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The Canadian Experiment with Voluntary Incomes Restraint, Degree of Labour Organization and Cyclical Sensitivity of Employment

William D. Walsh

This paper provides a measure of the industrial distribution of the employment impact of monetary and fiscal policies and suggests that organized labour could have expected to have realized very little differential employment benefits from the Commission's package of proposals — prices and incomes restraint in combination with less monetary and fiscal restraint than would otherwise be possible.

INTRODUCTION

During 1969 and 1970 Canada's Prices and Incomes Commission strongly advocated a programme of voluntary prices and incomes restraint. The rationale for this proposal [1] was that such restraint would permit less restrictive monetary and fiscal po-

WALSH, W. D., Assistant Professor, Department of Economics, University of Victoria, Victoria, B. C.

[1] This argument received continuing prominence in the Commission's public discussions of their objectives. See, for example, addresses delivered by John H. YOUNG, Chairman, Prices and Incomes Commission to : the Empire Club of Toronto, Toronto, October 30, 1969 (mimeographed) ; the Conference on Labour Relations in the Quasi-Public Sector, Montreal, November 6, 1969 (mimeographed) ; Labour Relations and Workshop Conference, Saskatoon, Saskatchewan, February 25, 1970 (mimeographed) ; Ontario Federation of Printing Trade Unions, Ottawa, Ontario, May 2, 1970 (mimeographed) ; Joint Annual Luncheon of The Canadian Manufacturers' Association (Quebec Division and Montreal District Branch), Montreal, Quebec, May 6, 1970 (mimeographed) ; Annual Meeting of the Canadian Economics Association, Winnipeg, Manitoba, June 4, 1970 (mimeographed) ; Vancouver Board of Trade, Vancouver, B.C., September 14, 1970 (mimeographed) ; Ontario Federation of Construction Associations, Toronto, Ontario, March 10, 1971 (mimeographed) ; Association of Professional Economists of British Columbia, Vancouver, B.C., April 28, 1971 (mimeographed) ; Edmonton Rotary Club, Edmonton, Alta., July 22, 1971 (mimeographed). See also Prices and Incomes Commission, *Inflation, Unemployment and Incomes Policy, Summary Report,* Ottawa, 1972, pp. 48, 51.

licies than would otherwise be possible, while at the same time avoiding some of the difficulties associated with while at the same time avoiding some of the difficulties associated with compulsory price and wage controls.

In effect, the Commission's argument was that government policy-makers in combatting inflation face a type of « trade-off » between conventional monetary and fiscal policies and incomes policies. The output and employment costs of curbing an unacceptable rate of inflation depend upon the extent to which labour, business and other sectors of the economy can be persuaded to voluntarily restrain their money income demands. [2] In this respect, one may argue that the larger the element of cooperation in the incomes restraint programme and the smaller the element of compulsion, the more important is it that the self-interest of the parties to the agreement, principally business and labour, be identified with the success of the agreement. [3] The larger the benefits accruing to the parties to the agreement and the more clearly they are perceived the more readily do the guidelines become self-enforcing, even self-activating. [4]

In terms of the self-interest of organized labour, the Commission's proposals offered the prospect of higher than otherwise employment

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[2] In developing this theme, the Commission clearly did not mean that incomes policies would permit the adoption of *easy* monetary and fiscal policies, but only that an incomes policy would permit a given measure of inflation control with less restrictive than otherwise monetary and fiscal policies.

[3] It should be noted that the Commission had in mind a somewhat limited form of voluntarism. That is, the criteria for the assessment of excessive price and income increases were to be voluntarily and cooperatively arrived at. But such an agreement was also to include appropriate provision for review and surveillance procedures. It was also expected that various forms of government intervention and pressure would have to be employed to ensure general compliance with the agreement (see, for example, Address delivered by John H. YOUNG, Chairman, Prices and Incomes Commission, to the Retail Credit Men's Association, Vancouver, B.C., November 3, 1970 (mimeographed)). The Commission's approach, then, is distinguishable from a mandatory control programme not by the complete absence of coercion, but rather by the relative degree of coercion. This much being recognized, it remains that the Commission stressed consensus agreement by the parties concerned and substantial voluntary cooperation with the agreement.

[4] For example, the Commission was ultimately successful in working out an agreement with the business community to hold price increases in 1970 below what would be necessary to fully cover cost increases. This agreement can be interpreted as an acceptance by business of a squeeze on unit profit margins in return for the higher sales volume and total profits that could be expected from the prospect of less restrictive monetary and fiscal policies.

levels. [5] The magnitude of this employment benefit to the labour move-
ment depends upon the relationship between monetary and fiscal policy
and the level of total employment and, since the extent of unionization
varies by industry, upon the industrial distribution of the employment
impact of changes in monetary and fiscal policies. [6]

Additionally, it can be argued that the steadfast refusal of organized
labour to cooperate with the Commission in the formulation of a wage
guideline programme enhances the importance of the distributional as-
pects of the employment impact of the promised easier monetary and
fiscal policies. That is, the stronger is the opposition of organized labour
to incomes restraint that the policy-makers wish to overcome, the larger
must be the degree of monetary and fiscal relaxation and/or the more
pronounced must be the impact of a given degree of monetary and fiscal
easing on the organized sectors of the economy. [7] To the extent that an

