The US Model
Appendix A

April 26, 2019

Table A.1
The Six Sectors of the US Model

Sector	Corresponding Sector(s) in the Flow of Funds Accounts
1 Household (h)	1 Households and Nonprofit Organizations (H)
2 Firm (f)	2a Nonfinancial Corporate Business (F1) 2b Nonfinancial Noncorporate Business (NN)
3 Financial (b)	3 Financial Business (B) except Government Sponsored Enterprises (CA) and Monetary Authority (MA)
4 Foreign (r)	4 Rest of the World (R)
5 Fed. Gov. (g)	5a Federal Government (US) 5b Government-Sponsored Enterprises (CA) 5c Monetary Authority (MA)
6 S & L Gov. (s)	6 State and Local Governments (S)

• The abbreviations h, f, b, r, g, and s are used throughout this appendix.
• The abbreviations H, F1, NN, B, R, US, CA, MA, and S are used in Table A.5 in the description of
the flow of funds data and, when appropriate, in other tables.

Variable	Eq.	Description	Used in Equations
AA	133	Total net wealth, h, B2012$.	1, 2, 3, 5, 6, 7, 27
$AA1$	88	Total net financial wealth, h, B2012$.	133
$AA2$	89	Total net housing wealth, h, B2012$.	4, 133
AB	73	Net financial assets, b, B$.	none
AF	70	Net financial assets, f, B$.	none
AFT	exog	Total armed forces, g, millions	87
AG	77	Net financial assets, g, B$.	29
$AG1$	exog	Percent of 16+ population 26-55 minus percent 16-25.	1, 2, 3, 4, 27
$AG2$	exog	Percent of 16+ population 56-65 minus percent 16-25.	1, 2, 3, 4, 27
$AG3$	exog	Percent of 16+ population 66+ minus percent 16-25.	1, 2, 3, 4, 27
AH	66	Net financial assets, h, B$.	88
AR	75	Net financial assets, r, B$.	none
AS	79	Net financial assets, s, B$.	none
BO	exog	Bank borrowing from the Fed, B$.	125
BR	exog	Total bank reserves, B$.	125
$CCF1$	67	Capital consumption, F1, B$.	68
CCG	150	Capital consumption, g, B$.	68, 69, 76
$CCGQ$	exog	Capital consumption, g, B2012$.	150
CCH	151	Capital consumption, h, B$.	65, 68, 69
$CCHQ$	exog	Capital consumption, h, B2012$.	151
CCS	152	Capital consumption, s, B$.	68, 69, 78
$CCSQ$	exog	Capital consumption, s, B2012$.	152
CD	3	Consumer expenditures for durable goods, B2012$.	34, 51, 52, 58, 60, 61, 65, 96, 97, 116
CDH	96	Capital expenditures, consumer durable goods, h, B$.	65, 68
CG	25	Capital gains(+) or losses(-) on the financial assets of h, B$.	12, 66
CN	2	Consumer expenditures for nondurable goods, B2012$.	34, 51, 52, 60, 61, 65, 116
$cnst2$	exog	Time varying constant term	1,2,3,6,10,12
COG	exog	Purchases of consumption and investment goods, g, B2012$.	60, 61, 76, 104
COS	exog	Purchases of consumption and investment goods, s, B2012$.	60, 61, 78, 110
CS	1	Consumer expenditures for services, B2012$.	34, 51, 52, 60, 61, 65, 116
CTB	exog	Net capital transfers paid, financial corporations, B$.	72
$CTF1$	exog	Net capital transfers paid, nonfinancial corporations, B$.	69
$CTGB$	exog	Financial stabilization payments, B$.	68, 69
$CTGMB$	exog	Net capital transfers paid, g, less financial stabilization payments, B$.	76
CTH	exog	Net capital transfers paid, h, B$.	65
$CTNN$	exog	Net capital transfers paid, noncorporate business, B$.	69
CTR	exog	Net capital transfers paid, r, B$.	74
CTS	exog	Net capital transfers paid, s, B$.	78
CUR	26	Currency held outside banks, B$.	71, 77
$D1G$	exog	Personal income tax parameter, g.	47, 90
$D1GM$	90	Marginal personal income tax rate, g.	126, 127, 128
$D1S$	exog	Personal income tax parameter, s.	48, 91
$D1SM$	91	Marginal personal income tax rate, s.	126, 127, 128
$D2G$	exog	Profit tax rate, g.	12, 17, 49, 121
$D2S$	exog	Profit tax rate, s.	12, 17, 50, 121
$D3G$	exog	Indirect business tax rate, g.	35, 36, 37, 51
$D3S$	exog	Indirect business tax rate, s.	35, 36, 37, 52
$D4G$	exog	Employee social security tax rate, g.	53, 126
$D5G$	exog	Employer social security tax rate, g.	10, 54
$D6G$	exog	Capital consumption rate for CCF1, g.	67
$D593$	exog	1 in 1959:3; 0 otherwise.	11, 13
$D594$	exog	1 in 1959:4; 0 otherwise.	11
$D601$	exog	1 in 1960:1; 0 otherwise.	11
$D691$	exog	1 in 1969:1; 0 otherwise.	27
$D692$	exog	1 in 1969:2; 0 otherwise.	27
$D714$	exog	1 in 1971:4; 0 otherwise.	27
$D721$	exog	1 in 1972:1; 0 otherwise.	27
$D794823$	exog	1 in 1979:4-1982:3; 0 otherwise.	30

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Variable	Eq.	Description	Used in Equations
DB	153	Net dividends paid, b, B$.	64, 68, 69, 99, 115
DBQ	exog	Net dividends paid, b, B2012$.	153
$DELD$	exog	Physical depreciation rate of the stock of durable goods, rate per quarter.	3, 58
$DELH$	exog	Physical depreciation rate of the stock of housing, rate per quarter.	4, 59
$DELK$	exog	Physical depreciation rate of the stock of capital, rate per quarter.	92
DF	18	Net dividends paid, f, B$.	64, 69, 99, 115
DG	exog	Net dividends paid, g, B$.	64, 76, 99, 105, 115
$DISB$	exog	Discrepancy for b, B$.	73
$DISF$	exog	Discrepancy for f, B$.	70
$DISG$	exog	Discrepancy for g, B$.	77
$DISH$	exog	Discrepancy for h, B$.	66
$DISR$	exog	Discrepancy for r, B$.	75
$DISS$	exog	Discrepancy for s, B$.	79
DR	154	Net dividends paid, r, B$.	57, 64, 99, 115
DRQ	exog	Net dividends paid, r, B2012$.	154
DS	exog	Net dividends paid, s, B$.	64, 78, 99, 112, 115
E	85	Total employment, civilian and military, millions.	86
EX	exog	Exports, B2012$.	33, 60, 61, 74
$EXPG$	106	Net expenditures, g, B$.	107
$EXPS$	113	Net expenditures, s, B$.	114
FA	exog	Farm gross product, B2012$.	17, 26, 31
GDP	82	Gross Domestic Product, B$.	84, 129
$GDPD$	84	GDP price deflator.	111, 123, 130, 150–169
$GDPR$	83	Gross Domestic Product, B2012$.	84, 122, 130
GNP	129	Gross National Product, B$.	131
$GNPD$	131	GNP price deflator.	none
$GNPR$	130	Gross National Product, B2012$.	131
GSB	155	Gross saving, B, B$.	68, 69, 72
$GSBQ$	exog	Gross saving, B, B2012$.	155
$GSCA$	exog	Gross saving, CA, B$.	68, 69, 76
$GSMA$	exog	Gross saving, MA, B$.	68, 69, 76
$GSNN$	156	Gross saving, NN, B$.	68
$GSNNQ$	exog	Gross saving, NN, B2012$.	156
HF	14	Average number of hours paid per job, f, hours per quarter.	62, 100, 118
HFF	100	Deviation of HFF from HFS.	15
HFS	exog	Potential value of HF.	13, 14, 100
HG	exog	Average number of hours paid per civilian job, g, hours per quarter.	43, 64, 76, 82, 83, 104, 115, 126
HM	exog	Average number of hours paid per military job, g, hours per quarter.	43, 64, 76, 82, 83, 104, 115, 126
HN	62	Average number of non overtime hours paid per job, f, hours per quarter.	43, 53, 54, 64, 67, 68, 115, 121, 126
HO	15	Average number of overtime hours paid per job, f, hours per quarter.	43, 53, 54, 62, 67, 68, 115, 121, 126
HS	exog	Average number of hours paid per job, s, hours per quarter.	43, 64, 78, 82, 83, 110, 115, 126
$IBTG$	51	Indirect business taxes, g, B$.	34, 52, 61, 76, 82, 105
$IBTS$	52	Indirect business taxes, s, B$.	34, 51, 61, 78, 82, 112
IGZ	157	Gross investment, g, B$.	106
$IGZQ$	exog	Gross investment, g, B2012$.	157
IHB	exog	Residential investment, b, B2012$.	60, 61, 72
IHF	exog	Residential investment, f, B2012$.	60, 61, 68
IHH	4	Residential investment, h, B2012$.	34, 59, 60, 61, 65

Variable	Eq.	Description	Used in Equations
IKB	exog	Nonresidential fixed investment, b, B2012$.	60, 61, 72
IKF	92	Nonresidential fixed investment, f, B2012$.	60, 61, 67, 69
IKG	exog	Nonresidential fixed investment, g, B2012$.	60, 61, 76
IKH	exog	Nonresidential fixed investment, h, B2012$.	60, 61, 65
IM	27	Imports, B2012$.	33, 60, 61, 74
INS	exog	Insurance and pension reserves to h from g, B$.	65, 76
$INTF$	exog	Net interest payments, f, B$.	64, 68, 69, 99, 115
$INTG$	29	Net interest payments, g, B$.	56, 64, 76, 99, 106, 115
$INTGR$	56	Net interest payments, g to r, B$.	57, 64, 99, 115
$INTS$	exog	Net interest payments, s, B$.	64, 78, 99, 113, 115
$INTZ$	158	Net interest payments, other, B$.	64, 68, 69, 99, 115
$INTZQ$	exog	Net interest payments, other, B2012$.	158
ISZ	159	Gross investment, s, B$.	113
$ISZQ$	exog	Gross investment, s, B2012$.	159
IVA	exog	Inventory valuation adjustment, B$.	68
IVF	117	Inventory investment, f, B2012$.	68
JF	13	Number of jobs, f, millions.	14, 43, 53, 54, 64, 68, 69, 85, 115, 118, 121
JG	exog	Number of civilian jobs, g, millions.	43, 64, 76, 82, 83, 85, 104, 115, 126
$JHMIN$	94	Number of worker hours required to produce Y, millions.	13, 14
JM	exog	Number of military jobs, g, millions.	43, 64, 76, 82, 83, 85, 104, 115
JS	exog	Number of jobs, s, millions.	43, 64, 78, 82, 83, 85, 110, 115, 126
KD	58	Stock of durable goods, B2012$.	3
KH	59	Stock of housing, h, B2012$.	4, 89
KK	12	Stock of capital, f, B2012$.	92
$KKMIN$	93	Amount of capital required to produce Y, B2012$.	12
$L1$	5	Labor force of men 25-54, millions.	86, 87
$L2$	6	Labor force of women 25-54, millions.	86, 87
$L3$	7	Labor force of all others, 16+, millions.	86, 87
LAM	exog	Amount of output capable of being produced per worker hour.	10, 16, 94
LM	8	Number of "moonlighters": difference between the total number of jobs (establishment data) and the total number of people employed (household survey data), millions.	85
$M1$	81	Money supply, end of quarter, B$.	124
MB	71	Net demand deposits and currency, b, B$.	73
$MDIF$	exog	Net increase in demand deposits and currency of banks in U.S. possessions plus change in demand deposits and currency of private nonbank financial institutions plus change in demand deposits and currency of federally sponsored credit agencies and mortgage pools minus mail float, U.S. government, B$.	81
MF	17	Demand deposits and currency, f, B$.	70, 71, 81
MG	160	Demand deposits and currency, g, B$.	71, 77
MGQ	exog	Demand deposits and currency, g, B2012$.	160
MH	161	Demand deposits and currency, h, B$.	66, 71, 81, 88
MHQ	exog	Demand deposits and currency, h, B2012$.	161
MR	162	Demand deposits and currency, r, B$.	71, 75, 81
MRQ	exog	Demand deposits and currency, r, B2012$.	162
MS	163	Demand deposits and currency, s, B$.	71, 79, 81
MSQ	exog	Demand deposits and currency, s, B2012$.	163
MUH	exog	Amount of output capable of being produced per unit of capital.	93

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Variable	Eq.	Description	Used in Equations
$NICD$	97	Net investment in consumer durables, h, B\$.	65, 68, 69
NNF	exog	Net acquisition of nonproduced nonfinancial assets, f, B\$.	69
NNG	exog	Net acquisition of nonproduced nonfinancial assets, g, B\$.	76
NNH	exog	Net acquisition of nonproduced nonfinancial assets, h, B\$.	65
NNR	exog	Net acquisition of nonproduced nonfinancial assets, r, B\$.	74
NNS	exog	Net acquisition of nonproduced nonfinancial assets, s, B\$.	78
PCD	37	Price deflator for CD.	34, 51, 52, 61, 65, 96, 97, 116
$PCGDPD$	123	Percentage change in GDPD, annual rate, percentage points.	none
$PCGDPR$	122	Percentage change in GDPR, annual rate, percentage points.	none
$PCM1$	124	Percentage change in M1, annual rate, percentage points.	30
PCN	36	Price deflator for CN.	34, 51, 52, 61, 65, 116
PCS	35	Price deflator for CS.	34, 51, 52, 61, 65, 116
PD	33	Price deflator for X - EX + IM (domestic sales).	12, 30, 35, 36, 37, 38, 39, 40, 41, 42, 55
PEX	32	Price deflator for EX.	33, 61, 74
PF	10	Price deflator for non farm sales.	16, 17, 26, 27, 31, 119
PFA	111	Price deflator for farm sales.	31
PG	40	Price deflator for COG.	61, 76, 104
PH	34	Price deflator for CS + CN + CD + IHH inclusive of indirect business taxes.	1, 2, 3, 4, 7, 88, 89
$PIEF$	67	Before tax profits, f, B\$.	18, 25, 49, 50, 121, 132
$PIEFRET$	132	Foreign earnings retained abroad, f, B\$.	57, 69
PIH	38	Price deflator for residential investment.	34, 61, 65, 68, 72
PIK	39	Price deflator for nonresidential fixed investment.	21, 61, 65, 68, 72, 76
PIM	exog	Price deflator for IM.	10, 27, 33, 61, 74
PIV	42	Price deflator for inventory investment, adjusted.	67, 82
PKH	55	Market price of KH.	89
POP	120	Noninstitutional population 16+, millions.	1, 2, 3, 4, 5, 6, 7, 8, 26, 27, 47, 48, 90, 91
$POP1$	exog	Noninstitutional population of men 25-54, millions.	5, 120
$POP2$	exog	Noninstitutional population of women 25-54, millions.	6, 120
$POP3$	exog	Noninstitutional population of all others, 16+, millions.	7, 120
$PROD$	118	Output per paid for worker hour ("productivity").	none
PS	41	Price deflator for COS.	61, 78, 110
$PSI1$	exog	Ratio of PEX to PX.	32
$PSI2$	exog	Ratio of PCS to (1 + D3G + D3S)PD.	35
$PSI3$	exog	Ratio of PCN to (1 + D3G + D3S)PD.	36
$PSI4$	exog	Ratio of PCD to (1 + D3G + D3S)PD.	37
$PSI5$	exog	Ratio of PIH to PD.	38
$PSI6$	exog	Ratio of PIK to PD.	39
$PSI7$	exog	Ratio of PG to PD.	40
$PSI8$	exog	Ratio of PS to PD.	41
$PSI9$	exog	Ratio of PIV to PD.	42
$PSI10$	exog	Ratio of WG to WF.	44
$PSI11$	exog	Ratio of WM to WF.	45
$PSI12$	exog	Ratio of WS to WF.	46
$PSI13$	exog	Ratio of gross product of g and s to total employee hours of g and s.	83
$PSI14$	exog	Ratio of PKH to PD.	55
$PSI15$	exog	Ratio of INTGR to INTG.	56
PUG	104	Purchases of goods and services, g, B\$.	106
PUS	110	Purchases of goods and services, s, B\$.	113
PX	31	Price deflator for total sales.	12, 25, 32, 33, 61, 72, 82, 119
Q	164	Gold and foreign exchange, g, B\$.	75,77
QQ	exog	Gold and foreign exchange, g, B2012\$.	164

