

## Intra-Organizational Bargaining: Wage Differentials Among Saskatchewan Schoolteachers

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Résumé de l'article

L'étude des différences de salaires ainsi que d'autres aspects de leurs structures internes a tenu une place notable dans la littérature relative à leur détermination pendant les années 1940 et 1950. Ceci a donné ouverture à une analyse économétrique élargie, globale du rôle des syndicats en matière de salaires au cours des décennies suivantes, de 1960 et de 1970. Cet article se ramène à la question des différentiels internes de salaires entre des employés qualifiés et moins qualifiés au niveau restreint d'une unité de négociation. Afin d'accroître la compréhension des différences de salaires à l'intérieur d'un groupe donné, l'article soutient qu'il est nécessaire de s'orienter également vers un palier restreint d'analyse.

Les auteurs examinent l'effet possible du mode de fonctionnement interne d'une organisation syndicale au moment d'une négociation entre des groupes de travailleurs qualifiés et moins qualifiés à l'intérieur d'une unité de négociation donnée en matière de différences de salaires. On y montre que les deux groupes de travailleurs s'engagent dans une forme quelconque de négociation interne sur la question des différentiels de salaires. Les employés qualifiés aimeraient élargir l'écart entre les deux groupes, tandis que les moins qualifiés préféreraient qu'il soit le moins grand possible. Si le fonctionnement interne du syndicat est raisonnablement démocratique, on peut alors s'attendre à ce que le poids numérique relatif des deux groupes explique une certaine fluctuation dans les différentiels de salaires. Basée sur les relevés statistiques résultant de la négociation en matière de différences de salaires entre deux catégories d'enseignants, ceux qui détiennent un baccalauréat et ceux qui n'en ont pas, l'analyse présentée ci-dessous examine l'effet possible des pressions internes sur les différentiels de salaires.

Les enseignants des écoles publiques de la Saskatchewan négocient collectivement depuis 1935. Ils bénéficient de la protection du droit de négociation reconnu juridiquement depuis 1949 (Walmsley et Ohtsu, 1975). La Fédération des enseignants de la Saskatchewan (Saskatchewan Teachers' Federation) agit comme agent négociateur exclusif pour tous les enseignants de la province. Même si la négociation collective est généralement très centralisée, les salaires furent fixes au niveau local entre le conseil scolaire et la section locale de la Fédération de 1949 à 1967. En 1968, la négociation fut d'abord centralisée au plan régional et, plus tard, au niveau provincial (Wetzel et Gallagher, 1979). L'étude exclut la période postérieure à 1967 parce que les statistiques ne pouvaient plus se comparer avec celles de la période 1949-1967. On a aussi prétendu que la réaction des parties placées sous un régime plus centralisé était différente qualitativement si on la comparait à une structure décentralisée (Gallagher et Wetzel, 1980, 1984).

Notre modèle analytique se lit ainsi:

$WDt = f(UM, NDRt, MTRM, APM)$ , où WD: l'écart entre les enseignants non brevetés et les enseignants brevetés; U: le taux de chômage dans les Prairies; NDR: le ratio des enseignants brevetés et ceux qui ne le sont pas; MTR: le ratio du pourcentage des enseignants de sexe masculin parmi les non-brevetés par rapport au pourcentage des hommes parmi les enseignants brevetés; et AP: le pourcentage de changement dans l'indice des prix à la consommation dans la région Regina-Saskatoon.

En résumé, NDR est la seule variable qui soit significative. Le fait qu'elle compte pour la plus grande partie de la variation de la variable dépendante dans tous les cas laisse voir que les différences de salaires entre les classes peuvent s'expliquer par le pouvoir relatif entre les enseignants titulaires d'un brevet et ceux qui ne le sont pas. Donc, le résultat de la recherche confirme l'opinion selon laquelle le processus de négociation entre les groupes à l'intérieur des syndicats est une caractéristique importante de la substance de la négociation en matière de salaires.

Le but premier de cette étude visait à vérifier l'hypothèse, parmi d'autres, suggérée par Turner (1952) et Walton et McKersie (1965) que les différences professionnelles de salaires à l'intérieur d'une unité de négociation sont influencées par le pouvoir relatif des travailleurs dans différents groupes professionnels. Les résultats auxquels nous en sommes arrivés confirment cette hypothèse. Cette recherche est conciliable avec la compréhension normale du fonctionnement interne d'un syndicat. Le syndicat, qui est une institution démocratique, prend ses décisions en se fondant sur la volonté majoritaire. Il est fort raisonnable de s'attendre à ce que le poids relatif des groupes d'intérêts internes influence d'une façon passablement observable et mesurable la structure interne des salaires.

