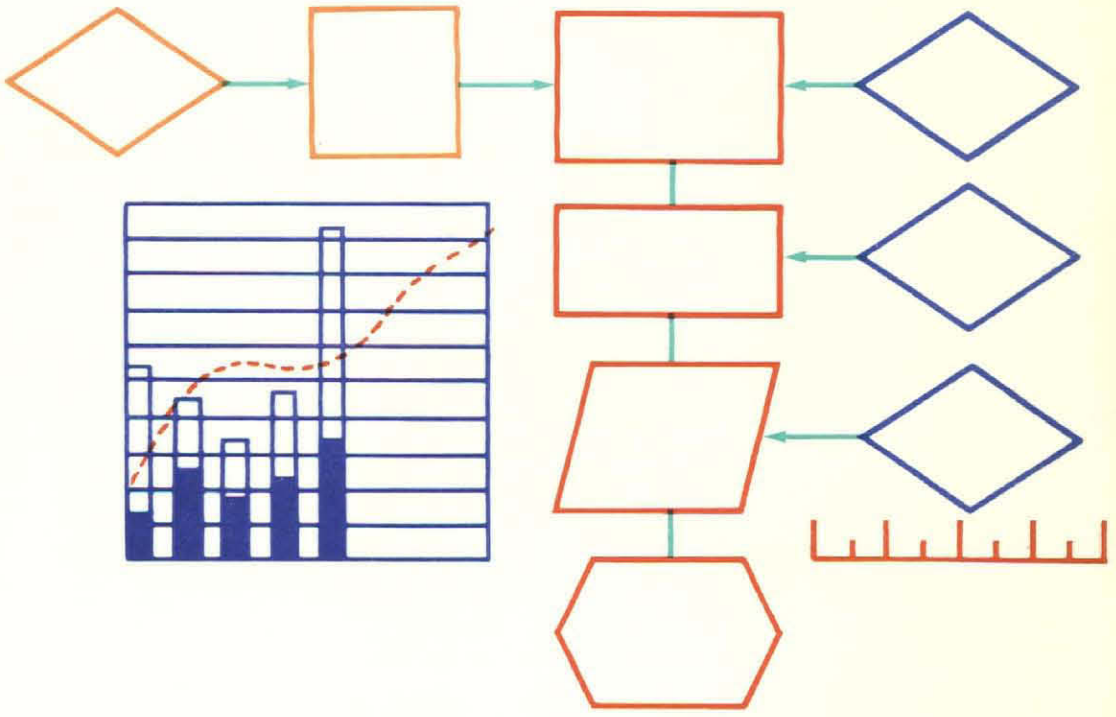
Regional Economic Expansion
Expansion Économique Régionale

Working Paper No.6

INDUSTRY OUTPUT - EMPLOYMENT IN CANDIDE-R

July 1975



ECONOMIC DEVELOPMENT ANALYSIS DIVISION
DIVISION DES ÉTUDES DE DÉVELOPPEMENT ÉCONOMIQUE

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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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INDUSTRY OUTPUT AND EMPLOYMENT IN CANDIDE-R

1.0 Introduction

The determination of disaggregated industry output is one of the most distinctive characteristics of the CANDIDE model. The national model explains industry output as a function of the final demand categories, which imposes important constraints on certain industries. Industry output is determined by converting categories of final demand into commodity requirements for final demand which in turn determine industry value-added through use of an impact matrix. A summary of this conversion procedure of final demand is given in the following matrix equation[1]:

$$Y = B^* \ (I-DB_i)^{-1} \ D \ E_i \ f \qquad (1)$$

where

Y = vector of first approximation of Real Domestic Product
B* = diagonal matrix representing the proportion of value-added in gross output
I = identity matrix
B = matrix of industry technology coefficients describing the input structure of the industry
D = domestic market share matrix

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1. See McCracken, M.C., An Overview of CANDIDE Model 1.0, CANDIDE Project Paper No. 1 published by the Economic Council of Canada for the Interdepartmental Committee (Ottawa, Information Canada, 1973).

E_i = converter matrix or matrix of final demand composition
f = final demand vector.

This relationship covers 169 final demand categories converted into 114 commodity requirements of which 105 are intermediate commodities, and 9 primary inputs. These outputs are accounted for by 75 industries (according to the input-output classification) or 63 industries at the disaggregated level in CANDIDE.

As this method reflects inter-industry trade for one year only, and since during the intervening years technological progress, changes in the elements of the matrices D, E_i and B* will affect the resulting input-output pattern, adjustment mechanisms were required to make longer run use of the input-output table more realistic. These mechanisms, similar to those used by Ross Preston in the long-term Wharton model, essentially explain the difference between the value-added estimated from the input-output table, and the observed Real Domestic Product by industry. CANDIDE 1.1 uses these 63 adjustment equations, instead of changing the many coefficients of the input-output table.

The adjustment equations have the following general format[2]:

$$(RDP_i - Y_i) = a + bt + c(RDP_i - Y_i)_{t-1} + d(RDP_i - Y_i)_{t-2} \quad (2)$$

where
RDP_i = Real Domestic Product, industry i

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2. ibid., p. 62.

Y_i = initial estimation of value-added, industry i.
t = time trend.

2.0 Regionalization of Output and Employment

The complexity of the estimation techniques which we have just described, and the important role they play in the national CANDIDE model leave few routes open for the regionalization of industry output. Complete regionalization is obviously impossible, since no adequate regional input-output tables now exist. Moreover all attempts to regionalize the adjustment mechanisms, as presented in equation (2) would require the explanation of residuals at two levels, temporal and spatial, with the risk of instability of the model in simulation, which would increase the source of error. Also the available regional data covers only eleven industry categories while CANDIDE uses 63 industries[3].

The only possibility left open consists of aggregating the 63 industry outputs calculated by equation (2), into eleven industries, and of regionalizing this breakdown.

This type of regionalization, using the limited feedback approach[4], does not permit us to make use of a certain number of links between regional and national

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3. Note that there are 12 industries in CANDIDE 1.1. However, in CANDIDE-R public utilities and transportation have been combined into one industry, resulting in an eleven industry breakdown.

4. See Overview of CANDIDE-R, Section 3, Regionalization.

production, but it does allow us to keep intact the input-output table which is at the centre of national CANDIDE. Other means must be found to transmit the effects of regionalization of industry output to the national level. Taking into account these effects should be done in a precise method in order to avoid an exercise which would be merely peripheral to the national model and hence of relatively little interest. The regionalization of industry output has therefore been reconciled with the regionalization of employment.

What are the links between employment and production in CANDIDE 1.1 and how will these be established in CANDIDE-R? One of the particular characteristics of CANDIDE 1.1 is the presence of a double production function in its specification. The main assumption of the national model concerns the fixed production coefficients used in the input-output model. Employment is estimated using a Cobb-Douglas production function which allows substitution between primary inputs. There is, however, a justification for this non-orthodox practice. In effect, the complementarity assumption implicit in the input-output model is not completely violated to the extent that there is always substitution possible between total primary and total intermediate inputs. Moreover the presence of technological progress in these equations offers a form of coherent theory with the adjustment equations, developed to correct estimates from the input-output table. The effect of technological and other modifications, from equation (2) is justified and formalized in these Cobb-Douglas type functions.

In our regionalization exercise, the assumption of ex-post fixity of production coefficients has been maintained, but with a different outlook than in CANDIDE 1.1. The Cobb-Douglas functions of CANDIDE 1.1 have been completely abandoned. The assumption that effective demand determines the level of industry output has, however, been retained. Employment is then related directly to the level of production. On its side, regional production depends among other things on utilization of accumulated capacity. Thus the recrusive nature of the employment functions and the criteria chosen for the regional distribution of industry output assures that employment and capital utilization are determined by production according to the fixed proportions currently employed. This very simple approach fits very well in a neo-classical framework. In effect, it can be assumed that the determination of technical coefficients depends on the neo-classical factors affecting expectations of future salaries and interest rates at the moment the decision is made to invest. It is possible to put forward such an assumption because the real salary which in such a framework should be at a level allowing profitable use of marginal equipment, does not influence employment in the short run.

Such an approach, where substitution between capital and labour works ex-ante,thus allowing retention of the ex-post fixity of the coefficients, appears satisfactory. Even if it were possible to rationalize the presence of a double production function in CANDIDE 1.1 it is still the case that substitution between capital and labour is ex-post in a Cobb Douglas function. For this reason it is necessary to be satisfied to assume complementarity between total primary and total intermediate inputs in CANDIDE 1.1.

3.0 Industry Output

As noted earlier, regionalization of industry output should satisfy the specifications of limited feedback by modelling the division of industry output among the regions.

3.1 A Share Distribution Model

First of all the estimation of disaggregated industrial production should be carried out at the national level through use of the input-output table. Next, stochastic equations of distribution in share form endogenously distribute industry output among the regions. It is clear that industry output obtained in this way does not allow the influence of regional dispersion to be directly conveyed to the national industry output estimates. This possibility is excluded from the start, since the share distribution approach adopted must, by definition, satisfy the constraints of aggregation.

In deriving the share ratios a partial adjustment model, between the desired ratio in period t and the observed in period t-1 is used. Why should the regionalization be based on an adjustment model? The basic notion is a very simple one, going back to the theory of the firm. It is assumed that one region, like one firm, attempts to control the largest possible share of the market. Thus it is attempted here to explain that part of the region. This desired ratio would correspond more or less to that part of the market which would allow the firm to maximize profits.

It is assumed that the desired levels of relative production $(X_{ij}/X_i)^*$ are a function of the relative degree of utilization of accumulated capacity, measured by the sum of investments over the last four years.

$$\left[\frac{X_{ijt}}{X_{it}}\right]^* = \alpha + \beta \frac{T_{ijt} \cdot C_{ijt}}{T_{it} \cdot C_{it}} + \mu_{ijt} \qquad (3)$$

where:

t	time t, 1961, ... 1971
X_{ijt}	output of industry i in region j
X_{it}	national output of industry i
T_{ijt}	rate of utilization of accumulated capacity of industry i in region j. These rates are obtained by dividing observed production by potential production evaluated by interpolating between identified production peaks (for more details see Appendix A).
C_{ijt}	sum of investment over the last four years for industry i in region j (see Appendix B for details)
μ_{ijt}	error term $(E(\mu_{ijt}) = \sigma, \text{var}\mu_{ijt} = \sigma^2, \text{cov}(\mu_{ijt}, \mu_{ijs}) = \sigma)$

Including the partial adjustment process:

$$(X_{ij}/X_i) - (X_{ij}/X_i)_{-1} = \gamma \left[(X_{ij}/X_i)^* - (X_{ij}/X_i)_{-1}\right] \qquad (4)$$

equation (3) can now be written as:

$$(X_{ijt}/X_{it}) = \alpha\gamma + (1-\gamma)\ (X_{ijt-1}/X_{it-1})$$

$$+ \beta\gamma((T_{ijt} \cdot C_{ijt})/(T_{it} \cdot C_{it})) + \gamma\mu_{ijt} \qquad (5)$$

The variables which make up the share distribution mechanism do not actually represent factors of production. They serve more to take account of relative regional advantages which result from accumulated capacity of production and the use made of this accumulated capacity in satisfying demand.

In a world where relative prices of industry outputs are closely tied to the rate of capacity utilization[5] of physical production the variable $((T_{ij} \cdot C_{ij})/(T_i \cdot C_i))$ can be interpreted to reflect the opportunity cost of unused industry (i) capacity in region (j) relative to national capacity utilization in the same industry i.

An increase in such a relative opportunity cost following pressure from increased demand[6], would cause the industry to want to expand its output and thereby modify the ratio (X_{ij}/X_i). Equation (4) then serves to measure the extent of adjustments effected by the industry in the face of new market conditions.

The mechanism of regional share distribution of output as shown in equation (5) offers a double advantage. By its simplicity it get around the problem of using data on regional production which were not collected at source but rather calculated for the purpose of the model. Finally, by the link which it establishes between investment and

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5. See Fromm, G. and O. Eckstein, "The Price Equation" American Economic Review, December 1968

6. In the short run these pressures are reflected in the fluctuations of capacity utilization rates.

output it offers the possibility of evaluating the impact of regional redistribution on investment.

The role played by investment in the specification of the share distribution of output is peculiar to CANDIDE-R. The model retains the endogenous determination of industry disaggregated investments at the national levels. However, the regional distribution of this investment is determined by exogenous shares. Imposed in part by the current impossibility of obtaining regional data for the variables used in the specification of a neo-classical investment model, this aspect of CANDIDE-R has the advantage of using exogenous shares in simulation. From this point of view, CANDIDE-R becomes an evaluation tool without equal, available for use by departments interested in the regional aspects of their investment policies.

For simulations outside the sample period it is necessary to supply values of these exogenous investment shares. This is not a problem for scenarios where the impact of various shares is explored. The difficulty is rather in conditional forecasts. For the control solution, the most realistic following current trends, our only reference point remains the periodic survey of investment intentions in the medium term (5 years). Outside of five years, the risk of error increases considerably, as it does for the majority of exogenous variables.

3.2 The Data and Estimation Techniques

The main problem posed by the data on regional industry output is evident at the initial stage of specification of the model. As this data has been collected for CANDIDE-R from information obtained directly from Statistics Canada on the components of Gross Domestic Product in current dollars, the specification of equation (5) must avoid simply repeating the estimation procedure used to obtain the data.

Once having circumvented this problem, we can set out data covering the followong eleven industries:

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
Private and Public Services

Since there are no regional deflators, constant dollar series on regional industry outputs were calculated using national deflators estimated by CANDIDE.

The estimation of equation (5) presented a double difficulty which resulted from the limited number of observations and their interpretation. The data describes, in effect, the same phenomenon in diverse regions at one point in time. This results in the problem of inter-regional dependence of the many variables making up the error term.

As a solution, equation (5) has been estimated for each industry, but for all regions simultaneously, using Zellner's[7] Generalized Least Squares technique. This approach allows the combination of regional equations on the assumption that they are independent and offers the possibility of taking into account interdependencies at the level of the error term, thus improving the precision of the estimates.

The specification of certain industries, at the estimation stage was modified by replacing the variable of the rate of capacity utilization by the percentage of labour employed, i.e. $(1-U_j)$. The industries which have this modification are:

Mines, Quarries and Oil Wells
Manufacturing
Construction

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7. Zellner, A. "An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias" Journal of the American Statistical Association, 1962, pp.348-68. For an explanation of these assumptions see Wages and Salaries in CANDIDE-R.

Transportation, Storage, Communication
and Public Utilities
Trade
Finance, Insurance and Real Estate

3.3 Empirical Results

The empirical results for industry output are presented below. In order to give a better idea of the tracking of these equations, graphs for manufacturing production follow. The graphs are in level form.

In judging the quality of the results, great importance is placed on the positive sign of the coefficient for capacity utilization. Little emphasis is placed on the Durbin Watson statistic, however, due to the presence of a lagged endogenous variable, and to the limited number of observations.

Agriculture

Gross Domestic Product Agriculture Atlantic

$$(50.1)\quad AGYE = AGY * [0.0052 - 0.0047\ (AGYE/AGY)_{-1}$$
$$[2.47] \quad [0.12]$$

$$+ 0.5706\ [TCAGE * \sum_{i=0}^{3} TIAGE_{t-i} / \sum_{i=0}^{3} ((AGICOK*AGICOP +$$
$$[25.72]$$

$$AGIMEK*AGIMEP) + (FSICOK*FSICOP + FSIMEK*FSIMEP))_{t-i}]]$$

$\bar{R}^2 = 0.97$
$S.E.E. = 0.0011$
$D.W. = 1.33$
$(GLS, 1961\text{-}1971)$

Gross Domestic Product Agriculture Quebec

$$(50.13)\quad AGYQ = AGY * [0.0260 - 0.0114\ (AGYQ/AGY)_{-1}$$
$$[2.17] \quad [0.13]$$

$$+ 0.6967\ [TCAGQ * \sum_{i=0}^{3} TIAGQ_{t-i} / \sum_{i=0}^{3} ((AGICOK*AGICOP$$
$$[10.34]$$

$$+ AGIMEK*AGIMEP) + (FSICOK*FSICOP + FSIMEK*$$

$$FSMIEP))_{t-i}\ ]]$$

$\bar{R}^2 = 0.84$
$S.E.E. = 0.0085$
$D.W. = 0.75$
$(GLS, 1961\text{-}1971)$

Gross Domestic Product Agriculture Ontario

$$(50.25)\quad AGYO = AGY * [0.0831 + 0.0262\ (AGYO/AGY)_{-1}$$
$$[1.97] \quad [0.18]$$

$$+ 0.7295\ [TCAGO * \sum_{i=0}^{3} TIAGO_{t-i} / \sum_{i=0}^{3} ((AGICOK*AGICOP$$
$$[5.61]$$

$$+ AGIMEK*AGIMEP) + (FSICOK*FSICOP +$$

$$FSIMEK*FSIMEP))_{t-i}]]$$

$\bar{R}^2 = 0.73$
$S.E.E. = 0.0184$
$D.W. = 0.78$
$(GLS, 1961\text{-}1971)$

Gross Domestic Product Agriculture Prairies

$$(50.37)\quad AGYW = AGY * [\underset{[2.85]}{0.1201} - \underset{[0.48]}{0.0338}\ (AGYW/AGY)_{-1} + \underset{[13.04]}{0.9165}\ [TCAGW * \sum_{i=0}^{3} TIAGW_{t-i} / \sum_{i=0}^{3} ((AGICOK*AGICOP + AGIMEK*AGIMEP) + (FSICOK*FSICOP + FSIMEK*FSIMEP))_{t-i}]]$$

$\bar{R}^2$ =0.89
S.E.E. =0.0223
D.W. =0.81
(*GLS*, 1961-1971)

Gross Domestic Product Agriculture British Columbia

$$(50.49)\quad AGYC = AGY*[\underset{[0.59]}{-0.0041} + \underset{[1.31]}{0.1122}\ (AGYC/AGY)_{-1} + \underset{[11.63]}{1.1307}\ [TCAGC * \sum_{i=0}^{3} TIAGC_{t-i} / \sum_{i=0}^{3} ((AGICOK*AGICOP + AGIMEK*AGIMEP) + (FSICOK*FSICOP + FSIMEK*FSIMEP))_{t-i}]]$$

$\bar{R}^2$ =0.86
S.E.E. =0.0035
D.W. =0.98
(*GLS*, 1961-1971)

Forestry

Gross Domestic Product Forestry Atlantic

$$(50.2)\quad FOYE = FOY*[\underset{[7.23]}{0.0419} + \underset{[13.46]}{1.0491}\ [TCFOE * \sum_{i=0}^{3} TIFOE_{t-i} / \sum_{i=0}^{3} (FOICOK*FOICOP + FOIMEK*FOIMEP)_{t-i}]]$$

$\bar{R}$ =0.92
S.E.E. =0.0058
D.W. =1.18
(*GLS*, 1961-1971)

Gross Domestic Product Forestry Quebec

$$(50.14)\quad FOYQ = FOY * [\underset{[0.34]}{0.0168} + \underset{[5.26]}{0.7477}\ (FOYQ/FOY)_{-1} + \underset{[2.63]}{0.3080}\ [TCFOQ * \sum_{i=0}^{3} TIFOQ_{t-i}/(FOICOK * FOICOP + FOIMEK * FOIMEP)_{t-i}\ ]]$$

$\bar{R}^2$ =0.47
S.E.E. =0.0173
D.W. =1.66
(*GLS*, 1961-1971)

Gross Domestic Product Forestry Ontario

$$(50.26)\quad FOYO = FOY * [\underset{[3.61]}{0.0527} + \underset{[2.31]}{0.2130}(FOYO/FOY)_{-1} + \underset{[8.58]}{0.8475}\ [TCFOO * \sum_{i=0}^{3} TIFOO_{t-i} / \sum_{i=0}^{3} (FOICOK * FOICOP + FOIMEK * FOIMEP)_{t-i}\ ]]$$

$\bar{R}^2$ = 0.89
S.E.E. = 0.0046
D.W. = 1.37
(*GLS*,1961-1971)

Gross Domestic Product Forestry Prairies

$$(50.38)\quad FOYW = FOY * [\underset{[1.15]}{0.0110} + \underset{[2.09]}{0.5147}\ (FOYW/FOY)_{-1} + \underset{[1.86]}{0.3027}\ [TCFOW * \sum_{i=0}^{3} TIFOW_{t-i} / \sum_{i=0}^{3} (FOICOK * FOICOP + FOIMEK * FOIMEP)_{t-i}\ ]]$$

$\bar{R}$ = 0.24
S.E.E. = 0.0038
D.W. = 1.41
(*GLS*, 1961-1971)

