

Trade Union Growth in Canada : 1911-1970 Le syndicalisme au Canada de 1911 à 1970

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Résumé de l'article

Le taux de croissance du syndicalisme au Canada depuis le commencement du XX^e siècle fut plutôt fluctuant. À des périodes d'expansion rapide, telles que celles de 1915 à 1916, de 1936 à 1937, de 1941 à 1944 et de 1946 à 1947 ont succédé des périodes de contraction marquée dans le nombre total des membres. Les deux dernières décennies ont été caractérisées par un taux de croissance relativement stable, quoique modéré. Le rythme de développement des syndicats au Canada n'est pas tellement différent de celui des États-Unis, mais on observe des variations significatives tant dans l'époque que dans l'ampleur des périodes d'expansion et des périodes de contraction.

Les plus importantes théories relatives au développement du syndicalisme sont celles qui furent mises de l'avant par Wolman et Bernstein. Les essais en vue de quantifier les déterminants de la croissance du syndicalisme mis au point par Hines au Royaume-Uni, ainsi que par Ashenfelter et Pencavel aux États-Unis n'ont obtenu qu'un succès relatif. Cet article a d'abord pour objet d'essayer d'individualiser les déterminants du taux de croissance du syndicalisme au Canada de 1911 à 1970 en retenant l'idée que les changements dans le nombre des effectifs syndicaux peuvent coïncider avec les modifications qui se produisent dans le degré de syndicalisation ou dans le nombre des unités syndicales. La variation des effectifs à l'intérieur des sections locales est déterminée par les fluctuations de l'emploi (ΔE) et par les variations du degré de dynamisme des dirigeants syndicaux dans le recrutement des membres (ΔS). L'accréditation de nouveaux groupes et, par conséquent, les changements dans les effectifs, dépendent du taux de chômage (U), du taux de l'inflation (AP), de la proportion de la main-d'œuvre syndiquée (T) et des effets d'entraînement de la croissance des syndicats aux États-Unis (ΔM_{US}). On peut normalement s'attendre à ce que le mouvement syndical croisse en fonction de (ΔE, de ΔS, de ΔP et de ΔM_{US}) et qu'il décroisse en fonction de U et de T.

Cet étalon fut vérifié au moyen d'analyses de régression à partir des statistiques annuelles au Canada pour les périodes 1911-70, 1911-39 et 1946-70. Étant donné qu'il n'était pas possible de quantifier le dynamisme de recrutement syndical (ΔS), on s'est servi à la place comme variable des fluctuations des statistiques en matière de grèves. Tous les coefficients obtenus confirment l'hypothèse dans l'analyse de régression pour la période 1911-1970 à l'exception des changements dans les taux d'emploi (ΔE) et des variations dans le taux de l'inflation qui ne sont pas significatifs. Pour la période 1911-1939, l'étalon laisse à désirer. Bien que tous les coefficients soient conformes à ce que l'on s'attendait, seuls le pourcentage de la main-d'œuvre syndiquée (T) et l'effet d'entraînement du développement du syndicalisme aux États-Unis (ΔM_{US}) sont significatifs. En ce qui a trait à l'équation relative à la période 1946-1970, seuls les coefficients de la fluctuation de l'emploi (ΔE), du taux de chômage (U) et du pourcentage de la main-d'œuvre syndiquée (T) sont significatifs, ce qui veut dire que, une fois le syndicalisme implanté, son développement repose principalement sur les conditions économiques et l'expansion de l'emploi. Le degré relatif de syndicalisation dans un secteur semble exercer un effet modérateur sur le taux de croissance du syndicalisme. Bien qu'on ait soulevé l'hypothèse que la formation des syndicats soit dans une certaine mesure un moyen de protection contre la baisse du revenu réel, il n'y a guère d'indication concrète de cette tendance. Non seulement le coefficient du taux d'inflation (AP) est-il toujours sans signification, mais il est même négatif dans l'équation se rapportant à la période 1946-1970. L'impression générale qui se dégage de l'analyse, c'est que les déterminants du développement du syndicalisme dépendent d'un ensemble enchevêtré de facteurs juridique, politique, sociologique et économique.

La dernière partie de l'article traite du degré optimal de la syndicalisation. Si la syndicalisation réussit à accroître les salaires réels des travailleurs syndiqués, elle concourt d'une certaine façon à réduire les salaires réels de ceux qui ne le sont pas ou de réduire la part de la production revenant au facteur capital. Si la première proposition est vraie, l'expansion du syndicalisme peut mener à une certaine dévalorisation des avantages véritables. Ainsi, les travailleurs syndiqués peuvent-ils se sentir incités à freiner le mouvement de syndicalisation ou, du moins, à ne pas en favoriser la croissance. Si les syndicats, au contraire, font des gains aux dépens du capital, une plus grande expansion du syndicalisme peut favoriser jusqu'à un certain point le transfert du revenu national du facteur capital au facteur travail.

Trade Union Growth in Canada: 1911-1970

R. Swidinsky

This paper is primarily an attempt to isolate the determinants of trade union membership growth in Canada over the past six decades.