Variable	Eq.	Description	Used in Equations
RB	23	Bond rate, percentage points.	12,25,29
$RECG$	105	Net receipts, g, B$.	107
$RECS$	112	Net receipts, s, B$.	114
RM	24	Mortgage rate, percentage points.	128
RMA	128	After tax mortgage rate, percentage points.	2, 3, 4
RNT	165	Rental income, h, B$.	64, 68, 69, 99, 115
$RNTQ$	exog	Rental income, h, B2012$.	165
RS	30	Three-month Treasury bill rate, percentage points.	17, 23, 24, 29, 127
RSA	127	After tax bill rate, percentage points.	1, 26
SB	72	Financial saving, b, B$.	73
SF	69	Financial saving, f, B$.	70
SG	76	Financial saving, g, B$.	77
SGP	107	NIPA surplus (+) or deficit (-), g, B$.	none
SH	65	Saving, h, B$.	66
$SHRPIE$	121	Ratio of after tax profits to the wage bill net of employer social security taxes.	none
$SIFG$	54	Employer social insurance contributions, f to g, B$.	67, 68, 76, 103
$SIFS$	exog	Employer social insurance contributions, f to s, B$.	67, 68, 78, 109
SIG	103	Total employer and employee social insurance contributions to g, B$.	105
$SIGG$	exog	Employer social insurance contributions, g to g, B$.	64, 76, 103, 115, 126
$SIHG$	53	Employee social insurance contributions, h to g, B$.	65, 76, 103, 115
$SIHS$	exog	Employee social insurance contributions, h to s, B$.	65, 78, 109, 115
SIS	109	Total employer and employee social insurance contributions to s, B$.	112
$SISS$	exog	Employer social insurance contributions, s to s, B$.	64, 78, 109, 115, 126
SR	74	Financial saving, r, B$.	75
SRZ	116	Approximate NIPA saving rate, h.	none
SS	78	Financial saving, s, B$.	79
SSP	114	NIPA surplus (+) or deficit (-), s, B$.	none
$STAT$	exog	Statistical discrepancy, B$.	68, 69, 80
$STATP$	exog	Statistical discrepancy relating to the use of chain type price indices, B2012$.	83
$SUBG$	exog	Subsidies less current surplus of government enterprises, g, B$.	68, 69, 76, 106
$SUBS$	exog	Subsidies less current surplus of government enterprises, s, B$.	68, 69, 78, 113
T	exog	1 in 1952:1, 2 in 1952:2, etc.	3, 4, 6, 10, 14, 16
$TAUG$	exog	Progressivity tax parameter in personal income tax equation for g.	47, 90, 99
$TAUS$	exog	Progressivity tax parameter in personal income tax equation for s.	48, 91, 99
TB	exog	Time varying time trend.	6, 10
TFR	exog	Taxes, f to r, B$.	18, 25, 74, 101
TBG	166	Corporate profit taxes, b to g, B$.	68, 69, 76, 102
$TBGQ$	exog	Corporate profit taxes, b to g, B2012$.	166
TBS	exog	Corporate profit taxes, b to s, B$.	68, 69, 78, 108
TCG	102	Corporate profit tax receipts, g, B$.	105
TCS	108	Corporate profit tax receipts, s, B$.	112
$TF1$	101	Corporate profit tax payments, F1, B$.	69
TFG	49	Corporate profit taxes, f to g, B$.	18, 25, 76, 101, 102
TFS	50	Corporate profit taxes, f to s, B$.	18, 25, 49, 78, 101, 108
$THETA1$	exog	Ratio of PFA to $GDPD$.	111
$THETA2$	exog	Ratio of CDH to $PCD \cdot CD$.	96
$THETA3$	exog	Ratio of $NICD$ to $PCD \cdot CD$.	97
$THETA4$	exog	Ratio of $PIEFRET$ to $PIEF$.	132
THG	47	Personal income taxes, h to g, B$.	65, 76, 101, 115
THS	48	Personal income taxes, h to s, B$.	65, 78, 105, 112, 115

Variable	Eq.	Description	Used in Equations
$TRFG$	exog	Transfer payments, f to g, B$.	68, 69, 76, 105
$TRFH$	exog	Transfer payments, f to h, B$.	64, 68, 69, 99, 115
$TRFR$	exog	Transfer payments, f to r, B$.	68, 69, 74
$TRFS$	exog	Transfer payments, f to s, B$.	68, 69, 78, 112
$TRGH$	167	Transfer payments (net), g to h, B$.	65, 76, 99, 106, 115
$TRGHQ$	exog	Transfer payments (net), g to h, B2012$.	167
$TRGR$	exog	Transfer payments (net), g to r, B$.	74, 76, 106
$TRGS$	168	Transfer payments, g to s, B$.	76, 78, 106, 112
$TRGSQ$	exog	Transfer payments, g to s, B2012$.	168
$TRHR$	exog	Transfer payments, h to r, B$.	65, 74, 115
$TRRS$	exog	Transfer payments, r to s, B$.	74, 78
$TRSH$	169	Transfer payments, s to h, excluding unemployment insurance benefits, B$.	65, 78, 99, 111, 115
$TRSHQ$	exog	Transfer payments, s to h, excluding unemployment insurance benefits, B2012$.	169
U	86	Number of people unemployed, millions.	28, 87
UB	28	Unemployment insurance benefits, B$.	65, 78, 99, 111, 115
UBR	128	Unborrowed reserves, B$.	none
UR	87	Civilian unemployment rate.	5, 6, 7, 8, 10, 30
$USAFF$	exog	Contributions for government social insurance, U.S.-affiliated areas, B$.	65, 74, 76, 80, 99
$USOTHER$	exog	Net receipts of factor income from the rest of the world not counting net interest receipts, net dividend receipts, and foreign earnings retained abroad, B$.	57, 68, 69
$USROW$	57	Net receipts of factor income from the rest of the world, B$.	74, 129, 130
V	63	Stock of inventories, f, B2012$.	11, 82, 117
WA	126	After tax wage rate. (Includes supplements to wages and salaries except employer contributions for social insurance.)	7
WF	16	Average hourly earnings excluding overtime of workers in f. (Includes supplements to wages and salaries except employer contributions for social insurance.)	10, 11, 28, 43, 44, 45, 46, 53, 54, 64, 68, 69, 99, 121, 126
WG	44	Average hourly earnings of civilian workers in g. (Includes supplements to wages and salaries including employer contributions for social insurance.)	43, 64, 76, 82, 104, 115, 126
WH	43	Average hourly earnings excluding overtime of all workers. (Includes supplements to wages and salaries except employer contributions for social insurance.)	none
WM	45	Average hourly earnings of military workers. (Includes supplements to wages and salaries including employer contributions for social insurance.)	43, 64, 76, 82, 104, 115, 126
WR	119	Real wage rate of workers in f. (Includes supplements to wages and salaries except employer contributions for social insurance.)	none
WS	46	Average hourly earnings of workers in s. (Includes supplements to wages and salaries including employer contributions for social insurance.)	43, 64, 78, 82, 110, 115, 126
X	60	Total sales, B2012$.	11, 17, 26, 31, 33, 63
XX	61	Total sales, B$.	68, 69, 82
Y	11	Total production, B2012$.	10, 12, 13, 14, 27, 63, 83, 93, 94, 118
YD	115	Disposable income, h, B$.	1, 2, 3, 4, 116
YNL	99	Before tax nonlabor income, h, B$.	none
YS	exog	Potential output, B2012$.	12, 25
YT	64	Taxable income, h, B$.	47, 48, 65, 90, 91, 99

• B$ = Billions of dollars.
• B2012$ = Billions of 2012 dollars.

Table A.3
The Equations of the US Model

STOCHASTIC EQUATIONS

Eq.	LHS Variable	Explanatory Variables

Household Sector

1. $\log(CS/POP)$ — $cnst2, cnst, AG1, AG2, AG3, \log(CS/POP)_{-1}, \log[YD/(POP \cdot PH)], RSA, \log(AA/POP)_{-1}, RHO = 1$
[Consumer expenditures: services]

2. $\log(CN/POP)$ — $cnst, AG1, AG2, AG3, \log(CN/POP)_{-1}, \log(AA/POP)_{-1}, \log[YD/(POP \cdot PH)], RMA$
[Consumer expenditures: nondurables]

3. $\Delta CD/POP$ — $cnst2, cnst, AG1, AG2, AG3, DELD(KD/POP)_{-1} - (CD/POP)_{-1}, (KD/POP)_{-1}, YD/(POP \cdot PH), RMA \cdot (.01T), (AA/POP)_{-1}$
[Consumer expenditures: durables]

4. $\Delta IHH/POP$ — $cnst, AG1, AG2, AG3, DELH(KH/POP)_{-1} - (IHH/POP)_{-1}, (KH/POP)_{-1}, (AA/POP)_{-1}, YD/(POP \cdot PH), RMA_{-1} \cdot (.002T), (AA2/POP)_{-1}, RHO = 1$
[Residential investment–h]

5. $\log(L1/POP1)$ — $cnst, \log(L1/POP1)_{-1}, \log(AA/POP)_{-1}, UR$
[Labor force–men 25-54]

6. $\log(L2/POP2)$ — $cnst2, cnst, TB, T, \log(L2/POP2)_{-1}, \log(AA/POP)_{-1}, UR$
[Labor force–women 25-54]

7. $\log(L3/POP3)$ — $cnst, \log(L3/POP3)_{-1}), \log(WA/PH), \log(AA/POP)_{-1}, UR$
[Labor force–all others 16+]

8. $\log(LM/POP)$ — $cnst, \log(LM/POP)_{-1}, UR$
[Number of moonlighters]

Firm Sector

10. $\log PF$ — $\log PF_{-1}, \log[WF(1 + D5G)] - \log LAM, cnst2, TB, cnst, T, \log PIM, UR$
[Price deflator for non farm sales]

11. $\log Y$ — $cnst, \log Y_{-1}, \log X, \log V_{-1}, D593, D594, D601, RHO = 3$
[Production–f]

12. $\Delta \log KK$ — $cnst2, cnst, \log(KK/KKMIN)_{-1}, \Delta \log KK_{-1}, \Delta \log Y, \Delta \log Y_{-1}, \Delta \log Y_{-2}, \Delta \log Y_{-3}, \Delta \log Y_{-4}, \Delta \log Y_{-5}, RB_{-2}(1 - D2G_{-2} - D2S_{-2}) - 100(PD_{-2}/PD_{-6}) - 1), (CG_{-2} + CG_{-3} + CG_{-4})/(PX_{-2}YS_{-2} + PX_{-3}YS_{-3} + PX_{-4}YS_{-4})$
[Stock of capital–f]

13. $\Delta \log JF$ — $cnst, \log[JF/(JHMIN/HFS)]_{-1}, \Delta \log JF_{-1}, \Delta \log Y, D593$
[Number of jobs–f]

14. $\Delta \log HF$ — $cnst, \log(HF/HFS)_{-1}, \log[JF/(JHMIN/HFS)]_{-1}, \Delta \log Y, T$
[Average number of hours paid per job–f]

15. $\log HO$ — $cnst, HFF, HFF_{-1}, RHO = 1$
[Average number of overtime hours paid per job–f]

16. $\log WF - \log LAM$ — $\log WF_{-1} - \log LAM_{-1}, \log PF, cnst, T, \log PF_{-1}$
[Average hourly earnings excluding overtime–f]

17. $\log(MF/PF)$ — $cnst, T, \log(MF_{-1}/PF), \log(X - FA), RS(1 - D2G - D2S)$
[Demand deposits and currency–f]

18. $\Delta \log DF$ — $\log[(PIEF - TFG - TFS - TFR)/DF_{-1}]$
[Dividends paid–f]

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Eq.	LHS Variable	Explanatory Variables

Financial Sector

23    $RB - RS_{-2}$ $cnst, RB_{-1} - RS_{-2}, RS - RS_{-2}, RS_{-1} - RS_{-2}, RHO = 1$
[Bond rate]

24    $RM - RS_{-2}$ $cnst, RM_{-1} - RS_{-2}, RS - RS_{-2}, RS_{-1} - RS_{-2}$
[Mortgage rate]

25    $CG/(PX_{-1} \cdot YS_{-1})$ $cnst, \Delta RB, [\Delta(PIEF - TFG - TFS - TFR)]/(PX_{-1} \cdot YS_{-1})$
[Capital gains or losses on the financial assets of h]

26    $\log[CUR/(POP \cdot PF)]$
$cnst, \log[CUR_{-1}/(POP_{-1}PF)], \log[(X - FA)/POP], RSA$
[Currency held outside banks]

Import Equation

27    $\log(IM/POP)$ $cnst, \ AG1, \ AG2, \ AG3, \ \log(IM/POP)_{-1}, \ \log[Y/(POP \ \cdot \ PH)], \log(AA/POP)_{-1}, \log(PF/PIM), T, D691, D692, D714, D721$
[Imports]

Government Sectors

28    $\log UB$ $cnst, \log UB_{-1}, \log U, \log WF, RHO = 1$
[Unemployment insurance benefits]

29    $INTG/(-AG)$ $cnst, [INTG/(-AG)]_{-1}, (1/400)[.4RS + .75(.6)(1/8)(RB + RB_{-1} + RB_{-2} + RB_{-3} + RB_{-4} + RB_{-5} + RB_{-6} + RB_{-7})],$

30   RS $cnst, \ RS_{-1}, \ 100[(PD/PD_{-1})^4 \ - \ 1], \ UR, \ \Delta UR, \ PCM1_{-1}, D794823 \cdot \ PCM1_{-1}, \Delta RS_{-1}, \Delta RS_{-2}$
[Three-month Treasury bill rate]

IDENTITIES

Eq.	LHS Variable	Explanatory Variables
31	$PX =$	$[PF(X - FA) + PFA \cdot FA]/X$
		[Price deflator for total sales]
32	$PEX =$	$PSI1 \cdot PX$
		[Price deflator for EX]
33	$PD =$	$(PX \cdot X - PEX \cdot EX + PIM \cdot IM)/(X - EX + IM)$
		[Price deflator for domestic sales]
34	$PH =$	$(PCS \cdot CS + PCN \cdot CN + PCD \cdot CD + PIH \cdot IHH + IBTG + IBTS)/(CS + CN + CD + IHH)$
		[Price deflator for (CS + CN + CD + IHH) inclusive of indirect business taxes]
35	$PCS =$	$PSI2(1 + D3G + D3S)PD$
		[Price deflator for CS]
36	$PCN =$	$PSI3(1 + D3G + D3S)PD$
		[Price deflator for CN]
37	$PCD =$	$PSI4(1 + D3G + D3S)PD$
		[Price deflator for CD]
38	$PIH =$	$PSI5 \cdot PD$
		[Price deflator for residential investment]
39	$PIK =$	$PSI6 \cdot PD$
		[Price deflator for nonresidential fixed investment]
40	$PG =$	$PSI7 \cdot PD$
		[Price deflator for COG]
41	$PS =$	$PSI8 \cdot PD$
		[Price deflator for COS]
42	$PIV =$	$PSI9 \cdot PD$
		[Price deflator for inventory investment]
43	$WH =$	$100[(WF \cdot JF(HN + 1.5HO) + WG \cdot JG \cdot HG + WM \cdot JM \cdot HM + WS \cdot JS \cdot HS)/(JF(HN + 1.5HO) + JG \cdot HG + JM \cdot HM + JS \cdot HS)]$
		[Average hourly earnings excluding overtime of all workers]
44	$WG =$	$PSI10 \cdot WF$
		[Average hourly earnings of civilian workers–g]
45	$WM =$	$PSI11 \cdot WF$
		[Average hourly earnings of military workers]
46	$WS =$	$PSI12 \cdot WF$
		[Average hourly earnings of workers–s]
47	$THG =$	$[D1G + ((TAUG \cdot YT)/(POP \cdot PH))]YT$
		[Personal income taxes–h to g]
48	$THS =$	$[D1S + ((TAUS \cdot YT)/(POP \cdot PH))]YT$
		[Personal income taxes–h to s]
49	$TFG =$	$D2G(PIEF - TFS)$
		[Corporate profits taxes–f to g]
50	$TFS =$	$D2S \cdot PIEF$
		[Corporate profits taxes–f to s]
51	$IBTG =$	$[D3G/(1 + D3G)](PCS \cdot CS + PCN \cdot CN + PCD \cdot CD - IBTS)$
		[Indirect business taxes–g]
52	$IBTS =$	$[D3S/(1 + D3S)](PCS \cdot CS + PCN \cdot CN + PCD \cdot CD - IBTG)$
		[Indirect business taxes–s]
53	$SIHG =$	$D4G[WF \cdot JF(HN + 1.5HO)]$
		[Employee social insurance contributions–h to g]
54	$SIFG =$	$D5G[WF \cdot JF(HN + 1.5HO)]$
		[Employer social insurance contributions–f to g]