# *Intra-Organizational Bargaining Wage Differentials Among Saskatchewan Schoolteachers*

**Makoto Ohtsu  
and  
Anil Verma**

*This paper attempts to determine the extent to which the concept of «intra-organizational bargaining», suggested by Walton and McKersie, among others, is useful in analyzing wage differentials between sub-groups within a local union. Based on historical data for public schoolteachers in Saskatchewan, the results show that the relative power of sub-groups within the union has a much stronger bearing on internal wage differentials than do the economic variables. This lends strong support to the intra-organizational bargaining model of internal wage differentials.*

The study of occupational wage differentials and other aspects of internal wage structures occupied a central role in the wage determination literature of the 1940s and 1950s<sup>1</sup>. This gave way to broader, aggregate econometric analysis of the effects of unions on wages in the 1960s and the 1970s<sup>2</sup>. This paper returns to the issue of internal wage differentials between skilled and less skilled employees at the disaggregate level of the bargaining unit. It is argued that in order to improve our understanding of internal wage differentials, it is necessary to move to a disaggregated level of analysis. In aggregate studies, it is difficult — if not impossible — to model

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1 See, for example, REYNOLDS and TAFT (1956), KERR (1957), and REYNOLDS (1957).

2 For a good review of research from this period, see MITCHELL (1980). For examples of the effect of collective bargaining on the salary structure of teachers, see MOORE (1976) and DELANEY (1985). Other studies of union impact on teachers' salaries are summarized in LIPSKY (1982) and DELANEY (1985).

internal pressures on wage differentials. We argue that because of the decentralized nature of collective bargaining in North America, the internal dynamics of decision making within the union may be expected to have a significant impact on the structure of negotiated wage differentials. Case evidence suggests that strong personal attitudes are held regarding the appropriateness of internal wage differentials between different occupational and skill groups (Ross, 1950; Turner, 1952). This suggests that even if unions do not have formally articulated policies about internal wage differentials, internal organizational processes are constantly shaping negotiated outcomes. For these reasons, it is appropriate to move to a disaggregated level of analysis that will facilitate modeling the effects of internal organizational processes.

This paper examines the possible effect of internal organizational processes, such as intra-organizational bargaining on wage differentials between skilled and less skilled groups of employees within a given bargaining unit. It is suggested that the two groups of employees engage in some form of intra-organizational bargaining over the issue of internal wage differentials. The skilled employees would like to widen the differential between the two groups, whereas the less skilled would prefer the differential to be as compressed as possible. If the union's internal proceedings are reasonably democratic, then one may expect the relative numerical strength of the two groups to be significant in explaining some variation in wage differentials. Using bargaining level data on wage differentials between two classes of schoolteachers, those with a Bachelor's degree and those without, the analysis presented here examines the possible effect of internal pressures on wage differentials.

## CONCEPTUAL FRAMEWORK

In economic theory, the issue of internal wage differentials has been treated as a special case of occupational wage differentials. Occupational wage differentials arise primarily from differences in acquired skills, which, in turn, are obtained through education and training (Reder, 1955; Rees, 1979). This view is also largely endorsed by the human capital theorists (Becker, 1964; Mincer, 1974). Because it takes money to acquire skills, occupations requiring higher skill levels must pay higher wages in order to attract new entrants. If the supply of labor increases in any occupational group, it will depress the wages, which will reduce the number of new entrants as individuals seek out other relatively better paid occupations. The same argument can be made for an equilibrium of occupational wage differentials in the case of other types of changes in supply and demand. Inter-

nal wage differentials, therefore, can be understood in terms of skill differentials and the stabilizing forces of the labor market (Reder, 1962).

Another approach to occupational wage differentials is the so-called institutional school, which pays specific attention to such noneconomic factors as customary work practices and the particulars of collective bargaining structure and processes. These researchers have stressed the role of custom, past practices, and traditional wage relationships in determining internal wage differentials (Wooton, 1955; Doeringer and Piore, 1971; Ross, 1950). While Wooton (1955) emphasized the relative social status of different occupations, Doeringer and Piore (1971) leaned toward the argument that internal labor markets provide greater stability in employment causing the same groups of workers to come into regular and repeated contact and thus reinforcing the legitimacy of traditional wage differentials. Ross (1950) took a similar position, arguing that the union was a political organization composed of many heterogeneous interest groups. Further, the lack of homogeneity in union membership gives rise to conflicts of interest in formulating union wage policy. The formulation of the wage policy, both as to the specifics of acceptable differentials and the strategies for achieving and maintaining them, depend on the effective political pressure generated by the various interest groups within the union.

