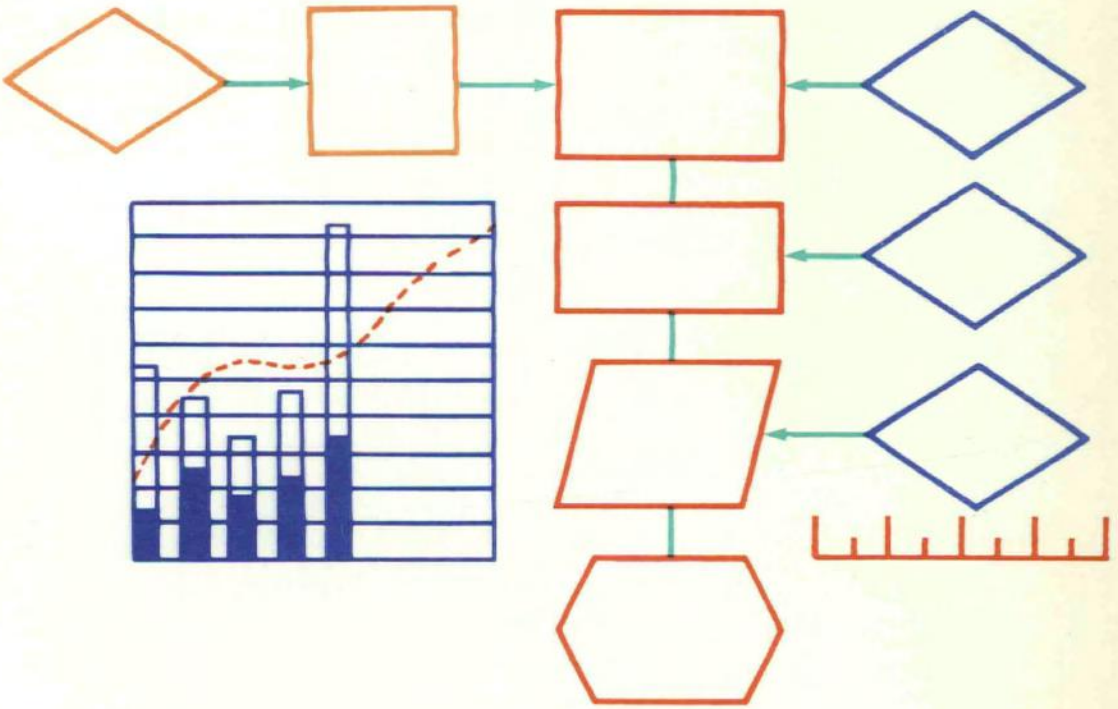
Regional Economic Expansion
Expansion Économique Régionale

Working Paper No.5

WAGES & SALARIES IN CANDIDE-R

July 1975



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This working document represents a partial regionalization of the CANDIDE 1.1 model. The acronym CANDIDE refers to the Canadian Disaggregated Interdepartmental Econometric model.

The CANDIDE-R version of the model outlined in this document is designed to help build an appreciation of the regional diversity of Canada. The authors draw attention to the tentative nature of the econometric work reported upon. So as to avoid attributing official status to the views expressed, prior consultation respecting quotation would be appreciated.

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WAGES AND SALARIES IN CANDIDE-R

1.0 Introduction[1]

The objectives of the regional model's salaries and wages block are the same as those of its counterpart in CANDIDE 1.1. That is, the block estimates the most important component of personal income, and calculates unit labour costs, which in turn are used in determining industry prices.

The regionalization of salaries and wages in CANDIDE-R should allow achievement of these two objectives. The regional salaries and wages model was thus incorporated in CANDIDE-R following the widespread theory that disparity is the appropriate variable for taking account of regional differences in the framework of a national study.

Salaries and wages were therefore regionalized by a limited feedback technique[2]. In summary, the original equations in CANDIDE 1.1 are used to estimate national

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1. We thank Michel Bergeron, professor of Economics, University of Sherbrooke, for his judicious comments.

2. See An Overview to CANDIDE-R, Section 3, "Regionalization".

averages at the first stage; at the second stage the regional block determines regional wages, and finally in the last stage regional salaries and wages are adjusted so that their sum corresponds to that obtained in the first stage.

The conceptual framework of regional wage and salary determination has inspired a so-called model of selected determinants.[3] Such a model relies on a choice of selected variables including factors which are likely to shift the labour supply curve, others the labour demand curve and elements which indicate disequilibrium in the market in question. These three types of explanatory variables are combined in a multiplicative rather than linear format in order to quantify the net effect of their forces. Taking into account the important role of productivity in the long run determination of salaries[4], the model retains relative productivity as the first determinant which influences regional wages through the displacement of labour demand curves. The second type of determinant comes from variations in real wages paid by industry at the national level, which in turn shift regional labour supply curves. Finally the model has a third variable, the unemployment rate, whose role is to introduce the concept of disequilibrium.

2.0 A Salary Model of Selected Determinants

In most macroeconomic models, including

3. Cowling, K. and D. Metcalf, "Wage-unemployment Relationships: A Regional Analysis for the U.K. 1960-1965", Oxford Bulletin of Economics and Statistics, February 1967, pp. 31-39. Smith, V.K. and R.A. Patton, "Sub-Market Labor Adjustment and Economic Impulses: A Note on the Ohio experience", Regional Studies, vol. 5, 1971, pp. 91-93.
4. See Kuh, E., "A Productivity Theory of Wages - An Alternative to the Phillips Curve", Review of Economic Studies, vol. XXXIV, October 1967, pp. 333-360.

CANDIDE 1.1, wages and salaries are determined within the analytical framework of Phillips or Kuh[5]. The national block determines the wage rates of three industries using a dynamic Phillips curve relationship. The rate of change of wages in one industry is related to the rate of change of the Consumer Price Index and to the inverse of the unemployment rate in the current and lagged periods. As well the wage rate in the corresponding American industry is introduced with a distributed lag, under the assumption that the demand for wage parity through collective negotiations and the very close links between the two economies are translated into analogous movements in salary increases. For the remaining nine industries, the national block determines the wage bill as a function of variables more likely to reflect medium term trends and thus better suited to this aspect of the model. Such factors are productivity, production and/or employment and also a variable to account for price escalation. The regionalization of CANDIDE-R does not sacrifice any of the national relationships and takes more direct account of factors associated with medium term growth of salaries.

2.1 Introductory Comments

In order to adequately specify the mechanism of wage and salary determination in industry i in region j, we must consider a large range of factors, each as

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5. Kuh, E., op. cit.

Lipsey, R.G., "The Relation Between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1862-1957: A Further Analysis", Economica, Vol. XXVII, February 1960.

important as the next. First there is the presence of national equations whose purpose is to determine national averages; second there are the regional interdependencies of wage and salary markets and thus of their structure; third, data limitations exist on a certain number of variables; and finally, there is the explicitly medium-term nature of CANDIDE.

It is important to consider the choice of unit of measurement of salaries and wages. Should we use the wage bill, the wage rate or the rate of change of the wage rate? As is well known, wage equations are commonly estimated using the rate of change of the wage rate as the dependent variable. The rationalization for this usage, as given by Lipsey[6], rests on the hypothesis that in situations of competition, the rate of change of the price of a good (in this case labour) depends on the excess demand for that good. As Agarwala, Drinkwater, Khosla and McMenomy[7] have observed, this hypothesis offers only a theory of prices in disequilibrium about a stationary equilibrium value. In practice, we should have more success in attempting to explain wage time series if we examine the divergences from equilibrium rather than the magnitude of the disequilibrium.

2.2 The Model

In order to incorporate the aspects discussed

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6. Lipsey, R.G., op. cit.
7. Agarwala et al., "A Neo-classical Approach to the Determination of Prices and Wages", Econometrica, August 1972.

above, first, a peripheral model was constructed of labour supply and demand in industry (i,j), which is structurally different for all (i,j) and which crystallizes the state of regional interdependence in order to determine wages in industry (i,j).

In order to better understand the approach taken for the basic specification of our model, it is necessary to spell out some of the details. Assume that labour demand in industry (i,j) is a positive function of production (D) and is independent of real wages, that the supply of labour (S) is a positive function of real wages. The positive unemployment rate can be used to analyse the dynamics of the market in disequilibrium.

These assumptions together give us Figure 1 which allows us to visualize for certain industries the possibility of a disequilibrium real wage rate, the size of which is measured by the prevailing unemployment rate in that industry. (Note that unemployment in industry i is given by $E_o - E_1$ in Figure 1).

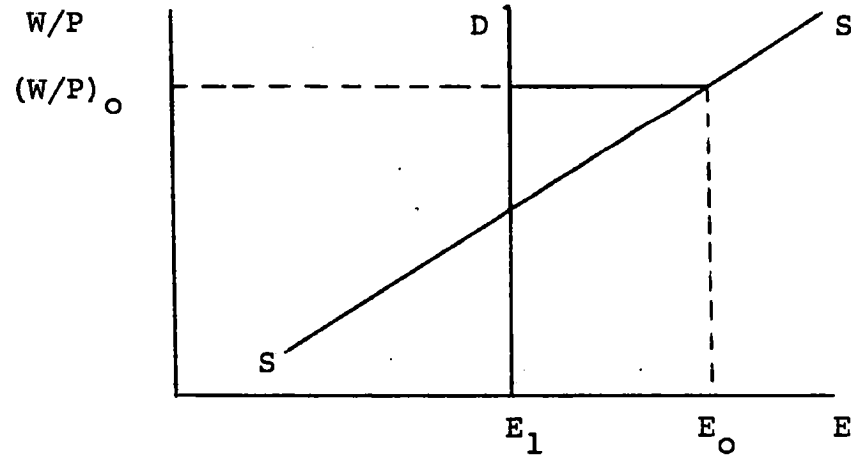

Figure 1.

The estimation of such a model requires the specification of a technique for disequilibrium estimation. The Phillips curve approach is one way to get around the problem, but this procedure was rejected as it is not well suited to a medium term outlook. While it would be possible to specify a disequilibrium estimation technique, equally interesting results can be obtained by selecting supply and demand variables which, through affecting the position of supply and demand curves, influence the level of wages.

2.2.1 Model Specification

Assume the following relationship for industry (i,j):

$$W_{ijt}/E_{ijt} = e^{\delta}\, U_{jt}^{\alpha}\, [(X_{ijt}/E_{ijt})/(X_{it}/E_{it})]^{\beta}$$

$$[(W_{it}/E_{it})/CPI_t]^{\gamma} CPI^{\eta}\, e^{\mu t} \qquad (1)$$

where W_{ijt} = Wage bill in industry i, region j, in period t
δ = constant
U_{jt} = Unemployment rate in region j, period t
X_{ijt} = Industry output in industry i, region j
E_{ijt} = Employment in industry i, region j
W_{it} = Wage bill in national industry i
CPI = Consumer Price Index
μ_t = Error term.

The hypothesis implicit in equation (1) rests on the following assumptions: that the variable U

represents a state of disequilibrium in industry (i,j); that the "productivity" variable will cause the demand curve to shift, and that the real wage variable $(W_i/E_i)/CPI$ will cause the labour supply curve to shift. We hypothesize as well that the relative improvement in the productivity of workers in industry (i,j) with respect to those in the Canadian industry i is translated onto Figure 1 by an increase in labour demand in industry (i,j) in anticipation of an increase in productivity in this same industry[8]. The variable $(W_i/E_i)/CPI$ allows workers in industry (i,j) to take into consideration the level of wages and salaries paid in industry (i,j) and the real wage in the Canadian industry, when considering their participation in the labour force.

Considering the productivity of the national industry i as a result of the regional performances, all growth in Canadian output which is accompanied by an increase in the average productivity of industry i should affect the relative regional productivities of industry i. If the growth in national output in industry i is concentrated in region j, it is clear that this will lead to a relative improvement in the productivity of industry (i,j) and will cause an increase in labour demand in the same industry. Under these circumstances, if the labour supply curve does not move, the wages in industry (i,j) should be forced up, taking into consideration that since labour demand is somewhat specialized it will not lower

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8. This assumption is discussed below. In the meantime, it is noted that this "hypothesis" does not necessarily imply the use of distributed lagged variables since annual data is used.

proportionately the pool of unemployed wishing to work in industry (i,j) at the going wage. As a result, according to the assumption that the increase in labour demand does not reduce to zero the number of unemployed, one can anticipate an increase in wages in industry (i,j).

On the other hand, if the increase in the average productivity of industry (i,j) is not accompanied by an increase in demand, one can easily imagine a situation where workers organize themselves in order to benefit from these improvements in productivity.

The advantage of using such a "productivity" variable is the possibility which it offers to draw from the national model variations in the productivity of the Canadian industry which can be translated regionally through wage increases. The variable $(W_i/E_i)/CPI$ offers the same advantages. Through national wages this variable establishes the necessary links between the national and regional mechanisms of wage and salary determination. As well as establishing these links, $(W_i/E_i)/CPI$ plays a particular role in this model. As mentioned above, it allows workers in industry (i,j), when considering their participation in the labour force, to take into account the wages paid by industry (i,j) with respect to the real national wage of that industry. An increase in W_i/CPI will shift the supply curve up to the left and, ceteris paribus, will lead to an increase in W_{ij}.[9] This shift in labour supply may be

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9. A parallel can be drawn between regional and national salaries as these two variables are for all intents and purposes measured in constant dollars. The variable CPI^n on the right hand side serves as a deflator for...

explained by an emigration of workers towards regions offering higher real wages, or by retirements from the labour force when the benefits of collective or private negotiations are not forthcoming in the form of salary increases.

Taking into account our analytical framework, if the unemployment variable, U, is significant, it must have a positive coefficient (α) in order to conform with a priori expectations. It is then possible to classify regions according to their wage elasticities with respect to unemployment, as the coefficients from an equation estimated in logarithmic form offer a direct measure of elasticity.

2.2.2 Some Theoretical Aspects of the Model

The general appeal of equation (1) has several dimensions. It was inspired by the theory of Kuh[10], where the operation of a labour market depends, at the first stage of analysis, on a fundamental variable of demand, that is productivity, and which recognizes, at the next stage, the importance of supply variables in a system of

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... (9. cont'd) (Wijt/Eijt) to the extent that the estimated value of η is expected to be very close to unity. By not constraining the coefficient η to equal one, the diverse regional industries are allowed to adapt more or less perfectly to take account of an increase in the cost of living.