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[5] As seen by the trade union movement the Commission's proposals also meant
lower than otherwise wage levels (see Method of Analysis section below). The
procedure of this paper is to take these lower wage levels as given and to ask the
question what employment gains might have accrued to organized labour by ac-
cepting this lower wage. For the purposes of this paper, it is therefore not necessary
to order the union movement's preferences for wages versus employment or other
dimensions of the employment relationship. Only in the extreme and unlikely case
where unions seek to maximize the wage rate irrespective of the employment
repercussions would the size of the potential employment benefits offered by the
Commission's proposals be of neither a priori nor empirical interest. For a fuller
discussion of union preferences in terms of the trade-off between wages and em-
ployment see Allan M. CARTTER, *Theory of Wages and Employment,* Richard
D. Irwin, Homewood, Illinois, 1959, Chs. 7 and 8, particularly, pp. 86-94. See also
footnotes 7 and 8 below.

[6] Clearly, the distribution as well as the magnitude of the impact of monetary
and fiscal policies are relevant to the labour movement. For example, on the
extreme assumption that monetary and fiscal measures come to rest entirely on
employment levels in the unorganized portion of the labour force, the labour
movement's attitude to the direction of these policies in terms of organized labour's
employment interests would be one of indifference.

[7] The rejection of the Commission's proposals by the Canadian Labour Con-
gress (and Confederation of National Trade Unions) obviously means that in
weighing the benefits and costs of the Commission's policy package organized labour
could see no net advantage in these proposals. This, however, clearly does not
detract from the a priori importance of the question posed by this paper.

For the main elements of the Canadian Labour Congress' opposition to volun-
tary restraint see the following section and the conclusion of this paper. For a
more complete statement of the CLC's position see Canadian Labour Congress,
Memorendum to the Government of Canada, March 23, 1970, Ottawa, Canada,
p. 26.

inflationary climate constrains the range of monetary and fiscal relax-
ation, the potential significance of the employment distribution effects
of the Commission's proposals is considerably increased.

This paper provides a measure of the industrial distribution of the
employment impact of monetary and fiscal policies and suggests that
organized labour could have expected to have realized very little differ-
ential employment benefits from the Commission's package of proposals
— prices and incomes restraint in combination with less monetary and
fiscal restraint than would otherwise be possible. [8]

METHOD OF ANALYSIS

The Commission's appeal for a programme of voluntary wage guide-
lines was directed to labour generally, but the key to its general accepta-
bility was the reaction of organized labour. Which means that the relevant
inducement mechanism relates not so much to employment benefits
generally, but to employment benefits for organized labour. When the
labour movement argued that wages restraint programmes are unwork-
able and inequitable [9] what they presumably had uppermost in mind was
the risk that organized labour's money wage rate would fall relative to
the money prices received by all other factors of production. On this
basis, the labour movement might reasonably expect to share dispropor-
tionately in the employment gains of the programme. Or alternatively,
the stronger the association between general economic conditions and the
employment prospects of organized labour, the more closely is the self-
interest of organized labour identified with an inflation-control program-
me of the type envisioned by the Commission — voluntary income res-
traint combined with some relaxation of monetary and fiscal restraint.

Whatever the lag structure of the economy, the impact of changes
in monetary and fiscal policy is ultimately registered in the economy by
changes in the rate of growth of the major economic aggregates — most
importantly for the purposes of this paper, in total employment. Ceteris
paribus, monetary and fiscal expansion, or less restraint, at less than full

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[8] In focusing on the industrial distribution of employment changes, this paper,
of course, does not deny the importance to the labour movement's objectives of
the total employment effect or possible income distribution effects of the Com-
mission's proposed programme. The intention here is simply to isolate analytically
one of the several aspects of the Commission's package of policies that are poten-
tially relevant to the interests of the labour movement.

[9] Canadian Labour Congress, *op. cit.*, p. 26.,

employment will eventually mean higher levels of total employment. In these circumstances, the nature of the differential employment benefits to organized labour from less restrictive monetary and fiscal policies can be approximated by the relationship between changes in total employment and employment changes in the more organized sectors of the economy.

Trade unions tend to be more strongly represented in the heavy industry sectors of the economy [10] and, therefore, a positive relationship between degree of union organization and cyclical sensitivity of employment might be expected. However, the main objective of this paper is to provide a measure of the differential employment benefits that might have been realized by organized labour from subscribing to the Commission's programme. In this context, not only are the direction and statistical significance of the relationship between degree of labour organization and cyclical sensitivity of employment by industry important, but also, of even more strategic importance is the overall strength (R^2) of this association.

What is required, then, is a measure of the extent to which the employment conditions of the organized portions of the labour force reflect the general ebb and flow of economic activity. Employment conditions in particular industries of the economy are measured by indexes of employment [11] and average weekly hours worked [12]; general economic conditions are measured by employment indexes and average weekly hours for the aggregate of the particular industries.