Walton and McKersie (1965) provided a theoretical bargaining framework in which internal wage differentials, described by many industrial relations observers, can be understood as bargaining outcomes among diverse groups within the organization. Labeled as «intra-organizational» bargaining, the outcome which can be explicit or implicit, depends on the relative power of the parties involved. If the union is assumed to be reasonably democratic, bargaining power may be operationalized in terms of the relative numerical strength of various groups in the union.

Several empirical illustrations of these arguments can be cited from case studies. For example, a group of skilled workers within the UAW successfully improved their relative position by mobilizing their power within the union (Ross, 1950, pp. 32-33). In a study of wage differentials in Britain, Turner (1952) found several examples of union demands expressed in terms of flat-rate increases (a constant dollar amount that decreases wage differentials) in cases where the union was dominated by unskilled workers. Similarly, he found that when the union was dominated by skilled workers, its wage demands were expressed in terms of percentage increases, whose effect is to maintain or widen existing wage differentials. Slichter, Healy, and Livernash (1960) observed a narrowing of occupational wage differentials in many industrial unions where the majority of workers were semi-skilled. They recorded however, that this narrowing tendency was less pronounced

in unions, where the proportion of skilled workers was high, notably the UAW during the late 1940s and early 1950s, (Slichter, Healy and Livernash, 1960, pp. 622-623). But to our knowledge, no study has attempted to systematically test this hypothesis, which has been stated by researchers since the 1940s.

In addition to the relative numbers, sex may determine the balance of power between interest groups within a union. Turner (1952) gives the example of two spinning unions, the Cardroom Amalgamation and the Operative Cotton Spinners, which demanded a joint wage increase of 15 percent in 1950. Since the bulk of the Operative Cotton Spinners were women, relative number alone may not explain their demand for an increase equal to the all-male Cardroom Amalgamation, given that a differential in male-female wages was universally accepted. The explanation for this is that although the Cotton Spinners was overwhelmingly a female union, it was run by a core of male officials. This example supports the view that traditionally it has been possible for a small group of male workers to maintain or improve their relative position of advantage by occupying important positions in the union.

Egalitarian ideals need special attention, because the associated notions of political egalitarianism and financial equity are foremost among the operating principles of trade unionism. Thus, it is often argued that when prices rise rapidly, unions tend to be particularly concerned with the issue of subsistence and, therefore, direct their efforts toward protecting the real incomes of its lower paid members on grounds of equity (Knowles and Robertson, 1951). These kinds of considerations tend to result in a demand for a flat rate type of increase which raises the wages of lower paid workers proportionately more than those of higher paid workers. On the other hand, when prices are stable or falling, such disproportionate increases are difficult to justify on grounds of equity. Evans (1963) examined the «inflation hypothesis» against historical data in the U.S. and found that the narrowing of the occupational differentials was clearly associated with inflation.

## THE INSTITUTIONAL SETTING

Public schoolteachers in Saskatchewan have bargained collectively since 1935 and have enjoyed the protection of bargaining rights under a statute since 1949 (Walmsley and Ohtsu, 1975). The Saskatchewan Teachers' Federation (STF) acts as the exclusive bargaining agent for all teachers in the province. Although collective bargaining is currently very

centralized, between 1949 and 1967 salaries were determined at the local level, between the local school board and the local unit of the STF. In 1968, bargaining became more centralized first at the regional level and later at the provincial level (Wetzel & Gallagher, 1979). This study excludes the period after 1967 because the data were no longer comparable with the 1949-67 period. It has also been argued that the response of the parties under a more centralized system has been qualitatively different compared to that in a decentralized structure (Gallagher & Wetzel, 1980, 1984).

In view of this institutional setting, skill does not seem to be relevant in explaining changes in wage differentials over time between different groups of teachers. For purposes of wage determination, skill is measured primarily in terms of the amount of post-secondary education. The educational requirements for the two classes of teachers, however, did not change over the 1949-1967 period. Thus, the skill differential between degree and nondegree teachers has remained fairly constant over the years.

### **THE ANALYTICAL FRAMEWORK**

We are left with three explanatory variables of inter-class wage differentials: (1) the differential effects of the labor market, (2) the power relationship measured by relative numbers and sex ratios, and (3) equity considerations as affected by inflation. Among those factors the market factor needs further discussion. It is difficult to measure directly the amount of excess demand (or supply) for different classes of teachers. For example, the fact that the ratio of degree teachers over nondegree teachers increased (or decreased) does not tell us anything about the existence of excess demand for one group or the other.

