The Equations of RDX2 Revised and Estimated to 4Q72



Bank of Canada
Technical Report 5

Banque du Canada
Études techniques 5

1976

THE EQUATIONS OF RDX2 REVISED AND ESTIMATED TO 4Q 1972

Bank of Canada

This study was prepared as part of
the econometric research programme
of the Bank of Canada

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PREFACE ET REMERCIEMENTS

Dans ce cinquième Rapport technique publié par la Banque du Canada, nous présentons la quatrième version du modèle économétrique trimestriel de l'économie canadienne, RDX2, construit par le Département des Recherches de la Banque du Canada. John F. Helliwell, Harold T. Shapiro, Gordon R. Sparks, Ian A. Stewart, Frederick W. Gorbet et Donald R. Stephenson avaient développé la première version, publiée en 1971 [3] et dont la période échantillonnale se terminait au 4T68. Une seconde version utilisant les revisions faites aux Comptes Nationaux en 1972 et dont la période échantillonnale se terminait au 4T70 fut estimée par Frederick W. Gorbet et John F. Helliwell et publiée en 1973. L'étude des propriétés dynamiques à court et surtout à long terme faite sur cette seconde version amorça la construction par Frederick W. Gorbet, et Tom Maxwell d'une troisième version publiée en juillet 1974 [2].

La période échantillonnale utilisée pour cette quatrième version se termine au 4T72. Plusieurs modifications ont été apportées à la structure du modèle RDX2 dans le but de refléter l'évolution continue du secteur public et du secteur privé de l'économie canadienne. Par exemple, la réforme du système fiscal de 1972 et l'indexation de l'impôt sur le revenu des particuliers ont été incorporées avec une attention toute spéciale. De nombreuses modifications ont été faites aux équations d'importations de biens ainsi qu'à l'équation du taux de change flexible qui a été estimée sur une période échantillonnale se terminant au 2T75. Beaucoup d'efforts ont été faits en vue de resserrer les contraintes d'offre dans les équations

d'importations et de prix intérieurs. Les tentatives pour améliorer les liens entre la politique monétaire, les prix et la production ont entraîné des révisions significatives du secteur financier. Les observations sur les quatre trimestres de 1973 ont servi à évaluer le pouvoir prédictif de différentes spécifications.

L'élaboration d'une nouvelle version du modèle est un travail d'équipe. Même s'il est impossible de reconnaître l'ensemble des contributions, passées et présentes, nous tenons cependant à en souligner un certain nombre.

Margaret Fitzpatrick, Thérèse Durocher et leur groupe ont assuré la mise à jour des données de base.

Diane Davis, Brian Near, Marcel Lemieux, Denis Bourbonnais, Lorraine Duguay et Leo de Bever ont contribué, à différentes étapes, au développement des programmes d'ordinateur.

Jean-Pierre Aubry a travaillé sur les secteurs de la consommation, de la construction résidentielle, des prix et des prêts hypothécaires. Lloyd Kenward et Tom Maxwell ont spécifié les secteurs de l'investissement et du marché du travail. William Alexander a entrepris la spécification des équations d'importations; Ulrich Kohli a estimé ces équations dans leur forme finale. Donald Stephenson et Patrick Grady ont développé le secteur de l'impôt sur le revenu des particuliers. Charles Freedman et David Longworth ont revisé le secteur financier ainsi que les équations des flux de capitaux à long terme. Elisa McFarlane, Pierre Duguay et Benjamin Wurzburger ont également apporté une contribution très significative.

Yvonne Rowe a dactylographié le texte édité par Margaret Bailey.

Le projet a été dirigé par Tom Maxwell en consultation avec John Helliwell. Tom Maxwell et Jean-Pierre Aubry étaient responsables des développements non mentionnés.

Les bandes magnétiques (des données, des coefficients et du programme Simulate) nécessaires à l'utilisation du modèle RDX2 sont disponnibles, sur demande et sans frais, auprès du Département des Recherches de la Banque du Canada.

Nous préparons présentement la publication de Rapports techniques additionnels qui devraient aider grandement à la compréhension du modèle RDX2. Ces rapports analyseront la structure et la dynamique sectorielle, la dynamique globale, le pouvoir prédictif et l'impact de la politique monétaire dans RDX2. Ces analyses nous aiderons non seulement à mieux connaître cette version du modèle RDX2 mais aussi à préparer la prochaine version. En plus d'allonger la période échantillonnale, nous utiliserons pour cette prochaine version les données revisées des Comptes nationaux et de l'Enquête sur la population active. Parmi les projets de développement il y a celui de resserrer les liens entre les pressions démographiques et le secteur de la construction domiciliaire, celui d'étudier différentes fonctions de production et d'investissements et celui de désagréger les équations d'exportations au même niveau que les équations d'importations.

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PREFACE AND ACKNOWLEDGEMENTS

This fourth version of RDX2, Bank of Canada Technical Report 5, is the latest variant of the quarterly econometric model of the Canadian economy developed in the Research Department of the Bank of Canada. John F. Helliwell, Harold T. Shapiro, Gordon R. Sparks, Ian A. Stewart, Frederick W. Gorbet, and Donald R. Stephenson constructed the first version published in 1971 [3]. In that version of RDX2 the sample period used in the estimation process ends in 4Q68. The historical revision of the National Accounts appeared in 1972 and these data were used to re-estimate the model. The estimation period was extended to 4Q70, the equation list was revised, and the second version of RDX2, constructed by Frederick W. Gorbet and John F. Helliwell, was made available on a limited basis in July 1973 [1]. By then a fair amount of experience had been gained with simulating RDX2, particularly over relatively long periods. This knowledge was incorporated into the restructured third version of RDX2 estimated to 4Q70 by John F. Helliwell and Tom Maxwell, which was made available on a limited basis in July 1974 [2].

In the fourth version of RDX2 we have extended the data period to 4Q72 and revised the interrelationships of the model so as to reflect the continuing evolution of the structure of the public and private sectors of the Canadian economy. For example, we have remodelled the federal tax sector to account for the 1972 federal tax reform and the subsequent indexing of the personal income tax. Extensive changes have been made in the equations for imports of goods and in the model of the foreign exchange market, which, operating under flexible rates, is estimated to

the end of 2Q75. The role of foreign prices and domestic supply constraints in the determination of imports and domestic prices is now greater than it was in earlier versions of RDX2. As a consequence of our continuing effort to model the channels through which monetary policy affects prices and output, the financial sector has been substantially revised. The data for 1973 were used to evaluate the tracking ability of alternative specifications.

The development of a new version of a large econometric model must be a team effort. It is, of course, impossible to acknowledge all the work done by those who have participated in the RDX2 project over the years, but we must recognize the following contributions to this fourth version of RDX2.

The maintenance and updating of the basic data were provided by Margaret Fitzpatrick, Therese Durocher, and the Data Services group.

Diane Davis, Brian Near, Marcel Lemieux, Dennis Bourbonnais, Lorraine Duguay, and Leo de Bever were involved at various stages in the development of the computer programmes.

Jean-Pierre Aubry worked on the consumption, residential construction, price, and mortgage loan sectors. Lloyd Kenward and Tom Maxwell devised the specification of the investment and labour market sectors. William Alexander developed the initial specification and estimation of the trade sector. Ulrich Kohli estimated the trade sector equations in their final form. William Alexander and Richard Haas constructed the model of the exchange market. Donald Stephenson and Patrick Grady developed the new personal income tax sector. Charles Freedman and David Longworth revised the financial sector including the long-term

capital flows equations. Elisa McFarlane, Pierre Duguay, and Benjamin Wurzburger each made a significant contribution.

John Helliwell has served as consultant for the RDX2 project since its inception. The development of this version of RDX2 was directed by Tom Maxwell. Jean-Pierre Aubry and Tom Maxwell are responsible for the sectors not mentioned above.

Yvonne Rowe did the typing and retyping involved. The editor of Technical Report 5 was Margaret Bailey.

The computer tapes (data tape, coefficient tape, and Program Simulate) needed to run the fourth version of RDX2 are available upon request, without charge, from the Research Department of the Bank of Canada.

Additional technical reports are to be issued in which the structure, dynamics, and tracking ability of RDX2 will be explained. An analysis of the working of monetary policy in the model is also to be the subject of a technical report. The research recorded in these papers will provide a thorough understanding of how the model works and, as well, will indicate the areas in which further development is most needed. In addition to extending the estimation period of the model and incorporating therein revised National Accounts and Labour Force Survey data, we will include in subsequent versions of RDX2 the results of a study of the housing sector - specially its links with demographic factors - as well as the results of a study of alternative specifications of production and investment functions. We also plan to disaggregate the export equations to the level of the import equations in this fourth version of RDX2.

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THE ALPHABETICAL LIST OF VARIABLES USED IN RDX2: AN EXPLANATION

All the Canadian variables used in RDX2 have mnemonic titles that follow a naming scheme developed for RDX2. This scheme is based on procedures suggested for use in Project LINK, and is intended to ease the problems of linking various national models. Because RDX2 has much more detail in its balance of payments, financial, and government sectors than is allowed for in these sectors of the Project LINK models, we have substantially extended and modified the Project LINK procedures to suit our purposes. However, since we have allowed for the possibility of linking RDX2 to a recent version of the MPS model (formerly known as the FRB-MIT-Penn model), we have used data from that model as the source of all the U.S. variables appearing in RDX2. Thus all these variables bear the names assigned to them in the MPS model. When included in RDX2, such names have the numeral 2 appended to inform the reader that the RDX2 naming scheme does not apply to these variables.

The dominant principle in the RDX2 mnemonic system is that the first letter of a variable indicates its general role in the model and how the variable is measured. Descriptions of our first-letter classification follow, exceptions being noted under the relevant letter.

A is a financial asset at book value measured in millions of dollars.

C is a consumption expenditure measured in millions of 1961 dollars.

CPVME is the present tax value of depreciation allowances for machinery and equipment.

CPVNR is the present tax value of depreciation allowances for non-residential construction.

D is a deposit in a financial institution measured in millions of current dollars.
   An appended B indicates a bank deposit.

E is an exogenous, quantitative variable, but of various units.

F is an international capital flow measured in millions of current dollars. (FI is an inflow and FO is an outflow.)
   FX is an excess demand for spot exchange.

G is a government expenditure, transfer payment, or balance item measured in millions of current dollars.
   G...F is federal government.
   G...PM is combined provincial and municipal governments.

H is a mortgage loan approval measured in millions of current dollars.
   HAW is average weekly hours.
   HST is housing starts measured in thousands per quarter.

I is an investment expenditure measured in millions of 1961 dollars.

J is an operator. The J is always followed either by a numeral or by W. The numeral refers to the number of quarters, including the current quarter, involved in the operation. The following operations are defined in cases where J is followed by a numeral.
   J3A is a three-quarter unweighted moving average starting in the current quarter.
   J3D is a three-quarter difference.
   J3L is a three-quarter lag.
   J3P is a three-quarter percentage change.
   J3S is a three-quarter moving sum.
   J3iS is the sum of three variables. For example: J3iS(USRTiC) = USRT1C + USRT2C + USRT3C.

The JW operator is a weighted moving average (or an unweighted moving average not starting in the current quarter). The weights are listed under the equation in which the operator is used. If the weights are estimated with a polynomial distributed lag technique, then the absolute values of the t-statistics are shown beside the weights. If the weights have been specified a priori, then the estimated coefficient and t-statistic are shown in the equation. The variable to which the J operator applies is shown in parentheses immediately behind the operator.

K is real capital, net of depreciation, measured in millions of 1961 dollars.
   KMEY is a desired capital-to-output ratio for

machinery and equipment.
KNRY is a desired capital-to-output ratio for non-residential construction.

L is a financial liability at book value measured in millions of current dollars.

M is imports measured in millions of 1961 dollars.

N is persons measured in millions.
NHH is in thousands.

P is a price or price index with a 1961 base value of 1.
PFX is the exchange rate measured in Canadian dollars per U.S. dollar.
PFX13 and PFX23 have a base value of 100 in 1961.

Q is a seasonal or dummy variable.

R is an interest rate, tax rate, or other rate always defined as percent per annum.

S is a stock of an asset measured in units.

T is a tax revenue measured in millions of current dollars.
TR is a transfer from persons to governments.

U is an endogenous variable not otherwise classified.

V is the market value of some A, L, K, or S variable measured in millions of current dollars. V alone is private sector wealth, or net worth, measured at market value in millions of dollars.

W is a wage rate measured in current dollars.

X is exports measured in millions of 1961 dollars.

Y is an income item measured in millions of current dollars.

Z is an exogenous monetary or fiscal policy variable.

When numbers appear at the end of a variable they refer to countries. Thus 1 refers to Canada, 2 refers to the United States, and 3 refers to countries other than Canada and the United States. When two numbers appear at the end of a variable the first one indicates the country to which the variable refers. Thus X12 represents trade flows from Canada to the United States measured in millions of 1961 dollars. Variables are measured

in terms of the currency of the 'actor' country. For example L12 is a liability of Canada to the United States measured in millions of current Canadian dollars. The variable L21 would represent the same debt seen as a U.S. asset, and therefore measured in terms of current U.S. dollars. A dollar sign appended to a variable indicates that the variable is the current-dollar value of a constant-dollar variable. For example IIG$ is the current-dollar value of the constant-dollar variable IIG.

The list of variables is composed of the mnemonic, the RDX2 tape number, and the Simulator coding number of each variable in the model. Each endogenous variable has an equation number. There are two ways of distinguishing endogenous and exogenous variables in RDX2. Each variable endogenous to RDX2 has an equation number (e g, (9.11) indicates the eleventh equation in Sector 9) and a simulator coding number preceded by X. Each variable exogenous to RDX2, whether the variable is endogenous to the U.S. model or not, has a simulator coding number prefixed by E but lacks an equation number.

There are 702 variables in this version of RDX2. Of these 325 are endogenous and 377 are exogenous. On the RDX2 data tape there are, however, 338 endogenous and 399 exogenous variables. Of the 338 endogenous variables eight are unused: MCM12(X=84), MFB12(X=87), MMF12(X=93), MMV12(X=95), MNTE13(X=88), PMFB12(X=58), PMMF12(X=94), PMNTE13(X=195) and five have a particular use:

GBCPPPM(X=75) is exogenously determined at present,

PCPIXLG(X=299) increases the storage of lagged values of PCPI,

UGAPME(X=294) simplifies the analysis of a shock response,

UGAPNRC(X=113) simplifies the analysis of a shock response,

UIGAPX(X=293) increases the impact of the capacity variable

on the price sector J4A($\frac{UGPPA+UIGAPX}{UGPPD}$).

As well, there are twenty-one unused exogenous variables: ECCA66R(E=68), EPFB(E=346), EPMF(E=349), KI2(E=98), PEEX2(E=283), PEGF2(E=281), PI2(E=282), PMMIS12(E=45), PMMIS13(E=46), PMMV13 (E=48), PNTE13(E=335), QDB(E=195), QDNUSA(E=280), QEUROPM(E=205), QMEF12(E=284), QRAB(E=87), QTHERM(E=50), RDP2(E=304), XB2(E=264), XBC2(E=265), YPCT$2(E=305). The variable NPOP19(E=340) is re-defined in the Simulator subroutine POLICY to ease the simulation of different exchange rate systems.

Although there are 325 endogenous variables in RDX2, we present 327 equations in this report. There are two equations for PFX and two for PFXF, depending on whether the exchange rate is fixed or flexible (see Sector 21).

A supplement of 191 identities is added to Sector 9 (direct taxes and other current transfers from persons). This sub-model; which endogenizes the spreading ratios, the exemptions, and the tax rates (USRNTiC, USRNWiC, USRWiC, RTPYFjC, RTPYFBjC, where i = 1, 3, j = 1, 4); makes possible the study of indexing policies. It operates after 4Q73.

For the most part the model data are available on tape as quarterly time series. However, a number of variables are on the RDX2 tape as monthly series and must be converted to quarterly series when employed in the model. Use of the monthly series is indicated in the variable list by an RDX2 tape number that includes a final numeral in brackets. For example the RDX2 tape number for ABBCD is B255(9). A (7), (8), or (9) indicates the nature of the conversion. A (7) indicates that the quarterly data are the sum of the monthly data, an (8) that the quarterly data are an average of the months, and a (9) that the quarterly

data are equal to the data of the last month of the quarter. The RDX2 tape number also indicates the status within the MPS model of the U.S. variables we use. All numbers in the range FM1 to FM200 are drawn from the MPS list of endogenous variables, whereas numbers in the range FM201 and up are taken from the MPS list of exogenous variables.

The RDX2 data are seasonally unadjusted. The MPS data are seasonally adjusted, with flow variables at annual rates.

THE LIST OF VARIABLES

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
A12	11879	20.7	X=1	Book value of U.S. indebtedness to Canada, including retained earnings accruing to Canadian shareholders.
A13	11880	20.8	X=2	Book value of the indebtedness of other countries to Canada, including retained earnings accruing to Canadian shareholders.
ABBCD	B255(9)	16.8	X=13	Bank of Canada deposits held by chartered banks.
ABBCN	B252(9)	16.2	X=14	Bank of Canada notes held by chartered banks.
ABEC	BS621		E=199	Excess cash reserves held by chartered banks as required by statute.
ABEL	BS601	16.9	X=3	Chartered bank earning liquid assets.
ABELCD	BS602	16.10	X=4	Chartered bank Canadian dollar earning liquid assets.
ABELNF	B1809(9)	16.7	X=5	Chartered bank net foreign assets.
ABLB	BS603	16.5	X=6	Chartered bank business and miscellaneous general loans.
ABLGBPM	BS606		E=237	Chartered bank holdings of provincial and municipal direct and guaranteed bonds.
ABLM	BS605	16.6	X=283	Chartered bank mortgage loans.
ABLO	BS604		E=108	Other loans held by chartered banks.
ABLP	B1001	16.4	X=9	Chartered bank personal loans.
ABSC	B619(9)		E=2	Corporate securities held by chartered banks.
ABSTATN	B803(9)	16.3	X=16	Bank of Canada notes held

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				by chartered banks as required by statute.
ABT	B601(9)	16.11	X=10	Chartered bank total assets.
ALI	BS123	17.15	X=282	Assets of life insurance companies.
ALIM	14703	17.17	X=280	Mortgage assets of life insurance companies.
ANFCUR	B2010(9)	15.1	X=15	Currency outside chartered banks held by non-financial public.
ANFGN	BS380	15.8	X=11	Government of Canada, provincial and municipal debt less chartered bank day, call, and short loans held by non-financial public.
ANFLIQ	BS381	15.9	X=12	Liquid assets held by nonfinancial public.
APLLI	BS109		E=114	Life insurance company policy loans.
ATL	14676	17.18	X=267	Assets of trust and mortgage loan companies.
ATLM	14704	17.16	X=281	Mortgage assets of trust and mortgage loan companies.
AYKGPA	16028	8.14	X=297	Stock of accrued unrealized capital gains.
CA$	16101	3.2	X=301	Value of commercial, industrial, and engineering contract awards.
CCA$	D40010	3.5	X=284 and E=240	Capital consumption allowances.
CCAC$	NA6	3.6	X=194 and E=187	Capital consumption allowances, corporations.
CCAGF$	D40100		E=217	Capital consumption allowances, federal government.
CCAGH$	D40103		E=228	Capital consumption allowances, hospitals.
CCAGPM$	13645		E=227	Capital consumption allowances,

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				provincial and municipal governments.
CDO	11377	1.4	X=18	Consumer expenditure on durables (excluding motor vehicles and parts).
CMV	11375	1.3	X=19	Consumer expenditure on motor vehicles and parts.
CNDSD	14636	1.1	X=20	Consumer expenditure on non-durables and semi-durables.
CPVME	11985		E=273	Present tax value of depreciation allowances, machinery and equipment.
CPVNR	11986		E=274	Present tax value of depreciation allowances, non-residential construction.
CRENT	11277	1.5	X=271	Gross rent (imputed and paid) less an estimate of residential property taxes.
CRENT$	11275	1.9	X=270	Gross rent (imputed and paid) less an estimate of residential property taxes.
CS	D40213	1.2	X=21	Consumer expenditure on services.
CSMVOD	11752	1.8	X=22	Consumer services imputed from the stock of motor vehicles and other consumer durables.
DCDPB	BS370	15.10	X=24	Canadian dollar deposits in chartered banks (excluding Government of Canada deposits).
DDB	BS371	15.7	X=25	Demand deposits in chartered banks (excluding float, Government of Canada deposits, and personal chequing accounts).
DDGFB	B652(9)		E=92	Government of Canada demand deposits in chartered banks.
DNPTB	B655(9)	15.5	X=27	Nonpersonal term and notice

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				deposits in chartered banks.
DPB	BS372	15.2	X=28	Personal savings and personal chequing accounts in chartered banks.
DSTATB	B806(9)	16.1	X=29	Chartered bank statutory deposits at the Bank of Canada.
DSTL	14666	15.3	X=261	Chequable and non-chequable demand and savings deposits in trust and mortgage loan companies.
DTTL	14665	15.6	X=260	Receipts and guaranteed investment certificates deposited in trust and mortgage loan companies.
EACR	13607		E=275	Weighted average coupon rate for Government of Canada direct market issues.
EACR1C	13603		E=252	Weighted average coupon rate for Government of Canada direct market issues, maturity class 1.
EACR2C	13604		E=253	Weighted average coupon rate for Government of Canada direct market issues, maturity class 2.
EACR3C	13605		E=254	Weighted average coupon rate for Government of Canada direct market issues, maturity class 3.
EACR4C	13606		E=255	Weighted average coupon rate for Government of Canada direct market issues, maturity class 4.
EACRCSB	13665		E=276	Weighted average coupon rate for Canada Savings Bonds.
EATM1C	13660		E=256	Average term-to-maturity of Government of Canada direct market issues, maturity class 1.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
EATM2C	13661		E=257	Average term-to-maturity of Government of Canada direct market issues, maturity class 2.
EATM3C	13662		E=258	Average term-to-maturity of Government of Canada direct market issues, maturity class 3.
EATM4C	13663		E=259	Average term-to-maturity of Government of Canada direct market issues, maturity class 4.
EC2	FM6		E=149	U.S. expenditure on consumer durables (1958 dollars).
ECCA63A	13649		E=67	Variable to capture effect on taxable corporate profits of accelerated depreciation allowances introduced in 1963.
ECCA66R	13650		E=68	Variable to capture effect on taxable corporate profits of reduced depreciation allowances introduced in 1966.
ECINT	3745		E=110	Net bond interest paid by private corporations (excluding banks, life insurance companies, and trusted pension plans).
ECINTGBE	3746		E=332	Net bond interest paid by public business enterprises.
ECO2	FM44		E=43	U.S. expenditure, personal consumption (1958 dollars).
ECO$2	FM51		E=41	U.S. expenditure, personal consumption.
ECRPM	16050		E=293	Provincial tax credits.
EDO	13542		E=172	Average consumption of diesel oil (millions of gallons per registered commercial motor vehicle).
EDTCA	13545		E=173	Variable to allow for overstatement of TCA and TCAF due to the use of a weighted marginal

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				rather than a weighted average tax rate.
EF68E	13709		E=7	Foreign exchange crisis expectations variable, 1.0 in 1Q68, -1.0 in 2Q68, zero elsewhere.
EG61MPF	13523		E=85	Military pay and allowances (1961 dollars).
EGAS	13541		E=170	Average gasoline consumption (millions of gallons per registered noncommercial motor vehicle).
EGNEADJ	13543		E=333	Adjustments to constant-dollar GNE necessary to produce implicit deflator, equals zero after 1960.
EGUIDE	13708		E=8	U.S. balance of payments guidelines variable.
EIET	13707		E=9	Interest equalization tax variable.
EIETB	14652		E=290	Variable to reflect deferral of new corporate, provincial and municipal bond issues in the United States because of uncertainty about the exemption of such issues from the U.S. interest equalization tax. Uncertainty ended when the exemption became law and deferred deliveries took place in 4Q64: -.2 from 3Q63 to 3Q64 inclusive, +1.0 in 4Q64, zero elsewhere.
EIFDMIS	13666		E=277	Miscellaneous components of interest on federal public debt.
ELEFF	14624		E=272	Labour efficiency factor in mining, manufacturing, and other business.
ELEFFC	16033		E=94	Labour efficiency factor in construction.
EMEDPAY	13680		E=320	Provincial medicare payments.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
EMRES	16123		E=399	Imports of goods residual, equals MG - MGA.
ENARES	D40237		E=84	National accounts expenditure residual (1961 dollars).
ENARES$	D40031		E=90	National accounts expenditure residual.
EP68E	13710		E=10	Foreign exchange crisis support variable, 1.0 in 1Q68.
EP69E	11989		E=328	Variable to capture effect on the forward rate of the imposition of a ceiling on swapped deposits, equals 1 in 3Q69, .5 in 4Q69, and zero elsewhere.
EPBT12	16105		E=385	Adjustment variable for PMBT12, equals PMBT12/[.01(PXBNF2)(PFX)].
EPBT13	16112		E=392	Adjustment variable for PMBT13, equals PMBT13/PFX13.
EPCH12	16106		E=386	Adjustment variable for PMCH12, equals PMCH12/[.01(PXBNF2)(PFX)].
EPCH13	16115		E=395	Adjustment variable for PMCH13, equals PMCH13/PFX13.
EPCM	14710		E=347	Adjustment variable for PMCM12, equals PMCM12/ .01(PXBNF2)(PFX).
EPCM13A	16113		E=393	Adjustment variable for PMCM13A, equals PMCM13A/PFX13.
EPD2	FM20		E=80	U.S. expenditure on producer durables (1958 dollars).
EPD$2	FM49		E=316	U.S. expenditure on producer durables.
EPEF	14711		E=348	Adjustment variable for PMEF12, equals PMEF12/ .01(PXBNF2)(PFX).
EPEF13A	16114		E=394	Adjustment variable for PMEF13A, equals PMEF13A/PFX13.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
EPFA12	16104		E=384	Adjustment variable for PMFA12, equals PMFA12/.01(PXBNF2)(PFX).
EPFA13	16111		E=391	Adjustment variable for PMFA13, equals PMFA13/PFX13.
EPFB	14709		E=346	Adjustment variable for PMFB12, equals PMFB12/ .01(PXBNF2)(PFX).
EPFXE	14606		E=189	Normal exchange rate, equals 1.0 prior to 2Q61 and from 1Q71 forward; from 3Q61 to 3Q62 EPFXE equals PFX; from 4Q62 to 1Q70 EPFXE equals 1.081; from 2Q70 to 4Q70 EPFXE equals PFX.
EPGPPADJ	16037		E=28	Adjustment variable for PGPP, equals (TILGS + CCAGF$ + CCAGPM$ + CCAGH$)/YGNE.
EPIM12	16110		E=390	Adjustment variable for PMIM12, equals PMIM12/.01(PXBNF2)(PFX).
EPIM13	16118		E=398	Adjustment variable for PMIM13, equals PMIM13/PFX13.
EPMF	14712		E=349	Adjustment variable for PMMF12, equals PMMF12/ .01(PXBNF2)(PFX).
EPMM12	16107		E=387	Adjustment variable for PMMM12, equals PMMM12/.01(PXBNF2)(PFX).
EPMM13	16116		E=396	Adjustment variable for PMMM13, equals PMM13/PFX13.
EPMVP12	16109		E=389	Adjustment variable for PMMVP12, equals PMMVP12/.01(PXBNF2)(PFX).
EPOM12A	16108		E=388	Adjustment variable for PMOM12A, equals PMOM12/ .01 (PXBNF2)(PFX).
EPOM13A	16117		E=397	Adjustment variable for PMOM13A, equals PMOM13A/PFX13.
EPOP	13818		E=307	The proportion of total

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				population (NPOPT) in the labour force population (NPOP).
EPS2	FM19		E=70	U.S. expenditure on producer structures (1958 dollars).
EPS$2	FM50		E=317	U.S. expenditure on producer structures.
ERBCRDD	BS632		E=200	Required cash reserve ratio for chartered bank demand deposits (percent).
ERBPCA	BS631		E=201	Ratio of personal chequing deposits to total personal deposits (percent).
ERDO	13540		E=171	Weighted average provincial diesel oil tax rate (dollars per gallon).
EREGQ69	11988		E=327	Variable to capture the extent to which the weighted foreign rate failed to represent the true foreign rate, equals 1,2,1,.5 in 1969 and zero elsewhere.
ERES1ADJ	13706		E=11	Adjustment variable used to convert published foreign exchange reserve series to a stock the first difference of which is an accurate measure of FXO. Variable is based on Bank of Canada deposit liabilities plus sterling bond retirements in 1963 and is used in balance of payments statistics.
ERES2ADJ	14660		E=182	Second adjustment variable used to convert published foreign exchange reserve series to a stock the first difference of which is FXO. Variable is based on IMF technical drawings and is not used in balance of payments statistics.
ERGAS	13539		E=169	Weighted average provincial gasoline tax rate (dollars

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				per gallon).
ERNUMIN	16030		E=154	Approximation for the frictional unemployment rate.
ERPAF	13667		E=291	Variable to redistribute federal retroactive wage payments made from 2Q69 to 1Q70.
ERTIMVPM	13526		E=167	Weighted average provincial rate of licence fee for registered commercial motor vehicles (dollars per vehicle).
ERTPHPM	11995		E=115	Weighted average hospital insurance premium.
ERTPMVPM	11998		E=162	Weighted average provincial rate of licence fee for registered noncommercial motor vehicles (dollars per vehicle).
ERUIB	11248		E=183	Weighted average rate of maximum unemployment insurance benefit (dollars per week).
ESAEC2	14620		E=262	Seasonal adjustment factor for U.S. expenditure on consumer durables (EC$2).
ESAYAS	16022		E=367	Seasonal adjustment factor for assessed income per taxpayer.
ESAYNW	16024		E=369	Seasonal adjustment factor for assessed nonwage income per nonwage taxpayer.
ESAYW	16023		E=368	Seasonal adjustment factor for assessed wage income per wage taxpayer.
ESUR	13674		E=279	Amount of surcharge that would have been collected had the 1961 volume of goods imports been maintained throughout the surcharge period 2Q62-1Q63.
ETARBT	16054		E=376	Equivalent ad valorem rate of duty collected on

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				imports of beverages and tobacco (SITC 1).
ETARCH	16057		E=379	Equivalent ad valorem rate of duty collected on imports of chemicals (SITC 5).
ETARCM	16055		E=377	Equivalent ad valorem rate of duty collected on imports of crude materials (excluding fuels) (SITC 2).
ETAREF	16056		E=378	Equivalent ad valorem rate of duty collected on imports of energy fuels (SITC 3).
ETARFA	16053		E=375	Equivalent ad valorem rate of duty collected on imports of food and live animals (SITC 0).
ETARIM	16060		E=382	Equivalent ad valorem rate of duty collected on imports of miscellaneous manufactured articles, e g, musical instruments, stereo equipment, printed matter, etc. (SITC 8).
ETARMM	16058		E=380	Equivalent ad valorem rate of duty collected on imports of manufactured goods classified chiefly by material, e g, paper, iron, steel, non-ferrous metals, etc. (SITC 6).
ETARMOM	16059		E=381	Equivalent ad valorem rate of duty collected on imports of machinery (excluding internal combustion engines and transportation equipment) (SITC 7 - [73 + 711.5]).
EWEURO	14661		E=177	Index of the real wage rate in Great Britain, Italy, and West Germany (1961=1.0).
EWLF	13507		E=99	Ratio of resident-held Government of Canada

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				direct market issues (excluding treasury bills) to resident-held total Government of Canada, provincial and municipal direct market issues.
EYDIV1C	2407		E=324	Proportion of assessed dividend income earned by taxpayers with assessed nonwage incomes between $0 and $3,000.
EYDIV2C	2408		E=325	Proportion of assessed dividend income earned by taxpayers with assessed nonwage incomes between $3,000 and $5,000.
EYDIV3C	2409		E=326	Proportion of assessed dividend income earned by taxpayers with assessed nonwage incomes between $5,000 and $10,000.
EYDIVA11	13514		E=116	Ratio of assessed dividend income to total dividends paid to Canadians by Canadian corporations.
FIBL13	11886	19.11	X=31	Sales of Canadian corporate bonds and shares in other countries: gross new issues, less retirements, plus net trade in outstanding bonds and shares.
FIDI12	D51560	19.1	X=32	U.S. direct investment in Canada.
FIDI13	13734	19.2	X=33	Direct investment of other countries in Canada.
FIGB13	11885	19.10	X=34	Sales of Government of Canada, provincial and municipal bonds in other countries: gross new issues, less retirements, plus net trade in outstanding bonds.
FILO12	11897		E=12	Other long-term capital flows from the United States.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
FILO13	11898		E=13	Other long-term capital flows from other countries.
FINIB12	2030	19.6	X=35	Sales of gross new issues of Canadian corporate bonds in the United States.
FINIGF12	11888		E=14	Sales of gross new issues of Government of Canada bonds in the United States.
FINIPM12	11882	19.5	X=36	Sales of gross new issues of provincial and municipal bonds, direct and guaranteed, in the United States.
FIPVB12	11884	19.9	X=37	Purchases of Canadian corporate shares on a portfolio basis by U.S. residents: gross new issues, less retirements, plus net trade in outstanding shares.
FIRETB12	2071		E=15	Retirements of Canadian corporate bonds held in the United States.
FIRETG12	11889		E=16	Retirements of Government of Canada, provincial and municipal bonds held in the United States.
FIS	D50688	21.5	X=40	Short-term capital flows.
FITOBB12	1992	19.8	X=38	Trade in outstanding Canadian corporate bonds between Canada and the United States (net sales to the United States).
FITOGB12	11883	19.7	X=39	Trade in outstanding Government of Canada, provincial and municipal bonds between Canada and the United States (net sales to the United States).
FIYCRE12	11869	19.13	X=262	Canadian corporate retained earnings accruing to U.S. shareholders.
FIYCRE13	14681		E=203	Canadian corporate retained earnings of residents

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				of other countries.
FODI12	13735	19.3	X=41	Canadian direct investment in the United States.
FOL13	11881	19.4	X=42	Canadian long-term direct and portfolio investment in bonds and shares in other countries.
FOPL12	11887	19.12	X=43	Purchases of U.S. bonds and shares by Canadians: gross new issues, less retirements, plus net trade in outstanding bonds and shares.
FOYCRE12	11901		E=4	Flow of retained earnings accruing to Canadian shareholders from U.S. corporations.
FOYCRE13	11902		E=5	Flow of retained earnings accruing to Canadian shareholders from corporations in other countries.
FXO	13704	21.1A	X=44	Official excess demand for spot exchange.
FXP	13700	21.2A and 21.4	X=45	Private excess demand for spot exchange.
GALPM	13531		E=159	Changes in asset and liability accounts of provincial and municipal governments.
GAMIS	13508		E=17	Changes in miscellaneous asset and liability accounts of the Government of Canada.
GASSTF	13643		E=18	Federal capital assistance to industry.
GASSTPM	D40129		E=224	Provincial capital assistance to industry.
GBALCPP	D40173	14.9	X=276	Canada Pension Plan national accounts balance (+ if surplus).
GBALF	D40169	14.6	X=46	Federal national accounts

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				balance (+ if surplus).
GBALH	D40172	14.8	X=259	Hospital national accounts balance (+ if surplus).
GBALPM	11999	14.7	X=47	Provincial-municipal national accounts balance (+ if surplus).
GBALQPP	D40174	14.10	X=277	Quebec Pension Plan national accounts balance (+ if surplus).
GBCPPPM	B3070	exogenous at present	X=75	Provincial bonds purchased by Canada Pension Plan Investment Fund.
GBRETSPM	13530		E=105	Retirements of provincial and municipal bonds.
GBRPM	13528	14.13	X=48	Gross new issues of provincial and municipal bonds (excluding provincial issues to Canada Pension Plan Investment Fund).
GCGSCPP	D40553		E=341	Expenditure on goods and services by Canada Pension Plan.
GCGSQPP	D40554		E=342	Expenditure on goods and services by Quebec Pension Plan.
GCGSH	D40116		E=208	Current expenditure on goods and services by hospitals.
GCNWF	11954	12.3	X=256	Federal current nonwage expenditure.
GCNWPM	11965	13.4	X=257	Provincial-municipal current nonwage expenditure.
GGSDF	D40113		E=308	Current defence expenditure on goods and services.
GMPF	D40001		E=19	Military pay and allowances.
GSUBSF	D40125		E=20	Federal subsidies.
GSUBSPM	D40126		E=21	Provincial-municipal subsidies.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
GTGHPM	13644		E=225	Provincial-municipal transfers to hospitals.
GTGMP	D40089		E=295	Provincial transfers to municipalities.
GTGPMF	13642		E=22	Federal transfers to provinces and municipalities.
GTNRF	D40130		E=218	Federal transfers to non-residents.
GTPCPP	D40121		E=104	Transfer payments to persons by Canada Pension Plan.
GTPFAF	16006		E=351	Family allowances.
GTPINTF	D40132	11.5	X=51	Interest on the federal public debt.
GTPINTH	D40555		E=343	Interest on the public debt paid by hospitals.
GTPINTPM	13646		E=23	Provincial-municipal interest payments to persons.
GTPOF	11991		E=24	Other federal transfers to persons.
GTPPM	13537		E=25	Provincial-municipal transfers to persons.
GTPQPP	D40122		E=337	Transfer payments to persons by Quebec Pension Plan.
GTPUIBF	14701	11.2	X=52	Unemployment insurance benefits.
GWIF	11961		E=26	Federal wages, salaries, and supplements paid to employees in non-commercial institutions.
GWIPM	11953		E=27	Provincial and municipal wages, salaries, and supplements paid to employees in non-commercial institutions (excluding schools).
GWPASPM	11967		E=210	Provincial and municipal wage supplements paid to employees in public administration.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
GWSF	11950		E=29	Federal wage supplements paid to employees in public administration and defence.
GWSSM	11932		E=211	Municipal wage supplements paid to employees in elementary and secondary schools.
HAPB	BS1611	17.14	X=278	Mortgage loans approved by chartered banks.
HAPCMHCM	11371		E=120	Direct NHA loans approved by CMHC for multiple dwellings.
HAPCMHCS	11370		E=96	Direct NHA loans approved by CMHC for single-detached dwellings.
HAPLI	BS1632	17.13	X=266	Life insurance company mortgage approvals.
HAPNRESD	14694	2.5	X=275	Mortgage approvals for new residential construction by life insurance, trust and mortgage loan companies, and chartered banks.
HAPNROT	16103		E=313	Mortgage approvals for new residential construction by other lending companies.
HAPTL	14675	17.12	X=265	Trust and mortgage loan company mortgage approvals.
HAWC	D1594(8)	5.5	X=55	Average weekly hours worked in construction.
HAWMM	11850	5.4	X=56	Average weekly hours worked in mining and manufacturing.
HSSPLIT	16025		E=184	Ratio of multiple starts to total housing starts.
HSTM	14647	2.6	X=57	Housing starts, multiples (thousands of units).
HSTS	14646	2.2	X=96	Housing starts, single-detached (thousands of units).

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
IH	13637		E=207	Investment expenditure by hospitals.
IIB	D40230	3.4	X=61	Change in nonfarm business inventories.
IIF	D40231		E=31	Change in farm inventories (1961 dollars).
IIF$	D40028		E=88	Change in farm inventories.
IIG	D40229		E=221	Value of physical change in government inventories (1961 dollars).
IIG$	D40026		E=220	Value of physical change in government inventories.
IME	D40225	3.1	X=62	Business investment in machinery and equipment.
IMEAG	16004		E=266	Investment in agricultural machinery and equipment.
IMEGF	13625	12.5	X=253	Federal investment in machinery and equipment.
IMEGPM	13632	13.7	X=254	Provincial-municipal investment in machinery and equipment.
INRC	D40224	3.3	X=63	Business investment in non-residential construction.
INRCAG	16005		E=267	Investment in agricultural non-residential construction.
INRCGF	13624	12.4	X=249	Federal investment in non-residential construction.
INRCGPM	13631	13.5	X=250	Provincial-municipal investment in construction (excluding schools).
INRCSM	13629	13.6	X=251	Municipal investment in school construction.
IRC	D40223	2.1	X=64	Business investment in residential construction.
KB$	14688	18.6	X=73	Replacement value of business capital stock.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
KDO	13780	1.7	X=65	Stock of consumer durables (excluding motor vehicles).
KI2	FM39		E=98	U.S. stock of nonfarm business inventories multiplied by 4.
KIB	11636	3.9	X=66	Stock of nonfarm business inventories.
KME	11309	3.7	X=67	Stock of nonfarm machinery and equipment.
KMEY	11315	3.10	X=68	Desired capital to output ratio for machinery and equipment.
KMV	13781	1.6	X=69	Stock of motor vehicles held by consumers.
KNRC	11314	3.8	X=70	Stock of nonfarm non-residential construction.
KNRCGF	13668	12.6	X=225	Stock of federal non-residential construction.
KNRCSM	13672	13.10	X=201	Stock of elementary and secondary schools.
KNRY	11311	3.11	X=71	Desired capital to output ratio for non-residential construction.
KRESD	14657	2.7	X=274	Value of housing stock, net of depreciation (1961 dollars).
LCB12	11890	20.2	X=74	Canadian corporate bonds and debentures held by U.S. residents.
LDIPRV13	14684	20.5	X=269	Replacement value of the stock of direct and portfolio investment in Canada by other countries, including Canadian corporate retained earnings accruing to shareholders in other countries.
LDIRV12	14683	20.4	X=268	Replacement value of the stock of U.S. direct investment in Canada, including Canadian corporate retained earnings accruing to U.S. direct

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				investors.
LEURO	13712		E=234	Amount of short-term Euro-dollar liabilities reported by banks in eight European countries.
LF2+LA2	FM143		E=310	U.S. labour force, including armed forces.
LGB12	11855	20.1	X=76	Government of Canada, provincial and municipal bonds, direct and guaranteed, held by U.S. residents.
LGB13	11856	20.6	X=77	Government of Canada, provincial and municipal bonds, direct and guaranteed, held by residents of other countries.
LGBF	13506		E=95	End-of-quarter stock of Government of Canada direct market issues held by the general public and the chartered banks.
LGBFG	B2401(9)		E=106	Government of Canada guaranteed debt.
LGBFR1C	11903		E=100	End-of-quarter stock of Government of Canada direct market issues 0-3 years held by the resident general public and the chartered banks.
LGBFR2C	11904		E=101	End-of-quarter stock of Government of Canada direct market issues 3-5 years held by the resident general public and the chartered banks.
LGBFR3C	11905		E=102	End-of-quarter stock of Government of Canada direct market issues 5-10 years held by the resident general public and the chartered banks.
LGBFR4C	11906		E=103	End-of-quarter stock of Government of Canada direct market issues 10

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				years and over held by the resident general public and the chartered banks.
LGBPM	13505	14.14	X=78	End-of-quarter stock of provincial and municipal bonds, direct and guaranteed (excluding provincial issues to Canada Pension Plan Investment Fund).
LGFCSB	B2406(9)	15.4	X=263	End-of-quarter stock of Canada Savings Bonds.
LGFTB	13664	14.11	X=26	End-of-quarter stock of Government of Canada treasury bills (excluding Bank of Canada holdings).
LGFTBNR	13513		E=107	End-of-quarter stock of Government of Canada treasury bills held by non-residents.
LONB	BS379		E=198	Total liabilities of chartered banks, net of deposit liabilities.
LONTL	14677		E=109	Other liabilities of trust and mortgage loan companies (ATL - [DSTL + DTTL]).
LPCV12	14686	20.3	X=72	Market value of common and preferred Canadian corporate shares held by U.S. residents.
LU2	FM124		E=311	U.S. unemployment.
M	14637	4.43	X=81	Imports of goods and services.
M$12	D3908	4.41	X=82	Imports of goods and services from the United States.
M$13	13731	4.42	X=83	Imports of goods and services from other countries.
MBT12	16068	4.3	X=310	Imports of beverages and tobacco from the United States (SITC 1).