10. Kuh, E., "A Productivity Theory of Wage Levels - An Alternative to the Phillips Curve", Review of Economic Studies, Vol. XXXIV, 1967, pp. 333-360.

simultaneous equations. At the level of region (j), the assumptions of Kuh's theory can essentially be reduced to the following:

$$W_{ijt} = f\,[U_{ijt},\ (P_{ijt} \cdot X_{ijt})/E_{ijt},\ CPI_t] \qquad (2)$$

where productivity appears in value terms[11].

Contrary to the Kuh approach, equation (1) considers the underlying structure of the labour market and depends on the functioning of this market in the determination of wages in a regional context. The comparative statics exercise described at the introduction of this model provides a description of the operation of such a labour market. The strength of the theory behind the dynamic forces of the market results from the choice of a framework based on relative prices.

In spite of the problems relating to the theoretical basis for wage and salary determination, the

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11. This measurement of productivity in value terms facilitates the analysis by allowing use of nominal salaries as dependent variables. Since this model considers the relative productivity of an industry in a region, compared to the national value, the ratio of productivities in value does not differ from the ratio actually used. Moreover, as already indicated, we are working to some extent with the real wage in the assumption than $\eta \to 1$. Thus the theory is coherent as we use two real measures for salaries and productivity, in place of two nominal measures.

regional context brings additional constraints. The problem of specification of a regional model reduces to one of capturing the determinants, both autonomous and induced, and the transversal influences which are felt from one region to another. Consequently, recognizing the spatial dimension of labour supply and demand and the partial mobility of factors of production, it is important to allow for changes in relative prices, as well as in the general price level. This is what has been attempted in equation (1) through the choice of variables retained as the central force for shifts in the labour supply and demand curves.

In this perspective, the theory of regional salaries relative to Canadian salaries is related to an adaptation of Friedman's "permanent wage theory".[12] Briefly, real wages $((W_{it}/E_{it})/CPI_t)$, can be associated with permanent wages and the Consumer Price Index with the transitory component of wages. Thus $(W_{it}/E_{it})/CPI_t$ takes account of variations in relative wages in real terms and causes modifications in the participation of workers of one region due to their relatively more or less favourable position in the national industry. The information provided by the variable $(W_{it}/E_{it})/CPI_t$ to workers in industry (i,j) allows them to formulate expectations, in the permanent wage framework, on their relative state of well-being. Their method of improving their relative position, as measured by their real wage,

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12. Lucas, R. and L.A. Rapping, "Real Wages, Employment and Inflation", in Microeconomic Foundations of Employment and Inflation Theory, ed. by E.J. Phelps, Norton, 1970, p. 266. Wachter, M.L., "Relating Wage Equations for U.S. Manufacturing Industries 1947-1967", Review of Economics and Statistics, November 1970, pp. 405-410.

is to modify their participation as workers in this industry. A priori, γ is expected to be positive.

$(W_{it}/E_{it})/CPI_t$ can equally be considered as a provisional indicator of the same type as profits in the case of production.[13]

As far as the variable $[(X_{ijt}/E_{ijt})/(X_{it}/E_{it})]$ is concerned, it is used to measure forces which influence labour demand. Estimated as a ratio of productivities, it plays, according to employers, a role analogous to that of relative wages in the minds of the workers. An improvement in this measure, for a regional industry, urges employers to increase their labour demand in order to realize locally the potential increase in profits derived from higher productivity. Thus the coefficient β (in equation (1)) must be positive to conform with a priori expectations.

Returning to equation (1) the ratio of productivities can be considered, in the manner of Kuh[14], ceteris paribus, as a ratio of profits[15] of regional industry (i)

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13. According to the terminology of the National Bureau of Economic Research on this subject, see B.M. Friedman and M.L. Wachter, "Unemployment: Okun's Law Labor Force and Productivity", Review of Economics and Statistics, May 1974.

14. Kuh, E., op. cit.

15. In order to establish a parallel between these two concepts, it is necessary that the two variables be measured in value terms. The measure of the ratio of productivity in value should not differ from our case as we have assumed that the implicit regional industrial production price indexes corresponded to the national prices. (Cont'd next page)...

to those of the same national industry. Thus, an increase in relative productivity would lead to increased profits of industry (i,j) which would then expect an increased demand for its product.[16]

With reference to the variable U_{ijt} it was noted earlier that it plays mainly a technical role in the estimation of a state of disequilibrium. Upon further examination of equation (1), one sees that the aggregation of the regional relationships takes the form:

$$W_{it} = f(U_t , CPI_t) \qquad (3)$$

or

$$dW_{it}/dt = (\partial W_{it}/\partial U_t) \cdot (dU_t/dt) + (\partial W_{it}/\partial (CPI)_t) \cdot (d(CPI)_t/dt) \qquad (4)$$

(15. cont'd from preceding page)...
If in $[(P_{ijt} \cdot X_{ijt})/E_{ijt}]/[(P_{it}/X_{it})/E_{it}]$,

$P_{ijt} = P_{it}$, then this ratio equals

$(X_{ijt}/E_{ijt})/(X_{it}/E_{it})$.

16. For a discussion on the use of profits as a provisional indicator or as a variable at the base of anticipations in a neo-classical model, see respectively:
Evans, M.K., Macroeconomic Activity: Theory Forecasting and Control, Harper and Row, New York, 1969.
Gordon, D.F. and A. Hines, "On the Theory of Price Dynamics", in Microeconomic Foundations of Employment and Inflation Theory, E.S. Phelps et al. (eds.), Norton, New York, 1970.

Equation (4) resembles the Phillips curve equation used in CANDIDE 1.1, except that the unemployment rate appears in (4) as a rate of change. The presence of U_{ijt} in equation (1) would thus add an important dimension to this model in allowing the regional unemployment rate to take account of structural changes in regional labour markets[17], and of the fact that, according to Bowen and Berry[18], the relationship between cyclical and structural unemployment varies through time. Therefore, since changes in the unemployment rate are more closely related to cyclical unemployment we should expect a significant correlation between the rate of change of wages and salaries and variations in the unemployment rate.

> For long-period studies, changes in unemployment may well constitute a more reliable index of active labour market processes than the level of unemployment which is more susceptible to inter-period variation in the amount of structural unemployment.[19]

One last interesting theoretical aspect[20] relates to the mathematical formulation of equation (1), a formulation which leads us to believe that all formulae

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17. Lipsey, R.G., op. cit.

18. Bowen, W.G. and R.A. Berry, "Unemployment Conditions and Movements of the Money Wage Level", Review of Economics and Statistics, 45, (2), 1963, pp. 163-172.

19. ibid., p. 169

20. This comment is attributed to M. Michel Bergeron, of the Department of Economics, University of Sherbrooke.

for indexation of Canadian wages and salaries to a cost of living index would be ineffective in raising regional wages and salaries. In effect, indexation of W_{it} to the rate of increase of the consumer price index (CPI_t) would leave the variable W_{it}/CPI_t unchanged. The measure of productivity, in value terms, could not be the mechanism for transmission of the benefits of indexation to the regions, since an increase in regional prices following an increase in national prices would not modify the ratio of productivities, since it is in real terms.[21]

The Consumer Price Index of equation (1) gets around this problem.

Since sufficient time series of regional price indexes do not exist, it was necessary to use the national Consumer Price Index in their place.

It is worth noting once more that this model was first built as a peripheral model to the national CANDIDE 1.1 model. The original equations of CANDIDE supply estimates of national averages of wages, required for the estimation of regional wages. At a second stage wages and salaries are determined by region, taking into account cyclical and structural differences between regions in the labour market. In a last stage, the regional

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21. Even if the productivity ratios were expressed in value terms

$$[(P_{ijt} \cdot X_{ijt})/E_{ijt}]/[(P_{it} \cdot X_{it})/E_{it}]$$

an increase in regional prices following an increase in the national price would not modify the ratio of productivities.

salary estimates are adjusted in order that their sum correspond to that obtained at the beginning, from the national equations. The adjustment mechanism splits the difference between the two national wage bill estimates according to the relative importance of each of the regions:

$$W^*_{ijt} = \hat{W}_{ijt} + [\hat{W}_{ijt} / \Sigma_j \hat{W}_{ijt}] \; [\hat{W}_{it} - \Sigma_j \hat{W}_{ijt}] \qquad (5)$$

where $\hat{}$ = estimated

$*$ = corrected

In principle a different procedure would have been desirable for this third stage. Originally it was intended to reaggregate the regional wage estimates from the second stage and to substitute these values for the national estimates obtained from the original CANDIDE 1.1 equations. This aggregation would carry the effects of regional disparities throughout the model where wages are used as explanatory variables. This characteristic would allow a study of the impact of regional disparities of wages and salaries on the national average and on the economy as a whole. There are, of course, a range of intermediate alternatives possible, if it is decided to correct the regional estimates from the second stage by dividing the difference between the estimates defined as follows:

[X % * national estimate from the first stage for an industry
+ (100 - X)% sum of regional estimates of that industry]
- [sum of regional estimates of that industry].

This would result in the following corrected regional values:

$$W^{*}_{ijt} = \hat{W}_{ijt} + \hat{W}_{ijt}/\sum_{j}\hat{W}_{ijt}\,[((\beta * \hat{W}_{it}) + ((1 - \beta) * \sum_{j}\hat{W}_{ijt})) - \sum_{j}\hat{W}_{ijt}] \qquad (6)$$

As with consumption in CANDIDE 1.1, the choice for the value of β would be left to the user. In principle the choice would be made after a series of experiments with the value of β, selecting that value which would minimize the variance of the consumption estimates, or in this case of $\sum_{j}\hat{W}_{ijt}$. However, such experiments run a high risk of resulting in the maintenance of status quo, or β = 1. Theoretically one should benefit by maintaining a portion of the information from the estimated aggregates of the first stage and a portion of the information from the disaggregated estimates of the second stage, since the greater detail at the regional level adds information not obtainable at the national level. Particularly because the information provided by the national wage estimates is required in estimating regional wages, the performance of regional equations in the model is partially tied to the quality of the national estimates. The errors in the national equations are thus automatically transmitted to the regions - as well as errors from the specification as such of the explanatory variables and from the poor quality of much of the regional data. To the extent that there is a desire to improve national equations, a large improvement would be made in favour of adopting the original aggregation approach, since the estimation results at the regional level are very encouraging.

3.0 Empirical Results

The empirical results for the equations described above follow. The quality of the estimation may be judged on the basis of the significance of the coefficients, the $\bar{R}^2$ and the signs of the coefficients (i.e. whether they conform with a priori expectations). Little importance is attached to the Durbin Watson test in this case due to the limited number of observations. It is worth noting that the coefficients may be interpreted as elasticities, and that the difference in elasticities between regions well displays the regional characteristics.

A set of graphs of manufacturing wages follows the empirical results. These graphs are expressed in level form rather than in logarithmic ratios as they were estimated.

Salaries and Wages

Agriculture

Wages, Salaries and Other Labour Income Agriculture Atlantic

(13.23) $$WSAGE = \exp.\ [7.9691 - 1.2041\ ln\ (AGYE/AGYPE) + 1.0652\ ln\ ((AGYE/AGETE)/(AGY/AGET)) + 1.5225\ ln\ (WSAGT/AGET/CPI)]* AGETE$$
[5.46] [4.86] [5.63] [5.51]

$\bar{R}^2$ = 0.94
S.E.E. = 0.1070
D.W. = 1.78
(GLS, 1961-1971)

Wages, Salaries and Other Labour Income Agriculture Quebec

(13.35) $$WSAGQ = \exp.\ [8.2623 - 0.8248\ ln\ (AGYQ/AGYPQ) + 0.5171\ ln\ ((AGYQ/AGETQ)/(AGY/AGET)) + 1.7187\ ln\ (WSAGT/AGET/CPI)]* AGETQ$$
[8.85] [2.83] [2.62] [10.24]

$\bar{R}^2$ = 0.90
S.E.E. = 0.0765
D.W. = 1.29
(GLS, 1961 - 1971)

Wages, Salaries and Other Labour Income Agriculture Ontario

(13.47) $$WSAGO = \exp.\ [7.8396 - 0.1541\ ln\ (AGYO/AGYPO) + 0.3429\ ln\ ((AGYO/AGETO)/(AGY/AGET)) + 1.4845\ ln\ (WSAGT/AGET/CPI)]* AGETO$$
[10.53] [0.36] [1.99] [10.49]

$\bar{R}^2$ = 0.91
S.E.E. = 0.0729
D.W. = 1.04
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Agriculture Prairies

(13.59) $WSAGW = \exp.\ [7.0642 - 0.3276\ ln\ (AGYW/AGYPW)$
[16.30] [2.11]

$+ 0.4715\ ln\ ((AGYW/AGETW)/(AGY/AGET))$
[1.71]

$1.5211\ ln\ (WSAGT/AGET/CPI)]* AGETW$
[20.99]

$\bar{R}^2$ = 0.98
S.E.E. = 0.0305
D.W. = 1.42
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Agriculture British Columbia

(13.7) $WSAGC = \exp.\ [7.4393 - 0.5000\ ln\ (AGYC/AGYPC)$
[5.57] [1.56]

$+ 0.6674\ ((AGYC/AGETC)/(AGY/AGET))$
[3.16]

$+ 1.4452\ ln\ (WSAGT/AGET/CPI)]* AGETC$
[5.65]

$\bar{R}^2$ = 0.70
S.E.E. = 0.1195
D.W. = 1.26
(*GLS*, 1961-1971)

Forestry

Wages, Salaries and Other Labour Income Forestry Atlantic

(13.24) $WSFOE = \exp.\ [-0.6806 + 0.0103\ ln\ (URATEE)$
[1.45] [0.48]

$+ 0.9108\ ln\ ((FOYE/FOETE)/(FOY/FOET))$
[40.31]

$+ 0.8662\ ln\ (WSFOT/FOET/CPI)$
[14.64]

$+ 1.0433\ ln\ (CPI)]* FOETE$
[15.31]

$\bar{R}^2$ = 0.99
S.E.E. = 0.0110
D.W. = 2.40
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Forestry Quebec.