Reder (1955) attempted to infer the differential wage effects of the market from the general market condition. He claimed that because of the «dilution effect», occupational wage differentials tend to narrow when the market demand for labor is generally high, and vice versa. Within the market for schoolteachers in Saskatchewan, however, the dilution effect does not exist for the same reason that was offered in consideration of skill differentials. Individual school boards have no authority over teacher classification; it is controlled at the level of the provincial government. Labor market considerations simply do not affect the teacher classification system as a structure.

Because of this market constraint, it could be argued that the high level of demand for labor in general might tend to widen inter-class wage differentials, and vice versa. Basic to this argument would be the assumption

that compared with nondegree teachers, degree teachers are more versatile. It may be that under ordinary market conditions, it would be easier for a degree teacher to find a job outside the teaching profession than for a nondegree teacher to find such a job. It would follow that when the demand for labor is generally high, proportionately more degree than nondegree teachers would leave the teaching profession and proportionately more B.Ed. graduates would be attracted to a nonteaching job than would graduates from teacher certificate programs. Thus, the supply of degree teachers would decline relative to the supply of nondegree teachers. When the demand for labor is generally high so that the general level of unemployment is low, the employers' ability to pay is high. Therefore, many employing school boards would shift their demand from nondegree to degree teachers. The combined effect of relative supply and demand would cause the widening of wage differentials in favor of degree teachers.

When the general level of unemployment is high, nonteaching jobs would be scarce, not only for nondegree teachers but also for degree teachers. Under such a situation, some graduates of certificate programs may be discouraged from competing in the labor market for nondegree teachers. They might change their career plan and enroll in degree programs. Not many B.Ed. graduates would enroll in graduate programs in education because of the common held belief that the marginal rate of return for graduate education is much lower than for a B.Ed. degree. Instead, many B.Ed. graduates would attempt to find teaching jobs in a less preferred school district, such as those with rural schools. Thus, the supply of nondegree teachers would decline relative to the supply of degree teachers. On the demand side, employing school boards would shift from degree to nondegree teachers because of their reduced ability to pay. The combined effect of relative supply and demand would result in a narrowing of inter-class wage differentials.

Our analytical model reads as follows:

$$WD_t = f(U_{t-1}, NDR_{t-1}, MTR_{t-1}, \Delta P_{t-1}), \quad (1)$$

where:  $WD$  = wage differential between nondegree and degree teachers;  $U$  = unemployment rate in prairie provinces;  $NDR$  = ratio of nondegree to degree teachers;  $MTR$  = ratio of percentage males among nondegree to percentage of males among degree teachers; and  $\Delta P$  = percentage change in consumer price index for Regina-Saskatoon.

Wage differentials can be expressed both as a differential in the *level* of wages and a differential in the *change* of wage levels. While both are valid expressions, they contain different amounts of information. Changes in wage levels are significant in that they are closely followed by the affected

groups of wage-earners. But it is the resultant level of wages and its relationship to other wage levels that determines long-run behavior of the interested groups. For example, while the differential between changes five years ago (say, \$200 versus \$250) is easily forgotten, the traditional differentials between wage levels is more strongly imprinted in people's minds (e.g., the fact that unskilled wages were 85 percent of skilled wages). Also, any differential component expressed in terms of wage levels already contains the differential component expressed in the change in wage levels. Accordingly, wage differentials in this study are expressed in terms of differential in wage levels rather than differential in the change variable<sup>3</sup>.

The next step is to define a reference group for constructing differentials. In our institutional setting, the degree teacher group consists of two subgroups: Class IV and Class V<sup>4</sup>. The nondegree teacher group consists of three subgroups: Classes I, Class II, and Class III. Wage scales for each class have a fair amount of spread. This presents some problems in defining a «value» of the scale, because the number of teachers in the class may not be uniformly distributed over the spread in the wage scale. It can be argued then that a precise «value» would be one weighted by the number of teachers in each wage slot. In terms of the specifics of the intraorganizational bargaining process, teachers within each class could have differing interests with respect to each other. For the purpose of simplification, however, we will assume that each class of teachers is homogeneous in its interests within the class<sup>5</sup>. This assumption allows us to use the mid-point of each wage scale as a «value» of the wage rates for each class. Therefore, wage differentials between degree and nondegree teachers are measured by the ratio of the average of three mid-points (for classes I, II, and III) to the average of two mid-points (for classes IV and V).