Economists have generally been puzzled by the irregular pattern of union growth in both Canada and the U.S. during the 1900's. Leo Wolman¹ has argued that favourable economic conditions very likely provide the most fertile periods for the expansion of unionism. Not only are workers more aware of the economic and noneconomic gains that unionization may render, but employers are least resistant to the unionizing activities of their employees during phases of business expansion. Bernstein² dismisses the business cycle theory of union growth, emphasizing instead secular forces and specific periods of social unrest and economic disturbances. Labour force growth, coupled with the spread of union security arrangements, the acceptance of the union as a permanent institution and the increase homogeneity of the labour force are sufficient to account for the upward trend in union membership. Short-run departures from trend are presumably with economic fluctuations. The two theories differ primarily in that Bernstein emphasizes secular forces whereas Wolman gives more weight to cyclical influences.

Efforts to identify empirically the determinants of union growth have met with mixed success. Hines³ has argued that trade union growth in the U.K. is related positively with price changes and the level of profits and negatively with the percentage of the labor force organized.

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¹ Leo WOLMAN, *The Ebb and Flow in Trade Unionism*, (New York, The National Bureau of Economic Research, 1936).

² I. BERNSTEIN, «The Growth of American Trade Unions», *American Economic Review*, XLIV (June, 1954).

A careful examination of his estimated equations shows, however, that the hypothesis holds only for the overall period, 1893-1961 (excluding the war years). The price change variable is insignificant in the estimated equations for all three subperiods analyzed and the profits variable has a negative sign in two of these equations.

The more recent attempt by Ashenfelter and Pencavel⁴ to quantify the explanatory variables stressed by Wolman, Bernstein and others appears to have captured the essence of the historical growth of U.S. trade union membership from 1900 to 1960. In general, the findings that union membership responds positively to inflationary pressures and negatively to the proportion of the labour force organized is consistent with those for the U.K. However, unlike the U.K., the magnitude of worker grievances, changes in employment and changes in political attitudes towards the union movement also appear to have contributed significantly to union membership growth in the U.S.

Despite these efforts there remain a large number of unanswered questions about the causes and implications of union growth. Most pertinent among these questions are : (i) Do economic or sociological and political factors best explain past patterns of union growth ? (ii) Can these factors be relied upon to predict future patterns of growth in union membership ? and (iii) What is the optimal size of the union sector ? While the first two issues have been debated at length, the question of optimal union growth has been almost entirely ignored.⁵

This paper is primarily an attempt to isolate the determinants of trade union membership growth in Canada over the past six decades. As Figure 1 shows, the rate of change in union membership fluctuated widely from decade to decade, with the most significant phases of expansion occurring during 1915-19, 1936-37, 1941-44 and 1946-47.⁶ The Cana-

³ A. G. HINES, «Trade Unions and Wage Inflation in the United Kingdom, 1893-1961», *Review of Economic Studies*, Vol. 31, No. 4 (October, 1964).

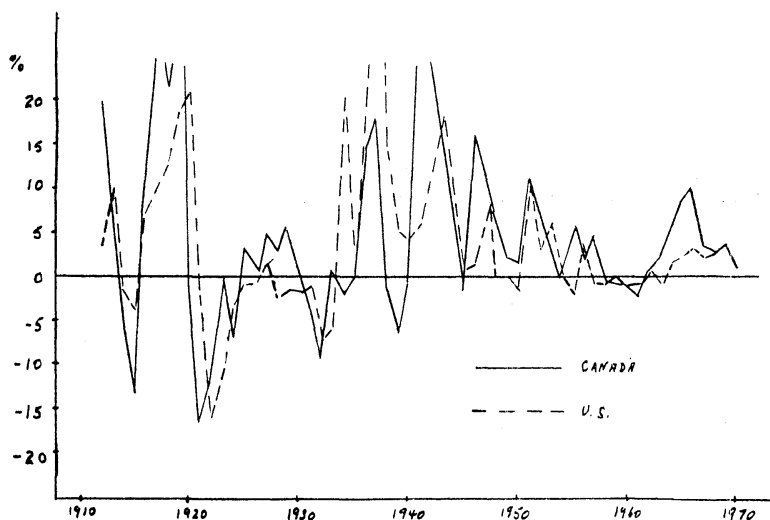
⁴ Orley ASHENFELTER and John H. PENCAVEL, «American Trade Union Growth: 1900-1960», *Quarterly Journal of Economics*, Vol. 83, No. 3 (October, 1969).

⁵ JOHNSON and MIESZKOWSKI recognize this question in a somewhat indirect manner. See Harry G. JOHNSON and Peter MIESZKOWSKI, «The Effects of Unionization on the Distribution of Income: A General Equilibrium Approach», *Quarterly Journal of Economics*, Vol. LXXIV, No. 4 (November, 1970), pp. 560-561.

dian pattern of union growth coincided roughly with that of U.S. union membership, but there are significant differences in timing and in magnitudes of expansion and contraction. Obviously, the variables specified by Ashenfelter and Pencavel would not necessarily provide the best fit for the Canadian data, and clearly, the political variable they include is somewhat irrelevant in the Canadian case.