(13.36) *WSFOQ* = exp. [0.7330 + 0.0454 *ln* (*URATEQ*)
[1.72] [3.15]

+ 1.0272 *ln* ((*FOYQ*/*FOETQ*)/(*FOY*/*FOET*))
[54.76]

+ 1.1148 *ln* (*WSFOT*/*FOET*/*CPI*)
[21.13]

+ 0.9061 *ln* (*CPI*)]* *FOETQ*
[14.45]

$\bar{R}^2$ = 0.99
S.E.E. = 0.0082
D.W. = 2.59
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Forestry Ontario.

(13.48) *WSFOO* = exp. [0.0133 + 0.0119 *ln* (*URATEO*)
[0.03] [1.11]

+ 1.0102 *ln* ((*FOYO*/*FOETO*)/(*FOY*/*FOET*))
[66.73]

+ 1.0006 *ln* (*WSFOT*/*FOET*/*CPI*)
[20.31]

+ 0.9982 *ln* (*CPI*)]* *FOETO*
[17.32]

$\bar{R}^2$ = 0.99
S.E.E. = 0.0078
D.W. = 2.73
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Forestry Prairies

(13.60) *WSFOW* = exp. [-0.1839 + 0.0162 *ln* (*URATEW*)
[0.14] [0.48]

+ 0.9062 ((*FOYW*/*FOETW*)/(*FOY*/*FOET*))
[41.22]

+ 0.8362 *ln* (*WSFOT*/*FOET*/*CPI*)
[4.95]

+ 0.9446 *ln* (*CPI*)]* *FOETW*
[5.14]

$\bar{R}^2$ = 0.99
S.E.E. = 0.0241
D.W. = 1.59
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Forestry British Columbia

(13.72) *WSFOC* = exp. [-0.7218 - 0.0212 *ln* (*URATEC*)
[1.91] [1.85]

+ 1.0445 *ln* ((*FOYC/FOETC*)/(*FOY/FOET*))
[36.13]

+ 0.9629 *ln* (*WSFOT/FOET/CPI*)
[22.89]

+ 1.1258 *ln* (*CPI*)]* *FOETC*
[19.55]

$\bar{R}^2$ = 0.99
S.E.E. = 0.0077
D.W. = 2.88
(*GLS*, (1961-1971)

Fishing and Trapping

Wages, Salaries and Other Labour Income Fishing Atlantic

(13.25) *WSFSE* = exp. [0.9093 - 0.0689 *ln* (*URATEE*)
[0.93] [1.58]

+ 0.8990 *ln* ((*FSYE/FSETE*)/(*FSY/FSET*))
[12.94]

+ 0.9894 *ln* (*WSFST/FSET/CPI*)
[11.73]

0.8382 *ln* (*CPI*)]* *FSETE*
[5.92]

$\bar{R}^2$ = 0.99
S.E.E. = 0.0216
D.W. = 2.64
(*GLS*, (1961-1971)

Wages, Salaries and Other Labour Income Fishing Quebec

(13.37) *WSFSQ* = exp. [-6.5291 - 0.0551 *ln* (*URATEQ*)
[0.87] [0.18]

+ 0.4858 *ln* ((*FSYQ/FSETQ*)/) *FSY/FSET*))
[2.60]

+ 1.0668 *ln* (*WSFST/FSET/CPI*)
[1.32]

+ 2.4735 *ln* (*CPI*)]* *FSETQ*
[2.56]

$\bar{R}$ = 0.83
S.E.E. = 0.2000
D.W. = 2.32
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Fishing British Columbia

(13.73) $WSFSC = \exp.\ [-2.3465 + 0.0926\ ln\ (URATEC)$
[2.39] [2.40]

$+ 0.9923\ ln\ ((FSYC/FSETC)/(FSY/FSET))$
[21.86]

$+ 0.7561\ ln\ (WSFST/FSET/CPI)$
[7.17]

$+ 1.2421\ ln\ (CPI)]* FSETC$
[9.02]

$\bar{R}^2$ = 0.97
S.E.E. = 0.0263
D.W. = 1.86
(*GLS*,1961-1971)

Mines, Quarries and Oil Wells

Wages, Salaries and Other Labour Income Mining Atlantic

(13.26) $WSMIE = \exp.\ [2.9582 + 0.0387\ ln\ (URATEE)$
[4.46] [0.59]

$+ 1.0496\ ln\ ((MIYE/MIETE)/(MIY/MIET))$
[29.10]

$+ 0.8947\ ln\ (WSMIT/MIET/CPI)$
[8.06]

$+ 0.3302\ ln\ (CPI)]* MIETE$
[3.77]

$\bar{R}^2$ = 0.99
S.E.E. = 0.0210
D.W. = 2.49
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Mining Quebec

(13.38) $WSMIQ = \exp.\ [0.5993 - 3.0033\ ln\ (URATEQ)$
[0.84] [0.49]

$+ 0.9729\ ln\ ((MIYQ/MIETQ)/(MIY/MIET))$
[26.06]

$+ 1.1196\ ln\ (WSMIT/MIET/CPI)$
[7.23]

+ 0.9840 ln (CPI)]* $MIETQ$
[9.18]

$\bar{R}^2$ = 0.98
$S.E.E.$ = 0.0279
$D.W.$ = 1.39
(GLS, 1961-1971)

Wages, Salaries and Other Labour Income Mining Ontario

(13.50) $WSMIO$ = exp. [-1.0499 - 0.0798 ln ($URATEO$)
[2.96] [2.80]

+ 0.9331 ln (($MIYO/MIETO$)/($MIY/MIET$))
[14.72]

+ 1.0057 ln ($WSMIT/MIET/CPI$)
[11.69]

+ 1.2798 ln (CPI)]* $MIETO$
[18.26]

$\bar{R}^2$ = 0.97
$S.E.E.$ = 0.0205
$D.W.$ = 1.91
(GLS, 1961-1971)

Wages, Salaries and Other Labour Income Mining Prairies

(13.62) $WSMIW$ = exp. [-1.4246 + 0.0455 ln ($URATEW$)
[4.84] [1.94]

+ 1.1840 ln (($MIYW/MIETW$)/($MIY/MIET$))
[16.72]

+ 1.0327 ln ($WSMIT/MIET/CPI$)
[13.62]

+ 1.2271 ln (CPI)]* $MIETW$
[26.68]

$\bar{R}^2$ = 0.99
$S.E.E.$ = 0.0147
$D.W.$ = 2.95
(GLS, 1961-1971)

Wages, Salaries and Other Labour Income Mining British Columbia

(13.73) $WSMIC$ = exp. [-0.3183 + 0.1464 ln ($URATEC$)
[0.61] [3.39]

+ 0.9647 ln (($MIYC/MIETC$)/($MIY/MIET$))
[28.14]

+ 0.5891 ln ($WSMIT/MIET/CPI$)
[4.79]

$$+ 0.7898\ ln\ (CPI)]* MIETC$$
$$[10.05]$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0243
D.W. = 2.63
(*GLS*, 1961-1971)

Manufacturing

Wages, Salaries and Other Labour Income Manufacturing Atlantic

(13.27) $$WSMAE = \exp.\ [0.5293 + \underset{[0.93]}{} \underset{}{0.00001\ ln\ (URATEE)} \underset{[0.001]}{}$$

$$+ 0.9769\ ln\ ((MAYE/MAETE)/(MAY/MAET))$$
$$[50.78]$$

$$+ 1.0217\ ln\ (WSMAT/MAET/CPI)$$
$$[12.67]$$

$$+ 0.8994\ ln\ (CPI)]* MAETE$$
$$[12.81]$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0036
D.W. = 2.22
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Manufacturing Quebec

(13.39) $$WSMAQ = \exp.\ [-0.1276 + \underset{[0.28]}{} \underset{}{0.0128\ ln\ (URATEQ)} \underset{[2.85]}{}$$

$$+ 0.9483\ ((MAYQ/MAETQ)/(MAY/MAET))$$
$$[44.91]$$

$$+ 1.0174\ ln\ (WSMAT/MAET/CPI)$$
$$[16.49]$$

$$+ 1.0329\ ln\ (CPI)]* MAETQ$$
$$[17.44]$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0026
D.W. = 2.11
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Manufacturing Ontario

(13.51) $$WSMAO = \exp.\ [0.1192 - \underset{[0.77]}{} \underset{}{0.0028\ ln\ (URATEO)} \underset{[2.22]}{}$$

$$+ 0.9560\ ln\ ((MAYO/MAETO)/(MAY/MAET))$$
$$[44.69]$$

$$+ 1.0011\ ln\ (WSMAT/MAET/CPI)$$
$$[48.68]$$

+ 0.9784 *ln (CPI)]* MAETO*
[49.23]

$\bar{R}^2$ = 0.99
S.E.E. = 0.0010
D.W. = 3.17
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Manufacturing Prairies

(13.63) *WSMAW* = exp. [-0.1339 - 0.0081 *ln (URATEW)*
[0.21] [1.70]

+ 1.0410 *ln ((MAYW/MAETW)/(MAY/MAET))*
[35.62]

+ 1.0003 *ln (WSMAT/MAET/CPI)*
[11.64]

+ 1.0251 *ln (CPI)]* MAETW*
[12.37]

$\bar{R}^2$ = 0.99
S.E.E. = 0.0037
D.W. = 2.72
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Manufacturing British Columbia

(13.75) *WSMAC* = exp. [1.1796 + 0.0007 *ln (URATEC)*
[0.91] [0.06]

+ 0.9463 *ln ((MAYC/MAETC)/(MAY/MAET))*
[16.87]

+ 1.1467 *ln (WSMAT/MAET/CPI)*
[6.64]

+ 0.8375 *ln (CPI)]* MAETC*
[5.06]

$\bar{R}^2$ = 0.99
S.E.E. = 0.0087
D.W. = 1.55
(*GLS*, 1961-1971)

Construction

Wages, Salaries and Other Labour Income Construction Atlantic

(13.28) *WSCOE* = exp. [-1.6855 - 0.0118 *ln (URATEE)*
[1.50] [0.08]

+ 0.9494 *ln ((COYE/COETE)/(COY/COET))*
[28.06]

+ 0.7630 *ln (WSCOT/COET/CPI)*
[6.38]

$$+ 1.2146\ ln\ (CPI)]* COETE$$
$$[7.4]$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0094
D.W. = 1.93
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Construction Quebec

(13.40) $$WSCOQ = \exp.\ [2.0186 + 0.0199\ ln\ (URATEQ)$$
$$[2.10] \quad [1.84]$$
$$+ 0.9753\ ln\ ((COYQ/COETQ)/(COY/COET))$$
$$[39.26]$$
$$+ 1.1461\ ln\ (WSCOT/COET/CPI)$$
$$[11.49]$$
$$+ 0.6635\ ln\ (CPI)]* COETQ$$
$$[4.63]$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0070
D.W. = 1.18
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Construction Ontario

(13.52) $$WSCOO = \exp.\ [-0.9427 + 0.0123\ ln\ (URATEO)$$
$$[1.29] \quad [2.17]$$
$$+ 0.9523\ ln\ ((COYO/COETO)/(COY/COET))$$
$$[26.18]$$
$$+ 0.9377\ ln\ (WSCOT/COET/CPI)$$
$$[12.24]$$
$$+ 1.1559\ ln\ (CIP)]* COETO$$
$$[10.74]$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0063
D.W. = 2.54
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Construction Prairies

(13.64) $$WSCOW = \exp.\ [-2.7103 - 0.0255\ ln\ (URATEW)$$
$$[2.76] \quad [2.85]$$
$$+ 1.0159\ ln\ ((COYW/COETW)/(COY/COET))$$
$$[31.27]$$
$$+ 0.7735\ ln\ (WSCOT/COET/CPI)$$
$$[7.62]$$

1.4314 ln (CPI)]* $COETW$
[9.86]

$\bar{R}^2$ = 0.99
$S.E.E.$ = 0.0057
$D.W.$ = 2.49
(GLS, 1961-1971)

Wages, Salaries and Other Labour Income Construction British Columbia

(13.76) $WSCOC$ = exp. [3.4743 - 0.0299 ln ($URATEC$)
[4.73] [4.93]

+ 1.1448 ln (($COYC/COETC$)/($COY/COET$))
[83.29]

+ 1.4168 ln ($WSCOT/COET/CPI$)
[18.33]

+ 0.5299 ln (CPI)]* $COETC$
[4.92]

$\bar{R}^2$ = 0.99
$S.E.E.$ = 0.0066
$D.W.$ = 2.45
(GLS, 1961-1971)

<u>Transportation, Storage, Communications and Public Utilities</u>

Wages, Salaries and Other Labour Income Transportation Atlantic

(13.29) $WSTSE$ = exp. [0.3369 - 0.0147 ln ($URATEE$)
[0.50] [0.94]

+ 1.2018 ln (($TSYE/TSETE$)/(($TSY+UTY$)/$TSUTET$))
[23.71]

+ 0.8471 ln (($WSTST+WSUTT$)/$TSUTET/CPI$)
[8.09]

+ 0.8434 ln (CPI)]* $TSETE$
[10.17]

$\bar{R}^2$ = 0.99
$S.E.E.$ = 0.0065
$D.W.$ = 2.46
(GLS, 1961-1971)

Wages, Salaries and Other Labour Income Transportation Quebec

(13.41) $WSTSQ$ = exp. [0.1266 + 0.0254 ln ($URATEQ$)
[0.40] [5.22]

+ 0.9792 ln (($TSYQ/TSETQ$)/($TSY+UTY$)/($TSUTET$))
[32.53]

$$+ 1.0741\ ln\ ((WSTST+WSUTT)/TSUTET/CPI)$$
$$[23.87]$$

$$+ 1.0120\ ln\ (CPI)]* TSETE$$
$$[25.47]$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0027
D.W. = 1.51
(GLS, 1961-1971)

Wages, Salaries and Other Labour Income Transportation Ontario

(13.53) $WSTSO = \exp.\ [-0.0979 - 0.0096\ ln\ (URATEO)$
$[0.35] \quad [3.33]$

$$+ 0.9724\ ln\ ((TSYO/TSETO)/((TSY+UTY)/TSUTET))$$
$$[30.75]$$

$$+ 0.9864\ ln\ ((WSTST+WSUTT)/TSUTET/CPI)$$
$$[25.38]$$

$$+ 1.0216\ ln\ (CPI)]* TSETO$$
$$[28.39]$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0029
D.W. = 1.83
(GLS, 1961-1971)