Eq.	LHS Variable	Explanatory Variables
55	$PKH =$	$PSI14 \cdot PD$
		[Market price of KH]
56	$INTGR =$	$PSI15 \cdot INTG$
		[Net interest payments, g to r]
57	$USROW =$	$-INTGR + DR + PIEFRET + USOTHER$
		[Net receipts of factor income from the rest of the world]
58	$KD =$	$(1 - DELD)KD_{-1} + CD$
		[Stock of durable goods]
59	$KH =$	$(1 - DELH)KH_{-1} + IHH$
		[Stock of housing–h]
60	$X =$	$CS + CN + CD + IHH + IKF + EX - IM + COG + COS + IKH + IKB + IKG + IHF + IHB$
		[Total real sales]
61	$XX =$	$PCS \cdot CS + PCN \cdot CN + PCD \cdot CD + PIH \cdot IHH + PIK \cdot IKF + PEX \cdot EX - PIM \cdot IM + PG \cdot COG + PS \cdot COS + PIK(IKH + IKB + IKG) + PIH(IHF + IHB) - IBTG - IBTS$
		[Total nominal sales]
62	$HN =$	$HF - HO$
		[Average number of non overtime hours paid per job–f]
63	$V =$	$V_{-1} + Y - X$
		[Stock of inventories–f]
64	$YT =$	$WF \cdot JF(HN + 1.5HO) + WG \cdot JG \cdot HG + WM \cdot JM \cdot HM + WS \cdot JS \cdot HS + RNT + INTZ + INTF + INTG - INTGR + INTS + DF + DB + DR + DG + DS + TRFH - TRHR - SIGG - SISS$
		[Taxable income–h]
65	$SH =$	$YT - SIHG - SIHS + USAFF - THG - THS - PCS \cdot CS - PCN \cdot CN - PCD \cdot CD + TRGH + TRSH + UB + INS + NICD + CCH - CTH - PIH \cdot IHH - CDH - PIK \cdot IKH - NNH$
		[Financial saving–h]
66	$0 =$	$SH - \Delta AH - \Delta MH + CG - DISH$
		[Budget constraint–h; (determines AH)]
67	$CCF1 =$	$D6G(PIK \cdot IKF + PIK_{-1} \cdot IKF_{-1} + PIK_{-2} \cdot IKF_{-2} + PIK_{-3} \cdot IKF_{-3})/4$
		[Capital consumption, F1]
68	$PIEF =$	$XX + PIV \cdot IVF + SUBS + SUBG + USOTHER - WF \cdot JF(HN + 1.5HO) - RNT - INTZ - INTF - TRFH - NICD - CCH + CDH - TBS - TRFS - CCS - TRFR - DB - GSB - CTGB - GSMA - GSCA - TBG - TRFG - CCG - SIFG - SIFS - GSNN - IVA - CCF1 - STAT$
		[Before tax profits–f]
69	$SF =$	$XX + SUBS + SUBG + PIEFRET + USOTHER - WF \cdot JF(HN + 1.5HO) - RNT - INTZ - INTF - TRFH - NICD - CCH + CDH - TBS - TRFS - CCS - TRFR - DB - GSB - CTGB - GSMA - GSCA - TBG - TRFG - CCG - SIFG - SIFS - STAT - DF - TF1 - PIK \cdot IKF - PIH \cdot IHF - NNF - CTF1 - CTNN$
		[Financial saving–f]
70	$0 =$	$SF - \Delta AF - \Delta MF - DISF$
		[Budget constraint–f; (determines AF)]

Eq.	LHS Variable	Explanatory Variables
71	$0 =$	$\Delta MB + \Delta MH + \Delta MF + \Delta MR + \Delta MG + \Delta MS - \Delta CUR$
		[Demand deposit identity; (determines MB)]
72	$SB =$	$GSB - CTB - PIH \cdot IHB - PIK \cdot IKB$
		[Financial saving–b]
73	$0 =$	$SB - \Delta AB - \Delta MB - \Delta(BR - BO) - DISB$
		[Budget constraint–b; (determines AB)]
74	$SR =$	$-PEX \cdot EX - USROW + PIM \cdot IM + TFR + TRFR + TRHR + TRGR - USAFF - CTR - NNR - TRRS$
		[Financial saving–r]
75	$0 =$	$SR - \Delta AR - \Delta MR + \Delta Q - DISR$
		[Budget constraint–r; (determines AR)]
76	$SG =$	$GSMA + GSCA + THG + IBTG + TBG + TFG + SIHG + SIFG - DG + TRFG - PG \cdot COG - WG \cdot JG \cdot HG - WM \cdot JM \cdot HM - TRGH - TRGR - TRGS - INTG - SUBG + CCG - INS - USAFF - CTGMB - NNG - PIK \cdot IKG + SIGG + CTGB$
		[Financial saving–g]
77	$0 =$	$SG - \Delta AG - \Delta MG + \Delta CUR + \Delta(BR - BO) - \Delta Q - DISG$
		[Budget constraint–g; (determines AG unless AG is exogenous)]
78	$SS =$	$THS + IBTS + TBS + TFS + SIHS + SIFS - DS + TRGS + TRFS - PS \cdot COS - WS \cdot JS \cdot HS - TRSH - UB - INTS - SUBS + CCS - CTS - NNS + SISS + TRRS$
		[Financial saving–s]
79	$0 =$	$SS - \Delta AS - \Delta MS - DISS$
		[Budget constraint–s; (determines AS)]
80	$0 =$	$SH + SF + SB + SR + SG + SS + STAT + USAFF$
		[Redundant equation—for checking]
81	$M1 =$	$M1_{-1} + \Delta MH + \Delta MF + \Delta MR + \Delta MS + MDIF$
		[Money supply]
82	$GDP =$	$XX + PIV(V - V_{-1}) + IBTG + IBTS + WG \cdot JG \cdot HG + WM \cdot JM \cdot HM + WS \cdot JS \cdot HS$
		[Nominal GDP]
83	$GDPR =$	$Y + PSI13(JG \cdot HG + JM \cdot HM + JS \cdot HS) + STATP$
		[Real GDP]
84	$GDPD =$	$GDP/GDPR$
		[GDP price deflator]
85	$E =$	$JF + JG + JM + JS - LM$
		[Total employment, civilian and military]
86	$U =$	$L1 + L2 + L3 - E$
		[Number of people unemployed]
87	$UR =$	$U/(L1 + L2 + L3 - AFT)$
		[Civilian unemployment rate]
88	$AA1 =$	$(AH + MH)/PH$
		[Total net financial wealth–h]
89	$AA2 =$	$(PKH \cdot KH)/PH$
		[Total net housing wealth–h]
90	$D1GM =$	$D1G + (2TAUG \cdot YT)/(POP \cdot PH)$
		[Marginal personal income tax rate–g]
91	$D1SM =$	$D1S + (2TAUS \cdot YT)/(POP \cdot PH)$
		[Marginal personal income tax rate–s]
92	$IKF =$	$KK + (1 - DELK)KK_{-1}$
		[Nonresidential fixed investment–f]
93	$KKMIN =$	Y/MUH
		[Amount of capital required to produce Y]
94	$JHMIN =$	Y/LAM
		[Number of worker hours required to produce Y]

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Eq.	LHS Variable	Explanatory Variables
96	$CDH =$	$THETA2 \cdot PCD \cdot CD$
		[Capital expenditures, consumer durable goods, h]
97	$NICD =$	$THETA3 \cdot PCD \cdot CD$
		[Net investment in consumer durables, h]
99	$YNL =$	$RNT + INTZ + INTF + INTG - INTGR + INTS + DF + DB + DR +$
		$DG + DS + TRFH + TRGH + TRSH + UB$
		[Before-tax nonlabor income–h]
100	$HFF =$	$HF - HFS$
		[Deviation of HF from HFS]
101	$TF1 =$	$TFG + TFS + TFR$
		[Corporate profit tax payments, F1]
102	$TCG =$	$TFG + TBG$
		[Corporate profit tax receipts–g]
103	$SIG =$	$SIHG + SIFG + SIGG$
		[Total social insurance contributions to g]
104	$PUG =$	$PG \cdot COG + WG \cdot JG \cdot HG + WM \cdot JM \cdot HM$
		[Purchases of goods and services–g]
105	$RECG =$	$THG + TCG + IBTG + SIG + TRFG - DG$
		[Net receipts–g]
106	$EXPG =$	$PUG + TRGH + TRGR + TRGS + INTG + SUBG - IGZ$
		[Net expenditures–g]
107	$SGP =$	$RECG - EXPG$
		[NIPA surplus or deficit–g]
108	$TCS =$	$TFS + TBS$
		[Corporate profit tax receipts–s]
109	$SIS =$	$SIHS + SIFS + SISS$
		[Total social insurance contributions to s]
110	$PUS =$	$PS \cdot COS + WS \cdot JS \cdot HS$
		[Purchases of goods and services–s]
111	$PFA =$	$THETA1 \cdot GDPD$
		[Price deflator for farm sales]
112	$RECS =$	$THS + TCS + IBTS + SIS + TRGS + TRFS - DS$
		[Net receipts–s]
113	$EXPS =$	$PUS + TRSH + UB + INTS + SUBS - ISZ$
		[Net expenditures–s]
114	$SSP =$	$RECS - EXPS$
		[NIPA surplus or deficit–s]
115	$YD =$	$WF \cdot JF(HN + 1.5HO) + WG \cdot JG \cdot HG + WM \cdot JM \cdot HM + WS \cdot JS \cdot HS +$
		$RNT + INTZ + INTF + INTG - INTGR + INTS + DF + DB + DR +$
		$DG + DS + TRFH + TRGH + TRSH + UB - SIHG - SIHS + USAFF -$
		$THG - THS - TRHR - SIGG - SISS$
		[Disposable income–h]
116	$SRZ =$	$(YD - PCS \cdot CS - PCN \cdot CN - PCD \cdot CD)/YD$
		[Approximate NIPA saving rate–h]
117	$IVF =$	$V - V_{-1}$
		[Inventory investment–f]
118	$PROD =$	$Y/(JF \cdot HF)$
		[Output per paid for worker hour:"productivity"]
119	$WR =$	WF/PF
		[Real wage rate of workers in f]
120	POP	$= POP1 + POP2 + POP3$
		[Noninstitutional population 16 and over]

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Eq.	LHS Variable	Explanatory Variables
121	$SHRPIE =$	$[(1 - D2G - D2S)PIEF]/[WF \cdot JF(HN + 1.5HO)]$
		[Ratio of after tax profits to the wage bill net of employer social security taxes]
122	$PCGDPR =$	$100[(GDPR/GDPR_{-1})^4 - 1]$
		[Percentage change in GDPR]
123	$PCGDPD =$	$100[(GDPD/GDPD_{-1})^4 - 1]$
		[Percentage change in GDPD]
124	$PCM1 =$	$100[(M1/M1_{-1})^4 - 1]$
		[Percentage change in M1]
125	$UBR =$	$BR - BO$
		[Unborrowed reserves]
126	$WA =$	$100[(1 - D1GM - D1SM - D4G)[WF \cdot JF(HN + 1.5HO)] + (1 - D1GM -$
		$D1SM)(WG \cdot JG \cdot HG + WM \cdot JM \cdot HM + WS \cdot JS \cdot HS - SIGG -$
		$SISS)]/[JF(HN + 1.5HO) + JG \cdot HG + JM \cdot HM + JS \cdot HS]$
		[After tax wage rate]
127	$RSA =$	$RS(1 - D1GM - D1SM)$
		[After-tax three-month Treasury bill rate]
128	$RMA =$	$RM(1 - D1GM - D1SM)$
		[After-tax mortgage rate]
129	$GNP =$	$GDP + USROW$
		[Nominal GNP]
130	$GNPR =$	$GDPR + USROW/GDPD$
		[Real GNP]
131	$GNPD =$	$GNP/GNPR$
		[GNP price deflator]
132	$PIEFRET =$	$THETA4 \cdot PIEF$
		[Foreign earnings retained abroad—f]
133	$AA =$	$AA1 + AA2$
		[Total net wealth–h]

Nominal Variables

150	$CCG =$	$GDPD \cdot CCGQ$
151	$CCH =$	$GDPD \cdot CCHQ$
152	$CCS =$	$GDPD \cdot CCSQ$
153	$DB =$	$GDPD \cdot DBQ$
154	$DR =$	$GDPD \cdot DRQ$
155	$GSB =$	$GDPD \cdot GSBQ$
156	$GSNN =$	$GDPD \cdot GSNNQ$
157	$IGZ =$	$GDPD \cdot IGZQ$
158	$INTZ =$	$GDPD \cdot INTZQ$
159	$ISZ =$	$GDPD \cdot ISZQ$
160	$MG =$	$GDPD \cdot MGQ$
161	$MH =$	$GDPD \cdot MHQ$
162	$MR =$	$GDPD \cdot MRQ$
163	$MS =$	$GDPD \cdot MSQ$
164	$Q =$	$GDPD \cdot QQ$
165	$RNT =$	$GDPD \cdot RNTQ$
166	$TBG =$	$GDPD \cdot TBGQ$
167	$TRGH =$	$GDPD \cdot TRGHQ$
168	$TRGS =$	$GDPD \cdot TRGSQ$
169	$TRSH =$	$GDPD \cdot TRSHQ$

Variables as a percent of GDP

180	$RECGZGDP =$	$RECG/GDP$
181	$EXPGZGDP =$	$EXPG/GDP$
182	$SGPZGDP =$	$-SGP/GDP$
183	$AGZGDP =$	$-AG/(4 \cdot GDP)$
184	$INTGZGDP =$	$INTG/GDP$
185	$SRZGDP =$	SR/GDP
186	$ASZGDP =$	$-AS/(4 \cdot GDP)$
187	$PCGDPR4 =$	$100 \cdot (GDPR/GDPR_{-4} - 1)$
188	$PCGDPD4 =$	$100 \cdot (GDPD/GDPD_{-4} - 1)$

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Table A.4
Coefficient Estimates and Test Results
for the US Equations

See Chapter 1 in Fair (2004) for discussion of the tests.
See Chapter 2 in Fair (2004) for discussion of the equations.

Table A1
Equation 1
LHS Variable is $\log(CS/POP)$

| Equation | | | | χ^2 Tests | | | |
RHS Variable	Coef.	t-stat.	Test	χ^2	df	p-value
cnst2	0.02102	5.05	Lags	16.92	3	0.0007
cnst	-0.10223	-3.17	T	7.40	1	0.0065
$AG1$	-0.03513	-1.52	Leads +1	9.03	1	0.0027
$AG2$	-0.26191	-6.34	Leads +4	18.13	4	0.0012
$AG3$	0.13283	3.05	Leads +8	21.66	2	0.0000
$\log(CS/POP)_{-1}$	0.91272	30.00				
$\log[YD/(POP \cdot PH)]$	0.03339	0.89				
RSA	-0.00127	-4.67				
$\log(AA/POP)_{-1}$	0.03353	4.95				
RHO1	0.19166	3.10				

SE	0.00374
R^2	1.000
DW	2.04

overid (df = 11, p-value =0.0000)
χ^2 (AGE) = 45.93 (df = 3, p-value = 0.0000)

Stability Test

AP	T_1	T_2	λ	Break	
20.03	1970.1	1979.4	2.00	1974.2	

Lags test adds $\log(CS/POP)_{-2}$, $\log[YD/(POP \cdot PH)]_{-1}$, and RSA_{-1}.
Leads tests are for $\log[YD/(POP \cdot PH)]$.
Estimation period is 1954.1-2019.1

Table A2
Equation 2
LHS Variable is $\log(CN/POP)$

Equation				χ^2 Tests		
RHS Variable	Coef.	t-stat.	Test	χ^2	df	p-value
cnst	-0.25569	-4.47	Lags	10.00	3	0.0186
$AG1$	0.02080	0.90	RHO	14.96	1	0.0001
$AG2$	-0.13247	-2.72	T	0.00	1	0.9731
$AG3$	-0.01259	-0.17	Leads +1	2.21	1	0.1372
$\log(CN/POP)_{-1}$	0.84050	26.36	Leads +4	0.07	4	0.9994
$\log(AA/POP)_{-1}$	0.05629	4.99	Leads +8	3.43	2	0.1798
$\log[YD/(POP \cdot PH)]$	0.03782	2.53				
RMA	-0.00092	-2.89				

SE   0.00656
R^2 0.999
DW   1.59

overid (df = 3, p-value =0.0008)
χ^2 (AGE) = 15.88 (df = 3, p-value = 0.0012)

		Stability Test				
AP	T_1	T_2	λ	Break		
20.14	1970.1	1979.4	2.00	1975.2	0.8605	2008.1
11.37	1980.1	1989.4	1.83	1981.1		
11.22	1990.1	1999.4	1.91	1994.1		

Lags test adds $\log(CN/POP)_{-2}$, $\log[YD/(POP \cdot PH)]_{-1}$, and RMA_{-1}.
Leads tests are for $\log[YD/(POP \cdot PH)]$.
Estimation period is 1954.1-2019.1

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| Equation | | | | χ^2 Tests | | |
RHS Variable	Coef.	t-stat.	Test	χ^2	df	p-value
cnst2	0.05217	3.33	Lags	3.72	3	0.2930
cnst	-0.04674	-1.52	RHO	1.99	1	0.1580
$AG1$	-0.10563	-2.22	T	0.62	1	0.4311
$AG2$	1.27671	4.84	Leads +1	4.37	1	0.0367
$AG3$	-0.81001	-4.10	Leads +4	0.70	4	0.9510
[a]	0.15223	4.46	Leads +8	2.07	2	0.3548
$(KD/POP)_{-1}$	-0.01875	-6.87				
$YD/(POP \cdot PH)$	0.02726	4.50				
$RMA \cdot (.01T)$	-0.00243	-3.14				
$(AA/POP)_{-1}$	0.00068	4.82				