FIGURE 1

ANNUAL PERCENTAGE CHANGE IN UNION MEMBERSHIP IN CANADA AND THE U.S.,
1912-1970



Section I of this paper develops a testable model of union membership growth. The second section contains an empirical test of the model as well as an analysis of the results. The final section diverges slightly from the main stream of analysis in that it contains a brief discussion of the optimal growth of the union sector. The two discussions are obviously not unrelated. If the union sector has reached an optimal size it is unlikely that union membership will again experience phases of rapid growth.

⁶ The average annual rate of membership growth by decade is 15.5% for 1911-1919 -1.4% for 1920-1929, 1.5% for 1930-1939, 11.2% for 1940-1949, 3.8% for 1950-1959 and 4.1% for 1960-1969.

A MODEL OF UNION GROWTH

To maintain consistency with previous studies we define trade union growth as the rate of change in union membership, (ΔM). Changes in union membership can result from changes in the size of existing local unions or from changes in the number of local unions. Thus

$$\Delta M = \Delta M_1 + \Delta M_2 \quad (1)$$

where ΔM_1 is the percentage change in aggregate union membership resulting from a contraction or expansion of membership in existing locals and ΔM_2 is the percentage change in aggregate membership arising from changes in the number of locals.⁷ ΔM_1 can be expressed as the function

$$\Delta M_1 = \Delta M_0 + a_1 \Delta E + a_2 \Delta S \quad (2)$$

where ΔM_0 refers to autonomous membership changes, ΔE to the rate of change in employment in unionized firms and ΔS to changes in union recruiting attitudes. Unless union security is universal workers in unionized firms will have the option of joining or withdrawing from their union.⁸ These movements are assumed autonomous, depending primarily on the individual worker's preferences for the private and collective services offered by the trade union. A worker, having joined the union, may realize that he values the union's collective services substantially above its private services and withdraw his membership. Similarly, another worker who had previously decided against joining the union may reassess the value of the private services he could enjoy only through membership and decide to join the union.⁹

⁷ Equation (1) can be rewritten as

$$\Delta M = \frac{dM}{M} = \frac{dM_1}{M} + \frac{dM_2}{M}$$

where dM_1 is the absolute change in membership of existing local unions and dM_2 is the absolute change in membership resulting from newly certified or decertified locals. The decertification of locals can be treated alternatively as a decline of the membership of existing locals. There remains the conceptual problem of how to treat the amalgamation or splitting-up of locals. It is probably more appropriate to view such locals as continuing organizations. However, the problem does not arise in the empirical estimations.

⁸ Union security refers to the presence of union shop, closed shop or other methods of compulsory membership.

⁹ The distinction between private, semicollective and collective services is made in John H. PENCAVEL, «The Demand for Union Services: An Exercise», *Industrial and Labour Relations Review*, Vol. 24, No. 2. (January, 1971), p. 182.

Employment changes are expected to exert a positive influence on ΔM_1 , but the magnitude of this influence depends on the distribution of employment changes among firms with different degrees of unionization and the prevalence of union security arrangements. Thus if all union firms were completely organized and operated under union security arrangements, a_1 would be equal to unity. Given the more realistic conditions of less than complete unionization among union firms and nonuniversality of union security arrangements, a_1 is expected to be positive but less than unity.¹⁰ ΔS is included because the aggressiveness with which unions recruit new membership may be subject to considerable variations. Hines has argued that whenever unions become militant in their wage demands they increase their bargaining power by recruiting additional membership.¹¹ Thus ΔM_1 may be quite sensitive to the pattern of wage negotiations.

ΔM_2 is expected to vary positively with the rate of change in the number of local organizations (ΔL). Thus

$$\Delta M_2 = b\Delta L \quad (3)$$

where b is the elasticity of membership with respect to the number of local unions. Organizational efficiency dictates that unions organize larger firms in the earlier stages of union growth and subsequently bring into the unionized sector smaller units. This implies that b is likely to decline with an increase in the percentage of the labour force unionized (T). Assuming that b is a linear function of T ,

$$b = b_0 + b_1T \quad (4)$$

ΔM_2 can be written as the function

$$\Delta M_2 = b_0\Delta L + b_1(\Delta L \cdot T) \quad (5)$$

where $b_0 > 0$ and $b_1 < 0$.

ΔL can be viewed as a function of several economic forces. Specifically, ΔL is expected to vary negatively with the rate of unemployment

¹⁰ Although the extent of union security arrangements in Canada is not known, it is probably less widespread than is generally believed. In Britain in 1964 only two out of five unionists worked in closed shop conditions. See PENCAVEL, « The Demand for Union Services: An Exercise », p. 182.

¹¹ This hypothesis originates with HINES, « Trade Unions and Wage Inflation in the United Kingdom, 1893-1961 ».