Gross Domestic Product Forestry British Columbia

$$(50.50)\quad FOYC = FOY * [0.1105 \underset{[3.80]}{} + 0.0742 \underset{[0.75]}{} (FOYC/FOY)_{-1}$$

$$+ 0.3650 \underset{[9.68]}{} [TCFOC * \sum_{i=0}^{3} TIFOC_{t-i} / \sum_{i=0}^{3} (FOICOK * FOICOP + FOIMEK * FOIMEP)_{t-i}]]$$

$\bar{R}^2 = 0.86$
$S.E.E. = 0.0115$
$D.W. = 1.05$
(*GLS*, 1961-1971)

Fishing and Trapping

Gross Domestic Product Fishing Atlantic

$$(50.3)\quad FSYE = FSY * [0.0489 \underset{[0.46]}{} + 0.4623 \underset{[2.44]}{} (FSYE/FSY)_{-1}$$

$$+ 4.0411 \underset{[2.31]}{} [TCFSE * \sum_{i=0}^{3} TIAGE_{t-i} / \sum_{i=0}^{3} ((AGICOK * AGICOP + AGIMEK * AGIMEP) + (FSICOK * FSICOP + FSIMEK * FSIMEP))_{t-i}]]$$

$\bar{R}^2 = 0.65$
$S.E.E. = 0.0264$
$D.W. = 1.53$
(*GLS*, 1961-1971)

Gross Domestic Product Fishing Quebec

$$(50.15)\quad FSYQ = FSY * [0.0267 \underset{[6.42]}{} - 0.0249 \underset{[3.35]}{} (FSYQ/FSY)_{-1}$$

$$+ 0.2883 \underset{[11.88]}{} [TCFSQ * \sum_{i=0}^{3} TIAGQ_{t-i} / \sum_{i=0}^{3} ((AGICOK * AGICOP + AGIMEK * AGIMEP) + (FSICOK * FSICOP + FSIMEK * FSIMEP))_{t-i}]]$$

$\bar{R} = 0.91$
$S.E.E. = 0.0019$
$D.W. = 1.04$
(*GLS*, 1961-1971)

Gross Domestic Product Fishing Ontario

$$(50.27)\quad FSYO = FSY * [0.0160 + \underset{[2.19]}{} \underset{[1.28]}{0.1508}\ (FSYO/FSY)_{-1}$$

$$+ \underset{[4.43]}{0.1031}\ [TCFSO * \sum_{i=0}^{3} TIAGO_{t-i} \Big/ \sum_{i=0}^{3} ((AGICOK*AGICOP +$$

$$AGIMEK*AGIMEP) + (FSICOK*FSICOP + FSIMEK*FSIMEP))_{t-i}]]$$

$\bar{R}$ =0.54
S.E.E. =0.0061
D.W. =0.92
(*GLS*,1961-1971)

Gross Domestic Product Fishing Prairies

$$(50.39)\quad FSYW = FSY * [\underset{[1.54]}{-0.0439} + \underset{[4.67]}{0.8091}\ (FSYW/FSY)_{-1}$$

$$+ \underset{[2.28]}{0.1050}\ [TCFSW * \sum_{i=0}^{3} TIAGW_{t-i} / \sum_{i=0}^{3} ((AGICOK*AGICOP$$

$$+ AGIMEK*AGIMEP) + (FSICOK*FSICOP +$$

$$FSMIEK*FSIMEP))_{t-i}]]$$

$\bar{R}$ =0.68
S.E.E. =0.0065
D.W. =1.72
(*GLS*,1961-1971)

Gross Domestic Product Fishing British Columbia

$$(50.51)\quad FSYC = FSY * [\underset{[0.26]}{-0.0214} + \underset{[1.44]}{0.3206}\ (FSYC/FSY)_{-1}$$

$$+ \underset{[2.66]}{4.45512}\ [TCFSC * \sum_{i=0}^{3} TIAGC_{t-i} / \sum_{i=0}^{3} ((AGICOK*AGICOP$$

$$+ AGIMEK*AGIMEP) + (FSICOK*FSICOP + FSIMEK*FSIMEP))_{t-i}]]$$

$\bar{R}^2$ =0.52
S.E.E. =0.0247
D.W. =1.08
(*GLS*, 1961-1971)

Mines, Quarries and Oil Wells

Gross Domestic Product Mining Atlantic

$$(50.4)\quad MIYE = MIY * [0.0159 \underset{[0.96]}{} + \underset{[4.23]}{0.7544}\ (MIYE/MIY)_{-1}$$

$$+ \underset{[2.59]}{0.0665}\ [(100-URATEE)/(100-URATE)]*$$

$$[\sum_{i=0}^{3} TIMIE_{t-i} \Big/ \sum_{i=0}^{3} (MIICOK*MIICOP+MIIMEK*MIIMEP)_{t-i}]]$$

$\bar{R}^2 = 0.47$
$S.E.E. = 0.0047$
$D.W. = 2.95$
$(GLS,\ 1961\text{-}1971)$

Gross Domestic Product Mining Quebec

$$(50.16)\quad MIYQ = MIY * [\underset{[0.90]}{0.0149} + \underset{[8.58]}{0.7899}(MIYQ/MIY)_{-1}$$

$$+ \underset{[4.83]}{0.2334}\ [(100-URATEQ)/(100-URATE)]*$$

$$[\sum_{i=0}^{3} TIMIQ_{t-i} \Big/ \sum_{i=0}^{3} (MIICOK*MIICOP+MIIMEK*MIIMEP)_{t-i}]]$$

$\bar{R}^2 = 0.81$
$S.E.E. = 0.0062$
$D.W. = 2.80$
$(GLS,\ 1961\text{-}1971)$

Gross Domestic Product Mining Ontario

$$(50.28\quad MIYO = MIY * [\underset{[2.27]}{0.0483} + \underset{[10.04]}{0.7116}\ (MIYO/MIY)_{-1}$$

$$+ \underset{[1.71]}{0.1547}\ [(100-URATEO)/(100-URATE)]*$$

$$[\sum_{i=0}^{3} TIMIO_{t-i} \Big/ \sum_{i=0}^{3} (MIICOK*MIICOP+MIIMEK*MIIMEP)_{t-i}]]$$

$\bar{R}^2 = 0.80$
$S.E.E. = 0.0128$
$D.W. = 2.44$
$(GLS,\ 1961\text{-}1971)$

Gross Domestic Product Mining Prairies

$$(50.40)\quad MIYW = MIY * [0.0529 \underset{[1.36]}{} + \underset{[10.17]}{0.7774}\ (MIYW/MIY)_{-1}$$

$$+\underset{[1.63]}{0.0659}\ [(100-URATEW)/(100-URATE)]*$$

$$[\sum_{i=0}^{3} TIMIW_{t-i} \Big/ \sum_{i=0}^{3} (MIICOK*MIICOP+MIIMEK*MIIMEP)_{t-i}]]$$

$\bar{R}^2$ =0.89
S.E.E. =0.0068
D.W. =1.52
(GLS,1961-1971)

Gross Domestic Product Mining British Columbia

$$(50.52)\quad MIYC = MIY * [\underset{[1.47]}{0.0219} + \underset{[2.38]}{0.6282}\ (MIYC/MIY)_{-1}$$

$$+\underset{[1.52]}{0.0802}\ [(100-URATEC)/[100-URATE)]*$$

$$[\sum_{i=0}^{3} TIMIC_{t-i} \Big/ \sum_{i=0}^{3} (MIICOK*MIICOP+MIIMEK*MIIMEP)_{t-i}]]$$

$\bar{R}^2$ =0.87
S.E.E. =0.0044
D.W. =2.23
(GLS,1961-1971)

Manufacturing

Gross Domestic Product Manufacturing Atlantic

$$(50.5)\quad MAYE = MAY * [\underset{[1.24]}{0.0132} + \underset{[2.11]}{0.6042}\ (MAYE/MAY)_{-1}$$

$$+\underset{[2.16]}{0.0279}\ [(100-URATEE)/(100-URATE)]*$$

$$[\sum_{i=0}^{3} TIMAE_{t-i} \Big/ \sum_{i=0}^{3} (MAICOK*MAICOP+MAIMEK*MAIMEP)_{t-i}]]$$

$\bar{R}^2$ =0.35
S.E.E. =0.0007
D.W. =1.09
(GLS,1961-1971)

Gross Domestic Product Manufacturing Quebec

$$(50.17)\quad MAYQ = MAY * [\underset{[2.14]}{0.0639} + \underset{[4.43]}{0.6393}\ (MAYQ/MAY)_{-1}$$

$$+ 0.1635\ [(100-URATEQ)/(100/URATE)]*\ [2.60]$$

$$[\sum_{i=0}^{3} TIMAQ_{t-i} / \sum_{i=0}^{3} (MAICOK*MAICOP+MAIMEK*MAIMEP)_{t-i}]]$$

$\bar{R}^2$ =0.92
S.E.E. =0.0024
D.W. =1.57
(*GLS*, 1961-1971)

Gross Domestic Product Manufacturing Ontario

(50.29) $MAYO = MAY *[0.0630 + 0.6976\ (MAYO/MAY)_{-1}$
[1.80] [10.85]

$$+ 0.1877\ [(100/URATEO)/(100/URATE)]*\ [6.00]$$

$$[\sum_{i=0}^{3} TIMAO_{t-i} / \sum_{i=0}^{3} (MAICOK*MAICOP+MAIMEK*MAIMEP)_{t-i}]]$$

$\bar{R}^2$ =0.91
S.E.E. =0.0021
D.W. =1.83
(*GLS*, 1961-1971)

Gross Domestic Product Manufacturing Prairies

(50.41) $MAYW = MAY *[0.0190 + 0.6797\ (MAYW/MAY)_{-1}$
[1.09] [2.52]

$$+ 0.00468\ [(100-URATEW)/(100-URATE)]*\ [1.47]$$

$$[\sum_{i=0}^{3} TIMAW_{t-i} / \sum_{i=0}^{3} (MAICOK*MAICOP+MAIMEK*MAIMEP)_{t-i}]]$$

$\bar{R}^2$ =0.53
S.E.E. =0.0013
D.W. =1.23
(*GLS*, 1961-1971)

Gross Domestic Product Manufacturing British Columbia

(50.53) $MAYC = MAY *[0.0400 - 0.5411\ (MAYC/MAY)_{-1}$
[0.0] [12.59]

$$+ 0.0089\ [(100-URATEC)/(100-URATE)]*\ [0.27]$$

$$[\sum_{i=0}^{3} TIMAC_{t-i} / \sum_{i=0}^{3} (MAICOK*MAICOP+MAIMEK*MAIMEP)_{t-i}]]$$

$\bar{R}^2$ =0.25
S.E.E. =0.0022
D.W. =0.75
(*GLS*, 1961-1971)

Construction

Gross Domestic Product Construction Atlantic

(50.6) $COYE = COY * [0.0521 - 0.5078\ (COYE/COY)_{-1}$
[4.72] [2.15]

$+0.6513\ [(100-URATEE)/\ (100-URATE)]*$
[5.28]

$[\sum_{i=0}^{3} TICOE_{t-i} / \sum_{i=0}^{3} (COICOK*COICOP+COIMEK*COIMEP)_{t-i}\ ]]$

$\bar{R}^2$ = 0.56
S.E.E. = 0.0031
D.W. = 1.89
(*GLS*, 1961-1971)

Gross Domestic Product Construction Quebec

(50.18) $COYQ = COY * [0.0018 + 0.2075\ (COYQ/COY)_{-1}$
[0.10] [1.47]

$+1.0667\ [(100-URATEQ)/\ (100-URATE)]*$
[6.07]

$[\sum_{i=0}^{3} TICOQ_{t-i} / \sum_{i=0}^{3} (COICOK*COICOP+COIMEK*COIMEP)_{t-i}\ ]]$

$\bar{R}^2$ = 0.95
S.E.E. = 0.0092
D.W. = 0.86
(*GLS*, 1961-1971)

Gross Domestic Product Construction Ontario

(50.30) $COYO = COY * [0.0779 + 0.5560\ (COYO/COY)_{-1}$
[1.05] [2.12]

$+0.3187\ [(100-URATEO)/\ (100-URATE)]*$
[2.43]

$[\sum_{i=0}^{3} TICOO_{t-i} / \sum_{i=0}^{3} (COICOK*COICOP+COIMEK*COIMEP)_{t-i}\ ]]$

$\bar{R}^2$ = 0.73
S.E.E. = 0.0129
D.W. = 1.37
(*GLS*, 1961-1971)

Gross Domestic Product Construction Prairies

$$(50.42)\quad COYW = COY * [0.0174 \underset{[0.38]}{} + \underset{[3.44]}{0.7637}\ (COYW/COY)_{-1}$$

$$+ \underset{[0.68]}{0.0748}\ [(100-URATEW)/(100-URATE)]*$$

$$[\sum_{i=0}^{3} TICOW_{t-i} \Big/ \sum_{i=0}^{3} (COICOK*COICOP+COIMEK*COIMEP)_{t-i}\ ]]$$

$\bar{R}^2$ =0.30
S.E.E. =0.0101
D.W. =0.59
(GLS,1961-1971)

Gross Domestic Product Construction British Columbia

$$(50.54)\quad COYC = COY * [\underset{[2.29]}{0.0451} + \underset{[0.88]}{0.2002}\ (COYC/COY)_{-1}$$

$$+ \underset{[3.36]}{0.3054}\ [(100-URATEC)/(100-URATE)]*$$

$$[\sum_{i=0}^{3} TICOC_{t-i} \Big/ \sum_{i=0}^{3} (COICOK*COICOP+COIMEK*COIMEP)_{t-i}\ ]]$$

$\bar{R}^2$ =0.61
S.E.E. =0.0088
D.W. =2.35
(GLS,1961-1971)

Transportation, Storage, Communications and Public Utilities

Gross Domestic Product Transportation Quebec

$$(50.19)\quad TSYQ = (TSY+UTY) * [\underset{[3.28]}{0.0671} + \underset{[7.69]}{0.6492}\ [TSYQ/(TSY+UTY)]_{-1}$$

$$+ \underset{[6.62]}{0.1056}\ [(100-URATEQ)/(100-URATE)]*$$

$$[\sum_{i=0}^{3} TITSQ_{t-i} \Big/ \sum_{i=0}^{3} ((TSICOK*TSICOP+TSIMEK*TSIMEP)+$$

$$(UTICOK*UTICOP+UTIMEK*UTIMEP))_{t-i}\ ]]$$

$\bar{R}^2$ =0.88
S.E.E. =0.0027
D.W. =2.12
(GLS, 1961-1971)

Gross Domestic Product Transportation Ontario

$$(50.31)\ TSYO=(TSY+UTY)\ *[0.0037\ +\ 0.9921\ [TSYO/(TSY+UTY)]_{-1}]$$
$$[0.06]\quad\ [5.58]$$

$\bar{R}^2$ =0.42
S.E.E.=0.0058
D.W. =2.09
(GLS,1961-1971)

Gross Domestic Product Transportation Prairies

$$(50.43)\ TSYW\ =(TSY+UTY)*[0.0453\ +\ 0.7564\ [TSYW/(TSY+UTY)]_{-1}]$$
$$[2.04]\quad\ [6.60]$$

$\bar{R}^2$ =0.67
S.E.E.=0.0042
D.W. =2.21
(GLS,1961-1971)

Gross Domestic Product Transportation British Columbia

$$(50.55)\ TSYC\ =(TSY+UTY)*[-0.0194\ +\ 1.1674\ [TSYC/(TSY+UTY)]_{-1}]$$
$$[1.24]\quad\ [9.28]$$

$\bar{R}$ =0.74
S.E.E.=0.0031
D.W. =2.13
(GLS,1961-1971)

Trade

Gross Domestic Product Trade Atlantic

TRYE is exogenous

Gross Domestic Product Trade Quebec

$$(50.20)\quad TRYQ = TRY * [0.0701 + 0.7324\ (TRYQ/TRY)_{-1}]$$
$$[2.17] \qquad [5.88]$$

$\bar{R}^2$ =0.48
S.E.E. =0.0031
D.W. =1.63
(*GLS*,1961-1971)

Gross Domestic Product Trade Ontario

$$(50.32)\quad TRYO = TRY * [0.0579 + 0.8545\ (TRYO/TRY)_{-1}]$$
$$[0.95] \qquad [5.46]$$

$\bar{R}^2$ =0.58
S.E.E. =0.0037
D.W. =1.57
(*GLS*,1961-1971)

Gross Domestic Product Trade Prairies

$$(50.44)\quad TRYW = TRY * [0.0175 + 0.8832\ (TRYW/TRY)_{-1}]$$
$$[1.46] \qquad [12.82]$$

$\bar{R}^2$ =0.91
S.E.E. =0.0027
D.W. =1.94
(*GLS*,1961-1971)

Gross Domestic Product Trade British Columbia

$$(50.56)\quad TRYC = TRY * [0.0166 + 0.6198\ (TRYC/TRY)_{-1}$$
$$[1.23] \qquad [3.90]$$

$$+ 0.2337\ [(100-URATEC)/(100-URATE)]*$$
$$[3.74]$$

$$[\sum_{i=0}^{3} TITRC_{t-i} \Big/ \sum_{i=0}^{3} (TRICOK*TRICOP+TRIMEK*TRIMEP)_{t-i}]]$$

$\bar{R}^2$ =0.82
S.E.E. =0.0017
D.W. =2.07
(*GLS*, 1961-1971)

Finance Insurance and Real Estate

Gross Domestic Product Finance Atlantic

$$(50.9)\quad FIYE = (FIY+HGY) * [\underset{[1.03]}{0.0148} + \underset{[2.27]}{0.4821}\ (FIYE/(FIY+HGY))_{-1}$$
$$+ \underset{[2.43]}{0.2629}\ [(100-URATEE)/(100-URATE)]*$$
$$[(\sum_{i=0}^{3} TIFIE_{t-i} \Big/ \sum_{i=0}^{3} (FIICOK*FIICOP+FIIMEK*FIIMEP)_{t-i}$$
$$+ \sum_{i=0}^{3} IRCZ_{t-i})]]$$

$\bar{R}^2$ =-0.085
S.E.E. =0.0013
D.W. =2.32
(*GLS*, 1961-1971)

Gross Domestic Product Finance Quebec

$$(50.21)\quad FIYQ = (FIY+HGY)* [\underset{[2.71]}{0.1825} + \underset{[0.04]}{0.0146}\ (FIYQ/(FIY+HGY))_{-1}$$
$$+ \underset{[2.76]}{0.1942}\ [(100-URATEQ)/(100-URATE)]*$$
$$[(\sum_{i=0}^{3} TIFIQ_{t-i} / \sum_{i=0}^{3} (FIICOK*FIICOP+FIIMEK*FIIMEP)_{t-i})$$
$$+ \sum_{i=0}^{3} IRCZ_{t-i}]]$$

$\bar{R}^2$ =0.72
S.E.E. =0.0034
D.W. =1.39
(*GLS*, 1961-1971)

Gross Domestic Product Finance Ontario

$$(50.33)\quad FIYO = (FIY+HGY)*[\underset{[1.21]}{0.0596} + \underset{[4.85]}{0.6268}\ (FIYO/(FIY+HGY))_{-1}$$

$$+\ 0.2477\ \underset{[4.74]}{}\ [(100-URATEO)/(100-URATE)]\ *$$

$$[\sum_{i=0}^{3} TIFIO_{t-i} / \sum_{i=0}^{3} (MIICOK*MIICOP+MIIMEK*MIIMEP)_{t-i}]]$$

$\bar{R}^2$ =0.83
S.E.E. =0.0044
D.W. =1.86
(*GLS*,1961-1971)

Gross Domestic Product Finance Prairies

$$(50.45)\quad FIYW = (FIY+HGY) * [\underset{[1.21]}{-0.0740} + \underset{[3.65]}{0.8397}\ (FIYW/(FIY+HGY))_{-1}$$

$$+0.5944\ \underset{[2.36]}{}\ [(100-URATEW)/(100-URATE)]*$$

$$[(\sum_{i=0}^{3} TIFIW_{t-i} / \sum_{i=0}^{3} (FIICOK*FIICOP+FIIMEK*FIIMEP)_{t-i})$$

$$+ \sum_{i=0}^{3} IRCZ_{t-i}]]$$

$\bar{R}^2$ =0.36
S.E.E. =0.0091
D.W. =2.16
(*GLS*, 1961-1971)

Gross Domestic Product Finance British Columbia

$$(50.57)\quad FIYC = (FIY+HGY)*[\underset{[2.10]}{0.0334}$$

$$+\ \underset{[0.60]}{0.2015}\ (FIYC/(FIY+HGY))_{-1}$$

$$+\ \underset{[2.56]}{0.4416}\ [(100-URATEC)/(100-URATE)]*$$

$$[(\sum_{i=0}^{3} TIFIC_{t-i} / \sum_{i=0}^{3} (F+ICOK*FIICOP+$$

$$FIIMEK*FIIMEP)_{t-i})+ \sum_{i=0}^{3} IRCZ_{t-i}]]$$

$\bar{R}^2$ =0.94
S.E. S.E.E =0.0019
D.W. =1.32
(*GLS*, 1961-1971)