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
MBT13	16086	4.4	X=326	Imports of beverages and tobacco from other countries (SITC 1).
MCH12	16070	4.9	X=312	Imports of chemicals from the United States (SITC 5).
MCH13	16089	4.10	X=329	Imports of chemicals from other countries (SITC 5).
MCM12A	16069	4.5	X=311	Imports of crude materials (excluding fuels) from the United States (SITC 2).
MCM13A	16087	4.6	X=327	Imports of crude materials (excluding fuels) from other countries (SITC 2).
MDIV$12	3721	4.28	X=86	Dividend payments to the United States.
MEF12	11730	4.7	X=99	Imports of energy fuels from the United States (SITC 3).
MEF13A	16088	4.8	X=328	Imports of energy fuels from other countries (SITC 3).
MFA12	16067	4.1	X=309	Imports of food and live animals from the United States (SITC 0).
MFA13	16085	4.2	X=325	Imports of food and live animals from other countries (SITC 0).
MFS$12	D51537	4.30	X=89	Freight and shipping payments to the United States.
MFS$13	13783	4.33	X=90	Freight and shipping payments to other countries.
MG	14673	4.39	X=157	Imports of goods (national accounts).
MG12A	16097	4.36	X=334	Imports of goods from the United States (SITC 0 to 9).
MG13A	16098	4.37	X=335	Imports of goods from other countries (SITC 0 to 9).
MG$12A	16095	4.34	X=336	Imports of goods from the United States.
MG$13A	16096	4.35	X=337	Imports of goods from

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				other countries.
MGA	16099	4.38	X=333	Imports of goods (SITC 0 to 9).
MID$13	13784	4.31	X=91	Interest and dividend payments to other countries.
MIH$	D50540		E=42	Imports: inheritances and emigrants' funds from all countries.
MIM12	16072	4.15	X=314	Imports of miscellaneous manufactured articles, e g, musical instruments, stereo equipment, printed matter, etc., from the United States (SITC 8).
MIM13	16092	4.16	X=332	Imports of miscellaneous manufactured articles, e g, musical instruments, stereo equipment, printed matter, etc., from other countries (SITC 8).
MINT$12	3717	4.27	X=92	Interest payments to the United States.
MMIS12	13834		E=32	Imports of transportation equipment (excluding motor vehicles and parts) and unclassified commodity transactions from the United States plus miscellaneous adjusting entries (SITC 9 + 73 - 732).
MMIS12A	16075		E=383	Miscellaneous imports from the United States (SITC 4 + (73 - 732) + 9).
MMIS13	13835		E=33	Imports of transportation equipment (excluding motor vehicles and parts) and unclassified commodity transactions from other countries plus miscellaneous adjusting entries (SITC [9 + 73] - 732).
MMIS13A	16094		E=374	Miscellaneous imports from other countries (SITC 4

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				+ (73 - 732) + 9).
MMM12	16071	4.11	X=313	Imports of manufactured goods classified chiefly by material, e g, paper, iron and steel, non-ferrous metals, etc., from the United States (SITC 6).
MMM13	16090	4.12	X=330	Imports of manufactured goods classified chiefly by material, e g, paper, iron and steel, non-ferrous metals, etc., from other countries (SITC 6).
MMV13	11743		E=40	Imports of motor vehicles and parts from other countries (SITC 732).
MMVP12	16074	4.17	X=316	Imports of motor vehicles and parts, including internal combustion engines, from the United States (SITC 732 + 711.5).
MMVP13	16093		E=373	Imports of motor vehicles and parts, including internal combustion engines, from other countries (SITC 732 + 711.5).
MOM12A	16073	4.13	X=315	Imports of machinery (excluding transportation equipment and internal combustion engines) from the United States (SITC 7 - [73 + 711.5]).
MOM13A	16091	4.14	X=331	Imports of machinery (excluding transportation equipment and internal combustion engines) from other countries (SITC 7 - [73 + 711.5]).
MOS$12	14630		E=155	Imports of other services from the United States.
MOS$13	14631		E=157	Imports of other services from other countries.
MTM$2	FM114		E=235	Total time deposits in

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				member banks of the U.S. federal reserve system.
MTR$12	D51531	4.29	X=101	Travel payments to the United States.
MTR$13	13790	4.32	X=102	Travel payments to other countries.
MTRP$	D40053		E=30	Transfer payments from Canadian residents to persons abroad.
N2	FM205		E=179	Total U.S. population.
NBIRTHS	13813		E=294	Births.
NC	11835	5.2	X=103	Paid employees in construction.
NCD	16034	5.17	X=291	Desired level of employment in construction.
NCL	11247	11.4	X=104	Unemployment Insurance Fund claimants.
NDEATHS	13814		E=306	Deaths.
NE	11824	5.11	X=105	Total employed persons (excluding armed forces).
NEMPS	11246	11.6	X=106	Employed contributors to the Unemployment Insurance Fund.
NEMS	13816	5.8	X=185	Emigrants.
NEUPB	11846	5.3	X=128	Unpaid employees in nonfarm business.
NEUPF	14602		E=35	Unpaid farm workers.
NFP	13723		E=34	Paid farm workers.
NGPAF	11922	12.1	X=107	Employment in federal public administration and defence.
NGPAPM	11962	13.1	X=108	Employment in provincial-municipal public administration.
NHH	3054		E=286	Number of families in Canada.
NIMS	13815	5.7	X=176	Immigrants.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
NINS	11257	11.3	X=109	Enrollment in the Unemployment Insurance Fund.
NIOS	11829		E=36	Paid workers in non-commercial institutions (excluding schools).
NIS	11927	13.3	X=110	Employment in elementary and secondary schools under municipal control.
NL	11141	5.6	X=111	Labour force.
NMMOB	13851	5.1	X=112	Paid employees in mining, manufacturing, and other business.
NMMOBD	14653	5.13	X=215	Desired level of employment in mining, manufacturing, and other business.
NMMOBD*	16035	5.16	X=292	Constrained desired level of employment in mining, manufacturing, and other business.
NMMOBS	16032	5.15	X=290	Approximation to the potential labour force in mining, manufacturing, and other business.
NOAPR	13519		E=122	Old age pension recipients.
NPOP	13817	5.10	X=224	Noninstitutional population 14 years of age and over.
NPOP019	14696		E=340	Population aged zero to 19 years.
NPOPS	11931		E=296	Students enrolled in elementary and secondary schools.
NPOPSS	11396		E=285	Total population 14 years of age and over attending school.
NPOPT	13812	5.9	X=214	Total population (beginning-of-quarter figure).
NT	11544	9.7	X=114	Tax returns filed.
NT1C	11545	9.10	X=115	Tax returns filed, income class 1.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
NT2C	11546	9.11	X=116	Tax returns filed, income class 2.
NT3C	11547	9.12	X=117	Tax returns filed, income class 3.
NT4C	11548	9.13	X=118	Tax returns filed, income class 4.
NTj				Tax returns filed, income group j (j = 1, 14).
NTNW1C	13569	9.26	X=123	Nonwage earners tax returns filed, income class 1.
NTNW2C	13570	9.27	X=124	Nonwage earners tax returns filed, income class 2.
NTNW3C	13571	9.28	X=125	Nonwage earners tax returns filed, income class 3.
NTNW4C	13572	9.29	X=126	Nonwage earners tax returns filed, income class 4.
NTW1C	13565	9.22	X=119	Wage earners tax returns filed, income class 1.
NTW2C	13566	9.23	X=120	Wage earners tax returns filed, income class 2.
NTW3C	13567	9.24	X=121	Wage earners tax returns filed, income class 3.
NTW4C	13568	9.25	X=122	Wage earners tax returns filed, income class 4.
NU	11063	5.12	X=127	Total unemployed persons.
NX	11848		E=37	Employment residual.
ODG2	FM294		E=66	U.S. military prime contracts for defence goods.
PC2	FM131		E=263	Implicit price deflator for U.S. expenditure on

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				consumer durables.
PCDO	13799	7.4	X=129	Price of other consumer durables.
PCMV	13791	7.3	X=131	Price of consumer durables - motor vehicles.
PCNDSD	13792	7.1	X=130	Price of consumer non-durables and semi-durables.
PCON2	FM132		E=312	Implicit price deflator for total U.S. expenditure on consumption.
PCPI	14642	7.18	X=132	Consumer Price Index.
PCPICE	11819	7.23	X=244	Expected annual rate of change in Consumer Price Index.
PCPIXLG	16043		X=299	Lagged value of PCPI. Current value is defined as the nineteenth lag of PCPI.
PCS	13793	7.22	X=133	Price of consumer services.
PCSMVOD	14654	7.21	X=100	Implicit price deflator for consumer services imputed from the stocks of motor vehicles and other consumer durables.
PCSXR	14707	7.2	X=286	Price of consumer services excluding rent and property taxes.
PEEX2	FM206		E=283	Implicit price deflator for U.S. exports.
PEGF2	FM275		E=281	Implicit price deflator for U.S. federal purchases of goods and services.
PFX	B3400(8)	21.4 and 21.2B	X=134	Spot exchange rate (Canadian dollars per U.S. dollar). (Equilibrium condition in the foreign exchange market used to determine PFX when the exchange rate is fixed.)
PFX13	NEW12650	21.10	X=273	Weighted index of exchange rates prevailing between Canada and nine other countries (Canadian dollars per unit of foreign

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				currency, index equals 1.0 in 1961).
PFX23	14697		E=334	Index of weighted exchange rates, the United States and the rest of the world (PFX23 = PFX13/PFX).
PFXF	13703	21.3A and 21.3B	X=135	Ninety-day forward exchange rate (Canadian dollars per U.S. dollar).
PGCNWG	13500	7.14	X=137	Price deflator for current nonwage government expenditure.
PGNE	13794	7.19	X=136	Price deflator for gross national expenditure.
PGPP	11689	7.20	X=138	Price deflator for gross private business product.
PHC2	FM136		E=239	Construction cost index used in the MPS model (mnemonic PHC).
PI2	FM168		E=282	Implicit price deflator for U.S. stock of inventories.
PIH	13640		E=226	Price deflator for hospital investment.
PIME	13796	7.5	X=140	Price deflator for business investment in machinery and equipment.
PIMEG	13639	7.16	X=255	Price deflator for government investment in machinery and equipment.
PINRC	13797	7.7	X=141	Price deflator for business investment in non-residential construction.
PINRCG	13638	7.15	X=252	Price deflator for government investment in non-residential construction.
PIRC	13798	7.6	X=242	Price deflator for business investment in residential construction.
PKIB	13811	7.8	X=243	Price index of nonfarm business inventory stock.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
PL2	FM152		E=297	Employee compensation rate in U.S. nonfarm private domestic business.
PLGF1C	11913	14.2	X=142	Ratio of market value to book value of Government of Canada direct market issues, maturity class 1.
PLGF2C	11914	14.3	X=143	Ratio of market value to book value of Government of Canada direct market issues, maturity class 2.
PLGF3C	11915	14.4	X=144	Ratio of market value to book value of Government of Canada direct market issues, maturity class 3.
PLGF4C	11916	14.5	X=145	Ratio of market value to book value of Government of Canada direct market issues, maturity class 4.
PLGI	13511	14.12	X=146	Market valuation ratio for Government of Canada, provincial and municipal bonds held by Canadian residents.
PMBT12	NEW12541	7.25	X=303	Price index for imports of beverages and tobacco from the United States (SITC 1).
PMBT13	16077	7.34	X=318	Price index for imports of beverages and tobacco from other countries (SITC 1).
PMCH12	NEW12542	7.28	X=304	Price index for imports of chemicals from the United States (SITC 5).
PMCH13	16080	7.37	X=321	Price index for imports of chemicals from other countries (SITC 5).
PMCM12	NEW12531	7.26	X=59	Price index for imports of crude materials from the United States (SITC 2).
PMCM13	NEW12654		E=49	Price index for imports of crude materials from other countries (SITC 2 + 4).

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
PMCM13A	16078	7.35	X=319	Price index for imports of crude materials (excluding fuels) from other countries (SITC 2).
PMEF12	NEW12530	7.27	X=60	Price index for imports of energy fuels from the United States (SITC 3).
PMEF13	NEW12655		E=250	Price index for imports of energy fuels from other countries (SITC 3).
PMEF13A	16079	7.36	X=320	Price index for imports of energy fuels from other countries (SITC 3).
PMFA12	NEW12540	7.24	X=302	Price index for imports of food and live animals from the United States (SITC 0).
PMFA13	16076	7.33	X=317	Price index for imports of food and live animals from other countries (SITC 0).
PMIM12	NEW12545	7.31	X=307	Price index for imports of miscellaneous manufactured articles, e g, musical instruments, printed matter, etc., from the United States (SITC 8).
PMIM13	16083	7.40	X=324	Price index for imports of miscellaneous manufactured articles, e g, musical instruments, printed matter, etc., from other countries (SITC 8).
PMMF13	NEW12656	7.38	E=278	Price index for imports of manufactures (excluding transport-ation equipment) from other countries (SITC 5 to 8 [excluding trans-portation equipment]).
PMMIS12	13831		E=45	Price index for imports of transportation equipment (excluding motor vehicles and parts) and unclassi-fied commodity transactions

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				(SITC 9) from the United States plus miscellaneous adjusting entries.
PMMIS12A	16064		E=370	Price index for miscellaneous imports from the United States (SITC 4 + [73 - 732] + 9).
PMMIS13	13831		E=46	Price index for imports of transportation equipment (excluding motor vehicles and parts) and unclassified commodity transactions from other countries plus miscellaneous adjusting entries (SITC 73 - 732 + 9).
PMMIS13A	16065		E=371	Price index for miscellaneous imports from other countries (SITC 4 + [73 - 732] + 9).
PMMM12	NEW12543	7.29	X=305	Price index for imports of manufactured goods classified chiefly by material, e g, paper, iron and steel, non-ferrous metals, etc., from the United States (SITC 6).
PMMM13	16081	7.38	X=322	Price index for imports of manufactured goods classified chiefly by material, e g, paper, iron and steel, non-ferrous metals, etc., from other countries (SITC 6).
PMMV12	NEW12546		E=47	Price index for imports of motor vehicles and parts from the United States (SITC 732).
PMMV13	NEW12657		E=48	Price index for imports of motor vehicles and parts from other countries (SITC 732).
PMMVP12	16063	7.32	X=308	Price index for imports of motor vehicles and parts (including internal combustion engines) from the United States

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				(SITC 732 + 711.5).
PMMVP13	16084		E=372	Price index for imports of motor vehicles and parts (including internal combustion engines) from other countries (SITC 732 + 711.5).
PMOM12A	16066	7.30	X=306	Price index for imports of machinery (excluding internal combustion engines and transportation equipment) from the United States. (SITC 7 - [73 + 711.5]).
PMOM13A	16082	7.39	X=323	Price index for imports of machinery (excluding internal combustion engines and transportation equipment) from other countries (SITC 7 - [73 + 711.5]).
PMS	13848		E=51	Price index for imports of services.
PNRM	14669	7.10	X=147	Price index for non-residential construction materials.
PNTE13	14698		E=335	PNTE13 equals PMNTE13/PFX13.
PPD2	FM133		E=97	Implicit price deflator for U.S. expenditure on producer durables (EPD2).
PRENT	11276	7.17	X=272	Price deflator for gross rent (paid and imputed).
PRM	14670	7.9	X=148	Price index for residential construction materials.
PWXG	9575		E=271	Price index for world exports of goods.
PXBNF2	FM156		E=269	Implicit price deflator for U.S. nonfarm business product and household output.
PXEF12	NEW12636		E=345	Price index for exports of energy fuels to the United States (SITC 3).
PXMIS12	13840		E=79	Price index for exports of uranium and aircraft and

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				parts to the United States plus miscellaneous adjusting entries (SITC 286 + 734).
PXMIS13	13840		E=82	Price index for exports of uranium and aircraft and parts to other countries plus miscellaneous adjusting entries (SITC 286 + 734).
PXMV12	NEW12640	7.12	X=149	Price index for exports of motor vehicles and parts to the United States (SITC 732).
PXNMV12	NEW12659	7.11	X=150	Price index for exports of goods (excluding uranisum, aircraft and parts, and motor vehicles and parts) to the United States (SITC 0 to 9 - [286 + 732 + 734]).
PXNW13	NEW12660	7.13	X=151	Price index for exports of goods (excluding wheat, uranium, and aircraft and parts) to other countries (SITC 0 to 9 - [041 + 286 + 734]).
PXS	13845		E=83	Price index for exports of services.
PXW13	NEW12407		E=53	Price index for exports of wheat to other countries.
PYFA	13520		E=86	Price deflator for accrued farm income.
Q1	11073		E=145	First-quarter seasonal dummy.
Q2	11074		E=146	Second-quarter seasonal dummy.
Q3	11075		E=147	Third-quarter seasonal dummy.
Q4	11076		E=148	Fourth-quarter seasonal dummy.
QAUTO	11723		E=260	Variable to reflect increased rationalization of production under terms of the Canadian-U.S. auto pact. Zero prior to 1Q63 then rises (changes in 4Q of each year) to 4.17 in 4Q70 and remains at that

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				value thereafter.
QAUTST	11745		E=121	Variable to reflect U.S. auto strikes, equals -1.0 in 4Q64 and 4Q67, +1.0 in 1Q65, .5 in 3Q67 and 1Q68, -7 in 4Q70, zero elsewhere.
QBORROW	16045		E=261	Variable to reflect large provincial and municipal borrowing in Europe, equals 1.0 from 2Q72 to 4Q72, zero elsewhere
QBROKE	13904		E=191	Variable to reflect reaction to the bankruptcy of Atlantic Acceptance Corporation, equals 1.0 from 1Q65 to 4Q65, zero elsewhere.
QC1	11982		E=192	First-quarter constrained dummy variable, equals Q1 - Q4.
QC2	11983		E=193	Second-quarter constrained dummy variable, equals Q2 - Q4.
QC3	11984		E=194	Third-quarter constrained dummy variable, equals Q3 - Q4.
QCRISIS	14678		E=196	Variable to capture effect of exchange crises on short rates, equals 1.0 in 3Q62, 1Q68 and 2Q68, zero elsewhere.
QCRISIS1	16040		E=89	Variable to capture effect of exchange crisis on short rates, equals 1.0 in 3Q62, zero elsewhere.
QDB	BS220		E=195	Bank deposit variable, equals 1.0 from 1Q62 forward, zero elsewhere.
QDBA	14680		E=315	Variable to reflect introduction of Bank Act changes in 3Q67 removing interest rate ceilings on bank loans, equals 1.0 from

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				3Q67 on, zero elsewhere.
QDBAD	14609		E=77	Variable in wage equation, equals 1.0 from 1Q52 to 1Q61, zero elsewhere.
QDCARS	13673		E=288	Variable to account for the effect of the Canadian-U.S. auto pact on customs duties, equals 1.0 from 1Q65 forward, zero elsewhere.
QDCENT	13679		E=319	Variable to account for irregular observations in provincial-municipal nonwage current expenditure, equals 1.0 from 3Q66 to 2Q67, zero elsewhere.
QDGOOD	14610		E=76	Variable in wage equation, equals 1.0 from 2Q61 forward, zero elsewhere.
QDKEN	13675		E=292	Variable to capture effects of Kennedy Round trade concessions on customs duties, equals 1.0 from 1Q68 to 2Q69, 2.5 from 3Q69 forward, zero elsewhere.
QDNINS	13908		E=181	Variable to reflect amendment of the Unemployment Insurance Act increasing its coverage equals 1.0 from 2Q67 forward, zero elsewhere.
QDNUSA	11758		E=280	Variable to reflect increased duty-free allowances for tourists to countries other than the United States, equals 1.0 from 4Q58 to 2Q62, zero elsewhere.
QDOWN	16042		E=323	Variable to capture effect on short-term rates of attempt by monetary authorities to prevent appreciation of the Canadian dollar, equals 1.0 in 4Q71, zero elsewhere.
QDTCCF1	13651		E=241	Variable to reflect changing corporation tax practices,

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				equals 1.0 from 1Q52 to 4Q63, zero elsewhere.
QDTCCF2	13652		E=242	Variable to reflect changing corporation tax practices, equals 1.0 from 1Q64 to 4Q64, zero elsewhere.
QDTCCF3	13653		E=243	Variable to reflect changing corporation tax practices, equals 1.0 from 1Q65 to 4Q65, zero elsewhere.
QDTCCF4	13654		E=244	Variable to reflect changing corporation tax practices, equals 1.0 from 1Q66 to 4Q67, zero elsewhere.
QDTCCF5	13655		E=245	Variable to reflect changing corporation tax practices, equals 1.0 from 1Q68 to 4Q68, zero elsewhere.
QDTCCF6	13656		E=246	Variable to reflect changing corporation tax practices, equals 1.0 from 1Q69 to 4Q69, zero elsewhere.
QDTCCF7	13657		E=247	Variable to reflect changing corporation tax practices, equals 1.0 from 1Q70 to 4Q70, zero elsewhere.
QDTCCF8	13658		E=248	Variable to reflect changing corporation tax practices, equals 1.0 from 1Q71 forward, zero elsewhere.
QDTCCF9	13659		E=249	Variable to reflect changing corporation tax practices, equals 1.0 in 3Q68 and 1Q69, -1.0 in 2Q68 and 4Q68, zero elsewhere.
QDUIF	13907		E=180	Variable to reflect structural changes in the operation of the Unemployment Insurance Fund, equals 1.0 from 3Q68 forward, zero elsewhere.
QEUR	16044		E=268	Variable to reflect increased government borrowing in the European market that start-

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				ed in 1968, equals 1.0 from 1Q68 forward, zero elsewhere.
QEUROPM	14604		E=205	Variable to account for European borrowing by provincial and municipal governments in mid-1968, equals .33 in 2Q68, 1.0 in 3Q68, 1.0 from 1Q69 to 3Q69, zero elsewhere.
QEXPO	11780		E=3	Variable to reflect effect of Expo67, equals 1.0 from 2Q67 to 4Q67, zero elsewhere.
QFIX	16038		E=1	Variable to span period of fixed exchange rates, equals 1.0 from 3Q62 to 1Q70, zero elsewhere.
QFLEX	13902		E=188	Variable to span period of flexible exchange rates (stopping when government announced intention of achieving higher PFX), equals 1.0 from 1Q52 to 2Q61, zero elsewhere.
QFLEX1D	16041		E=314	Variable to capture effect on short-term rates of attempts by monetary authorities to depreciate the Canadian dollar, equals 1.0 from 3Q61 to 1Q62, zero elsewhere.
QFLEX2	16039		E=39	Variable to span period of Canada's second experience with flexible exchange rates, equals 1.0 from 2Q70 forward.
QFLOW	13678		E=318	Variable to capture abnormal capital inflow on portfolio account with U.S., equals 1.0 in 2Q69, zero elsewhere.
QGT	16102		E=303	Variable to capture unusually large contract awards resulting from engineering projects and Expo67,

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				equals 1. in 2Q60, 2Q65, and 3Q65, zero elsewhere.
QHAPB	14705		E=160	Variable to reflect absence of chartered banks from the mortgage market from 1Q60 to 1Q67, equals zero from 1Q61 to 1Q67, 1.0 elsewhere. where.
QHOS	14700		E=336	Variable to account for transfer of hospitals from private to public sector in the National Accounts, equals 1.0 from 1Q61 forward, zero elsewhere. Also used in TWF equation to capture changes in withholding tax legislation in 1960.
QINDEX	16049		E=350	Variable to reflect introduction of indexing, equals 1.0 from 1Q74 forward.
QIRON	16036		E=212	Variable to reflect strikes in iron mines, equals -1.0 in 4Q69, .5 in 1Q70, .3 in 2Q70 .2 in 3Q70, -1.0 in 3Q72, .5 in 4Q72, .3 in 1Q73, .2 in 2Q73, 0 elsewhere.
QLOBO	13903		E=185	Variable to reflect exchange rate uncertainty and federal government policy announcements discouraging foreign borrowing, equals 1.0 from 3Q60 to 3Q62, 1.0 in 2Q70, zero elsewhere.
QMEF12	14623		E=284	Variable to reflect change in seasonal pattern of oil imports due to increased relative importance of refining capacity in the Maritimes, equals 1.0 in 1Q of each year from 1964 forward, zero elsewhere.
QMIDEAST	14645		E=299	Variable to reflect foreign purchases of Canadian oil shares in response to closing of Suez Canal, equals 1.0 from 3Q67 to 4Q67, zero elsewhere.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
QNHA	14671		E=321	Variable to represent the period of National Housing Act rate ceilings, equals 1.0 from 1Q54 to 3Q67, zero elsewhere.
QOIL	14651		E=289	Variable to account for large capital inflow from Royal Dutch Shell to finance purchase of Canadian Oil Companies by Shell Investments, equals 1.0 in 4Q62, zero elsewhere.
QPFX	13683		E=344	Variable to capture the change in expectations in the exchange market between the first and second float, equals 1 prior to 1Q62, zero elsewhere.
QRAB	13682		E=87	Variable to account for statistical over-estimate of RABEL, equals 1.0 in 2Q70, zero elsewhere.
QSALE	14611		E=178	Variable to reflect an identified sale of a large U.S. subsidiary by a Canadian corporation, equals 1.0 in 3Q66, zero elsewhere.
QSEA	11779		E=91	Variable to reflect completion of St. Lawrence seaway, equals 1.0 from 3Q59 forward, zero elsewhere. Also used to capture structural changes in the Unemployment Insurance Fund in 4Q59.
QSEAPCMV	16002		E=236	Variable to reflect the change in the seasonal pattern of PCMV, equals 1.0 from the 1Q55 to 4Q60.
QTFA	16048		E=251	Variable to reflect taxation of family allowances, equals 1.0 from 1Q74 forward.
QTHERM	11724		E=50	Variable to reflect completion of gas pipelines and in-

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				creased thermal capacity in Ontario, equals 1.0 from 1Q65 forward, zero elsewhere.
QTIME	14612		E=6	Time trend, equals 1.0 in 1Q50, 2.0 in 2Q50, etc.
QTSTEP	13648		E=59	Step time trend, equals 1.0 in each quarter of 1950, 2.0 in each quarter of 1951, etc.
QTXRFM	16047		E=166	Variable to reflect tax reform, equals 1.0 from 1Q72 forward.
QUSTAX	14644		E=298	Variable to represent portfolio changes in response to announcement of U.S. tax proposals unfavourable to U.S. mutual funds holding Canadian securities, equals .33 from 3Q61 to 3Q62, .89 in 4Q62, 2.3 from 1Q63 to to 4Q65, zero elsewhere.
QXDIV	14662		E=309	Variable to account for identified dividend receipt of $60 million from a U.K. subsidiary in 4Q62, equals 1.0 in 4Q62, zero elsewhere.
R90	B14017(8)	17.11	X=289	Ninety-day paper rate.
RABEL	BS625	16.12	X=152	Chartered bank ratio of 'free' earning liquid assets to total assets.
RABELCD	16000	16.14	X=287	Chartered bank ratio of 'free' Canadian dollar earning liquid assets to total assets.
RABELCDD	16001	16.15	X=288	Chartered bank desired ratio of 'free' Canadian dollar earning liquid assets to total assets.
RBCR	B808(9)	16.13	X=17	Chartered bank minimum average required cash reserve ratio.
RCB2	FM91		E=190	U.S. corporate bond rate.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
RCD2	FM109		E=219	U.S. certificate of deposit rate.
RCME	14616	3.12	X=53	Imputed rental price for machinery and equipment.
RCNR	14617	3.13	X=54	Imputed rental price for non-residential construction.
RDC	11006		E=123	Rate of dividend tax credit.
RDP2	FM126		E=304	U.S. dividend to price ratio.
REUR	B54411(8)		E=202	Ninety-day Euro-dollar rate.
RFAQ	13602		E=124	Rate of federal personal income tax abatement to Quebec.
RFAXQ	13601		E=125	Weighted average rate of federal personal income tax abatement to all provinces except Quebec.
RHO	11817	18.5	X=154	Approximation to the nominal supply price of capital.
RHO2	14613		E=52	Approximation to the U.S. nominal supply price of capital.

RHO2 = RHOR2 + JW [J4P (PXB2)]

t		JW [J4P (PXB2)]
w	=	0 before 1Q65
0		.286
-1		.238
-2		.190
-3		.143
-4		.095
-5		.048
Sum w		1.000

RHOR	13800	18.4	X=155	Approximation to the real supply price of capital.
RHOR2	14614		E=233	Approximation to the U.S. real supply price of capital.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				$RHOR2 = .5\,(RCB2 - JW\,[J4P\,(PXB2)]) + .5\,\frac{[J4A\,(YPCT\$2)]\,[RDP2]}{YDV\$2}$
				$\underline{t}$ / $\underline{JW\,[J4P\,(PXB2)]}$ w = 0 before 1Q65 0 .286 -1 .238 -2 .190 -3 .143 -4 .095 -5 .048 Sum w 1.000
RL	B14013(8)	17.2	X=156	Average yield on Government of Canada bonds, 10 years and over.
RLUK	14605		E=206	Interest rate on long-term U.K. government securities.
RMARFBk				Marginal rate of basic tax in income bracket k (k = 1, 17 before 1972), (k = 1, 13 after 1972).
RMARFk				Marginal rate of federal income tax in income bracket k (k = 1, 17 before 1972), (k = 1, 13 after 1972).
RMB	14706	17.19	X=279	Chartered bank mortgage rate.
RMC	B14024(8)	17.10	X=153	Conventional mortgage rate.
RML	B14011(8)	17.3	X=246	Average yield on Government of Canada bonds, 5-10 years.
RMS	B14010(8)	17.4	X=247	Average yield on Government of Canada bonds, 3-5 years.
RNHA	B14026(8)	17.20	X=300	Interest rate on NHA mortgages.
RNPT	BS205(8)	17.5	X=158	Rate on nonpersonal term and notice deposits in chartered banks.
RNU	14691	5.14	X=192	Unemployment rate.
RPD	14664	17.8	X=80	Average rate on personal deposits in chartered banks.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
RPOPURB	14695		E=339	Percentage of total population living in urban centres.
RPRIME	B14020(8)	17.6	X=160	Chartered bank prime lending rate.
RS	B14009(8)	17.1	X=159	Average yield on Government of Canada bonds, 1-3 years.
RSTL	16003	17.9	X=30	Rate on non-chequable savings deposits in trust and mortgage loan companies.
RSWITZGB	16046		E=338	Interest rate on long-term Government of Switzerland bonds.
RTB2	FM87		E=54	U.S. treasury bill rate.
RTCA	11987		E=174	Weighted marginal rate of corporation income tax.
RTCAF	13546		E=175	Weighted marginal rate of federal corporation income tax.
RTI	16026	9.30	X=295	Indexing factor.
RTISFME	11620		E=165	Rate of manufacturers sales tax applicable to production machinery and equipment.
RTISFR	11621		E=164	Rate of manufacturers sales tax applicable to construction materials and building supplies.
RTISFS	11025		E=163	Basic rate of manufacturers sales tax applicable to expenditure on consumer durables and non-durables, and non-production machinery and equipment.
RTISPM	11996		E=168	Weighted average rate of provincial retail sales tax.
RTPYF1C	11019	S9.180	E=126	Weighted average rate of federal income tax payable by taxpayers with assessed incomes between $0 and $3,000.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
RTPYF2C	11020	S9.181	E=127	Weighted average rate of federal income tax payable by taxpayers with assessed incomes between $3,000 and $5,000.
RTPYF3C	11021	S9.182	E=128	Weighted average rate of federal income tax payable by taxpayers with assessed incomes between $5,000 and $10,000.
RTPYF4C	11022	S9.183	E=129	Weighted average rate of federal income tax payable by taxpayers with assessed incomes exceeding $10,000.
RTPYFB1C	13595	S9.184	E=130	Weighted average rate of basic tax payable by taxpayers with assessed incomes between $0 and $3,000.
RTPYFB2C	13596	S9.185	E=131	Weighted average rate of basic tax payable by taxpayers with assessed incomes between $3,000 and $5,000.
RTPYFB3C	13597	S9.186	E=132	Weighted average rate of basic tax payable by taxpayers with assessed incomes between $5,000 and $10,000.
RTPYFB4C	13598	S9.187	E=133	Weighted average rate of basic tax payable by taxpayers with assessed incomes exceeding $10,000.
RTPYFBj		S9.152 to S9.165		Average rate of basic tax payable by taxpayers in income groups j (j = 1, 14).
RTPYFj		S9.138 to S9.151		Average rate of federal income tax payable by taxpayers in income group i (i = 1, 14).
RTPYPQ	13600		E=134	Weighted average rate of provincial income tax payable by Quebec residents.
RTPYPXQ	13599		E=135	Weighted average rate of provincial income tax

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				payable by residents of all provinces except Quebec.
RTPYQiC		S9.188 to S9.191		Weighted average rate of non-indexed basic tax payable by taxpayers in income class i (i = 1, 4).
RTPYQj		S9.166 to S9.179		Average rate of non-indexed basic tax payable by taxpayers in income group j (j = 1, 14).
RTTL	BS209	17.7	X=264	Rate on one-year deposits in trust companies.
RVB12	3761	20.9	X=161	Return to U.S. residents from Canadian business assets (percentage of total return).
RVB13	3762	20.10	X=162	Return to residents of other countries from Canadian business assets (percentage of total return).
SA$2	FM160		E=300	U.S. personal savings plus corporate retained earnings net of taxes.
SHM	14649	2.4	X=163	Stock of multiple dwellings (thousands of units).
SHS	14648	2.3	X=139	Stock of single-detached dwellings (thousands of units).
TANW	13551	9.6	X=164	Personal income tax accruals on nonwage income.
TAW	13550	9.5	X=165	Personal income tax accruals on wage income.
TCA	D40064	9.34	X=166	Corporation income tax accruals.
TCAF	D40065	9.36	X=167	Federal corporation income tax accruals.
TCAGBE	NA32		E=238	Corporation income taxes on government business

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				enterprises.
TCAPLMT	GPRU9		E=176	Provincial mining and logging taxes.
TCAPM	D40067	9.37	X=168	Provincial corporation income tax accruals.
TCCF	D40066	14.1	X=169	Federal corporation income tax collections.
TCPPF	D40062		E=216	Contributions to Canada Pension Plan.
TICUSF	GFRU35	10.7	X=170	Customs duties.
TIEXF	11969	10.2	X=171	Excise taxes and duties (excluding manufacturers sales tax).
TIGASPM	GPRU13	10.4	X=172	Gasoline tax.
TILGS	D40009	10.8	X=49	Indirect taxes less subsidies.
TIMVPM	GPRU16	10.5	X=173	Motor vehicle licences and permits, business.
TIOF	11979		E=55	Other federal indirect taxes.
TIOPM	11994		E=56	Other provincial-municipal indirect taxes.
TIPROPM	GMRU3		E=329	Municipal property tax revenue.
TISF	11270	10.1	X=174	Manufacturers sales tax.
TISPM	GPRU19	10.3	X=175	Retail sales tax.
TOPF	11978		E=57	Other federal personal direct taxes.
TOPPM	11993		E=58	Other provincial-municipal personal direct taxes.
TPO	11024	9.2	X=178	Personal income tax collections not withheld at source.
TPS	11023	9.1	X=179	Personal income tax collections withheld at source.
TPYF	GFRU1	9.4	X=180	Federal personal income tax collections.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
TPYPM	11977	9.3	X=181	Provincial personal income tax collections.
TQPPPM	D40063		E=222	Contributions to Quebec Pension Plan.
TRFPR	D40075		E=214	Transfers from persons to federal government.
TRHPMPR	GPRU27	9.31	X=258	Hospital and medical care insurance premiums.
TRHPR	D40078		E=215	Transfers from persons to hospitals.
TRMVPMPR	GPRU26	9.32	X=177	Motor vehicle licences and permits, persons.
TROPMPR	13641		E=213	Other transfers from persons to provincial and municipal governments.
TRSIGPR	13647		E=232	Employer and employee contributions to social insurance and government pension plans (excluding unemployment insurance contributions and payments to Canada Pension Plan and Quebec Pension Plan).
TUIRF	14702	11.1	X=228	Unemployment Insurance Fund revenue.
TWF	D40069	10.6	X=182	Withholding tax payable by non-residents.
UBAL	11900	21.7	X=184	Net balance of payments with all countries on current and long-term capital account (millions of Canadian dollars).
UBAL12	11899	21.6	X=183	Net balance of payments with the United States on current and long-term capital account (millions of Canadian dollars).
UDISi		S9.10-12		Displacement factor for displaced lognormal distribution for i = NT,

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				YWAS, YNWAS.
UPAPME	16051		X=294	See equation (3.1).
UGAPNRC	16052		X=113	See equation (3.2).
UGNE	D40239	8.17	X=338	Gross national expenditure (1961 dollars).
UGNWNH	14635	14.15	X=98	Government nonwage expenditure (excluding current expenditure by hospitals and pension plans) (1961 dollars).
UGPP	13820	3.16	X=189	Gross private business product (excluding agriculture and non-commercial services) (1961 dollars).
UGPPA	13854	3.17	X=187	UGPP adjusted to remove unintended inventory changes.
UGPPAMP	14618	3.14	X=23	Preferred output according to vintage stock of machinery and equipment.
UGPPANP	15619	3.15	X=50	Preferred output according to vintage stock of non-residential construction.
UGPPD	13849	3.18	X=190	Desired output based on the production function with actual capital stock, average employment rate, and trended weekly hours.
UGPPS	13853	3.19	X=186	Aggregate supply based on the production function with actual factor inputs.
UIGAPX	16031		X=293	Increases the impact of the capacity variable on the price sector, equals zero everywhere.
UKRMVNC	13544	9.33	X=245	Stock of noncommerical registered motor vehicles (millions of vehicles).
ULS	13713	21.9	X=85	Net international short-term liabilities outstanding between Canada and the rest of the world (+ if net lia-

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				bility is of Canada to the rest of the world) (millions of U.S. dollars).
UMEANi		S9.13-15		Mean for displaced log-normal distribution for i = NT, YWAS, YNWAS.
UQiNT		S9.1-3		Level of assessed income below which lie 10 percent, 50 percent, and 90 percent of the number of taxpayers for i = L, M, U, respectively.
UQiYNW		S9.7-9		Level of assessed income below which lie 10 percent, 50 percent, and 90 percent of assessed non wage income for i = L, M, U, respectively.
UQiYW		S9.4-6		Level of assessed income below which lie 10 percent, 50 percent, and 90 percent of assessed wage income for i = L, M, U, respectively.
URES	B3800(9)	21.8	X=188	Canadian foreign exchange reserves, including gold, U.S. dollars, other convertible currencies, and reserve position in the IMF (millions of U.S. dollars).
USIGMAi		S9.16-18		Standard deviation for displaced lognormal distribution for i = NT, YWAS, YNWAS.
USRNT1C	11302	S9.61	E=111	Proportion of total tax returns filed by taxpayers with assessed incomes between $0 and $3,000.
USRNT2C	11303	S9.62	E=112	Proportion of total tax returns filed by taxpayers with assessed incomes between $3,000 and $5,000.
USRNT3C	11304	S9.63	E=113	Proportion of total tax returns filed by taxpayers with assessed incomes between

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				$5,000 and $10,000.
USRNTj		S9.19 to S9.32		Proportion of tax returns filed in income group j (j = 1, 14).
USRNW1C	13591	S9.67	E=117	Proportion of assessed nonwage income (excluding dividends) earned by taxpayers with assessed nonwage incomes between $0 and $3,000.
USRNW2C	13592	S9.68	E=118	Proportion of assessed nonwage income (excluding dividends) earned by taxpayers with assessed nonwage incomes between $3,000 and $5,000.
USRNW3C	13593	S9.69	E=119	Proportion of assessed nonwage income (excluding dividends) earned by taxpayers with assessed nonwage incomes between $5,000 and $10,000.
USRNWj		S9.47 to S9.60		Proportion of assessed non-wage income in income group j (j = 1, 14).
USRW1C	13587	S9.64	E=151	Proportion of assessed wage income earned by taxpayers with assessed wage incomes between $0 and $3,000.
USRW2C	13588	S9.65	E=152	Proportion of assessed wage income earned by taxpayers with assessed wage incomes between $3,000 and $5,000.
USRW3C	13589	S9.66	E=153	Proportion of assessed wage income earned by taxpayers with assessed wage incomes between $5,000 and $10,000.
USRWj		S9.33 to S9.46		Proportion of assessed wage income in income group j (j = 1, 14).
V	11815	18.3	X=197	Market value of private sector wealth.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
VCN$2	FM138		E=186	Net worth of U.S. households at beginning of quarter (trillions of dollars).
VKB	11800	18.1	X=191	Market value of the end-of-quarter stock of total business fixed capital and inventories.
VLGB11	13512	18.2	X=196	Market value of resident-held Government of Canada, provincial and municipal bonds.
WQC	14640	6.2	X=198	Quarterly earnings in construction.
WQF	13724		E=81	Quarterly earnings in farming.
WQGPAF	11926	12.2	X=200	Quarterly earnings in federal public administration and defence.
WQGPAPM	11963	13.2	X=202	Quarterly earnings in provincial-municipal public administration.
WQIOS	13725		E=60	Quarterly earnings in noncommercial institutions (excluding schools).
WQISM	11929	13.8	X=203	Quarterly earnings in elementary and secondary schools.
WQMMOB	13852	6.1	X=199	Quarterly earnings in mining, manufacturing, and other business.
WZEXNW		S9.136		Quarterly spreading ratio for exemptions against nonwage income.
WZEXW		S9.137		Quarterly spreading ratio for exemptions against wage income.
X	D40233	4.46	X=204	Exports of goods and services.
X$12	D3907	4.44	X=205	Exports of goods and services

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				to the United States.
X$13	13729	4.45	X=206	Exports of goods and services to other countries.
XB2	FM3		E=264	U.S. gross private domestic business product (1958 dollars).
XBAL$	D50555	4.47	X=193	Net balance on current account, balance of payments basis.
XBC2	FM26		E=265	Production capacity of U.S. producer durables.
XEF$12	NEW12607		E=93	Exports of energy fuels to the United States (SITC 3).
XFS$12	D51512	4.23	X=207	Freight and shipping receipts from the United States.
XFS$13	13801	4.26	X=208	Freight and shipping receipts from other countries.
XG	D40234	4.40	X=97	Exports of goods.
XID$12	D51508	4.21	X=209	Interest and dividend receipts from the United States.
XID$13	13802	4.24	X=210	Interest and dividend receipts from other countries.
XIH$	D50515		E=44	Exports: inheritances and immigrants' funds to all countries.
XMIS12	13838		E=78	Exports of uranium, and aircraft and parts to the United States plus miscellaneous adjusting entries (SITC 286 + 734).
XMIS13	13839		E=61	Exports of uranium, and aircraft and parts to other countries plus miscellaneous adjusting entries (SITC 286 + 734).
XMV12	11771	4.18	X=211	Exports of motor vehicles and parts to the United States (SITC 732).
XNMV12	11769	4.19	X=212	Exports of goods (excluding uranium, aircraft

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				and parts, and motor vehicles and parts) to the United States (SITC 0 to 9 - [286 + 732 + 734]).
XNW13	11761	4.20	X=213	Exports of goods (excluding wheat, uranium, and aircraft and parts) to other countries (SITC 0 to 9 - [041 + 286 + 734]).
XOBE$2	FM48		E=287	U.S. gross national product.
XOS$12	14628		E=156	Exports of other services to the United States.
XOS$13	14629		E=158	Exports of other services to other countries.
XTR$12	D51506	4.22	X=216	Travel receipts from the United States.
XTR$13	13806	4.25	X=217	Travel receipts from other countries.
XTRP$	D40041		E=38	Transfer payments to Canadian residents from persons abroad.
XVOL$	14622		E=270	World trade (excluding U.S. and Canadian imports) (millions of U.S. dollars).
XW13	11763		E=62	Exports of wheat to other countries (SITC 041).
YASP				Average assessed income, seasonally adjusted at annual rates.
YBRACK				Lower income level in taxable income bracket k (k = 1, 18 before 1972), (k = 1, 14 after 1972).
YC	D40002	8.8	X=218	Corporate profits before tax.
YCGBE	14687		E=322	Gross profits of government business enterprises.

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
YCR	D40176	8.11	X=219	Retained corporate profits.
YCR$2	FM41		E=302	U.S. retained corporate profits.
YCT	11647	9.35	X=220	Taxable corporate profits.
YDIV11	NA23	8.1	X=221	Dividends paid to Canadian residents by Canadian corporations.
YDIVF	14638	8.2	X=222	Dividends (before withholding tax) paid to foreign shareholders by Canadian corporations.
YDP	D40057	8.10	X=8	Disposable personal income.
YDV$2	FM62		E=231	U.S. corporate dividends.
YDW	11747	8.7	X=223	Disposable wage income.
YF	D40034		E=63	Farm cash income.
YFA	D40005		E=64	Accrued farm income.
YGICPP	D40084		E=331	Investment income, Canada Pension Plan.
YGIF	D40080		E=65	Federal investment income.
YGIH	D40083		E=229	Hospital investment income.
YGIPM	11992		E=223	Provincial-municipal investment income.
YGIQPP	D40559		E=330	Investment income, Quebec Pension Plan.
YGj				Upper income level of group j (j = 1, 14).
YGNE	D40012	8.5	X=226	Gross national expenditure.
YGPP	11688	8.6	X=227	Gross private business product.
YII$2	FM167		E=230	U.S. interest income.
YIVA	D40007	8.16	X=285	Inventory valuation adjustment.
YKGPA	16027	8.13	X=296	Accrued capital gains.
YKGPR	16029	8.15	X=298	Realized capital gains.
YMISC	13819		E=69	Miscellaneous personal

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				nonwage income.
YMISCP	14633		E=209	Miscellaneous personal investment income.
YNFNC	D40006	8.3	X=229	Net income of non-farm unincorporated business, including rent.
YNWAS	13560	9.9	X=230	Assessed nonwage income (excluding dividends).
YNWAS1C	13561	9.18	X=231	Assessed nonwage income (including dividends), income class 1.
YNWAS2C	13562	9.19	X=232	Assessed nonwage income (including dividends), income class 2.
YNWAS3C	13563	9.20	X=233	Assessed nonwage income (including dividends), income class 3.
YNWAS4C	13564	9.21	X=234	Assessed nonwage income (including dividends), income class 4.
YNWNA				National accounts proxy for nonwage income.
YP	D40042	8.9	X=7	Personal income.
YPCC$2	FM61		E=136	Cash flow of U.S. corporations after taxes.
YPCCB	D40037		E=71	Charitable contributions of corporations.
YPCT$2	FM60		E=305	U.S. net corporate profits.
YPDNWP	14689	8.12	X=79	Permanent disposable nonwage personal income.
YRENT	NA35	8.4	X=241	Nonfarm non-residential unincorporated business rent (millions of dollars).
YTAj				Average taxable income in income group j, seasonally adjusted at annual rates (j = 1, 14).
YTOTPM	13677	13.9	X=248	Total provincial-municipal

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				revenue (national accounts basis).
YW	D40000	6.3	X=235	Wage bill.
YWAS	13555	9.8	X=236	Assessed wage income.
YWAS1C	13556	9.14	X=237	Assessed wage income, income class 1.
YWAS2C	13557	9.15	X=238	Assessed wage income, income class 2.
YWAS3C	13558	9.16	X=239	Assessed wage income, income class 3.
YWAS4C	13559	9.17	X=240	Assessed wage income, income class 4.
YWASj				Assessed wage income in income group j (j = 1, 14).
YWNA				National accounts proxy for wage income.
YWSLMED	16007		E=352	Medicare premiums paid by employer on behalf of employee.
YWSLP	11825		E=150	Supplementary labour income, private sector.
YWX	13726		E=72	Wage bill residual.
ZDEPREC	14643		E=301	Variable used to capture realignment of foreign direct investment in Canada due to depreciation incentives given in the June 1963 budget to firms with a minimum of 25 percent Canadian ownership, equals 1.0 from 2Q63 to 4Q65, zero elsewhere.
ZEUROF	14603		E=204	Variable to account for federal borrowing of Deutsche Marks in 2Q68, equals 175.0 in 2Q68, zero elsewhere.
ZEXINWiC		S9.120 to S9.123		Average indexed exemption and deduction for taxpayer earn-

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
				ing nonwage income in income class i (i = 1, 4).
ZEXIWiC		S9.124 to S9.127		Average indexed exemption and deduction for taxpayer earning wage income in income class i (i = 1, 4).
ZEXPERj				Average personal exemption in income group j (j = 1, 14).
ZEXQNWiC		S9.128 to S9.131		Average non-indexed exemption and deduction for taxpayer earning income in income class i (i = 1, 4).
ZEXQWiC		S9.132 to S9.135		Average non-indexed exemption and deduction for taxpayer earning wage income in income class i (i = 1, 4).
ZEXYGIj		S9.84 to S9.97		Average indexed exemption and deduction in income group j (j = 1, 14).
ZEXYGj	16007+j		E=352+j	Average exemption and deduction in income group j (j = 1, 14).
ZEXYGQj		S9.98 to S9.111		Average non-indexed exemption and deduction used in calculating Quebec tax rate in income group j (j = 1, 14).
ZEXYGTj		S9.70 to S9.83		Average exemption and deduction used in calculating combined federal and provincial tax in income group j (J = 1, 14).
ZEXYNW1C	13583	S9.112	E=137	Average exemption and deduction for taxpayer earning non-wage income, income class 1 (dollars).
ZEXYNW2C	13584	S9.113	E=138	Average exemption and deduction for taxpayer earning non-wage income, income class 2 (dollars).
ZEXYNW3C	13585	S9.114	E=139	Average exemption and deduction for taxpayer earning non-wage income, income class 3 (dollars).