Over any period of time the annual observations on an employment index [13] reflect the combined influence of trend variables and cyclical-

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10 See the percent unionization data in Tables 1A and 2A of the Statistical Appendix.

11 Dominion Bureau of Statistics, *Review of Employment and Average Weekly Wages and Salaries* (Cat. 72-201) (Ottawa, various issues, 1961-70). These employment index data cover both wage-earner and salaried employees in establishments employing twenty or more employees and are based in 1961. For several industries the employment indexes were obtained from a special request to Statistics Canada.

12 Dominion Bureau of Statistics, *Review of Man-Hours and Hourly Earnings* (Cat. 72-202) (Ottawa, various issues, 1961-70). The average weekly hours data report hours worked by hourly-rated wage-earners in establishments employing twenty or more employees. For a more detailed definition of the hours data see the source publication. For several industries the average weekly hours data were obtained from a special request to Statistics Canada.

13 The analysis of average weekly hours parallels that of the indexes of employment and it needs not be developed separately.

plus-irregular variables (treated here as the cyclical component). In order to measure the cyclical sensitivity of employment in any particular industry the trend magnitude must be separated from the cyclical magnitude. Trend equations of the following form are fitted (in natural logarithms) to the employment index data for each of the n industries

$$E_i = Ae^{r_i t} \qquad\qquad (1),$$

where E_i (i = 1, . . . ,n) is the annual average of the employment index in industry i, r_i is the average annual rate of growth in employment in industry i and t measures time in years. [14]

Since the central relationship in the analysis of this paper is that between the cyclical pattern in particular industries and the general or overall cyclical pattern, we need to fit a trend equation of the above form to the aggregate of the n industries ;

$$E_I = Ae^{r_I t} \qquad\qquad (2),$$

where E_I is the annual average of the employment index for the aggregate of the n industries, r_I is the average annual rate of growth in employment in the aggregate of the n industries and t measures time in years. [15]

The cyclical sensitivity of each industry can now be measured by the following equation ;

$$\frac{E_i}{E_{ic}} = b_0 \left(\frac{E_I}{E_{IC}} \right)^{b_1} \qquad\qquad (3),$$

where E_{ic} is the calculated trend value of the employment index in the ith industry ; E_{IC} is the calculated trend value of the aggregate employment index and $\dfrac{E_i}{E_{ic}}$ and $\dfrac{E_I}{E_{IC}}$ are, respectively, cyclical relatives for in-

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[14] Since the trend in average weekly hours data is much less perceptible than in the case of the employment index data, the most appropriate trend equation is linear rather than exponential. Specifically, the trend equation (1) for the average weekly hours data in each of the n industries is ;
$$H_i = a_0 + a_1 t,$$
where H_i (i = 1, . . . , n) is the annual average of average weekly hours in industry i and t measures time in years.

[15] Equation (2) for the average weekly hours data is $H_I = a_0 + a_1 t$, where H_I is the annual average of average weekly hours in the aggregate of the n industries and t measures time in years.

dustry i and for the aggregate of the n industries. [16] The b_1 coefficient defines a cyclical employment elasticity coefficient that measures the percentage responsiveness of deviations from trend employment in industry i with respect to a given percentage deviation from the aggregate employment trend. [17]

In general, deviations from trend in any particular industry are explained by swings in the overall state of economic activity and/or short run disturbances unique to the particular industry. On the other hand, deviations from the aggregate trend, given a relatively high level of aggregation, are explained primarily by cyclical movements in total economic activity. Industries with high elasticity coefficients are industries whose employment levels are sensitive to general economic conditions or, alternatively, are industries in which special factors tend to be strongly associated with general economic conditions. Conversely, low elasticity coefficients reflect the absence of cyclical sensitivity ; the offsetting impact of special factors and general economic conditions ; or contra-cyclical sensitivity (negative elasticity coefficients).

For the purposes of this study it is not essential to identify separately the effects of short run special factors and general economic conditions. [18] What matters in terms of the inducement for organized labour

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[16] Since the left hand side of equation (3) is included in the right hand side of the equation there is the possibility of introducing spurious correlation. In the following section, equation (3) is fitted to the eight major sectors of the industrial composite, the largest of which in 1970 are the manufacturing sector accounting for 26.9% of total industrial employment and the transportation, communication and other utilities sector accounting for 17.7% of total industrial employment (These figures are calculated from data in Dominion Bureau of Statistics, *Estimates of Employees by Province and Industry* (Ottawa, Cat. no. 72-008). These sectors are insufficiently large to dominate the average (the industrial composite) and the problem of spurious correlation is, therefore, not important. This problem is even less relevant when equation (3) is applied to 57 industries in the manufacturing sector.

[17] Equation (3) for the average weekly hours data is $\dfrac{H_i}{H_{ic}} = b_o \left(\dfrac{H_I}{H_{IC}} \right)^{b_1}$ where the variables are defined in the same way as for the employment index equation given in the text.