Public Administration and Defence

Gross Domestic Product Public Administration Atlantic

$$(50.10)\quad ADYE = ADY * [\underset{[1.82]}{-0.0202} + \underset{[13.56]}{1.1400}\ (ADYE/ADY)_{-1}]$$

$\bar{R}$ =0.93
S.E.E. =0.0019
D.W. =2.48
(*GLS*,1961-1971)

Gross Domestic Product Public Administration Quebec

$$(50.22)\quad ADYQ = ADY * [\underset{[5.85]}{0.0955} + \underset{[2.22]}{0.2569}\ (ADYQ/DAY)_{-1} + \underset{[4.86]}{0.2024}\ [\sum_{i=0}^{3} TIADQ_{t-i} / \sum_{i=0}^{3} GFICAC_{t-i}]]$$

$\bar{R}^2$ =0.76
S.E.E. =0.0026
D.W. =2.96
(*GLS*,1961-1971)

Gross Domestic Product Public Administration Ontario

$$(50.34)\quad ADYO = ADY * [\underset{[0.84]}{0.440} + \underset{[6.67]}{0.8915}\ (ADYO/ADY)_{-1}]$$

$\bar{R}^2$ =0.67
S.E.E. =0.0060
D.W. =2.09
(*GLS*,1961-1971)

Gross Domestic Product Public Administration Prairies

$$(50.46)\quad ADYW = ADY * [\underset{[3.45]}{0.0839} + \underset{[1.28]}{0.2488}\ (ADYW/ADY)_{-1} + \underset{[2.76]}{0.1871}\ [\sum_{i=0}^{3} TIADW_{t-i} / \sum_{i=0}^{3} GFICAC_{t-i}]]$$

$\bar{R}^2$ =0.54
S.E.E. =0.0025
D.W. =2.07
(*GLS*,1961-1971)

Gross Domestic Product Public Administration British Columbia

$$(50.58)\ ADYC = ADY\ *[\underset{[1.77]}{0.0310} + \underset{[5.55]}{0.8857}\ (ADYC/ADY)_{-1}$$

$$\underset{[3.02]}{-0.1688}\ [\sum_{i=0}^{3} TIADC_{t-i} \Big/ \sum_{i=0}^{3} GFICAC_{t-i}\ ]]$$

$\bar{R}^2$ =0.71
S.E.E. =0.0018
D.W. =2.48
(*GLS*,1961-1971)

Private and Public Services

Gross Domestic Product Services Atlantic

$$(50.11)\ CSYE = CSY\ *[\underset{[0.91]}{0.0076} + \underset{[5.32]}{0.6758}\ (CSYE/CSY)_{-1}$$

$$+\ \underset{[5.06]}{0.1841}\ TCCSE\ *[\sum_{i=0}^{3} TICSE_{t-i} \Big/ \sum_{i=0}^{3} (CSICOK*CSICOP$$

$$+\ CSIMEK*CSIMEP)_{t-i}]]$$

$\bar{R}^2$ =0.77
S.E.E. =0.0009
D.W. =2.31
(*GLS*,1961-1971)

Gross Domestic Product Services Quebec

$$(50.23)\ CSYQ = CSY\ *[\underset{[11.20]}{0.1372} + \underset{[6.40]}{0.3476}\ (CSYQ/CSY)_{-1}$$

$$+\ \underset{[9.14]}{0.1154}\ TCCSQ\ *[\sum_{i=0}^{3} TICSQ_{t-i} \Big/ \sum_{i=0}^{3} (CSICOK*$$

$$CSICOP+CSIMEK*CSIMEP)_{t-i}\ ]]$$

$\bar{R}^2$ =0.89
S.E.E. =0.0032
D.S. =3.18
(*GLS*, 1961-1971)

Gross Domestic Product Services Ontario

$$(50.35)\ CSYO = CSY\ *\ [\underset{[6.29]}{0.2158} + \underset{[4.26]}{0.3895}\ (CSYO/CSY)_{-1}$$

$$+\underset{[5.45]}{0.0772}\ TCCSO\ *[\sum_{i=0}^{3} TICSO_{t-i}\ /\ \sum_{i=0}^{3} (CSICOK*CSICOP+CSIMEK*CSIMEP)_{t-i}\ ]]$$

$\bar{R}^2$ =0.78
S.E.E. =0.0032
D.W. =1.98
(*GLS*,1961-1971)

Gross Domestic Product Services Prairies

$$(50.47)\ CSYW = CSY\ *[\underset{[7.50]}{0.0620} + \underset{[12.69]}{0.6197}\ (CSYW/CSY)_{-1}]$$

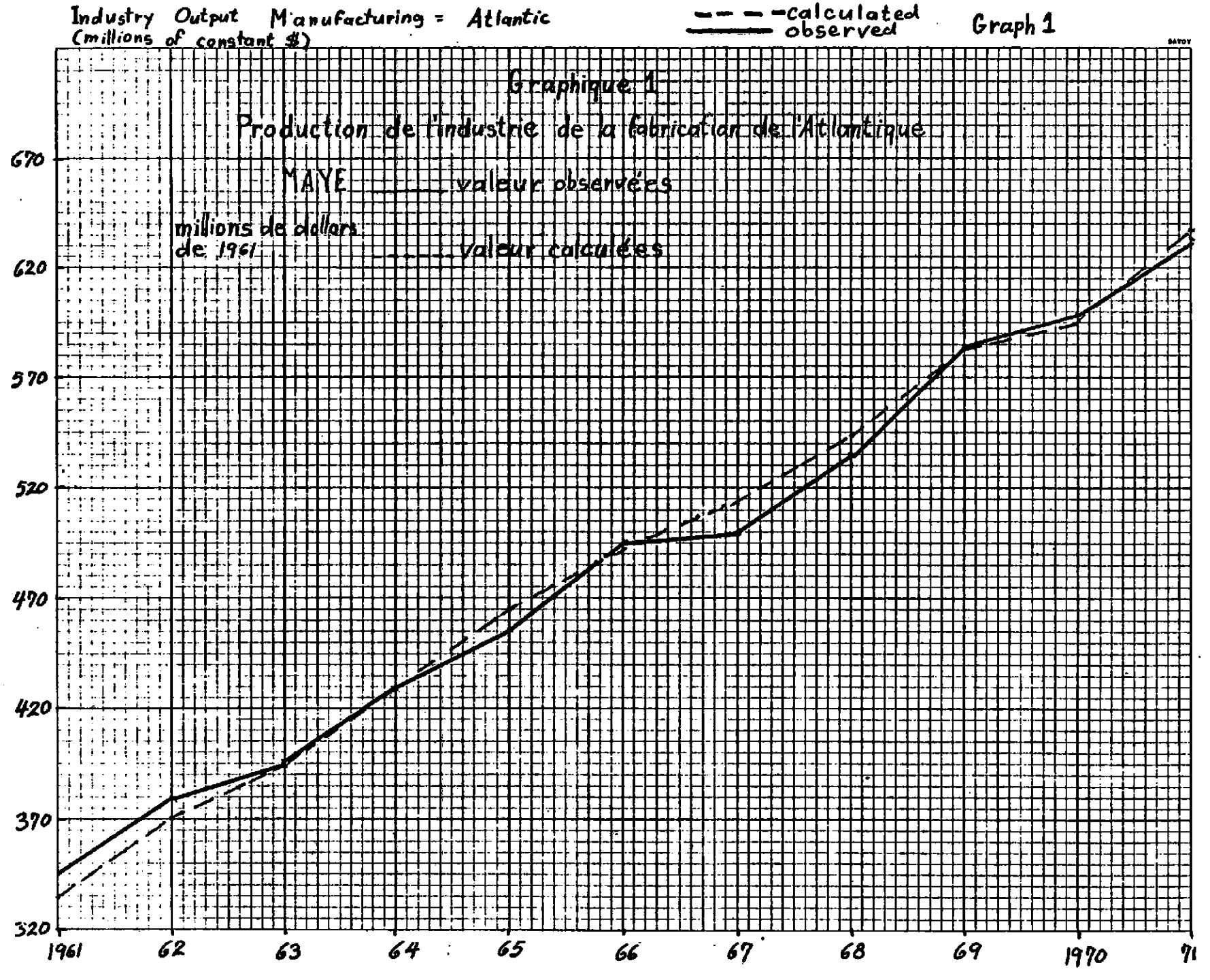
$\bar{R}^2$ =0.91
S.E.E. =0.0016
D.W. =2.38
(*GLS*,1961-1971)

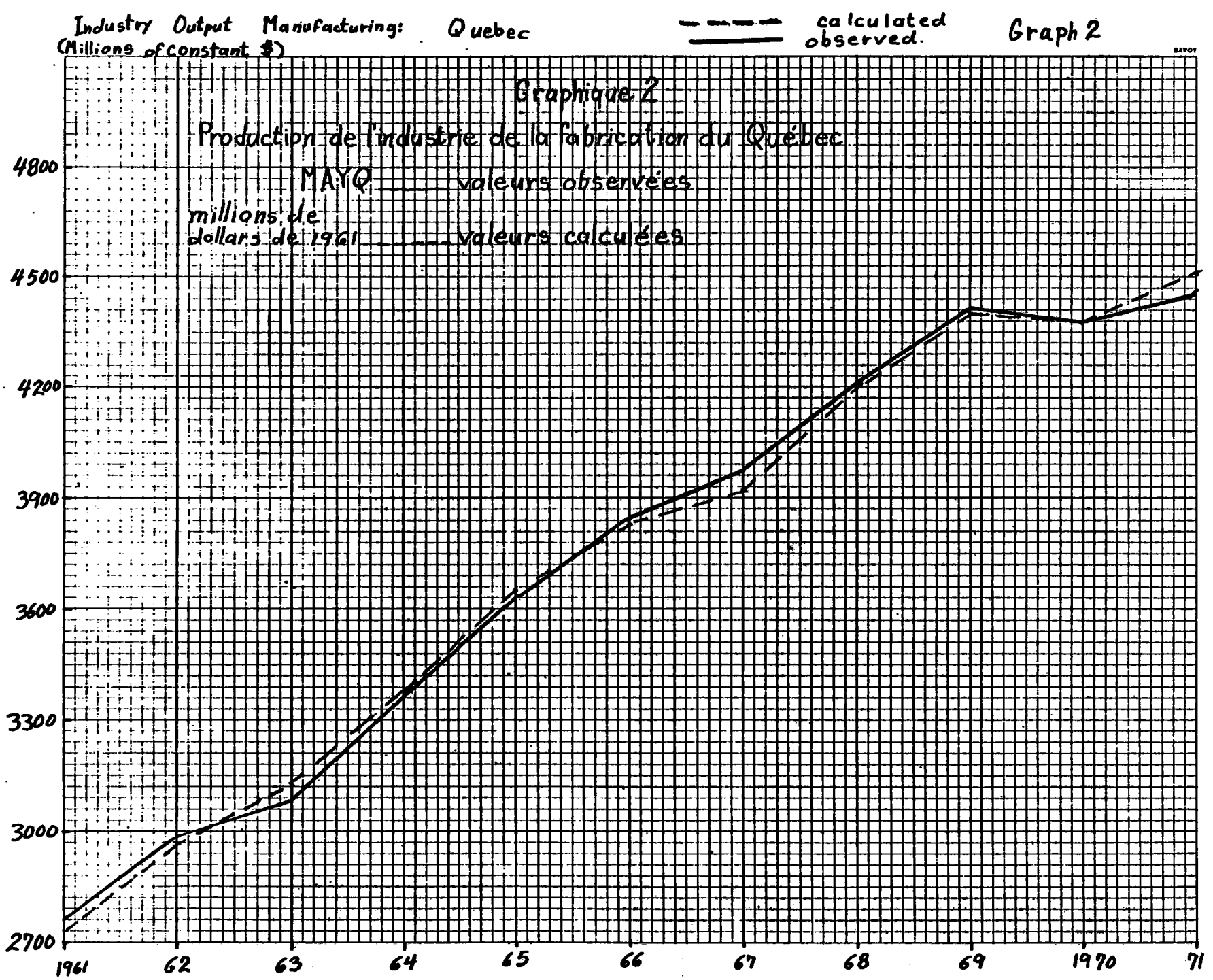
Gross Domestic Product Services British Columbia

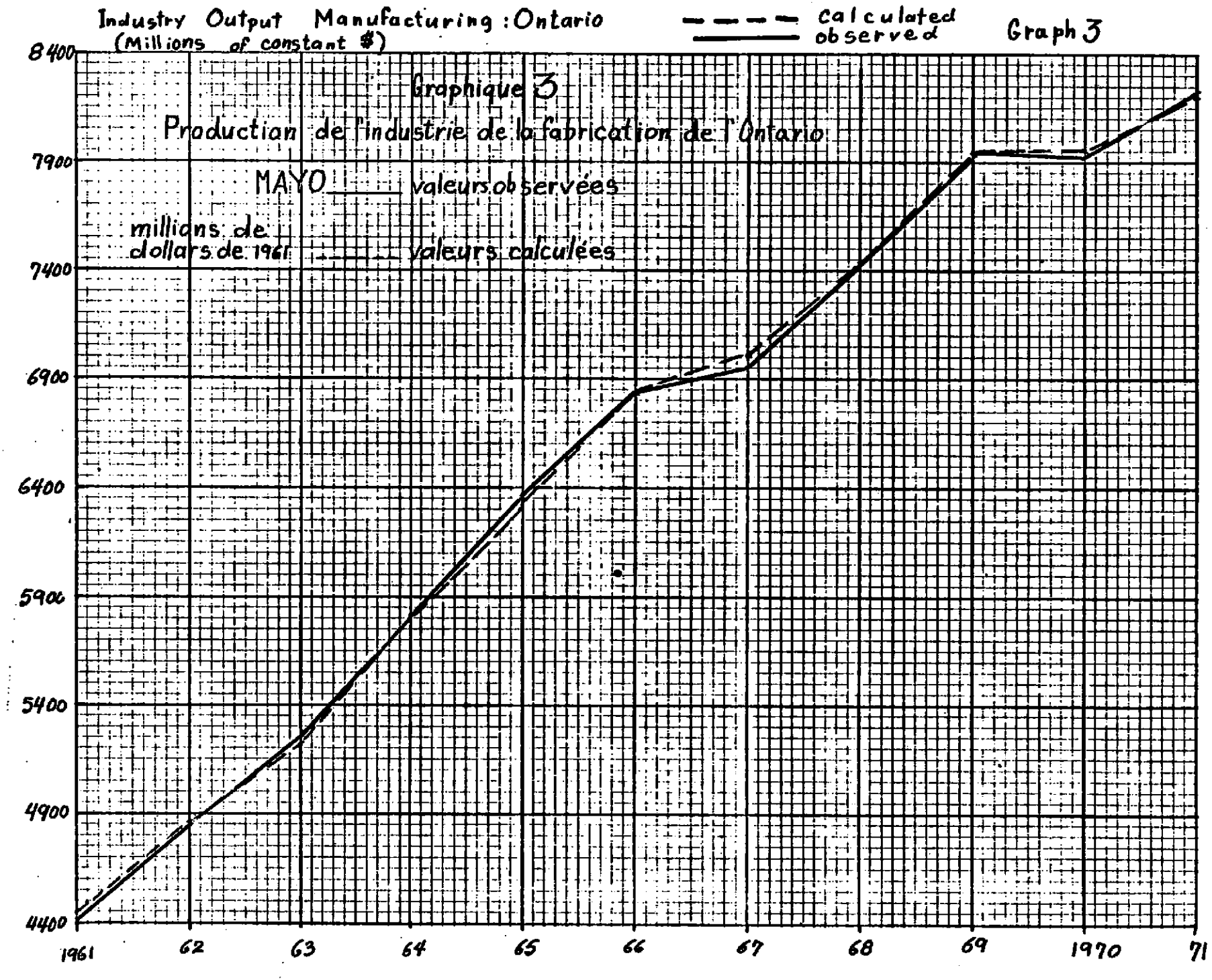
$$(\ 50.59)\ CSYC = CSY\ *[\underset{[5.10]}{0.0579} + \underset{[3.92]}{0.3606}\ (CSYC/CSY)_{-1}$$

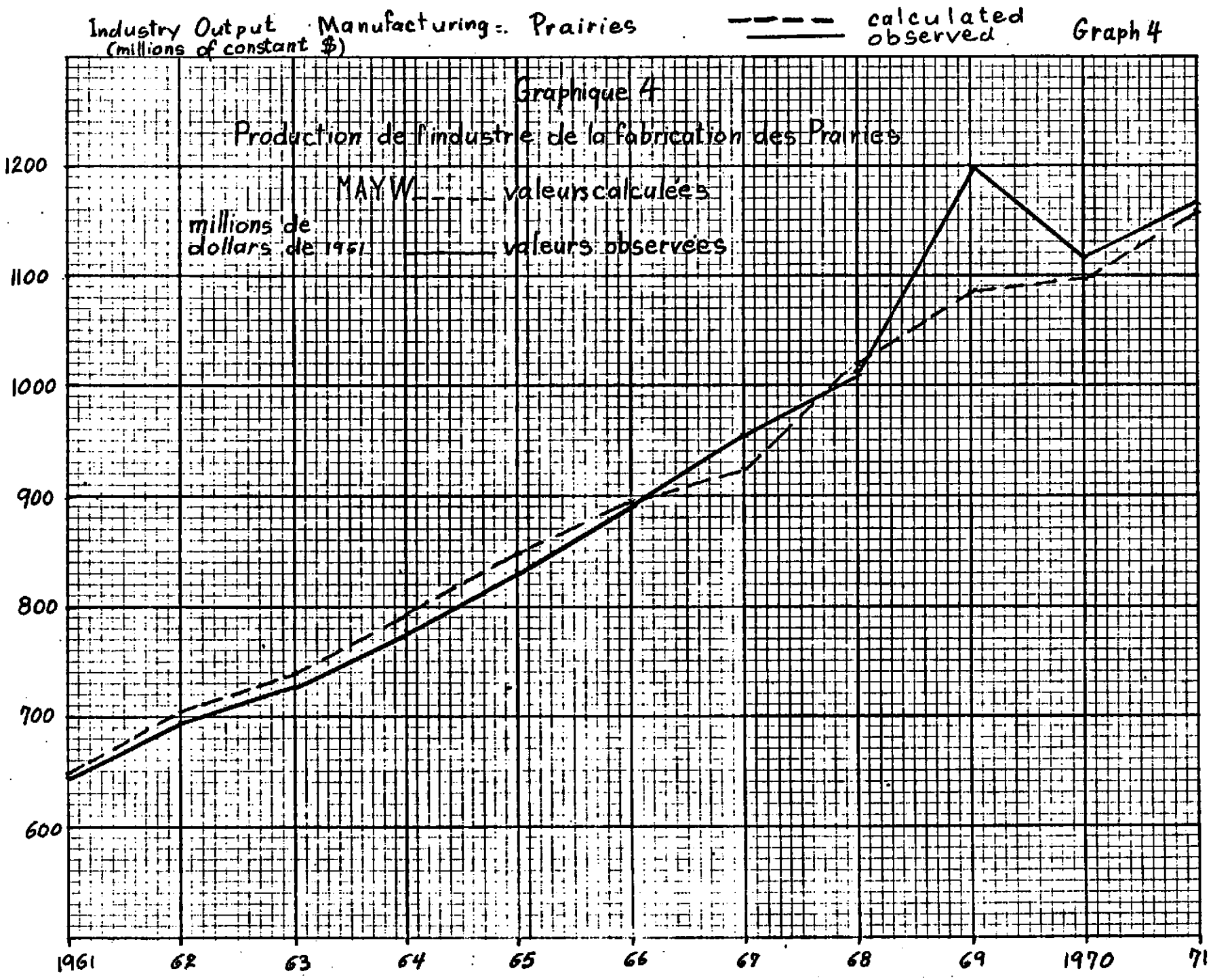
$$+\underset{[2.46]}{0.1237}\ TCCSC\ *[\sum_{i=0}^{3} TICSC_{t-i}/\ \sum_{i=0}^{3} (CSICOK*CSICOP+CSIMEK*CSIMEP)_{t-i}]]$$

