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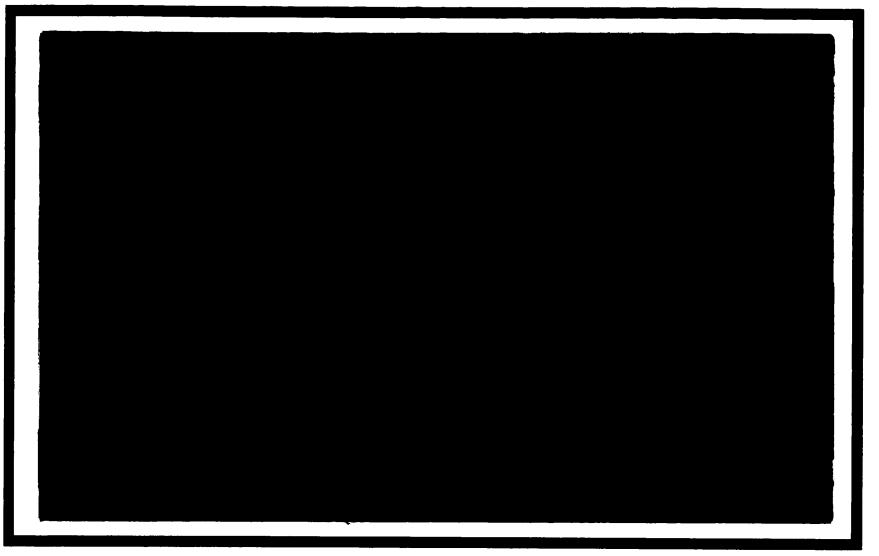
Discussion Paper



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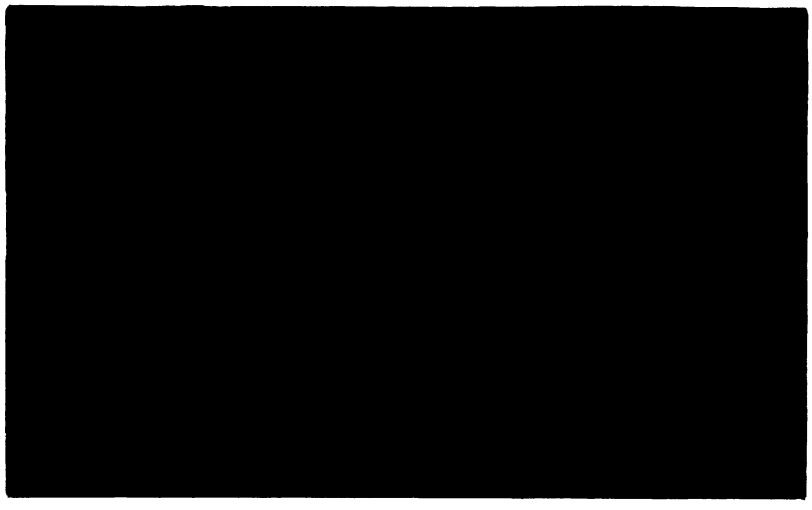

THE MICHIGAN QUARTERLY

ECONOMETRIC MODEL

OF THE U.S. ECONOMY

July 1988

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The University of Michigan

A. Wages and Prices

A1 $$\Delta \ln JCMH = \underset{(.00137)}{.01064} + \underset{(.39532)}{.70949} * \left(\frac{\Delta\ WUSMIN}{JCMH_{-1}}\right)$$

$$+ \underset{(.05370)}{.22429} * \ln\left(\frac{PC_{-1}}{PC_{-3}}\right) + \underset{(.01482)}{.04333} * \ln\left[\frac{2*\frac{REM_{-1}}{100} + JCU_{-1}}{3}\right]$$

$$+ \underset{(.01252)}{.06120} * \frac{DTSI}{JCMH_{-1}} + \underset{(.00346)}{.00781} * DFRZ1$$

$$+ \underset{(.12525)}{.29213} * \frac{RPPERM_{-2}}{100}$$

$R^2 = .725$ S.E. = .0034 D.W. = 1.95 F.P. = 1956.4-1983.4

A2 $$\Delta \ln PPNF = \underset{(.00170)}{-.00187} + \underset{(.00520)}{.01422} * \Delta \ln PFARM_{-1}$$

$$+ \underset{(.00918)}{.04806} * \ln\left(\frac{PCRUDE_{-1}}{PCRUDE_{-3}}\right)$$

$$+ \underset{(.00024)}{.00062} * \sum_{i=5}^{6} \beta_i * \left(\frac{1}{1-JCU}\right)_{-i}$$

$$+ \underset{(.00875)}{.03196} * DFROFF + \underset{(.00453)}{.00547} * \ln\left(\frac{RAAA_{-1}}{RAAA_{-5}}\right)$$

$$+ \underset{(.01492)}{.16115} * \left[\ln\left(\frac{JCMH_{-1}}{JCMH_{-5}}\right) - \sum_{i=1}^{4} \frac{QMHT_{-i}}{4}\right]$$

$\beta_i = (.6, .4)$

$R^2 = .814$ S.E. = .0037 D.W. = 2.53 F.P. = 1958.3-1983.4

A3 $$\Delta \ln PCDO = \underset{(.00153)}{.00052} + \underset{(.11303)}{.13510} * \Delta \ln PPNF_{-1}$$

$$+ \underset{(.03830)}{.11873} * \Delta \ln PMNOIL + \underset{(.09108)}{.61180} * \Delta \ln PCDO_{-1}$$

$R^2 = .646$ S.E. = .0056 D.W. = 1.78 F.P. = 1967.2-1984.4

A4 $\Delta \ell n\ PCDA = \underset{(.00252)}{.00039} + \underset{(.20956)}{.53110} * \Delta \ell n\ PPNF$

$+ \underset{(.13278)}{.62300} * \Delta \ell n\ PAUTO - \underset{(.08299)}{.15218} * \Delta \ell n\ PCDA_{-1}$

$R^2 = .306 \quad S.E. = .0154 \quad D.W. = 1.95 \quad F.P. = 1955.4\text{-}1983.4$

A5 $\Delta \ell n\ PCDFE = - \underset{(.00131)}{.00324} + \underset{(.09861)}{.40176} * \Delta \ell n\ PPNF$

$+ \underset{(.10689)}{.11144} * \Delta \ell n\ PPNF_{-1} + \underset{(.02759)}{.05826} * \Delta \ell n\ PMNOIL$

$+ \underset{(.11464)}{.37863} * \Delta \ell n\ PCDFE_{-1}$

$R^2 = .743 \quad S.E. = .0039 \quad D.W. = 2.03 \quad F.P. = 1967.2\text{-}1984.4$

A6 $\Delta \ell n\ PCN = \underset{(.00102)}{.00282} + \underset{(.08664)}{.51066} * \Delta \ell n\ PPNF$

$+ \underset{(.00541)}{.03460} * \Delta \ell n\ PFARM + \underset{(.03042)}{.07065} * \Delta \ell n\ PMNOIL$

$+ \underset{(.01627)}{.07864} * \Delta \ell n\ PGAS + \underset{(.00636)}{.02923} * \Delta \ell n\ PMOIL$

$+ \underset{(.07185)}{.02359} * \Delta \ell n\ PCN_{-1}$

$R^2 = .886 \quad S.E. = .0038 \quad D.W. = 1.76 \quad F.P. = 1967.2\text{-}1986.4$

A7 $$\Delta \ln PCS = \underset{(.00117)}{-.00049} + \underset{(.04550)}{.11478} * \ln\left(\frac{PPNF}{PPNF_{-2}}\right) + \underset{(.03259)}{.09192} * \ln\left(\frac{JCMH}{JCMH_{-4}}\right) + \underset{(.00339)}{.00878} * \ln\left(\frac{PNGAS}{PNGAS_{-4}}\right) + \underset{(.09453)}{.31082} * \Delta \ln PCS_{-1}$$

$R^2 = .868$ S.E. = .0026 D.W. = 2.17 F.P. = 1959.1-1983.4

A8 $$\Delta \ln PCPI = \underset{(.00053)}{-.00042} + \underset{(.04154)}{1.0710} * \Delta \ln PC + \underset{(.00065)}{.00241} * \Delta RMTG_{-1} - \underset{(.01051)}{.05321} * \Delta \ln\left(\frac{CDA82 + CDFE82 + CDO82}{C82}\right)$$

$R^2 = .883$ S.E. = .0032 D.W. = 2.05 F.P. = 1954.3-1983.4

A9 $$\Delta \ln PINC = \underset{(.00196)}{-.00127} + \underset{(.16109)}{.56056} * \Delta \ln PPNF + \underset{(.02035)}{.03672} * \ln\left(\frac{PCRUDE}{PCRUDE_{-2}}\right) + \underset{(.05982)}{.08700} * \Delta \ln PMNOIL + \underset{(.09077)}{.39917} * \Delta \ln PINC_{-1}$$

$R^2 = .701$ S.E. = .0069 D.W. = 1.88 F.P. = 1967.2-1984.4

A10 $$\Delta \ell n \text{ PIRC} = \underset{(.00323)}{-.00666} + \underset{(.13670)}{.17995} * \ell n \left(\frac{\text{JCMH}}{\text{JCMH}_{-2}}\right)$$

$$+ \underset{(.00071)}{.00191} * \sum_{i=1}^{3} \beta_i * (\text{RAAA-RCPCD})_{-i}$$

$$+ \underset{(.02287)}{.03249} * \Delta \ell n \text{ PCRUDE} + \underset{(.21390)}{.93290} * \Delta \ell n \text{ PPNF}$$

$$\beta_i = (.41, .49, .10)$$

$R^2 = .451$ S.E. = .0101 D.W. = 2.33 F.P. = 1954.4-1983.4

A11 $$\ell n \text{ PHOUSN.E} = \underset{(.25091)}{.94741} + \underset{(.01872)}{.07555} * \ell n\left(\frac{\text{HOUSEX}}{\text{HOUSEX}_{-4}}\right)$$

$$+ \underset{(.01279)}{.02796} * \ell n \left(\frac{\text{RCPCD}_{-1}}{\text{RCPCD}_{-3}}\right) + \underset{(.17807)}{.28025} * \ell n \left(\frac{\text{JCMH}}{\text{JCMH}_{-4}}\right)$$

$$- \underset{(.00464)}{.01206} * \text{DSEAS1} + \underset{(.00469)}{.00160} * \text{DSEAS2}$$

$$- \underset{(.00458)}{.01324} * \text{DSEAS3} + \underset{(.05414)}{.79266} * \ell n \text{ PHOUSN.E}_{-1}$$

$R^2 = .864$ S.E. = .0211 D.W. = 1.80 F.P. = 1969.1-1984.4

A12 $\Delta \ell n\ PGFNCC = \underset{(.00277)}{.00102} + \underset{(.18278)}{.63209} * \Delta \ell n\ PPNF$

$+ \underset{(.11440)}{.63485} * DGPAY * \Delta \ell n \left(\frac{YGWS}{EGOV}\right)$

$+ \underset{(.06928)}{.12727} * \Delta \ell n\ PMNOIL$

$R^2 = .542 \quad S.E. = .0095 \quad D.W. = 2.69 \quad F.P. = 1972.2\text{-}1986.4$

A13 $\Delta \ell n\ PGSL = \underset{(.00125)}{.00642} + \underset{(.07650)}{.29207} * \Delta \ell n\ PPNF$

$+ \underset{(.10079)}{.31046} * \Delta \ell n\ JCMH + \underset{(.02338)}{.03708} * \Delta \ell n\ PMNOIL$

$+ \underset{(.00307)}{.01303} * \Delta \ell n\ PMOIL$

$R^2 = .785 \quad S.E. = .0030 \quad D.W. = 1.50 \quad F.P. = 1972.2\text{-}1986.4$

A14 $PIPD = (IPDQ82 * PIPDQ + IPDO82 * PIPDO$

$+ IPDAG82 * PIPDAG)/IBFPD82$

A15 $\Delta \ell n\ PIPDQ = - \underset{(.00122)}{.00275} + \underset{(.10647)}{.29712} * \Delta \ell n\ PPNF$

$+ \underset{(.03161)}{.13457} * \Delta \ell n\ PMNOIL + \underset{(.05715)}{.75483} * \Delta \ell n\ PIPDQ_{-1}$

$R^2 = .877 \quad S.E. = .0044 \quad D.W. = 1.86 \quad F.P. = 1967.2\text{-}1984.4$

A16 $\Delta \ell n\ PIPDAG = -\underset{(.00264)}{.00178} + \underset{(.20285)}{.44421} + \Delta \ell n\ PPNF + \underset{(.07395)}{.18420} * \Delta \ell n\ PMNOIL$