[18] It should be noted here that structural changes among industries occur mainly over the longer term and are, therefore, reflected in the trend employment values calculated for each industry from equation (1). These values serve as the base (E_{ic}) in the left hand side of equation (3) and hence, the cyclical sensitivity measure is, in effect, « net » of structural change, or structural change « adjusted. »

to trade voluntary wage restraint for less general economic restraint, is the perceived association between the general state of the economy and employment conditions in particular unionized industries in the economy. Whether this association is direct, or indirect through the relationship between unique industry factors and general economic conditions is of a second order of importance.

On the basis of this model, the contribution that differential employment gains make to the self-interest of organized labour in an exchange of voluntary wage restraint for easier monetary and fiscal policies can now be approximated by the correlation between industry employment elasticity coefficients and the level of unionism by industry. The more strongly positive is this correlation, the greater is the proportion of the benefits of economic expansion accruing to organized labour, and, therefore, the stronger, ceteris paribus, is the inducement for the labour movement to subscribe to a programme of wage and price restraint of the type proposed by the Prices and Incomes Commission.

THE RESULTS

This model is applied to the major sectors of the Canadian economy comprising the industrial composite [19] for the period 1961-1970[20] and to 57 three-digit manufacturing industries over the same time period.

Major Sectors

Over the period 1961-1970 total industrial employment, as measured by the industrial composite, grew at an average annual compound rate of 3.0%. The service sector was the most rapidly growing sector at 7.2% per annum while the forestry industry at −1.6% per annum was the slowest growth sector. [21]

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[19] The industrial composite excludes the public sector, agriculture, fishing and trapping, and is, therefore, essentially the private non-agriculture sector of the economy. Average weekly hours data on the major sectors of the industrial composite are unavailable and the analysis of these major sectors is, therefore, restricted to the employment index data.

[20] Both 1961 and 1970 are years of cyclical weakness. For example, the overall unemployment rate in 1961 was at a high of 7.1% and in 1970 rose to 5.9% from 4.7% in 1969. (Statistics Canada, The Labour Force (Ottawa, various issues)).

[21] The employment growth rates in this paragraph are obtained from equations (1) and (2). The trend regression equations may be obtained by writing to the author.

The degree of responsiveness of annual deviations from sector trends to annual deviations from the aggregate (industrial composite) trend varies from the highly sensitive construction industry with an elasticity coefficient of 3.19 to the slightly contra-cyclical sensitivity of the finance sector with an elasticity coefficient of −0.15. [22]

Using regression techniques to correlate these sectoral employment elasticity coefficients with the extent of unionization by sector (U)[23] yields the following results (t-values in parentheses).

$$b_1 = 0.0181 + 0.0311U \qquad (4)$$
$$(0.0296) \quad (2.2065)$$
$$R^2 = 0.4480$$
$$\bar{R}^2 = 0.3559$$

The sensitivity of sectoral employment to general economic expansion (and contraction) is positively associated with the degree of unionism, but the relationship is not a strong one. Each percentage point increase in the degree of unionism is associated with a 0.0311 increase in the employment elasticity coefficient (the degree of unionism regression coefficient is significant at the 0.10 confidence level) ; but considerably less than one half of the variation in the employment elasticity coefficient can be accounted for by variation in the degree of unionism. [24]

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[22] The sector employment elasticity calculations are from Table 1A of the Statistical Appendix.

[23] The extent of unionization (U) is defined in note 1 of Table 1A in the Statistical Appendix. The results exclude the construction sector for which comparable unionization data are unavailable. Given the high employment elasticity coefficient of the construction sector and the relatively high degree of unionism in this sector, its inclusion in the analysis would probably improve the significance of equation (4).

[24] Alternative measures of the degree of unionism fail to improve these results. When the U variable is measured with reference to sectoral employment given by the Labour Force Survey (rather than by the Establishment Employment Survey) equation (4) becomes (t-values in parentheses) :

$$b_1 = 0.2285 + 0.0284U$$
$$(0.3239) \quad (1.5407)$$
$$R^2 = 0.2835$$
$$\bar{R}^2 = 0.1641$$

And when the degree of unionism is measured by the number of unionized employees rather than by the percentage of employees who are unionized, equation (4) lacks any statistical significance whatsoever.

The rank correlation between degree of unionism and employment elasticity (U and b_1, respectively, from Table 1A in the Statistical Appendix) yields a rank correlation coefficient of 0.6071 which is not significant at the 0.05 confidence level.

These findings provide some indication that employment in the more highly organized sectors of the economy is affected more than proportionately by swings in general economic activity. On this basis, there is an added incentive for organized labour as distinct from labour generally, to participate in a trade-off between less restrictive monetary and fiscal policies and voluntary money incomes restraint. However, it would also appear that the size of this additional inducement is not of major importance.

