

Reverse Engineering the FRB/US Model in R

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Chapter 1

Introduction

I am starting to reverse engineer¹ the Federal Reserve's FRB/US model packages to create my own version in the R Language. I quote their about page:

The FRB/US model is a large-scale estimated general equilibrium model of the U.S. economy that has been in use at the Federal Reserve Board since 1996. The model is designed for detailed analysis of monetary and fiscal policies. One distinctive feature compared to dynamic stochastic general equilibrium (DSGE) models is the ability to switch between alternative assumptions about expectations formation of economic agents. Another is the models level of detail: FRB/US contains all major components of the product and income sides of the U.S. national accounts. Since its original development, the model has continuously undergone changes to cope with the evolving structure of the economy, including conceptual revisions to sectoral definitions of the national accounts.

The article "The FRB/US Model: A Tool for Macroeconomic Policy Analysis" provides a brief overview of the structure of FRB/US, and presents some key properties of the model and some applications, code for which is included with the main FRB/US model package. The article "November 2014 Update of the FRB/US Model" presents some model properties of the most recently released version of FRB/US.

This is an evolving document, where I will initially create the Fed's model files byte by byte and reverse engineer the structure of the model. Then I

¹The pdf was created with noweb, the literate programming tool: "noweb frbus.nw — pdflatex -synctex=1 -interaction=nonstopmode frbus.tex"

plan to morph it into the R software environment for statistical computing and graphics, to use to create my own models. I'm using the literate programming method of Donald Knuth to combine the documentation with the actual code.

1.1 Apr 2014 The FRB/US Model: A Tool for Macroeconomic Policy Analysis Flint Brayton, Thomas Laubach, and David Reifschneider

1.1.1 Introduction

The FRB/US model of the U.S. economy is one of several that Federal Reserve Board staff consults for forecasting and the analysis of macroeconomic issues, including both monetary and fiscal policy. To improve public access to and understanding of the model, a new page has been introduced on the Federal Reserve Board's website from which interested users can download expanded FRB/US documentation; model equations, coefficients, and data; and sample simulation programs.

These simulation programs can be run by anyone with access to the EViews software package, a widely available commercial product. This note provides a brief summary of the main features of the model, illustrates some applications of the model using sample programs provided on the web page, and concludes with an overview of the contents of the web page. Because the model continues to undergo changes as both economic theory and empirical evidence evolve, any given model release reflects only the state of thinking at the time of the release.

1.1.2 The FRB/US Model: A Brief Overview

The FRB/US model is a large-scale model of the U.S. economy featuring optimizing behavior by households and firms as well as detailed descriptions of monetary policy and the fiscal sector. The model's large number of endogenous variables permits the study of the effects of a broad range of macroeconomic policies and exogenous shocks on real GDP and its major spending components; the unemployment rate and other key labor market indicators; several measures of inflation and relative prices;

the main categories of national income; a detailed treatment of the government's account; and various interest rates, asset prices, and components of wealth. FRB/US has a neoclassical core that combines a production function with endogenous and exogenous supplies of production factors and key aspects of household preferences such as impatience. To account for cyclical fluctuations, the model features rigidities that apply to many decisions made by households and firms; these rigidities enable the model to generate gradual responses of macroeconomic variables to a wide range of exogenous shocks that are consistent with the economic data.

Although a detailed description of the model's equations is beyond the scope of this note, a number of resources are available on the new web page. Here we provide only an overview of the main specifications of the various agents' behavior and how they compare to other models currently used in policy analysis, and then focus on illustrating some properties of the model.

1.1.3 Basic structure of the model

- *Households.* There are liquidity-constrained and unconstrained households. Liquidity-constrained households spend all their income each quarter. In contrast, other households consume and invest based on their assessment of their lifetime resources. This assessment contains different aggregate average propensities to spend out of different types of income, reflecting variations in the distribution of different types of income across age groups; in addition, future labor and transfer income is discounted at a rate substantially higher than the discount rate on future income from non-human wealth, reflecting uninsurable individual income risk. Unconstrained households face adjustment costs that cause them to adjust their spending gradually in response to changes in expected income and property wealth. As in the national income and product accounts, total spending by households consists of consumption of nondurable goods and non-housing services, purchases of durable consumer goods, and consumption of housing services; movements in these three components of total spending are modeled separately. Labor supply is assumed to be independent of wealth both in the long-run and at higher

frequencies. Movements in labor force participation are driven by social norms in the long run, represented by a stochastic trend, and by the availability of jobs in the short run.

- *Firms.* Forward-looking firms solve optimization problems to determine their hiring and investment. Firms' fixed investment is disaggregated into spending on durable equipment, intellectual property, and nonresidential structures, and is modeled in line with standard neoclassical investment theory. In particular, the desired level of investment is a function of the user cost of capital, the expected level and growth rate of output, and depreciation, with movements of actual spending toward this desired level slowed by adjustment costs. Business fixed investment is also affected by current business output directly, which could capture either the effects of sales on liquidity-constrained firms' ability to invest, or sentiment effects. Businesses also aim to keep aggregate hours in line with the expected aggregate level of production and real compensation per hour (adjusted for trend labor productivity), but costly adjustment of both their workforces and the workweek may cause them to temporarily deviate from the desired longer-run level of hours in response to shocks.
- *Domestic financial sector and monetary policy.* A variety of interest rates, including yields on Treasury securities at several maturities, BBB corporate bond yields, auto loan rates, and conventional 30-year residential mortgage rates, are determined as the expected average value of the federal funds rate over the appropriate holding period plus endogenous term/risk premiums. Equity prices equal the present discounted value of corporate earnings, where the discount rate equals the expected real yield on 30-year Treasury bonds plus an endogenous equity premium. Monetary policy is modeled as a simple rule for the federal funds rate subject to the zero lower bound on nominal interest rates; the parameters of the policy rule used in simulations can be modified as desired. In addition, the model allows for the imposition of the policy thresholds that were part of FOMC statements from December 2012 to January 2014 for the rates of unemployment and projected inflation that would need to be crossed before the funds rate would be allowed to rise from its effective lower bound.
- *Supply-side.* The key production sector in FRB/US is the

nonfarm business sector plus imported energy. The production function in this sector is Cobb-Douglas with potential output depending on the sustainable full-employment level of labor input, actual capital services, trend energy services, and the trend component of multi-factor productivity. Because there is no wealth effect on long-run labor supply in FRB/US, the sustainable level of aggregate hours depends on the overall population and the trend components of the participation rate and the workweek, where the latter two factors follow stochastic trends.

- *Price and wage setting.* The key inflation measures modeled in FRB/US are for core PCE prices and ECI hourly compensation, following the New Keynesian Phillips curve specification in the presence of nonzero trend inflation developed in Cogley and Sbordone (2008). In addition to slack and expectations of future inflation, other important determinants of total consumer price inflation include movements in the relative prices of food, energy, and non-energy imports.
- *Other.* The government sector includes disaggregated components of spending and a wide range of tax rates and credits at both the federal and the state and local levels. Simulations can be run under fiscal rules that adjust the trend component of average personal income tax rates to stabilize the ratio of either the budget surplus or debt to GDP. The foreign sector affects domestic real activity through equations for imports and exports of goods and services that depend on real activity in the rest of the world and the terms of trade. The trade-weighted dollar exchange rate is modeled assuming uncovered interest parity, which links the expected real return on safe long-run assets abroad to those in the U.S., plus a country-risk premium that depends on the level of U.S. net foreign indebtedness. Foreign short-term and long-term nominal interest rates are modeled jointly with foreign inflation and foreign real activity in reduced form.

1.1.4 Parameterizing the model

The large size of FRB/US makes it infeasible to estimate all of its equations simultaneously. The estimation strategy for ma-

major structural equations has several key features. First, some of the parameters governing the model's long-run relationships, such as factor elasticities in the production function and desired capital-output ratios, are calibrated based on priors grounded in evidence on income shares and similar considerations. Other long-run relationships are estimated using cointegration techniques. Second, the estimation of those equations that contain expectations terms involves the separate estimation of a set of smaller models, each of which typically combines one of the structural equations with a condensed model of the overall economy that features a VAR. Projections of the VAR provide proxies for the explicit expectations terms in the structural equation. The VARs in the smaller models share a core set of macro variables: the federal funds rate, consumer price inflation, and the output gap. Sector-specific variables are added to individual VARs as needed to form proxies for expectations of variables not in the core set. This design can be interpreted as a limited form of rational expectations. Third, the rigidities that apply to consumption, investment, and factor inputs in production are specified as a generalized form of adjustment costs, polynomial adjustment costs, or PAC, see Tinsley (2002). PAC permits costs to be associated with time derivatives of the decision variable that are of a higher order than the first difference term that appears in the quadratic adjustment cost framework. The order of adjustment costs in each PAC equation is determined empirically as part of the estimation process and is typically chosen so as to ensure that residuals are not serially correlated. Thus, in these behavioral equations, there is no external source of serial persistence. Finally, after estimation the assembled model is subjected to a set of diagnostic tests to ensure that the overall system's properties are consistent with the empirical evidence, such as the dynamics of a simple VAR model.

1.1.5 Forming expectations in the model

FRB/US allows for two alternative assumptions about the way in which different groups of agents –such as financial market participants, wage-and-price setters, households, and nonfinancial firms– form their expectations in simulations of the model. Expectations of a particular group can be either consistent with full knowledge of the dynamics of the model (henceforth called model-consistent expectations or MCE) or based on projections

from the estimated small-scale auxiliary VAR models that are used in the estimation of FRB/US. VAR expectations assume only limited knowledge of the joint dynamics of the variables on the part of decision-makers and correspond to the same restricted information set used in the estimation of the model as discussed above. This approach allows users of the model to explore the implications of alternative characterizations of the expectations-formation process –a useful feature given the likelihood that various economic players differ significantly in their knowledge about the workings of the economy and its future direction. For example, simulations can be run in which financial market participants have the sophisticated understanding of policy and the dynamics of the economy implied by MCE, while households instead base their expectations on the limited information and average historical relationships embedded in the VAR models.

1.1.6 Comparing the design of FRB/US to the DSGE modeling approach

As is already evident from this brief description, FRB/US differs along several dimensions from many dynamic stochastic general equilibrium (DSGE) models in current use. For example:

- Because FRB/US is not built around a representative household paradigm, it is more generously parameterized than typical DSGE models and dispenses with many of the cross-equation restrictions imposed by the latter. Notably, future income is valued by different discount factors depending on whether it accrues to households or firms. Also, the marginal propensity of households to consume out of different types of income can vary, depending on which group of households receives the income. For example, transfer income is disproportionately received by retirees who are well-advanced in their lifecycles.
- Some optimization problems are specified in a different fashion in FRB/US than in many DSGE models. As noted earlier, the FRB/US specification of consumer spending bases the valuation of a large component of human wealth on a discount rate that is both fixed and quite large, implying that the effective planning horizon for many households in FRB/US is closer to the five years advocated by

Friedman (1957) than to the much longer period embedded in a typical DSGE model (Carroll, 2001). In addition, the growth of consumer spending in FRB/US is not closely linked to the path of expected future short-term (risk-free) interest rates as it is in the Euler equation specification of consumption used in most DSGE models; rather, the level of spending in the model depends directly on intermediate-term consumer loan rates and indirectly on the long-term bond rates that influence the value of corporate equities.

- Another important dimension along which FRB/US is different from many DSGE models used in policy analysis is that the model allows for nonlinear interactions among endogenous variables, in contrast to the common practice of writing models as linear approximations around a steady state or balanced-growth path. For example, the model's estimate of the average interest elasticity of aggregate demand has changed markedly over time as the composition of GDP has evolved; in particular, the aggregate elasticity fell sharply with the recent collapse of residential construction, because it is the most interest-sensitive sector of the economy. Another important nonlinearity concerns the zero lower bound on nominal interest rates, which has constrained the actual and expected future stance of monetary policy markedly since late 2008. It is straightforward in FRB/US to model the short-term policy rate as a feedback rule subject to the zero lower bound.
- Broadly speaking, the eclectic approach to the specification of FRB/US permits the historical patterns in macroeconomic data to influence its structure more substantially than is the case for the typical DSGE model, whose structure is more tightly imposed by economic theory. Recognizing that this and other issues about the best design of a macroeconomic model are the subjects of ongoing debate, the staff at the Federal Reserve Board has also developed and uses the EDO and SIGMA DSGE models.

1.1.7 Two Applications of the FRB/US Model

We now illustrate and discuss several key features of the model by means of some applications. The code for these applications is available on the web page.

Impulse response functions to funds rate and multi-factor productivity shocks

Stochastic simulations

1.1.8 Contents of the Web Page

The main FRB/US web page provides access to the following material:

- FRB/US model package: This contains the package of code needed to simulate FRB/US using the EViews software (the EViews software itself needs to be previously installed by the user). It includes files containing model equations and parameters as well as a database. The database will be updated periodically. The model files themselves will be updated occasionally, usually once a year, reflecting specification changes or re-estimation of model equations. The package also contains the two sample programs described above.
- FRB/US supply-side model: This provides the code and data used for estimating a state-space model similar to that developed in Fleischman and Roberts (2011) on which the FRB/US specification of potential output and its components is based.
- RE solver package: For users who are primarily interested in the solution algorithms for solving linear and nonlinear models under MCE, this provides the library of EViews code that implements these algorithms, as well as sample programs and specific documentation.
- Research papers and documentation: This page features links to articles that use the FRB/US model as well as to published and unpublished documentation of the FRB/US model.

Chapter 2

Model Equations and Coefficients

Compare my version of the "Model Equations and Coefficients" to the documentation.