$+ \underset{(.08712)}{.53381} * \Delta \ell n\ PIPDAG_{-1}$

$R^2 = .575$ S.E. = .0107 D.W. = 1.74 F.P. = 1967.2-1986.4

A17 $\Delta \ell n\ PIPDO = -\underset{(.00239)}{.00599} + \underset{(.20087)}{.64741} * \Delta \ell n\ PPNF$

$+ \underset{(.08825)}{.28904} * \Delta \ell n\ PAUTO + \underset{(.06718)}{.09947} * \Delta \ell n\ PMNOIL_{-1}$

$- \underset{(.03918)}{.05600} * \Delta \ell n\ PCRUDE + \underset{(.09075)}{.37239} * \Delta \ell n\ PIPDO_{-1}$

$R^2 = .643$ S.E. = .0080 D.W. = 2.35 F.P. = 1967.3-1984.4

A18 $\Delta \ell n\ PX = \underset{(.00186)}{-.00550} + \underset{(.13102)}{.83473} * \Delta \ell n\ PPNF$

$+ \underset{(.05391)}{.37995} * \Delta \ell n\ PMNOIL + \underset{(.01026)}{.04449} * \Delta \ell n\ PFARM$

$+ \underset{(.00734)}{.03055} * \Delta \ell n\ PMOIL$

$R^2 = .786$ S.E. = .0073 D.W. = 2.01 F.P. = 1967.2-1986.4

A19 $$\Delta \ln JEXR = \underset{(.00472)}{.00710} + \underset{(.05809)}{1.0349} * \Delta \ln \left(\frac{PFOREIGN}{PX}\right)$$

$$+ \underset{(.05714)}{.07823} * \Delta \ln \left(\frac{PFOREIGN}{PX}\right)_{-1} + \underset{(.01735)}{.03555} * \ln \left(\frac{X_{-2}}{M}\right)$$

$$+ \underset{(.02331)}{.04333} * \ln \left(\frac{RTB}{REURDR3}\right)$$

$R^2 = .898$ S.E. = .0124 D.W. = 1.87 F.P. = 1973.2-1984.4

A20 $$\Delta \ln PGAS = \underset{(.00492)}{.00991} - \underset{(.12460)}{.29546} * \Delta \ln PGAS_{-1} + \underset{(.09225)}{.79639} * \Delta \ln PMOIL$$

$R^2 = .787$ S.E. = .0252 D.W. = 1.81 F.P. = 1978.2-1985.4

A21 $$\Delta \ln PCRUDE = \underset{(.00189)}{.00225} + \underset{(.03346)}{.37543} * \Delta \ln POIL$$

$$+ \underset{(.06331)}{.08683} * \Delta \ln PNGAS + \underset{(.03410)}{.36054} * \Delta \ln POTHRCRU$$

$$+ \underset{(.19341)}{.59037} * \Delta \ln PCRUDE_{-1} - \underset{(.07890)}{.19588} * \Delta \ln POIL_{-1}$$

$$- \underset{(.06106)}{.08634} * \Delta \ln PNGAS_{-1} - \underset{(.07833)}{.21457} * \Delta \ln POTHRCRU_{-1}$$

$R^2 = .963$ S.E. = .0074 D.W. = 1.80 F.P. = 1978.2-1985.4

A22 $\Delta \ell n\ POIL = \underset{(.00583)}{.01339} + \underset{(.05038)}{1.1194} * \Delta \ell n\ PMOIL$

$$- \underset{(.03841)}{.07684} * \Delta \ell n\ POIL_{-1} - \underset{(.24206)}{.95167} * \ell n \left(\frac{POIL}{PMOIL} \right)_{-1}$$

$R^2 = .973$ S.E. = .0203 D.W. = 1.39 F.P. = 1981.2-1986.4

A23 $JRAUTO = \underset{(2.5953)}{14.694} + \underset{(.46234)}{1.4872} * RG5_{-1} - \underset{(.22277)}{.40202} * (RAAA - RCPCD)$

$$+ \underset{(.36174)}{.79416} * RTB_{-1} - \underset{(.39626)}{.69792} * DAINC1$$

$$+ \underset{(.05292)}{.59377} * (JRAUTO_{-1} + \underset{(.39626)}{.69792} * DAINC1_{-1})$$

$R^2 = .984$ S.E. = 1.712 D.W. = 1.83 F.P. = 1978.2-1987.2

A24 $\ell n\ PIINVO = \underset{(.25074)}{.00482} + \underset{(.22570)}{.83628} * \ell n\ PPNF$

$$+ \underset{(.17566)}{.36378} * \ell n\ PMNOIL - \underset{(.10319)}{.20398} * \ell n\ PIINVO_{-1}$$

$R^2 = .889$ S.E. = .1433 D.W. = 2.19 F.P. = 1967.2-1971.3, 1972.2-1975.2, 1976.2-1981.1, 1981.4-1985.3

A25 $\ell n\ PIINVA = - \underset{(1.4120)}{6.5322} + \underset{(.30750)}{2.4244} * \ell n\ PAUTO$

$R^2 = .705$ S.E. = .1326 D.W. = 2.13 F.P. = 1979.3-1980.2, 1980.4-1984.2, 1984.4-1986.4

B. Productivity and Employment

B1 $$\Delta \ell n\ QMH77 = -\underset{(.02279)}{.05832} + \underset{(.00297)}{.01116} * D5467 + \underset{(.00182)}{.00576} * D6873 - \underset{(.00872)}{.05786} * \ell n \left(\frac{JIPM}{JCAP}\right) + \underset{(.04836)}{.49865} * \Delta \ell n\ GNP82 + \underset{(.00384)}{.00753} * \sum_{i=1}^{6} \beta_i * \ell n\ (IBF82 - IPDAG82)_{-i}$$

$$\beta_i = (.1,\ .15,\ .25,\ .25,\ .15,\ .1)$$

$R^2 = .573$ S.E. = .0053 D.W. = 2.06 F.P. = 1955.3-1983.4

B2 $$\Delta \ell n\ REM = -\underset{(.00032)}{.00373} + \underset{(.03172)}{.28034} * \Delta \ell n\ GNP82 + \underset{(.03391)}{.09668} * \Delta \ell n\ GNP82_{-1} + \underset{(.00805)}{.03108} * \frac{RUM_{-1} + RUM_{-2}}{2} * \sum_{i=1}^{2} \frac{\Delta \ell n\ GNP82_{-i}}{2} - \underset{(.04054)}{.05975} * \Delta \ell n\ QMH77$$

$R^2 = .732$ S.E. = .0026 D.W. = 1.99 F.P. = 1954.4-1983.4

B3 RUG = .79518 + (.01330 - .00447 * RUM) * TIME
(.21603) (.00314) (.00053)

+ .02868 * RLFSEC * RUM + .9062 * μ_{-1}
(.00098)

GLS

R^2 = .964 S.E. = .0847 D.W. = 1.95 F.P. = 1954.3-1983.4

C. Expenditure

C1 $$AUTOSC = \underset{(1.5914)}{-1.6615} * (1 - DJRAUTO)$$

$$+ \underset{(.03861)}{.10630} * DJRAUTO * (RAAA - RCPCD)_{-2}$$

$$+ \underset{(.04115)}{.26145} * (1-DJRAUTO) * (RAAA - RCPCD)_{-2}$$

$$+ \underset{(1.5374)}{.23994} * DJRAUTO - \underset{(.00699)}{.01905} * DJRAUTO * JRAUTO$$

$$- \underset{(.04660)}{.05508} * RUM_{-1} - \underset{(.30204)}{.80913} * DOPEC1 * \frac{PGAS}{PC_{-1}}$$

$$+ \left(\underset{(.00283)}{.00756} - \underset{(.00233)}{.00573} * \left[\frac{RLFSEC}{\{1 - (\frac{RLFSEC}{100})\}/100} \right]_{-1} \right) * YPERM82_{-1}$$

$$- \underset{(1.9584)}{7.5028} * \left(\frac{PAUTO}{PC_{-1}} - \frac{PAUTO_{-2}}{PC_{-3}} \right) + \underset{(.00206)}{.00482} * \Delta (YPERM82 + YT82)$$

$$+ \underset{(.09277)}{.40427} * DAINC + \underset{(.04518)}{.36296} * DASTRIKE$$

$$- \underset{(.08057)}{.45233} * [\Delta AUTOSC_{-1} - \underset{(.09277)}{.40427} * \Delta DAINC_{-1} - \underset{(.04518)}{.36296} * \Delta DASTRIKE_{-1}]$$

$$+ \underset{(.07421)}{.54992} * [AUTOSC_{-1} - \underset{(.09277)}{.40427} * DAINC_{-1} - \underset{(.04518)}{.36296} * DASTRIKE_{-1}]$$

$R^2 = 0.912$ S.E. = .3006 D.W. = 2.16 F.P. = 1962.3-1985.4

$$C2 \quad AUTOSB = \underset{(.07788)}{.07101} + \underset{(.01043)}{.06947} * (RAAA - RCPCD)_{-2}$$

$$+ \underset{(.00002)}{.00009} * \left(1 + \frac{TDEPRAU_{-2} - \frac{1}{6} + TITCR_{-2} - .07}{4} \right) * \sum_{i=1}^{3} GNP82_{-i}$$

$$+ \underset{(.00043)}{.00077} (GNP82_{-1} - GNP82_{-3}) + \underset{(.04149)}{.13598} * DAINC + \underset{(.02119)}{.14013} * DASTRIKE$$

$$- \underset{(.08956)}{.43278} * (\Delta AUTOSB_{-1} - \underset{(.04149)}{.13598} * \Delta DAINC_{-1} - \underset{(.02119)}{.14013} * \Delta DASTRIKE_{-1})$$

$$+ \underset{(.06921)}{.68132} * (AUTOSB_{-1} - \underset{(.04149)}{.13598} * DAINC_{-1} - \underset{(.02119)}{.14013} * DASTRIKE_{-1})$$

$R^2 = .942$ S.E. = .1461 D.W. = 1.85 F.P. = 1962.3-1985.4

C3 $$\frac{AUTOSD}{AUTOS} = \underset{(.12625)}{.96730} - \underset{(.00047)}{.00274} * TIME + \underset{(.00653)}{.00938} * DVRA2$$

$$+ \underset{(.00249)}{.01267} * DASTRIKE - \underset{(.04431)}{.23267} * PAUTOD.F + \underset{(.00273)}{.00740} * DAINC$$

$$- \left(\underset{(.03677)}{.08695} * DOPEC1 + \underset{(.03249)}{.03355} * DOPEC2 \right) * \ell n \left(\frac{PGAS}{PC}\right)$$

$$+ \underset{(.00020)}{.00142} * JICS + \underset{(.02507)}{.07846} * D70.4 + \underset{(.02002)}{.07071} * D74.2 + \underset{(.01477)}{.05643} * D79.4$$

$$+ \underset{(.00772)}{.01970} * D85.3 - \underset{(.00633)}{.01316} DVRALED$$

$$+ \underset{(.09310)}{.24639} * \left(\left(\frac{AUTOSD}{AUTOS}\right)_{-1} - \underset{(.00273)}{.00740} * DAINC_{-1} - \underset{(.00249)}{.01267} * DASTRIKE_{-1} \right.$$

$$\left. - \underset{(.00653)}{.00938} * DVRA2_{-1} + \underset{(.00633)}{.01316} * DVRALED_{-1} \right)$$

$R^2 = .965$ S.E. = .0128 D.W. = 2.25 F.P. = 1967.2-1986.4

C4 $$\Delta CDAN82 = \underset{(.07770)}{.41645} + \left(\underset{(.00041)}{.00481} * YPERM82_{-1} \right.$$

$$\left. + \underset{(.11269)}{.37563} * RUM_{-1} - \underset{(1.5257)}{3.5578} * AUTOSIZE_{-1} \right) * \Delta AUTOSC$$

$$- \underset{(.32962)}{1.9955} * \Delta AUTOSIZE * AUTOSC_{-1}$$

$R^2 = .983$ S.E. = .7044 D.W. = 1.92 F.P. = 1962.3-1985.4

C5 $$CDAO82 = -\underset{(1.0994)}{3.4584} + \underset{(.25895)}{.33574} * DASTRIKE$$

$$+ \left[\underset{(.00155)}{.00728} + \underset{(.00007)}{.00055} * \sum_{i=1}^{3} \frac{(RAAA-RCPCD)_{-i}}{3} \right] * YPERM82$$

$$+ \underset{(.79038)}{1.8873} * DJGPM * \frac{2 * JGPM}{JGPM_{-12} + JGPM_{-16}}$$

$$+ \underset{(.04124)}{.80442} * CDAO82_{-1}$$

$$- \underset{(.09038)}{.22309} * \Delta\, CDAO82_{-1}$$

$R^2 = .991$ S.E. = 1.412 D.W. = 2.05 F.P. = 1958.1-1983.4

C6 $$CDFE82 = -\underset{(3.1120)}{6.6623} + \underset{(.00494)}{.01080} * YD82 + \underset{(1.0622)}{3.1653} * DCDFE$$

$$+ \underset{(.00117)}{.00296} * \Delta\, HOUSEX + \underset{(.00174)}{.00681} * \Delta\, HOUSCOMP$$

$$- \underset{(.12779)}{.27394} * (RAAA-RCPCD) + \underset{(.08533)}{.82774} * CDFE82_{-1}$$