SE   0.01408
R^2 0.240
DW   2.05

overid (df = 4, p-value =0.0000)
χ^2 (AGE) = 28.48 (df = 3, p-value = 0.0000)

| | | Stability Test | | | |
AP	T_1	T_2	λ	Break	
14.86	1970.1	1979.4	2.00	1974.2	

[a]Variable is $DELD(KD/POP)_{-1} - (CD/POP)_{-1}$
Lags test adds [a] lagged once, $[YD/(POP \cdot PH)]_{-1}$, and $(RMA \cdot (.01T))_{-1}$.
Leads tests are for $YD/(POP \cdot PH)$.
Estimation period is 1954.1-2019.1

<div align="center">

Table A4
Equation 4
LHS Variable is $IHH/POP - (IHH/POP)_{-1}$

</div>

RHS Variable	Equation Coef.	t-stat.	Test	χ^2 Tests χ^2	df	p-value
cnst	-0.36806	-2.45	Lags	4.36	3	0.2252
$AG1$	1.21628	3.53	T	12.66	1	0.0004
$AG2$	-2.49615	-5.16	Leads +1	0.32	1	0.5715
$AG3$	-0.49567	-0.63	Leads +4	5.07	4	0.2800
[a]	0.39293	6.88	Leads +8	2.60	2	0.2719
$(KH/POP)_{-1}$	-0.02013	-4.05				
$YD/(POP \cdot PH)$	0.07724	3.46				
$RMA_{-1} \cdot (.002T)$	-0.03990	-5.34				
$(AA2/POP)_{-1}$	0.00274	3.99				
RHO1	0.80601	16.86				

SE	0.01442
R^2	0.465
DW	2.31

overid (df = 12, p-value =0.0000)
χ^2 (AGE) = 61.09 (df = 3, p-value = 0.0000)

		Stability Test					
AP	T_1	T_2	λ	Break			
22.32	1970.1	1979.4	2.00	1978.1	1.0000		2008.1
35.60	1980.1	1989.4	1.83	1980.3			
34.92	1990.1	1999.4	1.91	1991.2			

[a] Variable is $DELH(KH/POP)_{-1} - (IHH/POP)_{-1}$
Lags test adds [a] lagged once, $[YD/(POP \cdot PH)]_{-1}$, and $(RMA_{-1} \cdot (.002T))_{-1}$.
Leads tests are for $YD/(POP \cdot PH)$.
Estimation period is 1954.1-2019.1

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Table A5
Equation 5
LHS Variable is $\log(L1/POP1)$

</div>

RHS Variable	Equation Coef.	t-stat.	Test	χ^2 Tests χ^2	df	p-value
cnst	0.02847	3.33	Lags	6.86	2	0.0324
$\log(L1/POP1)_{-1}$	0.91211	35.69	RHO	2.26	1	0.1328
$\log(AA/POP)_{-1}$	-0.00641	-3.33	T	5.31	1	0.0212
UR	-0.04461	-3.18				

SE	0.00240
R^2	0.994
DW	2.16

overid (df = 3, p-value =0.0203)

		Stability Test			End Test	
AP	T_1	T_2	λ	Break	p-value	End
6.48	1970.1	1979.4	2.00	1970.1	0.4942	2008.1
2.86	1980.1	1989.4	1.83	1989.4		
4.18	1990.1	1999.4	1.91	1992.4		

Lags test adds $\log(L1/POP1)_{-2}$ and UR_{-1}.
Estimation period is 1954.1-2019.1

Table A6
Equation 6
LHS Variable is $\log(L2/POP2)$

RHS Variable	Equation			Test	χ^2 Tests χ^2	df	p-value
		Coef.	t-stat.				
cnst2		0.06856	5.38	Lags	3.21	2	0.2013
cnst		-0.02929	-0.73	RHO	2.97	1	0.0848
TB		-0.00032	-6.08				
T		0.00040	6.56				
$\log(L2/POP2)_{-1}$		0.89110	45.17				
$\log(AA/POP)_{-1}$		-0.01473	-2.00				
UR		-0.13661	-4.08				
SE	0.00494						
R^2	1.000						
DW	2.22						

overid (df = 3, p-value =0.9017)

		Stability Test			
AP	T_1	T_2	λ	Break	
11.80	1970.1	1979.4	2.00	1973.1	

Lags test adds $\log(L2/POP2)_{-2}$ and UR_{-1}
Estimation period is 1954.1-2019.1

Table A7
Equation 7
LHS Variable is $\log(L3/POP3)$

RHS Variable	Equation			Test	χ^2 Tests χ^2	df	p-value
		Coef.	t-stat.				
cnst		0.03820	1.98	Lags	5.20	3	0.1574
$\log(L3/POP3)_{-1}$		0.97502	72.82	RHO	4.46	1	0.0347
$\log(WA/PH)$		0.01580	2.15	T	2.03	1	0.1541
$\log(AA/POP)_{-1}$		-0.01184	-2.23	Leads +1	2.22	1	0.1360
UR		-0.12251	-3.94	Leads +4	0.04	4	0.9998
				Leads +8	0.97	2	0.6169
				$\log PH$	4.26	1	0.0389
SE	0.00514						
R^2	0.987						
DW	2.10						

overid (df = 3, p-value =0.1305)

		Stability Test				End Test	
AP	T_1	T_2	λ	Break		p-value	End
9.53	1970.1	1979.4	2.00	1970.1		0.6570	2008.1
7.48	1980.1	1989.4	1.83	1989.3			
7.55	1990.1	1999.4	1.91	1990.1			

Lags test adds $\log(L3/POP3)_{-2}$, $\log(WA/PH)_{-1}$, and UR_{-1}.
Leads tests are for $\log(WA/PH)$.
Estimation period is 1954.1-2019.1

Table A8
Equation 8
LHS Variable is $\log(LM/POP)$

| | Equation | | | | χ^2 Tests | | |
RHS Variable		Coef.	t-stat.	Test	χ^2	df	p-value
cnst		-0.32129	-4.64	Lags	1.97	2	0.3742
$\log(LM/POP)_{-1}$		0.88387	39.05	RHO	0.45	1	0.5018
UR		-1.67445	-4.79	T	3.57	1	0.0588
SE	0.06251						
R^2	0.931						
DW	2.08						

overid (df = 3, p-value =0.1778)

| | | Stability Test | | | End Test | |
AP	T_1	T_2	λ	Break	p-value	End
5.21	1970.1	1979.4	2.00	1978.1	0.0581	2008.1
6.09	1980.1	1989.4	1.83	1986.1		
4.13	1990.1	1999.4	1.91	1990.1		

Lags test adds $\log(LM/POP)_{-2}$, and UR_{-1}.
Leads tests are for $\log(WA/PH)$.
Estimation period is 1954.1-2019.1

Table A10
Equation 10
LHS Variable is $\log PF$

| | Equation | | | | χ^2 Tests | | |
RHS Variable		Coef.	t-stat.	Test	χ^2	df	p-value
$\log PF_{-1}$		0.90525	79.23	Lags	2.52	4	0.6418
[a]		0.05278	4.95	RHO	1.94	1	0.1636
cnst2		0.00046	0.08	Leads +1	1.13	1	0.2881
TB		-0.00012	-6.55	Leads +8	2.58	2	0.2747
cnst		0.01446	0.82	[b]	0.67	1	0.4139
T		0.00024	6.50	$(YS-Y)/YS$	0.01	1	0.9023
$\log PIM$		0.03730	13.40				
UR		-0.16629	-9.01				
SE	0.00355						
R^2	1.000						
DW	1.84						

overid (df = 3, p-value =0.4855)

| | | Stability Test | | | |
AP	T_1	T_2	λ	Break	
17.42	1970.1	1979.4	2.00	1978.2	

[a] Variable is $\log[WF(1 + D5G)] - \log LAM$
[b] Variable is $\log[(YS - Y)/YS + .04]$
Lags test adds $\log PF_{-2}$, [a] lagged once, $\log PIM_{-1}$, and UR_{-1}.
Leads tests are for [a].
Estimation period is 1954.1-2019.1

Table A11
Equation 11
LHS Variable is $\log Y$

RHS Variable	Equation Coef.	t-stat.	Test	χ^2 Tests χ^2	df	p-value
cnst	0.30034	4.09	Lags	4.12	2	0.1272
$\log Y_{-1}$	0.33447	6.82	T	1.00	1	0.3165
$\log X$	0.84400	15.39	Leads +1	0.13	1	0.7228
$\log V_{-1}$	-0.22539	-8.94				
$D593$	-0.00977	-2.63				
$D594$	-0.00393	-1.08				
$D601$	0.00943	2.55				
RHO1	0.38641	5.07				
RHO2	0.38560	6.03				
RHO3	0.17601	2.54				
SE		0.00407				
R^2		1.000				
DW		2.03				

overid (df = 11, p-value =0.0016)

Lags test adds $\log Y_{-2}$ and $\log X_{-1}$.
Leads tests are for $\log X$.
Estimation period is 1954.1-2019.1

Table A12
Equation 12
LHS Variable is $\triangle \log KK$

RHS Variable	Equation Coef.	t-stat.	Test	χ^2 Tests χ^2	df	p-value
cnst2	-0.00022	-1.99	Lags	12.61	5	0.0273
cnst	0.00055	2.45	RHO	6.51	1	0.0108
$\log(KK/KKMIN)_{-1}$	-0.00726	-3.37	T	4.93	1	0.0264
$\triangle \log KK_{-1}$	0.90001	55.16	Leads +1	0.75	1	0.3878
$\triangle \log Y$	0.02912	3.24	Leads +8	3.25	2	0.1970
$\triangle \log Y_{-1}$	0.00770	1.86				
$\triangle \log Y_{-2}$	0.00216	0.55				
$\triangle \log Y_{-3}$	0.00483	1.32				
$\triangle \log Y_{-4}$	0.00684	1.92				
a	-0.00003	-1.45				
b	0.00072	3.65				
SE	0.00042					
R^2	0.977					
DW	1.71					

overid (df = 4, p-value =0.0017)

Stability Test

AP	T_1	T_2	λ	Break	
13.17	1970.1	1979.4	2.00	1971.4	

[a]Variable is $RBA_{-2} - 100 \cdot (PD(-2)/PD(-6) - 1)$
[b]Variable is $(CG_{-2} + CG_{-3} + CG_{-4})/(PX_{-2}YS_{-2} + PX_{-3}YS_{-3} + PX_{-4}YS_{-4})$
Lags test adds $\log(KK/KKMIN)_{-2}$, $\triangle \log KK_{-2}$, $\triangle \log Y_{-5}$, [a] lagged once, and [b] lagged once.
Leads tests are for $\triangle \log Y$.
Estimation period is 1954.1-2019.1

Table A13
Equation 13
LHS Variable is $\Delta \log JF$

	Equation			χ^2 Tests		
RHS Variable	Coef.	t-stat.	Test	χ^2	df	p-value
cnst	0.00051	0.64	Lags	17.80	3	0.0005
$\log JF/(JHMIN/HFS)_{-1}$	-0.04676	-3.79	RHO	3.61	1	0.0574
$\Delta \log JF_{-1}$	0.58319	12.42	T	2.65	1	0.1037
$\Delta \log Y$	0.30014	3.41	Leads +1	0.69	1	0.4061
$D593$	-0.01779	-4.96	Leads +8	17.12	2	0.0002

SE	0.00334
R^2	0.697
DW	2.23

overid (df = 3, p-value =0.0002)

Lags test adds $\log JF/(JHMIN/HFS)_{-2}$, $\Delta \log JF_{-2}$, and $\Delta \log Y_{-1}$.
Leads tests are for $\Delta \log Y$.
Estimation period is 1954.1-2019.1

Table A14
Equation 14
LHS Variable is $\Delta \log HF$

	Equation			χ^2 Tests		
RHS Variable	Coef.	t-stat.	Test	χ^2	df	p-value
cnst	-0.00480	-5.65	Lags	9.10	3	0.0280
$\log(HF/HFS)_{-1}$	-0.14694	-5.21	RHO	3.43	1	0.0639
$\log JF/(JHMIN/HFS)_{-1}$	-0.01782	-1.74	Leads +1	0.28	1	0.5963
$\Delta \log Y$	0.28932	4.74	Leads +8	1.40	2	0.4962
T	0.00001	4.74				

SE	0.00273
R^2	0.294
DW	2.17

overid (df = 3, p-value =0.1673)

		Stability Test			End Test	
AP	T_1	T_2	λ	Break	p-value	End
8.49	1970.1	1979.4	2.00	1978.2	0.9128	2008.1
3.77	1980.1	1989.4	1.83	1980.2		
2.07	1990.1	1999.4	1.91	1993.1		

Lags test adds $\log(HF/HFS)_{-2}$, $\log JF/(JHMIN/HFS)_{-2}$, and $\Delta \log Y_{-1}$.
Leads tests are for $\Delta \log Y$.
Estimation period is 1954.1-2019.1

Table A15
Equation 15
LHS Variable is $\log HO$

| Equation | | | | χ^2 Tests | | | |
RHS Variable	Coef.	t-stat.	Test	χ^2	df	p-value
cnst	3.95932	39.77	Lags	0.24	1	0.6212
HFF	0.01751	8.44	T	5.58	1	0.0182
HFF_{-1}	0.00821	3.96				
RHO1	0.97026	62.62				
SE	0.04482					
R^2	0.961					
DW	1.74					

| | | Stability Test | | | End Test | |
AP	T_1	T_2	λ	Break	p-value	End
2.28	1970.1	1979.4	2.11	1975.2	0.8293	2008.1
6.33	1980.1	1989.4	1.87	1985.3		
2.86	1990.1	1999.4	1.93	1990.1		

Lags test adds HFF_{-2}.
Estimation period is 1956.1-2019.1

Table A16
Equation 16
LHS Variable is $\log WF - \log LAM$

| Equation | | | | χ^2 Tests | | | |
RHS Variable	Coef.	t-stat.	Test	χ^2	df	p-value
$\log WF_{-1} - \log LAM_{-1}$	0.93298	53.25	[b]RealWageRes.	0.27	1	0.6008
$\log PF$	0.76707	10.94	Lags	0.02	1	0.8782
cnst	-0.05107	-4.08	RHO	0.05	1	0.8180
T	0.00004	1.88	UR	3.63	1	0.0568
[a] $\log PF_{-1}$	-0.71037	0.00				
SE	0.00749					
R^2	0.971					
DW	1.97					

overid (df = 5, p-value =0.1626)

| | | Stability Test | | | End Test | |
AP	T_1	T_2	λ	Break	p-value	End
1.83	1970.1	1979.4	2.00	1970.1	0.1105	2008.1
1.45	1980.1	1989.4	1.83	1989.4		
10.29	1990.1	1999.4	1.91	1999.4		

[a]Coefficient constrained. See the discussion in the text.
[b]Equation estimated with no restrictions on the coefficients.
Lags test adds $\log WF_{-2} - \log LAM_{-2}$.
Estimation period is 1954.1-2019.1

Table A17
Equation 17
LHS Variable is $\log(MF/PF)$

| RHS Variable | Equation | | | Test | χ^2 Tests | | |
		Coef.	t-stat.		χ^2	df	p-value
cnst		0.09547	1.49	$\log(MF/PF)_{-1}$	5.32	1	0.0211
$\log(MF_{-1}/PF)$		0.96882	67.02	Lags	10.96	3	0.0120
$\log(X - FA)$		0.01606	2.33	RHO	5.94	1	0.0148
[a]		-0.00397	-2.24	T	5.79	1	0.0161

SE	0.04424
R^2	0.984
DW	1.71

overid (df = 3, p-value =0.0116)

| | Stability Test | | | | End Test | |
AP	T_1	T_2	λ	Break	p-value	End
2.23	1970.1	1979.4	2.00	1975.4	0.0000	2008.1
6.88	1980.1	1989.4	1.83	1986.1		
8.56	1990.1	1999.4	1.91	1998.4		

[a] Variable is $[RS \cdot (1 - D2G - D2S)]$
Lags test adds $\log(MF_{-2}/PF_{-1})$, $\log(X - FA)_{-1}$, and [a] lagged once.
Estimation period is 1954.1-2019.1

Table A18
Equation 18
LHS Variable is $\triangle \log DF$

| RHS Variable | Equation | | | Test | χ^2 Tests | | |
		Coef.	t-stat.		χ^2	df	p-value
[a]		0.02509	4.04	[b]Restriction	0.01	1	0.9025
				Lags	1.30	1	0.2542
				RHO	1.55	1	0.2132
				T	0.21	1	0.6437
				cnst	0.06	1	0.8062