MNEMONIC	RDX2 TAPE NO.	EQUATION NUMBER	SIMULATOR CODING NO.	DESCRIPTION
ZEXYNW4C	13586	S9.115	E=140	Average exemption and deduction for taxpayer earning non-wage income, income class 4 (dollars).
ZEXYW1C	13579	S9.116	E=141	Average exemption and deduction for taxpayer earning wage income, income class 1 (dollars).
ZEXYW2C	13580	S9.117	E=142	Average exemption and deduction for taxpayer earning wage income, income class 2 (dollars).
ZEXYW3C	13581	S9.118	E=143	Average exemption and deduction for taxpayer earning wage income, income class 3 (dollars).
ZEXYW4C	13582	S9.119	E=144	Average exemption and deduction for taxpayer earning wage income, income class 4 (dollars).
ZFXOF	13701		E=74	First difference of end-of-quarter net undelivered foreign exchange contracts (millions of U.S. dollars).
ZRBSR	BS629		E=161	Required secondary reserve ratio of chartered banks.
ZRESD	13705		E=73	Desired or target level of foreign exchange reserves (millions of U.S. dollars).
ZTR	13711		E=75	Trading strategy variable, +1.0 when PFX moves up through par, -1.0 when PFX moves down through par.
ZWW	11320		E=197	Winter works variable, equals 1.0 from 3Q63 to 2Q66, zero elsewhere.

THE EQUATIONS OF RDX2

This section is in three parts: the first part is a general discussion of the method used in reporting the equations; the second is a summary table containing the titles of Sectors 1 to 21 of RDX2 and the number of behavioural and technical equations in each sector, and the third consists of 325 equations comprising RDX2 grouped by sector (and sub-sector in the case of Sector 9). The equations are arranged in numerical order within each sector.

One sector consists entirely of behavioural equations, and another consists entirely of accounting identities. The remaining sectors are comprised of both stochastic behavioural equations and non-stochastic technical relationships - the behavioural equations appearing first in each of these sectors. In order to reduce the number of technical relationships we have substituted out most of the less complicated ones, which in some cases makes the behavioural equations somewhat more difficult to read but decreases the number of variables to be kept in mind.

Each equation is headed by a mnemonic, a simulator coding number, and a description. In the case of stochastic equations, a record of the method and period of estimation appears immediately under the description. Most of these equations are estimated by ordinary least squares (OLS), but, because of the high first-order autocorrelation of residuals, a few equations were re-estimated according to the Hildreth-Lu procedure indicated by OLS H-L. The estimated first-order autocorrelation coefficient (rho) is recorded in the line of statistics below

these equations. The statistics reported at the end of each behavioural equation include the standard error of the estimate (see), the coefficient of determination corrected for degrees of freedom (RB2), the Durbin-Watson statistic (dw), and sometimes the coefficient of variation measured as a percentage of the mean (COV). The absolute value of the t-statistic is shown in brackets under the coefficient. (A problem arises in the interpretation of the RB2 statistic for regressions that lack a constant term. The sum of the explained variance, about the mean, and the residual variance may be greater than the total variance of the dependent variable. Two definitions of a 'pseudo' R2 suggest themselves for use in these circumstances: one equal to the explained variance over the total variance and the other equal to 1.0 minus the ratio of the residual variance to the total variance. We have calculated both measures for our regressions without constant terms, and have found they are all the same to at least four decimal places.)

We make full use in the equations of the J operators explained in Section 2. The JW operator is used for distributed lags. The weights for each JW series are reported below the equation in which the operator is used. If the weights are specified a priori, the estimated coefficient on the weighted variable and the associated t-statistic are reported in the equation. If the JW weights are estimated subject to the constraint that they lie on a polynomial of specified order, each weight shown below the equation has a bracketed t-statistic on its right. In estimating these constrained lag distributions we have employed a modified version of the Almon technique.

The Almon variables used in a regression are indicated by a list of numbered Zs shown under the column of t-statistics of the estimated weights. From this list one can obtain all the necessary information about the degree of the polynomial and any constraint that may have been placed on it. The modified Almon technique we employ allows us to change the degree of the polynomial or to impose other more specific constraints simply by using or not using certain of the Almon variables in the reqression.

The degree of the polynomial is indicated by the last Z of those reported. For example, if a fourth-degree polynomial is used, a Z4 appears as the last Z in the list; similarly for a second-degree polynomial the last Z reported would be Z2. By dropping the first Almon variable (Z0) from the regression list, we constrain the polynomial to pass through zero at some specified end-point in the distribution. (This constraint is automatically imposed in our programme, hence Z0 will never appear in any of our Z lists.) If Z1 is dropped, a further constraint is imposed - the polynomial has a zero slope as well as a zero value at the end-point of the distribution. Hence, an Almon list such as Z2Z3Z4 appearing with the estimated lag weights indicates that the weights have been constrained to lie on a fourth-degree polynomial that passes through zero with a zero slope in the quarter immediately prior to the earliest nonzero value shown in the related table of weights.

The notation (Z2 - Z1, Z3 - Z1) indicates that the sum of the coefficients in front of the Almon variables is constrained to a predetermined value. This technique is based on the fact that the sum of these coefficients is equal to the sum of the

unscrambled weights. An example of a sum of coefficients constrained to the value A is:

$$Y - A[Z1] = b[Z2 - Z1] + b[Z3 - Z1]$$

If the polynomial is constrained to pass through zero at t+1 in the quarter following the current quarter, a C is appended to each of the Zs. In that case the degree of the polynomial is still determined by the last Almon variable used and the zero end-point constraint is still obtained (automatically) by not using ZC0. However, ZC1 must be dropped from the regression for this further constraint, so that to obtain a zero slope constraint at the end-point ZC2 must also be dropped. Therefore a list such as ZC3ZC4 indicates that the fourth-degree polynomial is constrained to be zero at time t+1 and at the end-point of the distribution, as well as to have a zero slope at this end-point.

THE LIST OF SECTORS

	Sector	Behavioural*	Technical	Total
1.	CONSUMER EXPENDITURE	5	4	9
2.	RESIDENTIAL CONSTRUCTION	5	2	7
3.	BUSINESS INVESTMENT AND OUTPUT	6	13	19
4.	FOREIGN TRADE	33	14	47
5.	BUSINESS EMPLOYMENT, HOURS, LABOUR FORCE, AND POPULATION	8	9	17
6.	PRIVATE SECTOR WAGES	2	1	3
7.	PRICES	18	22	40
8.	INCOME COMPONENTS	4	13	17
9.	DIRECT TAXES AND OTHER CURRENT TRANSFERS FROM PERSONS	3	34**	37
10.	INDIRECT TAXES AND OTHER GOVERNMENT REVENUE	6	2	8
11.	TRANSFERS TO PERSONS	5	1	6
12.	FEDERAL CURRENT AND CAPITAL EXPENDITURE ON GOODS AND SERVICES	5	1	6
13.	PROVINCIAL-MUNICIPAL CURRENT AND CAPITAL EXPENDITURE ON GOODS AND SERVICES	8	2	10
14.	GOVERNMENT ASSET AND LIABILITY CHANGES	5	10	15
15.	DEMAND FOR LIQUID ASSETS BY NONFINANCIAL SECTOR	7	3	10
16.	CHARTERED BANK ASSETS	7	8	15
17.	INTEREST RATES AND MORTGAGE APPROVALS	17	3	20
18.	WEALTH AND THE EXPECTED RATE OF INFLATION	1	5	6
19.	LONG-TERM CAPITAL FLOWS	13		13

20. INTERNATIONAL PORTFOLIO POSITIONS		10	10
21. THE FOREIGN EXCHANGE MARKET AND SHORT-TERM CAPITAL FLOWS	3***	7	10
TOTAL NUMBER OF EQUATIONS	161	164	325

* Includes six endogenous variables for which equations have not yet been specified. These variables are CRENT, PXMV12, IMEGF, IMEGPM, WQISPM, and HSTM/(HSTS+HSTM).

** Does not include the supplement of equations used to endogenize spreading ratios, exemptions, and tax rates.

*** Does not include the second set of equations for PFX and PFXF used to model the flexible exchange rate regime.

THE EQUATIONS

Sector 1

CONSUMER EXPENDITURE

1.1 CNDSD (X=20) — Consumer expenditure on non-durables and semi-durables

1Q58-4Q72 OLS

```
J4D(CNDSD/NPOPT) = .30974 J4D(YPERM)
                   (9.15)

       + .26378 J4D[J4A(GTPOF+GTPPM+GTPUIBF+GTPCPP+GTPQPP)/
         (2.48)

       ([PCPI][NPOPT])]
```

where

```
YPERM = JW(YDW/[(NPOPT)(PCPI)]) + YPDNWP/[(NPOPT)(PCPI)]
```

t	JW[YDW/(...)]
0	.22153
-1	.18615
-2	.15385
-3	.12462
-4	.09846
-5	.07538
-6	.05539
-7	.03845
-8	.02461
-9	.01384
-10	.00616
-11	.00156
Sum W =	1.00000

see = 2.61 RB2 = .613 dw = 1.46

1.2 CS (X=21) Consumer expenditure on services

1Q58-4Q72 OLS

$$J4D\left(\frac{CS-(CRENT\$+.566TIPROPM)/PRENT}{NPOPT}\right) = .10496\ J4D(YPERM) \quad (6.16)$$

$$- .61274\ J4D(EMEDPAY/([NPOPT][PCS])) \quad (3.98)$$

$$- 5.3544\ J4D(QHOS) \quad (6.99)$$

$$- 5.4990\ J4D([Q2+Q3][QEXPO]) \quad (6.50)$$

$$+ .36610\ J1L\left[J4D\left(\frac{CS-(CRENT\$+.566TIPROPM)/PRENT}{NPOPT}\right)\right] \quad (5.24)$$

where

YPERM and JW weights are as in equation 1.1

see = 1.50 RB2 = .795 dw = 1.61

1.3 CMV (X=19) Consumer expenditure on motor vehicles and parts

1Q58-4Q72 OLS

$$\frac{CMV}{NPOP} = \underset{(.33)}{8.4736} - \underset{(1.57)}{.03069}\,[QC1(S1)] + \underset{(9.64)}{.19496}\,[QC2(S1)]$$

$$- \underset{(6.11)}{.11440}\,[QC3(S1)] + \underset{(4.69)}{.28699}\,YPERM^*$$

$$- \underset{(3.22)}{.18487}\,(PCMV/PCWTD)(YPERM^*)$$

$$- \underset{(2.08)}{.06713}\,J1L(KMV/NPOP)$$

where

PCWTD = [(CNDSD)(PCNDSD)+(CS)(PCS)]/(CS+CNDSD)

S1 = J1L(J4A(CMV/NPOP))

where

YPERM* = JW(YDW/[(NPOP)(PCPI)]) + YPDNWP/[(NPOP)(PCPI)]

JW weights are as in equation 1.1

see = 4.09 RB2 = .881 cov = 8.31% dw = .80

1.4 CDO (X=18) Consumer expenditure on durables (excluding motor vehicles and parts)

1Q58-4Q72 OLS

$$\frac{CDO}{NPOPT} = -16.523 - .20673\,[QC1(S1)] - .05131\,[QC2(S1)]$$
$$(4.02) \quad (30.11) \quad (8.87)$$

$$+ .00153\,[QC3(S1)] + .28900\,[YPERM-YPDNWP/([NPOPT][PCPI])]$$
$$(.23) \quad (6.45)$$

$$+ .11988\,J4A(IRC/NPOPT) + .00248\,(V/([PCPI][NPOPT]))$$
$$(3.40) \quad (4.20)$$

$$- .06923\,J1L(KDO/NPOPT)$$
$$(3.70)$$

$$- .13046\,(PCDO/PCWTD)(YPERM)$$
$$(5.76)$$

where

PCWTD = [(CNDSD)(PCNDSD)+(CS)(PCS)]/(CS+CNDSD)

S1 = J1L(J4A(CDO/NPOPT))

YPERM = JW(YDW/[(NPOPT)(PCPI)]) + YPDNWP/[(NPOPT)(PCPI)]

JW weights are as in equation (1.1)

see = .696 RB2 = .994 cov = 2.39% dw = 1.91

1.5 CRENT (X=271) Gross rent (imputed and paid) less an estimate of residential property taxes

This variable is exogenous. However, for simulation purposes the following equation, coded in the simulator programme, is available as an option.

1Q58-4Q72 OLS

$$
\begin{aligned}
J1D(CRENT) = {} & (.03221 - .12528\ QC1 + .21321\ QC2 \\
& \quad (6.83) \qquad (13.95) \qquad\ (25.47) \\
& .06994\ QC3)\ J1D(14.765\ SHS + 9.843\ SHM) \\
& \quad (8.82)
\end{aligned}
$$

see = 16.99 RB2 = .947 dw = 2.15

Technical Relationships

1.6 KMV (X=69) Stock of motor vehicles held by consumers

KMV = .933 [J1L(KMV)] + CMV

1.7 KDO (X=65) Stock of consumer durables (excluding motor vehicles)

KDO = .944 [J1L(KDO)] + CDO

1.8 CSMVOD (X=22) Consumer services imputed from the stock of motor vehicles and other consumer durables

CSMVOD = .01603809 [J2A(KDO+KMV)] + .067 J2A(KMV)
+ .056 J2A(KDO)

1.9 CRENT$ (X=270) Gross rent (imputed and paid) less an estimate of residential property taxes

CRENT$ = (CRENT)(PRENT)

Sector 2

RESIDENTIAL CONSTRUCTION

2.1 IRC (X=64) — Business investment in residential construction

1Q58-4Q73 OLS

$$IRC = -\underset{(4.97)}{108.46} + JW(HSTS) + JW(HSTM) + \underset{(8.55)}{.00446}\ J1L(KRESD)$$

$$+ [-\underset{(5.54)}{.10799}\ QC1 - \underset{(2.32)}{.03426}\ QC2 + \underset{(7.88)}{.10244}\ QC3]$$

$$[J1L(J4A(IRC))]$$

t	JW(HSTS)		JW(HSTM)	
0	5.20478	(7.14)	3.07142	(5.70)
-1	4.76294	(10.26)	2.27741	(10.63)
-2	3.25256	(9.28)	1.63915	(6.38)
-3	1.44262	(3.67)	1.13841	(4.05)
-4	.10210	(.20)	.75692	(3.37)
-5			.47646	(3.02)
-6			.27878	(1.55)
-7			.14564	(.64)
-8			.05880	(.31)
Sum W =	14.76500	Z2-Z1,Z3-Z1	9.84300	Z2-Z1,Z3-Z1

see = 24.71 RB2 = .861 cov = 30.64% dw = 1.34

where

14.765 is the average cost for a single-detached dwelling under the N.H.A. in 1961, 9.843 = 14.765(2/3).

2.2 HSTS (X=96) Housing starts, single-detached (thousand units)

1Q58-4Q73 OLS

$$[14.765\ HSTS+9.843\ HSTM] = -\underset{(13.70)}{211.62}\ (1-ZWW)(QC1) + \underset{(5.85)}{91.913}\ (1-ZWW)(QC2) + \underset{(6.14)}{84.562}\ (1-ZWW)(QC3) + \underset{(6.52)}{151.49}\ (1-ZWW) + \underset{(3.79)}{100.84}\ ZWW - \underset{(6.18)}{183.36}\ (ZWW)(QC1) + \underset{(.75)}{20.500}\ (ZWW)(QC2) + \underset{(2.96)}{83.284}\ (ZWW)(QC3) + JW([HAPNRESD+HAPCMHCS+HAPCMHCM+HAPNROT]/PIRC)$$

t	JW([HAPNRESD...])	
0	.52554	(6.03)
-1	.36074	(9.82)
-2	.18556	(3.13)
Sum W =	1.07184	Z1Z2

see = 54.46 RB2 = .928 cov = 10.09% dw = 1.52

2.3 SHS (X=139) Stock of single-detached dwellings (thousand units)

1Q58-4Q73 OLS

J1D(SHS) = - 2.1656 QC1 - .15483 QC2 + .91581 QC3
(1.72) (.16) (1.07)

+ JW(HSTS)

t	JW(HSTS)	
0	.23241	(3.14)
-1	.33347	(6.70)
-2	.23963	(5.93)
-3	.07202	(1.88)
-4	-.04824	(.93)
Sum W =	.82928	Z1Z2Z3

see = 2.61 RB2 = .724 cov = 14.87% dw = 2.02

2.4 SHM (X=163) Stock of multiple dwellings (thousand units)

1Q58-4Q73 OLS

J1D(SHM) = - 3.1133 QC1 + .95589 QC2 + .25502 QC3
(4.58) (1.77) (.45)

+ JW(HSTM)

t	JW(HSTM)	
0	.13229	(2.79)
-1	.17176	(8.93)
-2	.18275	(7.48)
-3	.17164	(6.55)
-4	.14486	(7.10)
-5	.10881	(7.50)
-6	.06989	(3.94)
-7	.03451	(1.53)
-8	.00908	(.49)
Sum W =	1.02559	Z1Z2Z3

see = 2.43 RB2 = .921 cov = 10.79% dw = 1.85

2.5 HAPNRESD (X=275) Mortgage approvals for new residential construction by life insurance, trust and mortgage loan companies, and chartered banks

1Q58-4Q73 OLS H-L

$$\begin{aligned} HAPNRESD = &- \underset{(3.36)}{26.948}\ QC1 + \underset{(2.00)}{14.533}\ QC2 + \underset{(1.27)}{10.358}\ QC3 \\ &- \underset{(1.37)}{.06041}\ (INRC)(PINRC) + \underset{(2.13)}{41.003}\ J4P(NHH) \\ &- \underset{(1.61)}{.08451}\ (HAPCMHCS+HAPCMHCM+HAPNROT) \\ &+ \underset{(22.06)}{.49172}\ (HAPLI+HAPTL+HAPB) \end{aligned}$$

see = 32.45 RB2 = .950 cov = 33.30% dw = 1.97 rho = .739

Technical Relationships

2.6 HSTM (X=57) Housing starts, multiples (thousand units)

HSTM/(HSTS+HSTM) = HSSPLIT

2.7 KRESD (X=274) Value of housing stock, net of depreciation (1961 dollars)

KRESD = .9942 J1L(KRESD) + IRC

Sector 3

BUSINESS INVESTMENT AND OUTPUT

3.1 IME (X=62) Business investment in machinery and equipment

1Q58-4Q72 OLS

$$IME - IMEAG = -212.36 + .05629\ [JW(UGAPME)][CASHIND]$$
$$(5.18) \quad (5.17)$$

$$- .00138\ (QC1)(J1L[J4A(KME)]) + .00429\ (QC2)(J1L[J4A(KME)])$$
$$(2.00) \quad (6.26)$$

$$- .00222\ (QC3)(J1L[J4A(KME)]) + .03147\ J1L(KME)$$
$$(3.26) \quad (10.79)$$

t	JW(UGAPME)	JW(UGPPASA)
0		1.12684
-1	.10	.42249
-2	.15	.20868
-3	.30	.08366
-4	.25	- .07940
-5	.15	- .08207
-6	.05	- .09705
-7		- .10629
-8		- .11001
-9		- .11026
-10		- .10860
-11		- .10601
Sum W =	1.00	1.04198

where

UGAPME = KMEY[JW(UGPPASA)-(.97965**8)(UGPPAMP)]

UGPPASA = .25[UGPPA/(.230 Q1 + .254 Q2 + .255 Q3 + .261 Q4)]

CASHIND = J4A[(YCR+CCAC$)/PIME]/J8A[(YCR+CCAC$)/PIME]

.97965 = (1 - the quarterly depreciation rate for KME)

see = 71.12 RB2 = .924 cov = 9.17% dw = .47

3.2 CA$ (X=301) Value of commercial, industrial, and engineering contract awards

1Q58-4Q72 OLS

$$CA\$/PINRC = \underset{(3.05)}{217.25} - \underset{(4.12)}{74.968}\ QC1 + \underset{(2.32)}{42.318}\ QC2 + \underset{(1.67)}{29.527}\ QC3 + \underset{(6.56)}{319.29}\ QGT + \underset{(4.09)}{.02808}\ UGAPNRC + \underset{(1.97)}{.00499}\ J1L(KNRC)$$

where

$$UGAPNRC = KNRY[JW(UGPPASA)-(.99125^{**}12)(UGPPANP)]$$

$$UGPPASA = .25[UGPPA/(.230\ Q1 + .254\ Q2 + .255\ Q3 + .261\ Q4)]$$

.99125 = (1 - the quarterly depreciation rate for KNRC)

t		JW(UGPPASA)
0		.98591
-1		.30694
-2		.08346
-3		-.00121
-4		-.03045
-5		-.03798
-6		-.03736
-7		-.03398
-8		-.02992
-9		-.02599
-10		-.02244
-11		-.01932
Sum W	=	1.13766

see = 78.96 RB2 = .764 cov = 15.27% dw = 1.82

3.3 INRC (X=63) Business investment in non-residential construction

2Q58-4Q72 OLS

$$
\begin{aligned}
INRC - INRCAG = {} & 12.875 - 139.04\ QC1 + 142.08\ QC2 \\
& (.92) \quad (14.00) \quad (6.79) \\
& + 131.28\ QC3 + .05781\ J1L(CA\$/PINRC) \\
& (12.41) \quad (2.53) \\
& + 1.3306\ J1L(INRC-INRCAG) \\
& (11.13) \\
& - .38184\ J2L(INRC-INRCAG) \\
& (3.20)
\end{aligned}
$$

see = 19.31 RB2 = .988 cov = 2.47% dw = 2.07

3.4 IIB Change in nonfarm business inventories
(X=61)

1Q56-4Q72 OLS

$$
\begin{aligned}
IIB = {} & 385.68 + .00828\ [QC1(J1L(KIB))] \\
& (5.44) \quad (4.31) \\
& - .00022\ [QC2(J1L(KIB))] - .00552\ [QC3(J1L(KIB))] \\
& (.15) \qquad\qquad\qquad (4.34) \\
& - .15406\ J1L(KIB) + .45665\ [UGPPS-(UGPP-IIB)] \\
& (6.32) \qquad\qquad (10.46) \\
& + JW(MG) + JW(CNDSD+CMV+CDO+XG+((GCNWF+GCNWPM \\
& + GCGSH-CCAGF\$-CCAGPM\$-CCAGH\$)/PGCNWG)+IME-IMEAG+INRC-INRCAG \\
& + IRC+IMEGF+IMEGPM+INRCGF+INRCGPM+INRCSM+IH)
\end{aligned}
$$

t	JW(CNDSD...)		JW(MG)	
0	.05500	(4.36)	.14271	(4.86)
-1	.04211	(4.36)	.08786	(3.96)
-2	.03094	(4.36)	.04083	(2.46)
-3	.02148	(4.36)	.00160	(.12)
-4	.01375	(4.36)	-.02981	(2.69)
-5	.00773	(4.36)	-.05342	(4.92)
-6	.00344	(4.36)	-.06922	(6.19)
-7	.00086	(4.36)	-.07721	(6.80)
-8			-.07738	(7.10)
-9			-.06975	(7.25)
-10			-.05431	(7.33)
-11			-.03106	(7.36)
Sum W =	.17531	Z2	-.18917	Z1Z2

see = 71.59 RB2 = .875 dw = 1.97

3.5 CCA$ Capital consumption allowances
(X=284)

1Q58-4Q72 OLS

$$CCA\$ = \underset{(.84)}{-\ 17.309} \underset{(2.88)}{-\ 31.382\ QC1} + \underset{(.59)}{6.4651\ QC2} + \underset{(.80)}{8.7233\ QC3}$$

$$+\ \underset{(90.96)}{1.4802}\ J1L[.00875(J16A[PINRC])(KNRC)$$

$$+\ .02035\ (J16A[PIME])(KME)$$

$$+\ .00875\ (J16A[PINRCG])(KNRCSM+KNRCGF)$$

$$+\ .0058\ (J16A[PIRC])(KRESD)]$$

see = 48.68 RB2 = .993 cov = 2.75% dw = .19

3.6 CCAC$ Capital consumption allowances,
(X=194) corporations

1Q58-4Q72 OLS

$$CCAC\$ = \underset{(1.32)}{14.498} \underset{(4.88)}{-\ 29.599\ QC1} + \underset{(.94)}{5.6711\ QC2} + \underset{(1.36)}{8.2404\ QC3}$$

$$+\ \underset{(84.53)}{1.0061}\ J1L[.00875(J16A[PINRC])(KNRC)+.02035(J16A[PIME])(KME)]$$

see = 27.07 RB2 = .992 cov = 3.03% dw = .53

Technical Relationships

3.7 KME (X=67) Stock of nonfarm machinery and equipment

```
KME = .97965 J1L(KME) + (IME-IMEAG)
```

3.8 KNRC (X=70) Stock of nonfarm non-residential construction

```
KNRC = .99125 J1L(KNRC) + (INRC-INRCAG)
```

3.9 KIB (X=66) Stock of nonfarm business inventories

```
KIB = J1L(KIB) + IIB
```

3.10 KMEY (X=68) Desired capital to output ratio for machinery and equipment

$$KMEY = \frac{1}{1.4506}\,[(.12/.16)^{**}.16][(.12/.72)^{**}.72]$$

$$[[[(1-.01\ RTCA)WEFFH/.01\ RCME][(.01785+.02035)/$$

$$(.01785-G+.02035(1+G))]]^{**}.72]$$

$$[(RCNR/RCME)^{**}.16]$$

3.11 KNRY (X=71) Desired capital to output ratio for non-residential construction

$$KNRY = \frac{1}{1.4506}\,[(.16/.12)^{**}.12][(.16/.72)^{**}.72]$$

$$[([(1-.01\ RTCA)WEFFH/.01\ RCNR][(.01785+.00875)/$$

$$(.01785-G+.00875(1+G))])^{**}.72]$$

$$[(RCME/RCNR)^{**}.12]$$

where:

$WEFFH = WQMMOB/([13\ HAWMM][ELEFF])$

.01785 is the average quarterly value of RHOR (1Q55-4Q72)

$$G = \frac{J12A[WEFFH/PGPP]}{J1L(J12A[WEFFH/PGPP])} - 1$$

3.12 RCME (X=53) Imputed rental price for machinery and equipment

$$RCME = JW(PIME)\left(\frac{1-CPVME}{(1-.01\ RTCA)}\right)\left(\frac{.01\ RTCA}{.50}\right)(.02035 + ([1+.01\ RHOR2$$

$$[LDIRV12/KB\$]+.01\ RHOR[1-LDIRV12/KB\$])^{**}.25-1]$$

$$[1-.01\ RTCA\left(\frac{J4S(ECINT)}{J4S(ECINT+YC)}\right)])100$$

3.13 RCNR (X=54) Imputed rental price for non-residential construction

$$RCNR = JW(PINRC)\left(\frac{1-CPVNR}{1-.01\ RTCA}\right)\left(\frac{.01\ RTCA}{.50}\right)(.00875 + ([1+.01\ RHOR2\ [LDIRV12/KB\$]+.01\ RHOR[1-LDIRV12/KB\$])^{**}.25-1]\ [1-.01\ RTCA(\frac{J4S(ECINT)}{J4S(ECINT+YC)})])100$$

JW weights for equations 3.12 to 3.13

t	JW(PIME)	JW(PINRC)
0	.640867	.718815
-1	.282214	.311914
-2	.156787	.168629
-3	.082417	.084166
-4	.038739	.034981
-5	.013470	.006896
-6	-.000796	-.008621
-7	-.008516	-.085300
-8	-.012374	-.056781
-9	-.082578	-.053395
-10	-.050621	-.052303
-11	-.045621	-.050956
Sum W =	1.013988	1.018045

3.14 UGPPAMP (X=23) Preferred output according to vintage stock of machinery and equipment

UGPPAMP = .97965 J1L(UGPPAMP) + (IME-IMEAG)/JW(KMEY)

t		JW(KMEY)
0		.00
-1		.10
-2		.15
-3		.30
-4		.25
-5		.15
-6		.05
Sum W	=	1.00

3.15 UGPPANP (X=50) Preferred output according to vintage stock of non-residential construction

UGPPANP = .99125 J1L(UGPPANP) + (INRC-INRCAG)/JW(KNRY)

t		JW(KNRY)
0		.000
-1		.064
-2		.085
-3		.089
-4		.086
-5		.079
-6		.072
-7		.067
-8		.061
-9		.055
-10		.050
-11		.046
-12		.042
-13		.038
-14		.034
-15		.032
-16		.029
-17		.026
-18		.024
-19		.021
Sum W	=	1.000

3.16 UGPP (X=189) Gross private business product (excluding agriculture and noncommercial services)

```
UGPP = (1-EPGPPADJ)(YGNE/PGNE)
       - 1333.1294 NIS - 1261.1062 NGPAF
       - 916.2790 NGPAPM + ENARES - (YFA/PYFA)
       - 560.000 NFP - EG61MPF - 620.8179 NIOS + EGNEADJ - CRENT
```

where

1261.1062 is the average 1961 value of WQGPAF + GWSF/NGPAF

1333.1294 is the average 1961 value of WQISM + GWSSM/NIS

916.2790 is the average 1961 value of WQGPAPM + GWPASM/NGPAPM

620.8179 is the average 1961 value of WQIOS

560.000 is the average 1961 value of WQF

3.17 UGPPA (X=187) UGPP adjusted to remove unintended inventory changes

```
UGPPA = UGPP - .4567 [UGPPS-106.5-(UGPP-IIB)]
```

3.18 UGPPD (X=190) Desired output based on the production function with actual capital stock, average employment rate, and trended weekly hours

```
UGPPD = 1.4506 ([J1L(KME)]**.12)([J1L(KNRC)]**.16)
        [([13 ELEFF/.72540][NMMOB][42.6206-.0380 QTIME]
        [1+NL/NE-1.054])**.72]
```

3.19 UGPPS (X=186) Aggregate supply based on the production function with actual factor inputs

```
UGPPS = 1.4506 ([J1L(KME)]**.12)([J1L(KNRC)]**.16)
        [([13 HAWMM][NMMOB][ELEFF/.72540])**.72]
```

Sector 4

FOREIGN TRADE

(The pairs of equations modelling imports from the United States and imports from the rest of the world (4.1) to (4.16) were estimated by joint least squares (JLS)). The vector (EXP$) of the expenditure variables (ACT$0-ACT$8) and the vector (PRICE) of the domestic price variables (PD0-PD8) used in equations (4.1) to (4.16) are defined below.

EXP$ = MARG.TEMP1

PRICE = MARG.TEMP2

where

EXP$' = (ACT$0, ACT$1, ACT$2, ACT$3, ACT$5, ACT$6, ACT$7, ACT$8)

PRICE' = (PD0, PD1, PD2, PD3, PD5, PD6, PD7, PD8)

$$
MARG = \begin{bmatrix}
.6167 & .0 & .1096 & .0311 & .0005 & .2420 \\
.8131 & .0 & .0741 & .0264 & .0005 & .0859 \\
.2900 & .0 & .0842 & .2223 & .0007 & .4028 \\
.2309 & .0 & .1396 & .1427 & .1334 & .3534 \\
.2704 & .0 & .2248 & .1575 & .0016 & .3457 \\
.1456 & .1137 & .0846 & .3032 & .0008 & .3521 \\
.0022 & .0427 & .0354 & .8477 & .0005 & .0713 \\
.1200 & .1788 & .1461 & .4142 & .0008 & .1401
\end{bmatrix}
$$

TEMP1' = (CON$, COND$, GOV$, KAP$, CONST$, EXPT$)

TEMP2' = (PCON, PCOND, PGCNWG, PKAP, PCONST, PEXPT)

and

```
CON$ = PCNDSD*CNDSD + PCS*CS

COND$ = PCDO*CDO + PCMV*CMV

GOV$ = PGCNWG*UGNWNH

KAP$ = PIME*IME + PIMEG*(IMEGF + IMEGPM)

CONST$ = PINRC*INRC + PIRC*IRC + PINRCG*(INRCGF + INRCPM
         + INRCSM)

EXPT$ = PXMIS12*XMIS12 + PXMIS13*XMIS13 + PXMV12*XMV12
        + PXNMV12*XNMV12 + PXNW13*XNW13 + PXW13*XW13

PCON = CON$/(CNDSD + CS)

PCOND = COND$/(CDO + CMV)

PKAP = KAP$/(IME + IMEGF + IMEGPM)

PCONST = CONST$/(INRC + IRC + INRCGF + INRCGPM + INRCSM)

PEXPT = EXPT$/(XMIS12 + XMIS13 + XMV12 + XNMV12 + XNW13
        + XW13)
```

4.1 MFA12 (X=309) Imports of food and live animals from the United States (SITC 0)

1Q58-4Q72 JLS

$$\ln \frac{MFA12}{NPOPT} = \underset{(2.00)}{-\ 1.6432} \underset{(7.49)}{-\ .07811\ QC1} + \underset{(6.16)}{.05533\ QC2}$$

$$\underset{(4.12)}{-\ .03523\ QC3} + \underset{(3.81)}{.56876}\ \ln\left(\frac{ACT\$0}{NPOPT}\ \frac{1}{PD0}\ \frac{UGPPD}{UGPPA}\right)$$

$$\underset{(5.31)}{-\ .66756}\ \ln\left((1+ETARFA)\ \frac{PMFA12}{PDO}\ \frac{UGPPD}{UGPPA}\right)$$

$$\underset{(3.04)}{+\ .17958}\ \ln\left((1+ETARFA)\ \frac{PMFA13}{PDO}\ \frac{UGPPD}{UGPPA}\right)$$

see = .071 RB2 = .696 cov = 5.12% dw = .45 rho = .788

4.2 MFA13 (X=325) Imports of food and live animals from other countries (SITC 0)

1Q58-4Q72 JLS

$$\ln \frac{MFA13}{NPOPT} = \underset{(5.82)}{-\ 3.3185} \underset{(16.39)}{-\ .28369\ QC1} + \underset{(6.12)}{.10545\ QC2}$$

$$\underset{(2.07)}{+\ .03539\ QC3} + \underset{(8.39)}{.86319}\ \ln\left(\frac{ACT\$0}{NPOPT}\ \frac{1}{PD0}\ \frac{UGPPD}{UGPPA}\right)$$

$$\underset{(2.97)}{+\ .18585}\ \ln\left((1+ETARFA)\ \frac{PMFA12}{PDO}\ \frac{UGPPD}{UGPPA}\right)$$

$$\underset{(10.66)}{-\ .59002}\ \ln\left((1+ETARFA)\ \frac{PMFA13}{PDO}\ \frac{UGPPD}{UGPPA}\right)$$

see = .076 RB2 = .934 cov = 5.18% dw = 1.84

4.3 MBT12 (X=310) Imports of beverages and tobacco from the United States (SITC 1)

1Q58-4Q72 JLS

$$\ln \frac{MBT12}{NPOPT} = \underset{(2.38)}{-\ 4.2461} \underset{(1.09)}{-\ .04376\ QC1} + \underset{(1.05)}{.04058\ QC2} \underset{(1.77)}{-\ .06852\ QC3} + \underset{(1.43)}{.41331}\ \ln\left(\frac{ACT\$1}{NPOPT}\ \frac{1}{PD1}\ \frac{UGPPD}{UGPPA}\right) \underset{(3.40)}{-\ 1.0673}\ \ln\left((1+ETARBT)\ \frac{PMBT12}{PD1}\ \frac{UGPPD}{UGPPA}\right) \underset{(1.38)}{+\ .35823}\ \ln\left((1+ETARBT)\ \frac{PMBT13}{PD1}\ \frac{UGPPD}{UGPPA}\right)$$

see = .162 RB2 = .412 cov = 6.97% dw = 1.34

4.4 MBT13 (X=326) Imports of beverages and tobacco from other countries (SITC 1)

1Q58-4Q72 JLS

$$\ln \frac{MBT13}{NPOPT} = \underset{(7.80)}{-\ 15.276} \underset{(14.03)}{-\ .61216\ QC1} + \underset{(3.45)}{.14718\ QC2} \underset{(4.91)}{+\ .22088\ QC3} + \underset{(7.87)}{2.5284}\left(\frac{ACT\$1}{NPOPT}\ \frac{1}{PD1}\ \frac{UGPPD}{UGPPA}\right) \underset{(1.36)}{+\ .08512}\ \ln\left((1+ETARBT)\ \frac{PMBT12}{PD1}\ \frac{UGPPD}{UGPPA}\right) \underset{(.45)}{-\ .11641}\ \ln\left((1+ETARBT)\ \frac{PMBT13}{PD1}\ \frac{UGPPD}{UGPPA}\right)$$

see = .188 RB2 = .854 cov = 21.28% dw = 1.83

4.5 MCM12A (X=311) Imports of crude materials (excluding fuels) from the United States (SITC 2)

1Q58-4Q72 JLS

$$\ln \frac{MCM12A}{NPOPT} = \underset{(.89)}{.69600} - \underset{(3.84)}{.07710}\,QC1 + \underset{(2.83)}{.04564}\,QC2 - \underset{(.01)}{.00011}\,QC3 + \underset{(1.10)}{.16923}\,\ln\left(\frac{ACT\$2}{NPOPT}\,\frac{1}{PD2}\,\frac{UGPPD}{UGPPA}\right) - \underset{(6.32)}{1.0542}\,\ln\left((1+ETARCM)\,\frac{PMCM12}{PD2}\,\frac{UGPPD}{UGPPA}\right) + \underset{(2.68)}{.23930}\,\ln\left((1+ETARCM)\,\frac{PMCM13A}{PD2}\,\frac{UGPPD}{UGPPA}\right)$$

see = .110 RB2 = .534 cov = 7.01% dw = .86 rho = .572

4.6 MCM13A (X=327) Imports of crude materials (excluding fuels) from other countries (SITC 2)

1Q58-4Q72 JLS

$$\ln \frac{MCM13A}{NPOPT} = - \underset{(.51)}{.48311} - \underset{(6.54)}{.16346}\,QC1 + \underset{(4.31)}{.09073}\,QC2 + \underset{(1.50)}{.03325}\,QC3 + \underset{(1.41)}{.26435}\,\ln\left(\frac{ACT\$2}{NPOPT}\,\frac{1}{PD2}\,\frac{UGPPD}{UGPPA}\right) + \underset{(2.66)}{.48442}\,\ln\left((1+ETARCM)\,\frac{PMCM12}{PD2}\,\frac{UGPPD}{UGPPA}\right) - \underset{(4.72)}{.86780}\,\ln\left((1+ETARCM)\,\frac{PMCM13A}{PD2}\,\frac{UGPPD}{UGPPA}\right)$$

see = .128 RB2 = .618 cov = 14.02% dw = 1.01 rho = .513

4.7 MEF12 (X=99) Imports of energy fuels from the United States (SITC 3)

1Q58-4Q72 JLS

$$\ln MEF12 = -13.775 - .56024\ QC1 + .15115\ QC2 + .27672\ QC3 + 2.2204 \ln\left(\frac{ACT\$3}{PD3}\frac{UGPPD}{UGPPA}\right) - 1.2463 \ln\left((1+ETAREF)\frac{PMEF12}{PD3}\frac{UGPPD}{UGPPA}\right) + 1.2197 \ln\left((1+ETAREF)\frac{PMEF13A}{PD3}\frac{UGPPD}{UGPPA}\right)$$

(3.69) (10.18) (4.52) (8.42) (4.68) (2.42) (4.71)

see = .257 RB2 = .610 cov = 7.24% dw = .61 rho = .731

4.8 MEF13A (X=328) Imports of energy fuels from other countries (SITC 3)

1Q58-4Q72 JLS

$$\ln MEF13A = -1.0939 - .09039\ QC1 - .05674\ QC2 + .09384\ QC3 + .82052 \ln\left(\frac{ACT\$3}{PD3}\frac{UGPPD}{UGPPA}\right) + .47055 \ln\left((1+ETAREF)\frac{PMEF12}{PD3}\frac{UGPPD}{UGPPA}\right) - .54788 \ln\left((1+ETAREF)\frac{PMEF13A}{PD3}\frac{UGPPD}{UGPPA}\right)$$

(1.86) (4.94) (3.53) (5.81) (6.24) (4.75) (5.63)

see = .072 RB2 = .970 cov = 1.49% dw = 1.67

4.9 MCH12 (X=312) Imports of chemical products from the United States (SITC 5)

1Q58-4Q72 JLS

$$\ln \frac{MCH12}{NPOPT} = \underset{(5.83)}{-3.1761} + \underset{(2.67)}{.03328}\,QC1 + \underset{(7.76)}{.08732}\,QC2 - \underset{(3.75)}{.04325}\,QC3 + \underset{(8.77)}{.95916}\ln\left(\frac{ACT\$5}{NPOPT}\,\frac{1}{PD5}\,\frac{UGPPD}{UGPPA}\right) - \underset{(9.69)}{.93387}\ln\left((1+ETARCH)\,\frac{PMCH12}{PD5}\,\frac{UGPPD}{UGPPA}\right) - \underset{(1.84)}{.10242}\ln\left((1+ETARCH)\,\frac{PMCH13}{PD5}\,\frac{UGPPD}{UGPPA}\right)$$

see = .048 RB2 = .981 cov = 2.79% dw = 1.52

4.10 MCH13 (X=329) Imports of chemical products from other countries (SITC 5)

1Q58-4Q72 JLS

$$\ln \frac{MCH13}{NPOPT} = \underset{(4.31)}{-5.1362} - \underset{(3.13)}{.09714}\,QC1 + \underset{(1.80)}{.04941}\,QC2 + \underset{(1.25)}{.03537}\,QC3 + \underset{(4.47)}{1.0678}\ln\left(\frac{ACT\$5}{NPOPT}\,\frac{1}{PD5}\,\frac{UGPPD}{UGPPA}\right) - \underset{(1.91)}{.42372}\ln\left((1+ETARCH)\,\frac{PMCH12}{PD5}\,\frac{UGPPD}{UGPPA}\right) - \underset{(6.67)}{1.5156}\ln\left((1+ETARCH)\,\frac{PMCH13}{PD5}\,\frac{UGPPD}{UGPPA}\right)$$

see = .120 RB2 = .935 dw = 2.09

4.11 MMM12 (X=313) Imports of manufactured goods classified chiefly by material from the United States (SITC 6)

1Q59-4Q72 JLS

$$\ln \frac{MMM12}{NPOPT} = \underset{(2.04)}{-1.1778} + \underset{(2.86)}{.04137}\,QC1 + \underset{(2.47)}{.02617}\,QC2 - \underset{(1.91)}{.02114}\,QC3 + \underset{(6.39)}{.76947}\,\ln\left(\frac{ACT\$6}{NPOPT}\,\frac{1}{PD6}\,\frac{UGPPD}{UGPPA}\right) - \underset{(3.82)}{.74441}\,\ln\left((1+ETARMM)\,\frac{PMMM12}{PD6}\,\frac{UGPPD}{UGPPA}\right) + \underset{(.30)}{.04495}\,\ln\left((1+ETARMM)\,\frac{PMMM13}{PD6}\,\frac{UGPPD}{UGPPA}\right)$$

see = .070 RB2 = .887 cov = 2.82% dw = .76 rho = .665

4.12 MMM13 (X=330) Imports of manufactured goods classified chiefly by material from other countries (SITC 6)

1Q63-4Q72 JLS

$$\ln \frac{MMM13}{NPOPT} = \underset{(1.00)}{-.66352} - \underset{(3.61)}{.10836}\,QC1 + \underset{(2.35)}{.05895}\,QC2 + \underset{(2.48)}{.06072}\,QC3 + \underset{(4.71)}{.61546}\,\ln\left(\frac{ACT\$6}{NPOPT}\,\frac{1}{PD6}\,\frac{UGPPD}{UGPPA}\right) + \underset{(.39)}{.08948}\,\ln\left((1+ETARMM)\,\frac{PMMM12}{PD6}\,\frac{UGPPD}{UGPPA}\right) - \underset{(5.33)}{2.4755}\,\ln\left((1+ETARMM)\,\frac{PMMM13}{PD6}\,\frac{UGPPD}{UGPPA}\right)$$

see = .095 RB2 = .847 cov = 4.77% dw = .99

4.13 MOM12A (X=315) Imports of machinery (excluding transportation equipment and internal combustion engines) from the United States (SITC 7 - [73 + 711.5])

1Q58-4Q64 JLS

$$\ln \frac{MOM12A}{NPOPT} = \underset{(1.40)}{-.95440} + \underset{(1.48)}{.03916}\,QC1 + \underset{(1.26)}{.02602}\,QC2 - \underset{(2.00)}{.03415}\,QC3 + \underset{(5.64)}{1.0154}\ln\left(\frac{ACT\$7}{NPOPT}\,\frac{1}{PD7}\,\frac{UGPPD}{UGPPA}\right) - \underset{(3.03)}{.77596}\ln\left((1+ETARMOM)\,\frac{PMOM12A}{PD7}\,\frac{UGPPD}{UGPPA}\right) + \underset{(.54)}{.05909}\ln\left((1+ETARMOM)\,\frac{PMOM13A}{PD7}\,\frac{UGPPD}{UGPPA}\right)$$

see = .043 RB2 = .872 cov = 1.54% dw = .98 rho = .555

4.14 MOM13A (X=331) Imports of machinery (excluding transportation equipment and internal combustion engines) from other countries (SITC 7 - [73 + 711.5])