2.1 Household Expenditures

2.1.1 a.1 ECO: Consumer expenditures on non-durable goods and non-housing services, cw 2009\$

25a $\langle \text{variable } ECO \text{ 25a} \rangle \equiv$ (219)
ECO = Consumer expenditures on non-durable goods and non-housing services, cw 2009\$

Defines:

ECO, used in chunks 186c and 231.

25b $\langle \text{equation } eco \text{ 25b} \rangle \equiv$ (252)
eco: d(log(eco), 0, 1) - eco_aerr _
= (y_eco(1) * log(qeco(-1)/eco(-1)) _
+ y_eco(2) * d(log(eco(-1)), 0, 1) _
+ y_eco(3) * zeco) * (1-y_eco(4)) _
+ y_eco(4) * (d(log(yhl+yht), 0, 1))

Defines:

eco, used in chunks 29d, 32c, and 119c.

Uses qeco 28b, y_eco 25c, yhl 89d, yht 92f, and zeco 187a.

25c $\langle \text{coefficient } y_eco \text{ 25c} \rangle \equiv$ (261)
y_eco 4 0.1088704831212408, 0.4609714707829828, 1, 0.252176379778204

Defines:

y_eco, used in chunk 25b.

2.1.2 a.2 ECD: Consumer expenditures on durable goods, cw 2009\$

26a $\langle \text{variable } ECD \text{ 26a} \rangle \equiv$ (219)
 ECD = Consumer expenditures on durable goods, cw 2009\$

Defines:

 ECD, used in chunks 187c, 188c, and 231.

26b $\langle \text{equation } ecd \text{ 26b} \rangle \equiv$ (252)
 ecd: d(log(ecd), 0, 1) - ecd_aerr _
 = y_ecd(1) * log(qecd(-1)/ecd(-1)) _
 + y_ecd(2) * d(log(ecd(-1)), 0, 1) _
 + y_ecd(3) * zecd _
 + y_ecd(4) * zgapc2 / 400

Defines:

 ecd, used in chunks 29d, 30e, 88d, 119c, and 163a.

Uses qecd 28e, y_ecd 26c, zecd 188a, and zgapc2 188d.

26c $\langle \text{coefficient } y_ecd \text{ 26c} \rangle \equiv$ (261)
 y_ecd 4 0.1553557918476032, -0.05860156240430123, 1, 9.039065475739223

Defines:

 y_ecd, used in chunk 26b.

2.1.3 a.3 EH: Residential investment expenditures, cw 2009\$

26d $\langle \text{variable } EH \text{ 26d} \rangle \equiv$ (219)
 EH = Residential investment expenditures, cw 2009\$

Defines:

 EH, used in chunks 189a and 231.

26e $\langle \text{equation } eh \text{ 26e} \rangle \equiv$ (252)
 eh: d(log(eh), 0, 1) - eh_aerr _
 = y_eh(1) * log(qeh(-1)/eh(-1)) _
 + y_eh(2) * d(log(eh(-1)), 0, 1) _
 + y_eh(3) * d(log(eh(-2)), 0, 1) _
 + y_eh(4) * zeh _
 + y_eh(5) * d(rme(-1), 0, 1) _
 + y_eh(6) * d83 * d(rme(-1), 0, 1)

Defines:

 eh, used in chunks 30c, 31a, 56b, and 59a.

Uses d83 204b, qeh 29a, rme 160a, y_eh 26f, and zeh 189b.

26f $\langle \text{coefficient } y_eh \text{ 26f} \rangle \equiv$ (261)
 y_eh 6 0.01184830003855771, 0.3575993755366778, 0.2161402157869259, 1, -0.051357

Defines:

 y_eh, used in chunk 26e.

2.1.4 a.4 ECH: Consumer expenditures on housing services, cw 2009\$

27a $\langle \text{variable } ECH \text{ 27a} \rangle \equiv$ (219)
ECH = Consumer expenditures on housing services, cw 2009\$

Defines:

ECH, used in chunk 231.

27b $\langle \text{equation } ech \text{ 27b} \rangle \equiv$ (252)
ech: $d((ech)/kh(-1), 0, 1) - ech_aerr _$
 $= y_ech(1) _$
 $+ y_ech(2) * ech(-1)/kh(-2) _$
 $+ y_ech(3) * d(ech(-1)/kh(-2), 0, 1) _$
 $+ y_ech(4) * rrmet/100$

Defines:

ech, used in chunks 29d, 32c, and 119c.

Uses **kh** 31a, **rrmet** 165f, and **y_ech** 27c.

27c $\langle \text{coefficient } y_ech \text{ 27c} \rangle \equiv$ (261)
y_ech 4 0.002890569762594884, -0.02415873224871467, 0.5006794105950545, 0.0017367936693711

Defines:

y_ech, used in chunk 27b.

2.1.5 a.5 QEC: Desired level of consumption (FRBUS definition)

27d $\langle \text{variable } QEC \text{ 27d} \rangle \equiv$ (219)
QEC = Desired level of consumption (FRBUS definition)

Defines:

QEC, used in chunks 195–97 and 231.

27e $\langle \text{equation } qec \text{ 27e} \rangle \equiv$ (252)
qec: **qec** - **qec_aerr** = **y_qec**(1) * **zyh** $_$
 $+ y_qec(2) * (dcon*(zyh-zyht)) _$
 $+ y_qec(3) * zyht _$
 $+ y_qec(4) * zyhp _$
 $+ y_qec(5) * (wps+wpo)$

Defines:

qec, used in chunks 28 and 29a.

Uses **dcon** 204e, **wpo** 164a, **wps** 161e, **y_qec** 27f, **zyh** 196a, **zyhp** 196d, and **zyht** 197b.

27f $\langle \text{coefficient } y_qec \text{ 27f} \rangle \equiv$ (261)
y_qec 5 0.7592609842874721, 0.002578773939057793, 0.2407390157125279, -0.2514158240890368,

Defines:

y_qec, used in chunk 27e.

2.1.6 a.6 QECO: Desired level of consumption of non-durable goods and nonhousing services

28a $\langle \text{variable } QECO \text{ 28a} \rangle \equiv$ (219)
 $QECO = \text{Desired level of consumption of nondurable goods and nonhousing services}$
 Defines:
 $QECO$, used in chunk 231.

28b $\langle \text{equation } qeco \text{ 28b} \rangle \equiv$ (252)
 $qeco: \log(qeco) - qeco_aerr = \log(qec) - \log(pcor) + y_qeco(1)$

Defines:
 $qeco$, used in chunks 25b and 187a.
 Uses $pcor$ 119c, qec 27e, and y_qeco 28c.

28c $\langle \text{coefficient } y_qeco \text{ 28c} \rangle \equiv$ (261)
 $y_qeco \quad 1 \quad -0.3372292498223053$
 Defines:
 y_qeco , used in chunk 28b.

2.1.7 a.7 QECD: Target level of consumption of durable goods, trending component

28d $\langle \text{variable } QECD \text{ 28d} \rangle \equiv$ (219)
 $QECD = \text{Target level of consumption of durable goods, trending component}$
 Defines:
 $QECD$, used in chunk 231.

28e $\langle \text{equation } qecd \text{ 28e} \rangle \equiv$ (252)
 $qecd: qecd - qecd_aerr = qec _$
 $\quad \quad \quad * (jrcd/4 + hggdpt/400 + y_qecd(1)*hgpcdr/400) _$
 $\quad \quad \quad * \exp(y_qecd(2) + y_qecd(3)*\log(pcdr*rccd))$

Defines:
 $qecd$, used in chunks 26b and 188a.
 Uses $hggdpt$ 68d, $hgpcdr$ 207f, $jrcd$ 207h, $pcdr$ 120f, qec 27e, $rccd$ 31c, and y_qecd 28f.

28f $\langle \text{coefficient } y_qecd \text{ 28f} \rangle \equiv$ (261)
 $y_qecd \quad 3 \quad -0.6165972226120303, 2.557266037164673, -0.6165972226120303$
 Defines:
 y_qecd , used in chunk 28e.

2.1.8 a.8 QEH: Target level of residential investment

28g $\langle \text{variable } QEH \text{ 28g} \rangle \equiv$ (219)
 $QEH = \text{Target level of residential investment}$
 Defines:
 QEH , used in chunk 231.

29a $\langle \text{equation } qeh \text{ 29a} \rangle \equiv$ (252)

$$\begin{aligned} qeh: qeh - qeh_aerr = qec _ \\ * (jrh/4 + hggdpt/400) _ \\ * \exp(y_qeh(1) - \log(phr*pxp/pcnia) + y_qeh(2)*\log(rcch)) \end{aligned}$$

Defines:

`qeh`, used in chunks 26e and 189b.

Uses `hggdpt` 68d, `jrh` 208a, `pcnia` 97b, `phr` 103d, `pxp` 101b, `qec` 27e, `rcch` 31e, and `y_qeh` 29b.

29b $\langle \text{coefficient } y_qeh \text{ 29b} \rangle \equiv$ (261)

$$y_qeh \quad 2 \quad 1.935026993649364, -0.1570195518635583$$

Defines:

`y_qeh`, used in chunk 29a.

2.1.9 a.9 ECNIA: Personal consumption expenditures, cw 2009\$ (NIPA definition)

29c $\langle \text{variable } ECNIA \text{ 29c} \rangle \equiv$ (219)

$$ECNIA = \text{Personal consumption expenditures, cw 2009\$ (NIPA definition)}$$

Defines:

`ECNIA`, used in chunk 231.

29d $\langle \text{equation } ecnia \text{ 29d} \rangle \equiv$ (252)

$$\begin{aligned} ecnia: \log(ecnia) - ecnia_aerr = \log(ecnia(-1)) + _ \\ .5 * .01 * (pcor*pcnia*eco/ecnian _ \\ + pcor(-1)*pcnia(-1)*eco(-1)/ecnian(-1)) _ \\ * d(\log(eco), 0, 1) _ \\ + .5 * .01 * (pcdr*pcnia*ecd/ecnian _ \\ + pcdr(-1)*pcnia(-1)*ecd(-1)/ecnian(-1)) _ \\ * d(\log(ecd), 0, 1) _ \\ + .5 * .01 * (pchr*pcnia*ech/ecnian _ \\ + pchr(-1)*pcnia(-1)*ech(-1)/ecnian(-1)) _ \\ * d(\log(ech), 0, 1) \end{aligned}$$

Defines:

`ecnia`, used in chunks 30a, 56b, and 59a.

Uses `ecd` 26b, `ech` 27b, `ecnian` 30a, `eco` 25b, `pcdr` 120f, `pchr` 120a, `pcnia` 97b, and `pcor` 119c.

2.1.10 a.10 ECNIAN: Personal consumption expenditures, current \$ (NIPA definition)

29e $\langle \text{variable } ECNIAN \text{ 29e} \rangle \equiv$ (219)

$$ECNIAN = \text{Personal consumption expenditures, current \$ (NIPA definition)}$$

Defines:

`ECNIAN`, used in chunk 231.

$$30a \quad \langle \text{equation } ecn \text{ 30a} \rangle \equiv \quad (252)$$

$$ecnian: ecnian - ecnian_aerr = .01 * pcnia * ecnia$$

Defines:

ecnian, used in chunks 29d, 56b, 59a, 88d, 92d, 101b, 106a, 119c, 139c, 145b, and 163a.

Uses **ecnia** 29d and **pcnia** 97b.

2.1.11 a.11 EHN: Residential investment expenditures

$$30b \quad \langle \text{variable } EHN \text{ 30b} \rangle \equiv \quad (219)$$

$$EHN = \text{Residential investment expenditures}$$

Defines:

EHN, used in chunk 231.

$$30c \quad \langle \text{equation } ehn \text{ 30c} \rangle \equiv \quad (252)$$

$$ehn: ehn - ehn_aerr = .01 * phr * pxp * eh$$

Defines:

ehn, used in chunks 46c, 56b, 59a, and 106a.

Uses **eh** 26e, **phr** 103d, and **pxp** 101b.

2.1.12 a.12 KCD: Stock of consumer durables, cw 2009\$

$$30d \quad \langle \text{variable } KCD \text{ 30d} \rangle \equiv \quad (219)$$

$$KCD = \text{Stock of consumer durables, cw 2009\$}$$

Defines:

KCD, used in chunk 231.

$$30e \quad \langle \text{equation } kcd \text{ 30e} \rangle \equiv \quad (252)$$

$$kcd: kcd - kcd_aerr = .25 * ecd + (1 - jrcd / 4) * kcd(-1)$$

Defines:

kcd, used in chunk 32.

Uses **ecd** 26b and **jrcd** 207h.

2.1.13 a.13 KH: Stock of residential structures, cw 2009\$

$$30f \quad \langle \text{variable } KH \text{ 30f} \rangle \equiv \quad (219)$$

$$KH = \text{Stock of residential structures, cw 2009\$}$$

Defines:

KH, used in chunk 231.

31a $\langle \text{equation } kh \text{ 31a} \rangle \equiv$ (252)

$$kh: kh - kh_aerr = .25*eh + (1-jrh/4)*kh(-1)$$

Defines:

`kh`, used in chunks 27b, 80, 83d, and 163a.

Uses `eh` 26e and `jrj` 208a.

2.1.14 a.14 RCCD: Cost of capital for consumer durables

31b $\langle \text{variable } RCCD \text{ 31b} \rangle \equiv$ (219)

$$RCCD = \text{Cost of capital for consumer durables}$$

Defines:

`RCCD`, used in chunks 181c and 231.