SE	0.07952
R^2	0.025
DW	2.59

overid (df = 4, p-value =0.5484)

| | Stability Test | | | | End Test | |
AP	T_1	T_2	λ	Break	p-value	End
1.01	1970.1	1979.4	2.00	1979.4	0.0000	2008.1
1.48	1980.1	1989.4	1.83	1980.2		
0.96	1990.1	1999.4	1.91	1990.1		

[a] Variable is $\log[(PIEF - TFG - TFS - TFR)/DF_{-1}]$
[b] $\log DF_{-1}$ added.
Lags test adds [a] lagged once.
Estimation period is 1954.1-2019.1

Table A23
Equation 23
LHS Variable is $RB - RS_{-2}$

	Equation				χ^2 Tests		
RHS Variable		Coef.	t-stat.	Test	χ^2	df	p-value
cnst		0.20155	4.77	[a]Restriction	0.09	1	0.7586
$RB_{-1} - RS_{-2}$		0.91654	59.74	Lags	0.22	2	0.8942
$RS - RS_{-2}$		0.31374	4.62	T	5.04	1	0.0247
$RS_{-1} - RS_{-2}$		-0.26092	-3.37	Leads +1	0.02	1	0.8931
RHO1		0.19821	3.08	[b]	0.34	1	0.5578
				[c]	0.51	1	0.4745
SE	0.26988						
R^2	0.964						
DW	2.01						

overid (df = 9, p-value =0.0983)

		Stability Test			End Test	
AP	T_1	T_2	λ	Break	p-value	End
3.03	1970.1	1979.4	2.00	1979.4	0.4884	2008.1
6.03	1980.1	1989.4	1.83	1982.3		
4.48	1990.1	1999.4	1.91	1999.4		

[a] RS_{-2} added.
[b] $100 \cdot (PD/PD(-4) - 1)$
[c] $100 \cdot [(PD/PD(-8)) \cdot 5 - 1]$
Lags test adds RS_{-3} and RB_{-2}. Leads tests are for RS.
Estimation period is 1954.1-2019.1

Table A24
Equation 24
LHS Variable is $RM - RS_{-2}$

	Equation				χ^2 Tests		
RHS Variable		Coef.	t-stat.	Test	χ^2	df	*p*-value
cnst		0.38211	5.83	[a]Restriction	0.06	1	0.8103
$RM_{-1} - RS_{-2}$		0.87803	44.60	Lags	0.32	2	0.8537
$RS - RS_{-2}$		0.31186	3.15	RHO	1.16	1	0.2808
$RS_{-1} - RS_{-2}$		-0.11657	-0.92	T	1.82	1	0.1773
				Leads +1	0.03	1	0.8701
				Leads +4	0.68	4	0.9540
				Leads +8	0.82	2	0.6624
				[b]	0.47	1	0.4920
				[c]	0.83	1	0.3635

SE 0.33994
R^2 0.906
DW 1.86

overid (df = 7, *p*-value =0.0953)

	Stability Test				End Test	
AP	T_1	T_2	λ	Break	*p*-value	End
3.73	1970.1	1979.4	2.00	1979.4	0.7616	2008.1
12.45	1980.1	1989.4	1.83	1984.4		
8.84	1990.1	1999.4	1.91	1990.3		

[a]RS_{-2} added.
[b]$100 \cdot (PD/PD(-4) - 1)$
[c]$100 \cdot [(PD/PD(-8)) \cdot 5 - 1]$
Lags test adds RS_{-3} and RM_{-2}. Leads tests are for RS.
Estimation period is 1954.1-2019.1

Table A25
Equation 25
LHS Variable is $CG/(PX_{-1}YS_{-1})$

RHS Variable	Equation			Test	χ^2 Tests		
		Coef.	t-stat.		χ^2	df	p-value
cnst		0.10930	5.07	Lags	1.31	2	0.5191
ΔRB		-0.08639	-0.68	RHO	1.72	1	0.1898
a		14.51383	1.15	T	0.72	1	0.3952
				Leads +1	0.54	2	0.7649
				Leads +8	1.98	4	0.7392
				ΔRS	0.11	1	0.7453
SE	0.29810						
R^2	0.013						
DW	1.94						

overid (df = 7, p-value =0.8821)

	Stability Test				End Test	
AP	T_1	T_2	λ	Break	p-value	End
2.16	1970.1	1979.4	2.00	1974.4	0.0000	2008.1
2.66	1980.1	1989.4	1.83	1988.1		
5.46	1990.1	1999.4	1.91	1998.4		

[a] Variable is $\Delta[(PIEF - TFG - TFS - TFR)]/(PX_{-1}YS_{-1})$
Lags test adds [a] lagged once and ΔRB_{-1}.
Leads tests are for [a].
Estimation period is 1954.1-2019.1

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Table A26
Equation 26
LHS Variable is $\log[CUR/(POP \cdot PF)]$

| | Equation | | | | χ^2 Tests | | |
RHS Variable		Coef.	t-stat.	Test	χ^2	df	p-value
cnst		-0.04901	-6.12	[a]	9.36	1	0.0022
$\log[CUR_{-1}/(POP_{-1} \cdot PF)]$	$\cdot$	0.96999	157.56	Lags	5.44	3	0.1424
$\log[(X-FA)/POP]$		0.04013	6.43	RHO	1.00	1	0.3167
RSA		-0.00081	-1.74	T	7.71	1	0.0055

SE	0.01006		
R^2	0.999		
DW	2.12		

overid (df = 4, p-value =0.0020)

| | | Stability Test | | | | End Test |
AP	T_1	T_2	λ	Break	p-value	End
9.92	1970.1	1979.4	2.00	1977.3	0.2674	2008.1
11.50	1980.1	1989.4	1.83	1982.1		
12.56	1990.1	1999.4	1.91	1992.3		

[a]Variable is $\log[CUR/(POP \cdot PF)]_{-1}$
Lags test adds $\log[CUR_{-2}/(POP_{-2}PF_{-1})]$, $\log[(X-FA)/POP]_{-1}$, and RSA_{-1}.
Estimation period is 1954.1-2019.1

Table A27
Equation 27
LHS Variable is $\log(IM/POP)$

| | Equation | | | | χ^2 Tests | | |
RHS Variable		Coef.	t-stat.	Test	χ^2	df	p-value
cnst		-1.34255	-4.99	Lags	27.82	3	0.0000
$AG1$		0.49991	3.70	RHO	35.21	1	0.0000
$AG2$		-0.01053	-0.04	Leads +1	7.81	1	0.0052
$AG3$		-0.95369	-2.94	Leads +4	6.26	4	0.1807
$\log(IM/POP)_{-1}$		0.77437	21.39	$\log PF$	3.20	1	0.0734
$\log(Y/POP)$		0.28516	2.27				
$\log(AA/POP)_{-1}$		0.06101	1.45				
$\log(PF/PIM)$		0.06054	2.69				
T		0.00119	2.46				
$D691$		-0.11892	-4.33				
$D692$		0.13775	4.96				
$D714$		-0.07268	-2.61				
$D721$		0.11087	4.01				

SE	0.02704	
R^2	0.999	
DW	1.55	

overid (df = 6, p-value =0.0000)
χ^2 (AGE) = 15.72 (df = 3, p-value = 0.0013)

Lags test adds $\log(IM/POP)_{-2}$, $\log(Y/POP)_{-1}$, and $\log(PF/PIM)_{-1}$.
Leads tests are for [a].
Estimation period is 1954.1-2019.1

Table A28
Equation 28
LHS Variable is $\log UB$

RHS Variable	Equation	Coef.	t-stat.	Test	χ^2 Tests χ^2	df	p-value
cnst		1.08543	2.53	Lags	3.51	3	0.3195
$\log UB_{-1}$		0.44366	3.02	T	1.18	1	0.2773
$\log U$		0.69512	2.39				
$\log WF$		0.37034	4.23				
RHO1		0.84328	12.48				
SE	0.07244						
R^2	0.996						
DW	2.29						

overid (df = 7, p-value =0.0153)

	Stability Test				End Test	
AP	T_1	T_2	λ	Break	p-value	End
11.72	1970.1	1979.4	2.00	1975.2	0.0000	2008.1
6.57	1980.1	1989.4	1.83	1980.4		
4.09	1990.1	1999.4	1.91	1990.1		

Lags test adds $\log UB_{-2}$, $\log U_{-1}$, and $\log WF_{-1}$.
Estimation period is 1954.1-2019.1

Table A29
Equation 29
LHS Variable is $INTG/(-AG)$

RHS Variable	Equation	Coef.	t-stat.	Test	χ^2 Tests χ^2	df	p-value
cnst		0.00069	7.07	Lags	5.96	2	0.0507
$(INTG/(-AG))_{-1}$		0.84761	53.99	T	2.52	1	0.1124
a		0.13332	9.76				
SE	0.00040						
R^2	0.994						
DW	1.91						

	Stability Test				End Test	
AP	T_1	T_2	λ	Break	p-value	End
5.82	1970.1	1979.4	2.00	1979.2	0.0116	2008.1
7.82	1980.1	1989.4	1.83	1989.4		
13.29	1990.1	1999.4	1.91	1991.1		

[a] Variable is $(.4 \cdot (RS/400) + .75 \cdot .6 \cdot (1/8) \cdot (1/400) \cdot (RB + RB_{-1} + RB_{-2} + RB_{-3}$
$+ RB_{-4} + RB_{-5} + RB_{-6} + RB_{-7}))$
Lags test adds $[INTG/(-AG)]_{-1}$ and [a] lagged once.
Estimation period is 1954.1-2019.1

Table A30
Equation 30
LHS Variable is RS

| | Equation | | | χ^2 Tests | | |
RHS Variable	Coef.	t-stat.	Test	χ^2	df	p-value
cnst	0.69906	4.64	Lags	6.41	4	0.1704
RS_{-1}	0.91738	50.22	RHO	37.41	1	0.0000
$100 \cdot [(PD/PD_{-1})^4 - 1]$	0.07504	4.05	T	0.90	1	0.3431
UR	-11.17437	-3.62	Leads +1	0.16	2	0.9244
ΔUR	-72.14503	-4.84	a	0.26	1	0.6100
$PCM1_{-1}$	0.01173	2.41	b	2.11	1	0.1460
$D794823 \cdot PCM1_{-1}$	0.20992	9.39				
ΔRS_{-1}	0.25094	4.42				
ΔRS_{-2}	-0.31946	-6.33				

SE   0.47607
R^2 0.972
DW   1.79

overid (df = 3, p-value =0.7724)

Stability test (1954.1-1979.3 versus 1982.4-2008.3): Wald statistic is 12.521 (8 degrees of freedom, p-value = .1294)

Lags test adds RS_{-4}, $100 \cdot [(PD_{-1}/PD_{-2})^4 - 1]$, UR_{-2}, and $PCM1_{-2}$.
Leads tests are for $100 \cdot [(PD/PD_{-1})^4 - 1]$ and UR.
Estimation period is 1954.1-2008.3

Table A.5
The Raw Data Variables for the US Model

NIPA Data

No.	Variable	Table	Line	Description
R1	GDPR	1.1.3	1	Real gross domestic product
R2	CD	1.1.3	4	Real personal consumption expenditures, durable goods
R3	CN	1.1.3	5	Real personal consumption expenditures, nondurable goods
R4	CS	1.1.3	6	Real personal consumption expenditures, services
R5	IK	1.1.3	9	Real nonresidential fixed investment
R6	IH	1.1.3	13	Real residential fixed investment
R7	EX	1.1.3	16	Real exports
R8	IM	1.1.3	19	Real imports
R9	PURG	1.1.3	23	Real consumption expenditures and gross investment, federal government
R10	PURS	1.1.3	26	Real consumption expenditures and gross investment, S&L
R11	GDP	1.1.5	1	Gross domestic product
R12	CDZ	1.1.5	4	Personal consumption expenditures, durable goods
R13	CNZ	1.1.5	5	Personal consumption expenditures, nondurable goods
R14	CSZ	1.1.5	6	Personal consumption expenditures, services
R15	IKZ	1.1.5	9	Nonresidential fixed investment
R16	IHZ	1.1.5	13	Residential fixed investment
R17	IVZ	1.1.5	14	Change in private inventories
R18	EXZ	1.1.5	16	Exports
R19	IMZ	1.1.5	19	Imports
R20	PURGZ	1.1.5	23	Consumption expenditures and gross investment, federal government
R21	PURSZ	1.1.5	26	Consumption expenditures and gross investment, S&L
R22	FA	1.3.3	4	Real farm gross domestic product
R23	FAZ	1.3.5	4	Farm gross domestic product
R24	FIUS	1.7.5	2	Income receipts from the rest of the world
R25	FIROW	1.7.5	3	Income payments to the rest of the world
R26	STAT	1.7.5	15	Statistical discrepancy
R27	DC	1.12	16	Net dividends, Total
R28	TRFR	1.12	24	Business current transfer payments to the rest of the world (net)
R29	DCB	1.14	14	Net dividends, corporate business
R30	INTF1	1.14	25	Net interest and miscellaneous payments, nonfinancial corporate business
R31	TCBN	1.14	28	Taxes on corporate income, nonfinancial corporate business
R32	DCBN	1.14	30	Net dividends, nonfinancial corporate business
R33	IVA	1.14	35	Inventory valuation adjustment, corporate business
R34	COMPT	2.1	2	Compensation of employees, received
R35	SIT	2.1	8	Employer contributions for government social insurance
R36	PRI	2.1	9	Proprietors' income with inventory valuation and capital consumption adjustments
R37	RNT	2.1	12	Rental income of persons with capital consumption adjustment
R38	PII	2.1	14	Personal interest income
R39	UB	2.1	21	Government unemployment insurance benefits
R40	TRFH	2.1	24	Other current transfer receipts from business (net)
R41	IPP	2.1	30	Personal interest payments
R42	TRHR	2.1	33	Personal current transfer payments to the rest of the world (net)

No.	Variable	Table	Line	Description
R43	THG	3.2	3	Personal current taxes, federal government (see below for adjustments)
R44	RECTXG	3.2	4	Taxes on production and imports, federal government
R45	TCG	3.2	8	Taxes on corporate income, federal government
R46	TRG	3.2	9	Taxes from the rest of the world, federal government
R47	SIG	3.2	10	Contributions for government social insurance, federal government
R48	RECINTG	3.2	14	Interest receipts, federal government
R49	RECDIVG	3.2	15	Dividends, federal government
R50	RECRRG	3.2	18	Rents and royalties, federal government
R51	TRFG	3.2	20	Current transfer receipts from business, federal government
R52	TRHG	3.2	21	Current transfer receipts from persons, federal government
R53	TRRG	3.2	22	Current transfer receipts from the rest of the world, federal government
R54	SURPG	3.2	23	Current surplus of government enterprises, federal government
R55	CONGZ	3.2	25	Consumption expenditures, federal government
R56	TRGHPAY	3.2	28	Government social benefits to persons, federal government (see below for adjustments)
R57	TRGR1	3.2	29	Government social benefits to the rest of the world, federal government
R58	TRGS	3.2	31	Grants in aid to atate and local governments, federal government
R59	TRGR2	3.2	32	Other current transfer payments to the rest of the world, federal government
R60	PAYINTG	3.2	33	Interest payments, federal government
R61	INTGR	3.2	35	Interest payments, federal government to the rest of the world
R62	SUBSG	3.2	36	Subsidies, federal government
R63	CCG	3.2	48	Consumption of fixed capital, Federal Government
R64	THS	3.3	3	Personal current taxes, S&L
R65	RECTXS	3.3	6	Taxes on production and imports, S&L
R66	TCS	3.3	11	Taxes on corporate income, S&L
R67	SIS	3.3	12	Contributions for government social insurance, S&L
R68	RECINTS	3.3	14	Interest receipts, S&L
R69	RECDIVS	3.3	15	Dividends, S&L
R70	RECRRS	3.3	16	Rents and royalties, S&L
R71	TRFS	3.3	19	Current transfer receipts from business (net), S&L
R72	TRHS	3.3	20	Current transfer receipts from persons, S&L
R73	TRRS	3.3	21	Current transfer receipts from the rest of the world, S&L
R74	SURPS	3.3	22	Current surplus of government enterprises, S&L
R75	CONSZ	3.3	24	Consumption expenditures, S&L
R76	TRRSHPAY	3.3	25	Government social benefit payments to persons, S&L
R77	PAYINTS	3.3	28	Interest payments, S&L
R78	SUBSS	3.3	31	Subsidies, S&L
R79	CCS	3.3	43	Consumption of fixed capital, S&L
R80	PROG	3.10.3	15	Real compensation of general government employees, federal
R81	PROS	3.10.3	50	Real compensation of general government employees, S&L
R82	PROGZ	3.10.5	15	Compensation of general government employees, federal
R83	COMPMIL	3.10.5	26	Compensation of general government employees, defense
R84	PROSZ	3.10.5	50	Compensation of general government employees, S&L
R85	TTRFR	4.1	32	Current taxes and transfer payments to the rest of the world from business
R86	IV	5.7.6	1	Real change in private inventories

No.	Variable	Table	Line	Description
R87	SIHGA	3.14	3	Employee and self-employed contributions for social insurance to the federal government, annual data only
R88	SIQGA	3.14	5	Government employer contributions for social insurance to the federal government, annual data only
R89	SIFGA	3.14	6	Other employer contributions for social insurance to the federal government, annual data only
R90	SIHSA	3.14	18	Employee and self-employed contributions for social insurance to the S&L governments, annual data only
R91	SIQSA	3.14	20	Government employer contributions for social insurance to the S&L governments, annual data only
R92	SIFSA	3.14	21	Other employer contributions for social insurance to the S&L governments, annual data only

• For Tables 1.1.3, 1.3.3, and 3.10.3, the respective raw data variable was created by multipling the quantity index for a given quarter by the nominal value of the variable in 2012 and then dividing by 100.