As for the independent variables of equation (1), the differential effect of the market is simply measured by the level of unemployment. Inflation is measured by the percentage change in the Consumer Price Index (CPI). Although Knowles and Robertson (1951) compared skill differentials and the cost-of-living index, we take the view that given the trend of a secular increase in the CPI over the period examined, it is the relative change in the

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<sup>3</sup> For an interesting discussion of the implications of using level and change variables, see HINES (1964).

<sup>4</sup> Although a new category, Class VI, has been added in recent years, there were only five classes of teachers during the period of the study (1954-1967).

<sup>5</sup> We do not mean to suggest that individual characteristics, such as age and seniority, do not give rise to significantly different interest groups within a given class of teachers. Rather, we believe that the assumption of homogeneity within the degree and nondegree groups is justified because our dependent variable is the *wage scale* and not individual earnings within the scale.



cost-of-living that influences unions in their desire for flat-rate increases rather than the level itself. The significance of the level of cost-of-living wears off once people have psychologically adjusted to it. Both the ratio of nondegree teachers (NDR) and of percentage males in the two groups (MTR) were calculated similarly to the wage differential variable.

In arriving at a precise functional relationship between wage differentials and its explanatory variables, it was decided to use one-period lagged variables on the right-hand side. This follows from the argument that environmental conditions (both economic and institutional) prevailing at the time of contract negotiations are the significant variables to be used for explaining wages. For example, a contract signed for a period beginning 1958 will be influenced by the conditions in 1957 rather than those in 1958. Hence we use a time-lag relationship of one year between wages and the explanatory variables.

Data were collected from twelve school boards for the academic years 1954 to 1967: Arcola, Assiniboia, Broadview, Canora, Graton, Kinistino, Lloydminster, Medstead, Regina, Rosetown, Saskatoon, and Swift Current. These boards constitute a fairly representative sample of the province-at-large, they include both city and rural boards and are distributed throughout the province. During the period from 1954 to 1967 bargaining was carried out at the local level; certain data for the academic year 1965 were not available.

## RESULTS

Using the analytical model presented in the last section, OLS estimates were obtained for each of twelve boards (see Table 1). The fact that the coefficient for unemployment (U) is not very significant suggests that no differential market effects were discernible. Regardless of the general level of economic activity, the labor market exerted more or less uniform influence on the two groups of teachers. In nine out of twelve cases, the ratio of nondegree to degree teachers (NDR) was significant. In the case of three school boards, Graton, Regina, and Swift Current, the insignificance was caused by a very high correlation between NDR and the ratio of the percentage of males in the two groups (MTR). Therefore, a new regression was run without MTR. As expected, the coefficient of NDR then became significant. Thus, in all twelve cases NDR was significant, in many cases at the 1 percentage test level.

**Table 1**  
**Regression Testing for Effects of Unemployment Rate (U),**  
**Nondegree-Degree Teacher Ratio (ND), Ratio of Percentage of Male Teachers**  
**(MTRD), and Change in CPI ( $\Delta P$ )**

<i>Board</i>	<i>No. of Cases</i>	<i>U</i>	<i>NDR</i>	<i>MTR</i>	$\Delta P$	$R^2$
1. Arcola	12	-2.176 (1.884)	1.061* (0.473)	-15.000 (11.750)	0.290 (1.152)	0.627 +
2. Assiniboia	12	1.394 (0.900)	0.588* (0.226)	44.648 (20.333)	0.697 (0.753)	0.856**
3. Broadview	9	-3.494 (1.413)	+ 1.032** (0.316)	52.240 (22.662)	0.213 (0.773)	0.818 +
4. Canora	12	-0.900 (1.357)	1.217* (0.554)	5.588 (11.210)	-0.231 (1.102)	0.559
5. Graton	11	0.290 (0.920)	0.204 (0.309)	-73.269** (17.968)	-1.628 (0.942)	0.940**
6. Kinistino	12	-1.833 (1.318)	1.500** (0.416)	0.947 (16.448)	-1.290 (1.750)	0.816*
7. Lloydminster	11	0.263 (0.662)	0.472** (0.069)	-25.199 (16.715)	-0.685 (0.662)	0.918**
8. Medstead	11	-0.747 (1.069)	0.519** (0.100)	-7.316 ( 8.501)	-1.980 (0.989)	0.859*
9. Regina	9	3.044 (4.625)	1.774 (1.680)	-53.538 (44.538)	-0.015 (3.447)	0.836 +
10. Rosetown	11	0.000 (1.214)	2.010** 0.403	1.844 (14.065)	-1.076 (0.812)	0.889**
11. Saskatoon	10	-1.710 (2.122)	7.821* (2.497)	-44.873 (41.564)	-0.725 (1.617)	0.849*
12. Swift Current	12	0.452 (1.881)	0.617 0.390	2.456 23.390	-1.819 1.599	0.325

Figures in parentheses are standard errors.