(U) and positively with the rate of price inflation (ΔP) and the rate of change in U.S. union membership (ΔM_{US}). ΔL can be written as the linear function.

$$\Delta L = c_0 + c_1U + c_2\Delta P + c_3\Delta M_{US} \quad (6)$$

Whether workers in nonunion firms become organized depends on their subjective evaluation of the respective costs and benefits of union membership.¹² Presumably union membership is not costless to a worker. It reduces his range of options in his relations with the employer. A highly skilled and efficient worker may have considerable power in bargaining over wages, promotion and working conditions in a nonunion firm which he cannot exercise in a collective context. Union membership also imposes a monetary cost in terms of initiation fees and dues, and it leaves open the possibility of economic losses during strike situations. There may also exist a noneconomic cost in terms of compliance with union rules and regulations and the time that must be allocated to union affairs. The most obvious benefits accrue in the form of improved wages, fringe benefits, working conditions, seniority rights and grievance settlements. In addition, unionization may give rise to noneconomic benefits, such as the feeling of enhanced security and worker solidarity.

In a period of growing unemployment, the costs of union membership loom large relative to the benefits. When economic activity declines, a worker's primary concern is employment security and unions are generally impotent in providing such protection. Moreover, employees who are active in organizing a firm, or who are sympathetic to the union cause, can be discharged for allegedly economic reasons. In periods of rising employment, a worker's attention is again focused on wages, working conditions and other factors that a union can be expected to influence. Thus the relative benefits of union membership are likely to be assessed more favourably during the expansionary phase of the business cycle. Since the subjective assessment of cost and benefits differ widely among individuals, not all workers would assess unionism as yielding a net benefit even under improved economic conditions. It is likely, however, that when unemployment is low an increased number of workers might feel that union membership yields a positive net benefit. In some firms this feeling may prevail among the majority so that the certification of new locals becomes more likely.

¹² See ASHENFELTER and PENCAVEL, « American Trade Union Growth: 1900-1960 », p. 436.

The behaviour of existing unions tends to accentuate the cyclical pattern of union formation. Unions are unlikely to undertake costly organizing campaigns in the face of declining revenues caused by unemployment among their membership, nor are they likely to do so when the probability of success is low. With more bouyant economic conditions these impediments are not only weakened but unions may try to strengthen their positions in the impending contract negotiations by controlling a larger fraction of the industry's labour supply.

The ΔP variable is included to test the argument set forth by Ashenfelter and Pencavel that unions are partly defensive organizations in that workers accept unionization in inflationary periods as a means of protecting their real wage. The close relation between U.S. and Canadian trade unions through the international union suggests that the rate of growth of unions in the U.S. may also be an important explanatory variable. Conceivably, a major organizing thrust in the U.S. may spill over into Canada, partly as a consequence of the international corporate structure. There is also the possibility that Canadian workers may react strongly to events and trends in the U.S., especially to changes in labour legislation.

Substituting Equation (6) into (5) we derive Equation (7).

$$\begin{aligned} \Delta M_2 = & b_0 c_0 + b_0 c_1 U + b_0 c_2 \Delta P + b_0 c_3 \Delta M_{US} \\ & + b_1 c_0 T + b_1 c_1 (U \cdot T) + b_1 c_2 (\Delta P \cdot T) \\ & + b_1 c_3 (T \cdot \Delta M_{US}) \end{aligned} \quad (7)$$

And replacing ΔM_1 and ΔM_2 in Equation (1) by Equations (2) and (7) we derive Equation (8).

$$\begin{aligned} \Delta M = & (\Delta M_0 + b_0 c_0) + a_1 \Delta E + a_2 \Delta S + b_0 c_1 U \\ & + b_0 c_2 \Delta P + b_0 c_3 \Delta M_{US} + b_1 c_0 T + b_1 c_1 (U \cdot T) \\ & + b_1 c_2 (\Delta P \cdot T) + b_1 c_3 (T \cdot \Delta M_{US}) \end{aligned} \quad (8)$$

The coefficients a_1 , a_2 , $b_0 c_2$ and $b_0 c_3$ are expected to be positive and the coefficients $b_0 c_1$ and $b_1 c_0$ negative. The signs of the cross-product coefficients, cannot be readily determined a priori. Unfortunately, many of the structural parameters that are of particular interest cannot be deduced from the estimated coefficients.

II. A TEST OF THE MODEL

Since the T variable is dominated by a strong positive trend, the cross-product terms in Equation (8) are highly correlated with each other and with T . Accordingly, to eliminate multicollinearity with the estimating equation is respecified as

$$\begin{aligned} \Delta M_t = & k_0 + k_1 \Delta E_t + k_2 \Delta S_t + k_3 U_t + k_4 \Delta P_{t-1} \\ & + k_5 T_{t-1} + k_6 \Delta M_{USt} \end{aligned} \quad (9)$$

where $k_0 = \Delta M_0 + b_0 c_0$, etc., and the cross-product terms omitted. All variables are entered concurrently with the exception of ΔP and T . The one period lag in ΔP is consistent with the notion that there is a delay in the worker's reaction to price changes, although a one year lag may be excessive. All variables, with the exception of ΔS , can be observed directly. It can be argued, however, that increased union militancy culminates in a higher level of strike activity, and if unions recruit more aggressively when they become militant there ought to exist a positive correlation between industrial unrest and union membership growth. Thus the rate of change in strikes is used as a proxy for changes in union recruiting activity.