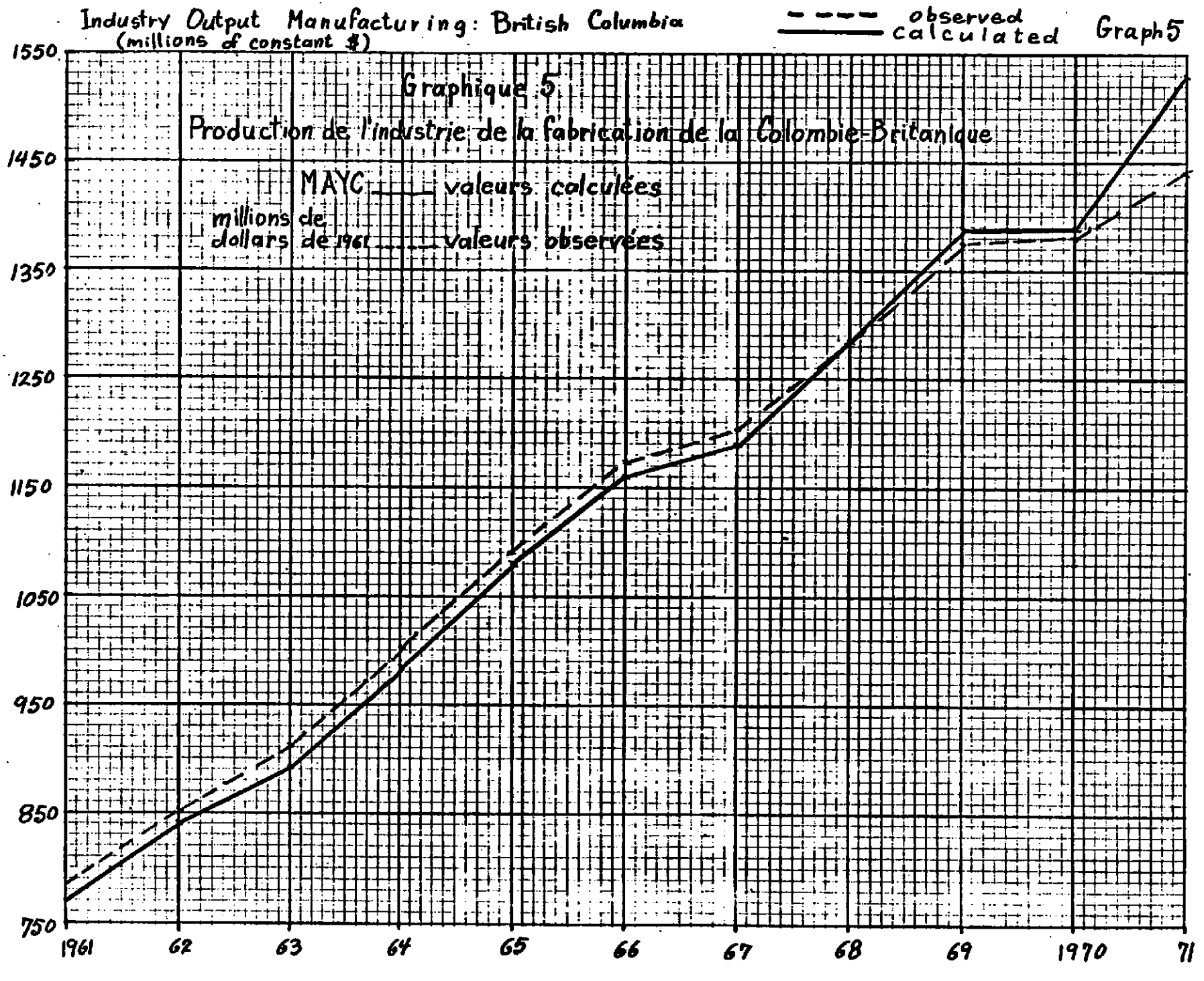
$\bar{R}^2$ =0.33
S.E.E. =0.0018
D.W. =1.44
(*GLS*,1961-1971)


Industry Output Manufacturing = Atlantic
(millions of constant $)
calculated
observed
Graph 1
Graphique 1
Production de l'industrie de la fabrication de l'Atlantique
MAYE
valeur observées
millions de dollars
de 1961
valeur calculées
670
620
570
520
470
420
370
320
1961
62
63
64
65
66
67
68
69
1970
71


Industry Output Manufacturing: Quebec
(Millions of constant $)
calculated
observed.
Graph 2
Graphique 2
Production de l'industrie de la fabrication du Québec
MAYQ _____ valeurs observées
millions de
dollars de 1961 _ _ _ _ valeurs calculées
4800
4500
4200
3900
3600
3300
3000
2700
1961
62
63
64
65
66
67
68
69
1970
71


Industry Output Manufacturing : Ontario
(Millions of constant $)
calculated
observed
Graph 3
Graphique 3
Production de l'industrie de la fabrication de l'Ontario
MAYO
millions de dollars de 1961
valeurs observées
valeurs calculées
8400
7900
7400
6900
6400
5900
5400
4900
4400
1961
62
63
64
65
66
67
68
69
1970
71


Industry Output Manufacturing :. Prairies
(millions of constant $)
calculated
observed
Graph 4
Graphique 4
Production de l'industrie de la fabrication des Prairies
MAYW
valeurs calculées
millions de dollars de 1961
valeurs observées
1200
1100
1000
900
800
700
600
1961
62
63
64
65
66
67
68
69
1970
71


Industry Output Manufacturing: British Columbia
(millions of constant $)
observed
calculated
Graph 5
Graphique 5
Production de l'industrie de la fabrication de la Colombie-Britanique
MAYC
millions de dollars de 1961
valeurs calculées
valeurs observées
1550
1450
1350
1250
1150
1050
950
850
750
1961
62
63
64
65
66
67
68
69
1970
71

4.0 Employment

In order that our treatment of industry output be more than just a peripheral regionalization exercise, it was necessary to consider employment as an essential element in the regionalization of industry output.

Thus, in order to realize this objective, relating employment to production, employment has been completely regionalized. In this manner the feedback in CANDIDE-R from regional to national, and national to regional levels has been guaranteed. The model uses the summation of employment over all regions, as the national employment variable.

4.1 The Basic Assumptions

The importance of the assumption of fixed coefficients of production, at the centre of the national model, and the intellectual exercises necessary to justify the use of a double production function in CANDIDE 1.1, have already been underlined. The following explanation of the regional production process has been adopted in order to obviate the methodological problems inherent in the use of a Cobb Douglas production function as the theoretical base of the employment-output relationship.

According to Edwin Kuh, a concensus has been established around the hypothesis that investment decisions are made "ex ante" according to neoclassical theory, based on the production function and capital theory. He states:

> Relative factor scarcity both actual and expected, will determine the optimal factor proportions for new investment goods according to a variable proportion production function. Once built, though, a machine is used with labour in fixed proportions, since most machine designs severely restrict possibilities for ex post variation of factor proportions.[8]

To summarize, there is some agreement that "putty-clay" models are considered the most realistic models.

On acceptance of this set of assumptions, the determination of employment can be related directly to the level of production. In this framework, fluctuations in production determine variations in employment, while respecting the capital-labour ratios required in the production process.

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8. Kuh, Edwin, "Unemployment Production Functions, and Effective Demand" Journal of Political Economy, June 1966, p.238.

An implicit relationship is established between the combination of employment and capital stock, due to the recursive nature of the employment functions and to the criteria used in the share distribution mechanisms for industry output. Employment is, in effect, a function of production. Production, in turn, depends on the utilization of capacity in place. The simultaneous presence of employment functions and regional production share distribution equations, by not violating the assumption of fixed production coefficients, keeps the assumptions at the base of CANDIDE intact. Moreover, the aggregation of regional employment is an important feedback mechanism from the regional to national level.

4.2 Labour Demand

This set of assumptions leads to the formulation of a regional demand for labour by industry which rests essentially on the technical relationship between employment and production. The following situation is hypothesized:

$$E_{ijt} = \alpha_{ijt} \cdot (X_{ijt}) \qquad (6)$$

where:

E_{ijt} = employment in industry i, region j, time t

X_{ijt} = production of industry i, region j, time t

Since it is impossible to observe annual changes in the technical coefficients, demand for labour must be left as a random process in order to better follow the conversion of final demand at the regional level. Equation (6), thus becomes:

$$E_{ijt} = \alpha_{ijt} \cdot (X_{ijt}) + \mu_{ijt} \qquad (6')$$

where: μ_{ijt} = error term

In doubling the adjustment mechanisms as they appear in equation(2) as functions of regional employment, maintaining the fixed technical coefficient assumption, the regionalization procedure is made more realistic. It is no longer an essentially peripheral exercise.

Returning to equation (6'), there is evidence that production will not satisfactorily explain either short term fluctuations or long term trends in employment in each regional industry. Although the share distribution mechanisms take account of the relative advantages related to technically more productive investment, they do not succeed in transmitting to employment, through output, the long term influences of technological developments. These developments could temporarily improve the relative capacity of certain regions. However, it is not possible to prevent the medium term diffusion of these technical improvements or the accumulation of technical knowledge, acquired through time. These developments exert an influence over the long term on employment and may lead to the loss of region's relative advantage in that area.

Production alone will not adequately take account of the reluctance of employers to hire or fire workers following a short run change in economic conditions.

In order to capture these two phenomena it was assumed that the coefficient α is the result of the combined effect of certain variables, one responsible for capturing the stability of the production trend, and the other to evaluate the importance of fluctuations in production.

$$\alpha_{ijt} = \beta \left(E_{ijt-1} / X_{ijt-1}\right) + \gamma \Delta X_{ijt} + e_{ijt} \quad (7)^{9}$$

where:

E_{ijt} / X_{ijt} = inverse of productivity

ΔX_{ijt} = rate of change of production in industry i, region j, time t, defined as = $(X_{ijt} - X_{ijt-1}) / X_{ijt-1}$

e_{ijt} = error term

and where β and γ are expected to have positive and negative signs, respectively.

Combining equations (6') and (7):

$$E_{ijt} = \left[\beta \left(E_{ijt-1} / X_{ijt-1}\right) + \gamma \Delta X_{ijt} + e_{ijt}\right] X_{ijt} + \mu_{ijt} \quad (8)$$

---

9. We are obliged to M. Roger Corbeil, of DREE, for his useful comments on the specification and estimation of X_{ijt}.

4.3 The Data and Estimation Techniques

The problems of estimating equation (8) are reduced, by dividing both sides of the equation by production, i.e.

$$E_{ijt}/X_{ijt} = \beta\,[E_{ijt-1}/X_{ijt-1}] + \gamma \Delta X_{ijt} + \mu_{ijt}/X_{ijt} + e_{ijt} \qquad (8')^{10}$$

In its transformed state, the employment equation becomes an equation of the inverse of productivity, where the error term is subjected to an autoregressive scheme due to the presence of X_{ijt}.

Equation (8') has therefore been estimated for the industries specified, using the Zellner Generalized Least Squares approach and treating the equations for autocorrection.

The data used for the estimation was obtained from the Labour Force Survey of Statistics Canada.

The absence of a constant term in this specification is noted. This situation results from the definition of α_{ijt}. A constant term could easily be introduced in the functional relationship defining α_{ijt}. However, due to the estimation results no constant term was included.

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10. This structure of the error term does not pose any particular problems to the extent that the assumption of independence is retained.

The poor quality of certain time series for employment resulted in the respecification of the influence of production on employment, according to three possible relationships.

$$E_{ijt}/X_{ijt} = \beta \left[E_{ijt-1}/X_{ijt-1}\right] + \mu_{ijt}/X_{ijt} + e_{ijt} \qquad (9)$$

$$E_{ijt}/X_{ijt} = \beta \left[E_{ijt-1}/X_{ijt-1}\right] + \gamma \left[(\Delta X_{ijt})\ (E_{ijt-1}/X_{ijt-1})\right] + \mu_{ijt}/X_{ijt} + e_{ijt} \qquad (9')$$

$$E_{ijt}/X_{ijt} = \beta \left[E_{ijt-1}/X_{ijt-1}\right] + \gamma \left[(D(\Delta X_{ijt}))(E_{ijt-1}/X_{ijt-1})\right] + \mu_{ijt}/X_{ijt} + e_{ijt} \qquad (9'')$$

The introduction of these modifications to the analytical framework developed above poses no technical difficulties, as it simply implies redefining α_{ijt} as, for example:

$$\alpha_{ijt} = \beta \left[E_{ijt-1}/X_{ijt-1}\right] + \gamma \left[(\Delta X_{ijt})(E_{ijt-1}/X_{ijt-1})\right] + e_{ijt}$$

for equation (9'). In principle, this should cause problems in simulation. The first term in α_{ijt} attempts to relate employment to production by avoiding a linear format, in order to better capture long term trends. The coefficient of this variable should be close to unity. If the estimated coefficient for the rate of change of production is very strong there is a risk of creating instability in the estimation of employment, from cyclical variations or from shocks to production. By multiplying (ΔX_{ijt}) by (E_{ijt-1}/X_{ijt-1}) the impact of short term fluctuations is graduated. This assures us of a type of variable which is consistent with the non-linear characteristic of the relationship.

4.4 Empirical Results

The empirical results for employment by industry and region are presented below. In order to give a better idea of these results, graphs follow for manufacturing employment. These graphs are in level form.

Agriculture

Employment Agriculture Atlantic

$$(12.1)\quad AGETE = AGYE * [0.9028\ (AGETE/AGYE)_{-1} \quad [29.00]$$

$$+ \beta\ (P(AGYE) * (AGETE/AGYE)_{-1})]$$

$\bar{R}^2 = 0.77$ $\rho = -0.206$
S.E.E. = 0.0582 P = Percentage change
D.W. = 1.87 $\beta = -0.004$ (predetermined)
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Agriculture Québec

$$(12.13)\quad AGETQ = AGYQ * [0.9666\ (AGETQ/AGYQ)_{-1} \quad [73.16]$$

$$+ \beta\ (P(AGYQ) * (AGETQ/AGYQ)_{-1})]$$

$\bar{R}^2 = 0.95$ $\rho = -0.416$
S.E.E. = 0.0286 P = Percentage change
D.W. = 2.09 $\beta = -0.006$ (predetermined)
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Agriculture Ontario

$$(12.25)\quad AGETØ = AGYØ * [0.9794\ (AGETØ/AGYØ)_{-1} \quad [45.72]$$

$$+ \beta\ (P(AGYØ) * (AGETØ/AGYØ)_{-1})]$$

$\bar{R}^2 = 0.80$ $\rho = -0.107$
S.E.E. = 0.0217 P = Percentage change
D.W. = 1.99 $\beta = -0.006$ (predetermined)
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Agriculture Prairies

$$(12.37)\quad AGETW = AGYW * [0.9973\ (AGETW/AGYW)_{-1} \quad [41.34]$$

$$- 0.0061\ (P(AGYW) * (AGETW/AGYW)_{-1}) \quad [-8.88]$$

$$+ 0.0081\ (D69(-2) - D66)] \quad [0.49]$$

$\bar{R}^2 = 0.77$ $\rho = -0.549$

$S.E.E. = 0.0245$ P = Percentage change

$D.W. = 2.22$

(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Agriculture British Columbia

$$(12.49)\quad AGETC = AGYC * [0.9489\ (AGETC/AGYC)_{-1}] \quad [32.86]$$

$\bar{R}^2 = 0.63$ $\rho = -0.641$

$S.E.E. = 0.0309$

$D.W. = 1.88$

(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Forestry Atlantic

$$(12.2)\quad FOETE = FOYE * [0.9431\ (FOETE/FOYE)_{-1} \quad [31.84]$$

$$- 0.00066\ (P(FOYE) * (FOETE/FOYE)_{-1})] \quad [-0.41]$$

$\bar{R}^2 = 0.86$ $\rho = 0.357$

$S.E.E. = 0.0166$ P = Percentage change

$D.W. = 1.51$

(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Forestry Québec

$$(12.14)\quad FOETQ = FOYQ * [0.9227\ (FOETQ/FOYQ)_{-1} \quad [53.33]$$

$$- 0.0068\ (D(P(FOYQ)) * (FOETQ/FOYQ)_{-1})] \quad [-2.08]$$

$\bar{R}^2$ = 0.96 ρ = -0.9
S.E.E. = 0.0194 P = Percentage change
D.W. = 1.15 D = First difference
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Forestry Ontario

$$(12.26)\quad FOETO = FOYO * [1.0208\ (FOETO/FOYO)_{-1} \quad [34.80]$$

$$+ \beta\ (D(P(FOY\emptyset)) * (FOETO/FOYO)_{-1})]$$

ρ = -0.680
$\bar{R}^2$ = 0.81 P = Percentage change
S.E.E. = 0.0113 D = First difference
D.W. = 2.04 β = -0.006 (predetermined)
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Forestry Prairies

$$(12.38)\quad FOETW = FOETW$$

Employment Forestry British Columbia

$$(12.50)\quad FOETC = FOYC * [1.0146\ (FOETC/FOYC)_{-1} \quad [21.49]$$

$$- 0.0063\ (P(FOYC) * (FOETC/FOYC)_{-1})] \quad [-1.15]$$

$\bar{R}^2$ = -0.13 ρ = -0.153
S.E.E. = 0.0125 P = Percentage change
D.W. = 1.98
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Fishing Atlantic

(12.3) FSETE = FSYE * [0.9607 (FSETE/FSYE)$_{-1}$]
[40.27]

$\bar{R}^2$ = 0.88 ρ = -0.683
S.E.E. = 0.0434
D.W. = 1.30
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Fishing Québec

(12.15) FSETQ = XFSETQ

Employment Fishing Ontario

(12.27) FSETO = XFSETO

Employment Fishing Prairies

(12.39) FSETW = XFSETW

Employment Fishing British Columbia

(12.51) FSETC = FSYC * [1.0911 (FSETC/FSYC)$_{-1}$]
[14.12]

$\bar{R}^2$ = 0.27 ρ = -0.086
S.E.E. = 0.0304
D.W. = 1.94
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Mines Atlantic

$$(12.4)\quad MIETE = MIYE * [0.9548\ (MIETE/MIYE)_{-1} \quad [18.16]$$

$$+ \beta\ (P(MIYE) * (MIETE/MIYE)_{-1})]$$

$\bar{R}^2 = 0.39$ $\rho = -0.132$
S.E.E. = 0.0126 P = Percentage change
D.W. = 1.78 $\beta = -0.006$ (predetermined)
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Mines Québec

$$(12.16)\quad MIETQ = MIYQ * [0.9557\ (MIETQ/MIYQ)_{-1} \quad [17.27]$$

$$- 0.0062\ (D(P(MIYQ)) * (MIETQ/MIYQ)_{-1})] \quad [-0.73]$$

$\bar{R}^2 = 0.67$ D = First difference
S.E.E. = 0.0093 P = Percentage change
D.W. = 2.12
(*O.L.S.*, 1962-1971)

Employment Mines Ontario

$$(12.28)\quad MIETO = MIYO * [1.0391\ (MIETO/MIYO)_{-1} \quad [48.82]$$

$$+ \beta\ (P(MIYO) * (MIETO/MIYO)_{-1})]$$

$\bar{R}^2 = 0.90$ $\rho = -0.532$
S.E.E. = 0.0067 P = Percentage change
D.W. = 1.96 $\beta = -0.006$ (predetermined)
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Mines Prairies

$$(12.40)\quad MIETW = MIYW * [0.9804\ (MIETW/MIYW)_{-1} \quad [36.97]$$

$$+ \beta\ (D(P(MIYW)) * (MIETW/MIYW)_{-1})]$$

$\rho = -0.130$
$\bar{R}^2 = -0.43$ — D = First difference
S.E.E. = 0.0029 — P = Percentage change
D.W. = 1.72 — $\beta = -0.004$ (predetermined)
(O.L.S., 1962-1971) Hildreth-Lu

Employment Mines British Columbia

$$(12.52)\quad MIETC = MIYC * [0.9750\ (MIETC/MIYC)_{-1}] \quad [21.64]$$

$\bar{R}^2 = 0.53$ — $\rho = -0.510$
S.E.E. = 0.0103
D.W. = 2.04
(O.L.S., 1962-1971) Hildreth-Lu

Employment Manufacturing Atlantic

$$(12.5)\quad MAETE = MAYE * [0.9816\ (MAETE/MAYE)_{-1} \quad [91.44]$$

$$+ \beta\ (D(P(MAYE)) * (MAETE/MAYE)_{-1})]$$

$\rho = -0.711$
$\bar{R}^2 = 0.97$ — P = Percentage change
S.E.E. = 0.0098 — D = First difference
D.W. = 2.36 — $\beta = -0.003$ (predetermined)
(O.L.S., 1962-1971) Hildreth-Lu

Employment Manufacturing Québec

(12.17) $MAETQ = MAYQ * [0.9858 \underset{[223.61]}{} (MAETQ/MAYQ)_{-1} + \beta (P(MAYE) * (MAETQ/MAYQ)_{-1})]$

$\bar{R}^2 = 0.996$ $\rho = -0.819$
S.E.E. = 0.0037 P = Percentage change
D.W. = 2.03 $\beta = -0.004$ (predetermined)
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Manufacturing Ontario