+ means statistical significance at the 10 percent test level.

\* means statistical significance at the 5 percent test level.

\*\* means statistical significance at the 1 percent test level.

MTR was significant in one case. That in eleven cases this variable was not significant suggests that this variable did not play a significant role in determining wage differentials. This suggests that there are no discernible differences between male and female teachers in terms of their assertiveness in the intra-organizational bargaining process. Finally, inflation ( $\Delta P$ ) was mildly significant (at the 0.10 level) in only one case, but the sign was

«wrong» compared to the expected result. Given these qualifications, the degree of association between inflation and wage differentials seems weak. This suggests that the rate of inflation does not strongly affect unions' internal equity considerations.

In summary, NDR is the only significant variable. The fact that it accounts for most of the variation in the dependent variable in all cases suggests that interclass wage differentials may be explained in terms of the relative power between degree and nondegree teachers. Thus, our findings provide support for the view that the process of intra-organizational bargaining within the union is an important determinant of the substance of the wage bargain.

The use of time-series data inevitably involves the possibility that there will exist some serial correlation. Since the Durbin-Watson test does not yield reliable results for the few number of cases in these regressions, residuals were directly examined. Based on the assumption that the absence of serial correlation yields randomly distributed residuals, a test of randomness (number-of-runs test) was applied to the residuals. These were found to be randomly distributed in all twelve equations. Another attempt was made to avoid the risk of serial correlation by running cross-sectional regressions across all twelve boards. Results obtained were quite disappointing. As with Eckstein and Wilson (1962), however, the nature of our data and the model is such that cross-sectional results cannot be expected to be any better. Intra-organizational bargaining is an ongoing process within each bargaining unit, the details of which become increasingly more specific to its own setting over time. Our proxy of this process is only an approximation, which may not fully account for the specificity of each setting in which the bargaining takes place when cross-sectional data are used.

Further, when the data are pooled cross-sectionally, wages across boards tend to become rather uniform, leaving little variation to be analyzed. For instance, the variance in our dependent variable ranged from 9.78 to 55.62 in time-series data, but in cross-sectional groupings it was confined to a limited range from 1.29 to 11.25. Any association between the variables, therefore, would be understated. Not surprisingly, results obtained from such an analysis are very poor.

## **DIFFERENTIAL EFFECTS OF THE LABOR MARKET RECONSIDERED**

The findings in the previous section suggest that the institutional factor measured by relative number of teachers is an important factor influencing the size of wage differentials. The market variable measured by the general

level of unemployment turned out to be significant only in one out of twelve cases. It could be argued, however, that our proxy for the measurement of differential effects of the labor market is too indirect and therefore that the observed lack of correlation between wage differentials and the level of unemployment may not necessarily prove that differential effects of the labor market do not exist.

To overcome this difficulty, an attempt was made to construct a proxy that measures those effects more directly. The proxy is the ratio of resignation rate of nondegree teachers to that of degree teachers. It is generally believed that in a period of rising labor demand, the resignation rate rises because workers find it easier to find better jobs (Reynolds, 1957). Therefore, by comparing this rate for the two groups of teachers — that is, degree teachers and nondegree teachers — we can infer the relative magnitude of excess demand (or supply). It is probably misleading to compare these rates directly for any given year, because demographic profiles of the two groups of teachers are different. For example, it is quite conceivable that the resignation rate is higher for nondegree teachers because a typical nondegree teacher during the period under consideration would have been a young, unmarried female who would have tended to resign to «return to home responsibilities» and to «get married». Those reasons probably would not have applied to a typical degree teacher. In spite of this problem, however, it seems reasonable to construct a ratio of two resignation rates for each year and compare those ratios for different years. Therefore, if this ratio (of resignation rate of nondegree teachers to that of degree teachers) increased from year one to year two, it is reasonable to expect that during that time the relative excess demand for nondegree teachers increased.