Equation (9) is the basic relationship on which the empirical analysis of this section is based. All OLS regression estimates are derived from annual aggregate data for the periods 1911-1970, 1911-1939 and 1946-1970. Presumably, the factors related to union growth prior to 1939, when unions were struggling for recognition, are quite different from those in the latter period when unions become well entrenched, and the regression estimates for the two periods ought to yield some evidence of these developments. The regression results are given in Table I.

The estimated coefficients for 1911-1970 are consistent with theoretical expectations and their magnitudes are quite plausible, although the ΔE_t and ΔP_{t-1} coefficients are not significantly different from zero at the 5 percent level of significance. The performance the U_t coefficient tends to support Wolman's business cycle theory of union growth. The estimated coefficient suggests that a one percentage point increase in the unemployment rate would reduce the rate of growth of union membership by as much as .81 percentage points. Labour strife and union growth are highly correlated in this period, thus seemingly lending

TABLE I
REGRESSION COEFFICIENTS AND t-VALUES
ESTIMATED FROM EQUATION (9)*

Independent Variable	Period		
	1911-1970	1911-1939	1946-1970
Constant	11.16 (3.83)	26.23 (3.01)	26.42 (5.56)
ΔE_t <i>supply price</i>	0.22 (1.58)	0.18 (0.67)	0.37 (2.28)
ΔP_{t-1} <i>price</i>	0.28 (1.38)	0.60 (1.67)	-0.24 (1.66)
ΔS_t <i>prices</i>	0.12 (4.28)	0.02 (0.27)	0.01 (0.07)
U_{t-1} <i>union wage</i>	-0.81 (3.43)	0.16 (0.30)	-1.05 (3.12)
T_{t-1} <i>lagged</i>	-0.18 (2.06)	-1.91 (2.45)	-0.67 (4.07)
ΔM_{USt} <i>lagged US</i>	0.28 (3.11)	0.26 (1.96)	0.55 (1.51)
R ²	0.72	0.78	0.89
DW	1.56	1.73	1.34

support to Hines' thesis that union membership growth is a precondition of union wage demands. Alternatively, the positive relation between ΔM_t and ΔS_t may reflect little more than the fact that the process of union formation and recognition prior to amendments in Canadian industrial relations legislation during the late 1930's and early 1940's was typified by industrial conflict.¹³ In the absence of machinery that would compel employers to recognize and bargain with unions, workers had little option other than to force the issue through a strike process.

* For a definition of the variables employed and the sources of data see Appendix A.

¹³ See H. D. WOODS, *Labour Policy in Canada*, 2nd ed., (Toronto, MacMillan of Canada, 1973), ch. 3.

The alternative hypotheses may be subjected to a rough test by changing the lag specification on ΔS . Thus if union growth precedes union militancy, the correlation between ΔS_t and ΔM_{t-1} ought to be most significant, but if the alternative hypothesis is superior the regression of ΔM_t on ΔS_t or ΔS_{t-1} ought to provide a better fit. It is obvious from the following simple regressions for the period 1911-1970 that the specification that yields the best fit is the one in which union militancy coincides or precedes union growth. There thus appears to be less support for Hines' hypothesis than for the alternative explanation of the relation between ΔM and ΔS . However, while this empirical evidence sheds some light on the circumstances and processes of union growth, it fails to explain why workers would select one period rather than another in which to force the issue of union recognition.

1. $\Delta M_t = 3.38 + 0.17 S_t \quad R^2 = 0.23$
(2.68) (3.93)
2. $\Delta M_t = 4.03 + 0.16 S_{t-1} \quad R^2 = 0.23$
(2.84) (3.90)
3. $\Delta S_t = 8.82 + 0.06 M_{t-1} \quad R^2 = 0.01$
(1.78) (0.14)

Not surprising, Canadian trade union growth is strongly correlated with the growth of U.S. trade unions. This relation probably manifests itself not only through the international union structure but also through similarities in economic events and labour legislation. The significantly negative T_{t-1} coefficient supports the hypothesis that as union membership increases the recruitment of additional membership becomes more difficult. This finding is consistent with the notion of organizational efficiency, but, alternatively, it may reflect nothing more than a diminution of recruiting efforts by established unions as they attain the optimal size in terms of security and economic objectives.

By contrast, the estimated equation for 1911-39 is rather poor in that only the T_{t-1} and $\Delta M_{US,t}$ coefficient are significant. Given the volatility of union membership changes in this period the poor results are not surprising, although the low significance levels for the ΔS_t and U_t coefficients are somewhat disappointing. The estimated equation for 1946-1970 is much improved and the results are generally consistent with the expected changes over time. The increased use of union security clauses and the maturing of union would dictate a significant correlation

ΔM_t and ΔE_t . The ΔE_t coefficient indicates that some 37 percent of employment changes in the unionized sector are translated into proportionate changes in union membership in that period, but it is very likely that there is also a lagged response in the sense that new employees join unions in subsequent periods. The unemployment rate continues to exert a depressing effect on union growth as does the percentage of the labour force organized. The increase in T since 1946 implies a deceleration in the growth of union membership by some 3.8 percentage points by 1970.