(12.29) $MAETO = MAYO * [0.9595 \underset{[275.22]}{} (MAETO/MAYO)_{-1} - 0.0036 \underset{[-3.20]}{} (D(P(MAYO)) * (MAETO/MAYO)_{-1})]$

$\bar{R}^2 = 0.99$ $\rho = -0.259$
S.E.E. = 0.0017 P = Percentage change
D.W. = 2.08 D = First difference
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Manufacturing Prairies

(12.41) $MAETW = MAYW * [0.9594 \underset{[279.24]}{} (MAETW/MAYW)_{-1}]$

$\bar{R}^2 = 0.998$ $\rho = -0.9$
S.E.E. = 0.0029
D.W. = 1.63
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Manufacturing British Columbia

$$(12.53)\quad MAETC = MAYC * [0.9693\ (MAETC/MAYC)_{-1} \quad [122.98]$$

$$+ \beta\ (D(P(MAYC)) * (MAETC/MAYC)_{-1})]$$

$\rho = -0.540$
$\bar{R}^2 = 0.97$ — D = First difference
S.E.E. = 0.0044 — P = Percentage change
D.W. = 2.28 — $\beta = -0.0036344$ (predetermined)
(O.L.S., 1962-1971) Hildreth-Lu

Employment Construction Atlantic

$$(12.6)\quad COETE = COYE * [0.9677\ (COETE/COYE)_{-1} \quad [68.99]$$

$$- 0.00059\ (P(COYE) * (COETE/COYE)_{-1})] \quad [-0.39]$$

$\bar{R}^2 = 0.98$ — $\rho = -0.787$
S.E.E. = 0.0126 — P = Percentage change
D.W. = 1.61
(O.L.S., 1962-1971) Hildreth-Lu

Employment Construction Québec

$$(12.18)\quad COETQ = COYQ * [0.9987\ (COETQ/COYQ)_{-1} \quad [52.81]$$

$$- 0.0038\ (D(P(COYQ)) * (COETQ/COYQ)_{-1})] \quad [-1.47]$$

$\bar{R}^2 = -0.36$ — $\rho = -0.113$
S.E.E. = 0.0115 — P = Percentage change
D.W. = 2.05 — D = First difference
(O.L.S., 1962-1971) Hildreth-Lu

Employment Construction Ontario

$$(12.30)\quad COETØ = COYO * [0.9758\ (COETO/COYO)_{-1} \quad [175.30]$$

$$- 0.0034\ (D(P(COYO)) * (COETO/COYO)_{-1})] \quad [-2.27]$$

$\bar{R}^2 = 0.98$ $\quad \rho = -0.465$
$S.E.E. = 0.0037$ $\quad P$ = Percentage change
$D.W. = 2.33$ $\quad D$ = First difference
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Construction Prairies

$$(12.42)\quad COETW = COYW * [0.9941\ (COETW/COYW)_{-1} \quad [92.45]$$

$$+ \beta\ (P(COYW) * (COETW/COYW)_{-1})]$$

$\bar{R}^2 = 0.92$ $\quad \rho = -0.099$
$S.E.E. = 0.0061$ $\quad P$ = Percentage change
$D.W. = 1.97$ $\quad \beta = -0.0035$ (predetermined)
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Construction British Columbia

$$(12.54)\quad COETC = COYC * [1.0023\ (COETC/COYC)_{-1} \quad [88.30]$$

$$- 0.0027\ (P(COYC) * (COETC/COYC)_{-1})] \quad [-2.86]$$

$\bar{R}^2 = 0.97$ $\quad \rho = -0.610$
$S.E.E. = 0.0057$
$D.W. = 1.92$
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Transports Atlantic

$$(12.07)\quad TSETE = TSYE * [0.9747\ (TSETE/TSYE)_{-1} \quad [78.13]$$

$$+ \beta\ (P(TSYE) * (TSETE/TSYE)_{-1})]$$

$\overline{R}^2$ = 0.95 ρ = -0.551
S.E.E. = 0.0083 P = Percentage change
D.W. = 0.66 β = -0.003 (predetermined)
(O.L.S., 1962-1971) Hildreth-Lu

Employment Transports Québec

$$(12.19)\quad TSETQ = TSYQ * [0.9604\ (TSETQ/TSYQ)_{-1} \quad [148.44]$$

$$+ \beta\ (D(P(TSYQ)) * (TSETQ/TSYQ)_{-1})]$$

$\overline{R}^2$ = 0.98 ρ = -0.590
S.E.E. = 0.0034 P = Percentage change
D.W. = 2.35 D = First difference
(O.L.S., 1962-1971) β = -0.004 (predetermined)
Hildreth-Lu

Employment Transports Ontario

$$(12.31)\quad TSETO = TSYO * [0.9546\ (TSETO/TSYO)_{-1} \quad [113.16]$$

$$- 0.0037\ (D(P(TSYO)) * (TSETO/TSYO)_{-1})] \quad [-2.65]$$

$\overline{R}^2$ = 0.99 ρ = 0.409
S.E.E. = 0.0018 P = Percentage change
D.W. = 1.49 D = First difference
(O.L.S., 1962-1971) Hildreth-Lu

Employment Transports Prairies

$$(12.43)\quad TSETW = TSYW * [0.9901\ (TSETW/TSYW)_{-1} \quad [96.65]$$

$$+ \beta\ (P(TSYW) * (TSETW/TSYW)_{-1})]$$

$\bar{R}^2$ = 0.95
S.E.E. = 0.0048
D.W. = 2.34
(*O.L.S.*, 1962-1971) Hildreth-Lu

ρ = -0.497
P = Percentage change
β = -0.004 (predetermined)

Employment Transports British Columbia

$$(12.55)\quad TSETC = TSYC * [0.9658\ (TSETC/TSYC)_{-1} \quad [78.11]$$

$$+ \beta\ (D(P(TSYC)) * (TSETC/TSYC)_{-1})]$$

$\bar{R}^2$ = 0.89
S.E.E. = 0.0051
D.W. = 1.65
(*O.L.S.*, 1962-1971) Hildreth-Lu

ρ = -0.427
P = Percentage change
D = First difference
β = -0.004 (predetermined)

Employment Trade Atlantic

$$(12.8)\quad TRETE = TRYE * [0.9929\ (TRETE/TRYE)_{-1} \quad [68.06]$$

$$+ \beta\ (P(TRYE) * (TRETE/TRYE)_{-1})]$$

$\overline{R}^2$ = 0.85
S.E.E. = 0.0124
D.W. = 1.84
(*O.L.S.*, 1962-1971)

P = Percentage change
B = -0.004 (predetermined)

Employment Trade Québec

$$(12.20)\quad TRETQ = TRYQ * [0.9670\ (TRETQ/TRYQ)_{-1} \quad [94.59]$$

$$+ \beta\ (D(P(TRYQ)) * (TRETQ/TRYQ)_{-1})]$$

$\overline{R}^2$ = 0.91
S.E.E. = 0.0055
D.W. = 1.57
(*O.L.S.*, 1962-1971)

P = Percentage change
D = First difference
β = -0.0035 (predetermined)

Employment Trade Ontario

$$(12.32)\quad TRETO = TRYO * [0.9707\ (TRETO/TRYO)_{-1} \quad [148.00]$$

$$+ \beta\ (D(P(TRYO)) * (TRETO/TRYO)_{-1})]$$

$\overline{R}^2$ = 0.95
S.E.E. = 0.0037
D.W. = 1.82
(*O.L.S.*, 1962-1971)

P = Percentage change
D = First difference
β = -0.0035 (predetermined)

Employment Trade Prairies

$$(12.44)\quad TRETW = TRYW * [0.9794\ (TRETW/TRYW)_{-1} \quad [141.73]$$

$$- 0.0033\ (D(P(TRYW)) * (TRETW/TRYW)_{-1})] \quad [-1.41]$$

$\bar{R}^2$ = 0.84
S.E.E. = 0.0049
D.W. = 1.80
(*O.L.S.*, 1962-1971)

P = Percentage change
D = First difference

Employment Trade British Columbia

$$(12.56)\quad TRETC = TRYC * [0.9894\ (TRETC/TRYC)_{-1} \quad [133.65]$$

$$+ \beta\ (D(P(TRYC)) * (TRETC/TRYC)_{-1})]$$

$\bar{R}^2$ = 0.76
S.E.E. = 0.0052
D.W. = 2.08
(*O.L.S.*, 1962-1971)

P = Percentage change
D = First difference
β = -0.0035 (predetermined)

Employment Finance Atlantic

$$(12.9)\quad FIETE = FIYE * [1.0113\ (FIETE/FIYE)_{-1}] \quad [84.11]$$

$\bar{R}^2$ = 0.69
S.E.E. = 0.0021
D.W. = 1.93
(*O.L.S.*, 1962-1971) Hildreth-Lu

ρ = -0.069

Employment Finance Québec

$$(12.21)\quad FIETQ = FIYQ * [1.0117\ (FIETQ/FIYQ)_{-1} \quad [225.49]$$

$$- 0.0010\ (D(P(FIYQ)) * (FIETQ/FIYQ)_{-1})] \quad [-0.24]$$

$\overline{R}^2$ = 0.997 ρ = -0.900
S.E.E. = 0.0017 D = First difference
D.W. = 1.12 P = Percentage change
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Finance Ontario

$$(12.33)\quad FIETO = FIYO * [1.0062\ (FIETO/FIYO)_{-1} \quad [100.01]$$

$$+ \beta\ (D(P(FIYO)) * (FIETO/FIYO)_{-1})]$$

$\overline{R}^2$ = 0.37 ρ = 0.016
S.E.E. = 0.0018 D = First difference
D.W. = 1.97 P = Percentage change
(*O.L.S.*, 1962-1971) Hildreth-Lu β = -0.004 (predetermined)

Employment Finance Prairies

$$(12.45)\quad FIETW = FIYW * [1.0329\ (FIETW/FIYW)_{-1} \quad [81.17]$$

$$+ \beta\ (P(FIYW) * (FIETW/FIYW)_{-1})]$$

$\overline{R}^2$ = 0.96 ρ = -0.658
S.E.E. = 0.0030 P = Percentage change
D.W. = 1.39 β = -0.004 (predetermined)
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Finance British Columbia

$$(12.57)\quad FIETC = FIYC * [1.0302\ (FIETC/FIYC)_{-1} \quad [16.96]$$

$$- 0.0044\ (P(FIYC) * (FIETC/FIYC)_{-1})] \quad [-0.43]$$

$\overline{R}^2 = 0.80$ $\quad\quad$ $\rho = -0.497$
$S.E.E. = 0.0053$ $\quad\quad$ P = Percentage change
$D.W. = 2.44$
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Public Administration Atlantic

$$(12.11)\quad ADETE = ADYE * [1.0163\ (ADETE/ADYE)_{-1} \quad [65.06]$$

$$+ \beta\ (P(ADYE) * (ADETE/ADYE)_{-1})]$$

$\overline{R}^2 = 0.58$ $\quad\quad$ $\rho = -0.015$
$S.E.E. = 0.0056$ $\quad\quad$ P = Percentage change
$D.W. = 1.74$ $\quad\quad$ $\beta = -0.003$ (predetermined)
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Public Administration Québec

$$(12.23)\quad ADETQ = ADYQ * [1.0102\ (ADETQ/ADYQ)_{-1} \quad [96.32]$$

$$+ \beta\ (D(P(ADYQ)) * (ADETQ/ADYQ)_{-1})]$$

$\rho = 0.062$
$\overline{R}^2 = 0.27$ $\quad\quad$ P = Percentage change
$S.E.E. = 0.0060$ $\quad\quad$ D = First difference
$D.W. = 1.78$ $\quad\quad$ $\beta = -0.003$ (predetermined)
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Public Administration Ontario

$$(12.35)\quad ADETO = ADYO * [0.9977\ (ADETO/ADYO)_{-1} \quad [114.62]$$

$$+ \beta\ (D(P(ADYO)) * (ADETO/ADYO)_{-1})]$$

$\rho = -0.295$
$\bar{R}^2 = 0.87$ — P = Percentage change
S.E.E. = 0.0051 — D = First difference
D.W. = 1.83 — $\beta = -0.003$ (predetermined)
(O.L.S., 1962-1971) Hildreth-Lu

Employment Public Administration Prairies

$$(12.47)\quad ADETW = ADYW * [1.0169\ (ADETW/ADYW)_{-1} \quad [77.65]$$

$$- 0.0036\ (D(P(ADYW)) * (ADETW/ADYW)_{-1})] \quad [-1.05]$$

$\rho = 0.028$
$\bar{R}^2 = 0.72$ — P = Percentage change
S.E.E. = 0.0061 — D = First difference
D.W. = 1.82
(O.L.S., 1962-1971) Hildreth-Lu

Employment Public Administration British Columbia

$$(12.59)\quad ADETC = ADYC * [0.9970\ (ADETC/ADYC)_{-1} \quad [80.76]$$

$$+ \beta\ (D(P(ADYC)) * (ADETC/ADYC)_{-1})]$$

$\rho = -0.594$
$\bar{R}^2 = 0.94$ — P = Percentage change
S.E.E. = 0.0085 — D = First difference
D.W. = 1.71 — $\beta = -0.003$ (predetermined)
(O.L.S., 1962-1971) Hildreth-Lu

Employment Services Atlantic

$$(12.10)\quad CSETE = CSYE * [0.9804\ (CSETE/CSYE)_{-1} \quad [75.52]$$

$$- 0.0017\ (D(P(CSYE)) * (CSETE/CSYE)_{-1})] \quad [-0.33]$$

$\bar{R}^2$ = 0.56 $\quad\quad$ ρ = -0.050
S.E.E. = 0.0123 $\quad\quad$ P = Percentage change
D.W. = 2.01 $\quad\quad$ D = First difference
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Services Québec

$$(12.22)\quad CSETQ = CSYQ * [1.0366\ (CSETQ/CSYQ)_{-1} \quad [72.46]$$

$$- 0.0047\ (P(CSYQ) * (CSETQ/CSYQ)_{-1})] \quad [-2.24]$$

$\bar{R}^2$ = 0.98 $\quad\quad$ ρ = -0.464
S.E.E. = 0.0071 $\quad\quad$ P = Percentage change
D.W. = 2.40
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Services Ontario

$$(12.34)\quad CSETO = CSYO * [1.0180\ (CSETO/CSYO)_{-1} \quad [287.98]$$

$$+ \beta\ (P(CSYO) * (CSETO/CSYO)_{-1})]$$

$\bar{R}^2$ = 0.97 $\quad\quad$ ρ = -0.231
S.E.E. = 0.0028 $\quad\quad$ P = Percentage change
D.W. = 1.86 $\quad\quad$ β = -0.004 (predetermined)
(*O.L.S.*, 1962-1971) Hildreth-Lu

Employment Services Prairies

$$(12.46)\quad CSETW = CSYW * [1.0033\ (CSETW/CSYW)_{-1} \quad [182.17]$$

$$- 0.0011\ (D(P(CSYW)) * (CSETW/CSYW)_{-1})] \quad [-0.37]$$

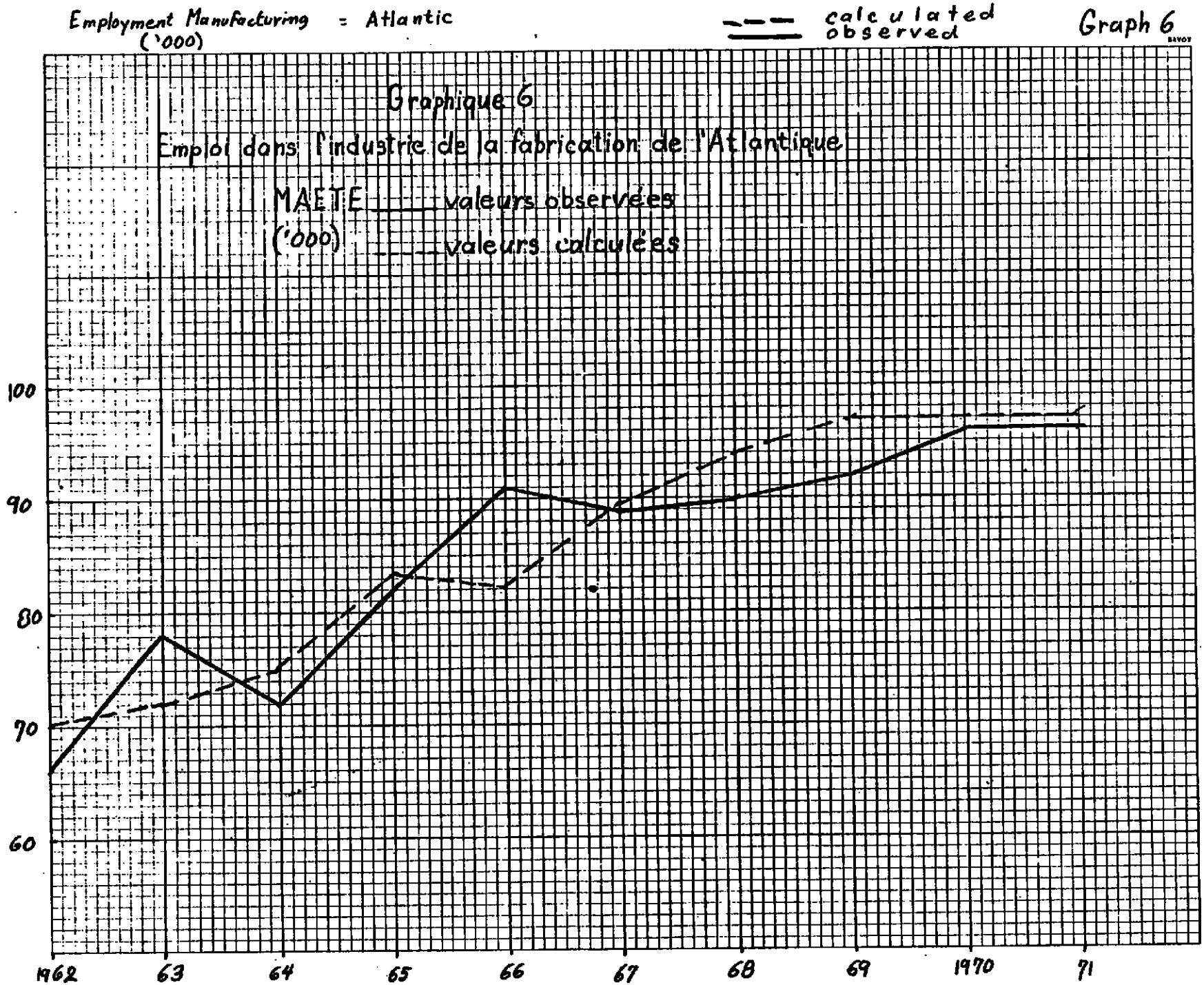
$\bar{R}^2$ = 0.99 ρ = -0.525
S.E.E. = 0.0059 P = Percentage change
D.W. = 1.74 D = First difference
(*O.L.S.*, 1962-1971) Hildreth-Lu