31c $\langle \text{equation } rccd \text{ 31c} \rangle \equiv$ (252)

$$rccd: rccd - rccd_aerr = (@recode((100*jrjcd + rcar - zpi5)>(.01), 100*jrjcd + rcar - zpi5, .01))$$

Defines:

`rccd`, used in chunk 28e.

Uses `jrjcd` 207h, `rcar` 159d, and `zpi5` 181d.

2.1.15 a.15 RCCH: Cost of capital for residential investment

31d $\langle \text{variable } RCCH \text{ 31d} \rangle \equiv$ (219)

$$RCCH = \text{Cost of capital for residential investment}$$

Defines:

`RCCH`, used in chunks 182d and 231.

31e $\langle \text{equation } rcch \text{ 31e} \rangle \equiv$ (252)

$$rcch: rcch - rcch_aerr = (@recode((100*jrj + (1-trfpm/100)*(rme+100*trspp) - zpi10)>(.1), 100*jrj + (1-trfpm/100)*(rme+100*trspp) - zpi10, .1))$$

Defines:

`rcch`, used in chunk 29a.

Uses `jrj` 208a, `rme` 160a, `trfpm` 211g, `trspp` 212c, and `zpi10` 182e.

2.1.16 a.16 JKCD: Consumption of fixed capital, consumer durables

31f $\langle \text{variable } JKCD \text{ 31f} \rangle \equiv$ (219)

$$JKCD = \text{Consumption of fixed capital, consumer durables}$$

Defines:

`JKCD`, used in chunk 231.

$$\begin{aligned} 32a \quad \langle \text{equation } jkcd \text{ 32a} \rangle \equiv & \quad (252) \\ jkcd: jkcd - jkcd_aerr = jrcd * kcd(-1) \end{aligned}$$

Defines:
 jkcd, used in chunks 32c and 163a.
 Uses jrcd 207h and kcd 30e.

2.1.17 a.17 EC: Consumption, cw 2009\$ (FRB/US definition)

$$\begin{aligned} 32b \quad \langle \text{variable } EC \text{ 32b} \rangle \equiv & \quad (219) \\ EC & = \text{Consumption, cw 2009\$ (FRB/US definition)} \end{aligned}$$

Defines:
 EC, used in chunk 231.

$$\begin{aligned} 32c \quad \langle \text{equation } ec \text{ 32c} \rangle \equiv & \quad (252) \\ ec: \log(ec) - ec_aerr = \log(ec(-1)) + & \quad _ \\ .5 * (pcor*pcnia*eco/(ec*pcnia) & \quad _ \\ + pcor(-1)*pcnia(-1)*eco(-1)/(ec(-1)*pcnia(-1))) & \quad _ \\ * d(\log(eco), 0, 1) & \quad _ \\ + .5 * (pchr*pcnia*ech/(ec*pcnia) & \quad _ \\ + pchr(-1)*pcnia(-1)*ech(-1)/(ec(-1)*pcnia(-1))) & \quad _ \\ * d(\log(ech), 0, 1) & \quad _ \\ + .5 * ((pcdr*pcnia*yhpcd+pcdr*pcnia*jkcd)/(ec*pcnia) & \quad _ \\ + (pcdr(-1)*pcnia(-1)*yhpcd(-1)+pcdr(-1)*pcnia(-1)*jkcd(-1))/(ec(-1)*pcnia(-1)) & \quad _ \\ * d(\log(yhpcd+jkcd), 0, 1) \end{aligned}$$

Defines:
 ec, never used.
 Uses ech 27b, eco 25b, jkcd 32a, pcdr 120f, pchr 120a, pcnia 97b, pcor 119c, and yhpcd 32e.

2.1.18 a.18 YHPCD: Imputed income of the stock of consumer durables, 2009\$

$$\begin{aligned} 32d \quad \langle \text{variable } YHPCD \text{ 32d} \rangle \equiv & \quad (219) \\ YHPCD & = \text{Imputed income of the stock of consumer durables, 2009\$} \end{aligned}$$

Defines:
 YHPCD, used in chunk 231.

$$\begin{aligned} 32e \quad \langle \text{equation } yhpcd \text{ 32e} \rangle \equiv & \quad (252) \\ yhpcd: \log(yhpcd) - yhpcd_aerr = \log(y_yhpcd(1)) + \log(kcd(-1)) \end{aligned}$$

Defines:
 yhpcd, used in chunks 32c and 91a.
 Uses kcd 30e and y_yhpcd 33a.

33a $\langle \text{coefficient } y_yhpcd \text{ 33a} \rangle \equiv$ (261)

$$y_yhpcd \ 1 \quad 0.053750000000000000E+00$$

Defines:

y_yhpcd , used in chunk 32e.

2.2 Business Expenditures

2.2.1 b.1 EPD: Investment in equipment, cw 2009\$

33b $\langle \text{variable } EPD \text{ 33b} \rangle \equiv$ (219)

$$EPD = \text{Investment in equipment, cw 2009\$}$$

Defines:

EPD , used in chunks 103f, 190c, 192c, and 231.

33c $\langle \text{equation } epd \text{ 33c} \rangle \equiv$ (252)

$$\begin{aligned} epd: & d(\log(epd), 0, 1) - epd_aerr = _ \\ & (y_epd(1) * (\log(qepd(-2)/epd(-2))) _ \\ & + (y_epd(2) * d(\log(epd(-1)), 0, 1) + y_epd(3) * d(\log(epd(-2)), 0, 1)) _ \\ & + zxbd(-1) _ \\ & + zvpd(-1) * (1 - y_epd(4)) _ \\ & + y_epd(4) * (d(\log(xbo(-1)), 0, 1) + hgvpd(-1)) \end{aligned}$$

Defines:

epd , used in chunks 37g, 43d, 56b, 59a, and 140c.

Uses $hgvpd$ 42d, $qepd$ 36a, xbo 58e, y_epd 33d, $zvpd$ 190d, and $zxbd$ 192d.

33d $\langle \text{coefficient } y_epd \text{ 33d} \rangle \equiv$ (261)

$$y_epd \ 4 \quad 0.1639648722427122, 0.4446158979500308, 0.3699597791648127, 0.5$$

Defines:

y_epd , used in chunk 33c.

2.2.2 b.2 EPI: Investment in intellectual property, cw 2009\$

33e $\langle \text{variable } EPI \text{ 33e} \rangle \equiv$ (219)

$$EPI = \text{Investment in intellectual property, cw 2009\$}$$

Defines:

EPI , used in chunks 104b, 191b, 193b, and 231.

34a $\langle \text{equation } epi \text{ 34a} \rangle \equiv$ (252)

```

    epi: d( log(epi), 0, 1 ) - epi_aerr = _
      ( y_epi(1)*(log(qepi(-2)/epi(-2))) _
      + ( y_epi(2) * d( log(epi(-1)), 0, 1 ) + y_epi(3) * d( log(epi(-2)), 0, 1 )) _
      + zxbi(-1) _
      + zvpi(-1) )*(1-y_epi(4)) _
      + y_epi(4) * d( log(xbo(-1)), 0, 1 )

```

Defines:

epi, used in chunks 38b, 43f, 56b, and 59a.

Uses **qepi** 37a, **xbo** 58e, **y_epi** 34b, **zvpi** 191c, and **zxbi** 193c.

34b $\langle \text{coefficient } y_epi \text{ 34b} \rangle \equiv$ (261)

```

    y_epi    4      0.01211724517486588,0.6819035622357826,0.1766782129232528,0.21229452

```

Defines:

y_epi, used in chunk 34a.

2.2.3 b.3 EPS: Investment in nonresidential structures, cw 2009\$

34c $\langle \text{variable } EPS \text{ 34c} \rangle \equiv$ (219)

EPS = Investment in nonresidential structures, cw 2009\$

Defines:

EPS, used in chunks 191e, 193e, and 231.

34d $\langle \text{equation } eps \text{ 34d} \rangle \equiv$ (252)

```

    eps: d( log(eps), 0, 1 ) - eps_aerr = _
      (y_eps(1) * log(qeps(-2)/eps(-2)) _
      + ( y_eps(2) * d( log(eps(-1)), 0, 1 ) + y_eps(3) * d( log(eps
      + zxbs(-1) _
      + zvps(-1)) * (1-y_eps(4)) _
      + y_eps(4) * (d( log(xbo(-1)), 0, 1 )) _
      + y_eps(5) * d01q4

```

Defines:

eps, used in chunks 38d, 44b, 56b, and 59a.

Uses **d01q4** 203a, **qeps** 36d, **xbo** 58e, **y_eps** 34e, **zvps** 192a, and **zxbs** 194a.

34e $\langle \text{coefficient } y_eps \text{ 34e} \rangle \equiv$ (261)

```

    y_eps    5      0.06660965676110558,0.5425646472109228,0.3261733908091358,0.5,-0.096

```

Defines:

y_eps, used in chunk 34d.

2.2.4 b.4 KI: Stock of private inventories, cw 2009\$

$$\begin{aligned} \langle \text{variable } KI \text{ 35a} \rangle &\equiv & (219) \\ KI &= \text{Stock of private inventories, cw 2009\$} \end{aligned}$$

Defines:

KI, used in chunk 231.

$$\begin{aligned} \langle \text{equation } ki \text{ 35b} \rangle &\equiv & (252) \\ ki: d(\log(ki), 0, 1) - ki_aerr &= y_ki(5) - \\ &+ y_ki(1) * (\log(qkir) - \log(ki(-1)/xfs(-1))) - \\ &+ y_ki(2) * (d(\log(ki(-1)), 0, 1) - y_ki(5)) - \\ &+ y_ki(3) * d(\log(xfs(-1)), 0, 1) - \\ &+ y_ki(4) * d(\log(xfs(-2)), 0, 1) \end{aligned}$$

Defines:

ki, used in chunks 35e, 39a, and 86f.

Uses qkir 37d, xfs 56b, and y_ki 35c.

$$\begin{aligned} \langle \text{coefficient } y_ki \text{ 35c} \rangle &\equiv & (261) \\ y_ki \quad 5 &= 0.01679108530917215, 0.451650730999944, 0.2617948535758293, 0.2865544154242267, -0. \end{aligned}$$

Defines:

y_ki, used in chunk 35b.

2.2.5 b.5 EI: Change in private inventories, cw 2009\$

$$\begin{aligned} \langle \text{variable } EI \text{ 35d} \rangle &\equiv & (219) \\ EI &= \text{Change in private inventories, cw 2009\$} \end{aligned}$$

Defines:

EI, used in chunks 95d and 231.

$$\begin{aligned} \langle \text{equation } ei \text{ 35e} \rangle &\equiv & (252) \\ ei: ei - ei_aerr &= 4 * d(ki, 0, 1) \end{aligned}$$

Defines:

ei, used in chunks 44d and 57a.

Uses ki 35b.

2.2.6 b.6 QEPD: Desired level of investment in equipment

$$\begin{aligned} \langle \text{variable } QEPD \text{ 35f} \rangle &\equiv & (219) \\ QEPD &= \text{Desired level of investment in equipment} \end{aligned}$$

Defines:

QEPD, used in chunk 231.

36a $\langle \text{equation } qepd \text{ 36a} \rangle \equiv$ (252)

$$\begin{aligned} qepd: \log(qepd) - qepd_aerr = & y_qepd(1) _ \\ & + y_qepd(2) * \log(xbo) _ \\ & + y_qepd(3) * \log(vpd) _ \\ & + y_qepd(4) * \log(hgx/100 + jrpd) \end{aligned}$$

Defines:

`qepd`, used in chunk 33c.

Uses `hgx` 67e, `jrpd` 208b, `vpd` 41d, `xbo` 58e, and `y_qepd` 36b.

36b $\langle \text{coefficient } y_qepd \text{ 36b} \rangle \equiv$ (261)

$$y_qepd \quad 4 \quad 0, 1.000000000000000000e+00, 1.000000000000000000e+00, 1.000000000000000000e+00$$

Defines:

`y_qepd`, used in chunk 36a.

2.2.7 b.7 QEPS: Desired level of investment in structures

36c $\langle \text{variable } QEPS \text{ 36c} \rangle \equiv$ (219)

$$QEPS = \text{Desired level of investment in structures}$$

Defines:

`QEPS`, used in chunk 231.

36d $\langle \text{equation } qeps \text{ 36d} \rangle \equiv$ (252)

$$\begin{aligned} qeps: \log(qeps) - qeps_aerr = & y_qeps(1) _ \\ & + y_qeps(2) * \log(xbo) _ \\ & + y_qeps(3) * \log(vps) _ \\ & + y_qeps(4) * \log(hgx/100 + jrps) \end{aligned}$$

Defines:

`qeps`, used in chunk 34d.

Uses `hgx` 67e, `jrps` 208d, `vps` 42b, `xbo` 58e, and `y_qeps` 36e.

36e $\langle \text{coefficient } y_qeps \text{ 36e} \rangle \equiv$ (261)

$$y_qeps \quad 4 \quad 0, 1.000000000000000000e+00, 1.000000000000000000e+00, 1.000000000000000000e+00$$

Defines:

`y_qeps`, used in chunk 36d.

2.2.8 b.8 QEPI: Desired level of investment in intellectual property

36f $\langle \text{variable } QEPI \text{ 36f} \rangle \equiv$ (219)

$$QEPI = \text{Desired level of investment in intellectual property}$$

Defines:

`QEPI`, used in chunk 231.

37a $\langle \text{equation } qepi \text{ 37a} \rangle \equiv$ (252)

$$\begin{aligned} qepi: \log(qepi) - qepi_aerr = & y_qepi(1) - \\ & + y_qepi(2) * \log(xbo) - \\ & + y_qepi(3) * \log(vpi) - \\ & + y_qepi(4) * \log(hgx/100 + jrpi) \end{aligned}$$

Defines:

`qepi`, used in chunk 34a.