$R^2 = .993$ S.E. = 1.254 D.W. = 1.87 F.P. = 1968.2-1983.4

C7 $$CDO82 = \underset{(2.0422)}{2.9598} + \underset{(.00423)}{.01621} * YD82 - \underset{(.00425)}{.01394} * YD82_{-1}$$

$$- \underset{(7.0644)}{22.563} * \left[\frac{PCDO}{PC} - \left(\frac{.01394}{.01621}\right) * \left(\frac{PCDO}{PC}\right)_{-1}\right]$$

$$+ \underset{(.03675)}{.90206} * CDO82_{-1}$$

$R^2 = .997$ S.E. = .7617 D.W. = 2.29 F.P. = 1954.3-1983.4

C8 $$CN82 = \underset{(36.355)}{131.04} + \underset{(.02259)}{.12638} * \Delta YD82 + \underset{(.01471)}{.04425} * YD82_{-1}$$

$$- \underset{(29.287)}{100.97} * \left(\frac{PCN}{PC}\right)_{-1} - \underset{(72.192)}{346.70} * \Delta\left(\frac{PCN}{PC}\right) + \underset{(.05417)}{.83628} * CN82_{-1}$$

$R^2 = .999$ S.E. = 3.667 D.W. = 1.84 F.P. = 1954.3-1983.4

C9 $$CS82 = \underset{(3.7069)}{4.3440} + \underset{(.01758)}{.10198} * \Delta\left(\frac{YD + TSIP}{PC/100}\right)$$

$$+ \underset{(23.336)}{28.460} * \left(\frac{PCS}{PC} - 1\right) + \underset{(.00811)}{.01461} * \left(\frac{YD+TSIP}{PC/100}\right)_{-1}$$

$$+ \underset{(.01896)}{.96734} * CS82_{-1}$$

$R^2 = .999$ S.E. = 3.050 D.W. = 2.39 F.P. = 1954.2-1983.4

C10 $$IBFNC82 = \underset{(1.1643)}{.93367} + \underset{(.00614)}{.02350} * (GNP82_{-1} - GNP82_{-3})$$

$$+ (\underset{(.00165)}{-.00180} + \underset{(.00219)}{.00673} * JCU_{-1}) * \left[1 + \frac{TDEPRNC_{-4} - \frac{1}{60}}{4}\right]$$

$$* \sum_{i=2}^{5} \beta_i * GNP82_{-i} + \underset{(.03644)}{.90499} * IBFNC82_{-1}$$

$$\beta_i = (.4, .3, .2, .1)$$

$R^2 = .989$ S.E. = 2.619 D.W. = 1.66 F.P. = 1955.2-1985.4

C11 $IBFPD82 = IPDQ82 + IPDO82 + IPDAG82$

C12 $$IPDQ82 = \underset{(.78720)}{.03878} + \underset{(.00328)}{.00932} * (GNP82_{-1} - GNP82_{-3})$$

$$+ \left\{ \underset{(.00102)}{.00166} + \underset{(.00117)}{.00555} * JCU_{-1} \right\} * \left[1 + \frac{TDEPRQ_{-2} - \frac{1}{6} + TITCR_{-2} - .07}{4} \right]$$

$$* \left[\frac{GNP82_{-1} + GNP82_{-2}}{2} \right]$$

$$- \underset{(7.7073)}{24.578} * 0.5 * \left[\left(\frac{UCKPDQ}{PPNF}\right)_{-1} + \left(\frac{UCKPDQ}{PPNF}\right)_{-2} \right]$$

$$+ \underset{(.04582)}{.76680} * IPDQ82_{-1}$$

$R^2 = .995$ S.E. = 1.201 D.W. = 1.65 F.P. = 1956.3-1985.4

C13 $$IPDONA82 = \underset{(3.4114)}{-10.318} + \underset{(.00778)}{.04980} * (GNP82_{-1} - GNP82_{-3})$$

$$- \underset{(.90337)}{1.0890} * \Delta RAAA_{-1} + \underset{(.00859)}{.02506} * (GNP82_{-3} - GNP82_{-5})$$

$$+ \underset{(.00326)}{.00791} * \left[1 + \frac{TDEPRO_{-3} - \frac{1}{6} + TITCR_{-3} - .07}{4} \right]$$

$$* \sum_{i=1}^{3} \frac{GNP82_{-i}}{3} + \underset{(.05815)}{.87712} * IPDONA82_{-1}$$

$R^2 = .991$ S.E. = 3.357 D.W. = 1.94 F.P. = 1959.4-1984.4

C14 $$\text{IPDAG82} = \underset{(.53676)}{2.2627} - \underset{(4.9847)}{23.963} * \sum_{i=1}^{4} \beta_i * \text{UCKIPDAG}_{-i}$$

$$+ \underset{(.00020)}{.00094} * \left[1 + \frac{\text{TDEPRAG}_{-4} - \frac{1}{6} + \text{TITCR}_{-4} - .07}{4}\right] * \sum_{i=3}^{5} \text{GNP82}_{-i}$$

$$+ \underset{(.09524)}{.18658} * \Delta\,\text{IPDAG82}_{-1} + \underset{(.07896)}{.61098} * \text{IPDAG82}_{-1}$$

$$\beta_i = (.4,\ .3,\ .2,\ .1)$$

$R^2 = .958$ S.E. = .9137 D.W. = 2.03 F.P. = 1955.2-1983.4

C15 $$\Delta\,\text{IPDAU82} = \underset{(.04741)}{.08887} + \left(- \underset{(1.1871)}{.73072} + \underset{(.00084)}{.00366} * \text{GNP82}_{-1}\right.$$

$$\left. + \underset{(.15341)}{.44438} * \text{RUM}_{-1} - \underset{(3.2411)}{8.5412} * \text{AUTOSIZE}_{-1}\right) * \Delta\,\text{AUTOSB}$$

$$+ \left(\underset{(.00052)}{.00107}\ \Delta\,\text{GNP82} - \underset{(.41717)}{1.4576}\ \Delta\,\text{AUTOSIZE}\right) * \text{AUTOSB}_{-1}$$

$R^2 = .971$ S.E. = 0.3601 D.W. = 2.29 F.P. = 1962.3-1985.4

C16 $$\text{IRC82} = \underset{(16.702)}{67.252} + \underset{(.46514)}{1.9551} * \sum_{i=1}^{3} \beta_i * (\text{RAAA-RCPCD})_{-i}$$

$$+ \underset{(.00708)}{.02923} * \sum_{i=0}^{2} \beta_i * (\text{DYD82} + \text{YD82})_{-i}$$

$$- \underset{(5.2470)}{15.147} * \text{D763} + \underset{(.04482)}{.67617} * \text{IRC82}_{-1}$$

$$- \left(\underset{(.14727)}{.30998} + \underset{(.00857)}{.04700} * (1-\text{DRMORT}) * \text{RFHA}_{-1} + \underset{(.00701)}{.03735} * \text{DRMORT} * \text{RMORT}_{-1} \right)$$

$$* \sum_{i=1}^{3} \beta_i * \text{PHOUSN.E}_{-i}$$

$$\beta_i = (.41, .49, .10)$$

$R^2 = .971$ S.E. = 4.852 D.W. = 2.24 F.P. = 1970.2-1986.4

C17 $$\Delta \text{ HOUSES} = - \underset{(10.288)}{10.647} + \underset{(2.1133)}{16.370} * \Delta \text{ IRC82} + \underset{(2.4877)}{3.3641} * \Delta \text{ IRC82}_{-1}$$

$$- \underset{(.12462)}{.36882} * \Delta \text{ HOUSES}_{-1} - \underset{(.11404)}{.15599} * \Delta \text{ HOUSES}_{-2}$$

$R^2 = .417$ S.E. = 109.0 D.W. = 2.04 F.P. = 1954.4-1983.4

C18 $\ell n\ HOUSEX = \underset{(.23662)}{.37597} + \underset{(.03017)}{.13249} * \ell n\ HOUSES$

$+ \underset{(.05169)}{.43858} * \Delta\ \ell n\ HOUSES$

$- \underset{(.02033)}{.07514} * \left(\frac{100}{PHOUSN.E_{-1}}\right) * \ell n\ HOUSES$

$+ \underset{(.02904)}{.89437} * \ell n\ HOUSEX_{-1}$

$R^2 = .972$ S.E. = .0421 D.W. = 2.50 F.P. = 1970.2-1985.4

C19 $IINVO82 = - \underset{(13.160)}{47.938} - \underset{(1.8305)}{3.6923} * DM82DOCK + \underset{(1.7795)}{3.5291} * DM82DOCK_{-1}$

$- \underset{(.01449)}{.06655} * SINVO82_{-1}$

$+ \left(\underset{(.03118)}{.13749} - \underset{(.00036)}{.00074} * \left\{RTB - \ell n\ \left(\frac{PPNF}{PPNF_{-4}}\right) * 100 \right\}\right.$

$\left. + \underset{(.02711)}{.04970} * \Delta\ \ell n\ PCRUDE_{-1} \right) * (FS82 - SERVE82)_{-1}$

$+ \underset{(.11342)}{.64902} * \Delta\ M82 + \underset{(.06810)}{.46298} * IINVO82_{-1}$

$R^2 = .651$ S.E. = 10.91 D.W. = 2.42 F.P. = 1955.1-1984.4

C20 $IINVA82 = \underset{(1.1060)}{2.2136} - \underset{(.08479)}{.13176} * IINVA82_{-1}$

$- \underset{(.03333)}{.14586} * SINVA82_{-1} + \underset{(.67644)}{2.4487} * DASTRIKE$

$- \underset{(.67825)}{.63571} * DASTRIKE_{-1} - \underset{(.08193)}{.08634} * \Delta\ CDAN82$

$+ \underset{(.03068)}{.15052} * (CDAN82 + IPDAU82)_{-1} - \underset{(1.0225)}{6.2056} * DAINC1$

$+ \underset{(1.1843)}{.52908} * DAINC1_{-1} + \underset{(1.3488)}{2.8992} * DAINC1_{-2}$

$R^2 = .512$ S.E. = 3.341 D.W. = 2.00 F.P. = 1954.3-1986.4

$$C21 \quad \ell n\ MOIL82 = -\underset{(2.3480)}{3.7619} + \underset{(2.3725)}{2.7000} * DOILDCON$$

$$- \underset{(.09427)}{.30002} * DEMB1 + \underset{(.09429)}{.20291} * DEMB1_{-1}$$

$$+ \underset{(.54671)}{.91779} * DOILCON * \Delta\ \ell n \left(\frac{PMOIL}{PGAS}\right)_{-1}$$

$$+ \underset{(.31715)}{.52768} * (1-DOILDCON) * \ell n\ GNP82$$

$$+ (1 - \underset{(.08983)}{.72356}) * DOILDCON * \ell n\ GNP82$$

$$- 2.3 * \left[1 - \underset{(.05059)}{.88488} * (1 - DOILDCON)\right] * \ell n \left(\frac{PGAS}{PPNF}\right)_{-1}$$

$$- 2.3 * \left[- \underset{(.08983)}{.72356} * DOILDCON\right] * \ell n \left(\frac{PGAS}{PPNF}\right)_{-1}$$

$$+ \underset{(.05059)}{.88488} * (1-DOILDCON) * \ell n\ MOIL82_{-1}$$

$$+ \underset{(.08983)}{.72356} * DOILDCON * \ell n\ MOIL82_{-1}$$

$R^2 = .952$ S.E. = .0933 D.W. = 2.03 F.P. = 1967.3-1983.4

C22 $$\ell n\ MNOIL82 = \underset{(.65497)}{-\ 2.4832} - 1.75 * (1 - \underset{(.06223)}{.76269}) * \ell n \left(\frac{PMNOIL}{PPNF}\right)_{-1}$$

$$+ \left(2 * (1 - \underset{(.06223)}{.76269}) + \underset{(.06096)}{.12355} * \Delta\ \ell n\ SINV82\right) * \ell n\ GNP82$$

$$+ \underset{(.11787)}{.21076} * \Delta\ \ell n\ JEXR + \underset{(.02180)}{.04247} * DM82DOCK$$

$$+ \underset{(.02175)}{.03606} * DM82DOCK_{-1} + \underset{(.06223)}{.76269} * \ell n\ MNOIL82_{-1}$$