The Manufacturing Sector

From a simple quantitative point of view — number of union members — manufacturing is the most important single sector of the economy to the labour movement. Manufacturing contains the largest number of union members by a margin of more than two-to-one. [25]

In light of the key position of manufacturing, it seems entirely plausible that the reaction of organized labour to a possible trade-off between incomes policies and monetary and fiscal policies will depend more upon how cyclical movements in total manufacturing employment are distributed among individual manufacturing industries than upon how cyclical movements in total industrial employment are distributed among the major industrial sectors of the economy. For this reason the model developed above is applied to 57 manufacturing industries for which comparable unionism, employment and average weekly hours data are available for the 1961-1970 period.

Average annual rates of growth in employment vary considerably among manufacturing industries during the 1961-1970 period. [26] The most rapid rate of employment growth, 8.5% per annum, occurred in the Office and Store Machinery industry while at the other extreme, employment in the Fur Goods industry declined at a rate of 5.6% per annum.

Similarly, the responsiveness of deviations from trend employment growth in manufacturing industries to deviations from trend employment

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[25] In 1969 total union membership was 2,074,616; union membership in the manufacturing sector was 765,049; and union membership in the next largest sector, transportation and utilities, was 362,828, *Labour Gazette,* Vol. 70, No. 3, March, 1970.

[26] The employment growth rates for manufacturing industries are obtained from equations (1) and (2). The trend regression equations may be obtained by writing to the author.

growth in total manufacturing varies widely. [27] Employment elasticity coefficients in manufacturing industries range from a high of 4.38 in the Agricultural Implements industry to a low of −0.73 in the Petroleum Rafineries industry.

Using regression analysis to correlate this pattern of cyclical sensitivity in the manufacturing sector to the pattern of unionism (U) [28] in this sector yields the following results (t-values in parentheses).

$$b_1 = -0.4737 + 0.0225U \qquad (5)$$
$$(-1.0033) \quad (3.5491)$$
$$R^2 = 0.186$$
$$\overline{R}^2 = 0.172$$

Although employment elasticity coefficients in the manufacturing sector are positively and significantly (the regression coefficient is significant at the 0.001 confidence level) related to the degree of unionism (a one percentage point increase in the percentage of employment organized is associated with a 0.0225 increase in the employment elasticity coefficient), less than 20% of the variation in manufacturing industry employment elasticity coefficients is associated with variation in the degree of unionism. [29] Highly unionized manufacturing industries are more susceptible to cyclical swings in total manufacturing activity than are lightly unionized manufacturing industries, but unionism and employment elasticities are not very importantly related in the manufacturing sector of the economy.

Comparing these results with those obtained above for the major industrial sectors, it would appear that the differential employment incentive for unions concentrated in the manufacturing sector to cooperate with a programme of voluntary incomes restraint is even less than it is for the labour movement generally.

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[27] See Table 2A of the Statistical Appendix.

[28] See Note 1 of Table 2A in the Statistical Appendix for the source and definition of the unionism data.

[29] Substituting the number of union members (number of non-office employees covered by collective agreements) for the percentage of employees organized (percentage of non-office employees covered by collective agreements) yields considerably less significant results than those presented in the text. Including office worker union membership data (percentage of office employees covered by collective agreements) in the analysis changes the results very little from those presented in the text.

Turning now to the analysis of the average weekly hours data for manufacturing industries, there is almost a complete absence of association between cyclical sensitivity in weekly hours and degree of unionism. [30] When the hours-worked elasticity coefficients are correlated with the degree of unionism (U) the following equation is derived (t-values in parentheses).

$$b_1 = 0.5051 + 0.0056U \qquad (6)$$
$$(1.2411 \qquad (1.0282)$$
$$R^2 = 0.019$$
$$\bar{R}^2 = 0.001$$

An increase in the degree of unionism is associated with a very small increase in the cyclical sensitivity of hours worked in manufacturing industries. These findings suggest that the relative distribution of cyclical variations in average weekly hours in manufacturing varies hardly, if at all, between lightly unionized manufacturing industries and highly unionized manufacturing industries.

SUMMARY AND CONCLUSIONS

The empirical analysis of this paper yields two main results : (1) In the major industrial sectors of the economy changes in the pace of general economic activity during the 1960's tended to come to rest only somewhat more heavily on employment conditions in the most highly unionized sectors of the economy ; and (2) In the key manufacturing sector of the economy the relationship between the degree of unionism and employment sensitivity to general economic conditions is weak and among manufacturing industries there is virtually no relationship between the extent of unionism and the responsiveness of average weekly hours to swings in total manufacturing activity.

On the basis of these findings it is difficult to be optimistic about the voluntary approach to the implementation of incomes policies. [31]

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[30] The average weekly hours trend equations (1) and (2) are specified above in footnotes 14 and 15. The trend regression analysis of the average weekly hours data for manufacturing industries may be obtained by writing to the author. The unionism data and hours elasticity calculations are given in Table 2A of the Statistical Appendix.

[31] It should be clear that this point bears not so much on the merits of incomes policies as such as it does on the *voluntary* forms of incomes policies.