Wages, Salaries and Other Labour Income Transportation Prairies

(13.65) $WSTSW = \exp.\ [0.0269 - 0.0104\ ln\ (URATEW)$
$[0.05] \quad [1.78]$

$$+ 0.9573\ ln\ ((TSYW/TSETW)/((TSY+UTY)/TSUTET))$$
$$[26.78]$$

$$+ 1.0009\ ln\ ((WSTST+WSUTT)/TSUTET/CPI)$$
$$[13.51]$$

$$+ 0.9891\ ln\ (CPI)]* TSETW$$
$$[14.95]$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0052
D.W. = 1.78
(GLS, 1961-1971)

Wages, Salaries and Other Labour Income Transportation British Columbia

(13.77) $WSTSC = \exp.\ [-0.0222 - 0.0027\ ln\ (URATEC)$
$[0.03] \quad [0.27]$

$$+ 1.0425\ ln\ ((TSYC/TSETC)/(TSY+UTY)/TSUTET))$$
$$[17.37]$$

$$+ 0.9602\ ln\ ((WSTST\ +WSUTT)/TSUTET/CPI)$$
$$[8.86]$$

+ 0.9724 ln (CPI)]* $TSETC$
[9.24]

$\bar{R}^2$ = 0.99
$S.E.E.$ = 0.0067
$D.W.$ = 0.90
(GLS, 1961-1971)

Trade

Wages, Salaries and Other Labour Income Trade Atlantic

(13.30) $WSTRE$ = exp. [-1.3193 - 0.0278 ln ($URATEE$)
[1.45] [2.56]

+ 1.0180 ln (($TRYE/TRETE$)/($TRY/TRET$))
[26.08]

+ 0.7806 ln ($WSTRT/TRET/CPI$)
[6.96]

+ 1.1298 ln (CPI)]* $TRETE$
[10.02]

$\bar{R}^2$ = 0.99
$S.E.E.$ = 0.0052
$D.W.$ = 2.52
(GLS, 1961-1971)

Wages, Salaries and Other Labour Income Trade Quebec

(13.42) $WSTRQ$ = exp. [-0.5008 + 0.0143 ln ($URATEQ$)
[0.80] [2.18]

+ 0.8570 ln (($TRYQ/TRETQ$)/($TRY/TRET$))
[25.79]

+ 0.9287 ln ($WSTRT/TRET/CPI$)
[11.84]

+ 1.0410 ln (CPI)]* $TRETQ$
[13.48]

$\bar{R}^2$ = 0.99
$S.E.E.$ = 0.0037
$D.W.$ = 2.61
(GLS, 1961-1971)

Wages, Salaries and Other Labour Income Trade Ontario

(13.54) $WSTRO$ = exp. [0.7934 + 0.0045 ln ($URATEO$)
[1.92] [1.36]

+ 0.9471 ln (($TRYO/TRETO$)/($TRY/TRET$))
[15.94]

$$+ 1.0881\ ln\ (WSTRT/TRET/CPI)$$
$$[20.79]$$

$$+ 0.8992\ ln\ (CPI)]* TRETO$$
$$[18.01]$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0023
D.W. = 3.01
(*GLS*, (1961-1971)

Wages, Salaries and Other Labour Income Trade Prairies

(13.66) $$WSTRW = \exp.\ [0.5135 - 0.0155\ ln\ (URATEW)$$
$$[1.29] \quad [4.86]$$

$$+ 0.7531\ ln\ ((TRYW/TRETW)/(TRY/TRET))$$
$$[17.08]$$

$$+ 1.0982\ ln\ (WSTRT/TRET/CPI)$$
$$[21.94]$$

$$+ 0.9636\ ln\ (CPI)]* TRETW$$
$$[19.78]$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0026
D.W. = 1.91
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Trade British Columbia

(13.78) $$WSTRC = \exp.\ [0.4744 + 0.0054\ ln\ (URATEC)$$
$$[0.62] \quad [0.79]$$

$$+ 0.9640\ ln\ ((TRYC/TRETC)/(TRY/TRET))$$
$$[26.16]$$

$$+ 1.0484\ ln\ (WSTRT/TRET/CPI)$$
$$[10.63]$$

$$+ 0.9388\ ln\ (CPI)]* TRETC$$
$$[10.18]$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0044
D.W. = 2.59
(*GLS*, 1961-1971)

<u>Finance, Insurance and Real Estate</u>

Wages, Salaries and Other Labour Income Finance Atlantic

(13.31) $$WSFIE = \exp.\ [-2.4927 - 0.0027\ ln\ (URATEE)$$
$$[0.74] \quad [0.05]$$

$$+ 1.0896 \underset{[4.85]}{} \ln ((FIYE/FIETE)/(FIY+HGY)/FIET))$$

$$+ 0.5742 \underset{[1.00]}{} \ln (WSFIT/FIET/CPI)$$

$$+ 1.1935 \underset{[3.23]}{} \ln (CPI)] * FIETE$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0194
D.W. = 2.32
(*GLS*, 1961-1971)

Wages, Salaries and Other Labour Income Finance Quebec

(13.43) $$WSFIQ = \exp. [-1.0663 \underset{[1.11]}{} - 0.0580 \underset{[3.17]}{} \ln (URATEQ)$$

$$+ 0.7931 \underset{[10.49]}{} \ln ((FIYQ/FIETQ)/((FIY+HGY)/FIET))$$

$$+ 1.2793 \underset{[11.52]}{} \ln (CPI)] * FIETQ$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0074
D.W. = 2.48
(*GLS*, (1961-1971)

Wages, Salaries and Other Labour Income Finance Ontario

(13.55) $$WSFIO = \exp. [0.7444 \underset{[0.98]}{} - 0.0348 \underset{[3.47]}{} \ln (URATEO)$$

$$+ 1.0792 \underset{[16.91]}{} \ln ((FIYO/FIETO)/((FIY+HGY)/FIET))$$

$$+ 0.9725 \underset{[8.15]}{} \ln (WSFIT/FIET/CPI)$$

$$+ 0.8470 \underset{[9.56]}{} \ln (CPI)] * FIETO$$

$\bar{R}^2$ = 0.99
S.E.E. = 0.0070
D.W. = 2.37
(*GLS*, (1961-1971)

Wages, Salaries and Other Labour Income Finance Prairies

(13.67) $$WSFIW = \exp. [-3.5518 \underset{[1.17]}{} + 0.0620 \underset{[2.15]}{} \ln (URATEW)$$

$$+ 0.7792\ ln\ ((FIYW/FIETW)/((FIY+HGY)/FIET))$$
$$[8.43]$$

$$+ 0.5514\ ln\ (WSFIT/FIET/CPI)$$
$$[1.17]$$

$$+ 1.3975\ ln\ (CPI)]*\ FIETW$$
$$[3.95]$$

$\bar{R}^2 = 0.96$
$S.E.E. = 0.0326$
$D.W. = 2.24$
$(GLS, (1961-1971)$

Wages, Salaries and Other Labour Income Finance British Columbia

(13.79) $$WSFIC = \exp.\ [3.9865 + 0.0440\ ln\ (URATEC)$$
$$[1.19] \quad [0.71]$$

$$+ 0.8754\ ln\ ((FIYC/FIETC)/((FIY+HGY)/FIET))$$
$$[6.72]$$

$$+ 1.5223\ ln\ (WSFIT/FIET/CPI)$$
$$[2.82]$$

$$+ 0.4507\ ln\ (CPI)]*\ FIETC$$
$$[1.15]$$

$\bar{R}^2 = 0.98$
$S.E.E. = 0.0247$
$D.W. = 1.52$
$(GLS, (1961-1971)$

Public Administration and Defence

Wages, Salaries and Other Labour Income Public Administration Atlantic

(13.32) $$WSADE = \exp.\ [3.5094 + 0.2074\ ln\ (URATEE)$$
$$[0.98] \quad [9.66]$$

$$+ 0.6047\ ln\ ((ADYE/ADETE)/(ADY/ADET))$$
$$[11.48]$$

$$+ 1.4712\ ln\ (WSADT/ADET/CPI)$$
$$[3.58]$$

$$+ 0.4250\ ln\ (CPI)]*\ ADETE$$
$$[0.85]$$

$\bar{R}^2 = 0.99$
$S.E.E. = 0.0160$
$D.W. = 2.51$
$(GLS, (1961-1971)$

Wages, Salaries and Other Labour Income Public Administration Quebec

$$(13.44)\quad WSADQ = \exp.\ [-2.4325 + 0.0044\ ln\ (URATEQ) + 0.5811\ ln\ ((ADYQ/ADETQ)/(ADY/ADET)) + 0.6411\ ln\ (WSADT/ADET/CPI) + 1.2856\ ln\ (CPI)]* ADETQ$$

[1.16] [0.46] [17.69] [2.66] [4.41]

$R^2 = 0.99$
$S.E.E. = 0.0096$
$D.W. = 2.29$
$(GLS, 1961.-1971)$

Wages, Salaries and Other Labour Income Public Administration Ontario

$$(13.56)\quad WSADO = \exp.\ [-1.0556 - 0.0233\ ln\ (URATEO) + 0.8793\ ln\ ((ADYO/ADETO)/(ADY/ADET)) + 0.8517\ ln\ (WSADT/ADET/CPI) + 1.1542\ ln\ (CPI)]* ADETO$$

[0.99] [2.96] [15.06] [6.82] [7.92]

$\bar{R}^2 = 0.99$
$S.E.E. = 0.0047$
$D.W. = 2.11$
$(GLS, (1961-1971$

Wages, Salaries and Other Labour Income Public Administration Prairies

$$(13.68)\quad WSADW = \exp.\ [1.5731 + 0.0281\ ln\ (URATEW) + 0.8104\ ln\ ((ADYC/ADETC)/(ADY/ADET)) + 1.1423\ ln\ (WSADT/ADET/CPI) + 0.7385\ ln\ (CPI)]* ADETW$$

[0.77] [2.32] [7.96] [4.91] [2.60]

$\bar{R}^2 = 0.99$
$S.E.E. = 0.0089$
$D.W. = 2.86$
$(GLS, (1961-1971)$

Wages, Salaries and Other Labour Income Public Administration British Columbia

(13.80) $WSADC = \exp.\ [3.9925 + 0.0220\ ln\ (URATEC)$
$[2.04] \quad [2.30]$

$+ 0.9134\ ln\ ((ADYC/ADETC)/(ADY/ADET))$
$[32.80]$

$+ 1.4037\ ln\ (WSADT/ADET/CPI)$
$[6.30]$

$+ 0.4022\ ln\ (CPI)]* ADETC$
$[1.47]$

$\bar{R}^2 = 0.99$
$S.E.E. = 0.0087$
$D.W. = 2.09$
$(GLS,\ (1961-1971)$

Public and Private Services

Wages, Salaries and Other Labour Income Services Atlantic

(13.33) $WSCSE = \exp.\ [-2.7334 + 0.0024\ ln\ (URATEE)$
$[1.33] \quad [0.19]$

$+ 0.9175\ ln\ ((CSYE/CSETE)/(CSY/CSET))$
$[20.26]$

$+ 0.7236\ ln\ (WSCST/CSET/CPI)$
$[3.07]$

$+ 1.3731\ ln\ (CPI)]* CSETE$
$[5.08]$

$\bar{R}^2 = 0.99$
$S.E.E. = 0.0060$
$D.W. = 2.11$
$(GLS,\ (1961-1971)$

Wages, Salaries and Other Labour Income Services Quebec

(13.45) $WSCSQ = \exp.\ [2.8151 - 0.0040\ ln\ (URATEQ)$
$[1.89] \quad [0.61]$

$+ 0.8599\ ln\ ((CSYQ/CSETQ)/(CSY/CSET))$
$[13.47]$

$+ 1.2940\ ln\ (WSCST/CSET/CPI)$
$[7.87]$

$+ 0.6220\ ln\ (CPI)]* CSETQ$
$[3.13]$

$\bar{R}^2 = 0.99$
$S.E.E. = 0.0036$
$D.W. = 2.91$
$(GLS,\ (1961-1971)$

Wages, Salaries and Other Labour Income Services Ontario

$$
\begin{aligned}
(13.57)\quad WSCSO = \exp.\ & [-3.7109 - 0.0102\ ln\ (URATEO) \\
& \quad [2.97] \quad [2.04] \\
& + 0.7140\ ln\ ((CSYO/CSETO)/(CSY/CSET)) \\
& \quad [7.33] \\
& + 0.6332\ ln\ (WSCST/CSET/CPI) \\
& \quad [4.64] \\
& + 1.5331\ ln\ (CPI)]* CSETO \\
& \quad 9.06
\end{aligned}
$$