$R^2 = .989$ S.E. = .0265 D.W. = 1.77 F.P. = 1976.1-1985.4

C23 $$\ell n\ MAUTO82 = \underset{(.16537)}{.12455} + \underset{(.07294)}{.19365} * \ell n\ AUTOSF + \underset{(.06393)}{.71626} * \ell n\ MAUTO82_{-1}$$

$$+ \underset{(.10162)}{.26974} * \ell n \left(\frac{CDAN82}{AUTOSC}\right)_{-1}$$

$R^2 = .966$ S.E. = .0796 D.W. = 2.15 F.P. = 1967.2-1985.4

C24 $$\Delta\ \ell n\ X82 = .875 * \Delta\ \ell n\ X82_{-1} - .1 * \Delta\ \ell n\ PX_{-1} - .1 * \Delta\ \ell n\ JEXR_{-1}$$

D. Income Flows

D1 $$\Delta \ell n\ YPWS = \underset{(.00149)}{-.00022} + \underset{(.08703)}{.93207} * \Delta \ell n\ JCMH + \underset{(.06155)}{1.0514} * \Delta \ell n\ GNP82 - \underset{(.08035)}{.72154} * \Delta \ell n\ QMH77 - \underset{(.02109)}{.05392} * \frac{DTSI}{JCMH_{-1}}$$

$R^2 = .767$ S.E. = .0054 D.W. = 2.34 F.P. = 1954.2-1983.4

D2 $$\Delta \ell n\ YOL = \underset{(.00206)}{.00753} + \underset{(.07345)}{.36745} * \Delta \ell n\ YPWS + \underset{(.06725)}{.51283} * \Delta \ell n\ YOL_{-1}$$

$R^2 = .528$ S.E. = .0081 D.W. = 1.74 F.P. = 1954.3-1983.4

D3 $$\Delta \ell n\ YNFP = \underset{(.00281)}{.01014} + \underset{(.14434)}{.29576} * \Delta \ell n\ YPWS + \underset{(.02612)}{.10681} * \Delta \ell n\ YCP - \underset{(.02318)}{.08482} * \ell n \left(\frac{RAAA_{-1}}{RAAA_{-3}}\right)$$

$R^2 = .392$ S.E. = .0147 D.W. = 1.57 F.P. = 1954.4-1983.4

D4 $\Delta \ell n\ YFP = -\underset{(.01400)}{.02560} - \underset{(.11193)}{.58817} * DYFP83.3$

$+ \underset{(.10715)}{1.1169} * DYFP83.4 + \underset{(.01998)}{.02362} * DJEXR$

$- \underset{(.44644)}{1.2512} * (1-DJEXR) * \Delta \ell n\ JEXR_{-4}$

$+ \underset{(.14846)}{1.3828} * \Delta \ell n\ PFARM + \underset{(.15066)}{.51578} * \Delta \ell n\ PFARM_{-1}$

$- \underset{(.24596)}{.33213} * \Delta \ell n\ RAAA$

$R^2 = .701$ S.E. = .1050 D.W. = 2.23 F.P. = 1955.2-1983.4

D5 $\Delta YPINT = \underset{(.35703)}{.24960} + \underset{(.02613)}{.35289} * \frac{\Delta RBAR}{RBAR_{-1}} * YPINT_{-1}$

$+ \underset{(.25421)}{1.0344} * \frac{RBAR}{100} * \Delta M2PLUS_{-1}$

$+ \underset{(.08801)}{.20046} * \frac{RBAR}{100} * \frac{(RHSAVE * YD)}{100}_{-1}$

$R^2 = .794$ S.E. = 2.440 D.W. = 2.01 F.P. = 1959.3-1983.4

$$\text{D6} \quad \Delta \ln \text{YUNB} = \underset{(.27513)}{.14515} + \underset{(.01772)}{.21837} * \Delta \text{RUG} + \underset{(.24342)}{.88697} * \Delta \ln \left(\frac{\text{RUM}}{\text{RUG}}\right) + \underset{(.29312)}{.14741} * \left[\ln \left(\frac{\text{JCMH}}{\text{JCMH}_{-4}}\right) - 1\right] + \underset{(.14371)}{.55407} * \text{DUBEXT}$$

$R^2 = .790$ S.E. = .0621 D.W. = 2.11 F.P. = 1955.1-1983.4

$$\text{D7.A} \quad \Delta (\text{YCP+KCAC}) = \underset{(.58172)}{-.80719} + \underset{(.03290)}{.65345} * \Delta \left[\text{PPNF} * \left(\frac{\text{GNP}}{\text{PGNP}} - \frac{\text{YGWS}}{\text{PG}} - \frac{\text{YFP}}{\text{PFARM}}\right)\right] - \underset{(.02457)}{.25375} * \Delta \left[\text{ULC77} * \left(\frac{\text{GNP}}{\text{PGNP}} - \frac{\text{YGWS}}{\text{PG}} - \frac{\text{YFP}}{\text{PFARM}}\right)\right] - \underset{(.00201)}{.00791} * \Delta \left[\text{PCRUDE} * \left(\frac{\text{GNP}}{\text{PGNP}} - \frac{\text{YGWS}}{\text{PG}} - \frac{\text{YFP}}{\text{PFARM}}\right)\right] - \underset{(.01603)}{.03860} * \sum_{i=1}^{2} \left(\frac{\text{RAAA}}{100} * \text{IBF}\right)_{-i}$$

$R^2 = .851$ S.E. = 3.582 D.W. = 2.09 F.P. = 1959.2-1983.4

$$\text{D7.B} \quad \text{YCP} = \text{GNP} - \text{KCA} - \text{TIBF} - \text{TIBSL} - \text{WALD} + \text{SLCSF} + \text{SLCSSL} - \text{STAT} - \text{TSI} + \text{YPDIV} + \text{GTRP} - \text{NINT} + \text{YPINT} - \text{YP}$$

D8 $$\Delta KCA = -\underset{(.18569)}{.09666} + \left[\underset{(.00136)}{.01290} + \underset{(.06010)}{.86334} * \Delta \ell n\ PIBF\right] * KCA_{-1}$$

$$+ \underset{(.02181)}{.03847} * \text{ BF}$$

$R^2 = .860$ S.E. = 1.302 D.W. = 2.51 F.P. = 1954.2-1983.4

D9 $$\Delta KCAC = -\underset{(.05052)}{.07545} + \left[\underset{(.00070)}{.00451} + \underset{(.03973)}{.32672} * \Delta \ell n\ PIBF\right] * KCAC_{-1}$$

$$+ \underset{(.02169)}{.42853} * \Delta KCA$$

$R^2 = .981$ S.E. = .3079 D.W. = 2.17 F.P. = 1959.2-1983.4

D10 $$YPDIV = -\underset{(.10895)}{.22957} + \underset{(.00397)}{.01870} * (YCBT - TCF - TCSL)$$

$$+ \underset{(.00800)}{.01553} * IVA + \underset{(.00797)}{.98555} * YPDIV_{-1}$$

$R^2 = .999$ S.E. = .5869 D.W. = 1.25 F.P. = 1954.2-1983.4

D11 $$\Delta TIBF = -\underset{(.12314)}{.07961} + (\underset{(.00309)}{.00646} + \underset{(.01578)}{.02782} * DEX65) * \Delta GNP$$

$$+ \underset{(.05137)}{.86580} * DTIB$$

$R^2 = .768$ S.E. = .8036 D.W. = 2.06 F.P. = 1954.2-1983.4

D12 Δ TIBSL = $\underset{(.27906)}{-.19082}$ + $\underset{(.00459)}{.07158}$ * Δ C

+ $\underset{(.08523)}{.12119}$ * ℓn TIME - $\underset{(.53153)}{6.9107}$ * DPROP13

+ $\underset{(.04475)}{.21561}$ * Δ $TIBSL_{-1}$

R^2 = .902 S.E. = .5208 D.W. = 1.62 F.P. = 1954.3-1983.4

D13 Δ ℓn TSIF = $\underset{(.00274)}{.00730}$ + $\underset{(.13386)}{.76690}$ * Δ ℓn YPWS

- $\underset{(.02050)}{.27502}$ * Δ ℓn $\left(\frac{YPWS}{WCEIL}\right)$ - $\underset{(.00355)}{.00535}$ * Δ RUG

+ $\underset{(.03379)}{.70132}$ * Δ ℓn TSIFR

R^2 = .905 S.E. = .0112 D.W. = 2.63 F.P. = 1954.2-1983.4

D14 Δ ℓn TSIP = - $\underset{(.00115)}{.00303}$ + $\underset{(.02767)}{1.0895}$ * Δ ℓn TSI

R^2 = .930 S.E. = .0093 D.W. = 2.26 F.P. = 1954.2-1983.4

D15 $TCF = \underset{(.77682)}{4.9737} + \{\underset{(.06621)}{.03064} + \underset{(.13872)}{.60790} * TCFR$

$+ \underset{(.00006)}{.00022} * \Delta (YCBT-TCSL)\} * (YCBT-TCSL)$

$- (\underset{(.08541)}{.20588} * TITCR_{-1} + \underset{(.12507)}{.16568} * \Delta TITCR) * IBFPD$

$+ .6525 * \mu_{-1}$

GLS

$R^2 = .978$ S.E. = 1.050 D.W. = 2.26 F.P. = 1954.3-1983.4

D16 $\Delta TCSL = \underset{(.04597)}{.07123} + (\underset{(.02316)}{.00941} + \underset{(.00023)}{.00048} * TIME) * \Delta YCBT$

$R^2 = .601$ S.E. = .4839 D.W. = 2.46 F.P. = 1954.2-1983.4

D17 $\Delta TPSL = \underset{(.08531)}{.04606} + \underset{(.00426)}{.02761} * \Delta (YP-GTROF-GTRSL-YUNB+TSIP)$

$+ \underset{(.19174)}{.30877} * D674 + \underset{(.21186)}{.54511} * D711$

$R^2 = .687$ S.E. = .5936 D.W. = 1.42 F.P. = 1954.3-1983.4

$$\text{D18}\quad \Delta TPF = (1 - DINDEX) * \{.03246 * DSW.TPF * \Delta YPADJ$$

$$+ .10058 * (1 - DSW.TPF) * \Delta YPADJ$$

$$+ .00003 * \{2 * YPADJ_{-1} * \Delta YPADJ + (\Delta YPADJ)^2\} \}$$

$$+ DINDEX * [.03246 * \Delta YPADJ$$

$$+ .00003 * \frac{PINDEX_{-1}}{100} * YPADJ82_{-1} * \Delta YPADJ$$

$$+ .00003 * YPADJ * \Delta(YPADJ82 * \frac{PINDEX}{100}] + DTP$$

$$\text{D19}\quad \Delta GINTF = \underset{(.12916)}{.21820} + \underset{(.10295)}{.46788} * \frac{RG5}{100} * \Delta GDEBTP$$

$$+ \underset{(.08845)}{.28408} * \Delta GINTF_{-1} + \underset{(.11852)}{.07540} * \left(\frac{RG5}{100}\right)_{-1} * \Delta GDEBTP_{-1}$$

$R^2 = .441$ S.E. = 1.205 D.W. = 1.99 F.P. = 1954.4-1983.4

E. Monetary Sector

E1 $$\ell n\ M2PLUS = \underset{(.02137)}{-.09663} + \underset{(.00505)}{.02253} * DM2P83 - \underset{(.00654)}{.02883} * \ell n\ RG5$$

$$+ \underset{(.03685)}{.13259} * \ell n\ GNP + \underset{(.03672)}{.88418} * \ell n\ M2PLUS_{-1}$$

$$+ \underset{(.09294)}{.25386} * \frac{\Delta\ GDEBTP}{GNP} + .4146 * \mu_{-1}$$

GLS

$R^2 = .999$ S.E. = .0054 D.W. = 2.08 F.P. = 1959.3-1983.4

E2 $$\ell n\ RTB = - \underset{(.23376)}{.87704} + \underset{(.09803)}{1.4611} * \ell n\ RDIS$$

$$- \underset{(.10521)}{.94183} * \ell n\ RDIS_{-1} - \underset{(.25591)}{.84694} * \ell n\ MBASE$$

$$+ \underset{(.19901)}{.67747} * \ell n\ M2PLUS + \underset{(.07468)}{.50000} * \ell n\ RTB_{-1}$$