Thus, this proxy is a more direct measurement of the differential market effects and therefore more desirable than the general level of unemployment. As a result, this proxy rather than the unemployment rate could have been introduced to the equation that was tested in the previous section. The only reason for not doing so was that data were not available for the entire period under consideration (1954-1967). The STF began its survey on Saskatchewan teachers' termination in 1957, so data for 1954, 1955 and 1956 are not available. By introducing this variable, then the number of observations (which is already small, ranging between eight and eleven) will be reduced by three. For this reason, this proxy was not introduced in the original regression equation.

At this stage, a new equation was used:

$$WD_t = f(NDR_{t-1}, RESIGNR_{t-1}), \quad (2)$$

where  $WD$  and  $NDR$  are as defined in equation (1) and  $RESIGNR$  is the resignation rate for nondegree teachers divided by the resignation rate for

degree teachers. The reason for choosing only two variables is again the small number of observations (ranging between seven and nine). It is hoped that each of these variables would represent the institutional and market forces, respectively. Table 2 summarizes the results of the multiple linear regression run for each of twelve boards.

The findings in Table 2 are very similar to those obtained in the previous section. The labor market variable (RESIGNR) turned out to be significant in only two of the twelve cases, suggesting that differential ef-

**Table 2**  
**Regression Testing for Effects of**  
**Nondegree-Degree Teacher Ratio (NDR) and**  
**Ratio of Resignation Rates (RESIGNR)**

	<i>Board</i>	<i>No. of Cases</i>	<i>NDR</i>	<i>RESIGNR</i>	<i>R<sup>2</sup></i>
1.	Arcola	9	0.340 (0.355)	2.688 (5.704)	0.272
2.	Assiniboia	9	1.151** (0.245)	5.196 (2.717)	0.830**
3.	Broadview	7	0.749 (0.559)	4.670 (6.270)	0.477
4.	Canora	9	0.947 + (0.427)	5.515 (4.045)	0.559 +
5.	Graton	8	0.881 + (0.360)	9.812 (5.678)	0.699*
6.	Kinistino	9	1.168** (0.230)	-0.615 (2.819)	0.841**
7.	Lloydminster	8	0.340 (0.099)	2.688 (2.071)	0.272
8.	Medstead	8	0.395** (0.035)	6.296** (1.131)	0.972**
9.	Regina	7	2.805 + (1.034)	7.161 (7.634)	0.870*
10.	Rosetown	8	1.548** (0.372)	4.147 (3.744)	0.840*
11.	Saskatoon	7	4.829** (0.631)	2.717 (1.689)	0.974**
12.	Swift Current	9	0.439 (0.289)	5.955 (4.313)	0.458

Figures in parentheses are standard errors.

+ means statistical significance at the 10 percent test level.

\* means statistical significance at the 5 percent test level.

\*\* means statistical significance at the 1 percent test level.

fects of the labor market operated only in isolated cases. The power variable (NDR) was significant in nine out of twelve cases. The overall degree of association between this variable and the dependent variable is weaker than that obtained in the previous section, partly because the numbers of observations decreased and partly because RESIGNR was forced into the equation for all cases. By correcting for those facts, it is possible to obtain statistical significance at the 5 percentage level or better for all cases. In summary, findings in this section confirm our earlier observation that interclass wage differentials may be understood better in terms of the internal power processes rather than in terms of market factors.

## CONCLUSION

The primary purpose of this study has been to test the hypothesis suggested by Turner (1952) and Walton and McKersie (1965), among others, that occupational wage differentials within a bargaining unit are influenced by the relative power of workers in different occupational groups. Our results provide some support for this hypothesis. This finding is consistent with the common understanding of the internal functioning of a trade union. The union as a democratic institution makes its decisions on the basis of majority will, so it is quite reasonable to expect the relative size of the respective internal «parties of interest» to influence, in a fairly observable and measurable way, the internal wage structure.

This study has not addressed the influence of management policy on interclass wage differentials. Instead, it has been assumed that management is a more or less homogeneous group and that its policy on interclass wage differentials is based on its appreciation of market conditions. Given that a central function of management is to identify, assess, and respond to the complexity of market forces, however, it must confront and resolve a variety of intra-organizational issues. Some of these issues and the manner in which they are resolved might usefully form the focus of other studies, contributing to a more comprehensive understanding of the effects of intra-organizational bargaining.