$\bar{R}^2 = 0.99$
$S.E.E. = 0.0032$
$D.W. = 2.01$
$(GLS,\ (1961\text{-}1971)$

Wages, Salaries and Other Labour Income Services Prairies

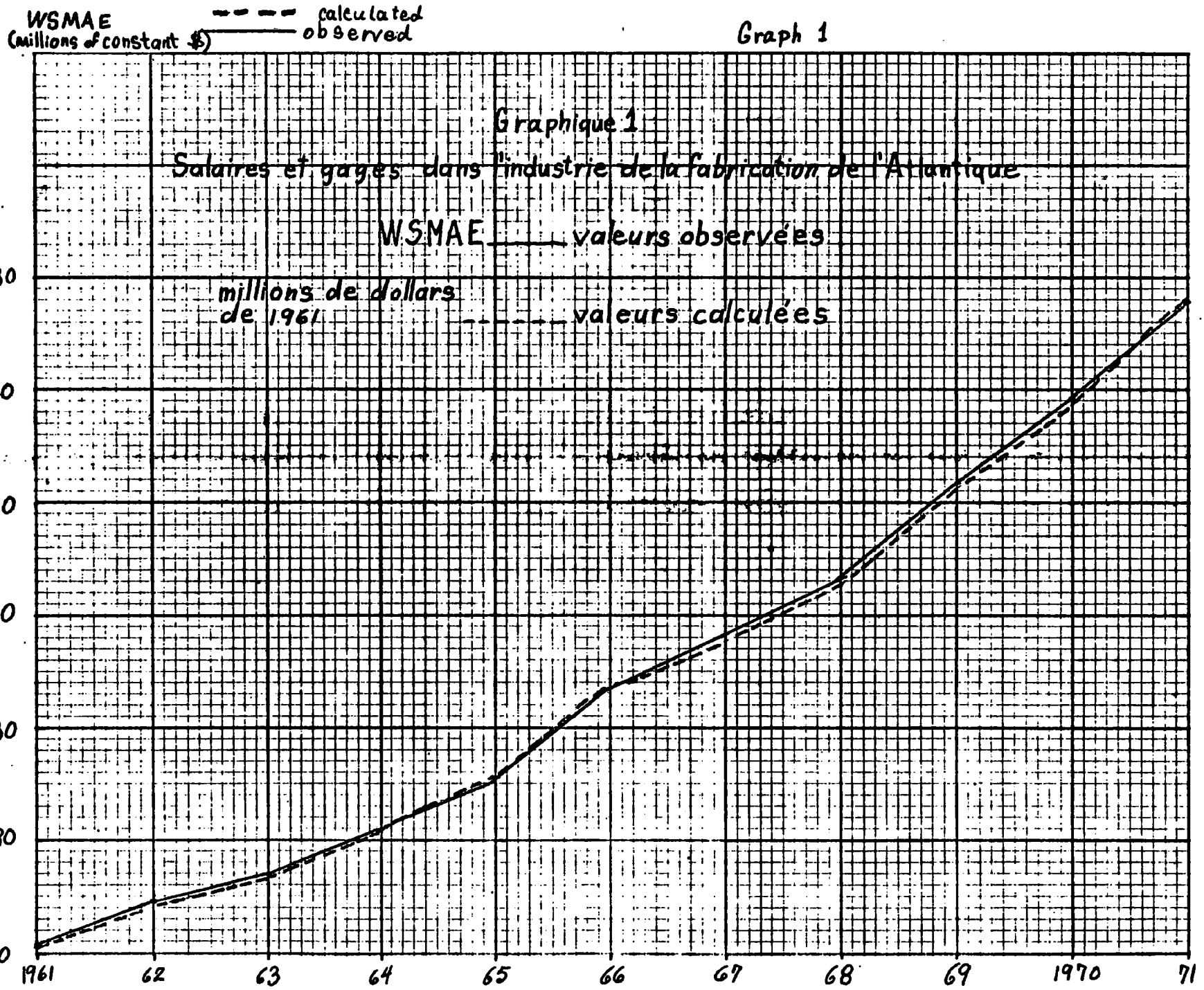
$$
\begin{aligned}
(13.69)\quad WSCSW = \exp.\ & [1.5278 + 0.0087\ ln\ (URATEW) \\
& \quad [0.54] \quad [0.94] \\
& + 0.8566\ ln\ ((CSYW/CSETW)/(CSY/CSET)) \\
& \quad [7.33] \\
& + 1.1305\ ln\ (WSCST/CSET/CPI) \\
& \quad [3.55] \\
& + 0.7614\ ln\ (CPI)]* CSETW \\
& \quad [2.03]
\end{aligned}
$$

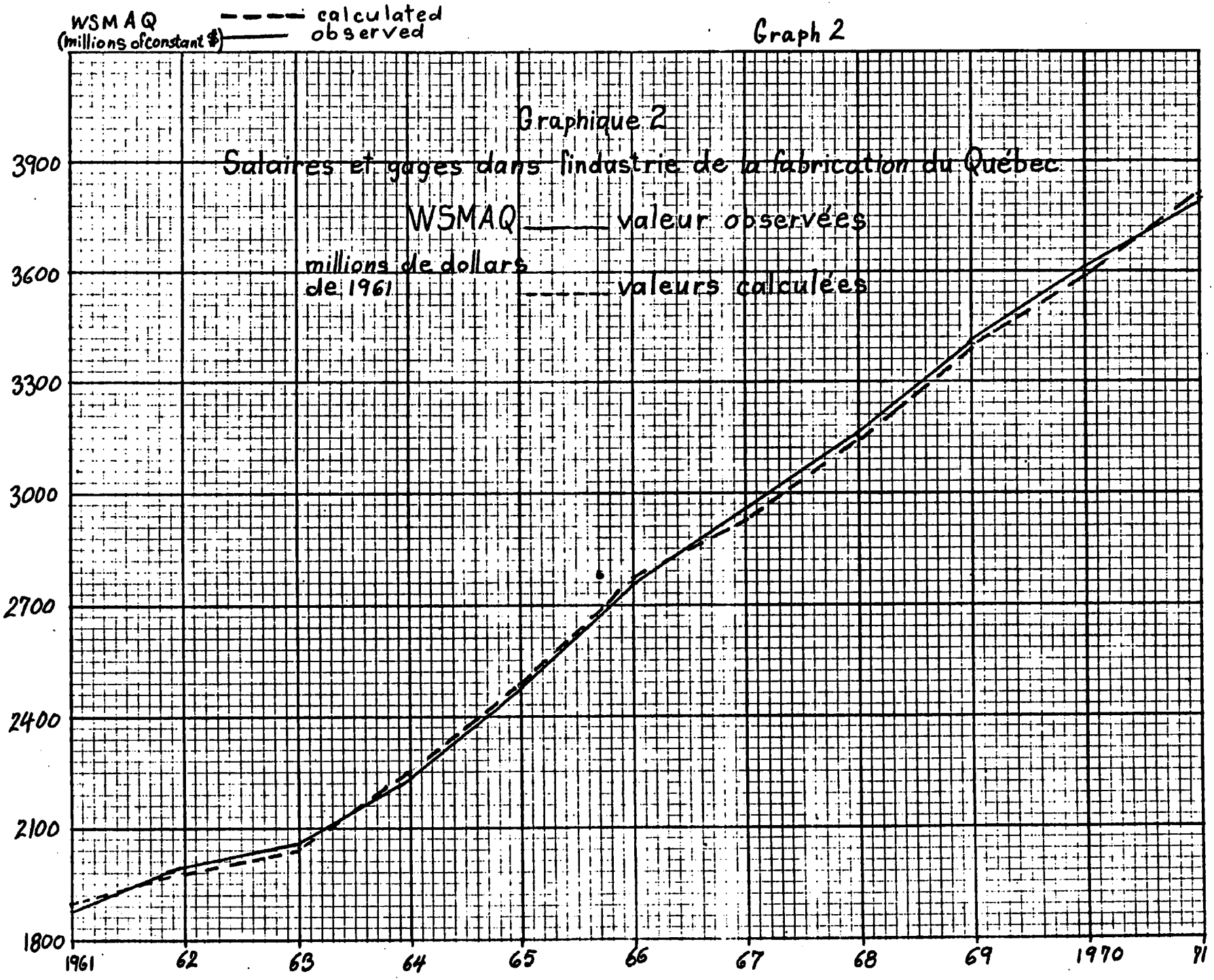
$\bar{R}^2 = 0.99$
$S.E.E. = 0.0077$
$D.W. = 2.22$
$(GLS,\ (1961\text{-}1971)$

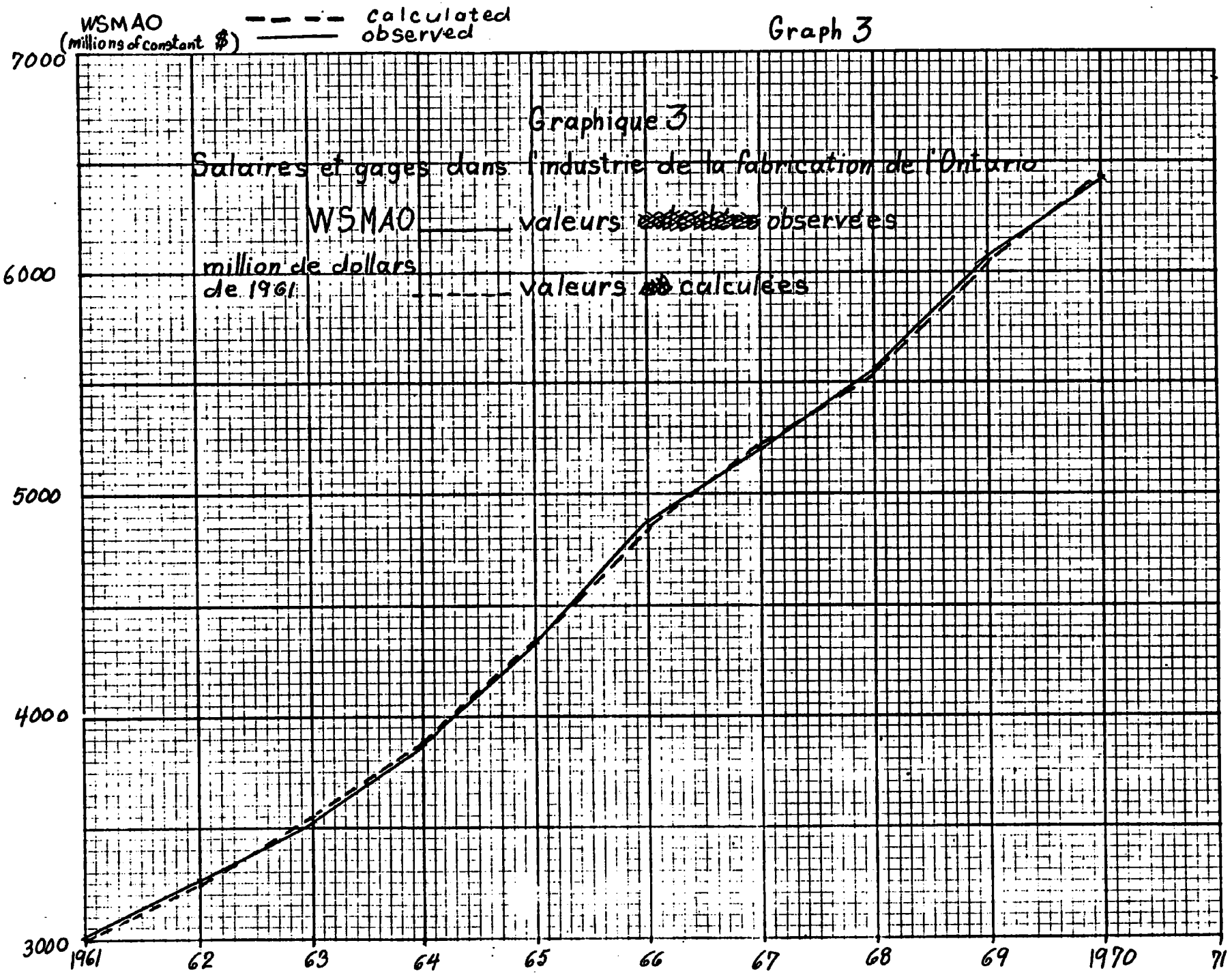
Wages, Salaries and Other Labour Income Services British Columbia

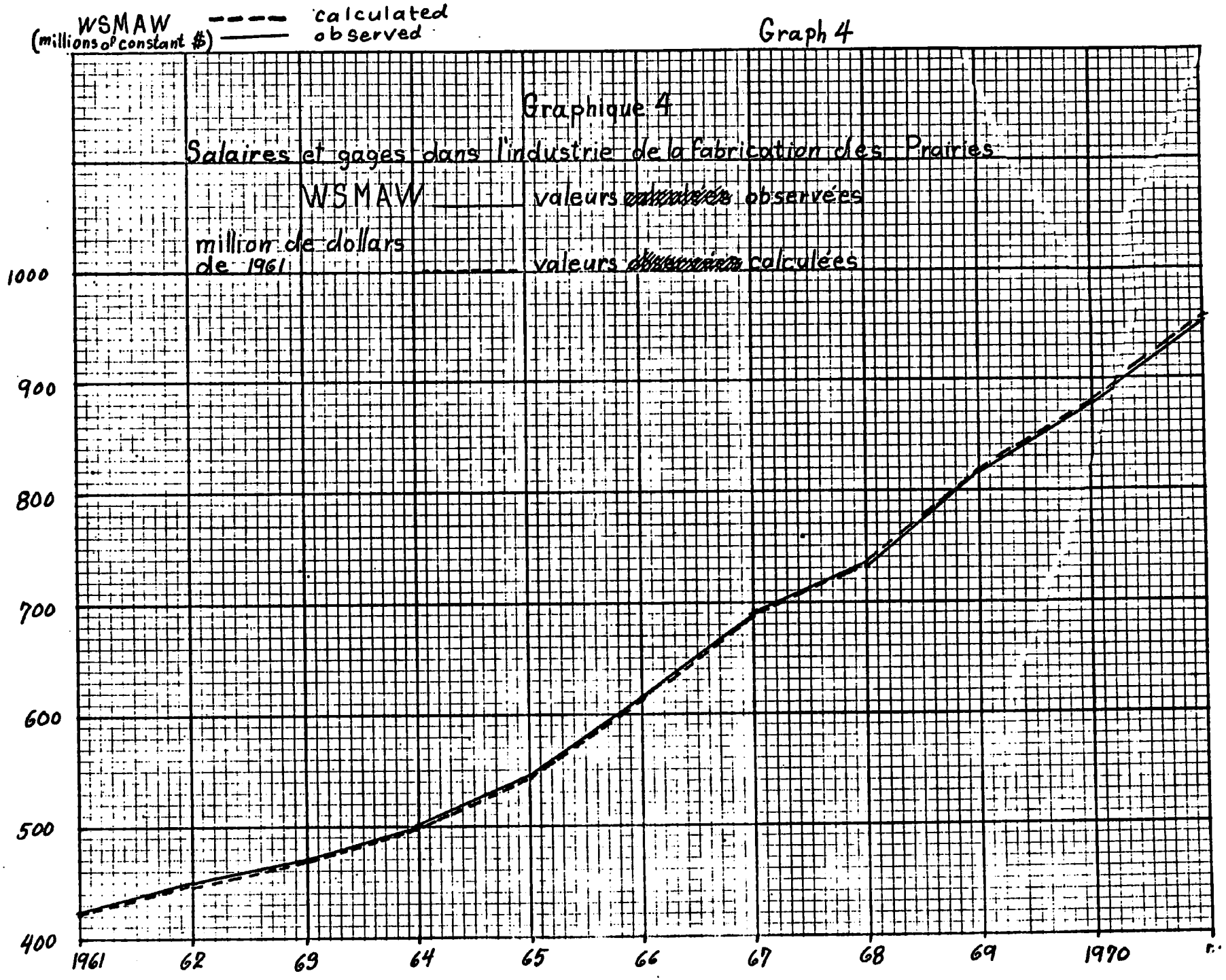
$$
\begin{aligned}
(13.81)\quad WSCSC = \exp.\ & [1.2986 + 0.0257\ ln\ (URATEC) \\
& \quad [0.31] \quad [1.75] \\
& + 0.9221\ ln\ ((CSYC/CSETC)/(CSY/CSET)) \\
& \quad [10.97] \\
& + 1.1174\ ln\ (WSCST/CSET/CPI) \\
& \quad [2.37] \\
& + 0.7847\ ln\ (CPI)]* CSETC \\
& \quad [1.44]
\end{aligned}
$$