$R^2 = .979$ S.E. = .0689 D.W. = 1.72 F.P. = 1959.2-1986.4

E3 $$\Delta\ MBASE = \underset{(.06889)}{.19706} + \underset{(.03799)}{.86515} * FDCUR + \underset{(.06525)}{.34026} * \Delta\ (RTB - RDIS)$$

$R^2 = .845$ S.E. = .4201 D.W. = 2.20 F.P. = 1959.2-1983.4

E4 Δ GDEBTP = .59814 + 4.4190 * DUM75
(.50859) (.81629)

- [1 + (.11670 - .29885 * DGDEBTP3) * DSEAS1
(.12840) (.10289)

+ (- .22160 + .53964 * DGDEBTP3) * DSEAS2
(.12449) (.09960)

+ (.12956 - .28054 * DGDEBTP3) * DSEAS3] * $\frac{\text{NIASF}}{4}$
(.11327) (.09213)

- (1 - 3.7918 * DSEAS1 + 3.3543 * DSEAS2
(1.0668) (.93705)

+ 1.5185 * DSEAS3) * FDCUR - 2.1356 * DSEAS1
(1.0678) (1.1701)

- 4.8849 * DSEAS2 + 3.6644 * DSEAS3
(1.1076) (1.2952)

+ Δ GCBDD + Δ GOLD + Δ TCO + Δ SDR

R^2 = .947 S.E. = 3.976 D.W. = 1.76 F.P. = 1959.2-1984.4

E5 Δ GCBDD = 1.4180 + .25789 * DSEAS1 + .36354 * DSEAS2
(.47819) (.31514) (.30966)

+ .12338 * DSEAS3 - .18301 * $GCBDD_{-1}$
(.30987) (.06060)

R^2 = .151 S.E. = 1.783 D.W. = 2.46 F.P. = 1959.2-1983.4

E6 $RG5 = -\underset{(.04331)}{.04100} - \underset{(.02816)}{.01606} * DSEAS1 + \underset{(.02826)}{.05408} * DSEAS2$

$+ \underset{(.02806)}{.07543} * DSEAS3 + \underset{(.02811)}{.03691} * RTB_{-1}$

$+ \underset{(.02854)}{.21595} * \Delta RTB + \underset{(.04526)}{.19046} * RAAA_{-1}$

$+ \underset{(.07404)}{1.0368} * \Delta RAAA + \underset{(.06582)}{.76497} * RG5_{-1}$

$R^2 = .997$ S.E. = .1727 D.W. = 1.75 F.P. = 1955.1-1983.4

E7 $RAAA = \underset{(.05524)}{.15027} + \underset{(.02267)}{.30567} * RTB - \underset{(.02722)}{.17334} * RTB_{-1}$

$+ \underset{(.01256)}{.02561} * \ell n \left(\frac{PPNF_{-3}}{PPNF_{-7}}\right) * 100 + \underset{(.02038)}{.86639} * RAAA_{-1}$

$R^2 = .995$ S.E. = .2231 D.W. = 1.83 F.P. = 1954.3-1983.4

E8 $RCP = \underset{(.04630)}{.40222} + \underset{(.00532)}{.93328} * RCD + .6256 * \mu_{-1}$

GLS

$R^2 = .997$ S.E. = .0820 D.W. = 2.03 F.P. = 1963.1-1983.4

$$\text{E8'} \quad RCP = \underset{(1.2181)}{4.7867} + \underset{(.03850)}{1.0278} * RTB - \underset{(.08793)}{.45880} * RTB_{-1}$$

$$- \underset{(.03725)}{.07074} * DSEAS1 + \underset{(.03705)}{.06936} * DSEAS2 + \underset{(.03752)}{.04151} * DSEAS3$$

$$+ \underset{(.15998)}{1.6523} * DSPRD - \underset{(1.2257)}{4.6561} * \frac{PPNF}{PPNF_{-4}} + \underset{(.05904)}{.51707} * RCP_{-1}$$

$R^2 = .993 \quad S.E. = .2072 \quad D.W. = 1.47 \quad F.P. = 1955.1\text{-}1979.4$

$$\text{E9} \quad RCD = - \underset{(.08308)}{.11235} + \underset{(.03357)}{1.1171} * RTB - \underset{(.10023)}{.45779} * RTB_{-1}$$

$$- \underset{(.05863)}{.17809} * DSEAS1 + \underset{(.06054)}{.06963} * DSEAS2 + \underset{(.05759)}{.09427} * DSEAS3$$

$$+ \underset{(.07494)}{.42983} * RCD_{-1} + \underset{(.23101)}{1.7896} * DSPRD$$

$R^2 = .993 \quad S.E. = .3018 \quad D.W. = 1.85 \quad F.P. = 1963.2\text{-}1983.4$

$$\text{E10} \quad RFHA = - \underset{(.21454)}{.00571} + \underset{(.07390)}{1.2114} * RAAA - \underset{(.17862)}{.43224} * RAAA_{-1}$$

$$+ \underset{(.08342)}{.22146} * RMORT_{-1} - \underset{(.03834)}{.06719} * (RAAA - RCPCD)$$

$$- \underset{(.03732)}{.01766} * (RAAA - RCPCD)_{-1} + \underset{(.15534)}{.07888} * RFHA_{-1}$$

$R^2 = .993 \quad S.E. = .2326 \quad D.W. = 1.82 \quad F.P. = 1976.2\text{-}1986.4$

E11 $$RMORT = \underset{(.23971)}{.31533} + \underset{(.08257)}{.62268}\ RAAA - \underset{(.19957)}{.22656}\ * RAAA_{-1} + \underset{(.17356)}{.58803}\ * RFHA_{-1} - \underset{(.04284)}{.04567}\ * (RAAA-RCPCD) - \underset{(.04170)}{.11147}\ * (RAAA-RCPCD)_{-1} + \underset{(.09321)}{.06186}\ * RMORT_{-1}$$

$R^2 = .992$ S.E. = .2599 D.W. = 2.21 F.P. = 1976.2-1986.4

E12 $$\ell n \left(\frac{M1PLUS}{M2PLUS}\right) = \underset{(.00175)}{.00670} - \underset{(.00072)}{.00457}\ * RTB - \underset{(.00119)}{.00240}\ * \Delta RTB_{-1} + \underset{(.00085)}{.00229}\ * RTB_{-2} + \underset{(.08929)}{1.0894}\ * \ell n \left(\frac{M1PLUS}{M2PLUS}\right)_{-1} - \underset{(.00192)}{.00244}\ * D66 - \underset{(.08781)}{.09378}\ * \ell n \left(\frac{M1PLUS}{M2PLUS}\right)_{-2} - \underset{(.00711)}{.07632}\ * DM2P83.1 + \underset{(.00965)}{.01102}\ * DM2P83.2$$

$R^2 = .999$ S.E. = .0066 D.W. = 1.91 F.P. = 1959.3-1983.4

F. Output Composition

F1 Δ SERVE82 = 4.1356 (.91243) + .81517 (.10399) * Δ CS82

+ .05167 (.01533) * Δ (GNP82 - CS82 - EGOV * 17.2878)

- .16168 (.07460) * Δ SERVE82$_{-1}$ + .34284 (.16074) * Δ (EGOV * 17.2878)

R^2 = .442 S.E. = 3.992 D.W. = 2.09 F.P. = 1954.3-1983.4

F2 JIPM = - 18.750 (1.9015) + .04871 (.00682) * FSMF82

+ .04563 (.00630) * CN82 + .05545 (.00901) * FSNMF82

+ (.02531 (.00940) - .00032 (.00008) * $\sum_{i=1}^{4}$ IINV82$_{-i}$) * Δ (FS82-SERVE82)

+ .04742 (.00733) * IINV82 + .43066 (.05855) * JIPM$_{-1}$

R^2 = .998 S.E. = 1.061 D.W. = 1.57 F.P. = 1955.1-1983.4

F3 $$\Delta \ell n\ JCAP = \underset{(.00665)}{.02946} - \underset{(.00065)}{.00523} * D5864 - \underset{(.00035)}{.00172} * D7074$$

$$+ \left[\underset{(.00376)}{.01431} + \underset{(.00093)}{.00149} * \frac{JCU_{-1} + JCU_{-2}}{2} \right]$$

$$* \sum_{i=0}^{1} \beta_i * \ell n(IBFNC82 + IPDQ82)_{-i}$$

$$- \underset{(.00255)}{.02108} * \ell n\ JCAP_{-1}$$

$\beta_i = (.7, .3)$

$R^2 = .838$ S.E. = .0013 D.W. = 1.34 F.P. = 1958.4-1983.4

F4 $$\Delta GAUTO82 = - \underset{(.04432)}{.05311} + \underset{(.01992)}{1.1266} * \Delta CDAN82$$

$$+ \underset{(.05511)}{.84839} * \Delta IPDAU82$$

$$+ \underset{(.09850)}{.08980} * DASTRIKE + \underset{(.00744)}{1.0171} * IINVA82$$

$$+ \underset{(.04348)}{.97267} * NETXA82$$

$R^2 = .997$ S.E. = .4701 D.W. = 2.47 F.P. = 1954.2-1983.4

G. Miscellaneous Definitions

G1 $$ULC77 = \frac{JCMH}{QMH77} * 100$$

G2 $$RUM = 100 - REM$$

G3 $$GTRP = GTROF + GTRSL + YUNB$$

G4 $$YP = YPWS + YGWS + YOL + YFP + YNFP + YPRENT + YPDIV + YPINT + GTRP + BTRP - TSIP$$

G5 $$YD = YP - TP$$

G6 $$YD82 = \frac{YD}{PC} * 100$$

G7 $$YPERM82 = \sum_{i=0}^{5} \beta_i * \left[YD82_{-i} + \left(\frac{TPNS - GTRP}{PC/100} \right)_{-i} \right]$$

$$\beta_i = (.271, .217, .173, .139, .111, .089)$$

G8 $$YT82 = YD82 + \left(\frac{TPNS - GTRP}{PC/100} \right) - YPERM82$$

G9 $$RHSAVE = \frac{(YD - C - HINT - HTRF)}{YD} * 100$$

G10 $$YCBT = YCP - IVA - KCCA$$

G11.A $$STAT = GNP - KCA - TIBF - TIBSL - WALD + SLCSF + SLCSSL - YCP - TSI + YPDIV + GTRP - NINT + YPINT - YP$$

G11.B STAT is exogenous

G12 TIB = TIBF + TIBSL

G13 TSI = TSIF + TSISL

G14 TC = TCF + TCSL

G15 NIASF = TPF + TCF + TIBF + TSIF - (GFD + GFO + GTROF + YUNB
+ GTRF + GAID + GINTF + SLCSF - GWALDF)

G16 NIASSL = TPSL + TCSL + TIBSL + TSISL + GAID - (GSL + GTRSL + GINTSL
+ SLCSSL - GWALDSL - GDIVSL)

G17 CDA82 = CDAN82 + CDAO82

G18 C82 = CDA82 + CDFE82 + CDO82 + CN82 + CS82

G19 $C = \frac{PCDA}{100} * CDA82 + \frac{PCDFE}{100} + CDFE82 + \frac{PCDO}{100} * CDO82$
$+ \frac{PCN}{100} * CN82 + \frac{PCS}{100} * CS82$

G20 $PC = \frac{C}{C82} * 100$

G21 $JCMHD = \frac{JCMH}{PC} * 100$

G22 IBF82 = IBFPD82 + IBFNC82

G23 $IBFNC = IBFNC82 * \frac{PINC}{100}$

G24 $IBFPD = IBFPD82 * \frac{PIPD}{100}$

G25 $IBF = IBFPD + IBFNC$

G26 $PIBF = \frac{IBF}{IBF82} * 100$

G27 $UCKNC = PINC * \left(\frac{RAAA}{100} + .06\right)$

G28 $UCKIPDAG = \frac{PIPDAG}{PFARM} * \left(\frac{RAAA}{100} + \frac{1}{6}\right)$

G29 $$UCKPDQ = PIPDQ * \left[RAAA/100 - \left(\frac{PPNF_{-1}}{PPNF_{-5}} - 1\right) + \frac{1}{6}\right]$$

G30 $IRC = IRC82 * \frac{PIRC}{100}$

G31 $$HOUSCOMF = \sum_{i=0}^{2} \beta_i * HOUSES_{-i}$$

$\beta_i = (.41, .49, .10)$

G32 $$HASSET = .5 * \ell n \left(\frac{PHOUSEX}{PHOUSEX_{-8}}\right) - \frac{1}{8} * \sum_{i=1}^{8} \frac{RCPCD_{-i}}{100}$$