• For Table 5.7.6, there is an "A" table and a "B" table. The "A" table is used for data prior to 1998:1, and the "B" table is used for data from 1998:1 on.

• S&L = State and Local Governments.

• R87–R92: Same value for all four quarters of the year. See variables R193–R198 for construction of variables SIHG, SIHS, SIFG, SIGG, SIFS, SISS.

Flow of Funds Data

No.	Variable	Code	Description
R93	CDDCF	103020005	Change in checkable deposits and currency, F1, F.103
R94	NFIF1	105000005	Net lending (+) or net borrowing (-), F1, F.103
R95	IHF1	105012005	Residential investment, F1, F.6
R96	NNF	105420005	Net acquisition of nonproduced nonfinancial assets, F1, F.6
R97	CTF1	105440005	Net capital transfers paid, F1, F.9
R98	PIEFRET	106006065	Foreign earnings retained abroad, F1, F.103
R99	PIEF1X	106060005	Profits before tax, F1, F.103
R100	CCF1	106300015	Capital consumption allowances, F1, F.103
R101	DISF1	107005005	Discrepancy, F1, F.103
R102	CDDCNN	113020005	Change in checkable deposits and currency, NN, F.104
R103	NFINN	115000005	Net lending (+) or net borrowing (-), NN, F.104
R104	IHNN	115012005	Residential Investment, NN, F.6
R105	IKNN	115013005	Nonresidential fixed investment, NN, F.6
R106	IVNN	115020005	Change in inventories, NN, F.104 (only for tesing)
R107	CTNN	115440005	Net capital transfers paid, NN, F.9
R108	GSNN	116300005	Gross saving, NN, F.104
R109	CDDCH1	153020005	Change in checkable deposits and currency, H, F.101, line 21
R110	MVCE,	154090005	Total financial assets of Households, H, F.101.
R111	CCE		MVCE is the market value of the assets. CCE is the change in assets excluding capital gains and losses
R112	NFIH1	155000005	Net lending (+) or net borrowing (-), H, F.101
R113	REALEST	155035005	Real estate, H, stock variable, Table B.101, line 3
R114	CDH	155111003	Capital expenditures, consumer durable goods, H, F.101
R115	NICD	155111005	Net investment in consumer durables, H, F.101
R116	NNH	155420003	Net acquisition of nonproduced nonfinancial assets, H, F.6
R117	CTH	155440005	Net capital transfers paid, H, F.9
R118	CCH	156300005	Consumption of fixed capital, H, F.100
R119	USAFF	156600075	Contributions for government social insurance, U.S.-affiliated areas, H, F.101
R120	DISH1	157005005	Discrepancy, H, F.101
R121	IKH1	165013005	Nonresidential fixed investment, H, F.6
R122	NNS	205420003	Net acquisition of nonproduced nonfinancial assets, S, F.6
R123	CTS	205440005	Net capital transfers paid, S, F.9
R124	CDDCS	213020005	Change in checkable deposits and currency, S, F.107
R125	NFIS	215000005	Net lending (+) or net borrowing (-), S, F.107
R126	DISS1	217005005	Discrepancy, S, F.107
R127	CGLDR	263011005	Change in U.S. official reserve assets, R, F.200
R128	CDDCR	263020005	Change in U.S. checkable deposits and currency, R, F.132
R129	CFXUS	263111005	Change in U.S. official reserve assets, R, F.132
R130	NFIR	265000005	Net lending (+) or net borrowing (-), R, F.132
R131	NNR	265420005	Net acquisition of nonproduced nonfinancial assets, R, F.6
R132	CTR	265440005	Net capital transfers paid, R, F.9
R133	DISR1	267005005	Discrepancy, R, F.132
R134	CGLDFXUS	313011005	Change in U.S. official reserve assets, US, F.106
R135	CDDCUS	313020005	Change in checkable deposits and currency, US, F.106
R136	CSDRUS	313111303	Change in SDR allocations, US, F.106
R137	INS	313154015	Insurance and pension reserves, US, F.106
R138	NFIUS	315000005	Net lending (+) or net borrowing (-), US, F.106
R139	CTGB	315410093	Capital transfers paid by US, financial stabilization payments, F.9
R140	NNG	315420003	Net acquisition of nonproduced nonfinancial assets, US, F.6
R141	CTGMB	315440005	Net capital transfers paid, US, F.106
R142	DISUS	317005005	Discrepancy, US, F.106

No.	Variable	Code	Description
R143	CDDCCA	403020005	Change in checkable deposits and currency, CA, F.124
R144	NIACA	404090005	Net acquisition of financial assets, CA, F.124
R145	NILCA	404190005	Net increase in liabilities, CA, F.124
R146	IKCAZ	405013005	Fixed nonresidential investment, CA, F.124
R147	GSCA	406000105	Gross saving, CA, F.124
R148	DISCA	407005005	Discrepancy, CA, F.124
R149	NIDDLZ2	473127003	Net change in liabilities of credit unions of checkable deposits and currency, F.204
R150	IHBZ	645012063	Residential investment, B, F.6
R151	CGLDFXMA	713011005	Change in U.S. official reserve assets, MA, F.109
R152	CFRLMA	713068705	Change in federal reserve loans to domestic banks, MA, F.109
R153	NILBRMA	713113003	Change in depository institution reserves, MA, F.109
R154	CBR	713113003	Change in reserves at Federal Reserve, private depository institutions, F.109
R155	NIDDLRMA	713122605	Net increase in liabilities in the form of checkable deposits and currency of the MA due to the rest of the world, F.109
R156	NIDDLGMA	713123005	Net increase in liabilities in the form of checkable deposits and currency of the MA due to the federal government, F.109
R157	NIDDLCMA	713124005	Net increase in liabilities in the form of checkable deposits and currency of the MA due to government-sponsored enterprises, F.109
R158	NILCMA	713125005	Net increase in liabilities in the form of currency outside banks of the MA, F.109
R159	NIAMA	714090005	Net acquisition of in financial assets, MA, F.109
R160	NILMA	714190005	Net increase in liabilities, MA, F.109
R161	IKMAZ	715013005	Fixed nonresidential investment, MA, F.109
R162	GSMA	716000105	Gross savings, MA, F.109
R163	DISMA	717005005	Discrepancy, MA, F.109
R164	NIDDLCB3	743127003	Net change in liabilities in the form of checkable deposits and currency, banks in U.S.-affiliated Areas, F.113
R165	CBRB1A	753013003	Change in reserves at federal reserve, foreign banking offices in U.S., F.112
R166	NIDDLCB2	753127005	Net change in liabilities in the form of checkable deposits and currency, foreign banking offices in U.S., F.112
R167	NIDDLCB1	763127005	Net change in liabilities in the form of checkable deposits and currency, U.S.-chartered depository institutions, F.111
R168	CDDCFS	793020005	Net change in assets in the form of checkable deposits and currency of financial sectors, F.108
R169	NFIBB	795000005	Net lending (+) or net borrowing (-), B, F.108
R170	IKBMACA	795013005	Nonresidential fixed investment, B, F.108
R171	CTB	795440005	Net capital transfers paid, B, F.9
R172	GSBBCT	796000105	Gross saving less net capital transfers paid, B, F.108
R173	DISBB	797005005	Discrepancy, B, F.108
R174	MAILFLT1	903023005	Mail Float, US, F.12
R175	MAILFLT3	903028003	Mail Float, S, F.12
R176	MAILFLT2	903029200	Mail Float, private domestic, F.12

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Table A.5 (continued)

Interest Rate Data

No.	Variable	Description
R177	RS	Three-month treasury bill rate (secondary market), percentage points. [BOG. Quarterly average.]
R178	RM	30 year fixed rate mortgage, percentage points. [Quarterly average. Data from BOG up to September 2016. Data from FRED from October 2017 on.]
R179	RB	Moody's Aaa corporate bond rate, percentage points. [Quarterly average. Data from BOG up to September 2016. Data from FRED from October 2017 on.]

Labor Force and Population Data

No.	Variable	Description
R180	CE	Civilian employment, SA in millions. [BLS. Quarterly average. See the next page for adjustments.]
R181	U	Unemployment, SA in millions. [BLS. Quarterly average. See the next page for adjustments.]
R182	CL1	Civilian labor force of males 25-54, SA in millions. [BLS. Quarterly average. See the next page for adjustments.]
R183	CL2	Civilian labor force of females 25-54, SA in millions. [BLS. Quarterly average. See the next page for adjustments.]
R184	AFT	Total armed forces, millions. [Computed from population data from the U.S. Census Bureau. Quarterly average.]
R185	AF1	Armed forces of males 25-54, millions. [Computed from population data from the U.S. Census Bureau. Quarterly average.]
R186	AF2	Armed forces of females 25-54, millions. [Computed from population data from the U.S. Census Bureau. Quarterly average.]
R187	CPOP	Total civilian noninstitutional population 16 and over, millions. [BLS. Quarterly average. See the next page for adjustments.]
R188	CPOP1	Civilian noninstitutional population of males 25-54, millions. [BLS. Quarterly average. See the next page for adjustments.]
R189	CPOP2	Civilian noninstitutional population of females 25-54, millions. [BLS. Quarterly average. See the next page for adjustments.]
R190	HO	Average weekly overtime hours in manufacturing, SA. [BLS. Quarterly average.]
R191	JT	Employment, total U.S. economy, SA in millions of jobs. [BLS website: Labor Productivity and Costs.]
R192	JG	Employment, general government, federal, SA in millions of jobs. [BLS website: Labor Productivity and Costs.]
R193	JS	Employment, general government, state & local, SA in millions of jobs. [BLS website: Labor Productivity and Costs.]
R194	JM	Employment, armed forces, SA in millions of jobs. [BLS website: Labor Productivity and Costs.]
R195	JTH	Hours worked, total U.S. economy, SA in billions. [BLS website: Labor Productivity and Costs.]
R196	JGH	Hours worked, general government, federal, SA in billions. [BLS website: Labor Productivity and Costs.]
R197	JSH	Hours worked, general government, state & local, SA in billions. [BLS website: Labor Productivity and Costs.]
R198	JMH	Hours worked, armed forces, SA in billions. [BLS website: Labor Productivity and Costs.]

Adjustments to the Raw Data

No.	Variable	Description
R199	SIHG =	[SIHGA/(SIHGA + SIHSA)](SIG + SIS - SIT)
		[Employee contributions for social insurance, h to g.]
R200	SIHS =	SIG + SIS - SIT - SIHG
		[Employee contributions for social insurance, h to s.]
R201	SIFG =	[SIFGA/(SIFGA + SIQGA)](SIG - SIHG)
		[Employer contributions for social insurance, f to g.]
R202	SIGG =	SIG - SIHG - SIFG
		[Employer contributions for social insurance, g to g.]
R203	SIFS =	[SIFSA/(SIFSA + SIQSA)](SIS - SIHS)
		[Employer contributions for social ensurance, f to s.]
R204	SISS =	SIS - SIHS - SIFS
		[Employer contributions for social insurance, s to s.]
R205	TBG =	[TCG/(TCG + TCS)](TCG + TCS - TCBN)
		[Corporate profit tax accruals, b to g.]
R206	TBS =	TCG + TCS - TCBN - TBG
		[Corporate profit tax accruals, b to s.]
	THG =	THG from raw data - TAXADJ
	TRGHPAY =	TRGHPAY from raw data - TAXADJ
		[TAXADJ (annual rate): 1968:3 = 6.1, 1968:4 = 7.1, 1969:1 = 10.7, 1969:2 = 10.9, 1969:3 = 7.1, 1969:4 = 7.3, 1970:1 = 5.0, 1970:2 = 5.0, 1970:3 = 0.4, 1975:2 = -31.2, 2008.2 = -199.4, 2008.3 = -57.0, 2009.2 = -152.0, 2009.3 = -239.0, 2009.4 = -249.0, 2010.1 = -231.0, 2010.2 = -256.0, 2010.3 = -266.0, 2010.4 = -15.0, 2011.1 = -53.0, 2011.2 = -74.0, 2011.3 = -99.0.]
R207	POP =	CPOP + AFT
		[Total noninstitutional population 16 and over, millions.]
R208	POP1 =	CPOP1 + AF1
		[Total noninstitutional population of males 25-54, millions.]
R209	POP2 =	CPOP2 + AF2
		[Total noninstitutional population of females 25-54, millions.]

• BLS = Website of the Bureau of Labor Statistics

• BOG = Website of the Board of Governors of the Federal Reserve System

• FRED = Website of the Federal Reserve Bank of St. Louis

• SA = Seasonally adusted

• For the construction of variables R193, R195, and R197, the annual observation for the year was used for each quarter of the year.

Variable	1952:1–1971:4	1952:1–1972:4	1973:1	1952:1–1977:4	1970:1–1989:4
Adjustments to Labor Force and Population Data					
POP	1.00547	1.00009	1.00006	-	1.0058886-.0000736075TPOP90
POP1	0.99880	1.00084	1.00056	-	1.0054512 -.00006814TPOP90
POP2	1.00251	1.00042	1.00028	-	1.00091654-.000011457TPOP90
(CE+U)	1.00391	1.00069	1.00046	1.00239	1.0107312-.00013414TPOP90
CL1	0.99878	1.00078	1.00052	1.00014	1.00697786-.00008722TPOP90
CL2	1.00297	1.00107	1.00071	1.00123	-
CE	1.00375	1.00069	1.00046	1.00268	1.010617-.00013271TPOP90

● TPOP90 is 79 in 1970:1, 78 in 1970:2, ..., 1 in 1989:3, 0 in 1989:4.

Variable	1990:1–1998:4
POP	1.0014883-.0000413417TPOP99
POP1	.99681716 +.000088412TPOP99
POP2	1.0045032 -.00012509TPOP99
(CE+U)	1.00041798-.000011611TPOP99
CL1	.9967564+.0000901TPOP99
CL2	1.004183-.00011619TPOP99
CE	1.00042068-.000011686TPOP99

● TPOP99 is 35 in 1990:1, 34 in 1990:2, ..., 1 in 1998:3, 0 in 1998:4.

Variable	1990:1–1999:4
POP	1.0165685-.00041421TPOP2000
POP1	1.0188400 -.00047100TPOP2000
POP2	1.0195067 -.00048767TPOP2000
(CE+U)	1.0156403-.00039101TPOP2000
CL1	1.0208284-.00052071TPOP2000
CL2	1.0151172-.00037793TPOP2000
CE	1.0156827-.00039207TPOP2000

● TPOP2000 is 39 in 1990:1, 38 in 1990:2, ..., 1 in 1999:3, 0 in 1999:4.

Variable	1993:1–2002:4
POP	1.0043019-.00010755TPOP2003
POP1	1.0046539 -.00011635TPOP2003
POP2	1.0043621 -.00010905TPOP2003
(CE+U)	1.0042240-.00010560TPOP2003
CL1	1.0046137-.00011534TPOP2003
CL2	1.0042307-.00010577TPOP2003
CE	1.0041995-.00010499TPOP2003

● TPOP2003 is 39 in 1993:1, 38 in 1993:2, ..., 1 in 2002:3, 0 in 2002:4.

Variable	1994:1–2003:4
POP	.9974832+.00006292TPOP2004
POP1	.9982816 +.00004296TPOP2004
POP2	.9966202 +.00008450TPOP2004
(CE+U)	.9970239+.00007440TPOP2004
CL1	.9977729+.00004454TPOP2004
CL2	.9959602+.00010000TPOP2004
CE	.9970481+.00007380TPOP2004

● TPOP2004 is 39 in 1994:1, 38 in 1994:2, ..., 1 in 2003:3, 0 in 2003:4.

Variable	1996:1–2005:4
POP	.9997054+.000007365TPOP2006
POP1	.9994935 +.0000126625TPOP2006
POP2	.9994283 +.0000142925TPOP2006
(CE+U)	.9991342 +.000021645TPOP2006
CL1	.9987934+.000030165TPOP2006
CL2	.9986564+.00003359TPOP2006
CE	.9991385 +.0000215375TPOP2006

• TPOP2006 is 39 in 1996:1, 38 in 1996:2, ..., 1 in 2005:3, 0 in 2005:4.