Uses `hgx` 67e, `jrpi` 208c, `vpi` 41f, `xbo` 58e, and `y_qepi` 37b.

37b $\langle \text{coefficient } y_qepi \text{ 37b} \rangle \equiv$ (261)

$$y_qepi \quad 4 \quad 0, 1.0000000000000000e+00, 1.0000000000000000e+00, 1.0000000000000000e+00$$

Defines:

`y_qepi`, used in chunk 37a.

2.2.9 b.9 QKIR: Desired Inventory Sales Ratio

37c $\langle \text{variable } QKIR \text{ 37c} \rangle \equiv$ (219)

$$QKIR = \text{Desired Inventory Sales Ratio}$$

Defines:

`QKIR`, used in chunk 231.

37d $\langle \text{equation } qkir \text{ 37d} \rangle \equiv$ (252)

$$qkir: \log(qkir) - qkir_aerr = (1 - dglprd) * y_qkir(1) + \log(qkir(-1))$$

Defines:

`qkir`, used in chunk 35b.

Uses `dglprd` 205d and `y_qkir` 37e.

37e $\langle \text{coefficient } y_qkir \text{ 37e} \rangle \equiv$ (261)

$$y_qkir \quad 1 \quad -0.001885366737710053$$

Defines:

`y_qkir`, used in chunk 37d.

2.2.10 b.10 KPD: Capital stock - Equipment, 2009\$

37f $\langle \text{variable } KPD \text{ 37f} \rangle \equiv$ (219)

$$KPD = \text{Capital stock - Equipment, 2009\$}$$

Defines:

`KPD`, used in chunks 115d and 231.

37g $\langle \text{equation } kpd \text{ 37g} \rangle \equiv$ (252)

$$kpd: kpd - kpd_aerr = 0.25 * epd + (1 - jrpd/4) * kpd(-1)$$

Defines:

`kpd`, used in chunks 39a, 80c, and 87b.

Uses `epd` 33c and `jrpd` 208b.

2.2.11 b.11 KPI: Capital Stock - Intellectual Property, 2009\$

$$\begin{aligned} 38a \quad \langle \text{variable } KPI \text{ 38a} \rangle &\equiv & (219) \\ KPI &= \text{Capital Stock - Intellectual Property, 2009\$} \end{aligned}$$

Defines:

KPI, used in chunk 231.

$$\begin{aligned} 38b \quad \langle \text{equation } kpi \text{ 38b} \rangle &\equiv & (252) \\ kpi: kpi - kpi_aerr &= 0.25 * epi + (1-jrpi/4) * kpi(-1) \end{aligned}$$

Defines:

kpi, never used.

Uses epi 34a and jrpi 208c.

2.2.12 b.12 KPS: Capital stock - nonresidential structures, 2009\$

$$\begin{aligned} 38c \quad \langle \text{variable } KPS \text{ 38c} \rangle &\equiv & (219) \\ KPS &= \text{Capital stock - nonresidential structures, 2009\$} \end{aligned}$$

Defines:

KPS, used in chunk 231.

$$\begin{aligned} 38d \quad \langle \text{equation } kps \text{ 38d} \rangle &\equiv & (252) \\ kps: kps - kps_aerr &= 0.25 * eps + (1-jrps/4) * kps(-1) \end{aligned}$$

Defines:

kps, used in chunks 39a, 80c, and 87d.

Uses eps 34d and jrps 208d.

2.2.13 b.13 HKS: Growth rate of KS, cw 2009\$ (compound annual rate)

$$\begin{aligned} 38e \quad \langle \text{variable } HKS \text{ 38e} \rangle &\equiv & (219) \\ HKS &= \text{Growth rate of KS, cw 2009$ (compound annual rate)} \end{aligned}$$

Defines:

HKS, used in chunk 231.

Uses KS 39b.

39a $\langle \text{equation } hks \text{ 39a} \rangle \equiv$ (252)

$$\begin{aligned} hks: hks - hks_aerr = & 400 * (ykpdn * d(\log(kpd), 0, 1) - \\ & + ykpsn * d(\log(kps), 0, 1) + ykin * d(\log(ki), 0, 1)) / - \\ & (ykpdn + ykpsn + ykin) + hksr \end{aligned}$$

Defines:

`hks`, used in chunks 39c and 67e.

Uses `hksr` 207g, `ki` 35b, `kpd` 37g, `kps` 38d, `ykin` 86f, `ykpdn` 87b, and `ykpsn` 87d.

2.2.14 b.14 KS: Capital services, 2009 \$

39b $\langle \text{variable } KS \text{ 39b} \rangle \equiv$ (219)

$$KS = \text{Capital services, 2009 \$}$$

Defines:

`KS`, used in chunks 38e and 231.

39c $\langle \text{equation } ks \text{ 39c} \rangle \equiv$ (252)

$$ks: \log(ks) - ks_aerr = \log(ks(-1)) + hks/400$$

Defines:

`ks`, used in chunk 60c.

Uses `hks` 39a.

2.2.15 b.15 RPD: After-tax real financial cost of capital for business investment

39d $\langle \text{variable } RPD \text{ 39d} \rangle \equiv$ (219)

$$RPD = \text{After-tax real financial cost of capital for business investment}$$

Defines:

`RPD`, used in chunks 182a and 231.

39e $\langle \text{equation } rpd \text{ 39e} \rangle \equiv$ (252)

$$rpd: rpd - rpd_aerr = 0.5*(7.2 + (1-trfcim)*(rg5e + rbbbe - rg10e) - zpib5) + 0.5*req$$

Defines:

`rpd`, used in chunks 40, 41b, 45a, and 46a.

Uses `rbbbe` 158f, `req` 161a, `rg10e` 156d, `rg5e` 155c, `trfcim` 211e, and `zpib5` 182b.

2.2.16 b.16 RTPD: User cost of capital for equipment

39f $\langle \text{variable } RTPD \text{ 39f} \rangle \equiv$ (219)

$$RTPD = \text{User cost of capital for equipment}$$

Defines:

`RTPD`, used in chunk 231.

40a $\langle \text{equation } rtpd \text{ 40a} \rangle \equiv$ (252)

$$\begin{aligned} rtpd: rtpd - rtpd_aerr = & (.01*rpdr + jrpd - .01*hgprdr) _ \\ & * ((1-.01*tapdr-trfcim*(1-tapddp*.01*tapdr)*tapdd)/(1-trfcim)) _ \\ & * ((pxd*pkpr + pxd(-1)*pkpr(-1)) /2)/pxb \end{aligned}$$

Defines:

rtpd, used in chunks 41d and 87b.

Uses **hgprdr** 116f, **jrpd** 208b, **pkpr** 115e, **pxb** 116d, **pxd** 101b, **rpdr** 39e, **tapdd** 46a, **tapddp** 210g, **tapdr** 211a, and **trfcim** 211e.

2.2.17 b.17 RTPI: User cost of capital for intellectual property

40b $\langle \text{variable } RTPI \text{ 40b} \rangle \equiv$ (219)

$$RTPI = \text{User cost of capital for intellectual property}$$

Defines:

RTPI, used in chunk 231.

40c $\langle \text{equation } rtpi \text{ 40c} \rangle \equiv$ (252)

$$\begin{aligned} rtpi: rtpi - rtpi_aerr = & (.01*rpdr + jrpi - .01*hgpir) _ \\ & * ((pxd*ppir + pxd(-1)*ppir(-1)) /2)/pxb \end{aligned}$$

Defines:

rtpi, used in chunk 41f.

Uses **hgpir** 117c, **jrpi** 208c, **ppir** 104c, **pxb** 116d, **pxd** 101b, and **rpdr** 39e.

2.2.18 b.18 RTPS: User cost of capital for nonresidential structures

40d $\langle \text{variable } RTPS \text{ 40d} \rangle \equiv$ (219)

$$RTPS = \text{User cost of capital for nonresidential structures}$$

Defines:

RTPS, used in chunk 231.

40e $\langle \text{equation } rtps \text{ 40e} \rangle \equiv$ (252)

$$\begin{aligned} rtps: rtps - rtps_aerr = & (@recode(((.01*rpdr + jrps - .01*hgppsr) _ \\ & * ((1-trfcim*tapsda)/(1-trfcim)) _ \\ & * ((pxd*ppsr + pxd(-1)*ppsr(-1)) /2)/pxb)>(.02),(.01*rpdr + jrps \\ & * ((1-trfcim*tapsda)/(1-trfcim)) _ \\ & * ((pxd*ppsr + pxd(-1)*ppsr(-1)) /2)/pxb, .02)) \end{aligned}$$

Defines:

rtps, used in chunks 42b and 87d.

Uses **hgppsr** 118b, **jrps** 208d, **ppsr** 104e, **pxb** 116d, **pxd** 101b, **rpdr** 39e, **tapsda** 45a, and **trfcim** 211e.

2.2.19 b.19 RTINV: User cost of capital for inventories

$$41a \quad \langle \text{variable } RTINV \text{ 41a} \rangle \equiv \quad (219)$$

$$RTINV = \text{User cost of capital for inventories}$$

Defines:

RTINV, used in chunk 231.

$$41b \quad \langle \text{equation } rtinv \text{ 41b} \rangle \equiv \quad (252)$$

$$rtinv: rtinv - rtinv_aerr = (.01*rpdr - .01*hgpkir) -$$

$$* ((pxp*pkir + pxp(-1)*pkir(-1)) / 2) / pxb$$

Defines:

rtinv, used in chunk 86f.

Uses hgpkir 117f, pkir 209d, pxb 116d, pxp 101b, and rpdr 39e.

2.2.20 b.20 VPD: Desired equipment-output ratio

$$41c \quad \langle \text{variable } VPD \text{ 41c} \rangle \equiv \quad (219)$$

$$VPD = \text{Desired equipment-output ratio}$$

Defines:

VPD, used in chunks 42c, 216d, and 231.

$$41d \quad \langle \text{equation } vpd \text{ 41d} \rangle \equiv \quad (252)$$

$$vpd: vpd - vpd_aerr = uvpd*(pkpdr/ppdr)/rtpd$$

Defines:

vpd, used in chunks 36a, 42d, 190d, and 192d.

Uses pkpdr 115e, ppdr 103g, rtpd 40a, and uvpd 216d.

2.2.21 b.21 VPI: Desired intellectual property-output ratio

$$41e \quad \langle \text{variable } VPI \text{ 41e} \rangle \equiv \quad (219)$$

$$VPI = \text{Desired intellectual property-output ratio}$$

Defines:

VPI, used in chunks 46d, 216e, and 231.

$$41f \quad \langle \text{equation } vpi \text{ 41f} \rangle \equiv \quad (252)$$

$$vpi: vpi - vpi_aerr = uvpi/rtpi$$

Defines:

vpi, used in chunks 37a, 46e, 191c, and 193c.

Uses rtpi 40c and uvpi 216e.

2.2.22 b.22 VPS: Desired structures-output ratio

$$42a \quad \langle \text{variable } VPS \text{ 42a} \rangle \equiv \text{VPS} = \text{Desired structures-output ratio} \quad (219)$$

Defines:

VPS, used in chunks 42f, 216f, and 231.

$$42b \quad \langle \text{equation } vps \text{ 42b} \rangle \equiv \text{vps: vps} - \text{vps_aerr} = \text{uvps/rtps} \quad (252)$$

Defines:

vps, used in chunks 36d, 43a, 192a, and 194a.

Uses rtps 40e and uvps 216f.

2.2.23 b.23 HGVPD: Trend Growth of VPD

$$42c \quad \langle \text{variable } HGVPD \text{ 42c} \rangle \equiv \text{HGVPD} = \text{Trend Growth of VPD} \quad (219)$$

Defines:

HGVPD, used in chunk 231.

Uses VPD 41c.

$$42d \quad \langle \text{equation } hgvpd \text{ 42d} \rangle \equiv \text{hgvpd: hgvpd} - \text{hgvpd_aerr} = \text{y_hgvpd}(1) * \text{hgvpd}(-1) _ \\ + \text{y_hgvpd}(2) * \log(\text{vpd}/\text{vpd}(-1)) \quad (252)$$

Defines:

hgvpd, used in chunks 33c and 190d.

Uses vpd 41d and y_hgvpd 42e.

$$42e \quad \langle \text{coefficient } y_hgvpd \text{ 42e} \rangle \equiv \text{y_hgvpd } 2 \quad 0.97, 0.03 \quad (261)$$

Defines:

y_hgvpd, used in chunk 42d.

2.2.24 b.24 HGVPs: Trend growth rate of VPS

$$42f \quad \langle \text{variable } HGVPs \text{ 42f} \rangle \equiv \text{HGVPs} = \text{Trend growth rate of VPS} \quad (219)$$

Defines:

HGVPs, used in chunk 231.

Uses VPS 42a.

43a $\langle \text{equation } hgvps \text{ 43a} \rangle \equiv$ (252)

$$\begin{aligned} hgvps: hgvps - hgvps_aerr = & y_hgvps(1) * hgvps(-1) - \\ & + y_hgvps(2) * \log(vps/vps(-1)) \end{aligned}$$

Defines:

hgvps, used in chunk 192a.

Uses **vps** 42b and **y_hgvps** 43b.

43b $\langle \text{coefficient } y_hgvps \text{ 43b} \rangle \equiv$ (261)

$$y_hgvps \text{ 2} \quad 0.97, 0.03$$

Defines:

y_hgvps, used in chunk 43a.