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### ***La négociation interne dans un syndicat: les différences de salaires chez les enseignants en Saskatchewan***

L'étude des différences de salaires ainsi que d'autres aspects de leurs structures internes a tenu une place notable dans la littérature relative à leur détermination pendant les années 1940 et 1950. Ceci a donné ouverture à une analyse économétrique élargie, globale du rôle des syndicats en matière de salaires au cours des décennies suivantes, de 1960 et de 1970. Cet article se ramène à la question des différentiels internes de salaires entre des employés qualifiés et moins qualifiés au niveau restreint d'une unité de négociation. Afin d'accroître la compréhension des différences de salaires à l'intérieur d'un groupe donné, l'article soutient qu'il est nécessaire de s'orienter également vers un palier restreint d'analyse.

Les auteurs examinent l'effet possible du mode de fonctionnement interne d'une organisation syndicale au moment d'une négociation entre des groupes de travailleurs qualifiés et moins qualifiés à l'intérieur d'une unité de négociation donnée en matière de différences de salaires. On y montre que les deux groupes de travailleurs s'engagent dans une forme quelconque de négociation interne sur la question des différentiels de salaires. Les employés qualifiés aimeraient élargir l'écart entre les deux groupes, tandis que les moins qualifiés préféreraient qu'il soit le moins grand possible. Si le fonctionnement interne du syndicat est raisonnablement démocrati-



que, on peut alors s'attendre à ce que le poids numérique relatif des deux groupes explique une certaine fluctuation dans les différentiels de salaires. Basée sur les relevés statistiques résultant de la négociation en matière de différences de salaires entre deux catégories d'enseignants, ceux qui détiennent un baccalauréat et ceux qui n'en ont pas, l'analyse présentée ci-dessous examine l'effet possible des pressions internes sur les différentiels de salaires.

Les enseignants des écoles publiques de la Saskatchewan négocient collectivement depuis 1935. Ils bénéficient de la protection du droit de négociation reconnu juridiquement depuis 1949 (Walmsley et Ohtsu, 1975). La Fédération des enseignants de la Saskatchewan (Saskatchewan Teachers' Federation) agit comme agent négociateur exclusif pour tous les enseignants de la province. Même si la négociation collective est généralement très centralisée, les salaires furent fixés au niveau local entre le conseil scolaire et la section locale de la Fédération de 1949 à 1967. En 1968, la négociation fut d'abord centralisée au plan régional et, plus tard, au niveau provincial (Wetzel et Gallagher, 1979). L'étude exclut la période postérieure à 1967 parce que les statistiques ne pouvaient plus se comparer avec celles de la période 1949-1967. On a aussi prétendu que la réaction des parties placées sous un régime plus centralisé était différente qualitativement si on la comparait à une structure décentralisée (Gallagher et Wetzel, 1980, 1984).

Notre modèle analytique se lit ainsi:

$$WD_t = f(U_{t-1}, NDR_{t-1}, MTR_{t-1}, \Delta P_{t-1}),$$

où  $WD$ : l'écart entre les enseignants non brevetés et les enseignants brevetés;  $U$ : le taux de chômage dans les Prairies;  $NDR$ : le ratio des enseignants brevetés et ceux qui ne le sont pas;  $MTR$ : le ratio du pourcentage des enseignants de sexe masculin parmi les non-brevetés par rapport au pourcentage des hommes parmi les enseignants brevetés; et  $\Delta P$ : le pourcentage de changement dans l'indice des prix à la consommation dans la région Régina-Saskatoon.

En résumé,  $NDR$  est la seule variable qui soit significative. Le fait qu'elle compte pour la plus grande partie de la variation de la variable dépendante dans tous les cas laisse voir que les différences de salaires entre les classes peuvent s'expliquer par le pouvoir relatif entre les enseignants titulaires d'un brevet et ceux qui ne le sont pas. Donc, le résultat de la recherche confirme l'opinion selon laquelle le processus de négociation entre les groupes à l'intérieur des syndicats est une caractéristique importante de la substance de la négociation en matière de salaires.

Le but premier de cette étude visait à vérifier l'hypothèse, parmi d'autres, suggérée par Turner (1952) et Walton et McKersie (1965) que les différences professionnelles de salaires à l'intérieur d'une unité de négociation sont influencées par le pouvoir relatif des travailleurs dans différents groupes professionnels. Les résultats auxquels nous en sommes arrivés confirment cette hypothèse. Cette recherche est conciliable avec la compréhension normale du fonctionnement interne d'un syndicat. Le syndicat, qui est une institution démocratique, prend ses décisions en se fondant sur la volonté majoritaire. Il est fort raisonnable de s'attendre à ce que le poids relatif des groupes d'intérêts internes influence d'une façon passablement observable et mesurable la structure interne des salaires.