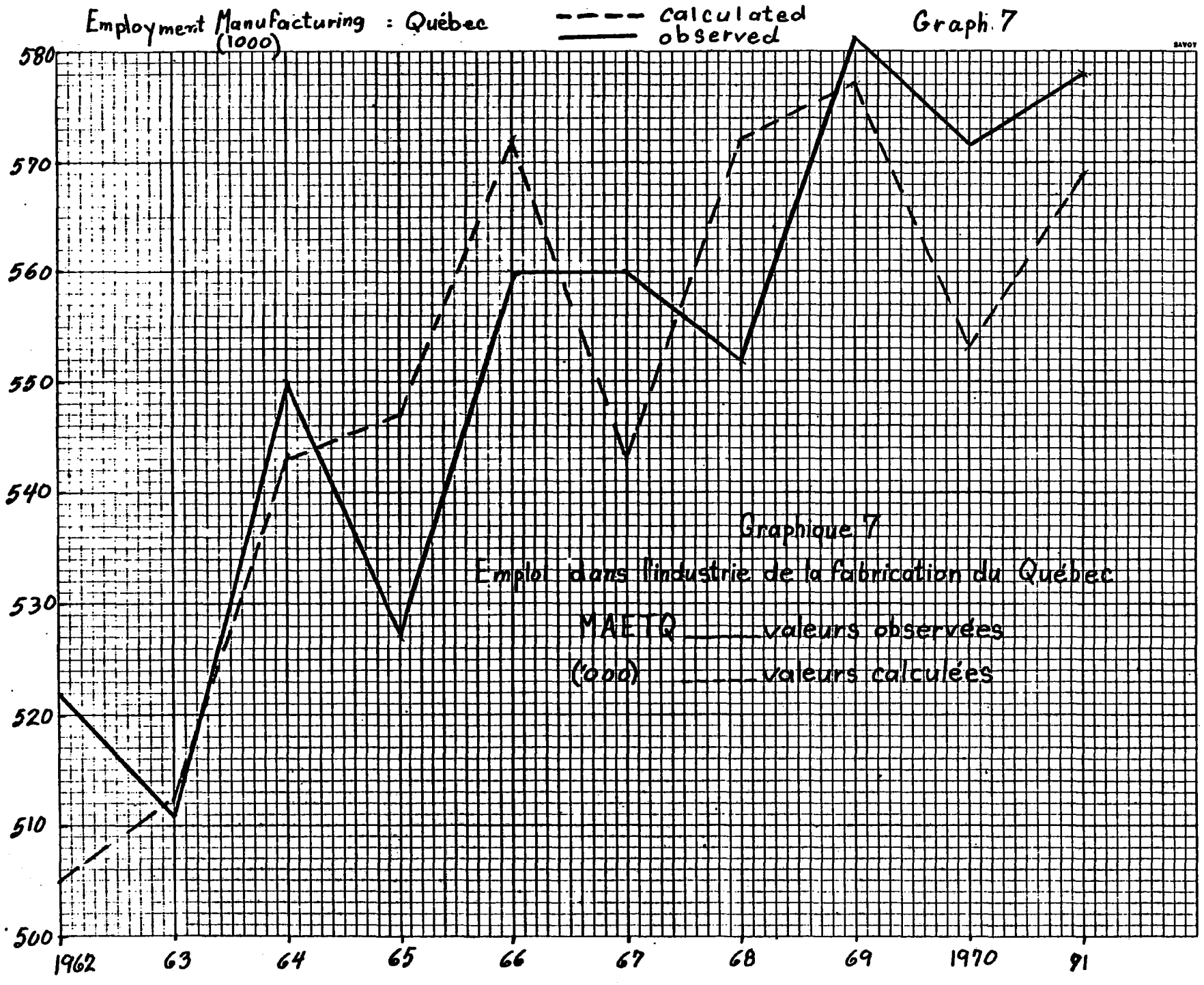
Employment Services British Columbia

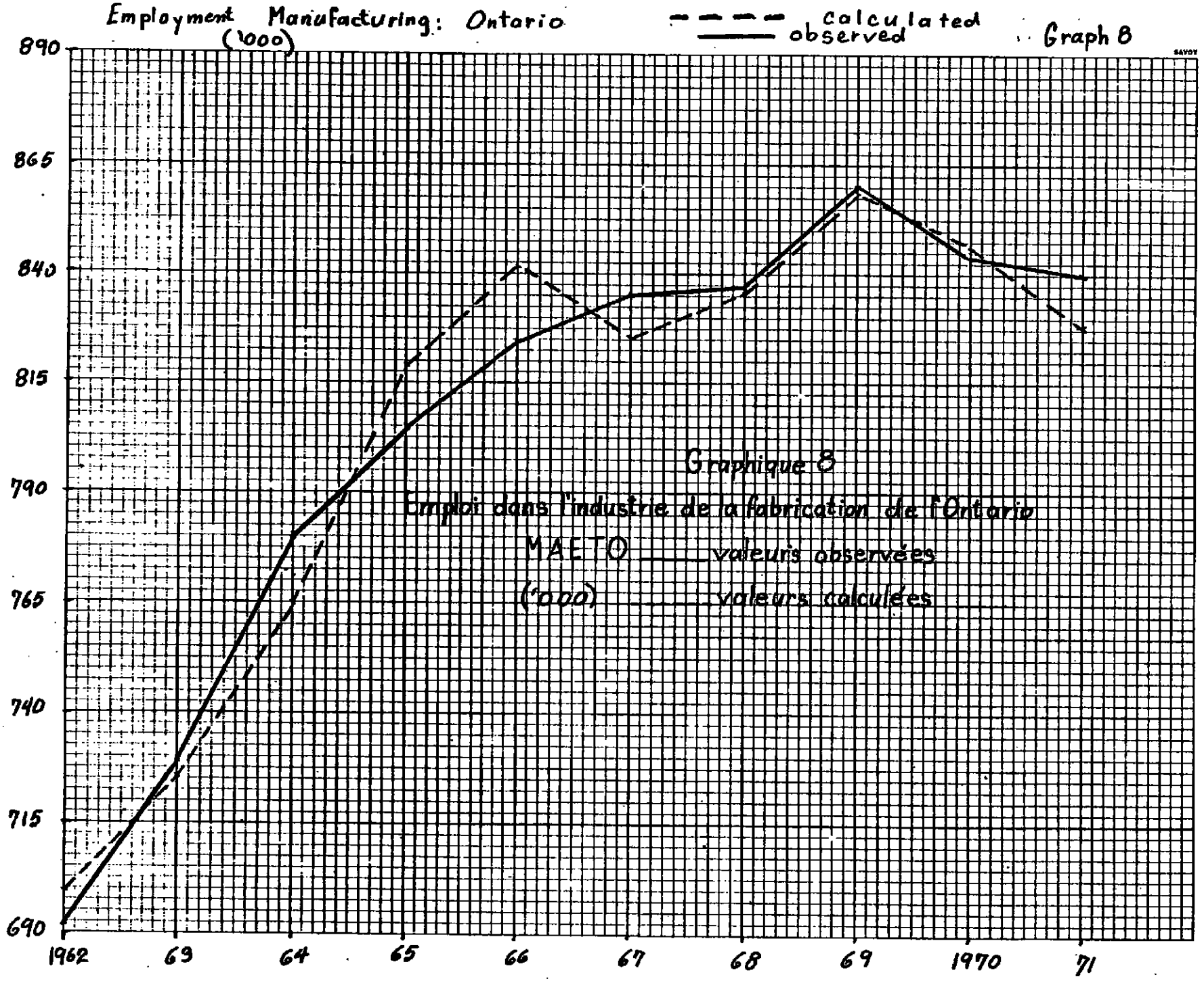
$$(12.58)\quad CSETC = CSYC * [1.0078\ (CSETC/CSYC)_{-1} \quad [96.76]$$

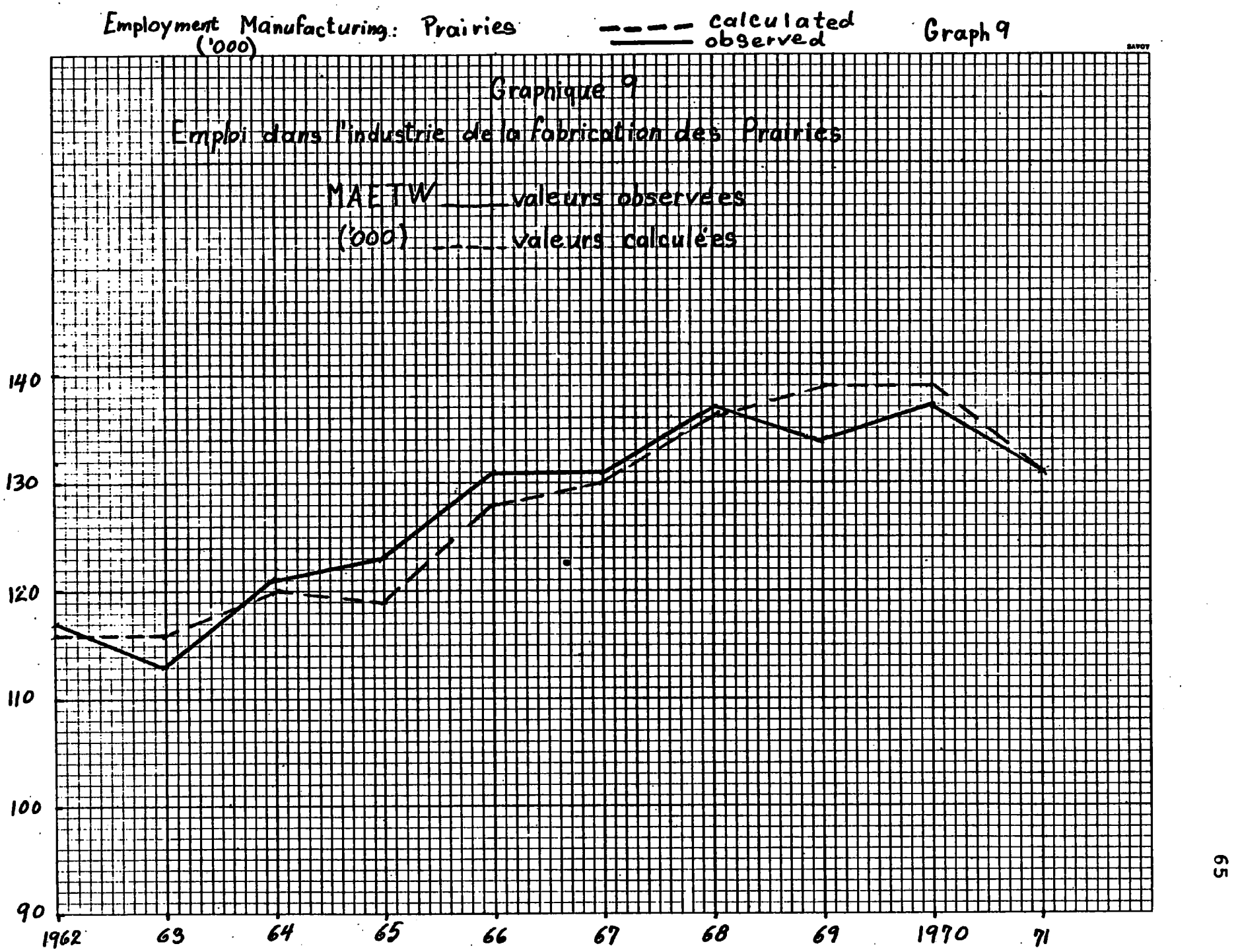
$$- 0.0032\ (D(P(CSYC)) * (CSETC/CSYC)_{-1})] \quad [-0.81]$$

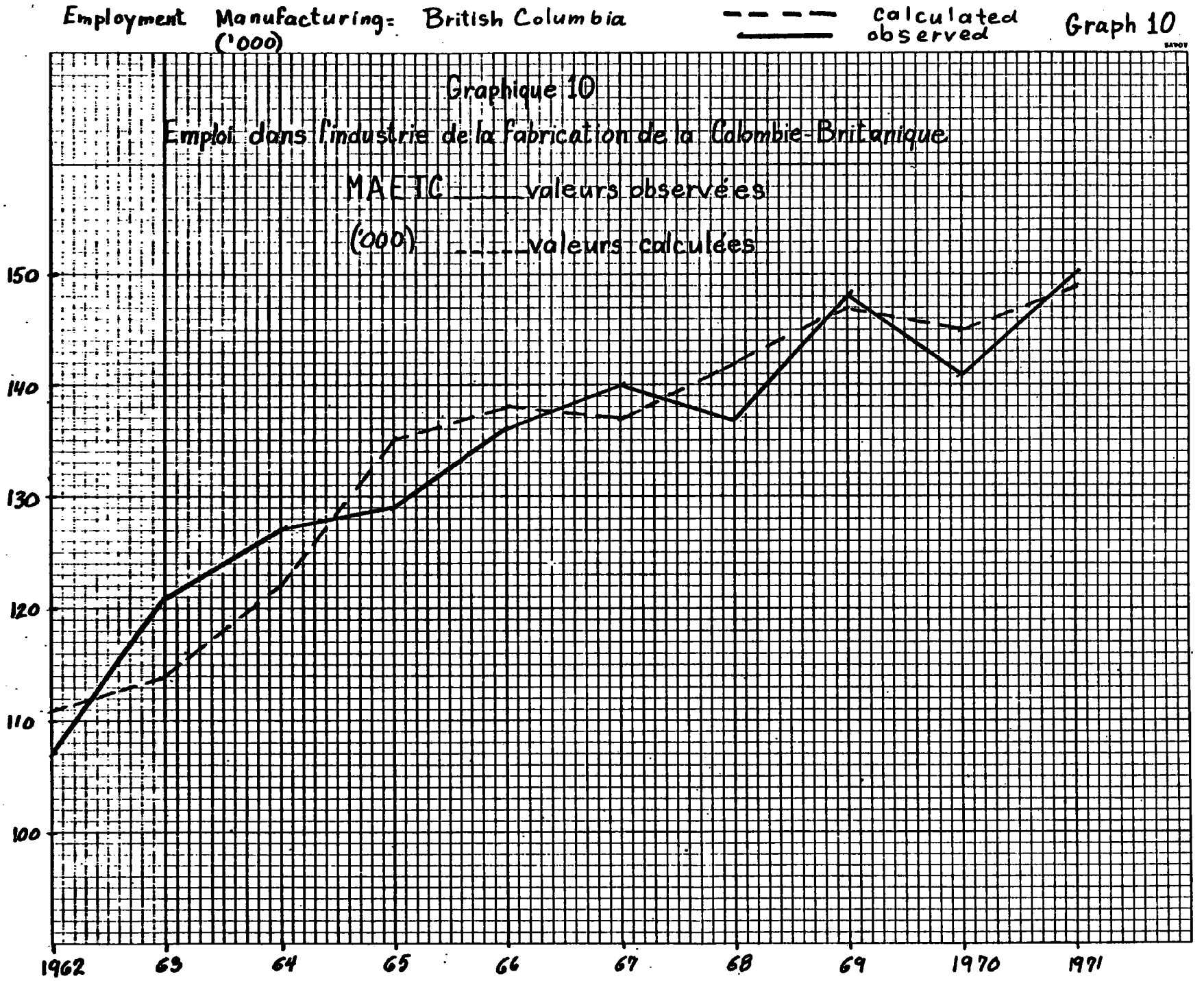
$\bar{R}^2$ = 0.94 ρ = -0.470
S.E.E. = 0.0099 P = Percentage change
D.W. = 1.64 D = First difference
(*O.L.S.*, 1962-1971) Hildreth-Lu


Employment Manufacturing = Atlantic
('000)
calculated
observed
Graph 6
Graphique 6
Emploi dans l'industrie de la fabrication de l'Atlantique
MAETE ——— valeurs observées
('000) - - - - valeurs calculées
100
90
80
70
60
1962
63
64
65
66
67
68
69
1970
71


Employment Manufacturing : Québec
(1000)
calculated
observed
Graph 7
580
570
560
550
540
530
520
510
500
1962
63
64
65
66
67
68
69
1970
91
Graphique 7
Emploi dans l'industrie de la fabrication du Québec
MAITQ _____ valeurs observées
(1000) _ _ _ _ valeurs calculées


Employment Manufacturing: Ontario
('000)
calculated
observed
Graph 8
890
865
840
815
790
765
740
715
690
1962
63
64
65
66
67
68
69
1970
71
Graphique 8
Emploi dans l'industrie de la fabrication de l'Ontario
MAETO
('000)
valeurs observées
valeurs calculées


Employment Manufacturing: Prairies
('000)
calculated
observed
Graph 9
Graphique 9
Emploi dans l'industrie de la fabrication des Prairies
MAETW
('000)
valeurs observées
valeurs calculées
140
130
120
110
100
90
1962
63
64
65
66
67
68
69
1970
71


Employment Manufacturing - British Columbia
('000)
calculated
observed
Graph 10
Graphique 10
Emploi dans l'industrie de la fabrication de la Colombie-Britanique
MAEIC _____ valeurs observées
('000) - - - - - valeurs calculées
150
140
130
120
110
100
1962
63
64
65
66
67
68
69
1970
1971

Appendix A Estimation of Capacity Utilization Rates

The rate of utilization of accumulated capacity is defined as the relationship between observed and potential production, i.e.

$$T_{ij} = X_{ij}/X^{\rho}_{ij} \qquad (1)$$

The first problem is in estimating X^{ρ}_{ij}

Production potential has been calculated using peaks in the production series, which were identified through annual rates of change of production, defined as follows:

$$r_t = \frac{X_t - X_{t-1}}{X_{t-1}} \qquad (2)$$

The set of criteria used to identify the peaks of production follow. The first peak is determined by comparison of each r_t with that of the following period (r_{t+1}). If $r_t > r_{t+1}$, the corresponding value X_t is retained as a first peak of production. Subsequent peaks should satisfy the following additional conditions:

i) if $r_t > r_{t+1}$, X_t is eligible as a production peak,

ii) if the sum of the rate under consideration, r_t, and preceding rates back to the last identified peak, is greater than the rate corresponding to this peak, X_t remains eligible,

iii) if $X_t > X_{t-i}$ where X_{t-i} is the last peak identified X_t becomes the new peak for production,

iv) the last value of the series must comply with conditions ii) and iii) to be retained as a peak.

After having identified all the peaks, the intermediate values are determined by interpolation between the peaks and the values obtained in this way constitute a measure of production potential.

This estimation technique has been applied to all sectors which require a measure of potential. Due to the irregularity of some series, in certain sectors constant production potentials were assumed. This was the case for forestry in the Atlantic region from 1964 on, and for fishing in the Atlantic from 1968 and in Ontario from 1966.

Finally, in order to facilitate simulation exercises outside of the sample period, production potentials for CANDIDE-R were projected along linear trends.

The estimation of T_{ij} raised another difficulty due to X_{ij} which is also an endogenous variable in equation (5). For equation (5) the T_{ij}'s are considered as predetermined variables. It is more difficult to solve these problems in a shock simulation or outside of the sample period. A value for T_{ij} is required to estimate X_{ij}, but X_{ij} is at the same time required to estimate T_{ij}. It is thus necessary to supply a value for T_{ij} for the first iteration. In certain sectors, the T_{ij}'s are treated as

exogenous variables. As well, when other assumptions are considered in simulation it is necessary to supply values for T_{ij}.

Appendix B Estimation of Accumulated Capacity

Accumulated capacity has been estimated by using a truncated sum of past realized investment. In principle, it should be possible, with the aid of the value of capital at some year in the past, to arrive at an estimate of the current value of capital by adding to this past value the sum of depreciated investments incurred since that date. Unfortunately, there is no regional data for capital investments. To get around this difficulty, it was assumed that the relative capacity of a region is more likely to be modified by the latest investments, than by investment already in place for some time. Often technological developments, by modifing physical production capacity, favour certain regions relative to others. The rapid diffusion of technological progress, however, will hinder the long term maintenance of such relative advantages. Since the latest investments are the most likely incorporate recent technological progress, it is assumed that a relatively short lag should take account of this phenomenon. The use of the capacity variable in equation (5), in ratio form, facilitates the acceptance of these rather simplistic assumptions. To the extent that the capacity variable is viewed as the determinant of the relative advantages of a region, a four year period (retained for reasons of data availability) seemed the most reasonable. If our analysis was not concerned with the relative positions, four years would appear to be too short a period for measuring capacity, since certain sectors do not modify their complicated equipment very often.

Investment

It should be noted that the regional investment data published by Statistics Canada does not offer a level of sectoral disaggregation comparable to the industry output, salaries and employment data. It was necessary to derive these series from source, and even then it was necessary to aggregate investment in agriculture and fisheries.

The regional investment equations have the following format:

$$I_{ij} = S_{ij} \cdot I_i \qquad (1)$$

where:

I_{ij} = Investment in industry i region j
I_i = Investment in national industry i
S_{ij} = Share of investment of regional industry i with respect to investment in the same national industry

For estimation of equation (5), the S_{ij} were considered as exogenous. These ratios can be projected or set arbitrarily for simulation purposes.

Since the variables in the investment equations were measured in current dollars, it was necessary to convert the I_i from constant into current dollars using the appropriate CANDIDE deflators.