G33 $IINV = IINVA + IINVF + IINVO$

G34 $SINV82 = SINV82_{-1} + IINV82$

G35 $M82 = MOIL82 + MNOIL82$

G36 $PMNOIL = \frac{PFOREIGN}{JEXR} * 100$

G37 $PM = PMOIL * \frac{MOIL82}{M82} + PMNOIL * \frac{MNOIL82}{M82}$

G38 $M = M82 * \frac{PM}{100}$

G39 $X = X82 * \frac{PX}{100}$

G40 $$GNP82 = C82 + IBF82 + IRC82 + IINV82 + \frac{GFD + GFO + GSL}{PG/100} + X82 - M82$$

G41 $$GNP = C + IBF + IRC + IINV + GFD + GFO + GSL + X - M$$

G42 $$PGNP = \frac{GNP}{GNP82} * 100$$

G43 $$FS82 = GNP82 - IINV82$$

G44 $$FS = GNP - IINV$$

G45 $$FSMF82 = CDA82 + CDFE82 + CDO82 + IBFPD82 + X82 - M82 + \left(\frac{GFO + GFD + GSL}{PG/100}\right) - EGOV * 17.2878$$

G46 $$FSNMF82 = FS82 - SERVE82 - CN82 - FSMF82$$

G47 $$GNPERM82 = \sum_{i=0}^{4} \beta_i * GNP82_{-i}$$

$$\beta_i = (.297, .238, .190, .153, .122)$$

G48 $$GDEBTM = \frac{GINTF}{4} * \left[\sum_{i=0}^{15} \frac{1}{\left(1 + \frac{RG5}{400}\right)^i}\right] + \frac{GDEBTP}{\left(1 + \frac{RG5}{400}\right)^{15}}$$

G49 $$MBASE = \left(1 + \frac{RBASE}{100}\right)^{.25} * MBASE_{-1}$$

G50 $$RM2PLUS = \left[\left(\frac{M2PLUS}{M2PLUS_{-1}}\right)^4 - 1\right] * 100$$

G51 RCPCD = RCP from 1954.1-1962.4
RCD from 1963.1-present

G52 $$RPPERM = \sum_{i=1}^{8} \beta_i * 100 * \Delta \ln PC_{-i}$$

$$\beta_i = (.241, .192, .154, .123, .098, .079, .063, .05)$$

G53 $$JCU = \frac{JIPM}{JCAP}$$

G54 $$QMHT = .5 * \sum_{i=1}^{8} [-.05832 + .01116 * D5467 + .00576 * D6873$$

$$- .05786 * \overline{\ln \left(\frac{JIPM}{JCAP}\right)}$$

$$+ .49865 * \overline{(\Delta \ln GNP82)}$$

$$+ .00753 * \sum_{j=1}^{6} \beta_j * \ln(IBF82 - IPDAG82)_{-j}]_{-i}$$

$$\beta_j = (.1, .15, .25, .25, .15, .1)$$

$$\overline{\ln \left(\frac{JIPM}{JCAP}\right)} = \sum_{i=1955.3}^{1983.4} \frac{\ln \left(\frac{JIPM}{JCAP}\right)_i}{114}$$

$$\overline{(\Delta \ln GNP72)} = \sum_{i=1955.3}^{1983.4} \frac{(\Delta \ln GNP82)_i}{114}$$

G55 NINT = YPINT - (GINTF - GINTFF) - GINTSL - HINT

G56 TP = TPF + TPSL

G57 YPADJ = YP - GTROF - GTRSL - YUNB + TSIP

G58 YPADJ82 = YPADJ/PC * 100

G59 IPDO82 = IPDONA82 + IPDAU82

G60 GFCCC82 = GFCCC * IINVFC82/IINVFC

G61 IINVF82 = IINVFC82 - GFCCC82

G62 $SINVO82 = SINVO82_{-1} + IINVO82$

G63 SINVNA82 = SINVO82 + SINVF82

G64 $SINVF82 = SINVF82_{-1} + IINVF82$

G65 $SINVA82 = SINVA82_{-1} + IINVA82$

G66 IINVNA82 = IINVO82 + IINVF82

G67 IINV82 = IINVNA82 + IINVA82

G68 IINVO = PIINVO/100 * IINVO82

G69 IINVA = PIINVA/100 * IINVA82

G70 IINVF = IINVFC - GFCCC

G71 GFND = GFO + GFCCC

G72 G82 = (GFD + GFO)/PGFNCCC * 100 + GSL/PGSL * 100 + GFCCC82

G73 GSL82 = GSL/PGSL * 100

G74 GF82 = (GFD + GFO)/PGFNCC * 100 + GFCCC82

G75 PG = (GFD + GFND + GSL)/G82 * 100

G76 $REURDR3 = \frac{RTB}{JUS.EUR}$

G77 FSDP = FS-X+M

G78 FSDP82 = FS82-X82+M82

G79 $$RBAR = .4 * \sum_{i=0}^{1} \frac{RCPCD_{-i}}{2} + .6 * \sum_{i=0}^{2} \beta_i * RAAA_{-i}$$

$$\beta_i = (.2, .4, .4)$$

G80 AUTOS = AUTOSC + AUTOSB + AUTOSG

G81 AUTOSF = AUTOS - AUTOSD

G82 NETXA82 = XAUTO82 - MAUTO82

G83 $$RAUTOSF = \frac{AUTOSF}{AUTOS} * 100$$

NOTATION

Most variables are denoted by a suggestive mnemonic. The following rules are followed throughout: i) the same mnemonic is used to represent current and constant dollar expenditure variables, except that the constant dollar version ends with "82", ii) price deflators are represented by a leading "P" followed by the category mnemonic, iii) all mnemonics for consumption expenditure variables begin with a "C", iv) all mnemonics for investment expenditure variables begin with an "I", v) all mnemonics for dummy variables begin with a "D", vi) all mnemonics for tax variables or tax rates begin with "T", vii) all mnemonics beginning with "R" represent variables scaled in percentage point units.

In the following list, a variable preceded by * is endogenous to the Michigan Model. A variable preceded by ** is a definition involving exogenous variables only.

*AUTOS	Units of retail new car sales; millions of units, SAAR.
*AUTOSB	Units of retail new car sales to businesses; millions of units, SAAR.
*AUTOSC	Units of retail new car sales to consumers; millions of units, SAAR.
*AUTOSD	Units of retail new car sales, domestic; millions of units, SAAR.
*AUTOSF	Units of retail new car sales, foreign; millions of units, SAAR.
AUTOSG	Units of retail new car sales to government; millions of units, SAAR.
AUTOSIZE	Ratio of the number of small car sales (domestic and foreign) to total new car sales.
BTRP	Business transfer payments, billions of current dollars.
*C	Personal consumption expenditures, total; billions of current dollars.
*CDAN82	Personal consumption expenditures, new automobiles; billions of 1982 dollars.
*CDAO82	CDA82 minus CDAN82, billions of 1982 dollars.
*CDA82	Personal consumption expenditures, motor vehicles and parts; billions of 1982 dollars.
*CDFE82	Personal consumption expenditures, furniture and household equipment; billions of 1972 dollars.
*CDO82	Personal consumption expenditures, durable goods except motor vehicles and parts and furniture and household equipment; billions of 1982 dollars.
*CN82	Personal consumption expenditures, nondurable goods; billions of 1982 dollars.
*CS82	Personal consumption expenditures, services; billions of 1982 dollars.
*C82	Personal consumption expenditures, total; billions of 1982 dollars.

DAINC Dummy variable for auto sales incentive programs, values defined in the Appendix.

DAINC1 Dummy variable for auto sales incentive programs, values defined in the Appendix.

DASTRIKE Dummy variable for auto strikes, values defined in the Appendix.

DATE Quarterly calendar date.

DCDFE Dummy variable in CDFE82 equation; equals 0 in 1954.1-1983.2, 1.0 otherwise.

DEMB1 Dummy variable for oil embargo; equals 1.0 in 1974.1, zero otherwise.

DEX65 Dummy variable for the change in federal excise tax law, equals 1 from 1954.1-1964.1, 0 otherwise.

DFROFF Dummy variable for removal of price controls; equals .25 in 1974.2-1975.1, 0 otherwise.

DFRZ1 Dummy variable to reflect price freeze; equals -1.0 in 1971.4, 0 otherwise.

DGDEBTP3 Dummy variable for change in seasonality in GDEBTP equation; equals 0 in 1954.1-1982.4, 1.0 otherwise.

DGPAY Dummy variable to reflect government pay increases, values defined in the Appendix.

DINDEX Dummy variable for the indexation of the federal personal income tax; equals 0 1954.1 - 1984.4, 1 otherwise.

DJEXR Dummy variable for the availability of the JEXR series; equals 1.0 1954.1-1968.1, 0 otherwise.

DJGPM Dummy variable to reflect increased consumer awareness of gas mileage in the cost of running a new car, equals zero from 1954.1 to 1974.4, 1 otherwise.

DJRAUTO Dummy variable for availability of JRAUTO series; equals 0 from 1954.1 to 1977.4, 1.0 otherwise.

DM2P83.1 Dummy variable for effect of money market deposit accounts; equals 1.0 in 1983.1, 0 otherwise.

DM2P83.2 Dummy variable for effect of money market deposit accounts; equals 1.0 in 1983.2, 0 otherwise.

DM82DOCK Dummy variable for dock strikes, values defined in the Appendix.

DOILCON Dummy variable to reflect the period of controlled domestic oil prices before the oil embargo; equals 1.0 1967.1-1973.4, zero otherwise.

DOILDCON Dummy variable to reflect the period since the decontrol of domestic oil prices; equals 0 1967.1-1980.4, 1.0 otherwise.

DOPEC1
DOPEC2 — Dummy variables to reflect effect of oil price shocks on auto sales. DOPEC1 equals 1.0 from 1973.4 to 1974.2. DOPEC2 equals 1.0 from 1978.4 to 1980.2.

DPROP13 — Dummy variable for the effect of Proposition 13 on state and local indirect business taxes; equals 1 in 1978.3, 0 otherwise.

DRMORT — Dummy variable for the availability of RMORT; equals zero from 1954.1-1976.1, 1 otherwise.

DSEAS1 — Dummy variable equal to 1 in the first quarter, -1 in the fourth quarter, zero otherwise.

DSEAS2 — Dummy variable equal to 1 in the second quarter, -1 in the fourth quarter, zero otherwise.

DSEAS3 — Dummy variable equal to 1 in the third quarter, -1 in the fourth quarter, zero otherwise.

DSPRD — Dummy variable for anomaly in spread between RCP and RTB; equals 1.0 in 1974.2 and 1974.3, zero otherwise.

DSW.TPF — Dummy variable to switch value of a coefficient in the TPF equation.

DTCF — Revenue effect of federal tax law changes on federal corporate taxes, billions of current dollars.

DTEX — Dummy variable to reflect direct price effects of changes in excise tax laws in 1965, values defined in the Appendix.

DTIB — Dummy variable to reflect changes in indirect business taxes, values defined in the Appendix.

DTP — Dummy variable to reflect changes in personal taxes, values defined in the Appendix.

DTSI — Dummy variable which assumes values equal to the revenue effect of changes in social insurance tax law, values defined in the Appendix.

DUBEXT — Dummy variable for the extension of unemployment benefits beyond 20 weeks, values defined in the Appendix.

DUM75 — Dummy variable in GDEBTP equation; equals 0 in 1954.1-1974.4, 1 otherwise.

DVRA2 — Dummy variable for the impact of the Voluntary Restraint Agreement on auto sales, values defined in the Appendix.

DVRALED — DVRA2 led one quarter.

DYD82 — Dummy variable for effect of the federal tax refund delay in 1985; equals 25.0 in 1985.1, -24.8 in 1985.2, 0 otherwise.

DYFP83.3 — Dummy variable to reflect the PIK program; equals 1.0 in 1983.3, 0 otherwise.

DYFP83.4 Dummy variable to reflect the PIK program; equals 1.0 in 1983.4, 0 otherwise.

D5467 Dummy variable for change in trend growth of productivity; equals 1 in 1954.1-1967.4, 0 otherwise.

D5864 Dummy variable in JCAP equation; equals 1 in 1958.1-1964.4, 0 otherwise.

D66 Dummy variable in M1PLUS equation; equals 0 in 1954.1-1965.4, 1 otherwise.

D674 Dummy variable for state income tax law changes; equals 0 in 1954.1-1967.3, 1 otherwise.

D6873 Dummy variable for change in trend growth of productivity; equals 1 in 1968.1-1973.4, 0 otherwise.

D70.4 Dummy variable in AUTOSD equation; equals 1.0 1954.1 - 1970.4, zero otherwise.