2.2.25 b.25 EPDN: Investment in equipment, current \$

43c $\langle \text{variable } EPDN \text{ 43c} \rangle \equiv$ (219)

$$EPDN = \text{Investment in equipment, current \$}$$

Defines:

EPDN, used in chunk 231.

43d $\langle \text{equation } epdn \text{ 43d} \rangle \equiv$ (252)

$$epdn: epdn - epdn_aerr = 0.01*ppdr*pxp*epd$$

Defines:

epdn, used in chunks 46c, 56b, 59a, and 106a.

Uses **epd** 33c, **ppdr** 103g, and **pxp** 101b.

2.2.26 b.26 EPIN: Investment in intellectual property, current \$

43e $\langle \text{variable } EPIN \text{ 43e} \rangle \equiv$ (219)

$$EPIN = \text{Investment in intellectual property, current \$}$$

Defines:

EPIN, used in chunk 231.

43f $\langle \text{equation } epin \text{ 43f} \rangle \equiv$ (252)

$$epin: epin - epin_aerr = 0.01*ppir*pxp*epi$$

Defines:

epin, used in chunks 46c, 56b, 59a, and 106a.

Uses **epi** 34a, **ppir** 104c, and **pxp** 101b.

2.2.27 b.27 EPSN: Investment in nonresidential structures, current \$

44a $\langle \text{variable } EPSN \text{ 44a} \rangle \equiv$ (219)
 EPSN = Investment in nonresidential structures, current \$

Defines:
 EPSN, used in chunk 231.

44b $\langle \text{equation } epsn \text{ 44b} \rangle \equiv$ (252)
 epsn: epsn - epsn_aerr = .01 * ppsr * pxp * eps

Defines:
 epsn, used in chunks 46c, 56b, 59a, and 106a.
 Uses eps 34d, ppsr 104e, and pxp 101b.

2.2.28 b.28 EIN: Change in business inventories, current \$

44c $\langle \text{variable } EIN \text{ 44c} \rangle \equiv$ (219)
 EIN = Change in business inventories, current \$

Defines:
 EIN, used in chunk 231.

44d $\langle \text{equation } ein \text{ 44d} \rangle \equiv$ (252)
 ein: ein - ein_aerr = .01*pxp*pkir*ei

Defines:
 ein, used in chunks 46c and 78.
 Uses ei 35e, pkir 209d, and pxp 101b.

2.2.29 b.29 TAPSDA: Present value of depreciation allowances for nonresidential structures

44e $\langle \text{variable } TAPSDA \text{ 44e} \rangle \equiv$ (219)
 TAPSDA = Present value of depreciation allowances for nonresidential structures

Defines:
 TAPSDA, used in chunk 231.

45a $\langle \text{equation } \textit{tapsda} \text{ 45a} \rangle \equiv$ (252)

$$\begin{aligned} \text{tapsda: } \text{tapsda} - \text{tapsda_aerr} = & (1 - \text{tapsad}) * (1 - \exp(-0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl})) / _ \\ & (0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl}) + _ \\ & \text{tapsad} * (1 - \text{d69}) * 2 * _ \\ & (1 - (1 - \exp(-0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl})) / _ \\ & (0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl})) / (0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl}) _ \\ & + \text{tapsad} * (\text{d69} - \text{d81}) * ((1.5 / _ \\ & (1.5 + .01 * \text{tapssl} * (\text{rpd} + \text{zpib5}))) * _ \\ & (1 - \exp(-0.5 - 0.33 * (0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl}))) + _ \\ & (\exp(-0.5) / (0.67 * (0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl}))) * _ \\ & (\exp(-0.33 * (0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl})) - _ \\ & \exp(-(0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl})))) _ \\ & + \text{tapsad} * (\text{d81} - \text{d86}) * ((1.75 / _ \\ & (1.75 + .01 * \text{tapssl} * (\text{rpd} + \text{zpib5}))) * _ \\ & (1 - \exp(-0.75 - 0.428 * (0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl}))) + _ \\ & (\exp(-0.75) / (0.572 * (0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl}))) * _ \\ & (\exp(-0.428 * (0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl})) - _ \\ & \exp(-(0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl})))) _ \\ & + \text{tapsad} * \text{d86} * (1 - \exp(-0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl})) / _ \\ & (0.01 * (\text{rpd} + \text{zpib5}) * \text{tapssl}) \end{aligned}$$

Defines:

`tapsda`, used in chunk 40e.

Uses `d69` 203d, `d81` 204a, `d86` 204c, `rpd` 39e, `tapsad` 211b, `tapssl` 211c, and `zpib5` 182b.

2.2.30 b.30 TAPDD: Present value of depreciation allowances for equipment

45b $\langle \text{variable } \textit{TAPDD} \text{ 45b} \rangle \equiv$ (219)

$$\text{TAPDD} = \text{Present value of depreciation allowances for equipment}$$

Defines:

`TAPDD`, used in chunk 231.

46a $\langle \text{equation tapdd 46a} \rangle \equiv$ (252)

$$\begin{aligned} \text{tapdd: tapdd} - \text{tapdd_aerr} = & .5 * \text{d2003} + .5 * \text{d2003} * (2.0 / (2.0 + .01 * \text{tapds} * (\text{rpd} + \text{zpib5}))) \\ & + .3 * \text{d2002} + .7 * \text{d2002} * (2.0 / (2.0 + .01 * \text{tapds} * (\text{rpd} + \text{zpib5}))) \\ & + (\text{d87} - \text{d2002} - \text{d2003}) * (2.0 / (2.0 + .01 * \text{tapds} * (\text{rpd} + \text{zpib5}))) \\ & + (\text{d81} - \text{d87}) * (1.5 / (1.5 + .01 * \text{tapds} * (\text{rpd} + \text{zpib5}))) - \\ & + (1 - \text{d81}) - \\ & * (((1 - \text{tapdad}) * (1 - \exp(-(.01 * \text{tapds} * (\text{rpd} + \text{zpib5})))) - \\ & \quad / (.01 * \text{tapds} * (\text{rpd} + \text{zpib5}))) - \\ & \quad + \text{tapdad} * 2 * (1 - (1 - \exp(-(.01 * \text{tapds} * (\text{rpd} + \text{zpib5})))) - \\ & \quad / (.01 * \text{tapds} * (\text{rpd} + \text{zpib5}))) - \\ & \quad / (.01 * \text{tapds} * (\text{rpd} + \text{zpib5}))) \end{aligned}$$

Defines:

tapdd, used in chunk 40a.

Uses **d2002** 203b, **d2003** 203c, **d81** 204a, **d87** 204d, **rpd** 39e, **tapdad** 210f, **tapds** 210h, and **zpib5** 182b.

2.2.31 b.31 EGPDI: Gross private domestic investment

46b $\langle \text{variable EGPDI 46b} \rangle \equiv$ (219)

$$\text{EGPDIN} = \text{Gross private domestic investment}$$

Defines:

EGPDIN, used in chunk 231.

46c $\langle \text{equation egpdin 46c} \rangle \equiv$ (252)

$$\text{egpdin: egpdin} - \text{egpdin_aerr} = \text{epdn} + \text{epsn} + \text{epin} + \text{ehn} + \text{ein}$$

Defines:

egpdin, never used.

Uses **ehn** 30c, **ein** 44d, **epdn** 43d, **epin** 43f, and **epsn** 44b.

2.2.32 b.32 HGVPI: Trend growth rate of VPI

46d $\langle \text{variable HGVPI 46d} \rangle \equiv$ (219)

$$\text{HGVPI} = \text{Trend growth rate of VPI}$$

Defines:

HGVPI, used in chunk 231.

Uses **VPI** 41e.

46e $\langle \text{equation hgvpi 46e} \rangle \equiv$ (252)

$$\begin{aligned} \text{hgvpi: hgvpi} - \text{hgvpi_aerr} = & \text{y_hgvpi}(1) * \text{hgvpi}(-1) - \\ & + \text{y_hgvpi}(2) * \log(\text{vpi}/\text{vpi}(-1)) \end{aligned}$$

Defines:

hgvpi, used in chunk 191c.

Uses **vpi** 41f and **y_hgvpi** 47a.

47a $\langle \text{coefficient } y_{\text{hgvpi}} \text{ 47a} \rangle \equiv$ (261)

$$y_{\text{hgvpi}}^2 = 0.97, 0.03$$

Defines:

y_{hgvpi} , used in chunk 46e.

2.3 Foreign Trade

2.3.1 c.1 EX: Exports of goods and services, cw 2009 \$

47b $\langle \text{variable } EX \text{ 47b} \rangle \equiv$ (219)

$$EX = \text{Exports of goods and services, cw 2009 \$}$$

Defines:

EX , used in chunk 231.

47c $\langle \text{equation } ex \text{ 47c} \rangle \equiv$ (252)

$$\begin{aligned} ex: d(\log(ex), 0, 1) - ex_aerr _ \\ &= y_ex(1) _ \\ &+ y_ex(2) * \log(ex(-1) * (pxr(-1) * pxp(-1) * fpx(-1)) / (fgdp(-1) * fpc(-1))) _ \\ &+ y_ex(3) * (fxgap - fxgap(-1)) / 100 _ \\ &+ y_ex(4) * (fxgap(-1) - fxgap(-2)) / 100 _ \\ &+ y_ex(5) * ddockx \end{aligned}$$

Defines:

ex , used in chunks 47, 48, 56b, 57e, 59a, 70f, 71b, 75, 95a, 99d, 101f, 102f, 109c, 113d, 125, 126, 130, 131, 162f, 163e, and 231.

Uses $ddockx$ 204g, $fgdp$ 166e, fpc 169b, fpx 172d, $fxgap$ 166b, pxp 101b, pxr 105b, and y_ex 47d.

47d $\langle \text{coefficient } y_ex \text{ 47d} \rangle \equiv$ (261)

$$y_ex^5 = 0.8118629319610274, -0.1074807087618527, 1.38575824141273, 1.092856118288064, 1.014$$

Defines:

y_ex , used in chunk 47c.

2.3.2 c.2 EXN: Exports of goods and services, current \$

47e $\langle \text{variable } EXN \text{ 47e} \rangle \equiv$ (219)

$$EXN = \text{Exports of goods and services, current \$}$$

Defines:

EXN , used in chunk 231.

47f $\langle \text{equation } exn \text{ 47f} \rangle \equiv$ (252)

$$exn: exn - exn_aerr = .01 * pxp * pxr * ex$$

Defines:

exn , used in chunks 51a, 56b, 57e, 59a, 79a, and 106a.

Uses ex 47c, pxp 101b, and pxr 105b.

2.3.3 c.3 EMO: Imports of goods and services ex. petroleum, cw 2009\$

48a $\langle \text{variable } EMO \text{ 48a} \rangle \equiv$ (219)
 $EMO = \text{Imports of goods and services ex. petroleum, cw 2009\$}$

Defines:

EMO , used in chunk 231.

Uses ex 47c.

48b $\langle \text{equation } emo \text{ 48b} \rangle \equiv$ (252)

$$\begin{aligned} emo: d(\log(emo), 0, 1) - emo_aerr _ \\ = y_emo(1) _ \\ + y_emo(2) * \log(emo(-1)*(pmo(-1)/100)/(uemot(-1)*xgden(-1))) _ \\ + y_emo(3) * (xgap2-xgap2(-1))/100 _ \\ + y_emo(4) * (xgap2(-1)-xgap2(-2))/100 _ \\ + y_emo(5) * \log(ddockm) _ \\ + y_emo(6) * \log(ddockm/ddockm(-1)) \end{aligned}$$

Defines:

emo , used in chunks 48e, 50e, 56b, and 57e.

Uses $ddockm$ 204f, pmo 113e, $uemot$ 212f, $xgap2$ 67c, $xgden$ 79a, and y_emo 48c.

48c $\langle \text{coefficient } y_emo \text{ 48c} \rangle \equiv$ (261)
 $y_emo \quad 6 \quad 0.01701497186817749, -0.1984753225812535, 1.352328263830308, 1.67397668$

Defines:

y_emo , used in chunk 48b.

2.3.4 c.4 EMON: Imports of goods and services ex. petroleum

48d $\langle \text{variable } EMON \text{ 48d} \rangle \equiv$ (219)
 $EMON = \text{Imports of goods and services ex. petroleum}$

Defines:

$EMON$, used in chunks 212f and 231.

Uses ex 47c.

48e $\langle \text{equation } emon \text{ 48e} \rangle \equiv$ (252)
 $emon: emon - emon_aerr = .01 * pmo * emo$

Defines:

$emon$, used in chunks 50, 56b, 57e, and 96c.

Uses emo 48b and pmo 113e.

2.3.5 c.5 CENG: Consumption of crude energy (oil, coal, natural gas), 2009 \$

49a $\langle \text{variable } CENG \text{ 49a} \rangle \equiv$ (219)
CENG = Consumption of crude energy (oil, coal, natural gas), 2009 \$

Defines:

CENG, used in chunk 231.

49b $\langle \text{equation } ceng \text{ 49b} \rangle \equiv$ (252)
ceng: $d(\log(ceng), 0, 1) - ceng_aerr =$
 $\quad y_ceng(1) * (\log(ceng(-1)) - \log(xg(-1)*veoa(-1))) -$
 $\quad + y_ceng(2) * d(\log(xg), 0, 1) -$
 $\quad + y_ceng(3) * d(\log(xg(-1)), 0, 1) -$
 $\quad + y_ceng(4) * d(\log(ceng(-1)), 0, 1) -$
 $\quad + y_ceng(5) * d(\log(veoa(-1)), 0, 1) -$
 $\quad + y_ceng(6) * hgx(-1)/400$

Defines:

ceng, used in chunks 49e, 60a, 63a, 68b, 112d, and 118e.