Voluntarism works best when the parties to the agreement can clearly identify their self-interest with its success. In the case of the Commission's programme, organized labour was offered the inducement of less restrictive than otherwise monetary and fiscal policies. Certainly the labour movement participates with the balance of the economy in any employment expansion or increase in average hours worked that follows from the introduction of easier monetary and fiscal policies. The analysis of this paper even indicates that the labour movement might be expected to gain somewhat more than proportionately from any policy-induced expansion in employment opportunities. However, the magnitude of this potential additional benefit accruing to organized labour does not appear to be sufficient to overcome any significant negative implications that the labour movement assigns to income control programmes.

This conclusion clearly does not necessarily imply that the labour movement's rejection of the Commission's 1970 programme was based on the limited differential employment consequences for the organized portion of the labour force promised by this programme. Organized labour strongly opposed voluntary restraint as being unworkable, inequitable and bad economic policy. [32] Indeed, the strength of this opposition was probably such as to provide sufficient rationale for turning down the Commission's proposals even without the leadership having any precise awareness of the employment implications of these proposals. Or alternatively, the union movement's leadership may have decided that politically the government could not persist indefinitely with strongly anti-inflationary economic policies and that the labour movement's best strategy was to simply outwait the policy-makers. In either event, organized labour's rejection of the Commission's policy package is not inconsistent with the labour movement's self-interest as reflected in the relatively weak relationship between industry variations in degree of unionism and degree of cyclical sensitivity of employment conditions during the 1960's.

In sum, the analysis of this paper provides additional support for the Commission's own ultimate conclusion that voluntarism can have only a limited role to play in the development of an effective incomes policy. [33]

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[32] Canadian Labour Congress, *Memorandum to the Government of Canada*, March 23, 1970, Ottawa, Canada, p. 26.

[33] See, for example, Price and Incomes Commission, *Summary Report*, op. cit., particularly, pp. 1-8 and 47-56.

Statistical Appendix : Elasticity Calculations
and Degree of Unionism in Manufacturing Industries
and Major Industrial Sectors

TABLE 1A

Percent Unionization, 1969, and Employment Elasticity, 1961-1970, in Major Canadian Industrial Sectors

Industrial Sector	Percent Unionized [1] (U)	Employment Elasticity Calculations [2]		
		b_1	t statistics [3]	R^2
Forestry	65.6%	2.5629	4.9873§	0.7566
Mining (Mines, Quarries and Oil Wells)	44.5	0.2904	0.7553	0.0666
Manufacturing	45.2	1.4503	6.9192§	0.8568
Construction	N.A.	3.1855	12.4735§	0.9511
Transportation, Communications and Other Utilities	54.7	0.4187	2,7466†	0.4853
Trade	8.7	0.5164	2.4493†	0.4285
Finance, Insurance and Real Estate	0.6	−0.1531	−1.7396	0.2744
Service	11.8	0.8867	2.1995*	0.3768

[1] The percent of total employment that is unionized in each industrial sector is calculated from union membership given in *The Labour Gazette,* vol. 70, no. 3, March 1970, and employment data from Dominion Bureau of Statistics, *Estimates of Employees by Province and Industry* (Cat. 72-008) (Ottawa, various issues, 1969-1970). Both the union membership data and the employment data are based on the DBS Standard Industrial Classification (1960).

[2] The employment elasticity equation (3), $\dfrac{E_i}{E_{ie}} = b_o \left(\dfrac{E_I}{E_{IC}} \right)^{b_1}$, when fitted in natural logarithm form by ordinary least squares regression techniques becomes, $\ln E_i - \ln E_{ie} = \ln b_o + b_1 (\ln E_I - \ln E_{IC}) + u$, where E_i is the observed value of the employment index in sector i, E_{ie} is the calculated (from equation (1)) trend value of the employment index in sector i, E_I is the observed value of the employment index in the industrial composite, E_{IC} is the calculated (from equation (2)) trend value of the employment index in the industrial composite, b_1 is the employment elasticity coefficient in sector i and u is the random error term.

[3] The significance of the b_1 coefficient in a two-tailed test is identified as follows : §, significant at the 0.01 level of confidence ; †, significant at the 0.05 level of confidence ; and *, significant at the 0.10 level of confidence.

TABLE 2A

Percent Unionization [1], 1969; Employment Elasticity Calculations [2,3], 1961-1970; and Hours Elasticity Calculations [4,5], 1961-1970, for Selected Canadian Manufacturing Industries