Variable	1997:1–2006:4
POP	1.0013950-.000034875TPOP2007
POP1	1.0009830 -.000024575TPOP2007
POP2	1.0016647 -.0000416175TPOP2007
(CE+U)	1.0010684 -.00002671TPOP2007
CL1	1.0008882-.000022205TPOP2007
CL2	1.0013202-.000033005TPOP2007
CE	1.0010474 -.0000261855TPOP2007

• TPOP2007 is 39 in 1997:1, 38 in 1997:2, ..., 1 in 2006:3, 0 in 2006:4.

Variable	1998:1–2007:4
POP	.9968047+.0000798825TPOP2008
POP1	.9958060+.00010485TPOP2008
POP2	.9976944 +.00005764TPOP2008
(CE+U)	.9958557 +.0001036075TPOP2008
CL1	.9948031+.0001299225TPOP2008
CL2	.9969464+.00007634TPOP2008
CE	.9959135+.0001021625TPOP2008

• TPOP2008 is 39 in 1998:1, 38 in 1998:2, ..., 1 in 2007:3, 0 in 2007:4.

Variable	1999:1–2008:4
POP	.9979450+.000051375TPOP2009
POP1	.9973640+.0000659TPOP2009
POP2	.9984844+.00003789TPOP2009
(CE+U)	.9970910+.000072725TPOP2009
CL1	.9964462+.000088845TPOP2009
CL2	.9977695+.0000557625TPOP2009
CE	.9971608+.00007098TPOP2009

• TPOP2009 is 39 in 1999:1, 38 in 1999:2, ..., 1 in 2008:3, 0 in 2008:4.

Variable	2000:1–2009:4
POP	.9989110+.000027225TPOP2010
POP1	.9978610+.000053475TPOP2010
POP2	.9989019+.0000274525TPOP2010
(CE+U)	.9983693+.0000407675TPOP2010
CL1	.9974105+.0000647375TPOP2010
CL2	.9989507+.0000262325TPOP2010
CE	.9982313+.0000442175TPOP2010

• TPOP2010 is 39 in 2000:1, 38 in 2000:2, ..., 1 in 2009:3, 0 in 2009:4.

Variable	2001:1–2010:4
POP	.9985474+.000036315TPOP2011
POP1	.9989740+.000025650TPOP2011
POP2	.9970233+.000074418TPOP2011
(CE+U)	.9967092+.000082270TPOP2011
CL1	.9956715+.000108213TPOP2011
CL2	.9971304+.000071740TPOP2011
CE	.9966082+.000084795TPOP2011

• TPOP2011 is 39 in 2001:1, 38 in 2001:2, ..., 1 in 2010:3, 0 in 2010:4.

Variable	2002:1–2011:4
POP	1.0062764-.000156910TPOP2012
POP1	.9899101+.00002522475TPOP2012
POP2	1.0051234-.000128085TPOP2012
(CE+U)	1.0016822-.000042055TPOP2012
CL1	.9889798+.000275505TPOP2012
CL2	1.0041332-.00010333TPOP2012
CE	1.0015354-.000038385TPOP2012

• TPOP2012 is 39 in 2002:1, 38 in 2002:2, ..., 1 in 2011:3, 0 in 2011:4.

Variable	2003:1–2012:4
POP	1.0005648-.00001412TPOP2013
POP1	1.0003568-.00000892TPOP2013
POP2	1.0007278-.000018195TPOP2013
(CE+U)	1.0008780-.00002195TPOP2013
CL1	1.0006285-.0000157125TPOP2013
CL2	1.0012289-.0000307225TPOP2013
CE	1.0008877-.0000221925TPOP2013

• TPOP2013 is 39 in 2003:1, 38 in 2003:2, ..., 1 in 2012:3, 0 in 2012:4.

Variable	2005:1–2014:4
POP	1.0021203-.0000530075TPOP2015
POP1	1.0013765-.0000344125TPOP2015
POP2	1.0027041-.0000676025TPOP2015
(CE+U)	1.0022376-.00005594 TPOP2015
CL1	1.0015986-.000039965TPOP2015
CL2	1.0029975-.0000749375TPOP2015
CE	1.0022012-.00005503TPOP2015

• TPOP2015 is 39 in 2005:1, 38 in 2005:2, ..., 1 in 2014:3, 0 in 2014:4.

Variable	2006:1–2015:4
POP	1.00105185-.00002630TPOP2016
POP1	1.00129812-.00003245TPOP2016
POP2	1.00079462-.00001987TPOP2016
(CE+U)	1.00138637-.00003466TPOP2016
CL1	1.00167363-.00004184TPOP2016
CL2	1.00108367-.00002709TPOP2016
CE	1.00137606-.00003440TPOP2016

• TPOP2016 is 39 in 2006:1, 38 in 2006:2, ..., 1 in 2015:3, 0 in 2015:4.

Table A.5 (continued)

Variable	2007:1–2016:4
POP	0.99673788+.00008155TPOP2017
POP1	0.99662313+.00008442TPOP2017
POP2	0.99664459+.00008389TPOP2017
(CE+U)	0.99680439+.00007989TPOP2017
CL1	0.99671730+.00008207TPOP2017
CL2	0.99675460+.00008113TPOP2017
CE	0.99679179+.00008021TPOP2017

● TPOP2017 is 39 in 2007:1, 38 in 2007:2, ..., 1 in 2016:3, 0 in 2016:4.

Variable	2008:1–2017:4
POP	1.00190544-.00004764TPOP2018
POP1	1.00246331-.00006158TPOP2018
POP2	1.00144289-.00003607TPOP2018
(CE+U)	1.00208281-.00005207TPOP2018
CL1	1.00273746-.00006844TPOP2018
CL2	1.00141202-.00003530TPOP2018
CE	1.00207029-.00005176TPOP2018

● TPOP2018 is 39 in 2008:1, 38 in 2008:2, ..., 1 in 2017:3, 0 in 2017:4.

Variable	2009:1–2018:4
POP	0.99690986 +.00007725TPOP2019
POP1	0.99672774 +.00008181TPOP2019
POP2	0.99701738 +.00007457TPOP2019
(CE+U)	0.99688635+.00007784TPOP2019
CL1	0.99672687 +.00008183TPOP2019
CL2	0.99699057 +.00007524TPOP2019
CE	0.99688141 +.00007796TPOP2019

● TPOP2019 is 39 in 2009:1, 38 in 2009:2, ..., 1 in 2018:3, 0 in 2018:4.

Var.	No.	Var.	No.	Var.	No.	Var.	No.
AF	R184	DISBB	R173	NFIBB	R169	RECTXS	R65
AF1	R185	DISCA	R148	NFIF1	R94	RM	R178
AF2	R186	DISF1	R101	NFIH1	R112	RNT	R37
CBR	R154	DISH1	R120	NFINN	R103	RS	R177
CBRB1A	R165	DISMA	R163	NFIR	R130	SIFG	R201
CCE	R111	DISR1	R133	NFIS	R125	SIFGA	R89
CCF1	R100	DISS1	R126	NFIUS	R138	SIFS	R203
CCG	R63	DISUS	R142	NIACA	R144	SIFSA	R92
CCH	R118	EX	R7	NIAMA	R159	SIG	R47
CCS	R79	EXZ	R18	NICD	R115	SIGG	R202
CD	R2	FA	R22	NIDDLCB1	R167	SIHG	R199
CDDCCA	R143	FAZ	R23	NIDDLCB2	R166	SIHGA	R87
CDDCF	R93	FIROW	R25	NIDDLCB3	R164	SIHS	R197
CDDCFS	R168	FIUS	R24	NIDDLCMA	R157	SIHSA	R90
CDDCH1	R109	GDP	R11	NIDDLGMA	R156	SIQGA	R88
CDDCNN	R102	GDPR	R1	NIDDLRMA	R155	SIQSA	R91
CDDCR	R128	GSBBCT	R172	NIDDLZ2	R149	SIS	R67
CDDCS	R124	GSCA	R147	NILBRMA	R153	SISS	R204
CDDCUS	R135	GSMA	R162	NILCA	R145	SIT	R35
CDH	R114	GSNN	R108	NILCMA	R158	STAT	R26
CDZ	R12			NILMA	R160	SUBSG	R62
CE	R180	HO	R190	NNF	R96	SUBSS	R78
CFRLMA	R152	IH	R6	NNG	R140	SURGP	R54
CFXUS	R129	IHBZ	R150	NNH	R116	SURPS	R74
CGLDFXMA	R151	IHF1	R95	NNR	R131	TBG	R205
CGLDFXUS	R134	IHNN	R104	NNS	R122	TBS	R206
CGLDR	R127	IHZ	R16	PAYINTG	R60	TCBN	R31
CL1	R182	IK	R5	PAYINTS	R77	TCG	R45
CL2	R183	IKBMACA	R170	PIEFRET	R98	TCS	R66
CN	R3	IKCAZ	R146	PIEF1X	R99	THG	R43
CNZ	R13	IKH1	R121	PII	R38	THS	R64
COMPMIL	R83	IKMAZ	R161	POP	R207	TRFG	R51
COMPT	R34	IKNN	R105	POP1	R208	TRFH	R40
CONGZ	R55	IKZ	R15	POP2	R209	TRFR	R28
CONSZ	R75	IM	R8	PRI	R36	TRFS	R71
CPOP	R187	IMZ	R19	PROG	R80	TRG	R46
CPOP1	R188	INS	R137	PROGZ	R82	TRGHPAY	R56
CPOP2	R189	INTF1	R30	PROS	R81	TRGR1	R57
CS	R4	INTGR	R61	PROSZ	R84	TRGR2	R59
CSDRUS	R136	IPP	R41	PURG	R9	TRGS	R58
CSZ	R14	IV	R86	PURGZ	R20	TRHG	R52
CTB	R171	IVA	R33	PURS	R10	TRHR	R42
CTF1	R97	IVNN	R106	PURSZ	R21	TRHS	R72
CTGB	R139	IVZ	R17	RB	R179	TRRG	R53
CTGMB	R141	JG	R192	REALEST	R113	TRRS	R73
CTH	R117	JGH	R194	RECDIVG	R49	TRRSHPAY	R76
CTNN	R107	JM	R193	RECDIVS	R69	TTRFR	R85
CTR	R132	JMH	R191	RECINTG	R48	U	R181
		JS	R193				
		JSH	R197				
		JT	R191				
		JTH	R195				
CTS	R123	MAILFLT1	R174	RECINTS	R68	UB	R39
DC	R27	MAILFLT3	R175	RECRRG	R50	USAFF	R119
DCB	R29	MAILFLT2	R176	RECRRS	R70		
DCBN	R32	MVCE	R110	RECTXG	R44		

Table A.6
Links Between the National Income and Product Accounts
and the Flow of Funds Accounts

Flow of Funds Data (raw data variables)

SH =	NFIH1 + DISH1
SF =	NFIF1 + DISF1 + NFINN
SB =	NFIBB + DISBB - NIAMA + NILMA - DISMA - NIACA + NILCA - DISCA
SR =	NFIR + DISR1
SG =	NFIUS + DISUS + NIACA - NILCA + DISCA + NIAMA - NILMA + DISMA
SS =	NFIS + DISS1

Variables in the Model on the Right Hand Side

SHTEST = YT - SIHG - SIHS + USAFF - THG - THS - PCS*CS - PCN·CN - PCD·CD + TRGH + TRSH + UB + INS + NICD + CCH - CTH - PIH·IHH - CDH - PIK·IKH - NNH

SFTEST = XX + SUBS + SUBG + USOTHER + PIEFRET - WF·JF(HN + 1.5*HO) - RNT - INTZ - INTF - TRFH - NICD - CCH + CDH - TBS - TRFS - CCS - TRFR - DB - GSB - CTGB - GSMA - GSCA - TBG - TRFG - CCG - SIFG - SIFS - STAT - DF - TF1 - TFA - PIK·IKF - PIH·IHF - NNF - CTF1 - CTNN

SBTEST = GSB - CTB - PIH·IHB - PIK·IKB

SRTEST = - PEX·EX - USROW + PIM·IM + TFR + TRFR + TRHR + TRGR - USAFF - CTR - NNR - TRRS

SGTEST = GSMA + GSCA + THG + IBTG + TBG + TFG + SIHG + SIFG - DG + TRFG - PG·COG - WG·JG·HG - WM·JM·HM - TRGH - TRGR - TRGS - INTG - SUBG + CCG - INS - USAFF - CTGMB - NNG - PIK·IKG + SIGG + CTGB

SSTEST = THS + IBTS + TBS + TFS + SIHS + SIFS - DS + TRGS + TRFS - PS·COS - WS·JS·HS - TRSH - UB - INTS - SUBS + CCS - CTS - NNS + SISS + TRRS

Tests

0 =	SH + SF + SB + SR + SG + SS + STAT + USAFF
0 =	SH - SHTEST
0 =	SF - SFTEST
0 =	SB - SBTEST
0 =	SR - SRTEST
0 =	SG - SGTEST
0 =	SS - SSTEST

0 = -NIDDLCB1 - NIDDLCB2 - NIDDLCB3 - NIDDLZ2 + CDDCFS + CDDCF + MAILFLT1 + MAILFLT2 + CDDCUS - NIDDLRMA - NIDDLGMA + CDDCH1 + CDDCNN + CDDCR + CDDCS - NILCMA + MAILFLT3 - NIDDLCMA

0 =	CBR - NILBRMA
0 =	CGLDR - CFXUS + CGLDFXUS + CGLDFXMA - CSDRUS
0 =	CTH + CTB + CTF1 + CTNN + CTGMB + CTR
0 =	NNH + NNF + NNR + NNG + NNS

• See Table A.5 for the definitions of the raw data variables.

Table A.7
Construction of the Variables for the US Model

Variable	Construction (raw data variables on right hand side)
AA	Def., Eq. 133.
$AA1$	Def., Eq. 88.
$AA2$	Def., Eq. 89.
AB	Def., Eq. 73. Base Period=1971:4, Value=29.425
AF	Def., Eq. 70. Base Period=1971:4, Value=-303.993
AFT	AFT
AG	Def., Eq. 77. Base Period=1971:4, Value=-513.731
AH	Def., Eq. 66. Base Period=1971:4, Value=2735.512
AR	Def., Eq. 75. Base Period=1971:4, Value=-18.702
AS	Def., Eq. 79. Base Period=1971:4, Value=-161.8
BO	Sum of CFRLMA. Base Period=1971:4, Value=.039
BR	Sum of CBR. Base Period=1971:4, Value=35.329
$CCF1$	CCF1
CCG	CCG
$CCGQ$	CCG/$GDPD$
CCH	CCH
$CCHQ$	CCH/$GDPD$
CCS	CCS
$CCSQ$	CCS/$GDPD$
CD	CD
CDH	CDH
CG	$MVCE - MVCE_{-1} - CCE$
CN	CN
$cnst2$	Time varying constant term. See text.
COG	PURG-PROG
COS	PURS-PROS
CS	CS
CTB	CTB
$CTF1$	CTF1
$CTGB$	CTBS
$CTGMB$	CTGMB
CTH	CTH
$CTNN$	CTNN
CTR	CTR
CTS	CTS
CUR	Sum of NILCMA. Base Period=1971:4, Value=53.521
$D1G$	Def., Eq. 47
$D1GM$	Def., Eq. 90
$D1S$	Def., Eq. 48
$D1SM$	Def., Eq. 91
$D2G$	Def., Eq. 49
$D2S$	Def., Eq. 50
$D3G$	Def., Eq. 51
$D3S$	Def., Eq. 52
$D4G$	Def., Eq. 53
$D5G$	Def., Eq. 55
$D6G$	Def., Eq. 67
DB	DCB-DCBN
DBQ	DB/$GDPD$
$DELD$	Computed using NIPA asset data
$DELH$	Computed using NIPA asset data
$DELK$	Computed using NIPA asset data
DF	DCBN

Table A.7 (continued)

Variable	Construction (raw data variables on right hand side)
DG	-RECDIVG
$DISB$	DISBB-DISMA-DISCA
$DISF$	DISF1
$DISG$	DISUS+DISCA+DISMA
$DISH$	DISH1
$DISR$	DISR1
$DISS$	DISS1
DR	DC-DCB
DRQ	DR/$GDPD$
DS	-RECDIVS
E	CE+AFT
EX	EX
$EXPG$	Def., Eq. 106
$EXPS$	Def., Eq. 113
FA	FA
GDP	Def., Eq. 82, or GDP
$GDPD$	Def., Eq. 84
$GDPR$	GDPR
GNP	Def., Eq. 129
$GNPD$	Def., Eq. 131
GSB	GSB
$GSBQ$	GSB/$GDPD$
$GSCA$	GSCA
$GSMA$	GSMA
$GSNN$	GSNN
$GSNNQ$	GSNN/$GDPD$
$GNPR$	Def., Eq. 130
HF	((JTH-JGH-JSH-JMH)/(JT-JG-JS-JM))·(1000/4)
HFF	Def., Eq. 100
HFS	Peak to peak interpolation of HF. The peaks are 1952:4, 1960.3, 1966:1, 1977:2, 1990:1, 2000:1, 2001:4, and 2004:2. Flat end.
HG	(JGH/JG)·(1000/4)
HM	(JMH/JM)·(1000/4)
HN	Def., Eq. 62
HO	13·HO. Constructed values for 1952:1-1955:4.
HS	(JSH/JS)·(1000/4)
$IBTG$	RECTXG+RECRRG
$IBTS$	RECTXS+RECRRS
IGZ	PURGZ-CONGZ
$IGZQ$	IGZ/$GDPD$
IHB	IHBZ/(IHZ/IH)
IHF	(IHF1+IHNN)/(IHZ/IH)
IHH	(IHZ-IHF1-IHBZ-IHNN)/(IHZ/IH)
IKB	(IKBMACA-IKMAZ-IKCAZ)/(IKZ/IK)
IKF	(IKZ-IKH1-IKBMACA)/(IKZ/IK)
IKG	((IKCAZ+IKMAZ)/(IKZ/IK)
IKH	IKH1/(IKZ/IK)
IM	IM
INS	INS
$INTF$	INTF1
$INTG$	PAYINTG-RECINTG
$INTGR$	INTGR