The coefficients of the remaining variables are not significant at the 5 percent level and the price variable is, moreover, unexpectedly negative. In comparison with the 1911-1970 estimates, worker militancy is no longer a contributing factor in union growth, probably because industrial relations legislation has made such organizing tactics redundant. It is also interesting to note that whatever relationship existed between U.S. and Canadian membership growth seems to have disappeared, but the reasons are not readily apparent.

The consistent insignificance, and even unexpected sign, of the ΔP_t coefficient is a strong contradiction of the thesis that unions are partly defensive organizations. This finding is not altered if different lag specifications on ΔP are introduced or changes in real wages are used instead of price changes. But the finding that nonunion workers do not accept unionization more readily during inflationary periods is not surprising in view of G. Lewis' findings that union-nonunion wage differentials tend to narrow under such economic conditions.¹⁴ Thus, if nonunion workers are unwilling to organize when the net benefits of unionization are increasing, that is, when union-nonunion wage differentials are widening, there is even less reason for them to initiate collective action when the net benefits of such action are decreasing.

In summary, union membership growth over the period 1911-1970 appears closely associated with economic fluctuations, union militancy and the growth of trade unionism in the U.S. Since 1946 the expansion of membership is related primarily with employment growth in the unionized sector, the rate of unemployment and the prevailing degree of unionization. Since employment increases in the unionized sector are quite moderate it is obvious that the growth of union membership will

¹⁴ H. C. LEWIS, *Unionism and Relative Wages in the United States: An Empirical Inquiry*, (Chicago, The University of Chicago Press, 1963), ch. VI.

be relatively limited unless unions break new ground. Whether it is in the interest of existing membership to do so is subjected to analysis in the following section.

THE OPTIMAL LEVEL OF UNION GROWTH

It can be demonstrated that the interests of unionized workers in any given industry lie in an extension of their influence until they have effective control over the industry supply of labour. The percentage of the industry labour force that must be organized for effective control will vary among industries, but it is unlikely to require total unionization in any industry. It has not been demonstrated, however, that it is in the general interest of workers in the union sector to promote union growth in unrelated industries in the non-union sector. That is, should the Canadian Labour Congress allocate funds to promote, for example, the unionization of white-collared workers or should it attempt to confine the union sector to its present dimensions.

Discounting worker solidarity and other noneconomic considerations as motives for spreading unionism, it can be shown that the extension of union jurisdiction into the nonunion sector is not necessarily beneficial, and indeed can be economically injurious, to workers in the union sector. Johnson and Mieszkowski¹⁵ have shown that, in general, if the union sector is capital intensive union wage gains will be primarily at the expense of workers in the nonunion sector. Conversely, if the union sector is labour intensive the cost of union wage gains will likely fall on capital. In the former case unionism results in a redistribution of income between union and nonunion labour and in the latter a redistribution between labour and capital. The net benefits of an expanded union sector can be viewed in this context.

Suppose the union sector is capital intensive and that all unions are equally effective in raising wages above the equilibrium wage level. For any given wage increase in the union sector, all other things being equal, the corresponding wage decrease in the nonunion sector must be greater the larger the union sector relative to the nonunion sector.¹⁶ For example, if the union sector is $\frac{1}{3}$ of the labour force and the elasticity of labour demand is unity in both sectors, a 15 percent wage increase in the union

¹⁵ JOHNSON and MIESZKOWSKI, «The Effects of Unionization in the Distribution of Income: A General Equilibrium Approach».

sector is consistent with a 7.5 percent reduction in nonunion wages. If the union sector expands to $\frac{2}{3}$ of the labour force nonunion wages would have to be depressed by 30 percent to accommodate a 15 percent union wage increase. On the other hand, if wages in the nonunion sector cannot be reduced below a level specified by a socially acceptable wage or an effective minimum wage, the wage increase the union sector can effect without producing unemployment will be smaller the larger the union sector relative to the nonunion sector. The magnitudes of allowable wage changes will depend crucially on the elasticities of labour demand in the two sectors. In the limit, if the union sector absorbs completely the non-union sector union wage gains can be made only by a redistribution from capital to labour, and changes in factor shares depend on an entirely different set of forces.

It is quite plausible that workers in newly formed unions are not as effective in making wage gains as those previously organized. An extension of unionism into the nonunion sector would thus leave relative wages basically unchanged. Workers in stronger unions would make wage gains at the expense of workers in weaker unions, but there could be a redistribution of income among workers depending on the distribution of power among the different unions.

Finally, if workers in the union sector gain by a redistribution from capital to labour, an extension of unionism into the nonunion sector ought not to have an adverse wage effect on workers in the union sector. Indeed, union wage gains may be enhanced by the extension of union control if labour's ability to capture a larger share of output is in some way dependent on political processes.