Appendix C Mnemonic Tables

MNEMONIC LIST -- BLOCK 12 -- LISTE DES MNEMONIQUES

ADET	EI	12073	2	TOTAL EMPLOYMENT -PUBLIC ADMINISTRATION CANADA
ADETC	EH	12059	2	TOTAL EMPLOYMENT -PUBLIC ADMINISTRATION BRIT. COLUMBIA
ADETE	EH	12011	3	TOTAL EMPLOYMENT -PUBLIC ADMINISTRATION ATLANTIC
ADETH	EH	12086	1	TOTAL MANHOURS -PUBLIC ADMINISTRATION
ADETO	EH	12035	2	TOTAL EMPLOYMENT -PUBLIC ADMINISTRATION ONTARIO
ADETQ	EH	12023	3	TOTAL EMPLOYMENT -PUBLIC ADMINISTRATION QUEBEC
ADETW	EH	12047	3	TOTAL EMPLOYMENT -PUBLIC ADMINISTRATION PRAIRIES
ADY	EH	23012	3	PUBLIC ADMINISTRATION -REAL DOMESTIC PROD,$MILL-1961
ADYC	EH	50058	3	GROSS DOMESTIC PRODUCT $CTS PUBLIC ADMIN, BRIT. COLUMBIA
ADYE	EH	50010	3	GROSS DOMESTIC PRODUCT $CTS PUBLIC ADMIN, ATLANTIC
ADYO	EH	50034	3	GROSS DOMESTIC PRODUCT $CTS PUBLIC ADMIN, ONTARIO
ADYQ	EH	50022	3	GROSS DOMESTIC PRODUCT $CTS PUBLIC ADMIN, QUEBEC
ADYW	EH	50046	3	GROSS DOMESTIC PRODUCT $CTS PUBLIC ADMIN, PRAIRIES
AGET	EI	12061	3	TOTAL EMPLOYMENT -AGRICULTURE CANADA
AGETC	EH	12049	3	TOTAL EMPLOYMENT -AGRICULTURE BRIT. COLUMBIA
AGETE	EH	12001	3	TOTAL EMPLOYMENT -AGRICULTURE ATLANTIC
AGETH	EH	12075	1	TOTAL MANHOURS -AGRICULTURE
AGETO	EH	12025	3	TOTAL EMPLOYMENT -AGRICULTURE ONTARIO
AGETQ	EH	12013	3	TOTAL EMPLOYMENT -AGRICULTURE QUEBEC
AGETW	EH	12037	3	TOTAL EMPLOYMENT -AGRICULTURE PRAIRIES
AGYC	EH	50049	3	GROSS DOMESTIC PRODUCT $CTS AGRICULTURE BRIT. COLUMBIA
AGYE	EH	50001	3	GROSS DOMESTIC PRODUCT $CTS AGRICULTURE ATLANTIC
AGYO	EH	50025	3	GROSS DOMESTIC PRODUCT $CTS AGRICULTURE ONTARIO
AGYQ	EH	50013	3	GROSS DOMESTIC PRODUCT $CTS AGRICULTURE QUEBEC
AGYW	EH	50037	3	GROSS DOMESTIC PRODUCT $CTS AGRICULTURE PRAIRIES
CCCK	EI	4072	1	CONSTRUCTION -TOTAL REAL GROSS CAP,STOCK
CDET	EI	12006	3	TOTAL EMPLOYMENT -CONSTRUCTION CANADA
CDETC	EH	12054	3	TOTAL EMPLOYMENT -CONSTRUCTION BRIT. COLUMBIA
CDETE	EH	12006	2	TOTAL EMPLOYMENT -CONSTRUCTION ATLANTIC
CDETH	EH	12080	5	TOTAL MANHOURS -CONSTRUCTION
CDETO	EH	12030	2	TOTAL EMPLOYMENT -CONSTRUCTION ONTARIO
CDETQ	EH	12018	3	TOTAL EMPLOYMENT -CONSTRUCTION QUEBEC
CDETW	EH	12042	3	TOTAL EMPLOYMENT -CONSTRUCTION PRAIRIES
CDY	EH	23006	7	CONSTRUCTION -REAL DOMESTIC PROD,$MILL-1961
CDYC	EH	50054	3	GROSS DOMESTIC PRODUCT $CTS CONSTRUCTION BRIT. COLUMBIA
CDYE	EH	50006	3	GROSS DOMESTIC PRODUCT $CTS CONSTRUCTION ATLANTIC
CDYO	EH	50030	3	GROSS DOMESTIC PRODUCT $CTS CONSTRUCTION ONTARIO
CDYQ	EH	50018	3	GROSS DOMESTIC PRODUCT $CTS CONSTRUCTION QUEBEC
CDYW	EH	50042	3	GROSS DOMESTIC PRODUCT $CTS CONSTRUCTION PRAIRIES
CSCK	EI	4077	1	SERVICES -TOTAL REAL GROSS CAP,STOCK
CSET	EI	12072	3	TOTAL EMPLOYMENT -SERVICES CANADA
CSETC	EH	12058	2	TOTAL EMPLOYMENT -SERVICES BRIT. COLUMBIA
CSETE	EH	12010	2	TOTAL EMPLOYMENT -SERVICES ATLANTIC
CSETH	EH	12085	3	TOTAL MANHOURS -SERVICES
CSETO	EH	12034	2	TOTAL EMPLOYMENT -SERVICES ONTARIO
CSETQ	EH	12022	2	TOTAL EMPLOYMENT -SERVICES QUEBEC
CSETW	EH	12046	2	TOTAL EMPLOYMENT -SERVICES PRAIRIES
CSY	EI	23011	4	SERVICES -REAL DOMESTIC PROD,$MILL-1961
CSYC	EH	50059	3	GROSS DOMESTIC PRODUCT $CTS SERVICES BRIT. COLUMBIA
CSYE	EH	50011	3	GROSS DOMESTIC PRODUCT $CTS SERVICES ATLANTIC
CSYO	EH	50035	3	GROSS DOMESTIC PRODUCT $CTS SERVICES ONTARIO
CSYQ	EH	50023	3	GROSS DOMESTIC PRODUCT $CTS SERVICES QUEBEC
CSYW	EH	50047	3	GROSS DOMESTIC PRODUCT $CTS SERVICES PRAIRIES
DPSIXT	XD	3	4	DUMMY,1 IN 1961 AND AFTER,ZERO BEFORE
D58	XD	33	2	DUMMY(1 IN 1958,ZERO OTHERWISE)-STRIKE IN IRON&STEEL