Industry	Percent Unionization [1]	Employment Elasticity Calculations [2,3,6]		Hours Elasticity Calculations [4,5,6]	
		b_1	R^2	b_1	R^2
Slaughtering and Meat Processing	86	0.2442	0.2124	0.7237†	0.4040
Dairy Factories	70	0.6918§	0.7025	−0.5887*	0.3349
Fish Products	61	0.7155†	0.4204	3.9096§	0.6032
Grain Mill Products	68	−0.4422	0.2401	1.0490†	0.5182
Biscuits	76	0.4515§	0.7123	−0.3032	0.0676
Bakeries	59	0.7413§	0.9116	0.3656	0.1939
Confectionery	56	1.3348§	0.8773	0.3927	0.2997
Soft Drinks	43	0.6930†	0.4320	1.8298§	0.8097
Breweries	98	0.0290	0.0065	1.0810	0.1107
Tobacco Products	91	0.2623	0.2473	−1.8203§	0.8138
Rubber Footwear	67	1.9815*	0.3405	0.2461	0.0539
Rubber Tires and Tubes	98	0.8618§	0.6363	1.2410†	0.5299
Other Rubber Products	85	2.6185§	0.7515	0.8027†	0.4798
Leather Tanneries	80	0.2894	0.0933	0.4091	0.1202
Shoe Factories	48	0.4624*	0.3614	0.2237	0.0583
Cotton Yarn and Cloth	94	1.4516†	0.5672	1.7208§	0.6651
Woolen Yarn and Cloth	71	1.5798†	0.4933	0.4213	0.0902
Synthetic Textiles	77	2.0926§	0.7783	−0.0761	0.0075
Knitting Mills	31	0.7532§	0.7227	1.0491§	0.8011
Men's Clothing	62	0.9156†	0.5422	0.7861†	0.4208
Women's Clothing	48	1.0307§	0.8665	0.5994†	0.4385
Children's Clothing	26	0.5018*	0.3505	0.3613	0.1391
Fur Goods	39	−0.5057	0.1687	−1.1216	0.1918
Saw, Shingle and Planing Mills	67	0.3523	0.1364	0.8667†	0.4803
Veneer and Plywood Mills	89	2.4201§	0.7022	0.9938*	0.3252
Sash, Door and Flooring Mills	60	0.0916	0.0114	1.6134§	0.7943

TABLE 2A (Continued)

Industry	Percent Unionization [1]	Employment Elasticity Calculations [2,3,6]		Hours Elasticity Calculations [4,5,6]	
		b_1	R^2	b_1	R^2
Household, Office and Other Furniture	52	1.4208§	0.9508	0.9796§	0.7629
Pulp and Paper Mills	95	0.5815§	0.7322	0.9504§	0.7575
Paper Boxes and Bags	81	0.3542†	0.5269	1.3099§	0.8178
Commercial Printing	50	0.0458	0.0082	1.2408§	0.8277
Printing and Publishing	59	0.2756	0.2107	0.8417*	0.3815
Iron and Steel Mills	81	1.1968†	0.5229	0.6190†	0.5456
Iron Foundries	86	1.6470§	0.9141	1.9198§	0.7958
Smelting and Refining	99	0.3258	0.0604	0.3124	0.2821
Boiler and Plate Works	83	1.3943†	0.4752	1.9967§	0.6362
Structural, Ornamental and Architectural Metal	81	1.6459§	0.5953	1.0016†	0.5268
Metal Stamping, Pressing and Coating	70	1.3376§	0.9431	0.6058†	0.5574
Wire and Wire Products	80	1.5714§	0.8900	1.5615§	0.7307
Heating Equipment	50	0.8007§	0.8252	1.0017†	0.4764
Machine Shops	36	2.0731§	0.6947	1.5865§	0.8234
Agricultural Implements	90	4.3807§	0.8917	1.7788§	0.7490
Miscellaneous Machinery and Equipment	81	1.9317§	0.8861	2.2203§	0.8780
Office and Store Equipment	19	−0.5770	0.1678	0.9612	0.1616
Aircraft and Parts	93	1.2486	0.1632	0.4945	0.1028
Motor Vehicles	99	3.1756§	0.7913	1.7071	0.2918
Motor Vehicle Parts and Accessories	91	2.8060§	0.8863	2.0877†	0.5816
Railroad Rolling Stock	97	4.2148§	0.7011	1.6349†	0.5478
Shipbuilding and Repair	95	4.1669§	0.8529	1.4331§	0.6477
Small Electrical Appliances	83	1.7386§	0.8233	−0.0474	0.0007
Major Appliances (Electric and Non-electric)	89	1.9063§	0.8194	0.7439*	0.3790
Household Radio and Television Receivers	85	0.1613	0.0059	1.8456†	0.5514

TABLE 2A (Concluded)

Industry	Percent Unionization [1] R^2	Employment Elasticity Calculations [2,3,6]		Hours Elasticity Calculations [4,5,6]	
		b_1	R^2	b_1	
Communications Equipment	71	1.1294†	0.4232	0.2143	0.0758
Electrical Industrial Equipment	88	1.5011§	0.7709	1.5555§	0.8203
Petroleum Refineries	61	−0.7309†	0.5189	0.6738	0.3020
Pharmaceuticals, Medicines and Toilet Preparations	14	0.3833*	0.3414	−0.0164	0.0024
Paint and Varnish	61	0.0599	0.0078	1.4923§	0.8549
Industrial Chemicals	92	0.6903§	0.6193	0.1520	0.0488

[1] The percentage unionization in each industry is measured by the « percentage of non-office employees covered by collective agreements ». These data are obtained from a survey of establishments employing 20 or more employees and are classified according to the DBS Standard Industrial Classification (1960). See Canada Dept. of Labour, *Working Conditions in Canadian Industry, 1969* (Ottawa, 1970).