D7074 Dummy variable in JCAP equation; equals 1 in 1970.1-1974.2,0 otherwise.

D711 Dummy variable for state personal income tax law changes; equals 0 in 1954.1-1970.4, 1 otherwise.

D74.2 Dummy variable in AUTOSD equation; equals 1.0 1971.1 - 1974.2, zero otherwise.

D763 Dummy variable for IRC82 equation; equals 1 in 1976.3,0 otherwise.

D79.4 Dummy variable in AUTOSD equation; equals 1.0 1974.3 - 1979.4, zero otherwise.

D85.3 Dummy variable in AUTOSD equation; equals 1.0 1980.1 - 1985.3, zero otherwise.

EGOV Government employment, including armed forces; millions of persons.

*FDCUR Change from previous quarter in currency held by the public plus unborrowed reserves plus extended credit, billions of current dollars, S.A.

*FS Final sales, billions of current dollars.

*FSDP Final sales to domestic purchasers, billions of current dollars.

*FSDP82 Final sales to domestic purchasers, billions of 1982 dollars.

*FSMF82 Final sales of manufactured goods, billions of 1982 dollars.

*FSNMF82 Final sales of non-manufactured goods, billions of 1982 dollars.

*FS82 Final sales; billions of 1982 dollars.

GAID Grants-in-aid to state and local governments, billions of dollars.

*GAUTO82	Gross auto product, billions of 1982 dollars.
*GCBDD	U.S. government deposits except demand deposits at Federal Reserve Banks, N.S.A., average for last month of the quarter.
*GDEBTM	Market value of federal debt held by private investors, billions of current dollars, N.S.A.
*GDEBTP	Gross public debt of the U.S. Treasury held by private investors, billions of current dollars N.S.A., last day of quarter.
GDIVSL	Dividends received by government, billions of current dollars.
GFCCC	Commodity Credit Corporation inventory change, billions of current dollars.
**GFCCC82	Commodity Credit Corporation inventory change, billions of 1982 dollars.
GFD	Federal defense purchases of goods and services, billions of current dollars.
**GFND	Federal government nondefense purchases of goods and services, billions of current dollars.
GFO	Federal government nondefense purchases of goods and services, excluding Commodity Credit Corporation inventory change; billions of current dollars.
*GF82	Federal government purchases of goods and services, billions of 1982 dollars.
*GINTF	Net interest paid by federal government, billions of current dollars.
GINTFF	Interest paid by government to foreigners, billions of current dollars.
GINTSL	Net interest paid by state and local government, billions of current dollars.
*GNP	Gross national product, billions of current dollars.
*GNPERM82	"Permanent" GNP, billions of 1982 dollars.
*GNP82	Gross national product, billions of 1982 dollars.
GOLD	Gold stock, billions of current dollars N.S.A., last day of quarter.
GSL	State and local government purchases of goods and services, billions of current dollars.
*GSL82	State and local government purchases of goods and services, billions of 1982 dollars.
GTRF	Federal government transfer payments to foreigners, billions of current dollars.
GTROF	GTRP minus YUNB minus GTRSL, billions of current dollars.

*GTRP	Government transfer payments to persons, total; billions of current dollars.
GTRSL	State and local government transfer payments to persons, billions of current dollars.
GWALDF	Government wage accruals less disbursements, federal; billions of current dollars.
GWALDSL	Government wage accruals less disbursements, state and local; billions of current dollars.
*G82	Government purchases of goods and services, billions of 1982 dollars.
*HASSET	The value of housing units as an asset measured by the inflation rate for existing housing prices less the interest rate.
HINT	Interest paid by consumers to business, billions of current dollars.
*HOUSCOMP	Housing completions, thousands of units, SAAR.
*HOUSES	Private housing starts, thousands of units, SAAR.
*HOUSEX	Sales of existing single family homes, thousands of units, SAAR.
HTRF	Personal transfers to foreigners, billions of current dollars.
*IBF	Business fixed investment, billions of current dollars.
*IBFNC	Nonresidential fixed investment, structures; billions of current dollars.
*IBFNC82	Nonresidential fixed investment, structures; billions of 1982 dollars.
*IBFPD	Nonresidential fixed investment, producers' durable equipment; billions of current dollars.
*IBFPD82	Nonresidential fixed investment, producers' durable equipment; billions of 1982 dollars.
*IBF82	Business fixed investment, billions of 1982 dollars.
*IINV	Change in business inventories, billions of current dollars.
*IINVA	Change in business inventories, new autos; billions of current dollars.
*IINVA82	Change in business inventories, new autos; billions of 1982 dollars.
**IINVF	Change in business inventories, farm; billions of current dollars.
IINVFC	Change in farm business inventories plus Commodity Credit Corporation inventory change; billions of current dollars.
IINVFC82	Change in farm business inventories plus Commodity Credit Corporation inventory change; billions of 1982 dollars.

**IINVF82	Change in business inventories, farm; billions of 1982 dollars.
*IINVNA82	Change in business inventories, except new autos; billions of 1982 dollars.
*IINVO	Change in business inventories excluding farm and new autos, billions of current dollars.
*IINVO82	Change in business inventories excluding farm and new autos, billions of 1982 dollars.
*IINV82	Change in business inventories, billions of 1982 dollars.
*IPDAG82	Nonresidential fixed investment, producers' durable equipment in agriculture; billions of 1982 dollars.
*IPDAU82	Nonresidential fixed investment, producers' durable equipment in new autos; billions of 1982 dollars.
*IPDONA82	Nonresidential fixed investment, producers' durable equipment except in agriculture, production and new autos; billions of 1982 dollars.
*IPDO82	Nonresidential fixed investment, producers' durable equipment except in agriculture and production; billions of 1982 dollars.
*IPDQ82	Nonresidential fixed investment, producers' durable equipment in production; billions of 1982 dollars.
*IRC	Residential construction expenditures, billions of current dollars.
*IRC82	Residential construction expenditures, billions of 1982 dollars.
IVA	Inventory valuation adjustment for corporate profits, billions of current dollars.
*JCAP	Index of available capacity in manufacturing, expressed as a percentage of 1977 actual output.
*JCMH	Compensation per manhour, private nonfarm sector; index, 1977=100.
*JCMHD	Real compensation per manhour; JCMH deflated by personal consumption expenditures implicit deflator.
*JCU	Federal Reserve Board index of capacity utilization in Manufacturing, expressed as index between zero and unity (based on 1977 output = 1.0).
*JEXR	Index of trade-weighted exchange value of the dollar against currencies of other G-10 countries plus Switzerland, March 1973=100.
JGPM	Index of gallons per mile for new cars, 1967=1.0.
JICS	Index of consumer sentiment, February 1960=100.
*JIPM	Manufacturing index of industrial production, 1977=100.

*JRAUTO	Index of the ratio of CPI-U: automobile finance charges, N.S.A., 1982-1984=100, to CPI-U: new cars, N.S.A., 1982-84=100.
JUS.EUR	Ratio of the 3 month treasury bill rate to the 3 month eurodollar rate.
*KCA	Total capital consumption allowances with capital consumption adjustments, billions of current dollars.
*KCAC	Corporate capital consumption allowances with capital consumption adjustments, billions of current dollars.
KCCA	Corporate capital consumption adjustment, billions of current dollars.
*M	Imports of goods and services, billions of current dollars.
*MAUTO82	Imports of autos as they appear in the Auto Output table of the National Income and Product Accounts, billions of 1982 dollars.
*MBASE	Monetary base, adjusted by the Federal Reserve for changes in reserve requirements; billions of current dollars, S.A., average for last month of quarter.
*MNOIL82	Non-petroleum imports of goods and services, billions of 1982 dollars.
*MOIL82	Petroleum and products imports, billions of 1982 dollars.
*M1PLUS	M1 plus total savings at all depository institutions (billions of $'s; S.A. average for last month of quarter), where M1 equals currency plus demand deposits at commercial banks plus other checkable deposits at all depository institutions including Now accounts, ATS, credit union share drafts and demand deposits at mutual savings banks.
*M2PLUS	M2 plus short term treasury securities (billions of $'s; S.A. average for last month of quarter), where M2 equals M1 plus savings and small denomination time deposits at all depository institutions, overnight RP's at commercial banks, overnight Eurodollars held by U.S. residents, and money market mutual fund shares. Short term treasury securities are defined as U.S. Treasury Bills and coupons with remaining maturity of less than 12 months held by the nonbank public less such securities held by money market mutual funds.
*M82	Imports of goods and services, billions of 1982 dollars.
*NETXA82	Net exports of auto product, billions of 1982 dollars.
*NIASF	Federal government budget surplus (National Income and Product Accounts Basis), billions of current dollars.
*NIASSL	State and local government budget surplus (National Income and Product Accounts Basis), billions of current dollars.
*NINT	Net interest, billions of current dollars.
PAUTO	CPI-W: new cars, 1982-84=100, S.A.

PAUTOD.F	Ratio of average expenditure per domestic new car sold to average expenditure per foreign new car sold.
*PC	Personal consumption expenditures implicit deflator, 1982=100.
*PCDA	Personal consumption expenditures implicit deflator, motor vehicles and parts; 1982=100.
*PCDFE	Personal consumption expenditures implicit deflator, furniture and household equipment; 1982=100.
*PCDO	Personal consumption expenditures implicit deflator, durables excluding motor vehicles and parts and furniture and household equipment; 1982=100.
*PCN	Personal consumption expenditures implicit deflator, non-durable goods; 1982=100.
*PCPI	CPI-U: all items, 1982-84=100, N.S.A.
*PCRUDE	Producer price index for crude materials less agricultural products; 1982=100, S.A.
*PCS	Personal consumption expenditures implicit deflator, services; 1982=100.
PFARM	Gross farm product implicit deflator, 1982=100.
PFOREIGN	Implicit deflator for non-petroleum goods and services imported by the U.S. and denominated in foreign currencies; equals PMNOIL * JEXR/100.
*PG	Government purchases of goods and services implicit deflator, 1982=100.
*PGAS	CPI-W: Motor fuel, motor oil, coolant, and other products; 1982-84=100, S.A.
*PGFNCCC	Implicit deflator, federal government purchases of goods and services excluding commodity credit corporation inventory change; 1982=100.
*PGNP	Gross national product implicit deflator, 1982=100.
*PGSL	Implicit deflator, state and local government purchases of goods and services; 1982=100.
PHOUSEX	Median price for existing single family home sales, thousands of dollars.
*PHOUSN.E	Ratio of the median price of a new home to the median price of an existing home multiplied by 100.
*PIBF	Business fixed investment implicit deflator, 1982=100.
*PIINVA	Implicit deflator, change in business inventories, new autos, calculated as 100 times the ratio of current dollar to constant dollar change in business inventories, new autos; 1982=100.

*PIINVO	Implicit deflator, change in business inventories excluding farm and new autos, calculated as 100 times the ratio of current dollar to constant dollar change in business inventories excluding farm and new autos; 1982=100.
*PINC	Implicit price deflator, business fixed investment, non-residential structures; 1982=100.
PINDEX	Price level used to "price-up" real adjusted gross income for income tax purposes under indexing, 1982=100.
*PIPD	Implicit price deflator, nonresidential fixed investment, producers' durable equipment; 1982=100.
*PIPDAG	Implicit price deflator, nonresidential fixed investment, producers' durable equipment in agriculture; 1982=100.
*PIPDO	Implicit price deflator, nonresidential fixed investment, producers' durable equipment except in agriculture and production; 1982=100.
*PIPDQ	Implicit price deflator, nonresidential fixed investment, producers' durable equipment in production; 1982=100.
*PIRC	Residential construction expenditures implicit deflator, 1982=100.
*PM	Import implicit deflator, 1982=100.
*PMNOIL	Non-petroleum imports of goods and services implicit deflator, 1982=100.
PMOIL	Imports of petroleum and products implicit deflator, 1982=100.
PNGAS	Producer price index for gas fuels; 1982=100 N.S.A.
*POIL	Producer price index for crude petroleum; 1982=100, N.S.A.
POTHRCRU	Producer price index for crude nonfood materials less energy, 1982=100, S.A.
*PPNF	Private nonfarm GNP implicit deflator, 1982=100.
*PX	Export implicit deflator, 1982=100.
*QMHT	Trend growth rate of productivity.
*QMH77	Output per hour, private nonfarm sector; index 1977=100.
*RAAA	Corporate Aaa bond interest rate, percent.
*RAUTOSF	Import share of unit new auto sales, percent.
*RBAR	Average interest rate used in YPINT equation, percent.
RBASE	Growth rate of the monetary base, percent annual rate.
*RCD	90 day certificate of deposit rate, percent.