Uses **hgx** 67e, **veoa** 62a, **xg** 60a, and **y_ceng** 49c.

49c $\langle \text{coefficient } y_ceng \text{ 49c} \rangle \equiv$ (261)
y_ceng 6 -0.1483451935619194, 0.475653118183134, 0.5437644321944857, -0.2301598753097478, 0.

Defines:

y_ceng, used in chunk 49b.

2.3.6 c.6 EMP: Petroleum imports, cw 2009\$

49d $\langle \text{variable } EMP \text{ 49d} \rangle \equiv$ (219)
EMP = Petroleum imports, cw 2009\$

Defines:

EMP, used in chunks 212g and 231.

49e $\langle \text{equation } emp \text{ 49e} \rangle \equiv$ (252)
emp: **emp** - **emp_aerr** = **uemp***(**ceng**-**xeng**)

Defines:

emp, used in chunks 50, 52f, 56b, 57e, 60a, 62d, 63a, 70c, 101f, 102f, and 231.

Uses **ceng** 49b, **uemp** 212g, and **xeng** 63e.

2.3.7 c.7 EMPN: Petroleum imports, current \$

49f $\langle \text{variable } EMPN \text{ 49f} \rangle \equiv$ (219)
EMPN = Petroleum imports, current \$

Defines:

EMPN, used in chunk 231.

50a $\langle \text{equation } empn \text{ 50a} \rangle \equiv$ (252)
 $empn: empn - empn_aerr = .01 * pmp * emp$

Defines:

$empn$, used in chunks 50, 56b, 57e, 60a, 63a, 68b, and 79e.

Uses emp 49e and pmp 110b.

2.3.8 c.8 EMN: Imports of goods and services, current \$

50b $\langle \text{variable } EMN \text{ 50b} \rangle \equiv$ (219)
 $EMN = \text{Imports of goods and services, current \$}$

Defines:

EMN , used in chunk 231.

50c $\langle \text{equation } emn \text{ 50c} \rangle \equiv$ (252)
 $emn: emn - emn_aerr = emon + empn$

Defines:

emn , used in chunks 50e, 51a, 78c, and 79a.

Uses $emon$ 48e and $empn$ 50a.

2.3.9 c.9 EM: Imports of goods and services, cw 2009\$

50d $\langle \text{variable } EM \text{ 50d} \rangle \equiv$ (219)
 $EM = \text{Imports of goods and services, cw 2009\$}$

Defines:

EM , used in chunk 231.

50e $\langle \text{equation } em \text{ 50e} \rangle \equiv$ (252)
 $em: \log(em) - em_aerr = \log(em(-1))$
 $\quad + .5 * (emon/emn + emon(-1)/emn(-1)) * d(\log(emo), 0, 1)$
 $\quad + .5 * (empn/emn + empn(-1)/emn(-1)) * d(\log(emp), 0, 1)$

Defines:

em , never used.

Uses emn 50c, emo 48b, $emon$ 48e, emp 49e, and $empn$ 50a.

2.3.10 c.10 FCBN: US current account balance, current \$

50f $\langle \text{variable } FCBN \text{ 50f} \rangle \equiv$ (219)
 $FCBN = \text{US current account balance, current \$}$

Defines:

$FCBN$, used in chunk 231.

51a $\langle \text{equation } fcbn \text{ 51a} \rangle \equiv$ (252)

$$fcbn: fcbn - fcbn_aerr = exn - emn + fynin + fcbrn$$

Defines:

`fcbn`, used in chunk 51e.

Uses `emn` 50c, `exn` 47f, `fcbrn` 51c, and `fynin` 52d.

2.3.11 c.11 FCBRN: US current account balance residual, current \$

51b $\langle \text{variable } FCBRN \text{ 51b} \rangle \equiv$ (219)

$$FCBRN = \text{US current account balance residual, current \$}$$

Defines:

`FCBRN`, used in chunks 212h and 231.

51c $\langle \text{equation } fcbrn \text{ 51c} \rangle \equiv$ (252)

$$fcbrn: fcbrn - fcbrn_aerr = ufcbx*pxg*xgpot/100$$

Defines:

`fcbrn`, used in chunk 51a.

Uses `pxg` 116b, `ufcbx` 212h, and `xgpot` 60c.

2.3.12 c.12 FNIN: Net stock of claims of US residents on the rest of the world, current \$

51d $\langle \text{variable } FNIN \text{ 51d} \rangle \equiv$ (219)

$$FNIN = \text{Net stock of claims of US residents on the rest of the world, current \$}$$

Defines:

`FNIN`, used in chunk 231.

51e $\langle \text{equation } fnin \text{ 51e} \rangle \equiv$ (252)

$$\begin{aligned} fnin: d(fnin, 0, 1) - fnin_aerr = & .25*fcbn \quad - \\ & + .54 * (d(\log(fpc), 0, 1) * fnicn(-1)) \quad - \\ & - .32 * (d(\log(pgd), 0, 1) * fniln(-1)) \quad - \\ & - .67 * (d(\log(fpx), 0, 1) * fnicn(-1)) \quad - \\ & + .06 * (d(\log(fpx), 0, 1) * fniln(-1)) \quad - \\ & + fnirn \end{aligned}$$

Defines:

`fnin`, used in chunks 53e, 83d, and 171d.

Uses `fcbn` 51a, `fnicn` 53c, `fniln` 53e, `fnirn` 55e, `fpc` 169b, `fpx` 172d, and `pgdp` 114f.

2.3.13 c.13 FTCIN: Corporate taxes paid to rest of world, current \$

$$52a \quad \langle \text{variable } FTCIN \text{ 52a} \rangle \equiv \quad (219)$$

$$FTCIN = \text{Corporate taxes paid to rest of world, current \$}$$

Defines:

FTCIN, used in chunks 213d and 231.

$$52b \quad \langle \text{equation } ftcin \text{ 52b} \rangle \equiv \quad (252)$$

$$ftcin: ftcin - ftcin_aerr = uftcin * ynicpn$$

Defines:

ftcin, used in chunk 86d.

Uses uftcin 213d and ynicpn 85b.

2.3.14 c.14 FYNIN: Net investment income received from the rest of the world, current \$

$$52c \quad \langle \text{variable } FYNIN \text{ 52c} \rangle \equiv \quad (219)$$

$$FYNIN = \text{Net investment income received from the rest of the world, current \$}$$

Defines:

FYNIN, used in chunk 231.

$$52d \quad \langle \text{equation } fynin \text{ 52d} \rangle \equiv \quad (252)$$

$$fynin: fynin - fynin_aerr = fynicn - fyniln$$

Defines:

fynin, used in chunks 51a and 82d.

Uses fynicn 54a and fyniln 54c.

2.3.15 c.15 HGEMP: Petroleum imports, cw 2009\$, trend growth rate

$$52e \quad \langle \text{variable } HGEMP \text{ 52e} \rangle \equiv \quad (219)$$

$$HGEMP = \text{Petroleum imports, cw 2009$, trend growth rate}$$

Defines:

HGEMP, used in chunk 231.

$$52f \quad \langle \text{equation } hgemp \text{ 52f} \rangle \equiv \quad (252)$$

$$hgemp: hgemp - hgemp_aerr = y_hgemp(1) * hgemp(-1) -$$

$$+ y_hgemp(2) * 400 * \log(emp/emp(-1))$$

Defines:

hgemp, never used.

Uses emp 49e and y_hgemp 53a.

$$53a \quad \langle \text{coefficient } y_{hgemp} \text{ 53a} \rangle \equiv \quad (261)$$

$$y_{hgemp} \text{ 2} \quad .9, .1$$

Defines:

y_{hgemp} , used in chunk 52f.

2.3.16 c.16 FNICN: Gross stock of claims of US residents on the rest of the world, current \$

$$53b \quad \langle \text{variable } FNICN \text{ 53b} \rangle \equiv \quad (219)$$

$$FNICN \quad = \text{Gross stock of claims of US residents on the rest of the world, current \$}$$

Defines:

$FNICN$, used in chunks 210b and 231.

$$53c \quad \langle \text{equation } fnicn \text{ 53c} \rangle \equiv \quad (252)$$

$$fnicn: d(fnicn, 0, 1)/xgdptn - fnicn_aerr = .54 * d(\log(fpc), 0, 1)*fnicn(-1)/xgdptn _ \\ - .67 * d(\log(fpx), 0, 1)*fnicn(-1)/xgdptn _ \\ + rfnicn$$

Defines:

$fnicn$, used in chunks 51e, 53e, and 54a.

Uses fpc 169b, fpx 172d, $rfnicn$ 210b, and $xgdptn$ 69a.

2.3.17 c.17 FNILN: Gross stock of liabilities of US residents to the rest of the world, current \$

$$53d \quad \langle \text{variable } FNILN \text{ 53d} \rangle \equiv \quad (219)$$

$$FNILN \quad = \text{Gross stock of liabilities of US residents to the rest of the world, current \$}$$

Defines:

$FNILN$, used in chunk 231.

$$53e \quad \langle \text{equation } fniln \text{ 53e} \rangle \equiv \quad (252)$$

$$fniln: fniln - fniln_aerr = fnicn - fnin$$

Defines:

$fniln$, used in chunks 51e and 54c.

Uses $fnicn$ 53c and $fnin$ 51e.

2.3.18 c.18 FYNICN: Gross investment income received from the rest of the world, current \$

$$53f \quad \langle \text{variable } FYNICN \text{ 53f} \rangle \equiv \quad (219)$$

$$FYNICN \quad = \text{Gross investment income received from the rest of the world, current \$}$$

Defines:

$FYNICN$, used in chunk 231.

54a $\langle \text{equation } fynicn \text{ 54a} \rangle \equiv$ (252)

$$fynicn: fynicn - fynicn_aerr = .01 * rfynic * fnicn(-1)$$

Defines:

`fynicn`, used in chunk 52d.

Uses `fnicn` 53c and `rfynic` 54e.

2.3.19 c.19 FYNILN: Gross investment income paid to the rest of the world, current \$

54b $\langle \text{variable } FYNILN \text{ 54b} \rangle \equiv$ (219)

$$FYNILN = \text{Gross investment income paid to the rest of the world, current \$}$$

Defines:

`FYNILN`, used in chunk 231.

54c $\langle \text{equation } fyniln \text{ 54c} \rangle \equiv$ (252)

$$fyniln: fyniln - fyniln_aerr = .01 * rfynil * fniln(-1)$$

Defines:

`fyniln`, used in chunk 52d.

Uses `fniln` 53e and `rfynil` 55b.

2.3.20 c.20 RFYNIC: Average yield earned on gross claims of US residents on the rest of the world

54d $\langle \text{variable } RFYNIC \text{ 54d} \rangle \equiv$ (219)

$$RFYNIC = \text{Average yield earned on gross claims of US residents on the rest of the world}$$

Defines:

`RFYNIC`, used in chunk 231.

54e $\langle \text{equation } rfynic \text{ 54e} \rangle \equiv$ (252)

$$\begin{aligned} rfynic: d(rfynic, 0, 1) - rfynic_aerr = & y_rfynic(1) _ \\ & + y_rfynic(2) * (rfynic(-1) - rfynil(-1)) _ \\ & + y_rfynic(3) * d(rfynic(-1), 0, 1) _ \\ & + y_rfynic(4) * d(rfynil, 0, 1) \end{aligned}$$

Defines:

`rfynic`, used in chunk 54a.

Uses `rfynil` 55b and `y_rfynic` 54f.

54f $\langle \text{coefficient } y_rfynic \text{ 54f} \rangle \equiv$ (261)

$$y_rfynic \quad 4 \quad 0.2599432734430575, -0.1468767116652314, 0.1482396937168886, 0.1482396937168886$$

Defines:

`y_rfynic`, used in chunk 54e.

2.3.21 c.21 RFYNIL: Average yield earned on liabilities of US residents on the rest of the world

55a $\langle \text{variable } RFYNIL \text{ 55a} \rangle \equiv$ (219)
 $RFYNIL = \text{Average yield earned on liabilities of US residents on the rest of the world}$
 Defines:
 $RFYNIL$, used in chunk 231.

55b $\langle \text{equation } rfynil \text{ 55b} \rangle \equiv$ (252)

$$\begin{aligned} rfynil: d(rfynil, 0, 1) - rfynil_aerr = & y_rfynil(1) _ \\ & + y_rfynil(2) * rfynil(-1) _ \\ & + y_rfynil(3) * rg10(-1) _ \\ & + y_rfynil(4) * rtb(-1) _ \\ & + y_rfynil(5) * reqp(-1) _ \\ & + y_rfynil(6) * d(rfynil(-1), 0, 1) _ \\ & + y_rfynil(7) * d(rg10, 0, 1) _ \\ & + y_rfynil(8) * d(rtb, 0, 1) _ \\ & + y_rfynil(9) * d(reqp, 0, 1) \end{aligned}$$

Defines:
 $rfynil$, used in chunk 54.
 Uses $reqp$ 160d, $rg10$ 156f, rtb 154d, and y_rfynil 55c.

55c $\langle \text{coefficient } y_rfynil \text{ 55c} \rangle \equiv$ (261)
 $y_rfynil \quad 9 \quad 0.1878356791714486, -0.2435367622231839, 0.07902780819914431, 0.0888015190$
 Defines:
 y_rfynil , used in chunk 55b.

