérés comme extrêmement ou très importants par la majorité des entreprises. Des coûts moins importants comprenaient la publicité auprès de la population, les amendes pour retard de livraison, des frais d'assurance supplémentaires et le sabotage. Une réponse inattendue consistait dans l'importance relative que l'on portait au temps consacré par les bureaux de direction des compagnies aux négociations collectives à la fois avant et durant un arrêt de travail. Il est aussi intéressant d'observer combien on attachait peu d'importance aux possibilités d'économie qui pouvaient résulter d'un arrêt de travail.

On a formulé l'hypothèse que les coûts (ou les économies) d'une grève pourraient être reliées à trois séries de variables: 1) les caractéristiques de l'entreprise; 2) les particularités internes des relations du travail dans l'entreprise et 3) les particularités de l'arrêt de travail au cours duquel on a eu à encourir les coûts. Les résultats indiquent que ces trois séries de variables étaient rattachées à l'évaluation que l'employeur faisait du coût de la grève.

Étant donné l'absence de recherche empirique antérieure sur la question des coûts d'une grève, dans la présente étude, on a adopté une approche exploratoire qui ne comprenait que peu d'hypothèses explicites pré-établies. Dans l'avenir, les chercheurs auront à développer et à vérifier des modèles prévisionnels. On suggère aussi d'entreprendre des recherches dans d'autres domaines se rapportant aux coûts des grèves.