*RCP	Interest rate on 4-6 month prime commercial paper, percent.
*RCPCD	RCP from 1954.1 to 1962.4 and RCD from 1963.1 to present, percent.
RDIS	Discount rate, Federal Reserve Bank of New York; percent.
*REM	Employment rate, males 20 years and over, percent.
*REURDR3	Three month Eurodollar rate, percent.
*RFHA	Secondary market yield on FHA mortgages, percent.
*RG5	Yield on U.S. government taxable securities, 5 year issues, percent.
*RHSAVE	Personal savings rate, percent.
RLFSEC	Share of the labor force which is not males twenty and over, percent.
*RMORT	Conventional mortgage rate, percent.
*RM2PLUS	Growth rate of M2PLUS, percent annual rate.
*RPPERM	"Permanent" rate of inflation, quarterly rate percent.
*RTB	90 Day Treasure bill rate, daily average of market yield; percent.
*RUG	Civilian unemployment rate, percent.
*RUM	Unemployment rate, males 20 years and over; percent.
SDR	Allowance for Special Drawing Rights, billions of current dollars, N.S.A., last day of quarter.
*SERVE82	Services component of real GNP, billions of 1982 dollars.
*SINVA82	Four times the stock of business inventories, new autos; billions of 1982 dollars, end of quarter.
**SINVF82	Four times the stock of business inventories, farm; billions of 1982 dollars, end of quarter.
*SINVNA82	Four times the stock of business inventories except new autos; billions of 1982 dollars, end of quarter.
*SINVO82	Four times the stock of business inventories, excluding farm and new autos; billions of 1982 dollars, end of quarter.
*SINV82	Four times the stock of business inventories, billions of 1982 dollars, end of quarter.
SLCSF	Subsidies less current surplus of government enterprise, federal; billions of current dollars.

SLCSSL	Subsidies less current surplus of government enterprise, state and local, billions of current dollars.
STAT	Statistical discrepancy in National Income and Product Accounts, billions of current dollars.
*TC	Total corporate profits tax accruals, billions of current dollars.
*TCF	Corporate profits tax accruals, federal; billions of current dollars.
TCFR	Federal statutory corporate tax rate.
TCO	Treasury currency outstanding, billions of current dollars, N.S.A., last day of quarter.
*TCSL	Corporate profits tax accruals, state and local; billions of current dollars.
TDEPRAG	Tax depreciation rate for agricultural equipment.
TDEPRAU	Tax depreciation rate for vehicles.
TDEPRNC	Tax depreciation rate for non-residential structures.
TDEPRO	Tax depreciation rate for other equipment.
TDEPRQ	Tax depreciation rate for production equipment.
*TIB	Indirect business tax and nontax accruals, billions of current dollars.
*TIBF	Indirect business tax and nontax accruals, federal; billions of current dollars.
*TIBSL	Indirect business tax and nontax accruals, state and local; billions of current dollars.
TIME	Time trend equal to 1 in 1954.1 and increasing by 1 per quarter.
TITCR	Tax rate for investment tax credit.
*TP	Total personal tax and nontax payments, billions of current dollars.
*TPF	Personal tax and nontax payments, federal; billions of current dollars.
TPNS	Nonwithheld component of 1968-69 personal income tax surcharge, values defined in the Appendix.
*TPSL	Personal tax and nontax payments, state and local; billions of current dollars.
*TSI	Total contributions for social insurance, billions of current dollars.
*TSIF	Contributions for social insurance, federal; billions of current dollars.

TSIFR	Total social security tax rate.
*TSIP	Personal contributions for social insurance, billions of current dollars.
TSISL	Contributions for social insurance, state and local; billions of current dollars.
μ	A regression residual, used in equations which were fitted with correction for first order autocorrelation of residuals.
*UCKIPDAG	User cost of capital investment in nonresidential producers' durable equipment, agriculture.
*UCKNC	User cost of capital investment in non-residential structures.
*UCKPDQ	User cost of capital investment in nonresidential producers' durable equipment, production.
*ULC77	Unit labor cost, private nonfarm sector; 1977=100.
WALD	Wage accruals less disbursements, total; billions of current dollars.
WCEIL	Wage ceiling for social security taxes, thousands of current dollars.
WUSMIN	Minimum hourly wage, current dollars.
*X	Exports of goods and services, billions of current dollars.
XAUTO82	Exports of autos as they appear in the Auto Output table of the National Income and Product Accounts, billions of 1982 dollars.
*X82	Exports of goods and services, billions of 1982 dollars.
*YCBT	Corporate profits before taxes; billions of current dollars.
*YCP	Corporate profits with inventory valuation adjustment and capital consumption adjustment; billions of current dollars.
*YD	Disposable personal income, billions of current dollars.
*YD82	Disposable personal income, billions of 1982 dollars.
*YFP	Farm proprietors' income with inventory valuation and capital consumption adjustments, billions of current dollars.
YGWS	Government wage and salary disbursements, including military; billions of current dollars.
*YNFP	Nonfarm proprietors' income with inventory valuation and capital consumption adjustments, billions of current dollars.
*YOL	Other labor income, billions of current dollars.
*YP	Personal income, billions of current dollars.

*YPADJ	Adjusted gross income, billions of current dollars.
*YPADJ82	Adjusted gross income, billions of 1982 dollars.
*YPDIV	Corporate dividend payments to persons, billions of current dollars.
*YPERM82	Permanent disposable income, billions of 1982 dollars.
*YPINT	Personal interest income, billions of current dollars.
YPRENT	Rental income of persons with capital consumption adjustment, billions of current dollars.
*YPWS	Private wages and salaries, billions of current dollars.
*YT82	Transitory income, billions of 1982 dollars.
*YUNB	Total unemployment benefits paid, billions of current dollars.

APPENDIX

This appendix notes only non-zero values of dummy variables. All unspecified values may be assumed to be zero.

DM82DOCK	
-1.0	1965.1
1.0	1965.2
-3.0	1969.1
2.5	1969.2
0.5	1969.3
-1.0	1971.3
-3.0	1971.4
4.0	1972.1
-1.0	1977.3
1.0	1977.4

DASTRIKE	
-2.0	1964.4
1.2	1965.1
0.8	1965.2
-1.0	1967.4
0.75	1968.1
0.25	1968.2
-3.6	1970.4
2.4	1971.1
1.2	1971.2
-0.5	1973.4
0.375	1974.1
0.125	1974.2
-1.0	1976.4
0.75	1977.1
0.25	1977.2

DGPAY	
1.0	1955.2
1.0	1955.4
1.0	1956.3
1.0	1957.3
1.0	1960.1-1960.3
1.0	1961.4
1.0	1962.4
1.0	1963.4
1.0	1964.3
1.0	1965.4
1.0	1967.4
1.0	1968.3
1.0	1969.3
1.0	1970.1
1.0	1971.1
1.0	1972.1
1.0	1973.1
1.0	1973.4
1.0	1974.4
1.0	1975.4
1.0	1976.4
1.0	1977.4
1.0	1978.4
1.0	1979.4
1.0	1980.4
1.0	1981.4
1.0	1982.4

DTP		DTEX		DTIB	
-2.5	1964.1	-0.6	1965.2	-0.496	1958.3
-5.0	1964.2	-1.8	1965.3	-0.339	1959.2
-0.3	1964.4	-0.6	1965.4	0.339	1959.3
0.6	1965.1	-1.8	1966.1	-0.971	1965.2-1965.3
-0.3	1965.2	0.3	1966.2- 1966.3	-1.452	1966.1
-1.2	1965.3	0.3	1970.3	0.474	1968.1
-0.3	1965.4	-0.8	1971.3	-0.634	1971.2-1971.3
2.0	1966.1-1966.2	-1.3	1971.4	-1.276	1972.1
-1.5	1967.2	-0.1	1972.1	0.831	1975.2-1975.3
1.0	1968.2	-0.1	1973.1	-3.2	1976.1
6.1	1968.3	-0.1	1974.1	-0.1	1976.4
1.0	1968.4	-0.1	1975.1	-0.35	1978.1
3.6	1969.1	-0.4	1977.1	-0.4	1979.1
0.2	1969.2			-2.4	1980.1
3.8	1969.3			6.8	1980.2
-2.1	1970.1			3.0	1980.3
-6.8	1970.3			4.9	1980.4
-6.5	1971.1			11.6	1981.1
9.5	1972.1			2.2	1981.2
-8.0	1973.1			-2.0	1981.3
-1.0	1773.2			2.1	1981.4
1.8	1973.3			-1.6	1982.1
-39.7	1975.2			0.3	1982.3
27.4	1975.3			0.5	1982.4
0.4	1975.4			4.6	1983.1
-1.5	1976.1			5.2	1983.2
0.2	1976.2			0.1	1983.3
1.2	1976.3			0.1	1983.4
0.3	1977.2				
-4.0	1977.3				
-0.1	1977.4				
-4.2	1978.1				
-1.0	1978.2				
4.0	1978.3				
-10.0	1979.1				
-10.0	1980.1				
-5.0	1981.1				
-0.6	1981.3				
-17.9	1981.4				
-8.5	1982.1				
-0.3	1982.2				
-26.8	1982.3				
-2.3	1982.4				
-10.4	1983.1				
-1.5	1983.2				
-29.6	1983.3				
-3.2	1983.4				

DTSI

1.1	1957.1
1.6	1959.1
2.2	1960.1
1.4	1962.1
1.6	1963.1
5.0	1966.1
1.5	1967.1
2.2	1968.1
2.0	1969.1
3.4	1971.1
3.5	1972.1
11.5	1973.1
4.3	1974.1
1.5	1975.1
2.7	1977.1
5.9	1978.1
9.2	1979.1
3.6	1980.1
16.0	1981.1
4.3	1982.1
3.0	1983.1

DUBEXT

0.133	1958.3
0.220	1961.2
0.230	1972.1
0.212	1975.1
0.162	1975.2
0.117	1975.3
0.022	1975.4
0.011	1976.1
0.027	1977.1

TPNS

0.8	1968.3-1968.4
4.2	1969.1-1969.2
0.2	1969.3-1969.4
1.4	1970.1-1970.2
0.4	1970.3-1970.4

DAINC

1974.3	.5
1974.4	-.3
1975.1	.3
1975.2	-.3
1975.3	-.2
1982.1	1.0
1982.2	-.6
1982.3	-.4
1982.4	1.0
1983.1	-.6
1983.2	.6
1983.3	-.6
1983.4	-.4
1985.3	2.0
1985.4	-1.2
1986.1	-.8
1986.3	3.0
1986.4	-.8

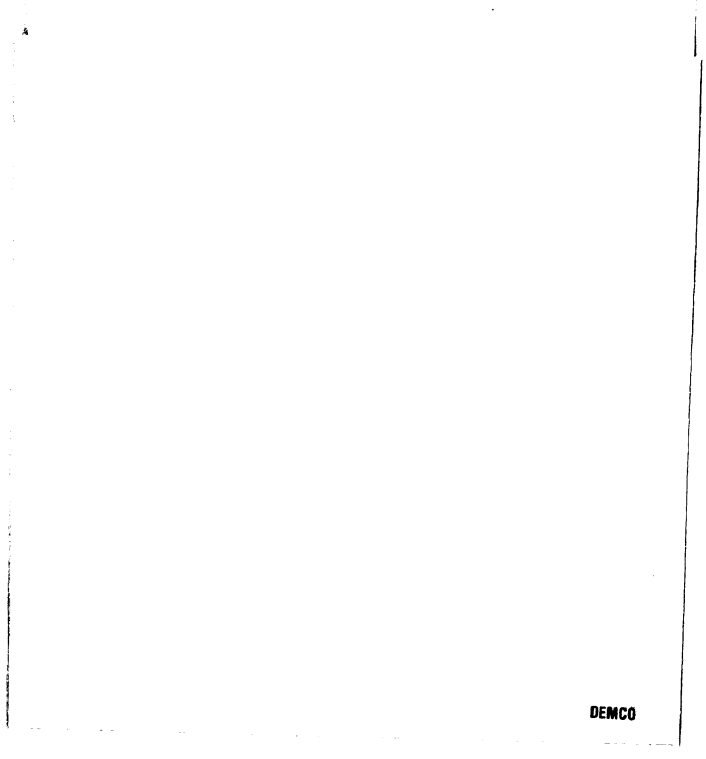
DAINC1

1974.3	.5
1975.1	.5
1982.1	1.0
1982.4	1.0
1983.2	1.0
1985.3	2.0
1986.3	3.0
1986.4	1.0

DVRA2

1982.2	1.0
1983.1	1.0
1984.1	1.0
1985.1	1.0
1986.1	1.0

INDEX OF EQUATIONS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