Variable	Construction (raw data variables on right hand side)
$INTS$	PAYINTS-RECINTS
$INTZ$	PII-IPP-INTF1-(PAYINTG-RECINTG)+INTGR-(PAYINTS-RECINTS)
$INTZQ$	INTZ/$GDPD$
ISZ	PURSZ-CONSZ
$ISZQ$	ISZ/$GDPD$
IVA	IVA
IVF	IV
JF	JT-JG-JS-JM
JG	JG
$JHMIN$	Def., Eq. 94
JM	JM
JS	JS
KD	Def., Eq. 58. Base Period=1952:1, Value=278.7, Fixed Assets Table 1.2, line 15. Dep. Rate=DELD
KH	Def., Eq. 59. Base Period=1952:1, Value=2598.6, Fixed Assets Table 1.2, line 8. Dep. Rate=DELH
KK	Def., Eq. 92. Base Period=1952:1, Value=2619.7, Fixed Asset Table 1.2, line 4. Dep. Rate=DELK
$KKMIN$	Def., Eq. 93
$L1$	CL1+AF1
$L2$	CL2+AF2
$L3$	Def., Eq. 86
LAM	Computed from peak to peak interpolation of $\log[Y/(JF \cdot HF)]$. Peak quarters are 1955:2, 1963:3, 1966:1, 1973:1, 1992.4, and 2010.4. Growth rate from 2011.1 on is 1.0 percent
LM	Def., Eq. 85
$M1$	Def., Eq. 81. Base Period=1971:4, Value=240.964
MB	Def., Eq. 71. Also sum of -NIDDLCB1-NIDDLCB2-NIDDLCB3-NIDDLZ2+CDDCFS-CDDCCA. Base Period=1971:4, Value=-197.969
$MDIF$	CDDCFS-MAILFLT1
MF	Sum of CDDCF+MAILFLT1+MAILFLT2+CDDCNN+MAILFLT3, Base Period= 1971:4, Value=84.075
MG	Sum of CDDCUS+CDDCCA-NIDDLRMA-NIDDLGMA-NIDDLCMA, Base Period=1971:4, Value=10.526
MGQ	MG/$GDPD$
MH	Sum of CDDCH1. Base Period=1971:4, Value=132.050
MHQ	MH/$GDPD$
MR	Sum of CDDCR. Base Period=1971:4, Value=12.725
MRQ	MR/$GDPD$
MS	Sum of CDDCS. Base Period=1971:4, Value=12.114
MSQ	MS/$GDPD$
MUH	Peak to peak interpolation of Y/KK. Peak quarters are 1953:2, 1955:3, 1959:2, 1962:3, 1965:4, 1969:1, 1973:1, 1977:3, 1981:1, 1984:2, 1988:4, 1993:4, 1998:1, 2006:1, 2019:1. Flat beginning.
$NICD$	NICD
NNF	NNF
NNG	NNG
NNH	NNH
NNR	NNR
NNS	NNS
PCD	CDZ/CD
$PCGDPD$	Def., Eq. 122
$PCGDPR$	Def., Eq. 123
$PCM1$	Def., Eq. 124
PCN	CNZ/CN
PCS	CSZ/CS

Variable	Construction (raw data variables on right hand side)
PD	Def., Eq. 33
PEX	EXZ/EX
PF	Def., Eq. 31
PFA	FAZ/FA
PG	(PURGZ-PROGZ)/(PURG-PROG)
PH	Def., Eq. 34
$PIEF$	Def., Eq. 67, or PIEF1X
$PIEFRET$	PIEFRET
PIH	IHZ/IH
PIK	IKZ/IK
PIM	IMZ/IM
PIV	IVZ/IV, with the following adjustments: 1954:4 = .2382, 1959:3 = .2084, 1970:1 = .2399, 1971:4 = .2386, 1975:3 = .3634, 1975:4 = .3634, 1983:2 = .6142, 1983:3 = .6142, 1986:4 = .5842, 1987:3 = .6306, 1992:1 = .7708, 1993:3 = .7399, 1995:3 = .7867, 1995:4 = .7867, 1996:1 = .7867, 1997:1 = .6830, 2001:2 = .6578, 2002:1 = .6629, 2003:3 = .7461, 2005:2 = .8539, 2005:3 = .8539, 2008:1 = .8290, 2010:1 = 1.0097, 2016:3 = 1.2435, 2017:1 = 1.2570, 2018:2 = 1.1259
PKH	REALEST/KH
POP	POP
$POP1$	POP1
$POP2$	POP2
$POP3$	POP-POP1-POP2
$PROD$	Def., Eq. 118
PS	(PURSZ-PROSZ)/(PURS-PROS)
$PSI1$	Def., Eq. 32
$PSI2$	Def., Eq. 35
$PSI3$	Def., Eq. 36
$PSI4$	Def., Eq. 37
$PSI5$	Def., Eq. 38
$PSI6$	Def., Eq. 39
$PSI7$	Def., Eq. 40
$PSI8$	Def., Eq. 41
$PSI9$	Def., Eq. 42
$PSI10$	Def., Eq. 44
$PSI11$	Def., Eq. 45
$PSI12$	Def., Eq. 46
$PSI13$	(PROG+PROS)/(250(JGH+JSH+JMH))
$PSI14$	Def., Eq. 55
$PSI15$	Def., Eq. 56
PUG	Def., Eq. 104 or PURGZ
PUS	Def., Eq. 110 or PURSZ
PX	(CDZ+CNZ+CSZ+IHZ+IKZ+PURGZ-PROGZ+PURSZ-PROSZ+EXZ-IMZ-IBTG-IBTS)/ (CD+CN+CS+IH+IK+PURG-PROG+PURS-PROS+EX-IM)
Q	Sum of CGLDFXUS+CGLDFXMA-CSDRUS. Base Period=1971:4, Value=13.985
QQ	Q/$GDPD$
RB	RB
$RECG$	Def., Eq. 105
$RECS$	Def., Eq. 112
RM	RM
RMA	Def., Eq. 128
RNT	RNT
$RNTQ$	RNT/$GDPD$
RS	RS
RSA	Def., Eq. 127
SB	Def., Eq. 72
SF	Def., Eq. 69
SG	Def., Eq. 76
SGP	Def., Eq. 107
SH	Def., Eq. 65

Variable	Construction (raw data variables on right hand side)
$SHRPIE$	Def., Eq. 121
$SIFG$	SIFG
$SIFS$	SIFS
SIG	SIG
$SIGG$	SIGG
$SIHG$	SIHG
$SIHS$	SIHS
SIS	SIS
$SISS$	SISS
SR	Def., Eq. 74
SRZ	Def., Eq. 116
SS	Def., Eq. 78
SSP	Def., Eq. 114
$STAT$	STAT
$STATP$	Def., Eq. 83
$SUBG$	SUBSG - SURPG
$SUBS$	SUBSS - SURPS
T	1 in 1952:1, 2 in 1952:2, etc.
$TAUG$	Set to zero.
$TAUS$	Set to zero.
TB	Time varying time trend. See text.
TFR	TTRFR - TRFR
TBG	TBG
$TBGQ$	TBG/$GDPD$
TBS	TBS
TCG	TCG
TCS	TCS
TFG	Def., Eq. 102
TFS	Def., Eq. 108
$TF1$	TCBN
$THETA1$	PFA/$GDPD$
$THETA2$	CDH/(PCD·CD)
$THETA3$	NICD/(PCD·CD)
$THETA4$	PIEFRET/PIEF
THG	THG
THS	THS
$TRFG$	TRFG
$TRFH$	TRFH
$TRFR$	TRF-TRFH
$TRFS$	TRFS
$TRGH$	TRGHPAY - TRHG
$TRGHQ$	TRGH/$GDPD$
$TRGR$	TRGR1 + TRGR2 - TRG - TRRG
$TRGS$	TRGS
$TRGSQ$	TRGS/$GDPD$
$TRHR$	TRHR

Variable	Construction (raw data variables on right hand side)
$TRRS$	TRRS
$TRSH$	TRRSHPAY-TRHS-UB
$TRSHQ$	TRSH/$GDPD$
U	(CE+U)-CE
UB	UB
UBR	Def., Eq. 125
UR	Def., Eq. 87
$USAFF$	USAFF
$USOTHER$	Def., Eq. 57
$USROW$	FIUS-FIROW
V	Def., Eq. 117. Base Period=1996:4, Value=1781.1, Table 5.8.6A
WA	Def., Eq. 126
WF	WF=[COMPT-PROGZ-PROSZ-(SIT-SIGG-SISS) +PRI]/[(JT-JG-JS-JM)(((JTH-JGH-JSH-JMH)/(JT-JG-JS-JM))·(1000/4)+.5HO)]
WG	(PROGZ-COMPMIL)/(250(JGH))
WH	Def., Eq. 43
WM	COMPMIL/(250(JMH))
WR	Def., Eq. 119
WS	PROSZ/(250(JSH))
X	Def., Eq. 60
XX	Def., Eq. 61
Y	Def., Eq. 63
YD	Def., Eq. 115
YNL	Def., Eq. 99
YS	Computed from peak to peak interpolation of $\log Y$. Peak quarters are 1953:2, 1966:1, 1973:2, 2000:3, 2005:4, and 2018:3.
YT	Def., Eq. 64

• The variables in the first column are the variables in the model. They are defined by the identities in Table A.3 or by the raw data variables in Table A.5. A right hand side variable in this table is a raw data variable unless it is in italics, in which case it is a variable in the model. Sometimes the same letters are used for both a variable in the model and a raw data variable.

Eq.	First Stage Regressors
1	$cnst2$, $cnst$, $AG1$, $AG2$, $AG3$, $\log(CS/POP)_{-1}$, $\log(AA/POP)_{-1}$, $\log[YD/(POP \cdot PH)]_{-1}$, RSA_{-1}, $cnst2_{-1}$, $AG1_{-1}$, $AG2_{-1}$, $AG3_{-1}$, $\log(AA/POP)_{-2}$, $\log(CS/POP)_{-2}$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$, $\log POP$, $\log POP_{-1}$
2	$cnst$, $AG1$, $AG2$, $AG3$, $\log(CN/POP)_{-1}$, $\log(AA/POP)_{-1}$, $\log[YD/(POP \cdot PH)]_{-1}$, RMA_{-1}, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$
3	$cnst2$, $cnst$, $AG1$, $AG2$, $AG3$, $(KD/POP)_{-1}$, $(AA/POP)_{-1}$, $YD/(POP \cdot PH)$, $(RMA \cdot (.01T))_{-1}$, $DELD(KD/POP)_{-1} - (CD/POP)_{-1}$, $\log[(COG+COS)/POP]_{-1}$, $\log[(TRGH+TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$, T
4	$cnst$, $(KH/POP)_{-1}$, $RMA_{-1} \cdot (.002T)$, $[YD/(POP \cdot PH)]_{-1}$, $AG1$, $AG2$, $AG3$, $AG1_{-1}$, $AG2_{-1}$, $AG3_{-1}$, $(KH/POP)_{-2}$, $RMA_{-2} \cdot (.002T)_{-1}$, $DELH(KH/POP)_{-1} - (IHH/POP)_{-1}$, $DELH_{-1}(KH/POP)_{-2} - (IHH/POP)_{-2}$, $\Delta(IHH/POP)_{-1}$, $(AA2/POP)_{-1}$, $(AA2/POP)_{-2}$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$, T
5	$cnst$, $\log(L1/POP1)_{-1}$, $\log(AA/POP)_{-1}$, UR_{-1}, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$
6	$cnst2$, $cnst$, TB, T, $\log(L2/POP2)_{-1})$, $\log(AA/POP)_{-1}$, UR_{-1}, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$
7	$cnst$, $\log(L3/POP3)_{-1})$, $\log(AA/POP)_{-1}$, $\log(WA/PH)_{-1}$, UR_{-1}, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$
8	$cnst$, $\log(LM/POP)_{-1}$, UR_{-1}, $\log[(COG+COS)/POP]_{-1}$, $\log[(TRGH+TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$

Eq.	First Stage Regressors

10     $\log PF_{-1}$, $\log[[WF(1+D5G)] - \log LAM]_{-1}$, $cnst2$, $cnst$, TB, T, $\log PIM_{-1}$, UR_{-1}, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$

11     $cnst$, $\log Y_{-1}$, $\log V_{-1}$, $D593$, $D594$, $D601$, $\log Y_{-2}$, $\log Y_{-3}$, $\log Y_{-4}$, $\log V_{-2}$, $\log V_{-3}$, $\log V_{-4}$, $D601_{-1}$, $D601_{-2}$, $D601_{-3}$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$

12     $cnst2$, $cnst$, $\log KK_{-1}$, $\log KK_{-2}$, $\log Y_{-1}$, $\log Y_{-2}$, $\log Y_{-3}$, $\log Y_{-4}$, $\log Y_{-5}$, $\log(KK/KKMIN)_{-1}$, $RB_{-2}(1 - D2G_{-2} - D2S_{-2}) - 100(PD_{-2}/PD_{-6}) - 1)$, $(CG_{-2} + CG_{-3} + CG_{-4})/(PX_{-2}YS_{-2} + PX_{-3}YS_{-3} + PX_{-4}YS_{-4})$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$

13     $cnst$, $\log[JF/(JHMIN/HFS)]_{-1}$, $\Delta \log JF_{-1}$, $\Delta \log Y_{-1}$, $D593$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$

14     $cnst$, $\log(HF/HFS)_{-1}$, $\log[JF/(JHMIN/HFS)]_{-1}$, $\Delta \log Y_{-1}$, T, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$

16     $cnst$, T, $\log WF_{-1} - \log LAM_{-1} - \log PF_{-1}$, $\log PF_{-1}$, $\log PF_{-2}$, $\log PIM_{-1}$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$

17     $cnst$, $\log(MF/PF)_{-1}$, $\log(X - FA)_{-1}$, $RS(1 - D2G - D2S)_{-1}$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$

18     $cnst$, $\log[(PIEF - TFG - TFS)/DF_{-1}]_{-1}$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$

Eq.	First Stage Regressors

23     $cnst$, RB_{-1}, RB_{-2}, RS_{-1}, RS_{-2}, RS_{-3}, $100[(PD/PD_{-1})^4 - 1]_{-1}$, UR_{-1}, $\log(PIM/PF)_{-1}$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$, T

24     $cnst$, RM_{-1}, RS_{-1}, $100[(PD/PD_{-1})^4 - 1]_{-1}$, UR_{-1}, $\log(PIM/PF)_{-1}$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$, T

25     $cnst$, ΔRB_{-1}, $[[\Delta(PIEF - TFG - TFS + PX \cdot PIEB - TBG - TBS)/(PX_{-1} \cdot YS_{-1})]_{-1}$, RS_{-1}, RS_{-2}, RB_{-2}, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$, T

26     $cnst$, $\log[CUR_{-1}/(POP_{-1}PF)]_{-1}$, $\log[(X - FA)/POP]_{-1}$, RSA_{-1}, $\log[CUR_{-1}/(POP_{-1}PF_{-1})]$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$

27     $cnst$, $\log(IM/POP)_{-1}$, $\log(AA/POP)_{-1}$, $\log(Y/POP)_{-1}$, $\log(PF/PIM)_{-1}$, $D691$, $D692$, $D714$, $D721$, $AG1$, $AG2$, $AG3$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$, T, $\log POP$, $\log POP_{-1}$, $\log PIM_{-1}$

28     $cnst$, $\log UB_{-1}$, $\log U_{-1}$, $\log WF_{-1}$, $\log UB_{-2}$, $\log(PIM/PF)_{-1}$, $100[(PD/PD_{-1})^4 - 1]_{-1}$, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$, T

30     $cnst$, RS_{-1}, $100[(PD/PD_{-1})^4 - 1]_{-1}$, UR_{-1}, ΔUR_{-1}, $PCM1_{-1}$, $D794823 \cdot PCM1_{-1}$, ΔRS_{-1}, ΔRS_{-2}, $\log[(COG + COS)/POP]_{-1}$, $\log[(TRGH + TRSH)/(POP \cdot PH)]_{-1}$, $\log(EX/POP)_{-1}$