Since the union sector comprises the relatively capital intensive industries of mining, forestry, manufacturing, construction and transportation, communications and utilities, union growth probably has the effect of minimizing the net benefits of unionization in these industries. If this analysis is valid, it is surprising that union leadership would seek to promote unionism among white collar workers and workers in trade, finance and service industries. Conceivably, efforts to promote unionism are more apparent than real; the philosophy of worker soli-

¹⁶ See Albert REES, « The Effects of Unions on Resource Allocation », *The Journal of Law and Economics*, Vol. 6 (October, 1963).

clarity demands that union policy at least give the appearance of favouring union growth.

On the other hand, if unions pursue actively the organization of the non-union sector, the traditional model of the trade union as an economic institution whose sole function is the maximization of its members' wealth becomes somewhat deficient. A more realistic model of the trade union in that case is one that incorporates the political as well as economic character of the institution. A union is distinct from its members in terms of its needs and objectives. It is interested not solely in wealth, but also in its own survival and power. These considerations demand that the union attempt to influence public policy to ensure a favourable climate for union activity. Whether it is successful in this pursuit will depend in no small measure on the dynamic nature of the institution.

If union workers' wage gains are largely the result of a redistribution of functional shares, the pursuit of wealth and the pursuit of power are consistent with each other. Similarly, if unions in the formerly nonunion sector are ineffective in altering their relative wage position the extension of union control over the supply of labour is not in conflict with the wealth objectives of workers in the formerly unionized sector. By contrast, if unionized workers gain at the expense of nonunion workers the pursuit of power is likely to be incompatible with the pursuit of wealth. Where the union tends to be more of an economic institution, as in Canada and the U.S., the union sector is likely to remain relatively small. By contrast, where economic considerations are subservient to political considerations, as in European unions, union growth will command a greater emphasis in union policy.

The course of future growth will likewise be determined by the reaction of unorganized labour. If the bargaining power of all unions in all industries is equal workers in the nonunion sector should organize in order to maintain their relative wage position. If bargaining power varies among unions, those workers who cannot improve their relative wage position by organizing are better off to remain in the nonunion sector. By rejecting union status these workers not only avoid the costs involved, they also minimize the political influence that unions can exert. It is quite plausible that in moderating union political influence nonunion workers may enhance their own relative economic position.

APPENDIX A

The specification of the variables used in the regressions reported in Table I and the sources of data are follows. All data are annual.

$\Delta M_t = [(M_{t+1} - M_{t-1})/2M_t] \cdot 100$ where M_t is aggregate union membership in year t . The source of data is Canada Department of Labour, *Labour Organizations in Canada*, (Ottawa, Information Canada, 1971), p. XViii, Table 1.

$\Delta E_t = [(E_{t+1} - E_{t-1})/2E_t] \cdot 100$ where E_t is employment in the manufacturing, logging, mining, communications, transportation and construction industries in year t . Employment by industry is constructed from annual employment indices and the numbers employed in Census years. Sources of data are D.B.S., *Canada Year Book* (Ottawa, Queen's Printer, Annual), various issues and *Census of Canada*, various issues.

$\Delta P_t = [(P_{t+1} - P_{t-1})/2P_t] \cdot 100$ where P_t is the price index, 1949=100. Source of data are *Historical Statistics of Canada*, ed. M.C. Urquart and K. A. H. Buckley, (Toronto, MacMillan Company, 1965), p. 304, Series J139-152 and Department of Labour, *Labour Gazette*, Ottawa, monthly.

$\Delta S_t = [(S_{t+1} - S_{t-1})/2S_t] \cdot 100$ where S_t is the number of strikes. Source of data is Canada Department of Labour, *Strikes and Lockouts in Canada* (Ottawa, Queen's Printer, Annual).

U_t is the unemployment rate. Data for 1911-1914 is the U.S. unemployment rate published in U.S. Bureau of Census, *Historical Statistics of the United States*, Colonial Times to 1957, Washington, D.C., 1960, Series D47. Data for 1915-1920 is the unemployment rate among union members published in Canada Department of Labour, *Labour Gazette*, Ottawa, monthly, various issues and also in D.B.S., *Canada Year Book*, Annual, various issues. The 1921-1960 unemployment rates refer to the aggregate unemployment rates as published in *Historical Statistics of Canada*, p. 61, Series C47-55. The 1961-70 unemployment rates are found in D.B.S., *Seasonally Adjusted Labour Force Statistics*, Ottawa, Annual.

T_t is union membership as a percentage of non-agricultural paid workers. Source of data is Canada Department of Labour, *Labour Organizations in Canada*, Ottawa, 1971, Table I. Total non-agricultural paid workers for 1911-1921 are derived by means of a linear interpolation using the 1911 and 1921 *Census of Canada* data.

$\Delta M_{UST} = [M_{UST+1} - M_{UST-1})/2M_{UST}] \cdot 100$ where M_{UST} is union membership in the U.S. in time t . Source of data for 1911-1960 is Irving Bernstein, « The Growth of American Unions, 1945-1960 », *Labour History*, Vol. 2, no. 2 (Spring, 1961), p. 135. The 1961-1968 U.S. union membership data is published in U.S. Bureau of the Census, *Statistical Abstract of the United States*, Annual, Washington, D.C., various issues. The 1969-1970 union membership is determined by extrapolating the trend in the 1960's.