1Q58-4Q64 JLS

$$\ln \frac{MOM13A}{NPOPT} = \underset{(.95)}{-1.2414} - \underset{(2.09)}{.13945}\,QC1 + \underset{(.46)}{.02400}\,QC2 + \underset{(.55)}{.02719}\,QC3 + \underset{(1.86)}{.64497}\ln\left(\frac{ACT\$7}{NPOPT}\,\frac{1}{PD7}\,\frac{UGPPD}{UGPPA}\right) + \underset{(.87)}{.46694}\ln\left((1+ETARMOM)\,\frac{PMOM12A}{PD7}\,\frac{UGPPD}{UGPPA}\right) - \underset{(5.04)}{.79137}\ln\left((1+ETARMOM)\,\frac{PMOM13A}{PD7}\,\frac{UGPPD}{UGPPA}\right)$$

see = .140 RB2 = .023 cov = 11.54% dw = 1.02

4.15 MIM12 (X=314) Imports of miscellaneous manufactured articles from the United States (SITC 8)

1Q58-4Q64 JLS

$$\ln \frac{MIM12}{NPOPT} = \underset{(2.68)}{-3.8278} + \underset{(2.93)}{.12745}\,QC1 - \underset{(.63)}{.01854}\,QC2 - \underset{(.23)}{.00698}\,QC3 + \underset{(3.88)}{1.2780}\ln\left(\frac{ACT\$8}{NPOPT}\,\frac{1}{PD8}\,\frac{UGPPD}{UGPPA}\right) - \underset{(4.52)}{1.6734}\ln\left((1+ETARIM)\,\frac{PMIM12}{PD8}\,\frac{UGPPD}{UGPPA}\right)$$

see = .084 RB2 = .307 cov = 5.33% dw = 1.48

4.16 MIM13 (X=332) Imports of miscellaneous manufactured articles from other countries (SITC 8)

1Q58-4Q64 JLS

$$\ln \frac{MIM13}{NPOPT} = \underset{(3.16)}{-4.5807} - \underset{(4.09)}{.12445}\,QC1 - \underset{(2.68)}{.04337}\,QC2 + \underset{(12.09)}{.18849}\,QC3 + \underset{(3.88)}{1.2782}\ln\left(\frac{ACT\$8}{NPOPT}\,\frac{1}{PD8}\,\frac{UGPPD}{UGPPA}\right) - \underset{(2.24)}{.77056}\ln\left((1+ETARIM)\,\frac{PMIM13}{PD8}\,\frac{UGPPD}{UGPPA}\right)$$

see = .131 RB2 = .289 cov = 15.43% dw = .16 rho = .910

4.13 MOM12A (X=315) Imports of machinery (excluding transportation equipment and internal combustion engines) from the United States (SITC 7 - [73 + 711.5])

1Q65-4Q72 JLS

$$\ln \frac{MOM12A}{NPOPT} = -1.9800 + .04698\ QC1 - .02570\ QC2 \quad (2.96)\ (3.17)\ (1.57)$$

$$+ .01362\ QC3 + 1.2319 \ln\left(\frac{ACT\$7}{NPOPT} \frac{1}{PD7} \frac{UGPPD}{UGPPA}\right) \quad (1.01)\ (7.74)$$

$$- 1.3218 \ln\left((1+ETARMOM) \frac{PMOM12A}{PD7} \frac{UGPPD}{UGPPA}\right) \quad (3.89)$$

$$- .09866 \ln\left((1+ETARMOM) \frac{PMOM13A}{PD7} \frac{UGPPD}{UGPPA}\right) \quad (1.10)$$

see = .048 RB2 = .867 cov = 1.53% dw = .94 rho = .403

4.14 MOM13A (X=331) Imports of machinery (excluding transportation equipment and internal combustion engines) from other countries (SITC 7 - [73 + 711.5])

1Q65-4Q72 JLS

$$\ln \frac{MOM13A}{NPOPT} = -5.2859 - .01526\ QC1 - .12603\ QC2 \quad (6.69)\ (.68)\ (5.52)$$

$$+ .10786\ QC3 + 1.6780 \ln\left(\frac{ACT\$7}{NPOPT} \frac{1}{PD7} \frac{UGPPD}{UGPPA}\right) \quad (5.44)\ (8.79)$$

$$- .57272 \ln\left((1+ETARMOM) \frac{PMOM12A}{PD7} \frac{UGPPD}{UGPPA}\right) \quad (1.53)$$

$$- 2.0416 \ln\left((1+ETARMOM) \frac{PMOM13A}{PD7} \frac{UGPPD}{UGPPA}\right) \quad (7.96)$$

see = .061 RB2 = .956 cov = 3.44% dw = 1.55

4.15 MIM12 (X=314) Imports of miscellaneous manufactured articles from the United States (SITC 8)

1Q65-4Q72 JLS

$$\ln \frac{MIM12}{NPOPT} = \underset{(3.00)}{-\ 1.9543} \underset{(.15)}{-\ .00264\ QC1} + \underset{(.36)}{.00449\ QC2} + \underset{(.57)}{.00670\ QC3} + \underset{(6.21)}{.84573} \ln\left(\frac{ACT\$8}{NPOPT} \frac{1}{PD8} \frac{UGPPD}{UGPPA}\right) \underset{(.51)}{-\ .18979} \ln\left((1+ETARIM) \frac{PMIM12}{PD8} \frac{UGPPD}{UGPPA}\right) \underset{(1.58)}{-\ .35082} \ln\left((1+ETARIM) \frac{PMIM13}{PD8} \frac{UGPPD}{UGPPA}\right)$$

see = .051 RB2 = .730 cov = 2.55% dw = .96 rho = .409

4.16 MIM13 (X=332) Imports of miscellaneous manufactured articles from other countries (SITC 8)

1Q65-4Q72 JLS

$$\ln \frac{MIM13}{NPOPT} = \underset{(13.08)}{-\ 9.8565} \underset{(.97)}{+\ .03119\ QC1} \underset{(4.08)}{-\ .11208\ QC2} + \underset{(8.20)}{.21647\ QC3} + \underset{(15.58)}{2.4643} \ln\left(\frac{ACT\$8}{NPOPT} \frac{1}{PD8} \frac{UGPPD}{UGPPA}\right) \underset{(1.58)}{-\ .56883} \ln\left((1+ETARIM) \frac{PMIM12}{PD8} \frac{UGPPD}{UGPPA}\right) \underset{(4.27)}{-\ 1.8425} \ln\left((1+ETARIM) \frac{PMIM13}{PD8} \frac{UGPPD}{UGPPA}\right)$$

see = .086 RB2 = .908 cov = 5.64% dw = 1.28

4.17 MMVP12 (X=316) Imports of motor vehicles and parts, including internal combustion engines, from the United States (SITC 732 + 711.5)

1Q58-4Q64 OLS

$$
\begin{aligned}
MMVP12 = {} & 40.449 + .16673\ QC1[J1L(J4A(MMVP12))] \\
& (1.82) \quad (3.86) \\
& - .09672\ QC2[J1L(J4A(MMVP12))] \\
& (1.37) \\
& - .19865\ QC3[J1L(J4A(MMVP12))] \\
& (4.52) \\
& + .12712\ CMV + .49497\ (QAUTO)(CMV) \\
& (2.56) \qquad (2.66) \\
& + .09804\ (QAUTST)(CMV) \\
& (2.36)
\end{aligned}
$$

see = 11.97 RB2 = .838 cov = 11.07% dw = 2.02

1Q65-4Q72 OLS

$$
\begin{aligned}
\frac{MMVP12}{CMV-MMV13} = {} & 2.6813 + .04461\ QC1 - .06776\ QC2 \\
& (4.60) \quad (3.23) \qquad (4.72) \\
& - .04343\ QC3 + .00069\ XMV12 \\
& (2.41) \qquad (17.26) \\
& - 2.1273\ \frac{PMMV12}{PCMV} + .0000459\ QAUTST\ (CMV-MMV13) \\
& (4.00) \qquad (4.04)
\end{aligned}
$$

see = .044 RB2 = .970 cov = 5.70% dw = 2.53

4.18 XMV12 (X=211) Exports of motor vehicles and parts to the United States (SITC 732)

1Q63-4Q72 OLS

$$
\begin{aligned}
XMV12 = {} & 9.3025 \underset{(.89)}{} + .10949 \underset{(4.94)}{} [QC1(J1L(XMV12))] \\
& + .06961 \underset{(3.09)}{} [QC2(J1L(XMV12))] - .14141 \underset{(6.76)}{} [QC3(J1L(XMV12))] \\
& + 7.6004 \underset{(50.10)}{} (QAUTO)[(EC2/ESAEC2)+.001(CDO+CMV)]
\end{aligned}
$$

see = 41.41 RB2 = .985 cov = 9.93% dw = 1.81

4.19 XNMV12 (X=212) Exports of goods (excluding uranium, aircraft and parts, and motor vehicles and parts) to the United States (SITC 0 to 9 -[286 + 732 + 734])

1Q62-4Q72 OLS

$$\ln[XNMV12 - (XEF\$12/PXEF12)] = -7.3955 \underset{(6.87)}{}$$

$$- .01230\ (QC1)(J1L(\ln[XNMV12 - (XEF\$12/PXEF12)])) \underset{(9.86)}{}$$

$$+ .00887\ (QC2)(J1L(\ln[XNMV12 - (XEF\$12/PXEF12)])) \underset{(7.06)}{}$$

$$- .00002\ (QC3)(J1L(\ln[XNMV12 - (XEF\$12/PXEF12)])) \underset{(.02)}{}$$

$$+ 1.4339\ J12A(\ln[ACT]) \underset{(23.27)}{}$$

$$+ .67938\ (\ln[ACT] - J12A\ \ln[ACT]) \underset{(1.64)}{}$$

$$- 1.2649\ J16A(\ln[PXNME] - \ln[(PFX)(PXBNF2)]) \underset{(4.40)}{}$$

where

$$ACT = .8898\ ECO2 + .0551\ EPD2 + .0551\ EPS2$$

$$PXNME = \frac{(XNMV12)(PXNMV12) - XEF\$12}{XNMV12 - \frac{XEF\$12}{PXEF12}}$$

see = .033 RB2 = .981 cov = .48% dw = 1.31

4.20 XNW13 (X=213) Exports of goods (excluding wheat, uranium, and aircraft and parts) to other countries (SITC 0 to 9 -[041 + 286 + 734])

1Q62-4Q72 OLS

$$
\begin{aligned}
\ln(XNW13) = {} & 3.2665 - .01106\ [QC1(J1L(\ln(XNW13)))] \\
& (4.92) \quad (4.81) \\
& + .00356\ [QC2(J1L(\ln(XNW13)))] \\
& (1.58) \\
& + .00512\ [QC3(J1L(\ln(XNW13)))] \\
& (2.14) \\
& + .92649\ J12A(\ln(XVOL\$/PWXG)) \\
& (14.38) \\
& + .96828\ [\ln(XVOL\$/PWXG) - J12A(\ln(XVOL\$/PWXG))] \\
& (5.66) \\
& - .61878\ J16A[\ln(PXNW13) - \ln((PFX)(PWXG))] \\
& (1.81) \\
& + .14927\ QIRON \\
& (4.26)
\end{aligned}
$$

see = .055 RB2 = .948 cov = .84% dw = 1.58

4.21 XID$12 (X=209) Interest and dividend receipts from the United States

1Q58-4Q72 OLS

$$\frac{\text{XID\$12}}{(\text{YII\$2}+\text{YDV\$2})(\text{PFX})} = \underset{(4.63)}{.32128}\ (Q1)(S1)$$

$$+ \underset{(4.61)}{.30909}\ (Q2)(S1)$$

$$+ \underset{(4.35)}{.28584}\ (Q3)(S1)$$

$$+ \underset{(4.46)}{.36822}\ (Q4)(S1)$$

$$+ \underset{(5.82)}{.53678}\ J4L[XID\$12/([YII\$2+YDV\$2][PFX])]$$

where

S1 = 1000 A12/([PFX][1000000 VCN$2]+A12)

see = .197 RB2 = .272 cov = 16.59% dw = 1.47

4.22 XTR$12 Travel receipts from the United States
(X=216)

3Q54-4Q72 OLS

$$(XTR\$12/N2) = -1.4788 - 1.0095\ [QC1(J1L(XTR\$12/N2))] \quad (6.31)\ (27.45)$$
$$- .14250\ [QC2(J1L(XTR\$12/N2))] \quad (3.29)$$
$$+ 1.3484\ [QC3(J1L(XTR\$12/N2))] \quad (53.30)$$
$$+ JW(PFX) + JW[(ECO\$2/ESAEC2)/N2] + .41443\ QEXPO \quad (7.63)$$

t	JW(PFX)		JW[(ECO$2...]	
0	.41608	(5.40)	.51901	(19.88)
-1	.31856	(5.40)	.39737	(19.88)
-2	.23404	(5.40)	.29194	(19.88)
-3	.16253	(5.40)	.20277	(19.88)
-4	.10402	(5.40)	.12975	(19.88)
-5	.05851	(5.40)	.07299	(19.88)
-6	.02600	(5.40)	.03244	(19.88)
-7	.00650	(5.40)	.00811	(19.88)
Sum W	1.32624	Z2	1.65434	Z2

see = .087 RB2 = .985 cov = 10.60% dw = 2.13

4.23 XFS$12 (X=207) Freight and shipping receipts from the United States

1Q58-4Q72 OLS

$$
\begin{aligned}
XFS\$12 = {} & 15.224 - .07059\ [QC1(J1L(XFS\$12))] \\
& (3.12) \quad (4.75) \\
& + .01215\ [QC2(J1L(XFS\$12))] \\
& \quad (.77) \\
& + .06239\ [QC3(J1L(XFS\$12))] + .05338\ XG\$12 \\
& \quad (4.53) \qquad\qquad\qquad\qquad (10.82) \\
& - .00164\ (QAUTO)(XG\$12) \\
& \quad (1.90)
\end{aligned}
$$

where

$$
\begin{aligned}
XG\$12 = {} & (XMV12)(PXMV12) + (XNMV12)(PXNMV12) \\
& + (XMIS12)(PXMIS12)
\end{aligned}
$$

see = 6.66 RB2 = .975 cov = 6.83% dw = .79

4.24 XID$13 (X=210) Interest and dividend receipts from other countries

1Q57-4Q70 OLS

$$
\begin{aligned}
XID\$13 = {} & .17880\ (.30420\ J20A[.01\ RLUK]+.03775)(A13) \\
& (24.53) \\
& - .05058\ [QC1(.30420\ J20A[.01\ RLUK]+.03775)(A13)] \\
& \quad (3.89) \\
& - .01461\ [QC2(.30420\ J20A[.01\ RLUK]+.03775)(A13)] \\
& \quad (1.14) \\
& - .01130\ [QC3(.30420\ J20A[.01\ RLUK]+.03775)(A13)] \\
& \quad (.90) \\
& + 58.387\ QXDIV \\
& \quad (5.35)
\end{aligned}
$$

see = 10.73 RB2 = .748 cov = 34.16% dw = 2.33

4.25 XTR$13 Travel receipts from other countries
(X=217)

1Q58-4Q72 OLS

XTR$13 = - 5.6777 - .87517 [QC1(J1L(XTR$13))]
(4.25) (15.51)

+ .41572 [QC2(J1L(XTR$13))] + .64992 [QC3(J1L(XTR$13))]
(6.42) (19.16)

+ JW(.001 XVOL$) + 17.797 QEXPO
(7.37)

t	JW(.001 XVOL$)	
0	.24016	(12.05)
-1	.18387	(12.05)
-2	.13509	(12.05)
-3	.09381	(12.05)
-4	.06004	(12.05)
-5	.03377	(12.05)
-6	.01501	(12.05)
-7	.00375	(12.05)
Sum W	.76550	Z2

see = 3.97 RB2 = .957 cov = 16.78% dw = 1.66

4.26 XFS$13 (X=208) Freight and shipping receipts from other countries

2Q58-4Q72 OLS

$$XFS\$13 = \underset{(4.12)}{8.6393} + \underset{(16.44)}{.07364}\ XG\$13 + \underset{(1.83)}{.00854}\ J1L(XG\$13)$$

where

$$XG\$13 = (XNW13)(PXNW13) + (XW13)(PXW13) + (XMIS13)(PXMIS13)$$

see = 5.36 RB2 = .967 cov = 6.11% dw = .96

4.27 MINT$12 (X=92) Interest payments to the United States

1Q58-4Q72 OLS

$$MINT\$12 = \underset{(9.10)}{16.342} + \underset{(51.40)}{.20346}\ [.757(\frac{J20S[(FI12)(.01\ RCB2/PFX)]}{J20S(FI12)})(PFX)$$

$$+ .243(\frac{J20S[(FI12)(.01\ RL)]}{J20S(FI12)})(LGB12+LCB12)]$$

$$- \underset{(4.99)}{.01708}\ (QC1[\text{same as first term}])$$

$$+ \underset{(6.99)}{.02344}\ (QC2[\text{same as first term}])$$

$$- \underset{(6.64)}{.02193}\ (QC3[\text{same as first term}])$$

where

$$FI12 = FINIGF12 + FINIPM12 + FINIB12 + FITOGB12 + FITOBB12$$

see = 6.76 RB2 = .979 cov = 6.96% dw = 2.56

4.28 MDIV$12 Dividend payments to the United States
(X=86)

1Q58-4Q72 OLS

MDIV$12 = .04854 J4S[([LDIRV12+LPCV12]/KB$)(YC+CCAC$-TCA)]
(45.80)

- .00440 [QC1(J4S[([LDIRV12+LPCV12]/KB$)(YC+CCAC$-TCA)])]
(2.36)

- .01007 [QC2(J4S[([LDIRV12+LPCV12]/KB$)(YC+CCAC$-TCA)])]
(5.46)

- .00896 [QC3(J4S[([LDIRV12+LPCV12]/KB$)(YC+CCAC$-TCA])])
(4.91)

see = 22.92 RB2 = .836 cov = 17.30% dw = 1.98

4.29 MTR$12 (X=101) Travel payments to the United States

1Q58-4Q72 OLS

$$\frac{MTR\$12}{NPOP} = \underset{(3.24)}{10.035} - \underset{(3.94)}{.10865}\ [QC1(J1L(MTR\$12/NPOP))]$$

$$+ \underset{(4.36)}{.10002}\ [QC2(J1L(MTR\$12/NPOP))]$$

$$+ \underset{(13.53)}{.27208}\ [QC3(J1L(MTR\$12/NPOP))]$$

$$+ \underset{(16.27)}{.02740}\ ([(PCS)(CS)+(PCSMVOD)(CSMVOD)]/NPOP)$$

$$+ JW(PFX)$$

t	JW(PFX)	
0	-3.74181	(2.68)
-1	-2.39476	(2.68)
-2	-1.34705	(2.68)
-3	- .59869	(2.68)
-4	- .14967	(2.68)
Sum W	-8.23199	Z2

see = 1.07 RB2 = .915 cov = 9.55% dw = 1.38

4.30 MFS$12 (X=89) Freight and shipping payments to the United States

2Q58-4Q72 OLS

$$\begin{aligned}MFS\$12 = &- 15.854 - .17651\ [QC1(J1L(MFS\$12))] \\ &\quad (.82) \quad (14.05) \\ &+ .02894\ [QC2(J1L(MFS\$12))] \\ &\quad (2.02) \\ &+ .11809\ [QC3(J1L(MFS\$12))] \\ &\quad (10.02) \\ &+ .04016\ MG\$12A + JW(PFX) \\ &\quad (34.38)\end{aligned}$$

t	JW(PFX)	
0	27.796	(3.21)
-1	17.790	(3.21)
-2	10.007	(3.21)
-3	4.447	(3.21)
-4	1.112	(3.21)
Sum W	61.151	Z2

see = 6.53 RB2 = .965 cov = 5.58% dw = .88

4.31 MID$13 (X=91) Interest and dividend payments to other countries

1Q58-4Q72 OLS

$$\begin{aligned}MID\$13 = &\ 9.9413 + .14327\ [.241\ J20A(.01\ RL)+.013](LDIPRV13+LGB13) \\ &\quad (5.21) \quad (18.70) \\ &+ .02013\ [QC1[.241\ J20A(.01\ RL)+.013](LDIPRV13+LGB13)] \\ &\quad (4.06) \\ &- .02440\ [QC2[.241\ J20A(.01\ RL)+.013](LDIPRV13+LGB13)] \\ &\quad (5.02) \\ &- .00080\ [QC3[.241\ J20A(.01\ RL)+.013](LDIPRV13+LGB13)] \\ &\quad (.17)\end{aligned}$$

see = 5.36 RB2 = .865 cov = 12.42% dw = 1.87

4.32 MTR$13 (X=102) Travel payments to other countries

4Q58-4Q72 OLS

$$\frac{MTR\$13}{NPOP} = -\underset{(6.93)}{2.6705} - \underset{(10.68)}{.37596}\,[QC1(J1L(MTR\$13/NPOP))]$$

$$-\underset{(1.59)}{.05394}\,[QC2(J1L(MTR\$13/NPOP))]$$

$$+\underset{(21.51)}{.61246}\,[QC3(J1L(MTR\$13/NPOP))]$$

$$+ JW([(PCS)(CS) + (PCSMVOD)(CSMVOD)]/NPOP)$$

$$-\underset{(3.18)}{1.2337}\,QEXPO$$

t	JW([(PCS)(CS)...)	
0	.01029	(21.41)
-1	.00659	(21.41)
-2	.00371	(21.41)
-3	.00165	(21.41)
-4	.00041	(21.41)
Sum W	.02265	Z2

see = .65 RB2 = .949 cov = 12.12% dw = .89

4.33 MFS$13 (X=90) Freight and shipping payments to other countries

1Q59-4Q72 OLS

$$
\begin{aligned}
\text{MFS\$13} = {} & .30298 - .05329\ [QC1(J1L(MFS\$13))] \\
& (.09) \quad (2.44) \\
& + .03906\ [QC2(J1L(MFS\$13))] \\
& \quad (1.65) \\
& + .00007\ [QC3(M1L(MFS\$13))] + JW(MG\$13A) \\
& \quad (.00)
\end{aligned}
$$

t	JW(MG$13)	
0	.05408	(28.62)
-1	.03461	(28.62)
-2	.01947	(28.62)
-3	.00865	(28.62)
-4	.00216	(28.62)
Sum W	.11898	Z2

see = 8.66 RB2 = .940 cov = 9.88% dw = .64

Technical Relationships

4.34 MG$12A (X=336) Imports of goods from the United States

```
MG$12A = (PMFA12)(MFA12) + (PMBT12)(MBT12)
         + (PMCM12)(MCM12A) + (PMEF12)(MEF12)
         + (PMCH12)(MCH12) + (PMMM12)(MMM12)
         + (PMOM12A)(MOM12A) + (PMIM12)(MIM12)
         + (PMMVP12)(MMVP12) + (PMMIS12A)(MMIS12A)
```

4.35 MG$13A (X=337) Imports of goods from other countries

```
MG$13A = (PMFA13)(MFA13) + (PMBT13)(MBT13)
         + (PMCM13A)(MCM13A) + (PMEF13A)(MEF13A)
         + (PMCH13)(MCH13) + (PMMM13)(MMM13)
         + (PMOM13A)(MOM13A) + (PMIM13)(MIM13)
         + (PMMVP13)(MMVP13) + (PMMIS13A)(MMIS13A)
```

4.36 MG12A (X=334) Imports of goods from the United States (SITC 0 to 9)

```
MG12A = MFA12 + MBT12 + MCM12A + MEF12 + MCH12 + MMM12
        + MOM12A + MIM12 + MMVP12 + MMIS12A
```

4.37 MG13A (X=335) Imports of goods from other countries (SITC 0 to 9)

```
MG13A = MFA13 + MBT13 + MCM13A + MEF13A + MCH13 + MMM13
        + MOM13A + MIM13 + MMVP13 + MMIS13A
```

4.38 MGA (X=333) Imports of goods (SITC 0 to 9)

```
MGA = MG12A + MG13A
```

4.39 MG (X=157) Imports of goods (national accounts)

```
MG = MGA + EMRES
```

4.40 XG (X=97) Exports of goods

```
XG = XMV12 + XNMV12 + XW13 + XNW13 + XMIS12 + XMIS13
```

4.41 M$12 (X=82) Imports of goods and services from the United States

```
M$12 = MG$12A + MINT$12 + MDIV$12 + MTR$12 + MFS$12 + MOS$12
```

4.42 M$13 (X=83) Imports of goods and services from other countries

```
M$13 = MG$13A + MID$13 + MTR$13 + MFS$13 + MOS$13
```

4.43 M (X=81) Imports of goods and services

```
M = MG + (MINT$12+MDIV$12+MTR$12+MFS$12+MOS$12+MID$13
    + MTR$13+MFS$13+MOS$13+TWF-MTRP$-GTNRF-MIH$)/PMS
```

4.44 X$12 (X=205) Exports of goods and services to the United States

```
X$12 = (XMV12)(PXMV12) + (XNMV12)(PXNMV12)
       + (XMIS12)(PXMIS12) + XID$12 + XTR$12
       + XFS$12 + XOS$12
```

4.45 X$13 (X=206) Exports of goods and services to other countries

```
X$13 = (XNW13)(PXNW13) + (XW13)(PXW13) + (XMIS13)(PXMIS13)
       + XID$13 + XTR$13 + XFS$13 + XOS$13
```

4.46 X (X=204) Exports of goods and services

```
X = XG + (XID$12+XTR$12+XFS$12+XOS$12+XID$13+XTR$13
    + XFS$13+XOS$13-XTRP$-XIH$)/PXS
```

4.47 XBAL$ (X=193) Net balance on current account, balance of payments basis

```
XBAL$ = X$12 + X$13 - M$12 - M$13
```

Sector 5

BUSINESS EMPLOYMENT, HOURS, LABOUR FORCE, AND POPULATION

5.1 NMMOB (X=112) — Paid employees in mining, manufacturing, and other business

1Q61-4Q72 OLS

$$J1D(NMMOB) = \underset{(8.48)}{.03446} - \underset{(10.23)}{.11267}\ QC1 + \underset{(12.83)}{.12415}\ QC2 + \underset{(12.60)}{.09086}\ QC3 + \underset{(3.28)}{.09726}\ [NMMOBD^{*}-J1L(NMMOB)]$$

see = .028 RB2 = .952 dw = 1.58

5.2 NC (X=103) — Paid employees in construction

1Q58-4Q72 OLS

$$J1D(NC) = \underset{(.25)}{.00034} - \underset{(12.25)}{.05341}\ QC1 + \underset{(17.82)}{.05774}\ QC2 + \underset{(10.41)}{.03858}\ QC3 + \underset{(2.08)}{.12389}\ [NCD-J1L(NC)]$$

see = .010 RB2 = .968 dw = 1.99

5.3 NEUPB (X=128) Unpaid employees in nonfarm business

1Q58-4Q72 OLS

$$J1D(NEUPB) = \underset{(1.43)}{.00731} + \underset{(9.30)}{.10394}\ J1D(NENFP) + \underset{(1.81)}{.04539}\ QC1[J1D(NENFP)] - \underset{(.74)}{.02281}\ QC2[J1D(NENFP)] - \underset{(3.25)}{.10058}\ QC3[J1D(NENFP)]$$

see = .011 RB2 = .728 dw = 2.00

where

NENFP = NE - (NEUPF+NFP) - NEUPB

5.4 HAWMM (X=56) Average weekly hours worked in mining and manufacturing

1Q61-4Q72 OLS

$$\frac{HAWMM - (42.621 - .0380\ QTIME)}{(42.621 - .0380\ QTIME)} = \underset{(7.52)}{.01079} + \underset{(2.07)}{.00450}\ QC1 + \underset{(.58)}{.00108}\ QC2 + \underset{(3.90)}{.00734}\ QC3 + \underset{(3.12)}{.08559}\left(\frac{NMMOBD^{*}-NMMOB}{NMMOBD}\right) + \underset{(3.27)}{.31117}\left(\frac{NMMOBD-NMMOBD^{*}}{NMMOBD}\right)$$

see = .007 RB2 = .487 dw = 1.24

5.5 HAWC Average weekly hours worked in construction
(X=55)

1Q58-4Q72 OLS

$$\frac{HAWC-(42.140-.0251\ QTIME)}{(42.140-.0251\ QTIME)} = \underset{(1.27)}{-\ .00402} \underset{(.21)}{-\ .00190\ QC1} + \underset{(2.30)}{.01121\ QC2} + \underset{(4.71)}{.03929\ QC3} + \underset{(2.39)}{.10352}\ \frac{[INRC+IRC+INRCGF+INRCGPM+INRCSM-J12A(INRC+...+INRCSM)]}{J12A(INRC+...+INRCSM)}$$

see = .019 RB2 = .794 dw = .67

5.6 NL Labour Force
(X=111)

1Q58-4Q72 OLS

$$100\ J1D(NL/NPOP) = \underset{(3.75)}{.17439} \underset{(9.35)}{-\ .72087\ QC1} + \underset{(5.45)}{.54011\ QC2} + \underset{(14.26)}{1.0174\ QC3} \underset{(7.62)}{-\ .54326\ (Q1+Q2)(100\ J1D[NPOPSS/NPOP])} \underset{(7.57)}{-\ .80641\ (Q3+Q4)(100\ J1D[NPOPSS/NPOP])} + \underset{(1.21)}{4.4537\ J1D[(UGPPA/UGPPD)]} + \underset{(2.25)}{34.819\ J1D[J19S(NIMS-NEMS)/NPOP]}$$

see = .204 RB2 = .980 dw = 2.26

5.7 NIMS Immigrants
(X=176)

1Q58-4Q72 OLS

100(NIMS/NPOP) = .41476
(3.09)

- .30752[QC1(J1L[J4A(100 NIMS/NPOP)])]
(11.13)

+ .08766 [QC2(J1L[J4A(100 NIMS/NPOP)])]
(3.07)

+ .20166 [QC3(J1L[J4A(100 NIMS/NPOP)])] + JW[RNU]
(6.79)

+ JW[(J1L[.5005 WQMMOB/([13 HAWMM][PCPI])])/

(.86 EWEURO+.14[.4072 PL2/PCON2])]

- .08795 J4A[J4P(NPOP)/J8A(J4P[NPOP])]
(1.50)

t	JW[RNU]		JW[J1L[...]]	
0			.10372	(2.67)
-1			.07941	(2.67)
-2	-.01909	(13.62)	.05834	(2.67)
-3	-.01546	(13.62)	.04052	(2.67)
-4	-.01222	(13.62)	.02593	(2.66)
-5	-.00935	(13.62)	.01459	(2.67)
-6	-.00687	(13.62)	.00648	(2.67)
-7	-.00477	(13.62)	.00162	(2.67)
-8	-.00305	(13.62)		
-9	-.00172	(13.62)		
-10	-.00076	(13.62)		
-11	-.00019	(13.62)		
Sum W =	-.07349	Z2	.33061	Z2

see = .035 RB2 = .851 cov = 14.25% dw = 1.41

5.8 NEMS Emigrants
(X=185)

1Q55-4Q72 OLS

100(NEMS/NPOP) = .04703
(3.53)

- .15822[QC1(J1L[J4A(100 NEMS/NPOP)])]
(4.45)

- .08055[QC2(J1L[J4A(100 NEMS/NPOP])])
(2.27)

+ .17887 [QC3(J1L[J4A(100 NEMS/NPOP)])]
(5.05)

+ JW[J4A(1/RNU)] + JW[.01 J4A([LF2+LA2]/LU2)]

t	JW[J4A(1/RNU)]		JW[.01 J4A(...)]	
0	-.03321	(1.04)	.18552	(4.91)
-1	-.02129	(1.04)	.11873	(4.91)
-2	-.01198	(1.04)	.06679	(4.91)
-3	-.00532	(1.04)	.02968	(4.91)
-4	-.00133	(1.04)	.00742	(4.91)
Sum W =	-.07313	Z2	.40814	Z2

see = .021 RB2 = .499 cov = 17.70% dw = .90

Technical Relationships

5.9 NPOPT (X=214) — Total population (beginning-of-quarter figure)

```
J1D(NPOPT) = J1L(NIMS-NEMS+NBIRTHS-NDEATHS)
```

5.10 NPOP (X=224) — Noninstitutional population 14 years of age and over

```
NPOP = (EPOP)(NPOPT)
```

5.11 NE (X=105) — Total employed persons (excluding armed forces)

```
NE = NMMOB + NC + NIS + NGPAF + NGPAPM + NIOS + NFP
     + NEUPB + NEUPF + NX
```

5.12 NU (X=127) — Total unemployed persons

```
NU = NL - NE
```

5.13 NMMOBD (X=215) — Desired level of employment in mining, manufacturing, and other business

```
NMMOBD = ([UGPPA/1.4506/([J1L(KME)**.12][J1L(KNRC)**
         .16])]**[1.0/.72])/(13[42.6206-.0380 QTIME]
         [ELEFF/.72540])
```

5.14 RNU (X=192) Unemployment rate

RNU = 100 (NU/NL)

5.15 NMMOBS (X=290) Approximation to the potential labour force in mining, manufacturing, and other business

NMMOBS = NL - .01(ERNUMIN+.5)*NL - (NE-NMMOB)

5.16 NMMOBD* (X=292) Constrained desired level of employment in mining, manufacturing, and other business

NMMOBD* = NMMOBS(NMMOBD/NMMOBS)**BETA

where

BETA = 1 if NMMOBD is less or equal to NMMOBS

BETA = .3 if NMMOBD is greater than NMMOBS

5.17 NCD (X=291) Desired level of employment in construction

$$NCD = .10388 \frac{(INRC+IRC+INRCGF+INRCGPM+INRCSM)}{13*(42.140-.0251\ QTIME)*ELEFFC}$$

Sector 6

PRIVATE SECTOR WAGES

6.1 WQMMOB (X=199) Quarterly earnings in mining, manufacturing, and other business

1Q57-4Q72 OLS

$$
\begin{aligned}
\text{J1P(WQMMOB)} = {} & -\underset{(1.53)}{4.5950}\ \text{QDBAD} - \underset{(2.85)}{5.1289}\ \text{QDGOOD} - \underset{(2.53)}{.79208}\ \text{QC1} \\
& + \underset{(2.00)}{.61245}\ \text{QC2} + \underset{(2.88)}{.50506}\ \text{QC3} + \underset{(2.59)}{18.949}\ \text{ELEFF} \\
& - \underset{(3.64)}{25.067}\ \text{J1L(.00093783(WQMMOB/PCPI))} \\
& + \underset{(2.98)}{.30374}\ \text{J1P(HAWMM)} \\
& + \underset{(5.97)}{8.8029}\ \text{((NMMOBD-NMMOBS)/NMMOBS)} \\
& + \underset{(2.58)}{6.6690}\ \text{J1L(.00093783 (UGPPA/NMMOBD))} \\
& - \underset{(6.69)}{.44541}\ \text{J1P(NMMOB)}
\end{aligned}
$$

see = .519 RB2 = .758 dw = 1.89

6.2 WQC (X=198) Quarterly earnings in construction

1Q58-4Q72 OLS

$$J1P(WQC) = -\underset{(2.66)}{10.264} + \underset{(2.74)}{2.3377}\,QC1 + \underset{(1.05)}{.94112}\,QC2 - \underset{(.55)}{.72781}\,QC3 + \underset{(3.00)}{34.690}\,ELEFFC - \underset{(2.81)}{23.821}\,J1L(.00068696(WQC/PCPI)) + \underset{(1.43)}{.32678}\,J1P(HAWC) + \underset{(2.03)}{.22723}\,J4L[J1P(WQC)] + \underset{(3.96)}{.32558}\,J1P[([IRC+INRC + INRCGF+INRCGPM+INRCSM]/[(13\ HAWC)(NC)])/ELEFFC]$$

see = 2.39 RB2 = .532 dw = 2.13

Technical Relationship

6.3 YW (X=235) Wage bill

$$YW = (NMMOB)(WQMMOB) + (NC)(WQC) + (NFP)(WQF) + (NIOS)(WQIOS) + (NIS)(WQISM) + (NGPAF)(WQGPAF) + (NGPAPM)(WQGPAPM) + YWSLP + GWSF + GWPASPM + GWSSM + YWX$$

Sector 7

PRICES

The numbers in square brackets are the long-run elasticities of the dependent variables with respect to the explanatory variables.

7.1 PCNDSD (X=130) — Price of consumer non-durables and semi-durables

1Q58-4Q72 OLS

$$\ln\left(\frac{PCNDSD}{(1+.006\ RTISPM)}\right) = .13486 \quad (3.60)$$

$$- .07834\ [QC1(J1L(J4A[\ln(PCNDSD/(1+.006\ RTISPM))]))] \quad (5.68)$$

$$+ .06727\ [QC2(J1L(J4A[\ln(PCNDSD/(1+.006\ RTISPM))]))] \quad (4.44)$$

$$+ .04697\ [QC3(J1L(J4A[\ln(PCNDSD/(1+.006\ RTISPM))]))] \quad (3.56)$$

$$+ JW(\ln[(WQMMOB)(NMMOB)/UGPPS]) \quad [.569]$$

$$+ .10901\ \ln[.07351\ PMFB+.08209\ PMCM+.75536\ PMEF \quad (3.42) \quad [.290]$$

$$+.08904\ PMMF]$$

$$+ .13310\ \ln[J4A(UGPPA/UGPPD)] \quad (3.22) \quad [.354]$$

$$+ .62442\ J1L[\ln(PCNDSD/(1+.006\ RTISPM))] \quad (6.58)$$

where

$$PMFB = [(MFA12)(PMFA12)+(MBT12)(PMBT12)+(MFA13)(PMFA13)$$

$$+(MBT13)(PMBT13)]/[MFA12+MBT12+MFA13+MBT13]$$

$$PMCM = [(MCM12A)(PMCM12)+(MCM13A)(PMCM13A)]/[MCM12A+MCM13A]$$

$$PMEF = [(MEF12)(PMEF12)+(MEF13A)(PMEF13)]/[MEF12+MEF13A]$$

PMMF = [(MCH12)(PMCH12)+(MMM12)(PMMM12)+(MOM12A)(PMOM12A)
+(MMVP12)(PMMVP12)+(MIM12)(PMIM12)+(MCH13)(PMCH13)
+(MMM13)(PMMM13)+(MOM13A)(PMOM13A)+(MMVP13)(PMMVP13)
+(MIM13)(PMIM13)]/[MCH12+MMM12+MOM12A+MMVP12
+(MIM12)+MCH13+MMM13+MOM13A+MMVP13+MIM13]

t	JW(ln[(WQMMOB)...])	
0	.09716	(3.49)
-1	.06218	(3.49)
-2	.03498	(3.49)
-3	.01554	(3.49)
-4	.00389	(3.49)
Sum W	.21374	Z2

see = .006 RB2 = .995 dw = 1.85

7.2 PCSXR (X=286) Price of consumer services excluding rent and property taxes

1Q58-4Q72 OLS

$$\ln\left(\frac{PCSXR}{(1+.0023\ RTISPM)}\right) = -.54853 + JW[\ln(.01\ WQMMOB)] \quad (3.10) \quad [.933]$$

$$+ .10012\ \ln[J4A(UGPPA/UGPPD)] \quad (3.16) \quad [.395]$$

$$+ .74655\ J1L[\ln(PCSXR/(1+.0023\ RTISPM))] \quad (8.93)$$

t	JW[ln(.01 WQMMOB)]	
0	.10748	(3.15)
-1	.06879	(3.15)
-2	.03869	(3.15)
-3	.01720	(3.15)
-4	.00430	(3.15)
Sum W	.23645	Z2

see = .005 RB2 = .999 dw = 2.13

7.3 PCMV (X=131) Price of consumer durables - motor vehicles

1Q58-4Q72 OLS-HL

$$\ln\left(\frac{PCMV}{(1+.01\ RTISPM)}\right) = .69873 \quad (6.37)$$

$$- .06415\ QC1[J1L(J4A(\ln\left(\frac{PCMV}{(1+.01\ RTISPM)}\right)))]QSEAPCMV \quad (.67)$$

$$+ .00006\ QC2[J1L(J4A(\ln\left(\frac{PCMV}{(1+.01\ RTISPM)}\right)))]QSEAPCMV \quad (.00)$$

$$+ .49322\ QC3[J1L(J4A(\ln\left(\frac{PCMV}{(1+.01\ RTISPM)}\right)))]QSEAPCMV \quad (4.12)$$

$$+ JW(\ln[(WQMMOB)(NMMOB)/UGPPS])$$

$$+ JW(\ln[(PFX)(.01\ PC2)])$$

$$- 1.5418\ \ln(ELEFF) \quad (4.22)$$

$$+ .56186\ \ln(J4A(NMMOB/[(NMMOBD) \quad (3.19)$$

$$(41.372 - .0133\ QTIME)/HAWMM]))$$

t	JW(ln[(WQMMOB)...])		JW(ln[(PFX)...])	
0	.38526	(6.63)	.04017	(1.23)
-1	.29496	(6.63)	.06427	(1.23)
-2	.21671	(6.63)	.07230	(1.23)
-3	.15049	(6.63)	.06427	(1.23)
-4	.09631	(6.63)	.04017	(1.23)
-5	.05418	(6.63)		
-6	.02408	(6.63)		
-7	.00602	(6.63)		
Sum W	1.22801	Z2	.28117	ZC2

see = .014 RB2 = .672 dw = 2.12 rho = .608

7.4 PCDO Price of other consumer durables
(X=129)

1Q58-4Q72 OLS

$$\ln\left(\frac{PCDO}{(1+.01\ RTISPM)}\right) = \underset{(5.58)}{.11604}$$

$$- \underset{(1.77)}{.09599}\ QC1[J1L(J4A(\ln\left(\frac{PCDO}{(1+.01\ RTISPM)}\right))]$$

$$\underset{(4.32)}{.23049}\ QC2[J1L(J4A(\ln\left(\frac{PCDO}{(1+.01\ RTISPM)}\right))]$$

$$- \underset{(2.48)}{.14028}\ QC3[J1L(J4A(\ln\left(\frac{PCDO}{(1+.01\ RTISPM)}\right))]$$

$$\underset{(5.55)}{.20109}\ \ln[(WQMMOB)(NMMOB)/UGPPS]_{[.287]}$$

$$+ \underset{(4.37)}{.18811}\ \ln[(J1L(KIB) - J12S(UGPP-UGPPA))/J1L(KIB)]_{[.268]}$$

$$+ \underset{(2.32)}{.29932}\ J1L(\ln\left(\frac{PCDO}{(1+.01\ RTISPM)}\right)$$

see = .009 RB2 = .946 dw = 2.00

7.5 PIME (X=140) Price deflator for business investment in machinery and equipment

1Q58-4Q72 OLS

$$\ln\left(\frac{PIME}{(1+.0012\ RTISFS+.0088\ RTISFME)}\right) = \underset{(4.67)}{.12953}$$

$$+\ JW(\ln[(PFX)(.01PPD2)])\quad [.480]$$

$$+\ JW[\ln((.0012\ RTISFS+.0088\ RTISFME)\ (J1L(PIME)/(1+.0012\ RTISFS+.0088\ RTISFME)))]\quad [.010]$$

$$+\ JW(\ln[(WQMMOB)(NMMOB)/UGPPS])\quad [.520]$$

$$+\underset{(5.56)}{.50682}\ J1L\left(\ln\left(\frac{PIME}{(1+.0012\ RTISFX+.0088\ RTISPME)}\right)\right)$$

t	JW(ln[(PFX)...])		JW[ln((.0012 RTISFS...))]	
0	.10769	(5.19)	-.00671	(4.34)
-1	.06892	(5.19)	-.00236	(4.63)
-2	.03877	(5.19)	.00049	(.88)
-3	.01723	(5.19)	.00183	(2.35)
-4	.00431	(5.19)	.00167	(2.76)
Sum W	.23693	Z2	-.00507	Z1Z2

t	JW(ln[(WQMMOB)...])	
0	.11648	(4.92)
-1	.07455	(4.92)
-2	.04193	(4.92)
-3	.01864	(4.92)
-4	.00466	(4.92)
Sum W	.25626	Z2

see = .006 RB2 = .996 dw = 1.62

7.6 PIRC (X=242) Price deflator for business investment in residential construction

1Q58-4Q72 OLS

$$\ln(PIRC) = -.02790 + JW(\ln(.001\ WQC)) \quad [.233]$$
$$(5.02)$$
$$+ .27285\ \ln(PRM) \quad [.599]$$
$$(6.34)$$
$$+ .05212\ J1L(J4D(\ln([(.01\ RCNR)(KNRC)$$
$$(3.71)$$
$$+ (.01\ RCME)(KME)]/UGPPS)))$$
$$+ .54456\ J1L(\ln(PIRC))$$
$$(8.77)$$

t	JW(ln(.001 WQC))	
0	.04830	(4.75)
-1	.03091	(4.75)
-2	.01739	(4.75)
-3	.00773	(4.75)
-4	.00193	(4.75)
Sum W	.10627	Z2

see = .006 RB2 = .998 dw = 1.54

7.7 PINRC (X=141) Price deflator for business investment in non-residential construction

1Q58-4Q72 OLS

$$\ln(PINRC) = -\underset{(2.04)}{.00897} + JW(\ln(.001\ WQC)) + \underset{(4.94)}{.31363}\ \ln(PNRM)$$
$$[.143] \qquad [.980]$$
$$+ \underset{(2.26)}{.03208}\ J1L(J4D(\ln([(.01\ RCNR)(KNRC) + (.01\ RCME)(KME)]/UGPPS)))$$
$$+ \underset{(11.56)}{.67982}\ J1L\ \ln(PINRC)$$

t	JW(ln(.001 WQC))	
0	.02078	(2.38)
-1	.01330	(2.38)
-2	.00748	(2.38)
-3	.00333	(2.38)
-4	.00083	(2.38)
Sum W	.04572	Z2

see = .006 RB2 = .998 dw = 2.05

7.8 PKIB (X=243) Price index for nonfarm business inventory stock

1Q58-4Q72 OLS

$$\ln(PKIB) = \underset{(1.27)}{-.00193} + \underset{(2.97)}{.42358}\ \ln(J4A(PGPPXS)) \quad [.831]$$

$$- \underset{(1.45)}{.18987}\ J1L[\ln(J4A(PGPPXS))] + \underset{(2.67)}{.07280}\ \ln(PMG) \quad [.259]$$

$$+ \underset{(1.69)}{.01802}\ \ln[(J1L(KIB) - J12S(UGPP-UGPPA))/J1L(KIB)] \quad [.064]$$

$$+ \underset{(6.62)}{.71885}\ J1L(\ln(PKIB))$$

where

$$PMG = \frac{M\$12 + M\$13 - (M-MG)(PMS)}{MG}$$

$$PGPPXS = \frac{YGPP - [(CS-CRENT)(PCSXR)+(X-XG)(PXS)-(M-MG)(PMS)]}{UGPP-[(CS-CRENT)+(X-XG)-(M-MG)]}$$

see = .003 RB2 = .999 dw = 1.83

7.9 PRM (X=148) Price index for residential construction materials

1Q58-4Q72 OLS

$$\ln\left(\frac{PRM}{(1+.54\ RTISFR)/(100+.54\ RTISFR)}\right) = -.29725 \quad (1.90)$$

$$+\ .29391\ \ln(J4A(UGPPA/UGPPD)) \quad (3.27) \quad [.587]$$

$$+\ JW(\ln[(WQMMOB)(NMMOB)/UGPPS]) \quad [.524]$$

$$+\ JW(\ln[[(.01\ RCNR)(KNRC) + (.01\ RCME)(KME)]/UGPPS)) \quad [.045]$$

$$+\ .11898\ \ln[(PFX)(PHC2)] \quad (3.83) \quad [.238]$$

$$+\ .19313\ \ln[J4A((ANFCUR+DDB)/UGPPS)] \quad (4.93) \quad [.386]$$

$$+\ .49936\ J1L\left(\ln\left(\frac{PRM}{(1+.54\ RTISFR)/(100+.54\ RTISFR)}\right)\right) \quad (4.39)$$

t	JW(ln[(WQMMOB)...])		JW(ln([.01 RCNR)...]))	
0	.11914	(2.50)	.01026	(.62)
1	.07625	(2.50)	.00657	(.62)
2	.04289	(2.50)	.00369	(.62)
3	.01906	(2.50)	.00164	(.62)
4	.00477	(2.50)	.00041	(.62)
Sum W	.26211	Z2	.02257	Z2

see = .010 RB2 = .994 dw = 1.84

7.10 PNRM (X=147) Price index for non-residential construction materials

1Q58-4Q72 OLS

$$\ln\left(\frac{PNRM}{(1+.46\ RTISFR)/(100+.46\ RTISFR)}\right) = .17031 \quad (2.31)$$

$$+\ .02289\ J1L\left(J4A\left(\ln\left(\frac{PNRM}{(1+.46\ RTISFR)/(100+.46\ RTISFR)}\right)\right)\right)QC1 \quad (1.70)$$

$$+\ .00746\ J1L\left(J4A\left(\ln\left(\frac{PNRM}{(1+.46\ RTISFR)/(100+.46\ RTISFR)}\right)\right)\right)QC2 \quad (.60)$$

$$-\ .01154\ J1L\left(J4A\left(\ln\left(\frac{PNRM}{(1+.46\ RTISFR)/(100+.46\ RTISFR)}\right)\right)\right)QC3 \quad (.93)$$

$$+\ JW\left(\ln[(WQMMOB)(NMMOB)/UGPPS]\right) \quad [.817]$$

$$+\ JW\left(\ln[[(.01\ RCNR)(KNRC) + (.01\ RCME)(KME)]/UGPPS)\right) \quad [.046]$$

$$+\ .13590\ \ln(J4A(UGPPA/UGPPD)) \quad (2.82) \quad [.490]$$

$$+\ .72285\ J1L\left(\ln\left(\frac{PNRM}{(1+.46\ RTISFR)/(100+.46\ RTISFR)}\right)\right) \quad (6.51)$$

t	JW(ln[(WQMMOB)...])		JW(ln([(.01 RCNR)...]))	
0	.10295	(2.87)	.00585	(.51)
-1	.06589	(2.87)	.00374	(.51)
-2	.03706	(2.87)	.00211	(.51)
-3	.01647	(2.87)	.00094	(.51)
-4	.00412	(2.87)	.00023	(.51)
Sum W	.22649	Z2	.01287	Z2

see = .007 RB2 = .996 dw = 1.66

7.11 PXNMV12 (X=150) Price index for exports of goods (excluding uranium, aircraft and parts, and motor vehicles and parts) to the United States (SITC 0 to 9 - [286 + 732 + 734])

1Q58-4Q72 OLS

$$\ln(PXNMV12) = -\underset{(1.12)}{.17207} + \underset{(2.20)}{.15599}\ln(PGPP) + \underset{[.718]}{.03702}\ln(PFX*PXBNF2) + \underset{(8.75)}{.78284}\,J1L(\ln(PXNMV12))$$

see = .010 RB2 = .987 dw = 1.86

7.12 PXMV12 (X=149) Price index for exports of motor vehicles and parts to the United States

1Q58-4Q72 OLS

PXMV12 is exogenous at present.