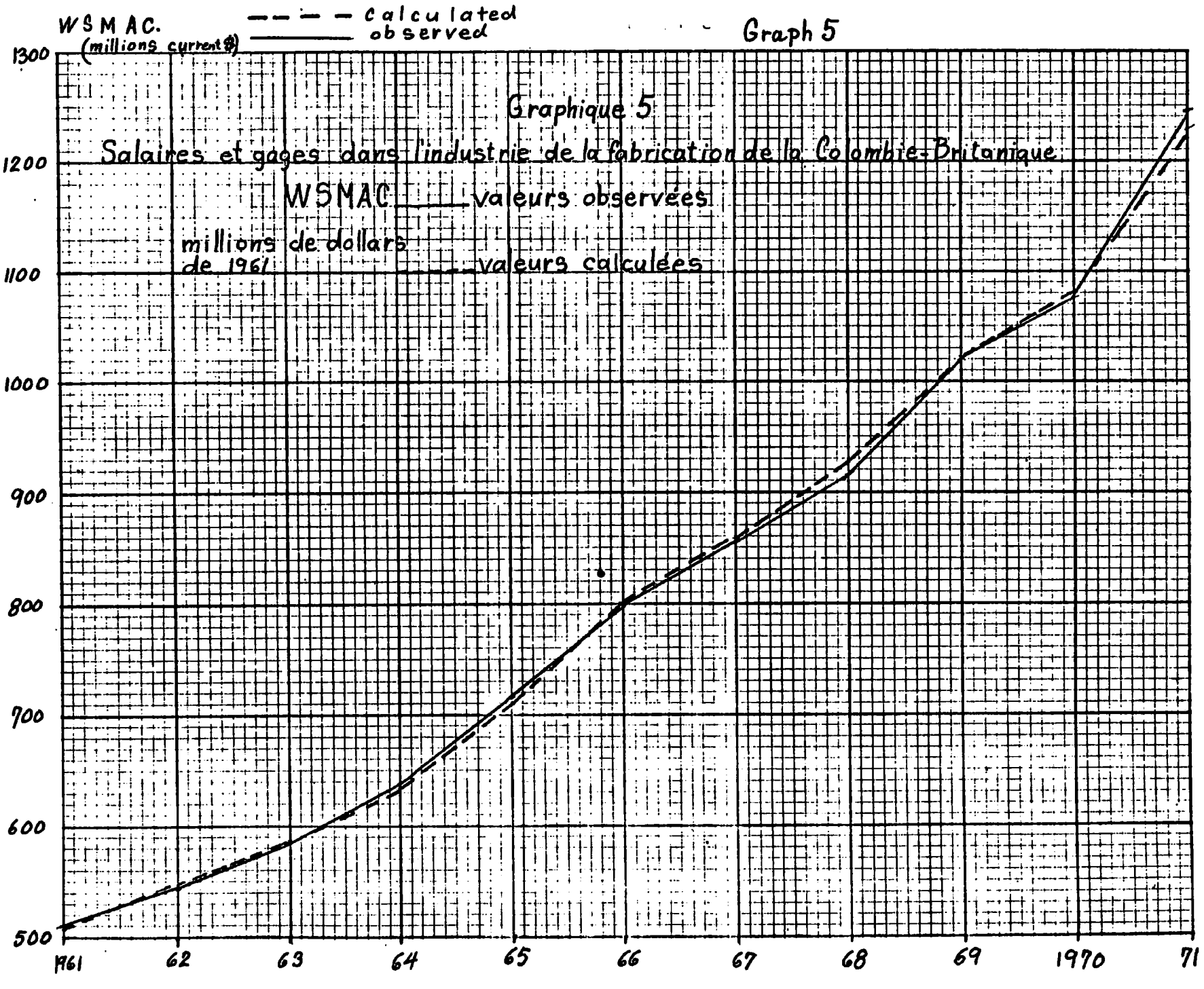
$\bar{R}^2 = 0.99$
$S.E.E. = 0.0098$
$D.W. = 2.58$
$(GLS,\ (1961\text{-}1971)$


WSMAE
(millions of constant $)
calculated
observed
Graph 1
Graphique 1
Salaires et gages dans l'industrie de la fabrication de l'Atlantique
WSMAE ——— valeurs observées
millions de dollars de 1961 - - - - - valeurs calculées
530
480
430
380
330
280
230
1961
62
63
64
65
66
67
68
69
1970
71


WSMAQ
(millions of constant $)
calculated
observed
Graph 2
Graphique 2
Salaires et gages dans l'industrie de la fabrication du Québec
WSMAQ ——— valeur observées
millions de dollars de 1961
- - - - - valeurs calculées
3900
3600
3300
3000
2700
2400
2100
1800
1961
62
63
64
65
66
67
68
69
1970
71


WSMAO
(millions of constant $)
calculated
observed
Graph 3
7000
6000
5000
4000
3000
Graphique 3
Salaires et gages dans l'industrie de la fabrication de l'Ontario
WSMAO
valeurs observées
million de dollars de 1961
valeurs calculées
1961
62
63
64
65
66
67
68
69
1970
71


WSMAW (millions of constant $)
calculated
observed
Graph 4
Graphique 4
Salaires et gages dans l'industrie de la fabrication des Prairies
WSMAW
valeurs observées
million de dollars de 1961
valeurs calculées
1000
900
800
700
600
500
400
1961
62
63
64
65
66
67
68
69
1970


WSMAC.
(millions current $)
calculated
observed
Graph 5
Graphique 5
Salaires et gages dans l'industrie de la fabrication de la Colombie-Britanique
WSMAC ____ valeurs observées
millions de dollars de 1961 _ _ _ _ valeurs calculées
1300
1200
1100
1000
900
800
700
600
500
1961
62
63
64
65
66
67
68
69
1970
71

4.0 Conclusion

One of the characteristic features of the regionalization of salaries and wages is the uniformity of specification in our model. We feel that the strength of reasoning here rests precisely on this uniformity which constitutes an important criterion for the implicit acceptance of the hypotheses.

In point of fact the originality of this approach has led to new research in the field of regionalization. One of the more interesting aspects, which may be the subject of future research, is the theory of relative regional salaries and the concept of permanent income. It goes without saying that special attention should be given to the collection of improved regional data.

APPENDIX A

Estimation Techniques

The difficulties in estimating equation (1) are not related solely to data problems. The data were taken from regional national accounts in the form of annual time series for the period 1961 - 1971. The data for wages and salaries and output were compiled by Statistics Canada and the Department of Regional Economic Expansion respectively. The following eleven industries are included:

Agriculture
Forestry
Fishing and Trapping
Mines, Quarries, and Oil Wells
Manufacturing
Construction
Transportation, Storage, Communications and Public Utilities
Trade
Finance, Insurance and Real Estate
Public Administration and Defence
Public and Private Services

As we wanted to estimate equation (1) by region and by industry the first difficulty arose from the limited number of observations. The second difficulty arose from the form of the data which aimed to describe chronologically a spatial phenomenon. The most crucial econometric problem concerned the inter-regional dependence of error terms.

As a solution to these problems we have estimated equation (1) in logarithmic form by industry and simultaneously for all regions using Zellner's[1] Generalized Least Squares approach.

Assume:

$$Y_j = \ln W_{ij} \qquad j = 1, 2, \ldots 5$$

$$X_j = \text{matrix } (1, \ln U_{ij}, \ln P_{ij}, \ln R_{ij})$$

Under these conditions we can rewrite equation (1) in the following form:

$$Y = X_j \gamma_j + \mu_j \qquad (5)$$

and the system of equations as:

$$\begin{bmatrix} Y_1 \\ Y_2 \\ Y_3 \\ Y_4 \\ Y_5 \end{bmatrix} = \begin{bmatrix} X_1 & 0 & 0 & 0 & 0 \\ 0 & X_2 & 0 & 0 & 0 \\ 0 & 0 & X_3 & 0 & 0 \\ 0 & 0 & 0 & X_4 & 0 \\ 0 & 0 & 0 & 0 & X_5 \end{bmatrix} \begin{bmatrix} \gamma_1 \\ \gamma_2 \\ \gamma_3 \\ \gamma_4 \\ \gamma_5 \end{bmatrix} + \begin{bmatrix} \mu_1 \\ \mu_2 \\ \mu_3 \\ \mu_4 \\ \mu_5 \end{bmatrix} \qquad (6)$$

or as:

$$Y = X\gamma + \mu \qquad (7)$$

---

1. Zellner, A. "An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias", Journal of the American Statistical Association, Vol. 57, June 1962, pp. 348-368.

This technique of combining the equations allows us to assume that they are apparently independent but offers the possibility of taking into account interdependencies of the errors terms, while increasing the precision of estimation. Considering the restricted number of observations per region, in this case, such advantages should not be overlooked.

The assumptions which we make regarding covariance are the following:

assuming $\mu_j = \begin{bmatrix} \mu_{1j} \\ \mu_{2j} \\ \mu_{tj} \\ \mu_{Tj} \end{bmatrix}$ where T is the number of observations per region.

i) $E(\mu_{tj}\ \mu_{tj}) = 0,\ V_j$

ii) $E(\mu_{tj}\ \mu_{sr}) = 0$

iii) $E(\mu_{tj}\ \mu_{tr}) = \sigma_{jr}$

$V_{jr} = 1, 2, \ldots 5$ (8)

or $E(\mu_j\ \mu_r^1) = \sigma_{jr}\ I$

where

$$\Sigma = E\ (\mu\ \mu^1) = \begin{matrix} \sigma_{11}\ \sigma_{12} \ldots\ldots\ldots \sigma_{15} \\ \ldots\ldots\ldots \sigma_{jr} \ldots\ldots\ldots \otimes\ I \\ \sigma_{51} \ldots\ldots\ldots\ldots\ldots \sigma_{55} \end{matrix} \quad (9)$$

where I is a (TxT) matrix.
The symbol $\otimes$ signifies a Kronecker matrix product.

Applying Generalized Least Squares to equation (7), we obtain:

$$\hat{\gamma} = (X^1 \Sigma^{-1} X)^{-1} X^1 \Sigma^{-1} Y \qquad (10)$$

as the best linear estimator with the variance - covariance matrix.

$$\text{Var } (\hat{\gamma}) = (X^1 \Sigma^{-1} X)^{-1} \qquad (11)$$

and where S is used as an estimate of Σ

$$S = \frac{1}{T} \begin{bmatrix} e_1^1 \\ e_2^1 \\ \cdot \\ \cdot \\ \cdot \\ e_5^1 \end{bmatrix} \begin{bmatrix} e_1 & e_2 \cdots & e_5 \end{bmatrix}$$

where $e_j = Y_j - X_j \hat{\gamma}_j$ is calculated in the first stage, through Ordinary Least Squares.