2.3.22 c.22 FNIRN: Net stock of claims of US residents on the rest of the world, residual

55d $\langle \text{variable } FNIRN \text{ 55d} \rangle \equiv$ (219)
 $FNIRN = \text{Net stock of claims of US residents on the rest of the world, residual}$
 Defines:
 $FNIRN$, used in chunks 213a and 231.

55e $\langle \text{equation } fnirn \text{ 55e} \rangle \equiv$ (252)
 $fnirn: fnirn - fnirn_aerr = ufnir * xgdpn$

Defines:
 $fnirn$, used in chunk 51e.
 Uses $ufnir$ 213a and $xgdpn$ 78c.

2.4 Aggregate Output Identities

2.4.1 d.1 XFS: Final sales of gross domestic product, cw 2009\$

$$56a \quad \langle \text{variable } XFS \text{ 56a} \rangle \equiv \quad (219)$$

$$XFS = \text{Final sales of gross domestic product, cw 2009\$}$$

Defines:

XFS , used in chunk 231.

$$56b \quad \langle \text{equation } xfs \text{ 56b} \rangle \equiv \quad (252)$$

$$\begin{aligned} xfs: & \log(xfs) - xfs_aerr = \log(xfs(-1)) - \\ & + .5*((ecnian/xfsn + ecnian(-1)/xfsn(-1)) * d(\log(ecnia), 0, 1) - \\ & + (ehn/xfsn + eh(-1)/xfsn(-1)) * d(\log(eh), 0, 1) - \\ & + (epdn/xfsn + epdn(-1)/xfsn(-1)) * d(\log(epd), 0, 1) - \\ & + (epsn/xfsn + epsn(-1)/xfsn(-1)) * d(\log(eps), 0, 1) - \\ & + (epin/xfsn + epin(-1)/xfsn(-1)) * d(\log(epi), 0, 1) - \\ & + (egfon/xfsn + egfon(-1)/xfsn(-1)) * d(\log(egfo), 0, 1) - \\ & + (egfin/xfsn + egfin(-1)/xfsn(-1)) * d(\log(egfi), 0, 1) - \\ & + (egfln/xfsn + egfln(-1)/xfsn(-1)) * d(\log(egfl), 0, 1) - \\ & + (egson/xfsn + egson(-1)/xfsn(-1)) * d(\log(egso), 0, 1) - \\ & + (egsin/xfsn + egsin(-1)/xfsn(-1)) * d(\log(egsi), 0, 1) - \\ & + (egsln/xfsn + egsln(-1)/xfsn(-1)) * d(\log(egsl), 0, 1) - \\ & + (exn/xfsn + exn(-1)/xfsn(-1)) * d(\log(ex), 0, 1) - \\ & - (emon/xfsn + emon(-1)/xfsn(-1)) * d(\log(emo), 0, 1) - \\ & - (empn/xfsn + empn(-1)/xfsn(-1)) * d(\log(emp), 0, 1) \end{aligned}$$

Defines:

xfs , used in chunks 35b and 57a.

Uses $ecnia$ 29d, $ecnian$ 30a, $egfi$ 122d, $egfin$ 123a, $egfl$ 124a, $egfln$ 124d, $egfo$ 125d, $egfon$ 126b, $egsi$ 127e, $egsin$ 128c, $egsl$ 129b, $egsln$ 129e, $egso$ 130d, $egson$ 131b, eh 26e, ehn 30c, emo 48b, $emon$ 48e, emp 49e, $empn$ 50a, epd 33c, $epdn$ 43d, epi 34a, $epin$ 43f, eps 34d, $epsn$ 44b, ex 47c, exn 47f, and $xfsn$ 78e.

2.4.2 d.2 XGDP: GDP, cw 2009\$

$$56c \quad \langle \text{variable } XGDP \text{ 56c} \rangle \equiv \quad (219)$$

$$XGDP = \text{GDP, cw 2009\$}$$

Defines:

$XGDP$, used in chunks 68c, 88a, 92a, 164b, and 231.

57a $\langle \text{equation } xgdp \text{ 57a} \rangle \equiv$ (252)

$$\begin{aligned} xgdp: xgdp - xgdp_aerr = xgdp(-1) * @sqrt(_ \\ (xfsn(-1)/xgdpn(-1)) * (xfs/xfs(-1)) _ \\ + (.01 * ei(-1)*pkir(-1)*pxp(-1) / xgdpn(-1)) * (ei/ei(-1))) _ \\ * 1/ _ \\ ((xfsn/xgdpn) * (xfs(-1)/xfs) _ \\ + (.01 * ei*pkir*pxp / xgdpn) * (ei(-1)/ei))) \end{aligned}$$

Defines:

`xgdp`, used in chunks 57, 64c, 92b, and 114f.

Uses `ei` 35e, `pkir` 209d, `pxp` 101b, `xfs` 56b, `xfsn` 78e, and `xgdpn` 78c.

2.4.3 d.3 HGGDP: Growth rate of GDP, cw 2009\$ (annual rate)

57b $\langle \text{variable } HGGDP \text{ 57b} \rangle \equiv$ (219)

$$HGGDP = \text{Growth rate of GDP, cw 2009\$ (annual rate)}$$

Defines:

`HGGDP`, used in chunk 231.

57c $\langle \text{equation } hggdp \text{ 57c} \rangle \equiv$ (252)

$$hggdp: hggdp - hggdp_aerr = 400*d(\log(xgdp), 0, 1)$$

Defines:

`hggdp`, never used.

Uses `xgdp` 57a.

2.4.4 d.4 XGDE: Domestic absorption, cw 2009\$

57d $\langle \text{variable } XGDE \text{ 57d} \rangle \equiv$ (219)

$$XGDE = \text{Domestic absorption, cw 2009\$}$$

Defines:

`XGDE`, used in chunk 231.

57e $\langle \text{equation } xgde \text{ 57e} \rangle \equiv$ (252)

$$\begin{aligned} xgde: \log(xgde) - xgde_aerr = \log(xgde(-1)) _ \\ + .5*((xgdpn/xgden + xgdpn(-1)/xgden(-1)) * d(\log(xgdp), 0, 1) _ \\ - (exn/xgden + exn(-1)/xgden(-1)) * d(\log(ex), 0, 1) _ \\ + (emon/xgden + emon(-1)/xgden(-1)) * d(\log(emo), 0, 1) _ \\ + (empn/xgden + empn(-1)/xgden(-1)) * d(\log(emp), 0, 1)) \end{aligned}$$

Defines:

`xgde`, never used.

Uses `emo` 48b, `emon` 48e, `emp` 49e, `empn` 50a, `ex` 47c, `exn` 47f, `xgden` 79a, `xgdp` 57a, and `xgdpn` 78c.

2.4.5 d.5 XGO: Output of business sector plus oil imports, adjusted for measurement error, cw 2009\$

58a $\langle \text{variable } XGO \text{ 58a} \rangle \equiv$ (219)
 $XGO = \text{Output of business sector plus oil imports, adjusted for measurement error}$
 Defines:
 XGO , used in chunk 231.

58b $\langle \text{equation } xgo \text{ 58b} \rangle \equiv$ (252)
 $xgo: \log(xgo) - xgo_aerr = \log(xgpot) + y_xgo(1) * xgap2/100$

Defines:
 xgo , used in chunks 64e, 65c, 67a, and 190a.
 Uses $xgap2$ 67c, $xgpot$ 60c, and y_xgo 58c.

58c $\langle \text{coefficient } y_xgo \text{ 58c} \rangle \equiv$ (261)
 $y_xgo \quad 1 \quad 1.313096$
 Defines:
 y_xgo , used in chunk 58b.

2.4.6 d.6 XBO: Business output, adjusted for measurement error, cw 2009\$

58d $\langle \text{variable } XBO \text{ 58d} \rangle \equiv$ (219)
 $XBO = \text{Business output, adjusted for measurement error, cw 2009$}$
 Defines:
 XBO , used in chunk 231.

58e $\langle \text{equation } xbo \text{ 58e} \rangle \equiv$ (252)
 $xbo: \log(xbo) - xbo_aerr = \log(xbt) + y_xbo(1) * xgap2/100$

Defines:
 xbo , used in chunks 33, 34, 36, 37a, 79c, and 190–94.
 Uses xbt 63a, $xgap2$ 67c, and y_xbo 58f.

58f $\langle \text{coefficient } y_xbo \text{ 58f} \rangle \equiv$ (261)
 $y_xbo \quad 1 \quad 1.338129148984226$
 Defines:
 y_xbo , used in chunk 58e.

2.4.7 d.7 XP: Final sales plus imports less government labor, cw 2009\$

58g $\langle \text{variable } XP \text{ 58g} \rangle \equiv$ (219)
 $XP = \text{Final sales plus imports less government labor, cw 2009$}$
 Defines:
 XP , used in chunk 231.

59a $\langle \text{equation } xp \text{ 59a} \rangle \equiv$ (252)

$$\begin{aligned}
 xp: \log(xp) - xp_aerr = \log(xp(-1)) & _ \\
 + .5 * (ecnia/xpn + ecnia(-1)/xpn(-1)) & * d(\log(ecnia), 0, 1) _ \\
 + .5 * (ehn/xpn + ehn(-1)/xpn(-1)) & * d(\log(eh), 0, 1) _ \\
 + .5 * (epdn/xpn + epdn(-1)/xpn(-1)) & * d(\log(epd), 0, 1) _ \\
 + .5 * (epin/xpn + epin(-1)/xpn(-1)) & * d(\log(epi), 0, 1) _ \\
 + .5 * (epsn/xpn + epsn(-1)/xpn(-1)) & * d(\log(eps), 0, 1) _ \\
 + .5 * (egfon/xpn + egfon(-1)/xpn(-1)) & * d(\log(egfo), 0, 1) _ \\
 + .5 * (egfin/xpn + egfin(-1)/xpn(-1)) & * d(\log(egfi), 0, 1) _ \\
 + .5 * (egson/xpn + egson(-1)/xpn(-1)) & * d(\log(egso), 0, 1) _ \\
 + .5 * (egsin/xpn + egsin(-1)/xpn(-1)) & * d(\log(egsi), 0, 1) _ \\
 + .5 * (exn/xpn + exn(-1)/xpn(-1)) & * d(\log(ex), 0, 1)
 \end{aligned}$$

Defines:

xp , used in chunks 78a, 100d, and 118e.

Uses $ecnia$ 29d, $ecnia$ 30a, $egfi$ 122d, $egfin$ 123a, $egfo$ 125d, $egfon$ 126b, $egsi$ 127e, $egsin$ 128c, $egso$ 130d, $egson$ 131b, eh 26e, ehn 30c, epd 33c, $epdn$ 43d, epi 34a, $epin$ 43f, eps 34d, $epsn$ 44b, ex 47c, exn 47f, and xpn 78a.

2.4.8 d.8 XB: Business output (BEA definition), cw 2009\$

59b $\langle \text{variable } XB \text{ 59b} \rangle \equiv$ (219)

$$XB = \text{Business output (BEA definition), cw 2009\$}$$

Defines:

XB , used in chunks 68a and 231.

59c $\langle \text{equation } xb \text{ 59c} \rangle \equiv$ (252)

$$xb: xb - xb_aerr = xbn / (pxb/100)$$

Defines:

xb , used in chunks 60a and 63a.

Uses pxb 116d and xbn 79c.

2.4.9 d.9 XG: Output of business sector plus oil imports, cw 2009\$

59d $\langle \text{variable } XG \text{ 59d} \rangle \equiv$ (219)

$$XG = \text{Output of business sector plus oil imports, cw 2009\$}$$

Defines:

XG , used in chunks 67d and 231.

60a $\langle \text{equation } xg \text{ 60a} \rangle \equiv$ (252)

$$\begin{aligned} xg: \log(xg) - xg_aerr = \log(xg(-1)) & - \\ + (1 - .5*(.035*empn/(&.01*pceng*ceng) + .035*empn(-1)/(&.01*pceng(-1)*ceng(-1)))) * \\ + .5*(.035*empn/(&.01*pceng*ceng) + .035*empn(-1)/(&.01*pceng(-1)*ceng(-1))) & * d(\log \end{aligned}$$

Defines:

xg, used in chunks 49b, 63a, 100d, 112d, and 116b.

Uses **ceng** 49b, **emp** 49e, **empn** 50a, **pceng** 111a, and **xb** 59c.

2.4.10 d.10 XGPOT: Potential output of business sector plus oil imports, cw 2009\$

60b $\langle \text{variable } XGPOT \text{ 60b} \rangle \equiv$ (219)

XGPOT = Potential output of business sector plus oil imports, cw 2009\$

Defines:

XGPOT, used in chunk 231.

60c $\langle \text{equation } xgpot \text{ 60c} \rangle \equiv$ (252)

$$\begin{aligned} xgpot: \log(xgpot) - xgpot_aerr = (y_xgpot(1) * (\log(leppot) + \log(qlww) + \log(lqualt) & \\ + y_xgpot(2) * \log(ks) & - \\ + y_xgpot(3) * \log(veoa) & - \\ + \log(mfpt)) / (1 - y_xgpot(4)) & \end{aligned}$$

Defines:

xgpot, used in chunks 51c, 58b, 63, 67a, and 77a.

Uses **ks** 39c, **leppot** 76b, **lqualt** 208f, **mfpt** 61c, **qlww** 69c, **veoa** 62a, and **y_xgpot** 60d.

60d $\langle \text{coefficient } y_xgpot \text{ 60d} \rangle \equiv$ (261)

y_xgpot 4 .7000, .265, .035, .035

Defines:

y_xgpot, used in chunk 60c.