7.13 PXNW13 (X=151) Price index for exports of goods (excluding wheat, uranium, and aircraft and parts) to other countries (SITC 0 to 9 - [041 + 286 + 734])

1Q58-4Q72 OLS

$$\ln(PXNW13) = \underset{(1.85)}{.00735} + \underset{(2.36)}{.22952}\ln(PGPP) + \underset{(2.37)}{.17063}\ln(PFX*PWXG) + \underset{(7.46)}{.68218}\,J1L(\ln(PXNW13))$$

$$\underset{[.722]}{\qquad}\qquad\underset{[.537]}{\qquad}$$

see = .020 RB2 = .972 dw = 1.94

7.14 PGCNWG (X=137) Price deflator for current nonwage government expenditure

2Q59-4Q72 OLS

$$
\begin{aligned}
\ln(PGCNWG) = & -.00656 \\
& \quad (1.40) \\
& -.05791\ J1L(J4A(\ln(PGCNWG)))QC1 \\
& \quad (1.72) \\
& +.02017\ J1L(J4A(\ln(PGCNWG)))QC2 \\
& \quad (.63) \\
& +.14930\ J1L(J4A(\ln(PGCNWG)))QC3 \\
& \quad (5.03) \\
& +(JW[\ln(PCS)])[1-(GGSDF-GMPF)/ \\
& \qquad (GCNWF+GCNWPM+GCGSH)] \\
& \qquad\quad [e1] \\
& +(JW[\ln(PMMP12)])[(GGSDF-GMPF)/ \\
& \qquad (GCNWF+GCNWPM+GCGSH)] \\
& \qquad\quad [e2] \\
& +.33082\ J1L(\ln(PGCNWG)) \\
& \quad (2.50)
\end{aligned}
$$

where

$$
\begin{aligned}
PMMP12 = & [(PMCH12)(MCH12)+(PMMM12)(MMM12)+(PMOM12A)(MOM12A) \\
& +(PMMVP12)(MMVP12)+(PMIM12)(MIM12)]/ \\
& [MCH12+MMM12+MOM12+MMVP12+MIM12]
\end{aligned}
$$

Elasticity 1 (e1) and elasticity 2 (e2) equal .78 and .22, respectively, given the average value (.26) of the ratio [(CGGSDF-GMPF)/(GCNWF+GCNUPM+GCGSH)]. Elasticity 1 (e1) and elasticity 2 (e2) equal .954 and .085, respectively, given the ratio of .1 at the end of the sample period.

t	(JW[ln(PCS)]...]		(JW[ln(PMMP12)]...]	
0	.28168	(5.23)	.22442	(1.83)
-1	.19561	(5.23)	.15584	(1.83)
-2	.12519	(5.23)	.09974	(1.83)
-3	.07042	(5.23)	.05610	(1.83)
-4	.03130	(5.23)	.02494	(1.83)
-5	.00782	(5.23)	.00623	(1.83)
Sum W	.71203	Z2	.56727	Z2

see = .021 RB2 = .978 dw = 1.99

7.15 PINRCG (X=252) Price deflator for government investment in non-residential construction

1Q58-4Q72 OLS

$$\ln(PINRCG) = \underset{(4.03)}{.01807} + \underset{(5.95)}{.56343}\ \ln(PINRC) \quad [.942]$$
$$+ \underset{(3.83)}{.40214}\ J1L(\ln(PINRCG))$$

see = .018 RB2 = .983 dw = 1.84

7.16 PIMEG (X=255) Price deflator for government investment in machinery and equipment

1Q58-4Q72 OLS

$$\ln(PIMEG) = - \underset{(.69)}{.00188} + \underset{(2.61)}{.14298}\ \ln(PIME) \quad [.640]$$
$$+ \underset{(8.39)}{.77643}\ J1L(\ln(PIMEG))$$

see = .011 RB2 = .968 dw = 2.43

7.17 PRENT (X=272) Price deflator for gross rent (paid and imputed)

1Q58-4Q72 OLS

$$\ln(PRENT) = -\underset{(3.46)}{.05474} + \underset{(1.45)}{1.4001}\ J1D(\ln(RPOPURB))_{[33.26]}$$

$$+\ JW(\ln(PIRC))_{[.812]} + JW(\ln(.5\ RMC + .5\ RNHA))_{[.656]}$$

$$+\ \underset{(58.64)}{.95791}\ J1L(\ln(PRENT))$$

t	JW(ln(PIRC))		JW(ln(.5 RMC...))	
0	.01072	(2.97)	.00866	(3.33)
-1	.00821	(2.97)	.00663	(3.33)
-2	.00603	(2.97)	.00487	(3.33)
-3	.00419	(2.97)	.00338	(3.33)
-4	.00268	(2.97)	.00217	(3.33)
-5	.00151	(2.97)	.00122	(3.33)
-6	.00067	(2.97)	.00054	(3.33)
-7	.00017	(2.97)	.00014	(3.33)
Sum W	.03418	Z2	.02761	Z2

see = .004 RB2 = .999 dw = 2.50

7.18 PCPI Consumer Price Index (Laspeyres base)
(X=132)

2Q61-4Q72 OLS

$$
\begin{aligned}
\ln(PCPI) = & -\underset{(.99)}{.01253} \\
& + \underset{(35.80)}{1.0090}\ \ln(.069\ PCMV + .060\ PCDO + .519\ PCNDSD \\
& \quad + .252\ PCSXR + .100\ PRENT) \\
& + \underset{(6.09)}{.02379}\ QC1[\ln(.069\ PCMV + .060\ PCDO + .519\ PCNDSD \\
& \quad + .252\ PCSXR + .100\ PRENT)] \\
& - \underset{(4.31)}{.01510}\ QC2[\ln(.069\ PCMV + .060\ PCDO + .519\ PCNDSD \\
& \quad + .252\ PCSXR + .100\ PRENT)] \\
& - \underset{(1.75)}{.00600}\ QC3[\ln(.067\ PCMV + .060\ PCDO + .519\ PCNDSD \\
& \quad + .252\ PCSXR + .100\ PRENT)] \\
& + \underset{(1.04)}{.00025}\ QTIME \\
& + \underset{(1.48)}{.03745}\ \ln(J4A(UGPPA/UGPPD))
\end{aligned}
$$

see = .002 RB2 = .999 dw = 1.19

Technical Relationships

7.19 PGNE (X=136) Price deflator for gross national expenditure

PGNE = YGNE/UGNE

7.20 PGPP (X=138) Price deflator for gross private business product

PGPP = YGPP/UGPP

7.21 PCSMVOD (X=100) Implicit price deflator for consumer services imputed from the stock of motor vehicles and other consumer durables

PCSMVOD = (.016038 J2A[(KMV)(PCMV)+(KDO)(PCDO)]

+ .056 J2A[(KDO)(PCDO)]+.067 J2A[(KMV)(PCMV)])/CSMVOD

where

.016038 is the average 1962 value of RHOR

7.22 PCS (X=133) Price of consumer services

PCS = [(CS-[CRENT+.566 TIPROPM])(PCSXR)

+ (CRENT+.566 TIPROPM)(PRENT)]/CS

7.23 PCPICE (X=244) Expected annual rate of change in Consumer Price Index (weights derived in the estimation of equation (18.1))

PCPICE = JW[J4P(PCPI)]

t	JW[J4P(PCPI)]
0	.21954
-1	.11210
-2	.04731
-3	.01723
-4	.01395
-5	.02953
-6	.05602
-7	.08551
-8	.11003
-9	.12168
-10	.11250
-11	.07460
Sum W	1.0000

7.24 PMFA12 (X=302) Price index for imports of food and live animals from the United States (SITC 0)

PMFA12 = (EPFA12)(PFX)(.01 PXBNF2)

7.25 PMBT12 (X=303) Price index for imports of beverages and tobacco from the United States (SITC 1)

PMBT12 = (EPBT12)(PFX)(.01 PXBNF2)

7.26 PMCM12 (X=59) Price index for imports of crude materials from the United States (SITC 2)

PMCM12 = (EPCM)(PFX)(.01 PXBNF2)

7.27 PMEF12 (X=60) Price index for imports of energy fuels from the United States (SITC 3)

PMEF12 = (EPEF)(PFX)(.01 PXBNF2)

7.28 PMCH12 (X=304) Price index for imports of chemicals from the United States (SITC 5)

PMCH12 = (EPCH12)(PFX)(.01 PXBNF2)

7.29 PMMM12 (X=305) Price index for imports of manufactured goods (classified chiefly by material) from the United States (SITC 6)

PMMM12 = (EPMM12)(PFX)(.01 PXBNF2)

7.30 PMOM12A (X=306) Price index for imports of machinery (excluding internal combustion engines and transportation equipment) from the United States (SITC 7 - [73 + 711.5])

PMOM12A = (EPOM12A)(PFX)(.01 PXBNF2)

7.31 PMIM12 (X=307) Price index for imports of miscellaneous manufactured articles from the United States (SITC 8)

PMIM12 = (EPIM12)(PFX)(.01 PXBNF2)

7.32 PMMVP12 (X=308) Price index for imports of motor vehicles and parts (including internal combustion engines) from the United States (SITC 732 + 711.5)

PMMVP12 = (EPMVP12)(PFX)(.01 PXBNF2)

7.33 PMFA13 (X=317) Price index for imports of food and live animals from other countries (SITC 0)

PMFA13 = (EPFA13)(PFX13)

7.34 PMBT13 (X=318) Price index for imports of beverages and tobacco from other countries (SITC 1)

PMBT13 = (EPBT13)(PFX13)

7.35 PMCM13A (X=319) Price index for imports of crude materials (excluding fuels) from other countries (SITC 2)

PMCM13A = (EPCM13A)(PFX13)

7.36 PMEF13A (X=320) Price index for imports of energy fuels from other countries (SITC 3)

PMEF13A = (EPEF13A)(PFX13)

7.37 PMCH13 (X=321) Price index for imports of chemicals from other countries (SITC 5)

PMCH13 = (EPCH13)(PFX13)

7.38 PMMM13 (X=322) Price index for imports of manufactured goods classified chiefly by material from other countries (SITC 6)

PMMM13 = (EPMM13)(PFX13)

7.39 PMOM13A (X=323) Price index for imports of machinery (excluding internal combustion engines and and transportation equipment) from other countries (SITC 7 - [73 + 711.5])

PMOM13A = (EPOM13A)(PFX13)

7.40 PMIM13 (X=324) Price index for imports of miscellaneous manufactured articles from other countries (SITC 8)

PMIM13 = (EPIM13)(PFX13)

Sector 8

INCOME COMPONENTS

8.1 YDIV11 (X=221) Dividends paid to Canadian residents by Canadian corporations

1Q58-4Q72 OLS

$$
\begin{aligned}
YDIV11 = {} & \underset{(49.73)}{.04295}\ J4S[(YC+CCAC\$-TCA)(1-(LDIRV12+LPCV12 \\
& +LDIPRV13)/KB\$)] \\
& \underset{(.63)}{-.00097}\ [QC1][J4S([YC+CCAC\$-TCA][1-(LDIRV12+LPCV12 \\
& +LDIPRV13)/KB\$])] \\
& \underset{(.97)}{-.00147}\ [QC2][J4S([YC+CCAC\$-TCA][1-(LDIRV12+LPCV12 \\
& +LDIPRV13)/KB\$])] \\
& \underset{(1.60)}{-.00238}\ [QC3][J4S([YC+CCAC\$-TCA][1-(LDIRV12+LPCV12 \\
& +LDIPRV13)/KB\$])]
\end{aligned}
$$

see = 27.54 RB2 = .729 cov = 16.00% dw = .21

8.2 YDIVF (X=222) Dividends (before withholding tax) paid to foreign shareholders by Canadian corporations

1Q58-4Q72 OLS

```
YDIVF = .05584 J4S([YC+CCAC$-TCA][(LDIRV12+LPCV12
        (55.03)

             +LDIPRV13)/KB$])

        - .00318 [QC1][J4S([YC+CCAC$-TCA][(LDIRV12+LPCV12
        (1.78)

             +LDIPRV13)/KB$])]

        - .01089 [QC2][J4S([YC+CCAC$-TCA][(LDIRV12+LPCV12
          (6.16)

             +LDIPRV13)/KB$])]

        - .00888 [QC3][J4S([YC+CCAC$-TCA][(LDIRV12+LPCV12
          (5.08)

             +LDIPRV13)/KB$])]
```

see = 27.55 RB2 = .857 cov = 14.38% dw = 1.98

8.3 YNFNC (X=229) Net income of nonfarm unincorporated business, including rent

1Q58-4Q72

$$J1D(YNFNC-YRENT) = \underset{(8.06)}{-56.862\ QC1} + \underset{(4.57)}{35.101\ QC2} + \underset{(3.70)}{16.212\ QC3}$$

$$+ JW[J1D(YC)] + \underset{(4.61)}{.61568}\ J1D[(WQMMOB)(NEUPB)]$$

t		JW[J1D(YC)]	
0		.01325	(.56)
1		.02854	(1.97)
2		.03143	(1.97)
3		.02191	(1.76)
Sum W	=	.09513	Z1Z2

see = 17.62 RB2 = .871 dw = 2.40

8.4 YRENT (X=241) Nonfarm non-residential unincorporated business rent

1Q58-4Q72 OLS

$$J1D(YRENT) = \underset{(2.18)}{.04614}\ J1D[(PIRC)(SHM)] - \underset{(2.43)}{5.7715\ QC1}$$

$$+ \underset{(8.07)}{19.2103\ QC2} + \underset{(1.57)}{3.7451\ QC3}$$

see = 10.63 RB2 = .609 dw = 1.76

Technical Relationships

8.5 YGNE Gross national expenditure
(X=226)

```
YGNE = (CNDSD)(PCNDSD) + (CS)(PCS) + (CMV)(PCMV)
       + (CDO)(PCDO) + (IME)(PIME) + (INRC)(PINRC)
       + (IH)(PIH) + (IRC)(PIRC) + [J1D((PKIB)(KIB)) + YIVA]
       + IIF$ + IIG$ + (INRCGF+INRCGPM+INRCSM)(PINRCG)
       + (IMEGF+IMEGPM)(PIMEG) + GCNWF + GCNWPM
       + (NGPAF)(WQGPAF) + GCGSH + GCGSQPP + GCGSCPP + GWIF + GWSF
       + (NGPAPM)(WQGPAPM) + GWPASPM + GWIPM + (NIS)(WQISM)
       + GWSSM + GMPF - TWF - XIH$ - XTRP$ + MIH$ + MTRP$
       + GTNRF + ENARES$ + X$12 + X$13 - M$12 - M$13
```

8.6 YGPP Gross private business product
(X=227)

```
YGPP = YGNE - (NGPAF)(WQGPAF) - GWSF - (NGPAPM)(WQGPAPM)
       - GWPASPM - (NIS)(WQISM) - GWSSM - (NFP)(WQF) - GMPF
       - (NIOS)(WQIOS) + ENARES$ - YFA - TILGS - CCAGF$
       - CCAGPM$ - CCAGH$ - CRENT$
```

8.7 YDW Disposable wage income
(X=223)

```
YDW = YW + GMPF + [1-(TPS/YWAS)][(WQMMOB)(NEUPB)] + GTPOF
      + GTPCPP + GTPQPP + .6832 J4A(YF)
      + GTPUIBF + GTPPM - TPS - TRSIGPR - TUIRF - TRHPMPR
      - TROPMPR - TRFPR - TRHPR - TCPPF - TQPPPM + YPCCB
      + XTRP$
```

8.8 YC (X=218) Corporate profits before tax

```
YC = YGNE - YW - GMPF + YDIVF - YNFNC - YFA - YIVA
     - TILGS - CCA$ + ENARES$ - YMISC - XID$12 - XID$13
     + MINT$12 - YGIPM - YGIF - YGIH - TCAGBE
```

where

YMISC = YMISC(on tape) - MID$13(historical) - MDIV$12(historical)

8.9 YP (X=7) Personal income

```
YP = YW + GMPF + YF + YNFNC + GTPOF + GTPUIBF + GTPPM
     + XTRP$ + GTPINTF + GTPINTPM + YDIV11 + YPCCB
     + YMISC + XID$12 + XID$13 - MINT$12
     + YMISCP + GTPCPP + GTPQPP
```

where

YMISC = YMISC(on tape) - MID$13(historical) - MDIV$12(historical)

8.10 YDP (X=8) Disposable personal income

```
YDP = YP - TPS - TPO - TOPF - TOPPM - TRHPMPR - TROPMPR
      - TRFPR - TRHPR - TRMVPMPR - TCPPF - TQPPPM - TUIRF
```

8.11 YCR (X=219) Retained corporate profits

```
YCR = YC - TCA - YDIVF - YDIV11 - YPCCB + TCAGBE
```

8.12 YPDNWP (X=79) Permanent disposable nonwage personal income

```
YPDNWP = .25[J4S[XID$12+XID$13
              +.016182 J1L([KDO][PCDO]+[KMV][PCMV]+[KRESD][PIRC])]
              +.01(RL-PCPICE)(J2A[LGFTB-LFGTBNR
              +ABBCD+ABBCN+ANFCUR-DDGFB])
              +(J4S[YC-TCA+ECINT+ECINTGBE
              +YCGBE+YNFNC-(WQMMOB)(NEUPB)])
              (1-.01 RVB12-.01 RVB13)
              +.01(EACR-PCPICE)(J2A[LGBF+LGBPM-LGB12-LGB13])
              +.01(EACRCSB-PCPICE)(J2A[LGFCSB])]
              -[.38427 J4S(TANW)+TOPF+TOPPM+TRMVPMPR-TRSIGPR
              -(TPS/YWAS)([WQMMOB][NEUPB])]
```

8.13 YKGPA (X=296) Accrued capital gains

```
YKGPA = (QTXRFM)(.775[J1D[(VKB)(1-.01 RVB12-.01 RVB13)]
        - (1-.01 RVB12-.01 RVB13)[J1D[(PKIB)(KIB)]
        + YIVA + (PIME)(IME-.05 J1L[KME]) + (PINRC)
             (INRC-.01 J1L[KNRC])]]
        + (1 - [LPCV12/((1-.01 RVB13)(VKB))])
             (YCR-FIYCRE12-FIYCRE13))
```

8.14 AYKGPA (X=297) Stock of accrued unrealized capital gains

AYKGPA = J1L(AYKGPA) + YKGPA - YKGPR

8.15 YKGPR (X=298) Realized capital gains

YKGPR = .018[J1L(AYKGPA) + YKGPA]

where

.018 is an estimate of the proportion of accrued gains that would be realized. This estimate is based on U.S. experience adjusted to deemed realization at death as required by Canadian law.

8.16 YIVA (X=285) Inventory valuation adjustment

YIVA = -[J1D(PKIB)][J1L(KIB)]

8.17 UGNE (X=338) Gross national expenditure (1961 dollars)

UGNE = CNDSD + CS + CMV + CDO + IME + INRC + IRC + IIB + IIF
+ IIG + INRCGF + IH + INRCGPM + INRCSM + IMEGF + IMEGPM
+ X - M + [(GCNWF+GCNWPM+GCGSH+GCGSCPP+GCGSQPP)/PGCNWG]
+ EG61MPF + 1333.1294 NIS + 1261.1062 NGPAF
+ 916.279 NGPAPM + 620.8179[(GWIF+GWIPM)/WQIOS] + ENARES

Sector 9

DIRECT TAXES AND OTHER CURRENT TRANSFERS FROM PERSONS

Personal Income Tax

9.1 TPS (X=179) — Personal income tax collections withheld at source

1Q62-4Q72 OLS

$$TPS = \underset{(101.47)}{1.1425\ JW(TAW)} - \underset{(3.27)}{.01877\ [Q1(J1L[J4S(TAW)])]} - \underset{(19.33)}{.11267\ [Q2(J2L[J4S(TAW)])]}$$

t		JW(TAW)
0		.667
-1		.333
Sum W	=	1.000

see = 68.79 RB2 = .990 cov = 6.06% dw = 2.21

9.2 TPO (X=178) — Personal income tax collections not withheld at source

1Q62-4Q72 OLS

$$TPO = \underset{(30.80)}{.29451\ [Q1(J1L[J4S(TANW)])]} + \underset{(90.74)}{.86760\ [Q2(J2L[J4S(TANW)])]} + \underset{(33.36)}{.31898\ [Q3(J3L[J4S(TANW)])]} + \underset{(27.18)}{.25999\ [Q4(J4L[J4S(TANW)])]} - ECRPM$$

see = 24.66 RB2 = .990 cov = 7.91% dw = 1.69

9.3 TPYPM Provincial personal income tax collections
(X=181)

2Q62-4Q72 OLS

TPYPM = 1.1353[J1W(S1) + J2W(S2)] + ECRPM

where

S1 = [.01 RTPYPXQ][S3-S4]

S2 = [.01 RTPYPQ][S5-S6]

S3 = J4iS[(.01 RTPYFBiC)(YWASiC+YNWAiC-(NTWiC)(ZEXIWiC)-
(NTNWiC)(ZEXINWiC))]

S4 = .9(EYDIVA11)(YDIV11)(.01 RDC)

S5 = J4iS[(.01 RTPYQiC)(YWASiC+YNWASiC-(NTWiC)(ZEXQWiC)-
(NTNWiC)(ZEXQNWiC))]

S6 = [(EYIDV1C)(RTPYQ1C)/(RTPYFB1C)
+(EYIDV2C)(RTPYQ2C)/(RTPYFB2C)
+(EYIDV3C)(RTPYQ3C)/(RTPYFB3C)
+(1-EYDIV1C-EYDIV2C-EYDIV3C)/(RTPYFB4C)][S4]

t	J1W	J2W
0	.333	.667
-1	.667	.333
Sum W	1.000	1.000

see = 37.63 RB2 = .980 cov = 9.39% dw = 2.03

Technical Relationships

9.4 TPYF (X=180) Federal personal income tax collections

```
TPYF = TPS + TPO - TPYPM
```

9.5 TAW (X=165) Personal income tax accruals on wage income

```
TAW = J4iS[((.01 RTPYFBiC).01(RTPYPXQ-RFAXQ-RFAQ)
      + (.01 RTPYQiC)(.01 RTPYPQ) + .01(RTPYFiC))
            (YWASiC - (NTWiC)(ZEXYWiC))]
```

9.6 TANW (X=164) Personal income tax accruals on nonwage income

```
TANW = J4iS[((.01 RTPYFBiC).01(RTPYPXQ-RFAXQ-RFAQ)
       + (.01 RTPYQiC)(.01 RTPYPQ) + .01(RTPYFiC))
             (YNWASiC - (NTNWiC)(ZEXYNWiC))]
       - .9(.01 RDC)(EYDIVA11)(YDIV11)
             [1+.01 (RTPYPXQ-RFAXQ-RFAQ)
       + ((J3iS(EYDIViC)(RTPYQiC)/(RTPYFBiC))
       + (1-(J3iS(EYDIViC))(RTPYQ4C)/(RTPYFB4C))
             (.01 RTPYPQ)]
```

9.7 NT (X=114) Tax returns filed

```
NT = - 2.6604 + 1.2457(NE+NOAPR)
```

9.8 YWAS Assessed wage income
(X=236)

```
YWAS = .79417(YW+GMPF-YWSLP-GWSF-GWPASPM-GWSSM)
       + .00741(YW+GMPF-YWSLP-GWSF-GWPASPM-GWSSM)(QTSTEP)
       + (QTXRFM)(YWSLMED+GTPUIBF) + (QTFA)(GTPFAF)
```

9.9 YNWAS Assessed nonwage income (excluding dividends)
(X=230)

```
YNWAS = .37401(YP-GMPF-YW-YRENT-YDIV11-GTPUIBF-GTPFAF)
        + .00331(YP-GMPF-YW-YRENT-YDIV11-GTPUIBF-GTPFAF)
             (QTSTEP)
```

9.10 NT1C Tax returns filed, income class 1
(X=115)

```
NT1C = (USRNT1C)(NT)
```

9.11 NT2C Tax returns filed, income class 2
(X=116)

```
NT2C = (USRNT2C)(NT)
```

9.12 NT3C Tax returns filed, income class 3
(X=117)

```
NT3C = (USRNT3C)(NT)
```

9.13 NT4C Tax returns filed, income class 4
(X=118)

```
NT4C = NT - (NT1C+NT2C+NT3C)
```

9.14 YWAS1C (X=237) Assessed wage income, income class 1

```
YWAS1C = (USRW1C)(YWAS)
```

9.15 YWAS2C (X=238) Assessed wage income, income class 2

```
YWAS2C = (USRW2C)(YWAS)
```

9.16 YWAS3C (X=239) Assessed wage income, income class 3

```
YWAS3C = (USRW3C)(YWAS)
```

9.17 YWAS4C (X=240) Assessed wage income, income class 4

```
YWAS4C = YWAS - (YWAS1C+YWAS2C+YWAS3C)
```

9.18 YNWAS1C (X=231) Assessed nonwage income (including dividends), income class 1

```
YNWAS1C = (USRNW1C)(YNWAS) + (1+.333 QTXRFM)(EYDIV1C)
          (EYDIVA11)(YDIV11) + (QTXRFM)(EYDIV1C)
          (.5 YKGPR)
```

9.19 YNWAS2C (X=232) Assessed nonwage income (including dividends), income class 2

```
YNWAS2C = (USRNW2C)(YNWAS) + (1+.333 QTXRFM)(EYDIV2C)
          (EYDIVA11)(YDIV11) + (QTXRFM)(EYDIV2C)
          (.5 YKGPR)
```

9.20 YNWAS3C (X=233) Assessed nonwage income (including dividends), income class 3

```
YNWAS3C = (USRNW3C)(YNWAS) + (1+.333 QTXRFM)(EYDIV3C)
          (EYDIVA11)(YDIV11) + (QTXRFM)(EYDIV3C)
          (.5 YKGPR)
```

9.21 YNWAS4C (X=234) Assessed nonwage income (including dividends), income class 4

```
YNWAS4C = YNWAS + (1+.333 QTXRFM)(EYDIVA11)(YDIV11)
        + (QTXRFM)(.5 YKGPR)
        - (YNWAS1C+YNWAS2C+YNWAS3C)
```

9.22 NTW1C (X=119) Wage earners tax returns filed, income class 1

```
NTW1C = [YWAS1C/(YWAS1C+YNWAS1C)](NT1C)
```

9.23 NTW2C (X=120) Wage earners tax returns filed, income class 2

```
NTW2C = [YWAS2C/(YWAS2C+YNWAS2C)](NT2C)
```

9.24 NTW3C (X=121) Wage earners tax returns filed, income class 3

```
NTW3C = [YWAS3C/(YWAS3C+YNWAS3C)](NT3C)
```

9.25 NTW4C (X=122) Wage earners tax returns filed, income class 4

```
NTW4C = [YWAS4C/(YWAS4C+YNWAS4C)](NT4C)
```

9.26 NTNW1C (X=123) Nonwage earners tax returns filed, income class 1

```
NTNW1C = NT1C - NTW1C
```

9.27 NTNW2C (X=124) Nonwage earners tax returns filed, income class 2

```
NTNW2C = NT2C - NTW2C
```

9.28 NTNW3C (X=125) Nonwage earners tax returns filed, income class 3

```
NTNW3C = NT3C - NTW3C
```

9.29 NTNW4C (X=126) Nonwage earners tax returns filed, income class 4

```
NTNW4C = NT4C - NTW4C
```

9.30 RTI (X=295) Indexing factor

```
RTI = QINDEX[(Q1)(J2L(J4A(PCPI))/1.38025)
      + (Q2)(J3L(J4A(PCPI))/1.38025)
      + (Q3)(J4L(J4A(PCPI))/1.38025)
      + (Q4)(J5L(J4A(PCPI))/1.38025)]
      + 1 - QINDEX
```

where:

1.38025 is the average of the consumer price index in the twelve months ending September 31, 1973 which is the base period for indexing of personal income tax.

Transfers from Persons to Provincial-Municipal Governments

9.31 TRHPMPR (X=258) Hospital and medical care insurance premiums

1Q60-4Q72 OLS

$$
\begin{aligned}
TRHPMPR = {} & 5.8821 \underset{(3.09)}{} + .05820 \underset{(2.51)}{} [QC1(JW[(ERTPHPM)(NE)])] \\
& - .04217 \underset{(1.87)}{} [QC2(JW[(ERTPHPM)(NE)])] \\
& - .03211 \underset{(1.47)}{} [QC3(JW[(ERTPHPM)(NE)])] \\
& + 1.0790 \underset{(52.96)}{} JW[(ERTPHPM)(NE)]
\end{aligned}
$$

t		JW[(ERTPHPM)(NE)]
0		.667
-1		.333
Sum W	=	1.000

see = 8.65 RB2 = .982 cov = 10.24% dw = .47

9.32 TRMVPMPR (X=177) Motor vehicle licences and permits, persons

1Q58-4Q72 OLS

$$
\begin{aligned}
TRMVPMPR = {} & .19733 \underset{(75.44)}{} (UKRMVNC)(ERTPMVPM) \\
& + .29953 \underset{(66.27)}{} (QC1[(UKRMVNC)(ERTPMVPM)]) \\
& - .03326 \underset{(7.36)}{} (QC2[(UKRMVNC)(ERTPMVPM)]) \\
& - .14099 \underset{(30.82)}{} (QC3[(UKRMVNC)(ERTPMVPM)])
\end{aligned}
$$

see = 2.96 RB2 = .989 cov = 11.09% dw = 1.79

Technical Relationships

9.33 UKRMVNC (X=245) Stock of noncommercial registered motor vehicles (million vehicles)

UKRMVNC = 1.02125 + .0004693 KMV + .0012459(KMV)(NU/NL)

Corporation Income Tax

9.34 TCA (X=166) Corporation income tax accruals

1Q58-4Q72 OLS

TCA = 1.0161 (.01 RTCA)(YCT) + TCAPLMT - EDTCA
(185.38)

see = 26.26 RB2 = .981 cov = 4.38% dw = 1.47

9.35 YCT (X=220) Taxable corporate profits

1Q58-4Q72 OLS

YCT = 126.93 + .03785 [QC1(YC-YPCCB-TCAPLMT)]
(4.19) (3.95)

+ .00448 [QC2(YC-YPCCB-TCAPLMT)]
(.56)

- .01867 [QC3(YC-YPCCB-TCAPLMT)]
(2.23)

+ 1.7463 (YC-YPCCB-TCAPLMT)
(2.23)

- .99640 (YC-YPCCB-TCAPLMT)(J4A(UGPPA)/J1L[J4A(UGPPA)])
(1.31)

- .76133 J4A(ECCA63A)
(6.19)

see = 58.77 RB2 = .978 cov = 4.76% dw = .80

9.36 TCAF Federal corporation income tax accruals
(X=167)

1Q58-4Q70 OLS

TCAF = 1.0212 (.01 RTCAF)(YCT) - EDTCA
(189.72)

see = 19.86 RB2 = .978 cov = 4.24% dw = 1.16

Technical Relationship

9.37 TCAPM Provincial corporation income tax accruals
(X=168)

TCAPM = TCA - TCAF

Supplement to Sector 9

ENDOGENIZED SPREADING RATIOS, EXEMPTIONS, AND TAX RATES

PG is a matrix used in the Simulator programme (in the sub-routines CONS9, SOLV30, and TAXCAL) to store calculated series.

I. SPREADING RATIOS

1) Quantiles (L = lower, M = middle, U = upper)

S9.1 ln(UQLNT) = 5.7223 + .13097 ln(YASP)
(PG = 1) (50.93) (9.70)

see = .0175 RB2 = .64 cov = .26% dw = .11

S9.2 ln(UQMNT) = .87804 + .87683 ln(YASP)
(PG = 2) (16.01) (133.06)

see = .0085 RB2 = .997 cov = .10% dw = .98

S9.3 ln(UQUNT) = - 1.0801 + 1.2032 ln(YASP)
(PG = 3) (6.91) (64.10)

see = .0243 RB2 = .987 cov = .27% dw = .26

S9.4 ln(UQLYW) = - .79136 + 1.0319 ln(YASP)
(PG = 4) (8.95) (97.16)

see = .0137 RB2 = .994 cov = .18% dw = .51

S9.5 ln(UQMYW) = - 1.5050 + 1.2124 ln(YASP)
(PG = 5) (13.98) (93.75)

see = .0167 RB2 = .994 cov = .20% dw = .47

S9.6 $\ln(UQUYW) = -1.4726 + 1.2967 \ln(YASP)$
(PG = 6) (13.93) (102.09)

see = .0164 RB2 = .995 cov = .18% dw = .56

S9.7 $\ln(UQLYNW) = 4.4740 + .39482 \ln(YASP)$
(PG = 7) (32.58) (23.93)

see = .0213 RB2 = .915 cov = .28% dw = .07

S9.8 $\ln(UQMYNW) = .70303 + .98201 \ln(YASP)$
(PG = 8) (6.47) (75.15)

see = .0169 RB2 = .991 cov = .19% dw = .36

S9.9 $\ln(UQUYNW) = 1.2303 + 1.1051 \ln(YASP)$
(PG = 9) (10.77) (80.49)

see = .0178 RB2 = .992 cov = .17% dw = .51

where

$YASP = 4(YWAS+YNWAS)/((NT)(ESAYAS))$

2) Distribution Parameters

S9.10-S9.12 Displacement factors

$$UDISi = UQMi[(UQLi)(UQUi)/(UQMi)-1]/[2-(UQLi)/(UQMi)-(UQUi)/(UQMi)]$$

S9.13-S9.15 Means

$$UMEANi = \ln(UQMi+UDISi)$$

S9.16-S9.18 Standard deviations

$$USIGMAi = \ln[UQUi+UDISi)/(UQMi+UDISi)]/1.2815$$

where

i = NT, YWAS, YNWAS

3) Spreading ratios

a) Income Groups

S9.19-S9.32 Tax returns filed

$$USRNTj = \frac{1}{(2\pi)^{.5}} \int_{\ln(YG_{j-1}+UDISNT)}^{\ln(YG_{j}+UDISNT)} e^{-[((X-UMEANNT)/USIGMANT)/2]}\,dx$$

(j = 1, 14)

S9.33-S9.46 Assessed wage income

$$USRWj = \frac{1}{(2\pi)^{.5}} \int_{\ln(YG_{j-1}+UDISYWAS)}^{\ln(YG_{j}+UDISYNWAS)} e^{-[((X-UMEANYWAS)/USIGMAYWAS)/2]}\,dx$$

(j = 1, 14)

S9.47-S9.60 Assessed nonwage income

$$USRNWj = \frac{1}{(2\pi)^{.5}} \int_{\ln(YG_{j-1} + UDISYNWAS)}^{\ln(YG_{j} + UDISYNWAS)} e^{-[((X-UMEANYNWAS)/USIGMAYNWAS)/2]}\, dx$$

(j = 1, 14)

b) Income Classes

S9.61-S9.63 Tax returns filed

USRNTic = JmjS(USRNTj)
(E = 110 + i)

(i = 1, 3)

S9.64-S9.66 Assessed wage income

USRWic = JmjS(USRWj)
(E = 150 + i)

(i = 1, 3)

S9.67-S9.69 Assessed nonwage income

USRNWic = JmjS(USRNWj)
(E = 116 + i)

(i = 1, 3)

where

m = number of groups in class i

II. EXEMPTIONS

1) Groups

S9.70-S9.83 Average exemption and deduction used in calculating combined federal and provincial tax in income group j

ZEXYGTj = ZEXYGj + (.8558RTI-1)(ZEXPERj)

(j = 1, 14)

where

.8558 is an estimate of the proportion of personal exemptions (ZEXPER) indexed, given that Quebec has chosen not to index the personal income tax.

S9.84-S9.97 Indexing provinces

ZEXYGIj = ZEXGj + (RTI-1)(ZEXPERj)

(j = 1, 14)

S9.98-S9.111 Quebec

ZEXYGQj = ZEXGj

(j = 1, 14)

2) Income classes

S9.112-S9.115 Total nonwage income

ZEXYNWiC = (WZEXNW))JmjS([(USRNTji/JmkS(USRNTjk))(ZEXYGTji)])

(E = 136 + i)

(i = 1, 4)

S9.116-S9.119 Total wage income

```
ZEXYWiC = (WZEXW)(JmjS([(USRNTji/JmkS(USRNTki))(ZEXYGTji)])
(E = 140 + i)

(i = 1, 4)
```

S9.120-S9.123 Indexing provinces nonwage income

```
ZEXINWiC = (WZEXNW)(JmjS([(USRNTji/JmkS(USRNTji))(ZEXYGIji)])
(PG = 13 + i)

(i = 1, 4)
```

S9.124-S9.127 Indexing provinces wage income

```
ZEXIWiC = (WZEXW)(JmjS[(USRNTji/JmkS(USRNTki))(ZEXYGIji])
(PG = 17 + i)

(i = 1, 4)
```

S9.128-S9.131 Quebec nonwage income

```
ZEXQNWiC = (WZEXNW)(JmjS([(USRNTji/JmkS(USRNTki))(ZEXYGQji)])
(PG = 21 + i)

(i = 1, 4)
```

S9.132-S9.135 Quebec wage income

```
ZEXQWiC = (WZEXW)(JmjS([(USRNTji/JmkS(USRNTki))(ZEXYGQji)])
(PG = 25 + i)

(i = 1, 4)
```

3) Quarterly Spreading Income Ratios

S9.136 Nonwage income

```
WZEXNW = (Q1)(J4L(YNWAS)/J1L(J4S(YNWAS)))
       + (Q2)(J4L(YNWAS)/J2L(J4S(YNWAS)))
       + (Q3)(J4L(YNWAS)/J3L(J4S(YNWAS)))
       + (Q4)(J4L(YNWAS)/J4L(J4S(YNWAS)))
```

S9.137 Wage income

```
WZEXW = (Q1)(J4L(YWAS)/J1L(J4S(YWAS)))
      + (Q2)(J4L(YWAS)/J2L(J4S(YWAS)))
      + (Q3)(J4L(YWAS)/J3L(J4S(YWAS)))
      + (Q4)(J4L(YWAS)/J4L(J4S(YWAS)))
```

III. TAX RATES

1) Income Groups

S9.138-S9.151 Federal tax rates

```
RTPYFj = (J1kS[(RMARFk)(YBRACk+1-YBRACk)(RTI)]
         + (RMARFn)[YTAj - (YBRACn)(RTI)])/YTAj
(j = 1, 14)
```

S9.152-S9.165 Basic federal tax rates

```
RTPYFBj = (J1kS[(RMARFB )(YBRACk+1-YBRACk)(RTI)]
          + (RMARFBn)[YTAj - (YBRACn)(RTI)])/YTAj
(j = 1, 14)
```

S9.166-S9.179 Quebec tax rates

RTPYQj = [JlkS[(RMARFBk)(YBRACk+1-YBRACk)]

+ (RMARFBn)(YTAj-YBRACn)]/YTAj

(j = 1, 14)

where

YTAj = (USRWj)(4YWAS)/((USRNTj)(NT)(ESAYW))

+ USRNWj)(4YNWAS)/((USRNTj)(NT)(ESAYNW)))

- ZEXYGij

The i in ZEXYGij refers to A, I and Q

n = the number of the marginal tax bracket for group j

l = n - 1

2) Income Classes

S9.180-S9.183 Federal tax rates

RTPYFiC = JmjS[(YASji/JmkS(YASki))(RTPYFji)]

(E = 125 + i)

(i = 1, 4)

S9.184-S9.187 Basic federal tax rates

RTPYFBiC = JmjS[(YASji/JmkS(YASji))(RTPYFBji)]

(E = 129 + i)

(i = 1, 4)

S9.188-S9.191 Quebec tax rates

RTPYQic = JmjS[(YASji/JmkS(YASji))(RTPYQji)]

(PG = 9 + i)

(i = 1, 4)

where

m = number of groups in class i

YASji = (YWASji+YNWASji)

Sector 10

INDIRECT TAXES AND OTHER GOVERNMENT REVENUE

10.1 TISF Manufacturers sales tax
(X=174)

1Q58-4Q72 OLS

$$TISF = \underset{(3.40)}{23.520} + \underset{(38.66)}{.51482}\ (.01\ RTISFS)[(CNDSD)(PCNDSD)+(CMV)(PCMV)+(CDO)(PCDO)]$$

$$+\ \underset{(18.74)}{.59622}\ ([.46\ RTISFR][(INRC)(PINRC)+(INRCGF+INRCGPM+INRCSM)(PINRCG)+(IH)(PIH)]/[100+.46\ RTISFR]+[.54\ RTISFR][(IRC)(PIRC)]/[100+.54\ RTISFR]+[.88(.01\ RTISFME)+.12(.01\ RTISFS)][(IME)(PIME)+(IMEGF+IMEGPM)(PIMEG)])$$

see = 17.04 RB2 = .990 cov = 3.96% dw = 1.95

10.2 TIEXF Excise taxes and duties (excluding manufacturers sales tax)
(X=171)

1Q58-4Q72 OLS

$$TIEXF = \underset{(18.01)}{65.891} - \underset{(2.89)}{5.2674}\ QC1 + \underset{(2.33)}{4.1180}\ QC2 + \underset{(3.21)}{5.6772}\ QC3 + \underset{(35.53)}{.02511}\ [(CNDSD)(PCNDSD)+(CDO)(PCDO)]$$

see = 7.90 RB2 = .961 cov = 4.14% dw = 1.25

10.3 TISPM Retail sales tax
(X=175)

1Q58-4Q72 OLS

TISPM = 1.2084 ([.0023 RTISPM/(1+.0023 RTISPM)]
(75.37)

[JW([CS][PCS])]+[.0060 RTISPM/

(1+.0060 RTISPM)][JW([CNDSD][PCNDSD])]

+[.01 RTISPM/(1+.01 RTISPM)]

[JW([CMV][PCMV][(.012 RTISPM+.45)/

(.012 RTISPM+.20)]+[CDO][PCDO])])

t		JW(...)
0		.667
-1		.333
Sum W	=	1.000

see = 32.61 RB2 = .969 cov = 12.46% dw = 1.44

10.4 TIGASPM Gasoline tax
(X=172)

1Q59-4Q72 OLS

$$
\begin{aligned}
\text{TIGASPM} = {} & \underset{(83.62)}{.90244}\ [(\text{ERGAS})(\text{EGAS})(\text{UKRMVNC}) \\
& \quad +(\text{ERDO})(\text{EDO})(.00009429\ \text{KME})] \\
& + \underset{(6.11)}{.04935}\ [QC1([\text{ERGAS}][\text{EGAS}][\text{UKRMVNC}] \\
& \quad +[\text{ERDO}][\text{EDO}][.00009429\ \text{KME}])] \\
& - \underset{(13.04)}{.09106}\ [QC2([\text{ERGAS}][\text{EGAS}][\text{UKRMVNC}] \\
& \quad +[\text{ERDO}][\text{EDO}][.00009429\ \text{KME}])] \\
& + \underset{(3.68)}{.02417}\ [QC3([\text{ERGAS}][\text{EGAS}][\text{UKRMVNC}] \\
& \quad +[\text{ERDO}][\text{EDO}][.00009429\ \text{KME}])] \\
& + \underset{(4.93)}{10.892}
\end{aligned}
$$

where

.00009429 is the proportion of the stock of motor vehicles in KME.

see = 6.23 RB2 = .993 cov = 3.38% dw = 2.04

10.5 TIMVPM (X=173) Motor vehicle licences and permits, business

1Q58-4Q72 OLS

```
TIMVPM = .15695 [(.00009429 KME)(ERTIMVPM)]
         (32.62)

         + .20719 (QC1[(.00009429 KME)(ERTIMVPM)])
           (24.48)

         - .00015 (QC2[(.00009429 KME)(ERTIMVPM)])
           (.02)

         - .10328 (QC3[(.00009429 KME)(ERTIMVPM)])
           (12.45)


       see = 8.84   RB2 = .924   cov = 24.77%   dw = 1.50
```

10.6 TWF (X=182) Withholding tax payable by non-residents

1Q58-4Q72 OLS

```
TWF = - 6.2899 + .14290 (MINT$12+MDIV$12+MID$13)
        (2.12)   (6.92)

      + .04302 [QHOS(MINT$12+MDIV$12+MID$13)]
        (3.26)

      - .00471 [QC1(MINT$12+MDIV$12+MID$13)]
        (1.03)

      + .03824 [QC2(MINT$12+MDIV$12+MID$13)]
        (8.31)

      - .02653 [QC3(MINT$12+MDIV$12+MID$13)]
        (5.59)


       see = 5.40   RB2 = .940   cov = 12.58%   dw = 2.08
```

10.7 TICUSF Customs duties
(X=170)

```
TICUSF = (MFA12*PMFA12+MFA13*PMFA13)ETARFA
       + (MBT12*PMBT12+MBT13*PMBT13)ETARBT
       + (MCM12A*PMCM12A+MCM13A*PMCM13A)ETARCM
       + (MEF12*PMEF12+MEF13A*PMEF13A)ETAREF
       + (MCH12*PMCH12+MCH13*PMCH13)ETARCH
       + (MMM12*PMMM12+MMM13*PMMM13)ETARMM
       + (MOM12A*PMOM12A+MOM13A*PMOM13A)ETARMOM
       + (MIM12*PMIM12+MIM13*PMIM13)ETARIM
       + ETICUSF
```

where

ETICUSF is an exogenous residual variable (average = 13.0262 for 1Q58 to 4Q72). Because the above equation was added after the creation of the RDX2 data tape, ETICUSF does not appear in the list of variables. It is calculated by using the observed values of the components of the equation at each iteration.