APPENDIX B Mnemonic List

MNEMONIC LIST -- BLOCK 13 -- LISTE DES MNEMONIQUES

```
ADET    El 12073 2  TOTAL EMPLOYMENT -PUBLIC ADMINISTRATION  CANADA
ADETC   Em 12059 2  TOTAL EMPLOYMENT -PUBLIC ADMINISTRATION  BRIT. COLUMBIA
ADETE   Em 12011 3  TOTAL EMPLOYMENT -PUBLIC ADMINISTRATION  ATLANTIC
ADETH   Em 12086 1  TOTAL MANHOURS   -PUBLIC ADMINISTRATION
ADETO   Em 12035 2  TOTAL EMPLOYMENT -PUBLIC ADMINISTRATION  ONTARIO
ADETQ   Em 12023 3  TOTAL EMPLOYMENT -PUBLIC ADMINISTRATION  QUEBEC
ADETW   Em 12047 3  TOTAL EMPLOYMENT -PUBLIC ADMINISTRATION  PRAIRIES
ADWA    El 13093 1  WAGES, SALARIES & OTHER LABOUR INC. PUBLIC ADMIN.
ADWHU   El 13004 1  COMPENS.PER MANHOUR WORKED,PUB.ADM.,DEF.EX.,AF.,$CURR.
ADWHU1  El 13005 3  INDEX OF ADWHU
ADY     Em 23012 3  PUBLIC ADMINISTRATION -REAL DOMESTIC PROD.,$MILL=1961
ADYC    Em 50056 3  GROSS DOMESTIC PRODUCT $CIS PUBLIC ADMIN. BRIT. COLUMBIA
ADYE    Em 50010 3  GROSS DOMESTIC PRODUCT $CIS PUBLIC ADMIN.      ATLANTIC
ADYO    Em 50034 3  GROSS DOMESTIC PRODUCT $CIS PUBLIC ADMIN.      ONTARIO
ADYQ    Em 50022 3  GROSS DOMESTIC PRODUCT $CIS PUBLIC ADMIN.      QUEBEC
ADYW    Em 50046 3  GROSS DOMESTIC PRODUCT $CIS PUBLIC ADMIN.      PRAIRIES
AGET    El 12061 3  TOTAL EMPLOYMENT -AGRICULTURE              CANADA
AGETC   Em 12049 3  TOTAL EMPLOYMENT -AGRICULTURE              BRIT. COLUMBIA
AGETE   Em 12001 3  TOTAL EMPLOYMENT -AGRICULTURE              ATLANTIC
AGETH   Em 12075 1  TOTAL MANHOURS   -AGRICULTURE
AGETO   Em 12025 3  TOTAL EMPLOYMENT -AGRICULTURE              ONTARIO
AGETQ   Em 12013 3  TOTAL EMPLOYMENT -AGRICULTURE              QUEBEC
AGETW   Em 12037 3  TOTAL EMPLOYMENT -AGRICULTURE              PRAIRIES
AGI     AA   459 1  ADJUSTMENT GRAIN TRANSACTIONS
AGNET   El 13096 1  ACC. NET INC. OF FARM OPERATORS FROM FARM PRODUCTION
AGNETC  Em 51005    ACC.NET INCOME OF FARM OPERATIONS    B.C.
AGNETE  Em 51001    ACC.NET INCOME OF FARM OPERATIONS    ATLANTIC
AGNETO  Em 51003    ACC.NET INCOME OF FARM OPERATIONS    ONTARIO
AGNETQ  Em 51002    ACC.NET INCOME OF FARM OPERATIONS    QUEBEC
AGNETW  Em 51004    ACC.NET INCOME OF FARM OPERATIONS    PRAIRIES
AGWA    El 13095 1  WAGES, SALARIES & OTHER LABOUR INC. AGRICULTURE
AGY     Em 23001 7  AGRICULTURE              -REAL DOMESTIC PROD.,$MILL=1961
AGYC    Em 50054 3  GROSS DOMESTIC PRODUCT $CIS AGRICULTURE  BRIT. COLUMBIA
AGYE    Em 50001 3  GROSS DOMESTIC PRODUCT $CIS AGRICULTURE      ATLANTIC
AGYO    Em 50025 3  GROSS DOMESTIC PRODUCT $CIS AGRICULTURE      ONTARIO
AGYPC   xS   584 2  POTENTIAL OUTPUT  AGRICULTURE   BRIT. COLUMBIA
AGYPE   xS   574 2  POTENTIAL OUTPUT  AGRICULTURE   ATLANTIC
AGYPO   xS   582 2  POTENTIAL OUTPUT  AGRICULTURE   ONTARIO
AGYPQ   xS   578 2  POTENTIAL OUTPUT  AGRICULTURE   QUEBEC
AGYPW   xS   580 1  POTENTIAL OUTPUT  AGRICULTURE   PRAIRIES
AGYQ    Em 50013 3  GROSS DOMESTIC PRODUCT $CIS AGRICULTURE      QUEBEC
AGYW    Em 50037 3  GROSS DOMESTIC PRODUCT $CIS AGRICULTURE      PRAIRIES
CNET    El 12066 3  TOTAL EMPLOYMENT -CONSTRUCTION          CANADA
CNETC   Em 12054 3  TOTAL EMPLOYMENT -CONSTRUCTION          BRIT. COLUMBIA
CNETE   Em 12006 2  TOTAL EMPLOYMENT -CONSTRUCTION          ATLANTIC
CNETH   Em 12080 5  TOTAL MANHOURS   -CONSTRUCTION
CNETO   Em 12030 2  TOTAL EMPLOYMENT -CONSTRUCTION          ONTARIO
CNETQ   Em 12018 3  TOTAL EMPLOYMENT -CONSTRUCTION          QUEBEC
CNETW   Em 12042 3  TOTAL EMPLOYMENT -CONSTRUCTION          PRAIRIES
CNWA    El 13086 5  WAGES, SALARIES & OTHER LABOUR INC. CONSTRUCTION
CNWH    Em 13002 5  COMPENS.PER MANHOUR WORKED,CONSTRUCTION      $CURR.
CNY     Em 23006 7  CONSTRUCTION             -REAL DOMESTIC PROD.,$MILL=1961
CNYC    Em 50058 3  GROSS DOMESTIC PRODUCT $CIS CONSTRUCTION  BRIT. COLUMBIA
CNYE    Em 50006 3  GROSS DOMESTIC PRODUCT $CIS CONSTRUCTION      ATLANTIC
CNYO    Em 50030 3  GROSS DOMESTIC PRODUCT $CIS CONSTRUCTION      ONTARIO
```

MNEMONIC LIST -- BLOCK 13 -- LISTE DES MNEMONIQUES

[illegible]	EP	50018	3	GROSS DOMESTIC PRODUCT $CTS CONSTRUCTION	QUEBEC
[illegible]	EP	50042	3	GROSS DOMESTIC PRODUCT $CTS CONSTRUCTION	PRAIRIES
CPI	EP	24027	5	CONSUMER PRICE INDEX	
CSCA	EI	4077	1	SERVICES -TOTAL REAL GROSS CAP.STOCK	
CSEI	EI	12072	3	TOTAL EMPLOYMENT -SERVICES	CANADA
CSEIC	EP	12056	2	TOTAL EMPLOYMENT -SERVICES	BRIT. COLUMBIA
CSEIE	EP	12010	2	TOTAL EMPLOYMENT -SERVICES	ATLANTIC
CSEIO	EP	12034	2	TOTAL EMPLOYMENT -SERVICES	ONTARIO
CSEIQ	EP	12022	2	TOTAL EMPLOYMENT -SERVICES	QUEBEC
CSEIP	EP	12046	2	TOTAL EMPLOYMENT -SERVICES	PRAIRIES
CS**	EI	13094	3	WAGES, SALARIES & OTHER LABOUR INC. SERVICES	
CSY	EI	25011	4	SERVICES -REAL DOMESTIC PROD.$MILL-1961	
CSYC	EP	50059	3	GROSS DOMESTIC PRODUCT $CTS SERVICES	BRIT. COLUMBIA
CSYE	EP	50011	3	GROSS DOMESTIC PRODUCT $CTS SERVICES	ATLANTIC
CSYO	EP	50035	3	GROSS DOMESTIC PRODUCT $CTS SERVICES	ONTARIO
CSYQ	EP	50023	3	GROSS DOMESTIC PRODUCT $CTS SERVICES	QUEBEC
CSYP	EP	50047	3	GROSS DOMESTIC PRODUCT $CTS SERVICES	PRAIRIES
DEFPAL	EI	13024	1	DEFENCE MILITARY PAY AND ALLOWANCES=$MILL.CURR.	
DEFPAN	EP	6091	2	DEFENCE MILITARY PAY&ALLOWANCES=$MILL.CONST.	
DEFPIP	EP	55015	5	DEFENCE MILITARY PAY&ALLOWANCES DEFLATOR	
D61	AP	1	4	DUMMY,1 IN 1961 AND AFTER,ZERO BEFORE	
D54	AP	34	1	DUMMY(1 IN 1954,ZERO OTHERWISE)	
D5455	AP	19	3	DUMMY(1 IN 1954&1955,ZERO OTHERWISE)	
D58	AP	33	2	DUMMY(1 IN 1958,ZERO OTHERWISE)	
D67U	AP	47	2	DUMMY(1 FROM 1967 ON)	
FIEI	EI	12071	2	TOTAL EMPLOYMENT -FINANCE	CANADA
FIEIC	EP	12057	3	TOTAL EMPLOYMENT -FINANCE	BRIT. COLUMBIA
FIEIE	EP	12034	2	TOTAL EMPLOYMENT -FINANCE	ATLANTIC
FIEIO	EP	12058	2	TOTAL EMPLOYMENT -FINANCE	ONTARIO
FIEIQ	EP	12021	2	TOTAL EMPLOYMENT -FINANCE	QUEBEC
FIEIP	EP	12045	2	TOTAL EMPLOYMENT -FINANCE	PRAIRIES
FIFUI	EP	13061	1	NON-FARM UNINCORPORATED BUSINESS INCOME FINANCE	
FIWAI	EI	13042	1	WAGES, SALARIES & OTHER LABOUR INC. FINANCE	
FIY	EP	25011	5	FINANCE -REAL DOMESTIC PROD.$MILL-1961	
FIYC	EP	50057	3	GROSS DOMESTIC PRODUCT $CTS FINANCE	BRIT. COLUMBIA
FIYE	EP	50034	3	GROSS DOMESTIC PRODUCT $CTS FINANCE	ATLANTIC
FIYO	EP	50058	3	GROSS DOMESTIC PRODUCT $CTS FINANCE	ONTARIO
FIYQ	EP	50021	3	GROSS DOMESTIC PRODUCT $CTS FINANCE	QUEBEC
FIYP	EP	50045	3	GROSS DOMESTIC PRODUCT $CTS FINANCE	PRAIRIES
FOEI	EI	12062	3	TOTAL EMPLOYMENT -FORESTRY	CANADA
FOEIC	EP	12051	2	TOTAL EMPLOYMENT -FORESTRY	BRIT. COLUMBIA
FOEIE	EP	12002	2	TOTAL EMPLOYMENT -FORESTRY	ATLANTIC
FOEIM	EP	12079	1	TOTAL MANHOURS -FORESTRY	
FOEIO	EP	12026	2	TOTAL EMPLOYMENT -FORESTRY	ONTARIO
FOEIQ	EP	12014	2	TOTAL EMPLOYMENT -FORESTRY	QUEBEC
FOEIP	EP	12038	2	TOTAL EMPLOYMENT -FORESTRY	PRAIRIES
FOFI	EI	14020	1	CORPORATE PROFITS - FORESTRY,$MILL.CURR.	
FOFUI	EP	13019	1	NON-FARM UNINCORPORATED BUSINESS INCOME FORESTRY	
FOWA	EI	13094	1	WAGES, SALARIES & OTHER LABOUR INC. FORESTRY	
FOY	EP	25002	5	FORESTRY -REAL DOMESTIC PROD.$MILL-1961	
FOYC	EP	50050	3	GROSS DOMESTIC PRODUCT $CTS FORESTRY	BRIT. COLUMBIA
FOYE	EP	50002	3	GROSS DOMESTIC PRODUCT $CTS FORESTRY	ATLANTIC
FOYO	EP	50026	3	GROSS DOMESTIC PRODUCT $CTS FORESTRY	ONTARIO
FOYQ	EP	50014	3	GROSS DOMESTIC PRODUCT $CTS FORESTRY	QUEBEC
FOYP	EP	50038	3	GROSS DOMESTIC PRODUCT $CTS FORESTRY	PRAIRIES

MNEMONIC LIST -- BLOCK 13 -- LISTE DES MNEMONIQUES

FSEI	EI	12065	3	TOTAL EMPLOYMENT =FISHING	CANADA
FSEIC	EI	12061	2	TOTAL EMPLOYMENT =FISHING	BRIT. COLUMBIA
FSEIE	EI	12063	2	TOTAL EMPLOYMENT =FISHING	ATLANTIC
FSEIM	EI	12077	2	TOTAL MANYEARS =FISHING	
FSEIQ	EI	12015	2	TOTAL EMPLOYMENT =FISHING	QUEBEC
FSUM	EI	13020	1	NON-FARM UNINCORPORATED BUSINESS INCOME FISHING&TRAPPING	
FSWA	EI	13005	1	WAGES, SALARIES & OTHER LABOUR INC, FISHING	
FSY	E	23005	7	FISHING =REAL DOMESTIC PROD.$MILL=1961	
FSYC	E	50051	3	GROSS DOMESTIC PRODUCT $CIS FISHING	BRIT. COLUMBIA
FSYE	E	50053	3	GROSS DOMESTIC PRODUCT $CIS FISHING	ATLANTIC
FSYQ	E	50015	3	GROSS DOMESTIC PRODUCT $CIS FISHING	QUEBEC
HSY	E	23013	2	HOUSING =REAL DOMESTIC PROD.$MILL=1961	
MAEI	EI	12005	3	TOTAL EMPLOYMENT =MANUFACTURING	CANADA
MAEIC	EI	12033	3	TOTAL EMPLOYMENT =MANUFACTURING	BRIT. COLUMBIA
MAEIE	EI	12003	3	TOTAL EMPLOYMENT =MANUFACTURING	ATLANTIC
MAEIM	EI	12079	7	TOTAL MANYEARS =MANUFACTURING	
MAEIO	EI	12029	2	TOTAL EMPLOYMENT =MANUFACTURING	ONTARIO
MAEIQ	EI	12017	3	TOTAL EMPLOYMENT =MANUFACTURING	QUEBEC
MAEIP	EI	12041	3	TOTAL EMPLOYMENT =MANUFACTURING	PRAIRIES
MAWA	EI	13007	7	WAGES, SALARIES & OTHER LABOUR INC, MANUFACTURING	
MAY	EI	23011	7	MANUFACTURING =REAL DOMESTIC PROD.$MILL=1961	
MAYC	EI	50035	3	GROSS DOMESTIC PRODUCT $CIS MANUFACTURING	BRIT. COLUMBIA
MAYE	EI	50033	3	GROSS DOMESTIC PRODUCT $CIS MANUFACTURING	ATLANTIC
MAYO	EI	50034	3	GROSS DOMESTIC PRODUCT $CIS MANUFACTURING	ONTARIO
MAYQ	EI	50017	3	GROSS DOMESTIC PRODUCT $CIS MANUFACTURING	QUEBEC
MAYP	EI	50041	3	GROSS DOMESTIC PRODUCT $CIS MANUFACTURING	PRAIRIES
MEI	EI	12001	2	TOTAL EMPLOYMENT =MINING	CANADA
MEIC	EI	12031	3	TOTAL EMPLOYMENT =MINING	BRIT. COLUMBIA
MEIE	EI	12003	3	TOTAL EMPLOYMENT =MINING	ATLANTIC
MEIO	EI	12027	3	TOTAL EMPLOYMENT =MINING	ONTARIO
MEIQ	EI	12015	3	TOTAL EMPLOYMENT =MINING	QUEBEC
MEIP	EI	12041	3	TOTAL EMPLOYMENT =MINING	PRAIRIES
MWA	EI	13001	1	WAGES, SALARIES & OTHER LABOUR INC, MINING	
MY	EI	23004	7	MINING =REAL DOMESTIC PROD.$MILL=1961	
MYC	E	50032	3	GROSS DOMESTIC PRODUCT $CIS MINING	BRIT. COLUMBIA
MYE	E	50034	3	GROSS DOMESTIC PRODUCT $CIS MINING	ATLANTIC
MYO	E	50034	3	GROSS DOMESTIC PRODUCT $CIS MINING	ONTARIO
MYQ	E	50016	3	GROSS DOMESTIC PRODUCT $CIS MINING	QUEBEC
MYP	E	50041	3	GROSS DOMESTIC PRODUCT $CIS MINING	PRAIRIES
NIWA	EI	20000	3	AVERAGE YIELD PER 10 INDUSTRIAL POWDS	
TWA	EI	13005	2	WAGES, SALARIES & OTHER LABOUR INC TOTAL ECONOMY	
TIME	A	1	2	TIME(LAST TWO DIGITS OF YEAR,1970=70)	C 140MM
TRE	EI	12070	3	TOTAL EMPLOYMENT =TRADE	CANADA
TREIC	E	12030	2	TOTAL EMPLOYMENT =TRADE	BRIT. COLUMBIA
TREIE	E	12003	2	TOTAL EMPLOYMENT =TRADE	ATLANTIC
TREIM	EI	12 53	2	TOTAL MANYEARS =TRADE	
TREIO	EI	12 52	2	TOTAL EMPLOYMENT =TRADE	ONTARIO
TREIQ	EI	12026	2	TOTAL EMPLOYMENT =TRADE	QUEBEC
TREIP	EI	12044	2	TOTAL EMPLOYMENT =TRADE	PRAIRIES
TWA	EI	13041	1	WAGES, SALARIES & OTHER LABOUR INC, TRADE	
TRY	EI	23009	7	TRADE =REAL DOMESTIC PROD.$MILL=1961	
TRYC	EI	50056	3	GROSS DOMESTIC PRODUCT $CIS TRADE	BRIT. COLUMBIA
TRYE	EI	50054	3	GROSS DOMESTIC PRODUCT $CIS TRADE	ATLANTIC
TRYO	EI	50052	3	GROSS DOMESTIC PRODUCT $CIS TRADE	ONTARIO