Le syndicalisme au Canada de 1911 à 1970

Le taux de croissance du syndicalisme au Canada depuis le commencement du XX^e siècle fut plutôt fluctuant. À des périodes d'expansion rapide, telles que celles de 1915 à 1916, de 1936 à 1937, de 1941 à 1944 et de 1946 à 1947 ont succédé des périodes de contraction marquée dans le nombre total des membres. Les deux dernières décennies ont été caractérisées par un taux de croissance relativement stable, quoique modéré. Le rythme de développement des syndicats au Canada n'est pas tellement différent de celui des États-Unis, mais on observe des variations significatives tant dans l'époque que dans l'ampleur des périodes d'expansion et des périodes de contraction.

Les plus importantes théories relatives au développement du syndicalisme sont celles qui furent mises de l'avant par Wolman et Bernstein. Les essais en vue de quantifier les déterminants de la croissance du syndicalisme mis au point par Hines au Royaume-Uni, ainsi que par Ashenfelter et Pencavel aux États-Unis n'ont obtenu qu'un succès relatif. Cet article a d'abord pour objet d'essayer d'individualiser les déterminants du taux de croissance du syndicalisme au Canada de 1911 à 1970 en retenant l'idée que les changements dans le nombre des effectifs syndicaux peuvent coïncider avec les modifications qui se produisent dans le degré de syndicalisation ou dans le nombre des unités syndicales. La variation des effectifs à l'intérieur des sections locales est déterminée par les fluctuations de l'emploi (ΔE) et par les variations du degré de dynamisme des dirigeants syndicaux dans le recrutement des membres (ΔS). L'accréditation de nouveaux groupes et, par conséquent, les changements dans les effectifs, dépendent du taux de chômage (U), du taux de l'inflation (ΔP), de la proportion de la main-d'œuvre syndiquée (T) et des effets d'entraînement de la croissance des syndicats aux États-Unis (ΔM_{US}). On peut normalement s'attendre à ce que le mouvement syndical croisse en fonction de (ΔE , de ΔS , de ΔP et de ΔM_{US} et qu'il décroisse en fonction de U et de T .

Cet étalon fut vérifié au moyen d'analyses de régression à partir des statistiques annuelles au Canada pour les périodes 1911-70, 1911-39 et 1946-70. Étant donné qu'il n'était pas possible de quantifier le dynamisme de recrutement syndical (ΔS), on s'est servi à la place comme variable des fluctuations des statistiques en matière de grèves. Tous les coefficients obtenus confirment l'hypothèse dans l'analyse de régression pour la période 1911-1970 à l'exception des changements dans les taux d'emploi (ΔE) et des variations dans le taux de l'inflation qui ne sont pas significatifs. Pour la période 1911-1939, l'étalon laisse à désirer. Bien que tous les coefficients soient conformes à ce que l'on s'attendait, seuls le pourcentage de la main-d'œuvre syndiquée (T) et l'effet d'entraînement du développement du syndicalisme aux États-Unis (ΔM_{US}) sont significatifs. En ce qui a trait à l'équation relative à la période 1946-1970, seuls les coefficients de la fluctuation de l'emploi (ΔE), du taux de chômage (U) et du pourcentage de la main-d'œuvre syndiquée (T) sont significatifs, ce qui veut dire que, une fois le syndicalisme implanté, son développement repose principalement sur les conditions économiques et l'expansion de l'emploi. Le degré relatif de syndicalisation dans un secteur semble

exercer un effet modérateur sur le taux de croissance du syndicalisme. Bien qu'on ait soulevé l'hypothèse que la formation des syndicats soit dans une certaine mesure un moyen de protection contre la baisse du revenu réel, il n'y a guère d'indication concrète de cette tendance. Non seulement le coefficient du taux d'inflation (ΔP) est-il toujours sans signification, mais il est même négatif dans l'équation se rapportant à la période 1946-1970. L'impression générale qui se dégage de l'analyse, c'est que les déterminants du développement du syndicalisme dépendent d'un ensemble enchevêtré de facteurs juridique, politique, sociologique et économique.

La dernière partie de l'article traite du degré optimal de la syndicalisation. Si la syndicalisation réussit à accroître les salaires réels des travailleurs syndiqués, elle concourt d'une certaine façon à réduire les salaires réels de ceux qui ne le sont pas ou de réduire la part de la production revenant au facteur capital. Si la première proposition est vraie, l'expansion du syndicalisme peut mener à une certaine dévalorisation des avantages véritables. Ainsi, les travailleurs syndiqués peuvent-ils se sentir incités à freiner le mouvement de syndicalisation ou, du moins, à ne pas en favoriser la croissance. Si les syndicats, au contraire, font des gains aux dépens du capital, une plus grande expansion du syndicalisme peut favoriser jusqu'à un certain point le transfert du revenu national du facteur capital au facteur travail.

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