10.8 TILGS Indirect taxes less subsidies
(X=49)

```
TILGS = TISF + TICUSF + TIEXF + TISPM + TIGASPM
      + TIMVPM + TIOF + TIOPM - GSUBSF - GSUBSPM
```

Sector 11

TRANSFERS TO PERSONS

11.1 TUIRF Unemployment Insurance Fund revenue
(X=228)

1Q58-4Q72 OLS

$$
\begin{aligned}
TUIRF = {} & .35723\ [QC1(NEMPS)] - 1.1552\ [QC2(NEMPS)] \\
& (1.97) \qquad\qquad (6.55) \\
& + .34582\ [QC3(NEMPS)] + 12.911\ NEMPS \\
& \quad (2.00) \qquad\qquad (35.63) \\
& + 5.4677\ (NEMPS)[J1L(QDUIF)] \\
& \quad (25.28) \\
& + 6.8444\ (NEMPS)[J1L(QSEA)] + 3.3508\ QDUIF71*NEMPS \\
& \quad (17.54) \qquad\qquad (6.34)
\end{aligned}
$$

where

QDUIF71 = J12L(QDUIF)-J4L(QDUIF)
ie, (1 in 3Q71 and 4Q71, 0 elsewhere)

see = 3.44 RB2 = .990 cov = 3.77% dw = 1.74

11.2 GTPUIBF (X=52) Unemployment insurance benefits

1Q58-4Q72 OLS

```
GTPUIBF = .67098 (QC1[(ERUIB)(NCL)])
          (5.96)

          + 1.0125 (QC2[(ERUIB)(NCL)])
            (7.96)

          - .58323 (QC3[(ERUIB)(NCL)])
            (4.10)

          + 8.2704 (ERUIB)(NCL) - 1.0350 (ERUIB)(NCL)(QDUIF)
            (23.43)               (5.49)

          - .79010 (ERUIB)(NCL)[J1L(QSEA)]
            (2.05)
```

see = 13.71 RB2 = .984 cov = 9.82% dw = 1.97

11.3 NINS (X=109) Enrollment in the Unemployment Insurance Fund

1Q58-4Q72 OLS

```
NINS = .92584 [NP] - .00250[NP](QTIME) + .05267[NP](QDUIF)
       (42.57)       (8.67)              (6.56)

       - .03591[NP](J1L[QSEA]) + .30964[QC1(NU)]
         (4.07)                  (5.37)

       - .00815 [QC2(NU)] - .36298 [QC3(NU)] + .73337 NU
         (.19)              (5.63)             (4.85)

       - .08717 (QDUIF72)(NE)
         (4.11)
```

where

```
QDUIF72 = J14L(QDUIF)

NP = [NE-(1-QDUIF72)(NEUPF+NEUPB)-(1-QDNINS)(NFP)]
```

see = .078 RB2 = .994 cov = 1.64% dw = 1.00

11.4 NCL (X=104) Unemployment Insurance Fund claimants

1Q58-4Q72 OLS

$$
\begin{aligned}
NCL = &- .57699 + .17912\ NINS - .01186\ (NINS)(QDUIF) \\
&\quad (10.65) \quad (9.47) \qquad\quad (2.90) \\
&- .00074\ (NINS)(QTIME) + .18498\ [QC1(NU)] \\
&\quad (5.59) \qquad\qquad\quad (7.92) \\
&- .06574\ [QC2(NU)] - .19426\ [QC3(NU)] + 1.0667\ NU \\
&\quad (3.53) \qquad\quad (7.38) \qquad\quad (15.74)
\end{aligned}
$$

see = .033 RB2 = .973 cov = 7.21% dw = 1.97

11.5 GTPINTF (X=51) Interest on the federal public debt

1Q58-4Q72 OLS

$$
\begin{aligned}
GTPINTF = &\ 1.0556\ [.0025(J2A[(EACR)(LGBF)] \\
&\quad (145.25) \\
&\qquad + J2A[(EACRCSB)(LGFCSB)] + (RS)[J2A(LGFTB)])] \\
&- .07755\ (QC1)[.0025(J2A[(EACR)(LGBF)] \\
&\quad (6.09) \\
&\qquad + J2A[(EACRCSB)(LGFCSB)] + (RS)[J2A(LGFTB)])] \\
&+ .05464\ (QC2)[.0025(J2A[(EACR)(LGBF)] \\
&\quad (4.31) \\
&\qquad + J2A[(EACRCSB)(LGFCSB)] + (RS)[(J2A(LGFTB)])] \\
&+ .02807\ (QC3)[.0025(J2A[(EACR)(LGBF)] \\
&\quad (2.22) \\
&\qquad + J2A[(EACRCSB)(LGFCSB)] + (RS)[J2A(LGFTB)])] \\
&+ EIFDMIS
\end{aligned}
$$

see = 11.590 RB2 = .981 cov = 5.76% dw = 1.01

Technical Relationship

11.6 NEMPS (X=106) Employed contributors to the Unemployment Insurance Fund

NEMPS = NINS - NCL

Sector 12

FEDERAL CURRENT AND CAPITAL EXPENDITURE ON GOODS AND SERVICES

12.1 NGPAF (X=107) — Employment in federal public administration and defence

1Q58-4Q72 OLS

```
100[NGPAF/NPOPT] = .91809
                   (5.74)

      + .00080 (QC1[J1L(100[J4A(NGPAF/NPOPT)])])
        (.10)

      + .02350 (QC2[J1L(100[J4A(NGPAF/NPOPT)])])
        (2.97)

      - .00114 (QC3[J1L(100[J4A(NGPAF/NPOPT)])])
        (.14)

      + JW[.001 YP/([PCPI][NPOPT])]

      + JW[(WQGPAF+(GWSF/NGPAF))/(1261.1062 PGCNWG)]

      + JW(.01 RNU) + JW(NPOPT)
```

t	JW[.001 YP/(...)]		JW[WQGPAF...)]	
0	.41915	(7.36)	-.16303	(4.61)
-1	.35221	(7.36)	-.09170	(4.61)
-2	.29108	(7.36)	-.04076	(4.61)
-3	.23577	(7.36)	-.01019	(4.61)
-4	.18629	(7.36)		
-5	.14263	(7.36)		
-6	.10479	(7.36)		
-7	.07277	(7.36)		
-8	.04657	(7.36)		
-9	.02620	(7.36)		
-10	.01164	(7.36)		
-11	.00291	(7.36)		
Sum W =	1.89201	Z2	-.30567	Z2

t	JW(.01 RNU)		JW(NPOPT)	
0	.24778	(2.00)	-.00805	(3.24)
-1	.20821	(2.00)	-.00676	(3.24)
-2	.17207	(2.00)	-.00559	(3.24)
-3	.13938	(2.00)	-.00453	(3.24)
-4	.11013	(2.00)	-.00358	(3.24)
-5	.08431	(2.00)	-.00274	(3.24)
-6	.06195	(2.00)	-.00201	(3.24)
-7	.04302	(2.00)	-.00140	(3.24)
-8	.02753	(2.00)	-.00089	(3.24)
-9	.01549	(2.00)	-.00050	(3.24)
-10	.00688	(2.00)	-.00022	(3.24)
-11	.00172	(2.00)	-.00006	(3.24)
Sum W =	1.11846	Z2	-.03633	Z2

see = .029 RB2 = .842 cov = 3.40% dw = 1.30

12.2 WQGPAF (X=200) Quarterly earnings in federal public administration and defence

1Q58-4Q72 OLS

$$\ln(WQGPAF+ERPAF) = -\underset{(5.30)}{.95696} + \underset{(.51)}{.00068}\,[QC1(\ln WQAXF)]$$

$$-\underset{(2.51)}{.00333}\,[QC2(\ln WQAXF)] + \underset{(.44)}{.00059}\,[QC3(\ln WQAXF)]$$

$$+ JW(\ln WQAXF) + JW(\ln WQAXF/RNU)$$

where

$$WQAXF = [YW-YWSLP-GWSF-GWPASPM-GWSSM-NGPAF(WQGPAF+ERPAF)]/$$

$$(NE-NEUPB-NEUPF-NGPAF)$$

t		JW(ln WQAXF)		JW(ln WQAXF/RNU)	
0		.00642	(5.18)	.35920	(43.78)
-1		.01124	(5.18)	.27501	(43.78)
-2		.01446	(5.18)	.20205	(43.78)
-3		.01606	(5.18)	.14031	(43.78)
-4		.01606	(5.18)	.08980	(43.78)
-5		.01446	(5.18)	.05051	(43.78)
-6		.01124	(5.18)	.02245	(43.78)
-7		.00642	(5.18)	.00561	(43.78)
Sum W	=	.09637	ZC2	1.14495	Z2

see = .042 RB2 = .974 cov = .58% dw = 1.11

12.3 GCNWF Federal current nonwage expenditure
(X=256)

1Q58-4Q72 OLS

(GCNWF-CCAGF$)/([PGCNWG][NPOPT]) = 73.361 + 3.6990 QC1
(10.98) (12.25)

- 2.3538 QC2 - 1.4714 QC3 + JW[YP/([PCPI][NPOPT])]
(7.99) (4.59)

+ JW[1261.1062 PGCNWG/(WQGPAF+(GWSF/NGPAF))]

+ JW[J4A(.01 RNU)] + JW(NPOPT)

t		JW[YP/(...)]		JW[1261.1062...]	
0		.01779	(4.23)	-7.11891	(3.59)
-1		.01236	(4.23)	-4.00438	(3.59)
-2		.00791	(4.23)	-1.77973	(3.59)
-3		.00445	(4.23)	- .44493	(3.59)
-4		.00198	(4.23)		
-5		.00049	(4.23)		
Sum W	=	.04498	Z2	-13.34795	Z2

t		JW(NPOPT)		JW[J4A(.01 RNU)]	
0		-1.49528	(7.30)	22.374	(1.85)
-1		-1.03839	(7.30)	12.585	(1.85)
-2		- .66457	(7.30)	5.593	(1.85)
-3		- .37382	(7.30)	1.398	(1.85)
-4		- .16614	(7.30)		
-5		- .04154	(7.30)		
Sum W	=	-3.77974	Z2	41.950	Z2

see = 1.28 RB2 = .846 cov = 9.72% dw = 2.02

12.4 INRCGF (X=249) Federal investment in non-residential construction

1Q58-4Q72 OLS

INRCGF - .00875 J1L(KNRCGF) = 253.08
(6.18)

- 9.4132 QC1 - 8.7525 QC2 + 11.559 QC3
(6.38) (5.97) (7.84)

+ JW(YP/PCPI) + JW(NGPAF) + JW(J1L[KNRCGF])

t	JW(YP/PCPI)		JW(NGPAF)	
0	.00046	(5.52)	60.792	(1.66)
-1	.00084	(5.52)	51.083	(1.66)
-2	.00115	(5.52)	42.217	(1.66)
-3	.00137	(5.52)	34.196	(1.66)
-4	.00153	(5.52)	27.019	(1.66)
-5	.00160	(5.52)	20.686	(1.66)
-6	.00160	(5.52)	15.198	(1.66)
-7	.00153	(5.52)	10.554	(1.66)
-8	.00137	(5.52)	6.755	(1.66)
-9	.00115	(5.52)	3.800	(1.66)
-10	.00084	(5.52)	1.689	(1.66)
-11	.00046	(5.52)	.422	(1.66)
Sum W =	.01389	ZC2	274.41	Z2

t	JW(J1L[KNRCGF])	
0	-.02487	(6.09)
-1	-.02015	(6.09)
-2	-.01592	(6.09)
-3	-.01219	(6.09)
-4	-.00895	(6.09)
-5	-.00622	(6.09)
-6	-.00398	(6.09)
-7	-.00224	(6.09)
-8	-.00099	(6.09)
-9	-.00025	(6.09)
Sum W =	-.09576	Z2

see = 6.55 RB2 = .744 cov = 29.74% dw = 1.33

12.5 IMEGF (X=253) Federal investment in machinery and equipment

IMEGF = exogenous at present

Technical Relationship

12.6 KNRCGF (X=225) Stock of federal non-residential construction

KNRCGF = .99125 J1L(KNRCGF) + INRCGF

Sector 13

PROVINCIAL-MUNICIPAL CURRENT AND CAPITAL EXPENDITURE ON GOODS AND SERVICES

13.1 NGPAPM (X=108) Employment in provincial-municipal public administration

1Q58-4Q72 OLS

$$
\begin{aligned}
NGPAPM = {} & .09201 - .00680\ QC1 + .00345\ QC2 + .00729\ QC3 \\
& (4.84) \quad (7.12) \qquad (3.56) \qquad (7.57) \\
& + JW(.001\ YP/PCPI) \\
& + JW[(WQGPAPM+(GWPASPM/NGPAPM))/916.279\ PGCNWG] \\
& + JW(RL) + JW[(RABELCD-RABELCDD)/RABELCD] \\
& + .04629\ J2A[(YTOTPM+GBCPPPM)/(YTOTPM-GBALPM+GALPM)] \\
& \quad (2.11)
\end{aligned}
$$

t	JW(.001 YP/PCPI)		JW[(WQGPAPM...]	
0	.00662	(40.26)	-.07080	(17.81)
-1	.00556	(40.26)	-.03983	(17.81)
-2	.00460	(40.26)	-.01770	(17.81)
-3	.00372	(40.26)	-.00443	(17.81)
-4	.00294	(40.26)		
-5	.00225	(40.26)		
-6	.00166	(40.26)		
-7	.00115	(40.26)		
-8	.00074	(40.26)		
-9	.00041	(40.26)		
-10	.00018	(40.26)		
-11	.00005	(40.26)		
Sum W =	.02988	Z2	-.13276	Z2

t	JW(RL)		JW[(RABELCD...)]	
0	-.00194	(3.64)	.00728	(1.91)
-1	-.00134	(3.64)	.00506	(1.91)
-2	-.00086	(3.64)	.00324	(1.91)
-3	-.00048	(3.64)	.00182	(1.91)
-4	-.00022	(3.64)	.00081	(1.91)
-5	-.00005	(3.64)	.00020	(1.91)
Sum W =	-.00489	Z2	.01841	Z2

see = .004 RB2 = .993 cov = 1.76% dw = 1.85

13.2 WQGPAPM (X=202) Quarterly earnings in provincial-municipal public administration

1Q58-4Q72 OLS

$$\ln WQGPAPM = -\underset{(4.30)}{.98164} - \underset{(.66)}{.00111}\,[QC1(\ln WQAXPM)]$$

$$- \underset{(1.03)}{.00173}\,[QC2(\ln WQAXPM)] - \underset{(.13)}{.00021}\,[QC3(\ln WQAXPM)]$$

$$+ JW(\ln WQAXPM)$$

where

$$WQAXPM = [YW-YWSLP-GWSF-GWPASPM-GWSSM$$

$$- (WQGPAPM)(NGPAPM)+(ERPAF)(NGPAF)]/$$

$$(NE-NEUPB-NEUPF-NGPAPM)$$

t		JW(ln WQAXPM)	
0		.35358	(35.02)
-1		.27071	(35.02)
-2		.19889	(35.02)
-3		.13812	(35.02)
-4		.08840	(35.02)
-5		.04972	(35.02)
-6		.02210	(35.02)
-7		.00552	(35.02)
Sum W	=	1.12704	Z2

see = .054 RB2 = .954 cov = .77% dw = .42

13.3 NIS (X=110) Employment in elementary and secondary schools under municipal control

1Q58-4Q72 OLS

$$1000(NIS/NPOPS) = \underset{(4.54)}{8.2324} - \underset{(.84)}{.08607}\ QC1 + \underset{(2.11)}{.24308}\ QC2 + \underset{(1.55)}{.16553}\ QC3$$

$$+ \underset{(2.29)}{80.450}\ J4A[GTGMP/([NPOPS][WQISM])]$$

$$+ JW(.001\ YP/[(PCPI)(NPOP)]) + JW(.001\ NPOPS)$$

$$+ JW(J1D[NPOPS])$$

t		JW(.001 YP...)		JW(.001 NPOPS)	
0		1.673	(12.47)	-308.89	(3.63)
-1		3.067	(12.47)	-283.14	(3.63)
-2		4.182	(12.47)	-257.40	(3.63)
-3		5.018	(12.47)	-231.66	(3.63)
-4		5.576	(12.47)	-205.92	(3.63)
-5		5.854	(12.47)	-180.18	(3.63)
-6		5.854	(12.47)	-154.44	(3.63)
-7		5.576	(12.47)	-128.70	(3.63)
-8		5.018	(12.47)	-102.96	(3.63)
-9		4.182	(12.47)	- 77.22	(3.63)
-10		3.067	(12.47)	- 51.48	(3.63)
-11		1.673	(12.47)	- 25.74	(3.63)
Sum W	=	50.737	ZC2	-2007.73	Z1

t		JW(J1D(NPOPS])	
0		10.591	(6.00)
-1		9.708	(6.00)
-2		8.826	(6.00)
-3		7.943	(6.00)
-4		7.061	(6.00)
-5		6.178	(6.00)
-6		5.296	(6.00)
-7		4.413	(6.00)
-8		3.530	(6.00)
-9		2.648	(6.00)
-10		1.765	(6.00)
-11		.883	(6.00)
Sum W	=	68.842	Z1

see = .450 RB2 = .981 cov = 1.08% dw = .43

13.4 GCNWPM (X=257) Provincial-municipal current nonwage expenditure

1Q58-4Q72 OLS

```
(GCNWPM-CCAGPM$-EMEDPAY)/PGCNWG = 147.98
                                   (1.44)

      - .00567 (QC1)(J1L[J4A([GCNWPM-CCAGPM$-EMEDPAY]/PGCNWG)])
        (.16)

      - .16279 (QC2)(J1L[J4A([GCNWPM-CCAGPM$-EMEDPAY]/PGCNWG)])
        (4.65)

      - .05007 (QC3)(J1L[J4A([GCNWPM-CCAGPM$-EMEDPAY]/PGCNWG)])
        (1.43)

      + [JW(YP/PCPI)][1+J4A[(YTOTPM+GBCPPPM)/

            (YTOTPM-GBALPM+GALPM)]-.86012]

      + JW[916.279 PGCNWG/(WQGPAPM+(GWPASPM/NGPAPM))]

      + 64.389 QDCENT
        (3.36)
```

t		[JW(YP/PCPI][...]		JW[916.279...]	
0		.00466	(6.94)	-93.568	(2.05)
-1		.00698	(6.94)	-52.632	(2.05)
-2		.00698	(6.94)	-23.392	(2.05)
-3		.00466	(6.94)	- 5.848	(2.05)
Sum W	=	.02328	ZC2	-175.440	Z2

see = 36.75 RB2 = .846 cov = 15.86% dw = 1.60

13.5 INRCGPM (X=250) Provincial-municipal investment in construction (excluding schools)

1Q58-4Q72 OLS

INRCGPM = 38.924 - 63.811 QC1 - 7.670 QC2 + 64.021 QC3
(1.87) (11.85) (1.35) (11.91)

+ JW[J1D(YGNE/PGNE - IRC - (INRC-INRCAG) - INRCSM

- INRCGF - INRCGPM)]

+ JW[IRC + (INRC-INRCAG) + INRCSM + INRCGF]

+ JW(RL-PCPICE)

t	JW[J1D(...)]		JW[IRC...]	
0	.01135	(3.40)	.03161	(7.67)
-1	.02080	(3.40)	.02656	(7.67)
-2	.02837	(3.40)	.02195	(7.67)
-3	.03404	(3.40)	.01778	(7.67)
-4	.03782	(3.40)	.01405	(7.67)
-5	.03971	(3.40)	.01076	(7.67)
-6	.03971	(3.40)	.00790	(7.67)
-7	.03782	(3.40)	.00549	(7.67)
-8	.03404	(3.40)	.00351	(7.67)
-9	.02837	(3.40)	.00198	(7.67)
-10	.02080	(3.40)	.00088	(7.67)
-11	.01135	(3.40)	.00022	(7.67)
Sum W =	.34417	ZC2	.14270	Z2

t	JW(RL...)	
0	-13.301	(3.03)
-1	- 6.651	(3.03)
-2	- 1.425	(3.03)
-3	2.375	(3.03)
-4	4.751	(3.03)
-5	5.701	(3.03)
-6	5.226	(3.03)
-7	3.325	(3.03)
Sum W =	0.000	Z2-Z1

see = 23.93 RB2 = .900 cov = 8.24% dw = .47

13.6 INRCSM Municipal investment in school construction
(X=251)

1Q58-4Q72 OLS

INRCSM-.00875 J1L(KNRCSM) = - 591.70
(6.06)

- .48946 (QC1)(J1L[J4A(INRCSM-.00875 J1L[KNRCSM])])
(7.84)

+ .12355 (QC2)(J1L[J4A(INRCSM-.00875 J1L[KNRCSM])])
(2.24)

+ .39431 (QC3)(J1L[J4A(INRCSM-.00875 J1L[KNRCSM])])
(7.72)

+ JW(YP/PCPI) + JW(NPOPS) + JW[GTGMP/J12A(GTGMP)]

+ JW[J1L(KNRCSM)]

t	JW(YP/PCPI)		JW(NPOPS)	
0	.00067	(1.48)	28.461	(7.29)
-1	.00123	(1.48)	23.916	(7.29)
-2	.00168	(1.48)	19.765	(7.29)
-3	.00201	(1.48)	16.010	(7.29)
-4	.00224	(1.48)	12.650	(7.29)
-5	.00235	(1.48)	9.685	(7.29)
-6	.00235	(1.48)	7.115	(7.29)
-7	.00224	(1.48)	4.941	(7.29)
-8	.00201	(1.48)	3.162	(7.29)
-9	.00168	(1.48)	1.779	(7.29)
-10	.00123	(1.48)	.791	(7.29)
-11	.00067	(1.48)	.198	(7.29)
Sum W =	.02034	ZC2	128.472	Z2

t	JW[GTGMP/J12A(GTGMP)]		JW[J1L(KNRCSM)]	
0	9.693	(.94)	-.04104	(3.15)
-1	29.424	(3.56)	-.03142	(3.15)
-2	40.616	(4.03)	-.02308	(3.15)
-3	43.270	(3.88)	-.01603	(3.15)
-4	37.385	(3.73)	-.01026	(3.15)
-5	22.962	(3.61)	-.00527	(3.15)
-6			-.00256	(3.15)
-7			-.00064	(3.15)
Sum W =	183.35	Z1Z2	-.13080	Z2

see = 12.11 RB2 = .806 cov = 23.16% dw = .70

13.7 IMEGPM (X=254) Provincial-municipal investment in machinery and equipment

IMEGPM is exogenous at present.

13.8 WQISM (X=203) Quarterly earnings in elementary and secondary schools

WQISM is exogenous at present.

Technical Relationships

13.9 YTOTPM (X=248) Total provincial-municipal revenue (national accounts basis)

```
YTOTPM = TPYPM + TOPPM + TCAPM + TIMVPM + TISPM
         + TIGASPM + TIOPM + TRHPMPR + TRMVPMPR + TROPMPR
         + YGIPM + CCAGPM$ + GTGPMF
```

13.10 KNRCSM (X=201) Stock of elementary and secondary schools

```
KNRCSM = .99125 J1L(KNRCSM) + INRCSM
```

Sector 14

GOVERNMENT ASSET AND LIABILITY CHANGES

14.1 TCCF Federal corporation income tax collections
(X=169)

1Q58-4Q72 OLS

```
TCCF = .97409 (Q1)[(.25(QDTCCF1+QDTCCF2+QDTCCF4+QDTCCF5)
       (33.50)
            +.2727 QDTCCF3+.40 QDTCCF6)(J9W[TCAF])
            +(QDTCCF7)(.10 J9W[TCAF]+.1667 J5W[TCAF])
            +(QDTCCF8)(.0833 J9W[TCAF]+.1667 J5W[TCAF])]
     + .97872 (Q2)[(QDTCCF1)(.667 J6W[TCAF]-.667 J3W[TCCF]
       (46.61)
            -.0833 J10W[TCAF])+(QDTCCF2)(J6W[TCAF]
            -J3W(TCCF)-.1667 J10W[TCAF]) + (QDTCCF3)
            (1.0833 J6W[TCAF]-J4W[TCCF]) + (QDTCCF4)
            (1.0833 J6W[TCAF]-J4W[TCCF]
            -.0833 J10W[TCAF]) + (QDTCCF5)(J6W[TCAF]
            -J4W[TCCF]-.0833 J10W[TCAF]) + (QDTCCF6)
            (1.30 J6W[TCAF]-J4W[TCCF]) + (QDTCCF7)
            (1.25 J6W[TCAF]+J1L[TCCF]
            -.40 J10W[TCAF]) + (QDTCCF8)(1.25 J6W[TCAF]
            -J4W[TCCF]+J1L[TCCF]-.50 J10W[TCAF])]
     + .96237 (Q3)[(QDTCCF1)(1.1667 J7W[TCAF]-J4W[TCCF]
       (34.77)
            -.1667 J11W[TCAF]) + (.2727 QDTCCF2
            +.25(QDTCCF3+QDTCCF4+QDTCCF7+QDTCCF8)
            +.40 QDTCCF5+.30 QDTCCF6)(J7W[TCAF])]
```

```
+ .90992 (Q4)[(.25(QDTCCF1+QDTCCF3+QDTCCF4+QDTCCF7
  (31.32)

      +QDTCCF8)+.2727 QDTCCF2+.20 QDTCCF5

      +.30 QDTCCF6)(J8W[TCAF])]

- 105.25 QDTCCF9
  (4.10)
```

t	J3W	J4W	J5W	J6W	J7W	J8W	J9W	J10W	J11W
-1	1.0	1.0	1.0						
-2	1.0	1.0	1.0	1.0					
-3		1.0	1.0	1.0	1.0				
-4			1.0	1.0	1.0	1.0			
-5				1.0	1.0	1.0	1.0		
-6					1.0	1.0	1.0	1.0	
-7						1.0	1.0	1.0	1.0
-8							1.0	1.0	1.0
-9								1.0	1.0
-10									1.0

see = 48.87 RB2 = .909 cov = 10.98% dw = 2.35

14.2 PLGF1C (X=142) — Ratio of market value to book value of Government of Canada direct market issues, maturity class 1

1Q58-4Q72 OLS

```
PLGF1C = 1.0006[(1+.01 RS/2)**(-2 EATM1C)
         (1773.2)

         + (EACR1C/RS)(1-[1+.01 RS/2]

         **[-2 EATM1C])]
```

see = .004 RB2 = .899 cov = .44% dw = 1.30

14.3 PLGF2C (X=143) Ratio of market value to book value of Government of Canada direct market issues, maturity class 2

1Q58-4Q72 OLS

PLGF2C = .99809 [(1+.01 RMS/2)**(-2 EATM2C)
(795.6)

+ (EACR2C/RMS)(1-[1+.01 RMS/2]

**[-2 EATM2C])]

see = .009 RB2 = .897 cov = .97% dw = 1.47

14.4 PLGF3C (X=144) Ratio of market value to book value of Government of Canada direct market issues, maturity class 3

1Q58-4Q72 OLS

PLGF3C = .99646 [(1+.01 RML/2)**(-2 EATM3C)
(556.1)

+ (EACR3C/RML)(1-[1+.01 RML/2]

**[-2 EATM3C])]

see = .013 RB2 = .885 cov = 1.39% dw = 1.42

14.5 PLGF4C (X=145) Ratio of market value to book value of Government of Canada direct market issues, maturity class 4

1Q58-4Q72 OLS

PLGF4C = .99848 [(1+.01 RL/2)**(-2 EATM4C)
(432.5)

+ (EACR4C/RL)(1-[1+.01 RL/2]

**[-2 EATM4C])]

see = .015 RB2 = .950 cov = 1.80% dw = 1.22

14.6 GBALF (X=46) Federal national accounts balance (+ if surplus)

```
GBALF = TPYF + TOPF + TUIRF + TCAF + TWF + TISF
        + TIEXF + TICUSF + TIOF + TRFPR + YGIF + CCAGF$
        - (NGPAF)(WQGPAF) - GWIF - GWSF - GCNWF - GMPF
        - GTPUIBF - GTPOF - GTPINTF - GTNRF - GSUBSF
        - GASSTF - GTGPMF - (INRCGF)(PINRCG) - (IMEGF)(PIMEG)
        - IIG$
```

14.7 GBALPM (X=47) Provincial-municipal national accounts balance (+ if surplus)

```
GBALPM = YTOTPM - (NGPAPM)(WQGPAPM) - GWIPM - GWPASPM
         - (NIS)(WQISM) - GWSSM - GCNWPM - GTPPM - GSUBSPM
         - GASSTPM - GTGHPM - GTPINTPM - (INRCGPM)(PINRCG)
         - (INRCSM)(PINRCG) - (IMEGPM)(PIMEG)
```

14.8 GBALH (X=259) Hospital national accounts balance (+ if surplus)

```
GBALH = TRHPR + YGIH + GTGHPM + CCAGH$ - GCGSH
        - (IH)(PIH) - GTPINTH
```

14.9 GBALCPP (X=276) Canada Pension Plan national accounts balance (+ if surplus)

```
GBALCPP = TCPPF + YGICPP - GCGSCPP - GTPCPP
```

14.10 GBALQPP (X=277) Quebec Pension Plan national accounts balance (+ if surplus)

```
GBALQPP = TQPPPM + YGIQPP - GCGSQPP - GTPQPP
```

14.11 LGFTB (X=26) End-of-quarter stock of Government of Canada treasury bills (excluding Bank of Canada holdings)

```
LGFTB = J1D(DDGFB) - GBALF - J1D(ANFCUR) - J1D(ABBCD)
        - J1D(ABBCN) + (FXO)(PFX) - J1D(LGBF) - TCCF + TCAF
        + GAMIS - J1D(LGFCSB) + J1L(LGFTB)
```

14.12 PLGI (X=146) Market valuation ratio for Government of Canada, provincial and municipal bonds held by Canadian residents

```
PLGI = (EWLF)([(PLGF1C)(LGBFR1C)+(PLGF2C)(LGBFR2C)
             +(PLGF3C)(LGBFR3C)+(PLGF4C)(LGBFR4C)]/
             [LGBFR1C+LGBFR2C+LGBFR3C+LGBFR4C])
      + (1-EWLF)(.20 PLGF1C+.14 PLGF2C+.33 PLGF3C
             +.33 PLGF4C)
```

14.13 GBRPM (X=48) Gross new issues of provincial and municipal bonds (excluding provincial issues to Canada Pension Plan Investment Fund)

```
GBRPM = GALPM + GBRETSPM - GBCPPPM - GBALPM
```

14.14 LGBPM (X=78) End-of-quarter stock of provincial and municipal bonds, direct and guaranteed (excluding provincial issues to Canada Pension Plan Investment Fund)

```
LGBPM = J1L(LGBPM) + GBRPM - GBRETSPM
```

14.15 UGNWNH (X=98) Government nonwage expenditure (excluding current expenditure by hospitals and pension plans)

```
UGNWNH = IIG + INRCGPM + IMEGF + INRCSM + IMEGPM
         + INRCGF + IH + (GCNWF+GCNWPM)/(PGCNWG)
```

Sector 15

DEMAND FOR LIQUID ASSETS BY NONFINANCIAL SECTOR

See the table following for equations (15.1) to (15.7). These equations were estimated by generalized least squares in a Brainard-Tobin framework subject to the following constraints: The sum of the constant terms is 1. The coefficients on the lagged dependent variable over ANFLIQ are equal. The sum of the coefficients of J1L(ANFLIQ)/ANFLIQ is equal to the negative of the coefficient of the lagged dependent variable over ANFLIQ. The sum of the coefficients across equations for each of the other explanatory variables is zero.

15.1	ANFCUR (X=15)	Currency outside chartered banks held by nonfinancial public
15.2	DPB (X=28)	Personal savings and personal chequing accounts in chartered banks
15.3	DSTL (X=261)	Chequable and nonchequable demand and savings deposits in trust and mortgage loan companies
15.4	LGFCSB (X=263)	End-of-quarter stock of Canada Savings Bonds
15.5	DNPTB (X=27)	Nonpersonal term and notice deposits in chartered banks
15.6	DTTL (X=260)	Receipts and guaranteed investment certificates deposited in trust and mortgage loan companies

15.7 DDB (X=25) Demand deposits in chartered banks (excluding float, Government of Canada deposits, and personal chequing accounts)

DEMAND FOR LIQUID ASSETS BY NONFINANCIAL SECTOR 2Q56-4Q72
(Estimated as a proportion of ANFLIQ)

	ANFCUR	DPB	DSTL	LGFCSB	DNPTB	DTTL	DDB	ANFGN
CONSTANT	.01909	.04849	.00725	.06318	.12780	.06120	.16913	.50388
	(1.43)	(1.38)	(3.12)	(2.03)	(2.87)	(2.49)	(3.76)	(7.62)
QC1	-.00093	.00480	.00070	-.00292	.00356	.00222	-.00422	-.00320
	(3.31)	(6.92)	(2.79)	(4.62)	(4.11)	(4.44)	(4.65)	(2.30)
QC2	.00173	.00133	.00019	-.00495	.00074	.00022	.00186	-.00113
	(9.87)	(3.06)	(1.28)	(12.53)	(1.37)	(.73)	(3.15)	(1.37)
QC3	-.00120	.00051	-.00074	-.00440	-.00167	-.00116	-.00013	.00879
	(3.79)	(.64)	(2.52)	(6.16)	(1.68)	(2.00)	(.12)	(5.58)
1000*PGNE/ ANFLIQ	.13668	.12298	-.29442	-.32783	-.58493	-.67913	.14932	1.47732
	(3.33)	(.96)	(6.41)	(2.82)	(4.96)	(6.85)	(1.49)	(8.39)
YGNE/ANFLIQ	.02154	.06618	.02610	-.02250	.10486	.05099	.09352	-.34068
	(2.26)	(2.74)	(2.82)	(1.04)	(3.44)	(2.80)	(2.99)	(7.03)
QDBA	.00532	.02632	-.00697	-.00211	.01060	.00127		-.03443
	(2.41)	(3.16)	(3.39)	(.29)	(1.49)	(.33)		(3.40)
1000*QDBA* PGNE/ANFLIQ	-.26435	-.91857	.31188	-.07717	-.26250	-.12535		1.33605
	(2.31)	(2.23)	(2.95)	(.21)	(.72)	(.63)		(2.59)
J1L(ANFLIQ)/ ANFLIQ	-.01830	-.02297		-.02415	-.12677	-.05249	-.17506	-.38435
	(1.30)	(.62)		(.73)	(2.72)	(2.04)	(3.76)	(5.41)
RPD		.00409		-.00055				-.00354
		(4.26)		(.69)				(4.90)
RSTL		-.00110	.00110					
		(4.24)	(4.24)					
EACRCSB		-.00119		.00119				
		(1.90)		(1.90)				
RNPT	-.00004				.00231	-.00046		-.00181
	(.27)				(2.77)	(.94)		(1.84)
RTTL			-.00127		-.00149	.00276		
			(6.32)		(3.26)	(6.29)		
RS		-.00127		-.00099	-.00301	-.00127	-.00186	.00841
		(2.84)		(2.42)	(3.05)	(2.36)	(4.14)	(6.73)
Lag. Dep. Var. ANFLIQ	.80408	.80408	.80408	.80408	.80408	.80408	.80408	.80408
	(34.92)	(34.92)	(34.92)	(34.92)	(34.92)	(34.92)	(34.92)	(34.92)
R2	.978	.980	.989	.975	.987	.997	.960	.991
dw	2.87	1.88	2.09	2.53	2.06	1.51	1.87	1.62

15.8 ANFGN (X=11) Government of Canada, provincial and municipal debt less chartered bank day, call, and short loans held by nonfinancial public

ANFGN = LGBPM + LGBF + LGFTB + LGBFG - LGB12 - LGB13

- LGFTBNR - ABELCD - ABLGBPM

15.9 ANFLIQ (X=12) Liquid assets held by nonfinancial public

ANFLIQ = ANFCUR + DPB + DSTL + LGFCSB + DDB + DNPTB

+ DTTL + ANFGN

15.10 DCDPB (X=24) Canadian dollar deposits in chartered banks (excluding Government of Canada deposits)

DCDPB = DDB + DNPTB + DPB

Sector 16

CHARTERED BANK ASSETS

16.1 DSTATB (X=29) — Chartered bank statutory deposits at the Bank of Canada

1Q58-4Q72 OLS H-L

$$
\begin{aligned}
DSTATB = {} & 616.94 - .01298\ [QC1(DCDPB+DDGFB)] \\
& (6.31) \quad (7.16) \\
& + .00392\ [QC2(DCDPB+DDGFB)] \\
& \quad (2.40) \\
& + .00526\ [QC3(DCDPB+DDGFB)] + .44536\ (DCDPB+DDGFB) \\
& \quad (3.15) \qquad\qquad\qquad\qquad (6.63) \\
& + .55529\ J1L(DCDPB+DDGFB) \\
& \quad (7.92)
\end{aligned}
$$

see = 173.65 RB2 = .999 cov = 1.41% dw = 1.98 rho = .39

16.2 ABBCN (X=14) — Bank of Canada notes held by chartered banks

1Q58-4Q72 OLS H-L

$$
\begin{aligned}
ABBCN = {} & -34.081 - .02657\ [QC1(ANFCUR)] \\
& \quad (1.04) \quad (8.46) \\
& + .00134\ [QC2(ANFCUR)] - .00082\ [QC3(ANFCUR)] \\
& \quad (.44) \qquad\qquad\qquad (.26) \\
& - .61343\ ANFCUR + .37069\ J1L(ANFCUR) \\
& \quad (7.27) \qquad\qquad (5.90) \\
& + .42740\ J2L(ANFCUR) \\
& \quad (4.79)
\end{aligned}
$$

see = 26.91 RB2 = .866 cov = 18.00% dw = 2.18 rho = .63

16.3 ABSTATN (X=16) Bank of Canada notes held by chartered banks as required by statute

1Q58-4Q72 OLS

```
ABSTATN = 81.363 - .07599 [QC1(ABBCN)]
          (4.78)   (2.71)

          + .05644 [QC2(ABBCN)] + .08048 [QC3(ABBCN)]
            (2.70)                (3.91)

          + .55189 ABBCN + .45707 J1L(ABBCN)
            (5.60)         (4.41)
```

see = 33.72 RB2 = .904 cov = 7.28% dw = .59

16.4 ABLP (X=9) Chartered bank personal loans

1Q58-4Q72 OLS

```
J1D(ABLP) = 6.6721 + 71.991 QC1 + 29.301 QC2
            (.57)    (3.21)       (1.24)

   - 15.954 QC3 + .39632 J1D(C$)
     (.78)        (5.59)

   + .03913 J1D(ABT-.01(ZRBSR+RBCR)(DSTATB)-.01(RABELCDD)(ABT))
     (1.67)

   + .72784 J1L(J1D(ABLP))
     (8.27)

   + .00081 J1D(J1L(RABELCD-RABELCDD)(ABT))
     (2.44)
```

see = 59.81 RB2 = .806 cov = 48.90% dw = 1.98

where

C$ = (PCMV)(CMV) + (PCDO)(CDO)

16.5 ABLB (X=6) Chartered bank business and miscellaneous general loans

1Q58-4Q72 OLS

$$
\begin{aligned}
ABLB = &- 169.76 \underset{(2.40)}{} - 36.675 \underset{(1.02)}{} QC1 + 96.636 \underset{(2.82)}{} QC2 + 43.501 \underset{(1.24)}{} QC3 \\
&+ .14961 \underset{(1.78)}{} I\$ + .14028 \underset{(5.38)}{} (ABT-.01(ZRBSR+RBCR)(DSTATB) \\
&\quad - .01(RABELCDD)(ABT)) \\
&- .01049 \underset{(2.22)}{} (RPRIME-RS)(J1L(J4A(ABLB))) + .71010 \underset{(10.86)}{} J1L(ABLB)
\end{aligned}
$$

see = 152.26 RB2 = .998 cov = 2.13% dw = 1.25

where

I$ = (PIME)(IME) + (PINRC)(INRC) + J1D((PKIB)(KIB)) + YIVA

16.6 ABLM (X=283) Chartered bank mortgage loans

1Q58-4Q72 OLS

$$
J1D(ABLM) = - .01265 \underset{(3.06)}{} J1L(ABLM) + JW(HAPB)
$$

t	JW(HAPB)	
0	.43334	(7.30)
1	.23484	(18.24)
2	.09645	(2.55)
3	.01817	(.52)
Sum W	.78280	Z1Z2

see = 21.17 RB2 = .939 dw = 1.20

16.7 ABELNF (X=5) Chartered bank net foreign assets

1Q58-4Q72 OLS

100.0(ABELNF/ABT) = - 1.1682
(1.47)

+ .38759 J1L[100.0(ABELNF/ABT)]
(4.37)

+ .18345 RABEL - .14079 RABELCDD
(6.26) (3.71)

+ .28871 RTB2 - .23762 RPRIME
(2.97) (1.82)

see = .403 RB2 = .663 dw = 2.01

Technical Relationships

16.8 ABBCD (X=13) Bank of Canada deposits held by chartered banks

ABBCD = (.01 RBCR)(DSTATB) + ABEC - ABSTATN

16.9 ABEL (X=3) Chartered bank earning liquid assets

ABEL = ABT - ABBCD - ABBCN - ABLB - ABLP - ABLM - ABLGBPM
- ABLO - ABSC

16.10 ABELCD (X=4) Chartered bank Canadian dollar earning liquid assets

ABELCD = ABEL - ABELNF

16.11 ABT (X=10) Chartered bank total assets

```
ABT = DCDPB + DDGFB + LONB
```

16.12 RABEL (X=152) Chartered bank ratio of 'free' earning liquid assets to total assets

```
RABEL = 100[ABEL-(.01 ZRBSR)(DSTATB)]/ABT
```

16.13 RBCR (X=17) Chartered bank minimum average required cash reserve ratio

```
RBCR = [(ERBCRDD)(J2A[DDB+DDGFB])+(16-ERBCRDD)(J2A[DPB+DNPTB])
       + (2 ERBCRDD-16)(.01 ERBPCA)(J2A(DPB)]/
       [J2A(DCDPB+DDGFB)]
```

16.14 RABELCD (X=287) Chartered bank ratio of 'free' Canadian dollar earning liquid assets to total assets

```
RABELCD = 100[ABELCD - (.01 ZRBSR)(DSTATB)]/ABT
```

16.15 RABELCDD (X=288) Chartered bank desired ratio of 'free' Canadian dollar earning liquid assets to total assets

```
RABELCDD = J1L[J12A(RABELCD)] - 6.0
```

Sector 17

INTEREST RATES AND MORTGAGE APPROVALS

17.1 RS (X=159) — Average yield on Government of Canada bonds, 1-3 years

1Q58-4Q72 OLS

```
RS = .52152 + .32752 J1L(RS) + .58698 RTB2
     (2.29)   (3.89)           (6.59)

   - .19682 (QFLEX1D)(RTB2) - .12466 (QFIX)(RTB2)
     (2.65)                   (3.22)

   - .18571 (QFLEX2)(RTB2) + .05384 J1P(LGBF+LGFTB)
     (4.32)                  (2.58)

   + .93264 QCRISIS1 - 1.1059 QDOWN
     (2.98)            (3.67)

   + JW[J1P(ABLP+ABLB)] + JW[J1P(PCPI)]
```

t	JW[J1P(ABLP+ABLB)]		JW[J1P(PCPI)]	
0	.06038	(6.10)	.17187	(3.79)
-1	.04193	(6.10)	.15039	(3.79)
-2	.02684	(6.10)	.12890	(3.79)
-3	.01509	(6.10)	.10742	(3.79)
-4	.00671	(6.10)	.08594	(3.79)
-5	.00168	(6.10)	.06445	(3.79)
-6			.04297	(3.79)
-7			.02148	(3.79)
Sum W =	.15263	Z2	.77342	Z1

see = .284 RB2 = .945 cov = 5.69% dw = 1.52

17.2 RL (X=156) Average yield on Government of Canada bonds, 10 years and over

1Q58-4Q72 OLS

RL = - .30117 + .30102 RS + JW(RS) + .49598 RCB2
(.90) (10.72) (5.36)

+ 5.1890 LGBFR4C/(ANFLIQ+LGB12+LGB13+LGFTBNR)
(3.56)

+ .52415 VKB/KB$ + .02727 J4P(PCPI)
(2.27) (1.16)