MNEMONIC LIST -- BLOCK 13 -- LISTE DES MNEMONIQUES

```
IKYJ    En 50020 3  GROSS DOMESTIC PRODUCT $CTS TRADE              QUEBEC
IKYK    En 50044 3  GROSS DOMESTIC PRODUCT $CTS TRADE              PRAIRIES
ISCIL   En 12055 2  TOTAL EMPLOYMENT -TRANSPORT & UTILITIES  BRIT. COLUMBIA
ISCIE   En 12007 3  TOTAL EMPLOYMENT -TRANSPORT & UTIL.       ATLANTIC
ISCIM   En 12042 5  TOTAL MANHOURS   -TRANSPORTATION
ISCIO   En 12031 2  TOTAL EMPLOYMENT -TRANSPORT & UTIL.       ONTARIO
ISCIQ   En 12019 2  TOTAL EMPLOYMENT -TRANSPORT & UTIL.       QUEBEC
ISCIR   En 12045 2  TOTAL EMPLOYMENT -TRANSPORT & UTIL        PRAIRIES
ISCIET  El 12007 3  TOTAL EMPLOYMENT -TRANSPORT & UTILITIES  CANADA
ISEA    El 13049 5  WAGES, SALARIES & OTHER LABOUR INC. TRANSPORTATION
ISEM    En 15003 5  COMPENS.PER MANHOUR WORKED,TRANS.STOR.COMM.    $CURR.
IST     El 23006 5  TRANSPORTATION          -REAL DOMESTIC PROD.$MILL-1961
ISTC    En 50055 3  GROSS DOMESTIC PRODUCT $CTS TRANS.& UTIL. BRIT. COLUMBIA
ISTE    El 50007 3  GROSS DOMESTIC PRODUCT $CTS TRANS.& UTIL.       ATLANTIC
ISTO    En 50031 3  GROSS DOMESTIC PRODUCT $CTS TRANS.& UTIL.       ONTARIO
ISTQ    En 50019 3  GROSS DOMESTIC PRODUCT $CTS TRANS.& UTIL.       QUEBEC
ISTR    En 50043 3  GROSS DOMESTIC PRODUCT $CTS TRANS.& UTIL.       PRAIRIES
IUNEL   El 11002 0  TOTAL UNEMPLOYMENT RATE
IUNETC  El 11057 0  UNEMPLOYMENT RATE IN %              BRITISH COLUMBIA
IUNETE  El 11055 0  UNEMPLOYMENT RATE IN %              ATLANTIC
IUNETO  El 11059 0  UNEMPLOYMENT RATE IN %              ONTARIO
IUNETQ  El 11054 0  UNEMPLOYMENT RATE IN %              QUEBEC
IUNETR  El 11058 0  UNEMPLOYMENT RATE IN %              PRAIRIES
UIEL    El 12009 3  TOTAL EMPLOYMENT -UTILITIES              CANADA
UIEA    El 13040 1  WAGES, SALARIES & OTHER LABOUR INC. UTILITIES
UIT     El 23007 5  UTILITIES                -REAL DOMESTIC PROD.$MILL-1961
WAM     Hr    457 5  MANUFACTURING AND MINING WAGE RATE,US
WSBCL   En 13008 1  WAGES, SALARIES & OTHER LABOUR INC. PUBLIC ADM.   BR.COL.
WSBIE   En 13052 1  WAGES, SALARIES & OTHER LABOUR INC. ADM. PUBLIC   ATLANTIC
WSBIO   En 13050 1  WAGES, SALARIES & OTHER LABOUR INC. PUBLIC ADM.   ONTARIO
WSBIQ   En 13044 1  WAGES, SALARIES & OTHER LABOUR INC. PUBLIC ADM.   QUEBEC
WSBIT   El 13010 1  WAGES,SALARIES & SUP. LABOUR INCOME N.AV. PUBLIC ADMIN.
WSBIR   En 13057 1  WAGES, SALARIES & OTHER LABOUR INC. PUBLIC ADM.   PRAIRIES
WSBBL   En 13071 1  WAGES, SALARIES & OTHER LABOUR INC. AGRICULTURE  BR.COL.
WSBIE   En 13048 1  WAGES, SALARIES & OTHER LABOUR INC. AGRICULTURE  ATLANTIC
WSBIO   En 13047 1  WAGES, SALARIES & OTHER LABOUR INC. AGRICULTURE  ONTARIO
WSBIQ   En 13055 1  WAGES, SALARIES & OTHER LABOUR INC. AGRICULTURE  QUEBEC
WSBIT   El 13008 1  WAGES,SALARIES & SUP. LABOUR INCOME N.AV. AGRICULTURE
WSBIR   En 13059 1  WAGES, SALARIES & OTHER LABOUR INC. AGRICULTURE  PRAIRIES
WSCBL   En 13078 1  WAGES, SALARIES & OTHER LABOUR INC. CONSTRUCTION  BR.COL.
WSCIE   En 13060 1  WAGES, SALARIES & OTHER LABOUR INC. CONSTRUCTION  ATLANTIC
WSCIO   En 13062 1  WAGES, SALARIES & OTHER LABOUR INC. CONSTRUCTION  ONTARIO
WSCIQ   En 13046 1  WAGES, SALARIES & OTHER LABOUR INC. CONSTRUCTION  QUEBEC
WSCIT   El 13011 5  WAGES,SALARIES & SUP. LABOUR INCOME N.AV. CONSTRUCTION
WSCIR   En 13064 1  WAGES, SALARIES & OTHER LABOUR INC. CONSTRUCTION  PRAIRIES
WSSBL   En 13081 1  WAGES, SALARIES & OTHER LABOUR INC. SERVICES      BR.COL.
WSSIE   El 13055 1  WAGES, SALARIES & OTHER LABOUR INC. SERVICES      ATLANTIC
WSSIO   En 13057 1  WAGES, SALARIES & OTHER LABOUR INC. SERVICES      ONTARIO
WSSIQ   En 13045 1  WAGES, SALARIES & OTHER LABOUR INC. SERVICES      QUEBEC
WSSIT   El 13017 3  WAGES,SALARIES & SUP. LABOUR INCOME N.AV. SERVICES
WSSIR   En 13069 1  WAGES, SALARIES & OTHER LABOUR INC. SERVICES      PRAIRIES
WSFBL   En 13079 1  WAGES, SALARIES & OTHER LABOUR INC. FINANCE      BR.COL.
WSFIE   En 13051 1  WAGES, SALARIES & OTHER LABOUR INC. FINANCE      ATLANTIC
WSFIO   En 13055 1  WAGES, SALARIES & OTHER LABOUR INC. FINANCE      ONTARIO
WSFIQ   En 13043 1  WAGES, SALARIES & OTHER LABOUR INC. FINANCE      QUEBEC
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MNEMONIC LIST -- BLOCK 15 -- LISTE DES MNEMONIQUES

^SF11	EA	15015	1	WAGES,SALARIES & SUP. LABOUR INCOME N.AV. FINANCE	
^SF1A	EA	15007	1	WAGES, SALARIES & OTHER LABOUR INC. FINANCE	PRAIRIES
^SF0L	EA	15072	1	WAGES, SALARIES & OTHER LABOUR INC. FORESTRY	BR.COL.
^SF0T	EA	15024	1	WAGES, SALARIES & OTHER LABOUR INC. FORESTRY	ATLANTIC
^SF0O	EA	15040	1	WAGES, SALARIES & OTHER LABOUR INC. FORESTRY	ONTARIO
^SF0Q	EA	15056	1	WAGES, SALARIES & OTHER LABOUR INC. FORESTRY	QUEBEC
^SF01	EA	15007	1	WAGES,SALARIES & SUP. LABOUR INCOME N.AV. FORESTRY	
^SF0W	EA	15080	1	WAGES, SALARIES & OTHER LABOUR INC. FORESTRY	PRAIRIES
^SF5L	EA	15073	1	WAGES, SALARIES & OTHER LABOUR INC. FISHING	BR.COL.
^SF5T	EA	15025	1	WAGES, SALARIES & OTHER LABOUR INC. FISHING	ATLANTIC
^SF5O	EA	15049	1	WAGES, SALARIES & OTHER LABOUR INC. FISHING	ONTARIO
^SF5Q	EA	15057	1	WAGES, SALARIES & OTHER LABOUR INC. FISHING	QUEBEC
^SF51	EA	15000	1	WAGES,SALARIES & SUP. LABOUR INCOME N.AV. FISHING & TRAP.	
^SF5W	EA	15001	1	WAGES, SALARIES & OTHER LABOUR INC. FISHING	PRAIRIES
^SI1L	E	15075	1	WAGES, SALARIES & OTHER LABOUR INC. MANUFACTURING	BR.COL.
^SI1T	EA	15027	1	WAGES, SALARIES & OTHER LABOUR INC. MANUFACTURING	ATLANTIC
^SI1O	EA	15051	1	WAGES, SALARIES & OTHER LABOUR INC. MANUFACTURING	ONTARIO
^SI1Q	EA	15059	1	WAGES, SALARIES & OTHER LABOUR INC. MANUFACTURING	QUEBEC
^SI11	EA	15010	7	WAGES,SALARIES & SUP. LABOUR INCOME N.AV. MANUFACTURING	
^SI1W	EA	15003	1	WAGES, SALARIES & OTHER LABOUR INC. MANUFACTURING	PRAIRIES
^SI1L	E	15074	1	WAGES, SALARIES & OTHER LABOUR INC. MINING	BR.COL.
^SI1T	E	15026	1	WAGES, SALARIES & OTHER LABOUR INC. MINING	ATLANTIC
^SI1O	E	15050	1	WAGES, SALARIES & OTHER LABOUR INC. MINING	ONTARIO
^SI1Q	E	15058	1	WAGES, SALARIES & OTHER LABOUR INC. MINING	QUEBEC
^SI11	EA	15014	2	WAGES,SALARIES & SUP. LABOUR INCOME N.AV. MINING	
^SI1W	E	15004	1	WAGES, SALARIES & OTHER LABOUR INC. MINING	PRAIRIES
^SIEL	EA	15002	1	WAGES, SALARIES & OTHER LABOUR INC. TOTAL	BR.COL.
^SIET	EA	15034	1	WAGES, SALARIES & OTHER LABOUR INC. TOTAL	ATLANTIC
^SIEO	EA	15033	1	WAGES, SALARIES & OTHER LABOUR INC. TOTAL	ONTARIO
^SIEQ	EA	15065	1	WAGES, SALARIES & OTHER LABOUR INC. TOTAL	QUEBEC
^SIE1	EA	15016	2	WAGES,SALARIES & SUP. LABOUR INCOME N.AV. TOTAL ECONOMY	
^SIEW	EA	15070	1	WAGES, SALARIES & OTHER LABOUR INC. TOTAL	PRAIRIES
^SIEY	AA	0005	1	TOTAL WAGES AND SALARIES TOWNS N.A.I.	
^SIRL	EA	15071	1	WAGES, SALARIES & OTHER LABOUR INC. TRADE	BR.COL.
^SIRT	EA	15030	1	WAGES, SALARIES & OTHER LABOUR INC. TRADE	ATLANTIC
^SIRO	E	15054	1	WAGES, SALARIES & OTHER LABOUR INC. TRADE	ONTARIO
^SIRQ	E	15062	1	WAGES, SALARIES & OTHER LABOUR INC. TRADE	QUEBEC
^SIR1	EA	15018	1	WAGES,SALARIES & SUP. LABOUR INCOME N.AV. TRADE	
^SIRW	E	15009	1	WAGES, SALARIES & OTHER LABOUR INC. TRADE	PRAIRIES
^SIUL	E	15077	1	WAGES, SALARIES & OTHER LABOUR INC. TRANS. UTIL.	BR.COL.
^SIUT	E	15027	1	WAGES, SALARIES & OTHER LABOUR INC. TRANS. UTIL.	ATLANTIC
^SIUO	E	15053	1	WAGES, SALARIES & OTHER LABOUR INC. TRANS. UTIL.	ONTARIO
^SIUQ	E	15061	1	WAGES, SALARIES & OTHER LABOUR INC. TRANS. UTIL.	QUEBEC
^SIU1	E	15012	5	WAGES,SALARIES & SUP. LABOUR INCOME N.AV. TRANS.STOR.&COMM.	
^SIUW	E	15005	1	WAGES, SALARIES & OTHER LABOUR INC. TRANS. UTIL.	PRAIRIES
^SUI1	E	15013	1	WAGES,SALARIES & SUP. LABOUR INCOME N.AV. UTILITIES	
^IWUS	X	499	4	U.S. TOTAL WAGE, TRANSPORTATION = 2/MR.	
^WSF5O	AA	5??	1	WAGES AND SALARIES & SUPPL. LABOUR INC., FISHING, ONTARIO	
^WSF5W	AA	???	1	WAGES AND SALARIES & SUPPL. LABOUR INC., FISHING, PRAIRIES	