[2] For the source and definition of the employment data see footnote 7 in the text.

[3] The employment elasticity equation (3), $\frac{E_i}{E_{ic}} = b_o \left(\frac{E_I}{E_{IC}} \right)^{b_1}$, when fitted in natural logarithm form by ordinary least squares regression techniques becomes, $\ln E_i - \ln E_{ic} = \ln b_o + b_1 (\ln E_I - \ln E_{IC}) + u$, where E_i is the observed value of the employment index in manufacturing industry i, E_{ic} is the calculated (from equation (1)) trend value of the employment index in manufacturing industry i, E_I is the observed value of the employment index in total manufacturing, E_{IC} is the calculated (from equation (2)) trend value of the employment index in total manufacturing, b_1 is the employment elasticity coefficient in industry i and u is the random error term.

[4] For the source and definition of the hours data see footnote 8 in the text.

[5] The hours worked elasticity equation (3), $\frac{H_i}{H_{ic}} = b_o \left(\frac{H_I}{H_{IC}} \right)^{b_1}$, when fitted in natural logarithm form by ordinary least squares regression techniques becomes, $\ln H_i - \ln H_{ic} = \ln b_o + b_1 (\ln H_I - \ln H_{IC}) + u$, where H_i is the observed value of hours worked in industry i, H_{ic} is the calculated (from equation (1)) trend value of hours worked in industry i, H_I is observed value of hours worked in total manufacturing, H_{IC} is the calculated (from equation (2)) trend value of hours worked in total manufacturing, b_1 is the hours worked elasticity coefficient in industry i and u is the random error term.

[6] The significance of the b_1 coefficient in a two-tailed test is as follows: §, significant at the 0.01 level of confidence; †, significant at the 0.05 level of confidence; and *, significant at the 0.10 level of confidence.

L'expérience canadienne en matière de restriction volontaire des revenus

L'article précédent fait ressortir deux choses. D'une part, dans les secteurs primordiaux de l'industrie, les changements dans le rythme de l'activité économique en général pendant la décennie 1960 n'ont eu tendance à s'immobiliser un peu plus fortement en matière de conditions d'embauche que dans les secteurs les plus syndiqués de l'économie; d'autre part, dans le secteur clé de l'industrie manufacturière, le rapport entre le taux de syndicalisation et la rapidité de la réaction aux conditions économiques générales est faible et on n'y décèle presque pas de relation entre le taux de syndicalisation et les variations de la moyenne des heures travaillées par rapport aux oscillations de l'activité manufacturière dans son ensemble.

En se fondant sur ces constatations, il est difficile d'être optimiste sur l'efficacité d'une politique de contrôle volontaire des revenus. Le volontarisme fonctionne mieux lorsque les parties contractantes peuvent assimiler d'une façon nette leurs propres intérêts au succès de cette politique. En ce qui concerne le programme de la Commission, celle-ci s'est montrée moins restrictive à l'endroit du mouvement syndical qu'à l'endroit des politiques financières et monétaires. Évidemment, le mouvement syndical profite tout comme le reste de l'économie de l'expansion de l'emploi et de l'accroissement de la moyenne des heures travaillées qui résultent de politiques financières et monétaires moins restrictives. Les constatations de cette étude indiquent même que le mouvement syndical peut espérer y gagner proportionnellement davantage par une politique qui favorise la croissance des occasions d'emploi. Cependant, l'ampleur de cet avantage potentiel qui revient au mouvement syndical ne semble pas suffisant pour compenser les effets négatifs que celui-ci attribue aux programmes de contrôle des revenus.

Cette conclusion ne signifie pas nécessairement que le rejet par le monde syndical du programme de la Commission pour l'année 1970 était fondé sur les résultats limités des changements dans l'embauche pour la fraction syndiquée de la main-d'oeuvre. Le monde syndical s'est fortement opposé à la politique de restriction volontaire parce qu'il la considérait impraticable, inéquitable et économiquement mauvaise. En réalité, la fermeté de cette opposition fut probablement telle qu'elle devint une raison suffisante pour faire mettre de côté les suggestions de la Commission, même sans qu'on n'ait eu aucune idée précise de leurs conséquences. Il se peut aussi que les dirigeants du monde syndical puissent avoir jugé que, politiquement, le gouvernement ne persisterait pas indéfiniment dans son dessein de maintenir des mesures économiques anti-inflationnistes et que la meilleure stratégie du monde syndical était simplement de circonvenir ceux qui avaient formulé ces mesures. À tout événement, le rejet par le monde syndical des suggestions proposées n'est pas incompatible avec les intérêts du mouvement syndical comme la chose ressort du rapport assez faible qui existe entre le taux de syndicalisation des différents types d'industries, d'une part, et l'intensité des réactions cycliques des conditions de l'embauche au cours de la décennie 1960.

En résumé, cette étude confirme dans l'ensemble la propre conclusion de la Commission selon laquelle le volontarisme ne peut jouer qu'un rôle limité dans la mise en place d'une politique efficace des revenus.