+ JW(J4P(PCPI))

t	JW(RS)		JW(J4P(PCPI)	
-1	.04771	(4.65)	-.00308	(.26)
-2	.03370	(3.71)	-.00771	(.93)
-3	.02272	(2.37)	-.01059	(1.74)
-4	.01445	(1.37)	-.01195	(2.30)
-5	.00859	(.76)	-.01200	(2.31)
-6	.00483	(.42)	-.01094	(2.01)
-7	.00286	(.25)	-.00900	(1.61)
-8	.00237	(.22)	-.00639	(1.15)
-9	.00306	(.31)	-.00331	(.61)
-10	.00461	(.51)	.00001	(.00)
-11	.00672	(.85)	.00337	(.70)
-12	.00909	(1.31)	.00655	(1.41)
-13	.01139	(1.83)	.00934	(2.04)
-14	.01333	(2.30)	.01152	(2.51)
-15	.01459	(2.62)	.01289	(2.81)
-16	.01487	(2.79)	.01322	(2.98)
-17	.01386	(2.85)	.01231	(3.06)
-18	.01125	(2.86)	.00995	(3.09)
-19	.00673	(2.85)	.00592	(3.08)
Sum W =	.24673	Z1Z2Z3	.01011	Z1Z2Z3

see = .096 RB2 = .993 cov = 1.63% dw = 1.92

17.3 RML (X=246) Average yield on Government of Canada bonds, 5-10 years

1Q58-4Q72 OLS

RML = - .26078 + .57344 RS + JW(RS)
(.77) (14.95)

+ .40532 RCB2 + 1.0932 VKB/KB$
(3.25) (3.58)

+ .04482 J4P(PCPI) + JW(J4P(PCPI))
(1.49)

t	JW(RS)		JW(J4P(PCPI)	
-1	.04286	(3.19)	-.02589	(1.68)
-2	.01730	(1.55)	-.01813	(1.65)
-3	-.00242	(.21)	-.01109	(1.34)
-4	-.01685	(1.34)	-.00478	(.68)
-5	-.02659	(1.97)	.00080	(.12)
-6	-.03219	(2.32)	.00567	(.82)
-7	-.03425	(2.51)	.00983	(1.44)
-8	-.03333	(2.58)	.01327	(2.02)
-9	-.03002	(2.54)	.01600	(2.61)
-10	-.02488	(2.37)	.01802	(3.20)
-11	-.01849	(2.02)	.01934	(3.70)
-12	-.01144	(1.41)	.01996	(3.93)
-13	-.00429	(.58)	.01988	(3.83)
-14	.00238	(.33)	.01910	(3.49)
-15	.00798	(1.11)	.01763	(3.09)
-16	.01196	(1.70)	.01547	(2.71)
-17	.01372	(2.10)	.01263	(2.39)
-18	.01270	(2.38)	.00910	(2.12)
-19	.00832	(2.58)	.00489	(1.89)
Sum W =	-.11752	Z1Z2Z3	.14169	Z1Z2Z3

see = .131 RB2 = .988 cov = 2.33% dw = 1.73

17.4 RMS (X=247) Average yield on Government of Canada bonds, 3-5 years

1Q58-4Q72 OLS

RMS = - .36122 + .82550 RS + JW(RS)
(1.01) (26.91)

+ .85935 VKB/KB$ + .04015 J4P(PCPI) + JW(J4P(PCPI))
(2.83) (1.30)

t	JW(RS)		JW(J4P(PCPI))	
-1	.02557	(1.90)	.00798	(.57)
-2	.02107	(2.21)	-.00116	(.12)
-3	.01693	(2.07)	-.00700	(.93)
-4	.01313	(1.56)	-.00994	(1.47)
-5	.00967	(1.08)	-.01039	(1.50)
-6	.00656	(.72)	-.00877	(1.23)
-7	.00381	(.43)	-.00549	(.77)
-8	.00140	(.17)	-.00097	(.14)
-9	-.00066	(.09)	.00438	(.68)
-10	-.00237	(.40)	.01015	(1.71)
-11	-.00373	(.74)	.01593	(2.90)
-12	-.00473	(.98)	.02129	(4.00)
-13	-.00539	(1.01)	.02584	(4.76)
-14	-.00568	(.93)	.02916	(5.12)
-15	-.00563	(.82)	.03083	(5.21)
-16	-.00522	(.73)	.03043	(5.15)
-17	-.00445	(.66)	.02757	(5.04)
-18	-.00332	(.59)	.02181	(4.92)
-19	-.00184	(.54)	.01276	(4.80)
Sum W =	.05510	Z1Z2Z3	.19441	Z1Z2Z3

see = .138 RB2 = .986 cov = 2.58% dw = 1.91

17.5 RNPT (X=158) Rate on nonpersonal term and notice deposits in chartered banks

3Q61-2Q69, 3Q70-4Q72 OLS

$$RNPT = -\underset{(1.94)}{.76767} + \underset{(19.74)}{.62064}\left([(1+\frac{RCD2}{405.5})\frac{PFXF}{PFX}-1]405.5\right) + \underset{(5.34)}{.41197}\ RPRIME + \underset{(2.76)}{.02500}(QDBA)(RMC) - \underset{(4.20)}{12578}(QDBA)(RABELCD-J1L(J4A(RABELCD)))$$

see = .168 RB2 = .976 cov = 3.45% dw = 1.82

17.6 RPRIME (X=160) Chartered bank prime lending rate

1Q58-4Q72 OLS

$$RPRIME = \underset{(5.78)}{1.3326} + \underset{(18.78)}{.67505}\ J1L(RPRIME) + \underset{(3.78)}{.12082}\ RS - \underset{(6.43)}{1.5712}\ QDBA + \underset{(6.20)}{.28960}\ (QDBA)(RS)$$

see = .141 RB2 = .973 cov = 2.27% dw = 2.11

17.7 RTTL (X=264) Rate on one-year deposits in trust companies

1Q58-4Q72 OLS

$$RTTL = \underset{(2.21)}{-\ 1.8297} + \underset{(2.49)}{.18577}\ RS + \underset{(5.11)}{.31806}\ RNPT + \underset{(5.26)}{.65658}\ (1-QDBA)(RMC) + \underset{(2.92)}{2.6042}\ QDBA + \underset{(9.26)}{.76256}\ (QDBA)(RPD)$$

see = .204 RB2 = .971 cov = 3.65% dw = 1.45

17.8 RPD (X=80) Average rate on personal deposits in chartered banks

1Q58-4Q72 OLS

$$RPD = \underset{(2.13)}{.95573} + \underset{(4.17)}{.32875}\ J2A(RPRIME) - \underset{(3.71)}{1.7700}\ QDBA + \underset{(4.16)}{.34111}\ (QDBA)(J2A(RPRIME))$$

see = .096 RB2 = .977 cov = 2.99% dw = .67

17.9 RSTL (X=30) Rate on non-chequable savings deposits in trust and mortgage loan companies

1Q67-4Q72 OLS

$$RSTL = \underset{(1.35)}{-\ .97113} + \underset{(2.40)}{.24195}\ RTTL + \underset{(2.60)}{.54254}\ RPD + \underset{(2.47)}{.27786}\ RMC$$

see = .180 RB2 = .947 cov = 3.39% dw = 1.13

17.10 RMC Conventional mortgage rate
(X=153)

1Q58-4Q72 OLS

RMC = 7.8406
(6.01)

- 2.3945 [(HAPTL+HAPLI+HAPB+HAPCMHCS+HAPCMHCM+HAPNROT)/
(4.70)

([PIRC][NHH])]

- 9.1979 [(J1L(SHM+SHS))/NHH] + .36303 RL
(5.31) (8.25)

- .11556 QNHA + .59887 J1L(RMC) + 2.1705 YPERM
(1.37) (15.63) (5.60)

where

YPERM = JW[YDW/([NHH][PGNE])] + YPDNWP/([NHH][PGNE])

t	JW[YDW/([NHH][PGNE])]
0	.22153
1	.18615
2	.15385
3	.12462
4	.09846
5	.07538
6	.05539
7	.03845
8	.02461
9	.01384
10	.00616
11	.00156
Sum W =	1.00000

see = .102 RB2 = .993 cov = 1.29% dw = 1.86

17.11 R90 Ninety-day paper rate
(X=289)

1Q59-4Q72 OLS-HL

$$R90 = \underset{(4.14)}{1.6323} + \underset{(2.76)}{.20990}\left[\left[\left(1+\frac{RTB2}{405.5}\right)\frac{PFXF}{PFX}-1\right]405.5\right]$$

$$+ \underset{(6.01)}{.52358}\ RNPT - \underset{(6.26)}{3.6216}\ (RABELCD-RABELCDD)/RABELCD$$

$$+ \underset{(4.26)}{.28399}\ RTB2$$

see = .199 RB2 = .906 cov = 22.67% dw = 2.05 rho = .842

17.12 HAPTL Trust and mortgage loan company mortgage approvals
(X=265)

1Q58-4Q72 OLS

$$HAPTL = \underset{(.02)}{.50274} - \underset{(2.51)}{.00590}\ [QC1(ATL)] + \underset{(5.67)}{.01333}\ [QC2(ATL)]$$

$$- \underset{(.89)}{.00199}\ [QC3(ATL)] + [JW(ATL) - .09628\ J1L(ATLM)]$$

$$+ JW[(J1L[INT-RMS])ATL] - \underset{(1.10)}{.00310}\ (INT-PCPICE)ATL$$

t	[JW(ATL)...]		JW[J1L[INT...]]	
0	.05135	(1.89)	-.00026	(.11)
-1	.02888	(1.89)	.00393	(6.64)
-2	.01284	(1.89)	.00537	(4.41)
-3	.00321	(1.89)	.00406	(3.51)
Sum W =	.09628	Z2	.01310	Z1Z2

where

INT = .5RMC+.5RNHA

see = 67.39 RB2 = .893 cov = 22.94% dw = 1.05

17.13 HAPLI (X=266) Life insurance company mortgage approvals

1Q58-4Q72 OLS

$$\begin{aligned} HAPLI = &- \underset{(.20)}{8.4611} - \underset{(3.32)}{.00220}\,[QC1(ALI-APLLI)] + \underset{(6.77)}{.00442}\,[QC2(ALI-APLLI)] \\ &- \underset{(.05)}{.00003}\,[QC3(ALI-APLLI)] + JW(ALI-APLLI) \\ &- \underset{(7.25)}{1.7007}\,J4D(APLLI) - \underset{(1.04)}{.03698}\,J1L(ALIM) - \underset{(3.72)}{.27530}\,HAPB \end{aligned}$$

t	JW(ALI-APLLI)	
0	.02233	(2.25)
-1	.01256	(2.25)
-2	.00558	(2.25)
-3	.00140	(2.25)
Sum W =	.04187	Z2

see = 32.76 RB2 = .727 cov = 16.77% dw = 1.54

17.14 HAPB (X=278) Mortgage loans approved by chartered banks

1Q58-4Q72 OLS

$$HAPB = QHAPB[-\underset{(1.11)}{30.498} - \underset{(5.50)}{.11386}\,(A)(QC1) + \underset{(4.84)}{.11005}\,(A)(QC2) + \underset{(.26)}{.00590}\,(A)(QC3)$$

$$JW(HAPB) + JW[(RMB-RMS)(A)]$$

$$+ [JW(A) - J1L(ABLM/1000)]]$$

t	JW(HAPB)		JW[(RMB...)]	
0			-.02851	(1.15)
-1	.39806	(3.38)	.01578	(1.94)
-2	.33853	(5.89)	.03530	(2.95)
-3	.20584	(2.40)	.03004	(2.70)
Sum W	.94244	Z1Z2	.05261	Z1Z2

t	[JW(A)...]	
0	.41675	(2.49)
-1	.00590	(.18)
-2	-.20051	(2.55)
-3	-.20248	(2.61)
Sum W	.01967	Z1Z2

where

$$A = .001(ABT)(RABEL)$$

see = 26.02 RB2 = .955 cov = 31.73% dw = 2.00

17.15 ALI Assets of life insurance companies
(X=282)

1Q58-4Q72 OLS

$$\underline{J1D(ALI)} = \underset{(1.68)}{2.3391} + \underset{(2.61)}{.00269}\ QC1[J1L(J4A(ALI))/NPOP]$$

$$- \underset{(4.27)}{.00357}\ QC2[J1L(J4A(ALI))/NPOP]$$

$$- \underset{(1.12)}{.00088}\ QC3[J1L(J4A(ALI))/NPOP]$$

$$+ \underset{(1.77)}{.13809}\ J1D(YPERM) + \underset{(5.80)}{.75505}\ J1L\left(\frac{\underline{J1D(ALI)}}{NPOP}\right)$$

where

YPERM = [JW[YDW/(NPOP)] + YPDNWP/(NPOP)]

t	JW[YDW/...]
0	.22153
1	.18615
2	.15385
3	.12462
4	.09846
5	.07538
6	.05539
7	.03845
8	.02461
9	.01384
10	.00616
11	.00156
Sum W =	1.00000

see = 2.50 RB2 = .650 cov = 17.66% dw = 2.55

17.16 ATLM (X=281) Mortgage assets of trust and mortgage loan companies

1Q58-4Q72 OLS

$$ATLM - .968\ J1L(ATLM) = -3.3472 - 31.367\ QC1 + 7.0198\ QC2 + 22.246\ QC3 + JW(HAPTL)$$
$$(.33) \quad (3.06) \quad (.61) \quad (2.32)$$

t	JW(HAPTL)	
0	.17812	(2.79)
1	.27933	(28.70)
2	.28338	(7.69)
3	.19027	(5.40)
Sum W =	.93110	Z1Z2

17.17 ALIM (X=280) Mortgage assets of life insurance companies

1Q58-4Q72 OLS

$$ALIM - .982\ J1L(ALIM) = 40.673 - 33.617\ QC1 + 14.638\ QC2 + 12.839\ QC3 + JW(HAPLI)$$
$$(3.11) \quad (5.13) \quad (2.08) \quad (2.15)$$

t	JW(HAPLI)	
0	-.01413	(.19)
1	.19180	(9.70)
2	.26280	(6.71)
3	.19886	(5.40)
Sum W =	.63933	Z1Z2

see = 25.79 RB2 = .689 cov = 15.95% dw = .68

17.18 ATL (X=267) Assets of trust and mortgage loan companies

ATL = DSTL + DTTL + LONTL

17.19 RMB (X=279) Chartered bank mortgage rate

RMB = (QDBAD)(QHAPB)(RNHA) + (1-QHAPB)6.0

+ (1-QDBAD)(QHAPB)(.5RMC+.5RNHA)

17.20 RNHA (X=300) Interest rate on NHA mortgages

RNHA is exogenous up to 4Q70.

RNHA = RMC-.3 from 1Q71 onwards

where

.3 is the average difference (1Q71-4Q72) between RMC and RNHA.

Sector 18

WEALTH AND THE EXPECTED RATE OF INFLATION

18.1 VKB (X=191) Market value of the end-of-quarter stock of business fixed capital and inventories. (The difference between the long-term interest rate and the normalized yield on the market value of business capital stock is used to solve for VKB.)

1Q56-4Q72 Iterative OLS*

$$RL-100(x/v) = \underset{(2.38)}{1.2423} - \underset{(10.65)}{.82627}\,[(x+.01\ JW[J4P(PGPP)]v)/h] + JW[J4P(PGPP)]$$

where

x = J4S[YC-TCA+ECINT+ECINTGBE+YCGBE+YNFNC-(WQMMOB)(NEUPB)]

v = J2A[VKB]

h = J4S[GTPINTF+GTPINTPM-EIFDMIS-.0025(J2A[(EACR)

(.139 LGBPM)])-YGICPP-YGIQPP]

t	JW[J4P(PGPP)]	
0	.13388	(2.96)
-1	.06836	(3.04)
-2	.02885	(1.63)
-3	.01051	(.51)
-4	.00851	(.40)
-5	.01801	(.96)
-6	.03416	(2.23)
-7	.05214	(3.71)
-8	.06710	(4.16)
-9	.07420	(3.91)
-10	.06861	(3.67)
-11	.04549	(3.48)
Sum W =	.60982	Z1Z2Z3

see = .66 RB2 = .690 dw = .45

* Explained in The Structure of RDX2, Part 1 (1971), page 189.

18.2 VLGB11 (X=196) Market value of resident-held Government of Canada, provincial and municipal bonds

VLGB11 = (PLGI)(LGBF+LGBPM-LGB12-LGB13)

18.3 V (X=197) Market value of private sector wealth

V = (VKB)(1-.01 RVB12-.01 RVB13) + A12 + A13 + (KMV)(PCMV)
+ (KDO)(PCDO) + (KRESD)(PIRC) + VLGB11 + ABBCD
+ ABBCN + ANFCUR + LGFCSB + LGFTB - DDGFB
- (ULS)(PFX)

18.4 RHOR (X=155) Approximation to the real supply price of capital

RHOR = RHO - PCPICE

18.5 RHO (X=154) Approximation to the nominal supply price of capital

RHO = .5[(100x/v+JW[J4P(PGPP)])+RL-1.2423
+ .82627 (x+.01 JW[J4P(PGPP)]v)/h]

where

x, v, h and JW[J4P(PGPP)] are all defined as in

equation 18.1 above.

18.6 KB$ (X=73) Replacement value of business capital stock

KB$ = (PKIB)(KIB) + (PIME)(KME) + (PINRC)(KNRC)

Sector 19

LONG-TERM CAPITAL FLOWS

19.1 FIDI12 U.S. direct investment in Canada
(X=32)

1Q58-4Q72 OLS

$$\frac{FIDI12}{[J4A(FINREQ)][LDIRV12/KB\$]} = \underset{(3.08)}{.50639} + \underset{(.70)}{.03753}\ QC1 + \underset{(.33)}{.01724}\ QC2 - \underset{(2.43)}{.12780}\ QC3 - \underset{(3.54)}{.07466}\ EGUIDE - \underset{(2.95)}{.30295}\ ZDEPREC + JW(RHO-RHO2) - \underset{(2.77)}{.94908}\ [(EPS\$2+EPD\$2-YPCC\$2+YDV\$2)/(SA\$2-YCR\$2)]$$

t		JW(RHO-RHO2)	
-1		.00627	(.16)
-2		.03438	(2.32)
-3		.04698	(4.41)
-4		.04772	(3.14)
-5		.04020	(2.60)
-6		.02804	(2.33)
-7		.01488	(2.18)
-8		.00432	(2.07)
Sum W	=	.22278	Z2Z3

where

FINREQ = (IME-IMEAG)(PIME)+(INRC-INRCAG)(PINRC)
+ J1D[(PKIB)(KIB)] - YCR - CCAC$

see = .235 RB2 = .415 cov = 32.11% dw = 1.90

19.2 FIDI13 (X=33) Direct investment of other countries in Canada

2Q58-4Q72 OLS

$$\frac{\text{FIDI13}}{\text{[J12A(FINREQ)][LDIPRV13/KB\$]}} = .40352 + \underset{(.69)}{\text{JW[RHO]}} + \underset{(7.10)}{3.0899}\ \text{QOIL}$$

t	JW[RHO]	
0	-.30164	(5.32)
-1	-.14675	(5.09)
-2	-.02534	(2.36)
-3	.06259	(4.19)
-4	.11703	(5.01)
-5	.13800	(5.18)
-6	.12548	(5.25)
-7	.07948	(5.28)
Sum W =	.04885	Z1Z2

see = .420 RB2 = .550 cov = 48.72% dw = 1.98

19.3 FODI12 (X=41) Canadian direct investment in the United States

1Q58-4Q72 OLS

$$\frac{\text{FODI12}}{\text{J4A([PFX][EPD\$2+EPS\$2-YPCC\$2+YDV\$2])}} = \underset{(4.54)}{1.0330} + \underset{(1.73)}{.67752}\ \text{QC1} - \underset{(1.21)}{.47400}\ \text{QC2} - \underset{(1.75)}{.70144}\ \text{QC3} - \underset{(4.89)}{8.8325}\ \text{QSALE}$$

see = 1.75 RB2 = .354 dw = 2.23

19.4 FOL13 (X=42) Canadian long-term direct and portfolio investment in bonds and shares in other countries

1Q58-4Q72 OLS

FOL13 = 7.5027 + 37.857 EF68E + JW[J1D(V)]
(1.33) (2.19)

t		JW[J1D(V)]	
0		.00297	(4.30)
-1		.00206	(4.30)
-2		.00132	(4.30)
-3		.00074	(4.30)
-4		.00033	(4.30)
-5		.00008	(4.30)
Sum W	=	.00750	Z2

see = 24.22 RB2 = .247 cov = 87.24% dw = 2.01

19.5 FINIPM12 (X=36) Sales of gross new issues of provincial and municipal bonds, direct and guaranteed, in the United States

1Q58-4Q72 OLS

$$\frac{\text{FINIPM12}}{\text{GBRPM}} = \underset{(3.65)}{.34037} + \underset{(3.03)}{.04975}\,QC1 + \underset{(1.18)}{.01929}\,QC2 - \underset{(1.03)}{.01691}\,QC3 - \underset{(7.54)}{.20401}\,QLOBO + \underset{(3.27)}{.22360}\,EIETB - \underset{(2.92)}{.08201}(RCB2-RL) - \underset{(1.78)}{.08638}[J1L(LGB12/VCN\$2)]/1000$$

see = .073 RB2 = .582 cov = 37.43% dw = 2.22

19.6 FINIB12 (X=35) Sales of gross new issues of Canadian corporate bonds in the United States

1Q58-4Q72 OLS

$$\frac{\text{FINIB12}}{\text{J12A[(IME-IMEAG)(PIME)+(INRC-INRCAG)(PINRC)+J1D[(PKIB)(KIB)]]}} =$$

$$\begin{aligned}
&1.0451 - .00288\ QC1 + .09025\ QC2 - .04804\ QC3 \\
&(6.33)\quad (.08)\qquad (2.57)\qquad (5.12) \\
&- .33594\ QFLEX - .42639\ [J1L(LCB12/VCN\$2)]/1000 \\
&(5.12)\qquad (3.40) \\
&- .72356\ J2A[(RABELCD-RABELCDD)/RABELCD] + .50501\ EIETB \\
&(2.46)\qquad (3.45) \\
&- .33945\ QCRISIS1 \\
&(2.02)
\end{aligned}$$

see = .156 RB2 = .425 cov = 70.50% dw = 2.12

19.7 FITOGB12 (X=39) Trade in outstanding Government of Canada, provincial and municipal bonds between Canada and the United States (net sales to the United States)

1Q58-4Q72 OLS

$$\begin{aligned}
\text{FITOGB12} = {} & 50.770 + 13.296\ (RL-RCB2) \\
& (3.12)\quad (3.21) \\
& - .03213\ J1L(LGB12/VCN\$2) + 172.40\ (PFX-EPFXE) \\
& (3.81)\qquad (1.36)
\end{aligned}$$

see = 10.80 RB2 = .449 dw = 1.41

19.8 FITOBB12 (X=38) Trade in outstanding Canadian corporate bonds between Canada and the United States (net sales to the United States)

1Q58-4Q72 OLS

$$\begin{aligned} \text{FITOBB12} = {} & \underset{(2.17)}{7.4625} + \underset{(3.08)}{129.28}\,(\text{PFX}-\text{EPFXE}) \\ & - \underset{(2.54)}{6.4819}\,[\text{J1L}(\text{LCB12}/\text{VCN\$2})]/1000 - \underset{(1.84)}{4.9057}\,\text{EF68E} \end{aligned}$$

see = 3.76 RB2 = .148 dw = 1.59

19.9 FIPVB12 (X=37) Purchases of Canadian corporate shares on a portfolio basis by U.S. residents: gross new issues, less retirements, plus net trade in outstanding shares

1Q58-4Q72 OLS

FIPVB12 = 48.456 QMIDEAST - 36.767 QUSTAX - 56.101 QBROKE
(2.72) (4.06) (4.48)

+ 91.566 QFLOW + JW[J1D(RHOR-RHOR2)] + JW[J1D(VCN$2)]
(3.76)

+ JW[J1D(V)]

t	JW[J1D(RHOR-RHOR2)]		JW[J1D(VCN$2)]	
0	15.093	(1.54)	122.56	(1.83)
-1	8.490	(1.54)	85.11	(1.83)
-2	3.773	(1.54)	54.47	(1.83)
-3	.943	(1.54)	30.64	(1.83)
-4			13.62	(1.83)
-5			3.40	(1.83)
Sum W =	28.300	Z2	309.80	Z2

t	JW[J1D(V)]	
0	-.00306	(3.02)
-1	-.00212	(3.02)
-2	-.00136	(3.02)
-3	-.00076	(3.02)
-4	-.00034	(3.02)
-5	-.00008	(3.02)
Sum W =	-.00773	Z2

see = 23.90 RB2 = .519 dw = 1.42

19.10 FIGB13 (X=34) Sales of Government of Canada, provincial and municipal bonds in other countries: gross new issues, less retirements, plus net trade in outstanding bonds

1Q58-4Q72 OLS

$$\begin{aligned} FIGB13 = {} & \underset{(1.39)}{25.613}\,(1-QEUR) + \underset{(1.21)}{15.230}\,(1-QEUR)(RCB2-RLUK) \\ & + \underset{(4.86)}{1.0612}\,ZEUROF + \underset{(5.27)}{.02546}\,(QEUR)(GBRPM)(RL-RSWITZGB) \\ & + \underset{(7.92)}{200.47}\,QBORROW \end{aligned}$$

see = 37.39 RB2 = .744 dw = 1.81

19.11 FIBL13 (X=31) Sales of Canadian corporate bonds and shares in other countries: gross new issues, less retirements, plus net trade in outstanding bonds and shares

1Q58-4Q72 OLS

$$\begin{aligned} FIBL13 = {} & - \underset{(6.87)}{190.49} - \underset{(3.41)}{.00667}\,J1L(LDIPRV13) + \underset{(6.37)}{25.152}\,RHO \end{aligned}$$

see = 20.16 RB2 = .424 dw = 1.16

19.12 FOPL12 (X=43) Purchases of U.S. bonds and shares by Canadians: gross new issues, less retirements, plus net trade in outstanding bonds and shares

1Q58-4Q72 OLS

$$\underset{PFX}{FOPL12} = \underset{(2.86)}{299.64} - \underset{(5.33)}{18434.2}\ J1L(A12/V) - \underset{(1.25)}{12.582}(RHO-RHO2)$$

$$+ JW(ODG2) + \underset{(1.21)}{23.295}\ (RCB2-RL) + \underset{(1.53)}{4.8347}\ J1P(V)$$

t	JW(ODG2)	
0	2.3121	(7.01)
-1	1.0231	(7.01)
-2	1.7341	(7.01)
-3	1.4451	(7.01)
-4	1.1561	(7.01)
-5	.8671	(7.01)
-6	.5780	(7.01)
-7	.2890	(7.01)
Sum W =	10.4046	Z1

see = 40.04 RB2 = .494 dw = .92

19.13 FIYCRE12 (X=262) Canadian corporate retained earnings accruing to U.S. shareholders

1Q58-4Q72 OLS

$$FIYCRE12 = \underset{(5.39)}{-\ 87.970} + \underset{(.93)}{.02825}\ (QC1)(LDIRV12/KB\$)(YC-TCA)$$

$$- \underset{(2.88)}{.07186}\ (QC2)(LDIRV12/KB\$)(YC-TCA)$$

$$- \underset{(1.50)}{.03880}\ (QC3)(LDIRV12/KB\$)(YC-TCA)$$

$$+ \underset{(20.42)}{1.1044}\ (LDIRV12/KB\$)(YC-TCA)$$

$$- (MDIV\$12)(LDIRV12/[LDIRV12+LPCV12])$$

see = 35.01 RB2 = .892 cov = 14.88% dw = .69

Sector 20

INTERNATIONAL PORTFOLIO POSITIONS

Technical Relationships

20.1 LGB12 (X=76) — Government of Canada, provincial and municipal bonds, direct and guaranteed, held by U.S. residents

```
LGB12 = J1L(LGB12) + FINIPM12 + FINIGF12 + FITOGB12
      + FIRETG12
```

20.2 LCB12 (X=74) — Canadian corporate bonds and debentures held by U.S. residents

```
LCB12 = J1L(LCB12) + FINIB12 + FITOBB12 + FIRETB12
```

20.3 LPCV12 (X=72) — Market value of common and preferred Canadian corporate shares held by U.S. residents

```
LPCV12 = (PKB/J1L(PKB)+YCR/VKB)(J1L(LPCV12)) + FIPVB12
```

where

```
PKB = KB$/(KIB+KME+KNRC)
```

20.4 LDIRV12 (X=268) — Replacement value of the stock of U.S. direct investment in Canada, including Canadian corporate retained earnings accruing to U.S. direct investors

```
LDIRV12 = (PKB/J1L(PKB))(J1L(LDIRV12)) + FIDI12
        + FIYCRE12
```

where

```
PKB = KB$/(KIB+KME+KNRC)
```

20.5 LDIPRV13 (X=269) Replacement value of the stock of direct and portfolio investment in Canada by other countries, including Canadian corporate retained earnings accruing to shareholders in other countries

LDIPRV13 = (PKB/J1L(PKB))(J1L(LDIPRV13)) + FIDI13
+ FIBL13 + FIYCRE13

where

PKB = KB$/(KIB+KME+KNRC)

20.6 LGB13 (X=77) Government of Canada, provincial and municipal bonds, direct and guaranteed, held by residents of other countries

LGB13 = J1L(LGB13) + FIGB13

20.7 A12 (X=1) Book value of U.S. indebtedness to Canada, including retained earnings accruing to Canadian shareholders

A12 = J1L(A12) + FODI12 + FOPL12 + FOYCRE12

20.8 A13 (X=2) Book value of the indebtedness of other countries to Canada, including retained earnings accruing to Canadian shareholders

A13 = J1L(A13) + FOL13 + FOYCRE13

20.9 RVB12 (X=161) Return to U.S. residents from Canadian business assets (percentage of total return)

RVB12 = 100(LDIRV12+LPCV12+LCB12)/KB$

20.10 RVB13 (X=162) Return to residents of other countries from Canadian business assets (percentage of total return)

RVB13 = 100(LDIPRV13/KB$)

Sector 21

THE FOREIGN EXCHANGE MARKET AND SHORT-TERM CAPITAL FLOWS

A. Fixed Exchange Rate Model

21.1A FXO (X=44) Official excess demand for spot exchange

1Q63-1Q70 OLS

```
FXO = .88147 [ZRESD-J1L(URES)]
      (6.09)

      - .53978 [(PFX-1.081)/(.000081-[PFX-1.081]**2)]
        (5.66)

      + 39017.2 [(1.08-PFX)-([(1.08-PFX)**2]**.5)]
        (4.97)

      + 63.709 ZTR
        (1.80)
```

see = 89.80 RB2 = .817 dw = 1.69

21.2A FXP (X=45) Private excess demand for spot exchange

1Q63-1Q70 OLS

$$FXP = -107.01 - .25872\ J2A(UBAL/PFX) + .11581\ J2A[J1L(ULS)]$$
$$(2.23)\quad (2.25)\qquad\qquad (3.76)$$

$$- 246.09\ [RS-(\frac{LEURO}{MTM\$2+LEURO})REUR$$
$$(3.53)$$

$$- (\frac{MTM\$2}{MTM\$2+LEURO})RTB2-(\frac{REUR}{RCD2}-1)(REUR-RTB2)$$

$$- 405.5\ (PFXF-PFX)/PFX]$$

$$+ 64.383\ J1D[RS-(\frac{LEURO}{MTM\$2+LEURO})REUR$$
$$(1.12)$$

$$- (\frac{MTM\$2}{MTM\$2+LEURO})RTB2-(\frac{REUR}{RCD2}-1)(REUR-RTB2)$$

$$- 405.5\ (PFXF-PFX)/PFX]$$

$$+ 173.56\ EIET + 640.92\ EF68E + 216.25\ EREGQ69$$
$$(1.91)\qquad (10.52)\qquad (4.24)$$

see = 83.46 RB2 = .842 dw = 1.73

21.3A PFXF (X=135) Ninety-day forward exchange rate (Canadian dollars per U.S. dollar)

1Q63-1Q70 OLS

$$PFXF = 1.0784 - .0000105\ J4A(UBAL/PFX)$$
$$(1607.2)\quad (4.02)$$

$$+ .00110\ [RS-(\frac{LEURO}{MTM\$2+LEURO})REUR$$
$$(1.25)$$

$$- (\frac{MTM\$2}{MTM\$2+LEURO})RTB2-(\frac{REUR}{RCD2}-1)(REUR-RTB2)]$$

$$+ .00001669\ ZFXOF + .01955\ EP68E + .00226\ EP69E$$
$$(3.26)\qquad (5.50)\qquad (1.10)$$

see = .002 RB2 = .715 cov = .16% dw = 1.51

Technical Relationships

21.4 PFX (X=134) Spot exchange rate (Canadian dollars per U.S. dollar) (Equilibrium condition in the foreign exchange market used to determine PFX when the exchange rate is fixed)

FXO + FXP = 0

21.5 FIS (X=40) Short-term capital flows (determined by balance of payments identity)

FIS = (FXO+ERES2ADJ)(PFX) - UBAL

21.6 UBAL12 (X=183) Net balance of payments with the United States on current and long-term capital account (millions of Canadian dollars)

UBAL12 = X$12 - M$12 + FIDI12 + FINIPM12 + FINIB12
+ FINIGF12 + FIRETG12 + FIRETB12 + FILO12 - FODI12
+ FITOGB12 - FOPL12 + FIPVB12 + FITOBB12

21.7 UBAL (X=184) Net balance of payments with all countries on current and long-term capital account (millions of Canadian dollars)

UBAL = UBAL12 + X$13 - M$13 + FIDI13 + FIGB13 + FIBL13
+ FILO13 - FOL13

21.8 URES (X=188) Canadian foreign exchange reserves, including gold, U.S. dollars, other convertible currencies, and reserve position in the IMF (millions of U.S. dollars)

URES = J1L(URES) + FXO + ERES1ADJ + ERES2ADJ

21.9 ULS (X=85) Net international short-term liabilities outstanding between Canada and the rest of the world (+ if net liability is of Canada to the rest of the world)(millions of U.S. dollars)

ULS = J1L(ULS) + FIS/PFX

21.10 PFX13 (X=273) Weighted index of exchange rates prevailing between Canada and nine other countries (Canadian dollars per unit of foreign currency: index equals 1.0 in 1961)

PFX13 = (PFX23)(PFX)

B. Floating Exchange Rate Model

When the exchange rate is floating the following two equations replace equations (21.1A) to (21.3A). FXO becomes an exogenous variable. Equation (21.4) then determines FXP.

21.2B PFX (X=134) Spot exchange rate (Canadian dollars per U.S. dollar)

3Q53-4Q61 and 1Q71-2Q75 OLS

$$
\begin{aligned}
PFX = {} & .21289 - .00473\ (RS-RTB2) \\
& (2.74) \quad (2.12) \\
& + .70327\ (PFXE)(QPFX) + .7644\ (PFXE)(1-QPFX) \\
& \quad (8.12) \qquad\qquad\qquad (9.67) \\
& - 1.087260\ (.00001)(UBAL/PFX-FXO) \\
& \quad (3.01) \\
& + 1.192430\ (.00001)(J1L(ULS)) \\
& \quad (3.70) \\
& + .00131\ J8A((1000)(XOBE\$2)/RCB2)/(J8A(YGNE/RL)/PFX) \\
& \quad (3.42)
\end{aligned}
$$

see = .0077 RB2 = .8511 dw = 2.10

21.3B PFXF (X=135) Ninety-day forward exchange rate (Canadian dollars per U.S. dollar)

3Q53-4Q61 and 1Q71-2Q75 OLS

$$PFXF = \underset{(1.61)}{.02393} + \underset{(36.73)}{.94086}\ PFXFP + \underset{(1.20)}{.03384}\ (QPFX)(PFXE) + \underset{(1.18)}{.03311}\ (1-QPFX)(PFXE)$$

where

the forward parity rate PFXFP is defined as:

$$PFXFP = \left(\frac{RS/400 - RTB2/394.52}{1 + RTB2/394.52}\right)PFX + PFX$$

see = .0017 RB2 = .992 dw = 1.49

For equations (21.2B) and (21.3B) the expected spot rate PFXE is defined as:

$$PFXE = PFX(t+1)$$

where

(PFX(t+1) is given by the following equation:

3Q53-4Q61 and 1Q71-2Q75 OLS

$$PFX(t+1) = \underset{(6.93)}{1.38557}\ J1L(PFX) - \underset{(1.91)}{.38218}\ J2L(PFX) + \underset{(5.14)}{.23869}(1-URES/J1L(URES))$$

see = .0155 RB2 = .550 dw = .89

THE TRACKING PROPERTIES AND STANDARD SHOCK RESPONSES OF RDX2

In this section we present a record of the tracking properties of the model both in an ex-post and an ex-ante context. We define an ex-post simulation to be intra-sample and a ex-ante simulation to be extra-sample. The model used in the following experiments differs slightly from the one presented earlier in this report. Equation 7.16 (PIMEG) was removed in error and equation 10.7 (TICUSF) was replaced by a stochastic equation specified as in the previous version of RDX2 [2]. These changes have had no significant effect on the results of our experiments.

Ex-Post Tracking Properties

Table 1 is a report of the intra-sample means, the root mean squared errors, and, where applicable, the root mean squared errors as a percentage of the mean for the major components of gross national expenditure in current and in constant dollars. For each variable we show three sets of statistics, taken from dynamic simulations beginning in the first quarter of 1963, 1966, and 1970 and running to the end of 1972. In Table 2, similar information is presented for other important variables of the model, grouped under several sector-related headings.

The difference between the root mean squared errors as a percentage of the mean obtained in the overall simulation period 1Q63-4Q72 and in the period 1Q66-4Q72 implies that the specification of the model explains economic activity during 1Q63-4Q65 less accurately than during 1Q66-4Q72. It may also

Table 1

INTRA-SAMPLE MEANS, ROOT MEAN SQUARED ERRORS, AND ROOT MEAN SQUARED ERRORS AS A PERCENTAGE OF THE MEAN FROM THREE EX-POST SIMULATIONS FOR G.N.E. AND ITS COMPONENTS

	Current Dollars			Constant (1961) Dollars		
	Mean	RMSE	RMSE%	Mean	RMSE	RMSE%
Consumption						
1Q63-4Q72	10689	188.2	1.76	9018	146.9	1.63
1Q66-4Q72	11892	100.0	.84	9652	90.9	.94
1Q70-4Q72	13744	97.3	.71	10481	86.7	.83
Government Current Expenditure						
1Q63-4Q72	3150	69.4	2.20	2208	51.3	2.32
1Q66-4Q72	3681	71.6	1.95	2416	55.0	2.27
1Q70-4Q72	4605	73.3	1.59	2722	50.5	1.86
Government Fixed Capital Formation						
1Q63-4Q72	729	40.5	5.55	574	25.4	4.42
1Q66-4Q72	812	26.7	3.28	613	12.9	2.11
1Q70-4Q72	908	40.9	4.50	635	24.2	3.82
Private Fixed Capital Formation						
1Q63-4Q72	3241	196.7	6.07	2588	158.5	6.12
1Q66-4Q72	3649	136.7	3.75	2794	105.4	3.77
1Q70-4Q72	4168	150.5	3.61	2979	96.9	3.25
Business Inventories						
1Q63-4Q72	-	154.7	-	-	135.4	-
1Q66-4Q72	-	155.4	-	-	136.3	-
1Q70-4Q72	-	165.5	-	-	138.8	-
Exports of Goods and Services						
1Q63-4Q72	4051	116.9	2.89	3455	76.1	2.20
1Q66-4Q72	4688	126.6	2.70	3911	85.3	2.18
1Q70-4Q72	5671	105.7	1.86	4565	64.1	1.40
Imports of Goods and Services						
1Q63-4Q72	4179	182.1	4.36	3561	153.6	4.31
1Q66-4Q72	4799	171.8	3.58	4001	132.5	3.31
1Q70-4Q72	5667	159.2	2.81	4531	131.8	2.91
Gross National Expenditure						
1Q63-4Q72	17869	323.7	1.81	14445	245.4	1.70
1Q66-4Q72	20112	201.3	1.00	15538	165.8	1.07
1Q70-4Q72	23540	231.3	.98	16926	181.1	1.07

Table 2

1NTRA-SAMPLE MEAN, ROOT MEAN SQUARED ERRORS, AND ROOT MEAN SQUARED ERRORS AS A PERCENTAGE OF THE MEAN FOR SELECTED VAR1A8LES DER1VED FROM THREE EX-POST S1MULAT1ONS

	1Q63-4Q72			1Q66-4Q72			1Q70-4Q72		
	Mean	RMSE	RMSE%	Mean	RMSE	RMSE%	Mean	RMSE	RMSE%
Gross National Product									
YP	13751	230.3	1.68	15602	100.8	.65	18559	120.9	.65
YW	9514	218.0	2.29	10847	85.0	.78	12919	120.6	.93
YC	1839	185.9	10.10	2017	176.4	8.75	2243	220.6	9.83
T1LGS	2353	51.1	2.17	2667	52.5	1.97	3117	75.2	2.41
Financial Sector									
A8T	24409	668.7	2.74	27870	636.3	2.28	33948	442.0	1.30
ANFL1Q	59309	857.5	1.45	66098	946.0	1.43	78206	735.4	.94
ANFCUR+DD8 (M1)	8217	390.0	4.75	8987	372.7	4.15	10137	497.9	4.91
RS	5.47	.37	6.77	5.94	.39	6.63	5.68	.41	7.15
RL	6.35	.18	2.87	6.86	.19	2.79	7.36	.18	2.40
RHOR	6.93	.39	5.56	6.87	.36	5.20	6.75	.38	5.59
V	166676	3721	2.23	185527	4072	2.20	215134	3398	1.58
Government Sector									
G8ALF	-	125.2	-	-	113.5	-	-	110.7	-
G8ALPM	-	74.8	-	-	70.5	-	-	80.8	-
LGFT8	2233	1108	49.64	2464	496.3	20.14	2945	469.9	15.96
LG8PM	21685	777.7	3.59	24631	255.6	1.04	29408	86.8	.30
External Sector									
X8AL$	-	171.5	-	-	171.8	-	-	178.2	-
X$12	2690	86.5	3.22	3185	94.4	2.96	3849	98.7	2.56
M$12	2954	156.0	5.28	3394	155.5	4.58	3922	148.3	3.78
U8AL	-	174.2	-	-	206.6	-	-	172.8	-
U8AL12	-	135.4	-	-	175.3	-	-	154.6	-
FXO	-	86.2	-	-	89.2	-	-	.000	-
PFX	1.06	.004	.34	1.05	.009	.84	1.01	.006	.59
Labour Sector									
NMMOB	4.31	.10	2.23	4.53	.07	1.56	4.77	.07	1.39
NE	7.40	.14	1.84	7.73	.08	1.00	8.10	.06	.77
NL	7.79	.11	1.37	8.16	.04	.47	8.63	.05	.58
NPOP	14.1	.11	.76	14.6	.01	.09	15.4	.03	.22
RNU	5.02	1.48	29.44	5.14	.92	17.85	6.23	1.13	18.22
Wages and Prices									
WQC	2014	61.0	3.03	2245	61.9	2.76	2618	63.0	2.41
WQMMO8	1424	13.5	.95	1536	9.30	.61	1721	15.2	.88
PGNE	1.22	.01	.84	1.28	.006	.47	1.39	.005	.33
PCP1	1.19	.01	.91	1.25	.007	.52	1.34	.005	.35
PCP1CE	2.92	.39	13.37	3.52	.19	5.52	3.85	.19	4.85
Output Measures									
UGPP	9530	201.7	2.12	10283	139.2	1.35	11234	155.2	1.38
UGPPA	9501	213.1	2.24	10277	160.7	1.56	11261	230.0	2.04
UGPPS	9550	193.6	2.03	10270	116.5	1.13	11177	104.6	.94
UGPPD	9450	160.7	1.70	10177	55.7	.55	11171	26.5	.24
Residential Construction									
HSTS	20.3	2.84	13.98	20.8	2.86	13.80	23.7	2.31	9.76
HSTM	26.2	3.84	14.65	28.5	4.13	14.46	32.5	3.42	10.53
KRESD	44142	508.2	1.15	46278	230.7	.50	49527	29.8	.06
1RC	632	64.8	10.26	670	62.2	9.29	746	26.5	3.56
8usiness 1nvestment									
1ME	1056	101.2	9.58	1167	91.9	7.88	1240	66.3	5.35
1NRC	900	73.7	8.19	957	39.4	4.11	993	44.1	4.44

mean that a structural shift between the period 1Q63-4Q65 and 1Q66-4Q72 is unexplained. In comparing these results with those of a previous version of RDX2 [2], it appears that one of the error sources may be attributable to the consumption equations.

The ex-post tracking ability of this version of RDX2 is poorer than that of the previous version [2] for the ten-year simulation period. However, we obtain far better results for the seven-year and three-year sample simulation periods. In these two cases there is a substantial improvement in the investment, consumption and price equations.

Ex-ante Tracking Properties

The most appropriate way of testing a model's performance is to run simulations beyond the sample period. Table 3 is a report of the extra-sample means, the root mean squared errors, and, where applicable, the root mean squared errors as a percentage of the mean for the major components of gross national expenditure in current and in constant dollars. For each variable we show four sets of statistics taken from simulations over the period 1Q73-4Q73 with and without certain single-equation errors suppressed. In Table 4, similar information is presented for other important variables of the model grouped under several sector-related headings.

Examination of the 1973 ex-ante forecasts, summarized in Tables 3 and 4, show that the tracking performance over 1973 is somewhat poorer than over the period 1970-1972 but it is about the same over 1962-1972 (see Tables 1 and 2). We know that forecasting 1973 is a severe test given the evolution of the different economic variables especially the rapid acceleration in

Table 3

EXTRA-SAMPLE MEANS, ROOT MEAN SQUARED ERRORS,
AND ROOT MEAN SQUARED ERRORS AS A PERCENTAGE
OF THE MEAN FROM TWO EX-ANTE SIMULATIONS
FOR G.N.E. AND ITS COMPONENTS

	Current Dollars			Constant (1961) Dollars		
	Mean	RMSE	RMSE%	Mean	RMSE	RMSE*
Consumption						
1Q73-4Q73	17273	200.0	1.16	12021	119.9	1.00
1Q73-4Q73*	17273	261.5	1.51	12021	149.8	1.25
Government Current Expenditure						
1Q73-4Q73	5660	188.4	3.33	2950	129.4	4.39
1Q73--Q73*	5660	185.3	3.27	2950	128.8	4.37
Government Fixed Capital Formation						
1Q73-4Q73	1099	39.2	3.57	694	25.1	3.61
1Q73-4Q73*	1099	44.7	4.07	694	28.4	4.10
Private Fixed Capital Formation						
1Q73-4Q73	5527	243.2	4.40	3538	105.8	2.99
1Q73-4Q73*	5527	361.5	6.54	3538	167.7	4.74
Business Inventories						
1Q73-4Q73	-	354.4	-	-	252.2	-
1Q73-4Q73*	-	521.8	-	-	-	-
Exports of Goods and Services						
1Q73-4Q73	7623	330.7	4.34	5254	180.7	3.44
1Q73-4Q73*	7623	339.2	4.45	5254	176.9	3.37
Imports of Goods and Services						
1Q73-4Q73	7819	276.0	3.53	5614	239.9	4.27
1Q73-4Q73*	7819	300.5	3.84	5614	198.9	3.54
Gross National Expenditure						
1Q73-4Q73	29726	568.9	1.91	19086	328.6	1.72
1Q73-4Q73*	29726	711.1	2.39	19086	297.2	1.56

* Indicates that IIB, IME, and INRC are exogenous throughout the period.