MNEMONIC LIST -- BLOCK 12 -- LISTE DES MNEMONIQUES

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D5861   XD     39 2  DUMMY(1 FROM 1958-61,ZERO OTHERWISE)
D61     XD     18 2  DUMMY(1 IN 1961)
D63     XD     29 1  DUMMY-INTRODUCTION OF U.S.INTEREST EQUALIZATION TAX
D64     XD     42 1  AUTO EXPORT INCENTIVES DUMMY(1 IN 1964)
D6566   XD     20 1  DUMMY(1 IN 1965&1966,ZERO OTHERWISE)
D66     XD     35 2  DUMMY(1 IN 1966,ZERO OTHERWISE)
D69     XD     11 3  1969 STRIKE DUMMY
FICK    FI   4076 2  FINANCE                  -TOTAL REAL GROSS CAP.STOCK
FIET    EI  12071 2  TOTAL EMPLOYMENT -FINANCE                 CANADA
FIETC   EB  12057 3  TOTAL EMPLOYMENT -FINANCE                 BRIT. COLUMBIA
FIETE   EB  12009 2  TOTAL EMPLOYMENT -FINANCE                 ATLANTIC
FIETH   EB  12084 2  TOTAL MANHOURS   -FINANCE
FIETO   EB  12033 2  TOTAL EMPLOYMENT -FINANCE                 ONTARIO
FIETQ   EB  12021 2  TOTAL EMPLOYMENT -FINANCE                 QUEBEC
FIETW   EB  12045 2  TOTAL EMPLOYMENT -FINANCE                 PRAIRIES
FIY     FB  23010 6  FINANCE                  -REAL DOMESTIC PROD,$MILL-1961
FIYC    EB  50057 3  GROSS DOMESTIC PRODUCT $CTS FINANCE       BRIT. COLUMBIA
FIYE    FB  50009 3  GROSS DOMESTIC PRODUCT $CTS FINANCE            ATLANTIC
FIYO    EB  50033 3  GROSS DOMESTIC PRODUCT $CTS FINANCE            ONTARIO
FIYQ    EB  50021 3  GROSS DOMESTIC PRODUCT $CTS FINANCE            QUEBEC
FIYW    EB  50045 3  GROSS DOMESTIC PRODUCT $CTS FINANCE            PRAIRIES
FOCK    FI   4068 1  FORESTRY                 -TOTAL REAL GROSS CAP.STOCK
FOET    FI  12062 3  TOTAL EMPLOYMENT -FORESTRY                 CANADA
FOETC   EB  12050 2  TOTAL EMPLOYMENT -FORESTRY                 BRIT. COLUMBIA
FOETE   EB  12002 2  TOTAL EMPLOYMENT -FORESTRY                 ATLANTIC
FOETH   EB  12076 1  TOTAL MANHOURS   -FORESTRY
FOETO   EB  12026 2  TOTAL EMPLOYMENT -FORESTRY                 ONTARIO
FOETQ   EB  12014 2  TOTAL EMPLOYMENT -FORESTRY                 QUEBEC
FOETW   EB  12038 2  TOTAL EMPLOYMENT -FORESTRY                 PRAIRIES
FOY     EB  23002 3  FORESTRY                 -REAL DOMESTIC PROD,$MILL-1961
FOYC    FB  50050 3  GROSS DOMESTIC PRODUCT $CTS FORESTRY       BRIT. COLUMBIA
FOYE    EB  50002 3  GROSS DOMESTIC PRODUCT $CTS FORESTRY            ATLANTIC
FOYO    EB  50026 3  GROSS DOMESTIC PRODUCT $CTS FORESTRY            ONTARIO
FOYQ    EB  50014 3  GROSS DOMESTIC PRODUCT $CTS FORESTRY            QUEBEC
FSCK    EI   4069 1  FISHING                  -TOTAL REAL GROSS CAP.STOCK
FSET    FI  12063 3  TOTAL EMPLOYMENT -FISHING                  CANADA
FSETC   EI  12051 2  TOTAL EMPLOYMENT -FISHING                  BRIT. COLUMBIA
FSETE   EB  12003 2  TOTAL EMPLOYMENT -FISHING                  ATLANTIC
FSETH   EB  12077 2  TOTAL MANHOURS   -FISHING
FSETO   EB  12027 2  TOTAL EMPLOYMENT -FISHING                  ONTARIO
FSETQ   EB  12015 2  TOTAL EMPLOYMENT -FISHING                  QUEBEC
FSETW   EI  12039 2  TOTAL EMPLOYMENT -FISHING                  PRAIRIES
FSY     EB  23003 7  FISHING                  -REAL DOMESTIC PROD,$MILL-1961
FSYC    EB  50051 4  GROSS DOMESTIC PRODUCT $CTS FISHING       BRIT. COLUMBIA
FSYE    EB  50005 3  GROSS DOMESTIC PRODUCT $CTS FISHING            ATLANTIC
HGY     FB  23015 2  HOUSING                  -REAL DOMESTIC PROD,$MILL-1961
MACK    FI   4071 1  MANUFACTURING            -TOTAL REAL GROSS CAP.STOCK
MAET    EI  12065 6  TOTAL EMPLOYMENT -MANUFACTURING           CANADA
MAETC   EB  12053 3  TOTAL EMPLOYMENT -MANUFACTURING           BRIT. COLUMBIA
MAETE   EB  12005 3  TOTAL EMPLOYMENT -MANUFACTURING           ATLANTIC
MAETH   EB  12079 7  TOTAL MANHOURS   -MANUFACTURING
MAETO   EB  12029 2  TOTAL EMPLOYMENT -MANUFACTURING           ONTARIO
MAETQ   EB  12017 3  TOTAL EMPLOYMENT -MANUFACTURING           QUEBEC
MAETW   EB  12041 3  TOTAL EMPLOYMENT -MANUFACTURING           PRAIRIES
MAY     EI  23005 6  MANUFACTURING            -REAL DOMESTIC PROD,$MILL-1961
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MNEMONIC LIST -- BLOCK 12 -- LISTE DES MNEMONIQUES

```
MAYC    EB 50053 3  GROSS DOMESTIC PRODUCT $CTS MANUFACTURING BRIT, COLUMBIA
MAYE    EB 50005 3  GROSS DOMESTIC PRODUCT $CTS MANUFACTURING     ATLANTIC
MAYO    EB 50029 3  GROSS DOMESTIC PRODUCT $CTS MANUFACTURING     ONTARIO
MAYQ    EB 50017 3  GROSS DOMESTIC PRODUCT $CTS MANUFACTURING     QUEBEC
MAYW    EB 50041 3  GROSS DOMESTIC PRODUCT $CTS MANUFACTURING     PRAIRIES
MICK    EI  4070 1  MINING                    =TOTAL REAL GROSS CAP,STOCK
MIET    FI 12064 2  TOTAL EMPLOYMENT =MINING                     CANADA
MIETC   EB 12052 3  TOTAL EMPLOYMENT =MINING                     BRIT, COLUMBIA
MIETE   EI 12004 3  TOTAL EMPLOYMENT =MINING                     ATLANTIC
MIETH   EH 12076 2  TOTAL MANHOURS   =MINING
MIETO   EB 12028 3  TOTAL EMPLOYMENT =MINING                     ONTARIO
MIETQ   EB 12016 3  TOTAL EMPLOYMENT =MINING                     QUEBEC
MIETW   EB 12040 3  TOTAL EMPLOYMENT =MINING                     PRAIRIES
MIY     EI 23004 7  MINING                    =REAL DOMESTIC PROD,$MILL=1961
MIYC    EB 50052 3  GROSS DOMESTIC PRODUCT $CTS MINING          BRIT, COLUMBIA
MIYE    EB 50004 3  GROSS DOMESTIC PRODUCT $CTS MINING              ATLANTIC
MIYO    EB 50028 3  GROSS DOMESTIC PRODUCT $CTS MINING              ONTARIO
MIYQ    EB 50016 3  GROSS DOMESTIC PRODUCT $CTS MINING              QUEBEC
MIYW    EB 50040 3  GROSS DOMESTIC PRODUCT $CTS MINING              PRAIRIES
POST62  XD    28 1  DUMMY=INFLUENCE OF MAN,&VOL,CTRLS ON L,T,CAP,FLOWS
TEET    EI 12074 6  TOTAL EMPLOYMENT -- TOTAL --                  CANADA
TEETC   EI 12060 4  TOTAL EMPLOYMENT -- TOTAL --                  BRIT, COLUMBIA
TEETE   EI 12012 2  TOTAL EMPLOYMENT -- TOTAL --                  ATLANTIC
TEETH   EI 12087 1  TOTAL MANHOURS   -- TOTAL --
TEETO   FI 12036 2  TOTAL EMPLOYMENT -- TOTAL --                  ONTARIO
TEETQ   EI 12024 4  TOTAL EMPLOYMENT -- TOTAL --                  QUEBEC
TEETW   EI 12048 3  TOTAL EMPLOYMENT -- TOTAL --                  PRAIRIES
TIME    XD     1 2  TIME(LAST TWO DIGITS OF YEAR,1970=70)                    C 1406MM
TRCK    EI  4075 1  TRADE                     =TOTAL REAL GROSS CAP,STOCK
TRET    FI 12070 3  TOTAL EMPLOYMENT =TRADE                      CANADA
TRETC   EB 12056 2  TOTAL EMPLOYMENT =TRADE                      BRIT, COLUMBIA
TRETE   EB 12008 2  TOTAL EMPLOYMENT =TRADE                      ATLANTIC
TRETH   EH 12083 2  TOTAL MANHOURS   =TRADE
TRETO   EB 12032 2  TOTAL EMPLOYMENT =TRADE                      ONTARIO
TRETQ   EB 12020 2  TOTAL EMPLOYMENT =TRADE                      QUEBEC
TRETW   EB 12044 2  TOTAL EMPLOYMENT =TRADE                      PRAIRIES
TRY     EI 23009 7  TRADE                     =REAL DOMESTIC PROD,$MILL=1961
TRYC    EB 50056 3  GROSS DOMESTIC PRODUCT $CTS TRADE           BRIT, COLUMBIA
TRYE    EI 50006 3  GROSS DOMESTIC PRODUCT $CTS TRADE               ATLANTIC
TRYO    EB 50032 3  GROSS DOMESTIC PRODUCT $CTS TRADE               ONTARIO
TRYQ    EB 50020 3  GROSS DOMESTIC PRODUCT $CTS TRADE               QUEBEC
TRYW    EB 50044 3  GROSS DOMESTIC PRODUCT $CTS TRADE               PRAIRIES
TSCK    EI  4074 1  TRANSPORTATION           =TOTAL REAL GROSS CAP,STOCK
TSET    EB 12068 3  TOTAL EMPLOYMENT =TRANSPORTATION             CANADA
TSETC   EB 12055 2  TOTAL EMPLOYMENT =TRANSPORT & UTILITIES      BRIT, COLUMBIA
TSETE   EB 12007 3  TOTAL EMPLOYMENT =TRANSPORT & UTIL.          ATLANTIC
TSETH   EH 12082 5  TOTAL MANHOURS   =TRANSPORTATION
TSETO   EB 12031 2  TOTAL EMPLOYMENT =TRANSPORT & UTIL.          ONTARIO
TSETQ   EB 12019 2  TOTAL EMPLOYMENT =TRANSPORT & UTIL.          QUEBEC
TSETW   EB 12043 2  TOTAL EMPLOYMENT =TRANSPORT & UTIL           PRAIRIES
TSUTET  FI 12067 3  TOTAL EMPLOYMENT =TRANSPORT & UTILITIES      CANADA
TSY     EI 23008 5  TRANSPORTATION            =REAL DOMESTIC PROD,$MILL=1961
TSYC    EB 50055 3  GROSS DOMESTIC PRODUCT $CTS TRANS,& UTIL, BRIT, COLUMBIA
TSYE    EI 50007 3  GROSS DOMESTIC PRODUCT $CTS TRANS,& UTIL,     ATLANTIC
TSYO    EB 50031 3  GROSS DOMESTIC PRODUCT $CTS TRANS,& UTIL,     ONTARIO
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MNEMONIC LIST -- BLOCK 12 -- LISTE DES MNEMONIQUES

ISYQ	E6	50019	5	GROSS DOMESTIC PRODUCT $CTS TRANS,& UTIL,	QUEBEC
ISYW	E6	50045	5	GROSS DOMESTIC PRODUCT $CTS TRANS,& UTIL,	PRAIRIES
UTCK	E1	4073	1	UTILITIES -TOTAL REAL GROSS CAP,STOCK	
UTET	E1	12069	5	TOTAL EMPLOYMENT -UTILITIES	CANADA
UTEIH	E6	12081	1	TOTAL MANHOURS -UTILITIES	
UTY	E1	23007	5	UTILITIES -REAL DOMESTIC PROD,$MILL-1961	
XFSEIC	X1	521	1	EMPLOYMENT -FISHING	BRITISH COLUMBIA
XFSEIO	XX	602	1	EMPLOYMENT, FISHING,	ONTARIO
XFSEIQ	XX	601	1	EMPLOYMENT, FISHING,	QUEBEC
XFSEIW	X1	520	1	EMPLOYMENT -FISHING	PRAIRIES
XMIETE	X1	519	1	EMPLOYMENT -MINING	ATLANTIC

MNEMONIC LIST -- BLOCK 50 -- LISTE DES MNEMONIQUES

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ADY     EB 23012 3  PUBLIC ADMINISTRATION -REAL DOMESTIC PROD,$MILL-1961
ADYC    EB 50058 3  GROSS DOMESTIC PRODUCT $CTS PUBLIC ADMIN,  BRIT, COLUMBIA
ADYE    EB 50010 3  GROSS DOMESTIC PRODUCT $CTS PUBLIC ADMIN,       ATLANTIC
ADYO    EB 50034 3  GROSS DOMESTIC PRODUCT $CTS PUBLIC ADMIN,       ONTARIO
ADYQ    EB 50022 3  GROSS DOMESTIC PRODUCT $CTS PUBLIC ADMIN,       QUEBEC
ADYW    EB 50046 3  GROSS DOMESTIC PRODUCT $CTS PUBLIC ADMIN,       PRAIRIES
AGICOK  EB  4001 5  AGRICULTURE              -CONST,GROSS FIX,CAP,FORM,-$61
AGICOP  EB 34001 5  IMPL, STRUCTURES-INV,DEFL, -AGRICULTURE
AGIMEK  EB  4012 5  AGRICULTURE              -M & E GROSS FIX,CAP,FORM,-$61
AGIMEP  EB 33001 5  IMPL,MACH,EQUIPM-INV,DEFL, -AGRICULTURE
AGY     EB 23001 7  AGRICULTURE              -REAL DOMESTIC PROD,$MILL-1961
AGYC    EB 50049 3  GROSS DOMESTIC PRODUCT $CTS AGRICULTURE    BRIT, COLUMBIA
AGYE    EB 50001 3  GROSS DOMESTIC PRODUCT $CTS AGRICULTURE         ATLANTIC
AGYO    EB 50025 3  GROSS DOMESTIC PRODUCT $CTS AGRICULTURE         ONTARIO
AGYQ    EB 50013 3  GROSS DOMESTIC PRODUCT $CTS AGRICULTURE         QUEBEC
AGYW    EB 50037 3  GROSS DOMESTIC PRODUCT $CTS AGRICULTURE         PRAIRIES
COICOK  EB  4006 4  CONSTRUCTION            -CONST,GROSS FIX,CAP,FORM,-$61
COICOP  EB 34024 4  IMPL, STRUCTURES-INV,DEFL, -CONSTRUCTION
COIMEK  EB  4017 4  CONSTRUCTION             -M & E GROSS FIX,CAP,FORM,-$61
COIMEP  EB 33024 4  IMPL,MACH,EQUIPM-INV,DEFL, -CONSTRUCTION
COY     EB 23006 7  CONSTRUCTION             -REAL DOMESTIC PROD,$MILL-1961
COYC    EB 50054 3  GROSS DOMESTIC PRODUCT $CTS CONSTRUCTION  BRIT, COLUMBIA
COYE    EB 50006 3  GROSS DOMESTIC PRODUCT $CTS CONSTRUCTION       ATLANTIC
COYO    EB 50030 3  GROSS DOMESTIC PRODUCT $CTS CONSTRUCTION       ONTARIO
COYQ    EB 50018 3  GROSS DOMESTIC PRODUCT $CTS CONSTRUCTION       QUEBEC
COYW    EB 50042 3  GROSS DOMESTIC PRODUCT $CTS CONSTRUCTION       PRAIRIES
CSICOK  EI  4011 4  COMM,BUS,&PERS,SERV,  -CONST,GROSS FIX,CAP,FORM,-$61
CSICOP  EI 34041 4  IMPL, STRUCTURES-INV,DEFL, -COM,BUS,PERS,SERVICES
CSIMEK  EI  4022 4  COMM,BUS,&PERS,SERV,  -M & E GROSS FIX,CAP,FORM,-$61
CSIMEP  EI 33041 4  IMPL,MACH,EQUIPM-INV,DEFL, -COM,BUS,PERS,SERVICES
CSY     EI 23011 4  SERVICES                 -REAL DOMESTIC PROD,$MILL-1961
CSYC    EB 50059 3  GROSS DOMESTIC PRODUCT $CTS SERVICES      BRIT, COLUMBIA
CSYE    EB 50011 3  GROSS DOMESTIC PRODUCT $CTS SERVICES           ATLANTIC
CSYO    EB 50035 3  GROSS DOMESTIC PRODUCT $CTS SERVICES           ONTARIO
CSYPC   X3   592 1  POTENTIAL OUTPUT  SERVICES       BRIT, COLUMBIA
CSYPE   X3   577 1  POTENTIAL OUTPUT  SERVICES       ATLANTIC
CSYPO   X3   585 1  POTENTIAL OUTPUT  SERVICES       ONTARIO
CSYPQ   X3   581 1  POTENTIAL OUTPUT  SERVICES       QUEBEC
CSYPT   X3   596 1  POTENTIAL OUTPUT  SERVICES       CANADA
CSYQ    EB 50023 3  GROSS DOMESTIC PRODUCT $CTS SERVICES           QUEBEC
CSYW    EB 50047 3  GROSS DOMESTIC PRODUCT $CTS SERVICES           PRAIRIES
FIICOK  EB  4010 4  FIN,,INS,&REAL EST,   -CONST,GROSS FIX,CAP,FORM,-$61
FIICOP  EB 34036 4  IMPL, STRUCTURES-INV,DEFL, -FIN,INS,REAL ESTATE
FIIMEK  EB  4021 4  FIN,,INS,&REAL EST,   -M & E GROSS FIX,CAP,FORM,-$61
FIIMEP  EB 33036 4  IMPL,MACH,EQUIPM-INV,DEFL, -FIN,INS,REAL ESTATE
FIY     EB 23010 6  FINANCE                  -REAL DOMESTIC PROD,$MILL-1961
FIYC    EB 50057 3  GROSS DOMESTIC PRODUCT $CTS FINANCE       BRIT, COLUMBIA
FIYE    EB 50009 3  GROSS DOMESTIC PRODUCT $CTS FINANCE            ATLANTIC
FIYO    EB 50033 3  GROSS DOMESTIC PRODUCT $CTS FINANCE            ONTARIO
FIYQ    EB 50021 3  GROSS DOMESTIC PRODUCT $CTS FINANCE            QUEBEC
FIYW    EB 50045 3  GROSS DOMESTIC PRODUCT $CTS FINANCE            PRAIRIES
FOICOK  EB  4002 4  FORESTRY                 -CONST,GROSS FIX,CAP,FORM,-$61
FOICOP  EB 34003 4  IMPL, STRUCTURES-INV,DEFL, -FORESTRY
FOIMEK  EB  4013 4  FORESTRY                 -M & E GROSS FIX,CAP,FORM,-$61
FOIMEP  EB 33003 4  IMPL,MACH,EQUIPM-INV,DEFL, -FORESTRY
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MNEMONIC LIST -- BLOCK 50 -- LISTE DES MNEMONIQUES

FOY	EB	23002	3	FORESTRY -REAL DOMESTIC PROD,$MILL-1961			
FOYC	EB	50050	3	GROSS DOMESTIC PRODUCT $CTS FORESTRY		BRIT, COLUMBIA	
FOYE	EB	50002	3	GROSS DOMESTIC PRODUCT $CTS FORESTRY		ATLANTIC	
FOYO	EB	50026	3	GROSS DOMESTIC PRODUCT $CTS FORESTRY		ONTARIO	
FOYPC	X3	590	1	POTENTIAL OUTPUT FORESTRY	BRIT, COLUMBIA		
FOYPE	X3	575	1	POTENTIAL OUTPUT FORESTRY	ATLANTIC		
FOYPO	X3	583	1	POTENTIAL OUTPUT FORESTRY	ONTARIO		
FOYPQ	X3	579	1	POTENTIAL OUTPUT AGRICULTURE	QUEBEC		
FOYPT	X3	594	1	POTENTIAL OUTPUT FORESTRY	CANADA		
FOYPW	X3	587	1	POTENTIAL OUTPUT FORESTRY	PRAIRIES		
FOYQ	EB	50014	3	GROSS DOMESTIC PRODUCT $CTS FORESTRY		QUEBEC	
FOYW	EB	50038	3	GROSS DOMESTIC PRODUCT $CTS FORESTRY		PRAIRIES	
FSICOK	EB	4003	4	FISHING -CONST,GROSS FIX,CAP,FORM,-$61			
FSICOP	EB	34002	5	IMPL, STRUCTURES-INV,DEFL, -FISHING & TRAPPING			
FSIMEK	EB	4014	5	FISHING -M & E GROSS FIX,CAP,FORM,-$61			
FSIMEP	EB	33002	5	IMPL,MACH,EQUIPM-INV,DEFL, -FISHING & TRAPPING			
FSY	EB	23003	7	FISHING -REAL DOMESTIC PROD,$MILL-1961			
FSYC	EB	50051	3	GROSS DOMESTIC PRODUCT $CTS FISHING		BRIT, COLUMBIA	
FSYE	EB	50003	3	GROSS DOMESTIC PRODUCT $CTS FISHING		ATLANTIC	
FSYO	EB	50027	3	GROSS DOMESTIC PRODUCT $CTS FISHING		ONTARIO	
FSYQ	EB	50015	3	GROSS DOMESTIC PRODUCT $CTS FISHING		QUEBEC	
FSYW	EB	50039	3	GROSS DOMESTIC PRODUCT $CTS FISHING		PRAIRIES	
GFICAC	EI	24008	4	GOVT,FIXED CAPITAL FORMATION-CURRENT$			
HGY	EB	23013	2	HOUSING -REAL DOMESTIC PROD,$MILL-1961			
IRCZ	EI	24009	4	INVEST,IN RES,CONSTRUCTION-CURRENT $			
MAICOK	EB	32068	4	MANUFACTURING -CONST,GROSS FIX,CAP,FORM,-$61			
MAICOP	EI	34039	4	IMPL, STRUCTURES-INV,DEFL, -MANUFACTURING			
MAIMEK	EI	4016	4	MANUFACTURING -M & E GROSS FIX,CAP,FORM,-$61			
MAIMEP	EI	33039	4	IMPL,MACH,EQUIPM-INV,DEFL, -MANUFACTURING			
MAY	EI	23005	6	MANUFACTURING -REAL DOMESTIC PROD,$MILL-1961			
MAYC	EB	50053	3	GROSS DOMESTIC PRODUCT $CTS MANUFACTURING		BRIT, COLUMBIA	
MAYE	EB	50005	3	GROSS DOMESTIC PRODUCT $CTS MANUFACTURING		ATLANTIC	
MAYO	EB	50029	3	GROSS DOMESTIC PRODUCT $CTS MANUFACTURING		ONTARIO	
MAYQ	EB	50017	3	GROSS DOMESTIC PRODUCT $CTS MANUFACTURING		QUEBEC	
MAYW	EB	50041	3	GROSS DOMESTIC PRODUCT $CTS MANUFACTURING		PRAIRIES	
MIICOK	EB	4004	4	MINING,QUARRYING&O,W, -CONST,GROSS FIX,CAP,FORM,-$61			
MIICOP	EB	34004	4	IMPL, STRUCTURES-INV,DEFL, -MINING,QUAR,OIL WELLS			
MIIMEK	EB	4015	4	MINING,QUARRYING&O,W, -M & E GROSS FIX,CAP,FORM,-$61			
MIIMEP	EB	33004	4	IMPL,MACH,EQUIPM-INV,DEFL, -MINING,QUAR,OIL WELLS			
MIY	EI	23004	7	MINING -REAL DOMESTIC PROD,$MILL-1961			
MIYC	EB	50052	3	GROSS DOMESTIC PRODUCT $CTS MINING		BRIT, COLUMBIA	
MIYE	EB	50004	3	GROSS DOMESTIC PRODUCT $CTS MINING		ATLANTIC	
MIYO	EB	50028	3	GROSS DOMESTIC PRODUCT $CTS MINING		ONTARIO	
MIYQ	EB	50016	3	GROSS DOMESTIC PRODUCT $CTS MINING		QUEBEC	
MIYW	EB	50040	3	GROSS DOMESTIC PRODUCT $CTS MINING		PRAIRIES	
TCAOC	EI	50076	3	RAPPORT DES TAUX D'UTIL, DE LA PROD,	AGRICULTURE	B.C,	
TCAOE	EI	50061	3	RAPPORT DES TAUX D'UTIL, DE LA PROD,	AGRICULTURE	ATLANTIC	
TCAOO	EI	50067	3	RAPPORT DES TAUX D'UTIL, DE LA PROD,	AGRICULTURE	ONTARIO	
TCAOQ	EI	50065	3	RAPPORT DES TAUX D'UTIL, DE LA PROD,	AGRICULTURE	QUEBEC	
TCAOW	EI	50073	3	RAPPORT DES TAUX D'UTIL, DE LA PROD,	AGRICULTURE	PRAIRIES	
TCLSC	EI	50079	3	RAPPORT DES TAUX D'UTIL, DE LA PROD,	SERVICES	B.C,	
TCLSE	EI	50064	3	RAPPORT DES TAUX D'UTIL, DE LA PROD,	SERVICE	ATLANTIC	
TCLSO	EI	50072	3	RAPPORT DES TAUX D'UTIL, DE LA PROD,	SERVICES	ONTARIO	
TCLSQ	EI	50068	3	RAPPORT DES TAUX D'UTIL, DE LA PROD,	SERVICES	QUEBEC	
TCFOC	EI	50077	3	RAPPORT DES TAUX D'UTIL, DE LA PROD,	FORET	B.C,	

MNEMONIC LIST -- BLOCK 50 -- LISTE DES MNEMONIQUES

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TCFOE   EI 50062 3  RAPPORT DES TAUX D'UTIL. DE LA PROD.  FORET          ATLANTIC
TCFOO   EI 50070 3  RAPPORT DES TAUX D'UTIL. DE LA PROD.  FORET          ONTARIO
TCFOQ   EI 50066 3  RAPPORT DES TAUX D'UTIL. DE LA PROD.  FORET          QUEBEC
TCFOW   EI 50074 3  RAPPORT DES TAUX D'UTIL. DE LA PROD.  FORET          PRAIRIES
TCFSC   EI 50078 3  RAPPORT DES TAUX D'UTIL. DE LA PROD.  PECHES         B.C.
TCFSE   EI 50063 3  RAPPORT DES TAUX D'UTIL. DE LA PROD.  PECHES         ATLANTIC
TCFSO   EI 50071 3  RAPPORT DES TAUX D'UTIL. DE LA PROD.  PECHES         ONTARIO
TCFSQ   EI 50067 3  RAPPORT DES TAUX D'UTIL. DE LA PROD.  PECHES         QUEBEC
TCFSW   EI 50075 3  RAPPORT DES TAUX D'UTIL. DE LA PROD.  PECHES         PRAIRIES
TEYBC   EI 50060 3  GROSS DOMESTIC PRODUCT $CTS TOTAL ECONOMY BRIT. COLUMBIA
TEYE    EI 50012 3  GROSS DOMESTIC PRODUCT $CTS TOTAL ECONOMY      ATLANTIC
TEYO    EI 50036 3  GROSS DOMESTIC PRODUCT $CTS TOTAL ECONOMY      ONTARIO
TEYQ    EI 50024 3  GROSS DOMESTIC PRODUCT $CTS TOTAL ECONOMY      QUEBEC
TEYW    EI 50048 3  GROSS DOMESTIC PRODUCT $CTS TOTAL ECONOMY      PRAIRIES
TIADC   EI 52053 3  TOTAL INVESTMENT -PUBLIC ADMIN,    BRIT. COLUMBIA
TIADQ   EI 52020 3  TOTAL INVESTMENT -PUBLIC ADMIN     QUEBEC
TIADW   EI 52042 3  TOTAL INVESTMENT -PUBLIC ADMIN,    PRAIRIES
TIAGC   EI 52045 4  TOTAL INVESTMENT -AGRIC.&FISHING   BRIT. COLUMBIA
TIAGE   EI 52001 4  TOTAL INVESTMENT -AGRIC.&FISHING   ATLANTIC
TIAGO   EI 52023 4  TOTAL INVESTMENT -AGRIC.&FISHING   ONTARIO
TIAGQ   EI 52012 4  TOTAL INVESTMENT -AGRIC.&FISHING   QUEBEC
TIAGW   EI 52034 4  TOTAL INVESTMENT -AGRIC.&FISHING   PRAIRIES
TICOC   EI 52049 3  TOTAL INVESTMENT -CONSTRUCTION     BRIT. COLUMBIA
TICOE   EI 52005 3  TOTAL INVESTMENT -CONSTRUCTION     ATLANTIC
TICOO   EI 52027 3  TOTAL INVESTMENT -CONSTRUCTION     ONTARIO
TICOQ   EI 52016 3  TOTAL INVESTMENT -CONSTRUCTION     QUEBEC
TICOW   EI 52038 3  TOTAL INVESTMENT -CONSTRUCTION     PRAIRIES
TICSC   EI 52054 3  TOTAL INVESTMENT -SERVICES         BRIT. COLUMBIA
TICSE   EI 52010 3  TOTAL INVESTMENT -SERVICES         ATLANTIC
TICSO   EI 52032 3  TOTAL INVESTMENT -SERVICES         ONTARIO
TICSQ   EI 52021 3  TOTAL INVESTMENT -SERVICES         QUEBEC
TIFIC   EI 52052 3  TOTAL INVESTMENT -FINANCE          BRIT. COLUMBIA
TIFIE   EI 52008 3  TOTAL INVESTMENT -FINANCE          ATLANTIC
TIFIO   EI 52030 3  TOTAL INVESTMENT -FINANCE          ONTARIO
TIFIQ   EI 52019 3  TOTAL INVESTMENT -FINANCE          QUEBEC
TIFIW   EI 52041 3  TOTAL INVESTMENT -FINANCE          PRAIRIES
TIFOC   EI 52046 3  TOTAL INVESTMENT -FORESTRY         BRIT. COLUMBIA
TIFOE   EI 52002 3  TOTAL INVESTMENT -FORESTRY         ATLANTIC
TIFOO   EI 52024 3  TOTAL INVESTMENT -FORESTRY         ONTARIO
TIFOQ   EI 52013 3  TOTAL INVESTMENT -FORESTRY         QUEBEC
TIFOW   EI 52035 3  TOTAL INVESTMENT -FORESTRY         PRAIRIES
TIMAC   EI 52048 3  TOTAL INVESTMENT -MANUFACTURING    BRIT. COLUMBIA
TIMAE   EI 52004 3  TOTAL INVESTMENT -MANUFACTURING    ATLANTIC
TIMAO   EI 52026 3  TOTAL INVESTMENT -MANUFACTURING    ONTARIO
TIMAQ   EI 52015 3  TOTAL INVESTMENT -MANUFACTURING    QUEBEC
TIMAW   EI 52037 3  TOTAL INVESTMENT -MANUFACTURING    PRAIRIES
TIME    XD     1 2  TIME(LAST TWO DIGITS OF YEAR,1970=70)                C 1406MM
TIMIC   EI 52047 3  TOTAL INVESTMENT -MINING           BRIT. COLUMBIA
TIMIE   EI 52003 3  TOTAL INVESTMENT -MINING           ATLANTIC
TIMIO   EI 52025 3  TOTAL INVESTMENT -MINING           ONTARIO
TIMIQ   EI 52014 3  TOTAL INVESTMENT -MINING           QUEBEC
TIMIW   EI 52036 3  TOTAL INVESTMENT -MINING           PRAIRIES
TITRC   EI 52051 3  TOTAL INVESTMENT -TRADE            BRIT. COLUMBIA
TITSQ   EI 52017 3  TOTAL INVESTMENT -TRANS.&UTIL,     QUEBEC
TRICOK  EI  4009 4  TRADE                  -CONST.GROSS FIX.CAP.FORM.-561
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MNEMONIC LIST -- BLOCK 50 -- LISTE DES MNEMONIQUES

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TRICOP EB 34035 4  IMPL. STRUCTURES-INV.DEFL. -TRADE
TRIMEK EB  4020 4  TRADE                      -M & E GROSS FIX.CAP.FORM.-$61
TRIMEP EB 33035 4  IMPL.MACH.EQUIPM-INV.DEFL. -TRADE
TRY    EI 23009 7  TRADE                      -REAL DOMESTIC PROD.$MILL-1961
TRYC   EB 50056 3  GROSS DOMESTIC PRODUCT $CTS TRADE          BRIT. COLUMBIA
TRYE   EI 50008 3  GROSS DOMESTIC PRODUCT $CTS TRADE              ATLANTIC
TRYO   EB 50032 3  GROSS DOMESTIC PRODUCT $CTS TRADE              ONTARIO
TRYQ   EB 50020 3  GROSS DOMESTIC PRODUCT $CTS TRADE              QUEBEC
TRYW   EB 50044 3  GROSS DOMESTIC PRODUCT $CTS TRADE              PRAIRIES
TSICOK.EB 32070 4  TRANS.,STOR.&COMM.     -CONST.GROSS FIX.CAP.FORM.-$61
TSICOP EI 34040 4  IMPL. STRUCTURES-INV.DEFL. -TRANSPORTATION
TSIMEK EI  4019 4  TRANS.,STOR.&COMM.     -M & E GROSS FIX.CAP.FORM.-$61
TSIMEP EI 33040 4  IMPL.MACH.EQUIPM-INV.DEFL. -TRANSPORTATION
TSY    EI 23008 5  TRANSPORTATION         -REAL DOMESTIC PROD.$MILL-1961
TSYC   EB 50055 3  GROSS DOMESTIC PRODUCT $CTS TRANS.& UTIL. BRIT. COLUMBIA
TSYE   EI 50007 3  GROSS DOMESTIC PRODUCT $CTS TRANS.& UTIL.      ATLANTIC
TSYO   EB 50031 3  GROSS DOMESTIC PRODUCT $CTS TRANS.& UTIL.      ONTARIO
TSYQ   EB 50019 3  GROSS DOMESTIC PRODUCT $CTS TRANS.& UTIL.      QUEBEC
TSYW   EB 50043 3  GROSS DOMESTIC PRODUCT $CTS TRANS.& UTIL.      PRAIRIES
URATE  EI 11062 6  TOTAL UNEMPLOYMENT RATE
URATEC EI 11057 6  UNEMPLOYMENT RATE IN %              BRITISH COLUMBIA
URATEE EI 11053 6  UNEMPLOYMENT RATE IN %              ATLANTIC
URATEO EI 11055 6  UNEMPLOYMENT RATE IN %              ONTARIO
URATEQ EI 11054 6  UNEMPLOYMENT RATE IN %              QUEBEC
URATEW EI 11056 6  UNEMPLOYMENT RATE IN %              PRAIRIES
UTICOK EB 32069 4  UTILITIES              -CONST.GROSS FIX.CAP.FORM.-$61
UTICOP EI 34042 4  IMPL. STRUCTURES-INV.DEFL. -UTILITIES
UTIMEK EI  4018 4  UTILITIES              -M & E GROSS FIX.CAP.FORM.-$61
UTIMEP EI 33042 4  IMPL.MACH.EQUIPM-INV.DEFL. -UTILITIES
UTY    EI 23007 5  UTILITIES              -REAL DOMESTIC PROD.$MILL-1961
XTRYE  X1   523 1  GROSS DOMESTIC PRODUCT  TRADE          ATLANTIC
XTSYE  X1   522 1  GROSS DOMESTIC PRODUCT  TRANS. & UTIL. ATLANTIC
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