Table 4

EXTRA-SAMPLE MEANS, ROOT MEAN SQUARED ERRORS, AND ROOT MEAN SQUARED ERRORS AS A PERCENTAGE OF THE MEAN FOR SELECTED VARIABLES FROM TWO EX-ANTE SIMULATIONS

	1Q73-4Q73			1Q73-4Q73*		
	Mean	RMSE	RMSE%	Mean	RMSE	RMSE%
Gross National Product						
YP	23498	122.9	.52	23498	112.0	.48
YW	16027	121.5	.76	16027	147.1	.92
YC	3569	597.7	16.75	3569	759.0	21.27
TILGS	3839	104.0	2.71	3839	108.9	2.84
Financial Sector						
ABT	45758	2252	4.92	45758	2395	5.23
ANFLIQ	98114	910.2	.93	98114	1015	1.03
ANFCUR+DDB (M1)	12790	356.0	2.78	12790	435.2	3.40
RS	6.53	.97	14.88	6.53	.91	13.88
RL	7.56	.48	6.30	7.56	.44	5.88
RHOR	7.49	.28	3.80	7.49	.37	4.98
V	265007	4613	1.74	265007	3996	1.51
Government Sector						
GBALF	-	394.2	-	-	455.0	-
GBALPM	-	150.1	-	-	139.3	-
LGFTB	3356	971.7	28.96	3356	1036	30.88
LGBPM	35436	108.0	.31	35436	105.5	.30
External Sector						
XBAL$	-	408.0	-	-	302.3	-
X$12	5131	353.2	6.88	5131	358.5	6.99
M$12	5429	152.4	2.81	5429	122.2	2.25
UBAL	-	369.1	-	-	481.4	-
UBAL12	-	53.3	-	-	116.5	-
PFX	1.00	.019	1.88	1.00	.028	2.81
Labour Sector						
NMMOB	5.22	.13	2.53	5.22	.14	2.68
NE	8.76	.12	1.42	8.76	.13	1.49
NL	9.28	.10	1.10	9.28	.11	1.17
NPOP	16.1	.026	.16	16.1	.026	.16
RNU	5.63	.43	7.68	5.63	.44	7.78
Wages and Prices						
WQC	3002	110.8	3.69	3002	116.1	3.87
WQMMOB	1951	35.3	1.81	1951	29.8	1.53
PGNE	1.56	.022	1.39	1.56	.018	1.19
PCPI	1.50	.010	.66	1.50	.014	.90
PCPICE	4.56	.19	4.26	4.56	.270	5.92
Output Measures						
UGPP	12773	278.5	2.18	12773	267.6	2.10
UGPPA	12824	324.3	2.53	12824	318.1	2.48
UGPPS	12562	170.6	1.36	12562	216.0	1.72
UGPPD	12454	188.0	1.51	12454	210.5	1.69
Residential Construction						
HSTS	32.9	7.94	24.15	32.9	8.09	24.60
HSTM	34.2	8.13	23.75	34.2	8.29	24.20
KRESD	53840	289.5	.54	53840	293.9	.55
IRC	948	165.4	17.46	948	167.7	17.70
Business Investment						
IME	1518	196.4	12.94	-	-	-
INRC	1072	64.6	6.03	-	-	-

* Indicates that IIB, IME, and INRC are exogenous throughout the period.

the growth of foreign and domestic prices. At 4Q73 the current-dollar GNE is underestimated by 3.35 percent; this error is divided between a 1.97 percent underestimation of price and a 1.41 percent underestimation of real output. Single-equation errors in the consumption equations are mainly responsible for the underestimation of real GNE. This underestimation of demand is mainly responsible for the overestimation of the unemployment rate by thirty-three basis points. In the same four-quarter forecast the net balance of payments with all countries on current and on long-term capital account is overestimated by $409 million while the Canadian currency appreciation is 3.4 percent too high. Tables 3 and 4 give a very rough idea of the tracking ability of RDX2. We will publish a more detailed study of this aspect of RDX2 in which the main sources of forecasting errors will be identified.

Shocked Response

In this section as in a previous version of RDX2 [2], we examine the results of four representative shocks, using as reference a forty-quarter control simulation over the period 1Q62-4Q73. The equations that model the flexible exchange rate regime are used in these simulations and the single-equation errors are added so that the control solution is tuned to historical values. A set of discontinuities (the 1967 Bank Act revision, the Autopact, the absence of the chartered banks during 1951-1967 from the mortgage market) affects the shock response of the model. Therefore, in another technical report we shall present a more detailed analysis of the dynamics of RDX2 purged of some of these discontinuities. For selected variables, we

show in Tables 5A-5D the differences from control for shocks in successive fourth quarters. The percentage deviation (100* shock-control/control) is placed in parentheses beside each deviation listed. These four tables are preceded by Table 5. It is made up of a glossary of the variables tabulated in Tables 5A-5D, and, in order to give some appreciation of the relative scale of the differences from control presented in Tables 5A-5D, of the mean observed value for each variable calculated for the period 1Q62 to 4Q73 as well as the observed values for 4Q62 and 4Q73.

Shock (a) An increase in government expenditure (Table 5A) during a flexible exchange rate regime, with an accommodating monetary policy

Federal current nonwage expenditure (GCNWF) is assumed to increase in the first quarter of 1962 by $100 million (1961 dollars). The increase is maintained throughout the simulation period, and is modelled by adding 100 times the relevant deflator to the GCNWF equation. With no explicit financing assumption, the induced net use of funds is assumed to be financed by additional issues of treasury bills (LGFTB).

Shock (b) An increase in government expenditure during a flexible exchange rate regime with M1 constrained at its historical values (Table 5B)

Under the assumptions of the previous shock, the central bank is willing to provide the banking system with the reserves required to have the additional government debt absorbed in private or bank portfolios at short-term interest rates determined by the reaction function. For our second experiment we hypothesize an alternative monetary reaction. We assume that the monetary authority ensures that the injection of 100 million

Table 5

GLOSSARY AND OBSERVED VALUES OF VARIABLES IN TABLES 5A-5B

Mnemonic	Definition and Units	Observed Values 4Q62	4Q73	Mean
CON	Total consumption, millions of 1961 dollars	7361	13278	9081
GCUR	Government current expenditure on goods and services, millions of 1961 dollars	1633	3207	2221
GCAP	Government fixed capital expenditure, millions of 1961 dollars	488	740	575
IPRF	Private fixed investment, millions of 1961 dollars	1803	3810	2595
IIB	Change in business, non-farm inventories, millions of 1961 dollars	40	302	-
UGNE	Gross national expenditure, millions of 1961 dollars	10746	19963	14511
YGNE	Gross national expenditure, millions of dollars	10969	31836	18262
YP	Personal income, millions of dollars	8077	24348	14100
YC	Corporate profits, millions of dollars	1199	4165	1923
WQMMOB	Average quarterly wage in mining, manufacturing, and other business, dollars	1093	2001	1439
PCPI	Consumer price index (1961=1.00)	1.020	1.554	1.202
PGNE	Implicit GNE deflator (1961=1.00)	1.021	1.595	1.228
NE	Total employment, thousands	6261	8832	7414
NL	Labour force, thousands	6607	9302	7817

over

Table 5-Continued

Mnemonic	Definition and Units	Control Value 4Q62	Control Value 4Q73	Mean
RNU	Unemployment rate, per cent	5.237	5.049	5.146
ABT	Total bank assets, millions of dollars	14477	49040	25332
M1	Currency plus demand deposits, millions of dollars	6060	13328	8388
ANFLIQ	Liquid assets held by non-financial public, millions of dollars	38789	103115	60741
RS	Interest rate on Government of Canada securities (3-5 years), basis points	411	670	546
RL	Interest rate on Government of Canada securities (10 years and over) basis points	510	765	635
RHOR	Approximation to the real supply price of capital, basis points	690	756	697
V	Market value of private sector wealth, millions of dollars	105682	274042	169605
GBALF	Federal national accounts surplus, millions of dollars	38	453	-
GBALPM	Provincial-municipal national accounts surplus, millions of dollars	-134	-390	-
XBAL$	Current account balance (BOP basis), millions of dollars	-114	-70	-
CAPBAL	Balance on long-term capital account, millions of dollars	460	31	-
FXO	Official excess demand for spot exchange, millions of US dollars	443	48	-

over

Table 5-Continued

Mnemonic	Definition and Units	Control Value 4Q62	Control Value 4Q73	Control Value Mean
PFX	Spot exchange rate ($Can./$US)	1.076	1.000	1.055
UGPP	Gross private business product, millions of 1961 dollars	7174	13346	9582
UGPPS	Aggregate supply, millions of 1961 dollars	7090	12893	9593
UGPPA	Aggregate demand, millions of 1961 dollars	7242	13462	9556
UGPPD	Desired output, millions of 1961 dollars	7172	12777	9503
HSTS	Housing starts, single-detached (hundred units)	162	347	212
HSTM	Housing starts, multiples (hundred units)	177	371	259
IRC	Business investment in residential construction, millions of 1961 dollars	520	1096	644

Table 5A

EFFECTS ON AN INCREASE IN GOVERNMENT EXPENDITURE ON SELECTED VARIABLES DURING A FLEXIBLE EXCHANGE RATE REGIME, WITH AN ACCOMMODATING MONETARY POLICY

(Differences from control; percentages in parentheses)

Variable	4Q62	4Q63	4Q64	4Q65	4Q66	4Q67	4Q68	4Q69	4Q70	4Q71	4Q72	4Q73
CON	29(.4)	32(.4)	22(.3)	16(.2)	20(.2)	25(.3)	28(.3)	26(.3)	23(.2)	12(.1)	-5(-.0)	-20(-.2)
GCUR	102(6.2)	100(6.0)	98(5.5)	97(5.2)	95(4.5)	94(4.3)	91(3.8)	90(3.6)	84(3.0)	76(2.6)	71(2.3)	68(2.1)
GCAP	4(.9)	9(1.9)	7(1.5)	2(.4)	-3(-.5)	-4(-.6)	-1(-.2)	3(.5)	6(1.1)	8(1.1)	6(.9)	1(.2)
IPRF	20(1.1)	42(2.1)	33(1.4)	16(.6)	6(.2)	4(.1)	7(.3)	19(.6)	35(1.2)	50(1.6)	49(1.5)	31(.8)
IIB	7(n.a.)	23(n.a.)	11(n.a.)	5(n.a.)	3(n.a.)	-3(n.a.)	-10(n.a.)	-8(n.a.)	-.69(n.a.)	10(n.a.)	11(n.a.)	16(n.a.)
UGNE	130(1.2)	163(1.4)	138(1.1)	106(.8)	89(.7)	88(.6)	102(.7)	135(.9)	174(1.1)	207(1.2)	199(1.1)	164(.8)
YGNE	159(1.5)	254(2.1)	285(2.2)	305(2.1)	298(1.9)	294(1.7)	315(1.7)	368(1.8)	494(2.2)	633(2.6)	736(2.7)	802(2.5)
YP	57(.7)	117(1.4)	157(1.7)	184(1.8)	192(1.7)	193(1.5)	206(1.5)	247(1.6)	298(1.8)	379(2.0)	457(2.2)	526(2.2)
YC	118(9.9)	159(11)	143(9.3)	126(7.2)	98(5.5)	91(4.9)	106(4.9)	133(6.3)	217(12)	258(11)	277(9.5)	269(6.5)
WQMMOB	3(.3)	8(.7)	13(1.1)	16(1.3)	16(1.3)	15(1.1)	15(1.0)	17(1.1)	21(1.3)	30(1.7)	37(2.0)	42(2.1)
PCPI	.003(.3)	.008(.8)	.012(1.2)	.013(1.2)	.013(1.2)	.012(1.1)	.013(1.0)	.015(1.2)	.019(1.5)	.024(1.8)	.029(2.0)	.032(2.1)
PGNE	.002(.2)	.007(.7)	.011(1.1)	.014(1.3)	.014(1.2)	.013(1.1)	.012(1.0)	.012(.9)	.016(1.2)	.019(1.4)	.024(1.6)	.027(1.7)
NE	.028(.5)	.050(.8)	.056(.8)	.055(.8)	.051(.7)	.049(.7)	.049(.6)	.052(.7)	.065(.8)	.071(.9)	.069(.8)	.067(.8)
NL	.008(.1)	.014(.2)	.024(.4)	.036(.5)	.046(.6)	.052(.7)	.052(.7)	.047(.6)	.047(.6)	.050(.6)	.057(.6)	.063(.7)
RNU	-.30(-6)	-.53(-12)	-.47(-12)	-.28(-9)	-.08(-3)	.021(.5)	.017(.4)	-.07(-2)	-.25(-4)	-.28(-5)	-.17(-3)	-.07(-1)
ABT	125(.9)	153(1.0)	177(1.1)	238(1.3)	285(1.4)	428(1.9)	578(2.2)	612(2.2)	754(2.5)	888(2.4)	960(2.3)	1115(2.3)
M1	71(1.2)	81(1.3)	89(1.3)	114(1.6)	129(1.7)	150(1.8)	155(1.7)	114(1.3)	134(1.5)	168(1.5)	184(1.5)	215(1.6)
ANFLIQ	473(1.2)	761(1.8)	923(2.1)	1160(2.4)	1467(2.9)	1856(3.3)	2332(3.8)	2739(4.2)	3206(4.5)	3493(4.3)	3698(4.1)	3948(3.8)
RS	.174(4.2)	.193(4.6)	.137(3.1)	.086(1.7)	.033(.6)	.002(.0)	.034(.5)	.072(.9)	.070(1.3)	.102(2.4)	.061(1.2)	.006(.1)
RL	.081(1.6)	.092(1.8)	.055(1.1)	.041(.8)	.057(1.0)	.061(1.0)	.060(.9)	.054(.7)	.042(.6)	.044(.7)	.037(.5)	.034(.4)
RHOR	.209(3.0)	.197(2.7)	.072(1.0)	-.02(-.3)	-.08(-1)	-.01(-.2)	-.06(-.9)	-.13(-2)	-.13(-2)	-.18(3)	-.20(-3)	-.29(-4)
V	1018(1.0)	2097(1.8)	2752(2.2)	3041(2.2)	3087(2.1)	2999(1.9)	3408(1.9)	4093(2.2)	5841(2.9)	7349(3.3)	8879(3.5)	9981(3.6)
GBALF	-61(n.a.)	-42(n.a.)	-40(n.a.)	-57(n.a.)	-73(n.a.)	-86(n.a.)	-90(n.a.)	-86(n.a.)	-47(n.a.)	-23(n.a.)	-26(n.a.)	-40(n.a.)
GBALPM	4(n.a.)	-.10(n.a.)	-3(n.a.)	-.82(n.a.)	3(n.a.)	6(n.a.)	5(n.a.)	5(n.a.)	7(n.a.)	8(n.a.)	19(n.a.)	29(n.a.)
XBAL$	-27(n.a.)	-42(n.a.)	-33(n.a.)	-29(n.a.)	-30(n.a.)	-23(n.a.)	-25(n.a.)	-30(n.a.)	-.24(n.a.)	-6(n.a.)	11(n.a.)	6(n.a.)
CAPBAL	-20(n.a.)	10(n.a.)	16(n.a.)	35(n.a.)	31(n.a.)	8(n.a.)	-4(n.a.)	-17(n.a.)	-17(n.a.)	-7(n.a.)	4(n.a.)	9(n.a.)
FXO	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)
PFX	-.000(.0)	.006(.5)	.013(1.2)	.014(1.3)	.013(1.2)	.014(1.3)	.019(1.8)	.026(2.5)	.035(3.5)	.040(4.0)	.040(4.1)	.037(3.7)
UGPP	112(1.6)	141(1.9)	118(1.5)	91(1.0)	76(.8)	73(.8)	84(.8)	112(1.1)	147(1.4)	176(1.5)	170(1.4)	141(1.1)
UGPPS	54(.8)	97(1.3)	101(1.3)	94(1.1)	83(.9)	79(.8)	83(.8)	97(.9)	118(1.1)	146(1.3)	144(1.2)	136(1.1)
UGPPA	136(1.9)	150(2.0)	122(1.5)	88(1.0)	71(.8)	72(.8)	89(.9)	122(1.1)	160(1.5)	184(1.6)	176(1.4)	136(1.0)
UGPPD	20(.3)	39(.5)	56(.7)	69(.8)	78(.9)	83(.9)	83(.9)	82(.8)	91(.9)	103(.9)	116(1.0)	127(1.0)
HSTS	.012(.1)	-.11(-.5)	-.10(-.4)	-.02(-.1)	.003(.0)	-.01(-.0)	-.02(-.1)	.035(.2)	.155(.7)	.321(1.1)	.198(.7)	.057(.2)
HSTM	.013(.1)	-.10(-.5)	-.10(-.4)	-.02(-.1)	.002(.0)	-.01(-.0)	-.03(-.1)	.060(.2)	.336(.7)	.419(1.1)	.237(.7)	.061(.2)
IRC	.317(.1)	-1(-.2)	-2(-.3)	-.54(-.1)	.303(.1)	-.57(-.1)	-.35(-.1)	.875(.1)	4(.6)	9(1.1)	8(.9)	3(.3)

Table 58

EFFECTS OF AN INCREASE IN GOVERNMENT EXPENDITURE, DURING A FLEXIBLE EXCHANGE RATE REGIME, ON SELECTED VARIABLES WITH M1 CONSTRAINED TO ITS CONTROL VALUES

(Differences from control; percentages in parentheses)

Variable	4Q62	4Q63	4Q64	4Q65	4Q66	4Q67	4Q68	4Q69	4Q70	4Q71	4Q72	4Q73
CON	28(.4)	30(.4)	19(.2)	13(.2)	16(.2)	21(.2)	24(.2)	23(.2)	20(.2)	9(.1)	-9(-.1)	-24(-.2)
GCUR	102(6.2)	101(6.0)	98(5.5)	98(5.2)	96(4.6)	95(4.4)	93(3.8)	91(3.6)	85(3.1)	77(2.7)	72(2.4)	70(2.2)
GCAP	2(.4)	8(1.7)	6(1.3)	.865(.2)	-4(-.6)	-4(-.6)	-2(-.3)	3(.5)	6(1.0)	7(1.0)	5(.7)	-1(-.2)
IPRF	17(.9)	34(1.7)	27(1.2)	11(.4)	.140(.0)	-2(-.1)	-.59(-.0)	12(.4)	37(1.3)	51(1.6)	43(1.3)	18(.5)
II8	9(n.a.)	21(n.a.)	8(n.a.)	5(n.a.)	3(n.a.)	-2(n.a.)	-9(n.a.)	-12(n.a.)	2(n.a.)	19(n.a.)	15(n.a.)	16(n.a.)
UGNE	122(1.1)	149(1.3)	124(1.0)	92(.7)	75(.6)	75(.5)	87(.6)	126(.8)	172(1.1)	197(1.1)	173(.9)	121(.6)
YGNE	148(1.4)	226(1.9)	251(1.9)	266(1.9)	255(1.6)	250(1.5)	267(1.4)	325(1.6)	472(2.1)	612(2.5)	691(2.5)	716(2.3)
YP	53(.7)	106(1.2)	141(1.5)	165(1.6)	171(1.5)	173(1.4)	186(1.3)	230(1.5)	288(1.7)	370(2.0)	440(2.1)	496(2.0)
YC	112(9.3)	142(10)	127(8.2)	112(6.4)	86(4.8)	81(4.3)	94(4.3)	127(6.0)	226(12)	264(11)	266(9.1)	234(5.6)
WQMMO8	2(.2)	7(.6)	11(1.0)	14(1.1)	14(1.1)	13(.9)	13(.9)	15(1.0)	19(1.2)	29(1.6)	35(1.9)	38(1.9)
PCP1	.003(.3)	.007(.7)	.011(1.0)	.012(1.1)	.011(1.0)	.010(.9)	.011(.9)	.013(1.0)	.018(1.4)	.024(1.7)	.028(1.9)	.029(1.9)
PGNE	.002(.2)	.006(.6)	.010(.9)	.012(1.1)	.012(1.1)	.011(.9)	.010(.8)	.010(.8)	.015(1.1)	.019(1.4)	.023(1.6)	.026(1.6)
NE	.026(.4)	.045(.7)	.051(.8)	.049(.7)	.045(.6)	.043(.6)	.043(.6)	.047(.6)	.062(.8)	.068(.8)	.065(.8)	.061(.7)
NL	.008(.1)	.013(.2)	.022(.3)	.032(.5)	.042(.6)	.047(.6)	.047(.6)	.044(.5)	.042(.5)	.045(.5)	.053(.6)	.058(.6)
RNU	-.28(-5)	-.48(-11)	-.43(-11)	-.24(-8)	-.06(-2)	.030(.8)	.023(.6)	-.06(-2)	-.26(-5)	-.29(-5)	-.17(3)	-.06(-1)
ABT	-48(-.3)	-55(-.4)	-55(-.3)	-60(-.3)	-50(-.3)	54(.2)	258(1.0)	414(1.5)	529(1.7)	606(1.7)	653(1.6)	747(1.5)
M1	.785(.0)	.794(.0)	.663(.0)	.735(.0)	.915(.0)	.979(.0)	.708(.0)	.394(.0)	.708(.0)	.736(.0)	.831(.0)	.525(.0)
ANFLIQ	370(1.0)	637(1.5)	822(1.8)	1064(2.2)	1374(2.7)	1769(3.1)	2285(3.7)	2789(4.3)	3244(4.5)	3429(4.2)	3555(3.9)	3776(3.7)
RS	.424(10)	.442(11)	.380(8.7)	.367(7.3)	.301(5.4)	.309(5.2)	.298(4.7)	.212(2.7)	.326(5.9)	.385(8.9)	.316(6.0)	.275(4.1)
RL	.178(3.5)	.189(3.7)	.156(3.1)	.169(3.1)	.187(3.2)	.202(3.1)	.193(2.8)	.142(1.8)	.163(2.2)	.171(2.6)	.151(2.1)	.154(2.0)
RHOR	.293(4.2)	.252(3.5)	.119(1.7)	.030(.4)	-.04(-.5)	.034(.5)	-.03(-.4)	-.15(-2)	-.08(-1)	-.1(-1.6)	-.15(-2)	-.23(-3)
V	557(.5)	1390(1.2)	1969(1.5)	2139(1.6)	2197(1.5)	2119(1.3)	2604(1.5)	3619(1.9)	5223(2.6)	6493(2.9)	7948(3.2)	8798(3.2)
G8ALF	-66(n.a.)	-51(n.a.)	-50(n.a.)	-68(n.a.)	-85(n.a.)	-99(n.a.)	-105(n.a.)	-102(n.a.)	-56(n.a.)	-31(n.a.)	-43(n.a.)	-71(n.a.)
G8ALPM	6(n.a.)	.104(n.a.)	-2(n.a.)	1(n.a.)	4(n.a.)	6(n.a.)	5(n.a.)	3(n.a.)	9(n.a.)	9(n.a.)	18(n.a.)	28(n.a.)
XBAL$	-28(n.a.)	-42(n.a.)	-35(n.a.)	-33(n.a.)	-33(n.a.)	-28(n.a.)	-28(n.a.)	-30(n.a.)	-7(n.a.)	-17(n.a.)	3(n.a.)	-.250(n.a.)
CAP8AL	-6(n.a.)	20(n.a.)	24(n.a.)	43(n.a.)	37(n.a.)	11(n.a.)	-2(n.a.)	-21(n.a.)	-5(n.a.)	18(n.a.)	28(n.a.)	31(n.a.)
FXO	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)
PFX	-.005(-.5)	.002(.2)	.010(1.0)	.011(1.1)	.010(.9)	.011(1.0)	.016(1.5)	.025(2.4)	.033(3.3)	.036(3.6)	.035(3.6)	.030(3.0)
UGPP	105(1.5)	129(1.7)	107(1.3)	80(.9)	64(.7)	62(.7)	71(.7)	104(1.0)	144(1.4)	168(1.5)	148(1.2)	104(.8)
UGPPS	50(.7)	89(1.2)	92(1.2)	84(1.0)	74(.8)	70(.7)	72(.7)	88(.8)	111(1.0)	139(1.2)	132(1.1)	116(.9)
UGPPA	126(1.7)	137(1.8)	109(1.3)	75(.9)	59(.7)	60(.6)	75(.7)	116(1.1)	158(1.5)	172(1.5)	148(1.2)	91(.7)
UGPPD	20(.3)	37(.5)	52(.7)	64(.8)	71(.8)	75(.8)	74(.8)	73(.7)	83(.8)	95(.9)	108(.9)	116(.9)
HSTS	-.11(-.7)	-.26(-1)	-.16(-.6)	-.13(-.5)	-.12(-.5)	-.13(-.8)	-.14(-.6)	-.03(-.2)	.245(1.1)	.312(1.0)	.209(.7)	.037(.1)
HSTM	-.12(-.7)	-.23(-1)	-.17(-.6)	-.12(-.5)	-.08(-.5)	-.19(-.8)	-.25(-.6)	-.05(-.2)	.532(1.1)	.408(1.0)	.250(.7)	.039(.1)
IRC	-1(-.3)	-6(-1.0)	-4(-.7)	-3(-.5)	-3(-.5)	-4(-.6)	-5(-.6)	-3(-.3)	6(.8)	9(1.1)	7(.8)	3(.2)

Table 5C

EFFECTS OF A DECREASE IN FEDERAL PERSONAL INCOME TAX ON SELECTED VARIABLES DURING A FLEXIBLE EXCHANGE RATE REGIME

(Differences from control; percentages in parentheses)

Variables	4Q62	4Q63	4Q64	4Q65	4Q66	4Q67	4Q68	4Q69	4Q70	4Q71	4Q72	4Q73
CON	30(.4)	46(.6)	55(.7)	59(.7)	65(.7)	75(.8)	88(.9)	106(1.0)	119(1.1)	124(1.1)	102(.8)	79(.6)
GCUR	.336(.0)	.430(.0)	-.052(-.0)	-.405(-.0)	-2(-.1)	-2(-.1)	-4(-.2)	-6(-.3)	-12(-.4)	-19(-.7)	-25(-.8)	-30(-.9)
GCAP	.371(.1)	2(.5)	3(.7)	3(.6)	2(.4)	2(.2)	2(.3)	3(.5)	6(1.0)	8(1.2)	8(1.1)	5(.6)
IPRF	2(.1)	11(.5)	16(.7)	17(.7)	16(.6)	17(.7)	21(.8)	30(1.0)	46(1.6)	66(2.1)	72(2.2)	61(1.6)
118	-2(n.a.)	4(n.a.)	3(n.a.)	2(n.a.)	3(n.a.)	3(n.a.)	-.84(n.a.)	-.67(n.a.)	-2(n.a.)	7(n.a.)	3(n.a.)	5(n.a.)
UGNE	24(.2)	50(.4)	63(.5)	69(.5)	74(.5)	84(.6)	102(.7)	134(.8)	177(1)	215(1.2)	215(1.2)	196(1.0)
YGNE	28(.3)	68(.6)	104(.8)	142(1.0)	176(1.1)	216(1.3)	269(1.4)	348(1.7)	487(2.2)	645(2.6)	767(2.8)	878(2.8)
YP	9(.1)	29(.3)	52(.6)	79(.8)	105(.9)	133(1.1)	171(1.2)	230(1.5)	295(1.8)	389(2.1)	486(2.3)	590(2.4)
YC	19(1.6)	43(3.0)	58(3.8)	70(4.0)	77(4.3)	87(4.6)	103(4.7)	135(6.3)	208(11)	249(10)	274(9.4)	278(6.7)
WQMMO8	.398(.0)	2(.2)	4(.3)	6(.5)	8(.7)	11(.8)	13(.9)	17(1.1)	21(1.3)	31(1.8)	40(2.1)	47(2.4)
PCP1	.000(.0)	.002(.2)	.004(.4)	.006(.5)	.007(.7)	.009(.8)	.011(.9)	.014(1.1)	.019(1.5)	.025(1.8)	.031(2.2)	.036(2.3)
PGNE	.000(.0)	.001(.1)	.003(.3)	.005(.5)	.007(.6)	.008(.7)	.009(.8)	.011(.8)	.015(1.1)	.019(1.4)	.024(1.6)	.028(1.8)
NE	.004(.1)	.011(.2)	.017(.3)	.022(.3)	.024(.3)	.028(.4)	.033(.4)	.039(.5)	.058(.7)	.066(.8)	.066(.8)	.065(.7)
NL	.001(.0)	.003(.1)	.007(.1)	.011(.2)	.015(.2)	.020(.3)	.025(.3)	.029(.4)	:033(.4)	.041(.5)	.050(.6)	.057(.6)
RNU	-.05(-1)	-.12(-3)	-.15(-4)	-.16(-5)	-.13(-4)	-.12(-3)	-.12(-3)	-.14(-3)	-.31(-5)	-.32(-6)	-.21(-3)	-.12(-2)
A8T	32(.2)	57(.4)	69(.4)	84(.5)	95(.5)	234(1.0)	436(1.7)	550(2.0)	795(2.6)	1036(2.8)	1156(2.8)	1356(2.8)
M1	20(.3)	34(.5)	37(.6)	42(.6)	45(.6)	69(.8)	92(1.0)	78(.9)	122(1.3)	176(1.6)	180(1.5)	191(1.4)
ANFL1Q	181(.5)	434(1.1)	677(1.5)	944(2.0)	1256(2.5)	1679(3.0)	2266(3.7)	2923(4.5)	3737(5.2)	4464(5.4)	5040(5.5)	5640(5.5)
R5	.050(1.2)	.081(1.9)	.092(2.1)	.097(1.9)	.090(1.6)	.085(1.4)	.117(1.9)	.154(1.9)	.128(2.3)	.163(3.7)	.113(2.1)	.064(1.0)
RL	.019(.4)	.037(.7)	.041(.8)	.044(.8)	.051(.9)	.059(.9)	.077(1.1)	.093(1.2)	.090(1.2)	.097(1.5)	.085(1.2)	.079(1.0)
RHOR	.022(.3)	.026(.4)	-.00(-.0)	-.05(-.7)	-.12(-2)	-.11(-2)	-.17(-3)	-.23(-3)	-.21(-3)	-.26(-4)	-.31(-4)	-.48(-6)
V	220(.2)	750(.7)	1370(1.1)	2038(1.5)	2782(1.9)	3380(2.1)	4331(2.4)	5433(2.9)	7530(3.7)	9484(4.3)	11872(5)	14250(5)
G8ALF	-36(n.a.)	-42(n.a.)	-47(n.a.)	-56(n.a.)	-69(n.a.)	-92(n.a.)	-111(n.a.)	-148(n.a.)	-130(n.a.)	-127(n.a.)	-110(n.a.)	-123(n.a.)
G8ALPM	2(n.a.)	2(n.a.)	2(n.a.)	2(n.a.)	3(n.a.)	7(n.a.)	9(n.a.)	12(n.a.)	15(n.a.)	15(n.a.)	24(n.a.)	35(n.a.)
X8AL$	-5(n.a.)	-13(n.a.)	-17(n.a.)	-17(n.a.)	-20(n.a.)	-18(n.a.)	-22(n.a.)	-35(n.a.)	-8(n.a.)	-31(n.a.)	-17(n.a.)	-17(n.a.)
CAP8AL	-4(n.a.)	-2(n.a.)	-2(n.a.)	6(n.a.)	7(n.a.)	-2(n.a.)	-4(n.a.)	-6(n.a.)	-9(n.a.)	1(n.a.)	10(n.a.)	8(n.a.)
FXO	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)
PFX	-.000(-.0)	.001(.1)	.004(.4)	.008(.7)	.010(.9)	.012(1.1)	.017(1.6)	.023(2.2)	.031(3.1)	.037(3.7)	.042(4.2)	.044(4.4)
UGPP	21(.3)	43(.6)	54(.7)	59(.7)	63(.7)	7(.8)	86(.8)	112(1.1)	149(1.4)	183(1.6)	183(1.5)	168(1.3)
UGPP5	8(.1)	25(.3)	35(.4)	44(.5)	49(.5)	56(.6)	66(.7)	82(.8)	107(1.0)	143(1.3)	144(1.2)	144(1.1)
UGPPA	28(.4)	49(.7)	61(.7)	65(.8)	68(.8)	77(.8)	95(.9)	126(1.2)	169(1.6)	198(1.7)	199(1.6)	177(1.3)
UGPP0	3(.0)	9(.1)	15(.2)	23(.3)	30(.3)	38(.4)	46(.5)	54(.5)	72(.7)	89(.8)	105(.9)	119(.9)
H5T5	.010(.1)	.030(.1)	.041(.2)	.071(.3)	.112(.5)	.084(.5)	.064(.3)	.356(.2)	.249(1.1)	.550(1.8)	.490(1.6)	.389(1.1)
H5TM	.011(.1)	.026(.1)	.044(.2)	.066(.3)	.077(.5)	.124(.5)	.117(.3)	.061(.2)	.540(1.1)	.719(1.8)	.586(1.6)	.416(1.1)
IRC	.164(.0)	.613(.1)	1(.2)	2(.3)	3(.5)	2(.4)	3(.4)	2(.3)	7(.9)	15(1.7)	16(1.7)	12(1.1)

Table 5D

EFFECTS OF A MONETARY SHOCK ON SELECTED VARIABLES OURING A FLEXIBLE EXCHANGE RATE REGIME

(Differences from control; percentages in parentheses)

Variables	4Q62	4Q63	4Q64	4Q65	4Q66	4Q67	4Q68	4Q69	4Q70	4Q71	4Q72	4Q73
CON	-2(-.0)	-4(-.1)	-6(-.1)	-7(-.1)	-7(-.1)	-6(-.1)	-6(-.1)	-8(-.1)	-12(-.1)	-10(-.1)	-8(-.1)	-12(-.1)
GCUR	.452(.0)	1(.1)	1(.1)	.585(.0)	1(.1)	2(.1)	3(.1)	3(.1)	4(.1)	5(.2)	7(.2)	9(.3)
GCAP	-5(-.9)	-3(-.6)	-3(-.6)	-3(-.5)	-.64(-.1)	.530(.1)	.191(.0)	-1(-.2)	-3(-.5)	-4(-.6)	-5(-.7)	-4(-.5)
IPRF	-4(-.3)	-16(-.8)	-17(-.7)	-14(-.6)	-10(-.4)	-8(-.3)	-8(-.3)	-15(-.5)	-21(-.7)	-25(-.8)	-32(-1.0)	-34(-.9)
IIB	4(n.a.)	-3(n.a.)	-6(n.a.)	-3(n.a.)	-1(n.a.)	1(n.a.)	3(n.a.)	4(n.a.)	4(n.a.)	3(n.a.)	.642(n.a.)	-12(n.a.)
UGNE	-16(-.2)	-33(-.3)	-37(-.3)	-34(-.3)	-26(-.2)	-17(-.1)	-18(-.1)	-31(-.2)	-53(-.3)	-77(-.4)	-98(-.5)	-108(-.5)
YGNE	-18(-.2)	-58(-.5)	-85(-.7)	-99(-.7)	-95(-.6)	-83(-.5)	-80(-.4)	-91(-.4)	-125(-.6)	-173(-.7)	-238(-.9)	-321(-1.0)
YP	-6(-.1)	-24(-.3)	-39(-.4)	-48(-.5)	-50(-.4)	-44(-.4)	-37(-.3)	-35(-.2)	-54(-.3)	-86(-.5)	-117(-.6)	-148(-.6)
YC	-12(-1.0)	-34(-2.4)	-42(-2.8)	-38(-2.2)	-22(-1.2)	-9(-.5)	-8(-.4)	-14(-.7)	-36(-2.0)	-49(-2.0)	-72(-2.5)	-103(-2)
WQMMOB	-.60(-.1)	-3(-.2)	-4(-.4)	-5(-.4)	-6(-.4)	-5(-.4)	-5(-.3)	-5(-.3)	-5(-.3)	-8(-.5)	-12(-.6)	-15(-.7)
PCPI	-.001(-.1)	-.003(-.3)	-.004(-.4)	-.004(-.4)	-.004(-.4)	-.004(-.3)	-.003(-.3)	-.003(-.3)	-.004(-.3)	-.006(-.5)	-.009(-.6)	-.011(-.7)
PGNE	-.000(-.0)	-.002(-.2)	-.004(-.4)	-.005(-.4)	-.005(-.4)	-.004(-.4)	-.004(-.3)	-.003(-.3)	-.003(-.2)	-.004(-.3)	-.005(-.4)	-.008(-.5)
NE	-.005(-.1)	-.01(-.2)	-.01(-.2)	-.01(-.2)	-.01(-.2)	-.01(-.2)	-.01(-.1)	-.01(-.1)	-.02(-.2)	-.02(-.3)	-.02(-.3)	-.03(-.3)
NL	-.001(-.0)	-.003(-.0)	-.005(-.1)	-.008(-.1)	-.01(-.1)	-.01(-.2)	-.01(-.2)	-.01(-.2)	-.01(-.1)	-.01(-.2)	-.02(-.2)	-.02(-.2)
RNU	.061(1.2)	.102(2.3)	.107(2.8)	.089(3.0)	.051(1.6)	.004(.1)	-.02(-.5)	-.00(-.1)	.072(1.3)	.102(1.8)	.094(1.6)	.073(1.5)
ABT	-330(-2)	-478(-3)	-560(-3)	-622(-3)	-677(-3)	-702(-3)	-619(-2)	-711(-3)	-771(-3)	-772(-2)	-836(-2)	-949(-2)
M1	-133(-2)	-188(-3)	-215(-3)	-237(-3)	-259(-3)	-283(-3)	-303(-3)	-342(-4)	-385(-4)	-436(-4)	-502(-4)	-580(-4)
ANFLIQ	-193(-.5)	-292(-.7)	-277(-.6)	-206(-.4)	-147(-.3)	-105(-.2)	-47(-.1)	-88(-.1)	-219(-.3)	-265(-.3)	-307(-.3)	-338(-.3)
RS	.500(12)	.500(12)	.500(11)	.500(9.9)	.500(9.0)	.500(8.5)	.500(8.0)	.500(6.3)	.500(9.0)	.500(11)	.500(9.5)	.500(7.5)
RL	.191(3.8)	.208(4.1)	.222(4.4)	.243(4.5)	.259(4.5)	.259(4.0)	.263(3.8)	.267(3.3)	.266(3.6)	.270(4.1)	.275(3.9)	.278(3.6)
RHOR	.173(2.5)	.141(2.0)	.105(1.5)	.097(1.4)	.095(1.3)	.074(1.1)	.049(.7)	.031(.5)	.085(1.2)	.165(2.7)	.157(2.2)	.089(1.2)
V	-922(-.9)	-1486(-1)	-1843(-1)	-1991(-1)	-1861(-1)	-1549(-1)	-1306(-1)	-1200(-1)	-2061(-1)	-2926(-1)	-3412(-1)	-3487(-1)
GBALF	-9(n.a.)	-20(n.a.)	-26(n.a.)	-27(n.a.)	-24(n.a.)	-22(n.a.)	-24(n.a.)	-34(n.a.)	-42(n.a.)	-51(n.a.)	-73(n.a.)	-93(n.a.)
GBALPM	5(n.a.)	2(n.a.)	2(n.a.)	3(n.a.)	2(n.a.)	.512(n.a.)	.026(n.a.)	.184(n.a.)	.152(n.a.)	.648(n.a.)	2(n.a.)	-2(n.a.)
XBAL$	-.18(n.a.)	-.22(n.a.)	-3(n.a.)	-7(n.a.)	-7(n.a.)	-9(n.a.)	-9(n.a.)	-7(n.a.)	-16(n.a.)	-18(n.a.)	-26(n.a.)	-21(n.a.)
CAPBAL	29(n.a.)	20(n.a.)	17(n.a.)	10(n.a.)	5(n.a.)	-4(n.a.)	2(n.a.)	15(n.a.)	25(n.a.)	34(n.a.)	31(n.a.)	22(n.a.)
FXO	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)	.000(.0)
PFX	-.009(-.9)	-.010(-.9)	-.007(-.7)	-.006(-.6)	-.006(-.6)	-.006(-.5)	-.006(-.5)	-.007(-.7)	-.01(-1.1)	-.02(-1.5)	-.02(-1.8)	-.02(-1.8)
UGPP	-12(-.2)	-27(-.4)	-31(-.4)	-29(-.3)	-22(-.2)	-15(-.2)	-15(-.2)	-27(-.3)	-46(-.4)	-66(-.6)	-85(-.7)	-94(-.7)
UGPPS	-5(-.1)	-16(-.2)	-21(-.3)	-23(-.3)	-21(-.2)	-18(-.2)	-17(-.2)	-22(-.2)	-32(-.3)	-49(-.4)	-59(-.5)	-66(-.5)
UGPPA	-18(-.2)	-31(-.4)	-33(-.4)	-30(-.3)	-21(-.2)	-14(-.2)	-16(-.2)	-30(-.3)	-54(-.5)	-75(-.7)	-97(-.8)	-101(-.8)
UGPPD	-.47(-.0)	-4(-.1)	-9(-.1)	-13(-.2)	-17(-.2)	-19(-.2)	-20(-.2)	-20(-.2)	-24(-.2)	-29(-.3)	-37(-.3)	-47(-.4)
HSTS	-.21(-1)	-.37(-2)	-.21(-.8)	-.21(-.8)	-.16(-.7)	-.179(-1)	-.16(-.7)	-.367(-2)	-.12(-.6)	-.07(-.2)	-.06(-.2)	.042(.1)
HSTM	-.23(-1)	-.32(-2)	-.23(-.8)	-.19(-.8)	-.11(-.7)	-.27(-1)	-.28(-.7)	-.631(-2)	-.27(-.6)	-.09(-.2)	-.08(-.2)	.04(.1)
IRC	-3(-.5)	-9(-1.5)	-7(-1.1)	-6(-.9)	-5(-.9)	-5(-.7)	-6(-.8)	-10(-1.3)	-9(-1.2)	-4(-.5)	-3(-.3)	-.635(-.1)

constant dollars per quarter has no effect on currency and demand deposits (M1). This situation has been modelled by removing the policy reaction equation (17.1) and replacing it with a rule that forces short-term interest rates to adjust until M1 is equal to its historical (control) value.

Shock (c) A decrease in federal personal income tax during a flexible exchange rate regime (Table 5C)

In this exercise we assume that federal personal income tax rates are reduced by 10 percent (ie, by one tenth of their historical value) for each quarter from 1962 to 1973. The adjustment is assumed not to affect the basic rate schedule; provincial tax receipts are therefore not directly affected.

Shock (d) A monetary shock during a flexible exchange rate regime (Table 5D)

To assess the sensitivity of the model to monetary policy we have assumed that, in each quarter from 1962 to 1973, the monetary authority attains a short-term interest rate fifty basis points higher than that in the control simulation. The policy reaction function is removed and RS is set equal to its historical values plus fifty basis points.

Results

The increase of $100 million (1961 dollars) in government expenditure (shock (a)) generates a cyclical response in real economic activity and a continuous price increase. On impact, government expenditure, private investment, inventories, consumption, and imports move by $101.2, $0.6, -$24, $6.6, and $8.4 million, respectively. These lead to an increase of $76 millions (1961 dollars) in the gross national product (UGNE).

With a further expected increase in demand and with the resulting inventory decrease producers increase their level of employment and make decisions to increase investment in machinery and equipment and in non-residential construction. The gross national product has a first peak response of $163 million (1961 dollars) after eight quarters, a second peak response of $212 million after forty-two quarters, and a trough response of $81 million appears after twenty-two quarters. This cyclical response has a much lower amplitude and a much shorter period than the one obtained in previous versions of RDX2. On impact, wages and prices are pushed upward by the sudden demand increase. In the following quarters the wage and price spiral, amplified by the exchange rate depreciation, brings prices and wages to a level that is around two percent higher than they were in the control solution by the end of the simulation period. During the simulation period and especially in the first eight quarters the increase in the stock of treasury bills issued to finance the federal deficit places upward pressure on interest rates. The peak response of the basic rate (RS) is twenty basis points at the end of the fifth quarter. This interest rate movement slows down the increase in the money supply (M1) to a level that is .28 percent and 1.62 percent over the control solution by the eighth and the forty-fourth quarter, respectively.

The addition of the constraint that maintains M1 at its control values (shock (b)) reduces slightly the amplitude of the cyclical response previously described. The real GNE multiplier drops from 1.63 and 2.12 to 1.49 and 2.05, respectively, in the first and second peak response. This drop in the first peak response is attributable mainly to the decrease in investment in

the trade balance. The additional increase in the interest rate needed to maintain M1 at its control solution (around twenty basis points) puts downward pressure on business investment and exerts upward pressure on the exchange rate; each of these effects, in turn, reduces expansionary trade pressures.

The effect of a 10 percent cut in the federal income tax (shock (c)) is mainly a slow but continuous increase in real GNE up to a level that is 1 percent over its control solution. At the end of the simulation period real consumption, investment, and exports are .6, 1.6, and 1 percent, respectively, above control values. On the other hand, real government current expenditure and imports drop by 1 and .4 percent, respectively. We also observed an average drop in the unemployment rate of .16 percent while the federal deficit and expected rates of inflation increased by $123 million and .3 percent, respectively, in the last quarter simulated.

The response of the monetary shock (shock (d)) confirms what we learned from the comparison of the first and second shocks: namely, that financial variables have little effect on real variables in RDX2. Most of the real impact comes from the effect of the exchange rate appreciation (produced by capital inflows) on the trade balance. For example, at the end of the simulation period UGNE drops by $108 million while the trade balance decreases by $55 million. The fall in demand pushes down the GNE deflator by .5 percent.

These standard shocks give only a partial idea of the dynamics of RDX2, but, as noted above, we shall elaborate on this aspect of the model in a future technical report.

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Printed in Canada
Imprimé au Canada