2.4.11 d.11 HMFPT: Trend growth rate of multifactor productivity

60e $\langle \text{variable } HMFPT \text{ 60e} \rangle \equiv$ (219)

HMFPT = Trend growth rate of multifactor productivity

Defines:

HMFPT, used in chunk 231.

60f $\langle \text{equation } hmfpt \text{ 60f} \rangle \equiv$ (252)

$$hmfpt: hmfpt - hmfpt_aerr = y_hmfpt(1) + y_hmfpt(2)*hmfpt(-1)$$

Defines:

hmfpt, used in chunks 61c, 64e, and 67e.

Uses **y_hmfpt** 61a.

$$61a \quad \langle \text{coefficient } y_{\text{hmfpt}} 61a \rangle \equiv \quad (261)$$

$$y_{\text{hmfpt}} 2 \quad 0.055, 0.95$$

Defines:

y_{hmfpt} , used in chunk 60f.

2.4.12 d.12 MFPT: Multifactor productivity, trend level

$$61b \quad \langle \text{variable } MFPT 61b \rangle \equiv \quad (219)$$

$$MFPT \quad = \text{Multifactor productivity, trend level}$$

Defines:

$MFPT$, used in chunk 231.

$$61c \quad \langle \text{equation } mfpt 61c \rangle \equiv \quad (252)$$

$$mfpt: \log(mfpt) - mfpt_aerr = y_{mfpt}(1) + \log(mfpt(-1)) + hmfpt/400$$

Defines:

$mfpt$, used in chunks 60c and 64e.

Uses $hmfpt$ 60f and y_{mfpt} 61d.

$$61d \quad \langle \text{coefficient } y_{mfpt} 61d \rangle \equiv \quad (261)$$

$$y_{mfpt} 1 \quad 0.0$$

Defines:

y_{mfpt} , used in chunk 61c.

2.4.13 d.13 VEO: Desired energy-output ratio

$$61e \quad \langle \text{variable } VEO 61e \rangle \equiv \quad (219)$$

$$VEO \quad = \text{Desired energy-output ratio}$$

Defines:

VEO , used in chunk 231.

$$61f \quad \langle \text{equation } veo 61f \rangle \equiv \quad (252)$$

$$veo: \log(veo) - veo_aerr = \log(pxb/pceng)$$

Defines:

veo , used in chunk 62a.

Uses $pceng$ 111a and pxb 116d.

2.4.14 d.14 VEOA: Average energy-output ratio of existing capital stock

$$61g \quad \langle \text{variable } VEOA 61g \rangle \equiv \quad (219)$$

$$VEOA \quad = \text{Average energy-output ratio of existing capital stock}$$

Defines:

$VEOA$, used in chunks 216c and 231.

62a $\langle \text{equation } \text{veoa } 62a \rangle \equiv$ (252)

$$\begin{aligned} \text{veoa: } \log(\text{veoa}) - \text{veoa_aerr} &= \text{y_veoa}(1) * \log(\text{veoa}(-1)) - \\ &+ \text{y_veoa}(2) * \log(\text{veo}(-1)) - \\ &+ \text{uveoa} \end{aligned}$$

Defines:

veoa, used in chunks 49b, 60c, and 67e.

Uses **uveoa** 216c, **veo** 61f, and **y_veoa** 62b.

62b $\langle \text{coefficient } \text{y_veoa } 62b \rangle \equiv$ (261)

$$\text{y_veoa } 2 \quad 0.988, 0.012$$

Defines:

y_veoa, used in chunk 62a.

2.4.15 d.15 EMPT: Petroleum imports trend, cw 2009\$

62c $\langle \text{variable } \text{EMPT } 62c \rangle \equiv$ (219)

$$\text{EMPT} = \text{Petroleum imports trend, cw 2009\$}$$

Defines:

EMPT, used in chunk 231.

62d $\langle \text{equation } \text{empt } 62d \rangle \equiv$ (252)

$$\begin{aligned} \text{empt: } d(\log(\text{empt}), 0, 1) - \text{empt_aerr} &- \\ &= \text{y_empt}(1) * \log(\text{emp}(-1)/\text{empt}(-1)) - \\ &+ \text{y_empt}(2) * \text{hgx}/400 \end{aligned}$$

Defines:

empt, used in chunks 63a and 68b.

Uses **emp** 49e, **hgx** 67e, and **y_empt** 62e.

62e $\langle \text{coefficient } \text{y_empt } 62e \rangle \equiv$ (261)

$$\text{y_empt } 2 \quad 0.10000000000000000E+00, 1.0000000000000000E+00$$

Defines:

y_empt, used in chunk 62d.

2.4.16 d.16 XBT: Potential business output, cw 2009\$

62f $\langle \text{variable } \text{XBT } 62f \rangle \equiv$ (219)

$$\text{XBT} = \text{Potential business output, cw 2009\$}$$

Defines:

XBT, used in chunks 66a and 231.

63a $\langle \text{equation } xbt \text{ 63a} \rangle \equiv$ (252)

$$\begin{aligned} xbt: \log(xbt) - xbt_aerr = \log(xb) + (\log(xgpot/xg) - \\ - .5 * (.035 * empn / (.01 * pceng * ceng) + .035 * empn(-1) / (.01 * pceng(-1) * ceng(-1))) * \log(emp / emp)) \\ (1 - .5 * (.035 * empn / (.01 * pceng * ceng) + .035 * empn(-1) / (.01 * pceng(-1) * ceng(-1)))) \end{aligned}$$

Defines:

xbt, used in chunks 58e and 63c.

Uses **ceng** 49b, **emp** 49e, **empn** 50a, **empt** 62d, **pceng** 111a, **xb** 59c, **xg** 60a, and **xgpot** 60c.

2.4.17 d.17 XGDPT: Potential GDP, cw 2009\$

63b $\langle \text{variable } XGDPT \text{ 63b} \rangle \equiv$ (219)

$$XGDPT = \text{Potential GDP, cw 2009\$}$$

Defines:

XGDPT, used in chunks 66a and 231.

63c $\langle \text{equation } xgdpt \text{ 63c} \rangle \equiv$ (252)

$$xgdpt: \log(xgdpt) - xgdpt_aerr = \log(xbt) + \log(uxbt)$$

Defines:

xgdpt, used in chunks 67c, 69a, 80, 81, 134f, 137f, 138e, 167b, 196, and 197b.

Uses **uxbt** 66b and **xbt** 63a.

2.4.18 d.26 XENG: Crude energy production, cw 2009\$

63d $\langle \text{variable } XENG \text{ 63d} \rangle \equiv$ (219)

$$XENG = \text{Crude energy production, cw 2009\$}$$

Defines:

XENG, used in chunks 216g and 231.

63e $\langle \text{equation } xeng \text{ 63e} \rangle \equiv$ (252)

$$xeng: xeng - xeng_aerr = uxeng * xgpot$$

Defines:

xeng, used in chunk 49e.

Uses **uxeng** 216g and **xgpot** 60c.

2.4.19 d.27 XGDI: Gross domestic income, cw 2009\$

63f $\langle \text{variable } XGDI \text{ 63f} \rangle \equiv$ (219)

$$XGDI = \text{Gross domestic income, cw 2009\$}$$

Defines:

XGDI, used in chunks 163b and 231.

$$\langle \text{equation } xgdi \text{ 64a} \rangle \equiv \quad (252)$$

$$xgdi: xgdi - xgdi_aerr = xgdo * mei$$

Defines:

$xgdi$, used in chunk 94e.

Uses mei 163c and $xgdo$ 64c.

2.4.20 d.28 XGDO: Gross domestic product, adjusted for measurement error, cw 2009\$

$$\langle \text{variable } XGDO \text{ 64b} \rangle \equiv \quad (219)$$

$$XGDO = \text{Gross domestic product, adjusted for measurement error, cw 2009\$}$$

Defines:

$XGDO$, used in chunks 163b, 164b, and 231.

$$\langle \text{equation } xgdo \text{ 64c} \rangle \equiv \quad (252)$$

$$xgdo: xgdo - xgdo_aerr = xgdp / mep$$

Defines:

$xgdo$, used in chunks 64a, 67c, and 79c.

Uses mep 164c and $xgdp$ 57a.

2.5 Labor Market

2.5.1 e.1 LHP: Aggregate labor hours, business sector (employee and self-employed)

$$\langle \text{variable } LHP \text{ 64d} \rangle \equiv \quad (219)$$

$$LHP = \text{Aggregate labor hours, business sector (employee and self-employed)}$$

Defines:

LHP , used in chunk 231.

$$\langle \text{equation } lhp \text{ 64e} \rangle \equiv \quad (252)$$

$$lhp: d(\log(lhp), 0, 1) - lhp_aerr = _$$

$$y_lhp(1) * (\log(qlhp(-1)/lhp(-1)) - d(\log(mfpt), 0, 1) / .965) _$$

$$+ y_lhp(2) * d(\log(lhp(-1)), 0, 1) _$$

$$+ y_lhp(3) * zlhp _$$

$$+ y_lhp(4) * (d(\log(xgo), 0, 1) - hlprdt(-1)/400 - d(hmfpt, 0, 1) _$$

$$+ y_lhp(5) * (d(\log(xgo(-1)), 0, 1) - hlprdt(-2)/400 - d(hmfpt(-1), 0, 1) _$$

Defines:

lhp , used in chunks 65e, 70b, 74d, and 82f.

Uses $hlprdt$ 77c, $hmfpt$ 60f, $mfpt$ 61c, $qlhp$ 65c, xgo 58b, y_lhp 65a, and $zlhp$ 190a.

65a $\langle \text{coefficient } y_lhp \text{ 65a} \rangle \equiv$ (261)
 $y_lhp \quad 5 \quad 0.255040531063274, 0.1491232069118806, 0.3902648422452434, 0.6097351577547565, -0.0$
 Defines:
 y_lhp , used in chunk 64e.

2.5.2 e.2 QLHP: Desired level of business labor hours

65b $\langle \text{variable } QLHP \text{ 65b} \rangle \equiv$ (219)
 $QLHP \quad = \text{Desired level of business labor hours}$
 Defines:
 $QLHP$, used in chunk 231.

65c $\langle \text{equation } qlhp \text{ 65c} \rangle \equiv$ (252)
 $qlhp: qlhp - qlhp_aerr = xgo/lprdt$

Defines:
 $qlhp$, used in chunk 64e.
 Uses $lprdt$ 77a and xgo 58b.

2.5.3 e.3 LWW: Workweek, business sector (employee and self-employed)

65d $\langle \text{variable } LWW \text{ 65d} \rangle \equiv$ (219)
 $LWW \quad = \text{Workweek, business sector (employee and self-employed)}$
 Defines:
 LWW , used in chunk 231.

65e $\langle \text{equation } lww \text{ 65e} \rangle \equiv$ (252)
 $lww: d(\log(lww), 0, 1) - lww_aerr _$
 $\quad = hqlww/400 _$
 $\quad + y_lww(1) * \log(qlww(-1)/lww(-1)) _$
 $\quad + y_lww(2) * (d(\log(lhp), 0, 1) - (hlept + hqlww)/400)$

Defines:
 lww , used in chunk 70b.
 Uses $hlept$ 76d, $hqlww$ 69e, lhp 64e, $qlww$ 69c, and y_lww 65f.

65f $\langle \text{coefficient } y_lww \text{ 65f} \rangle \equiv$ (261)
 $y_lww \quad 2 \quad 0.1984470411422383, 0.3128887644653584$
 Defines:
 y_lww , used in chunk 65e.

2.5.4 d.18 UXBT: Stochastic component of trend ratio of XGDPT to XBT

66a $\langle \text{variable } UXBT \text{ 66a} \rangle \equiv$ (219)

$UXBT = \text{Stochastic component of trend ratio of XGDPT to XBT}$

Defines:

$UXBT$, used in chunks 66d and 231.

Uses XBT 62f and $XGDPT$ 63b.

66b $\langle \text{equation } uxbt \text{ 66b} \rangle \equiv$ (252)

$uxbt: \log(uxbt) - uxbt_aerr = y_uxbt(1) + \log(uxbt(-1)) + .0025*huxb$

Defines:

$uxbt$, used in chunk 63c.

Uses $huxb$ 66e and y_uxbt 66c.

66c $\langle \text{coefficient } y_uxbt \text{ 66c} \rangle \equiv$ (261)

$y_uxbt \quad 1 \quad 0.0$

Defines:

y_uxbt , used in chunk 66b.

2.5.5 d.19 HUXB: Drift term in UXBT

66d $\langle \text{variable } HUXB \text{ 66d} \rangle \equiv$ (219)

$HUXB = \text{Drift term in UXBT}$

Defines:

$HUXB$, used in chunk 231.

Uses $UXBT$ 66a.

66e $\langle \text{equation } huxb \text{ 66e} \rangle \equiv$ (252)

$huxb: huxb - huxb_aerr = (1-dglprd) * (y_huxb(1) + y_huxb(2)*huxb(-1))$

Defines:

$huxb$, used in chunks 66b and 68d.

Uses $dglprd$ 205d and y_huxb 66f.

66f $\langle \text{coefficient } y_huxb \text{ 66f} \rangle \equiv$ (261)

$y_huxb \quad 2 \quad -0.01817091647656927, 0.95$

Defines:

y_huxb , used in chunk 66e.

2.5.6 d.20 XGAP: Output gap for business plus oil imports (100*log(actual/potential))

66g $\langle \text{variable } XGAP \text{ 66g} \rangle \equiv$ (219)

$XGAP = \text{Output gap for business plus oil imports } (100*\log(\text{actual/potential}))$

Defines:

$XGAP$, used in chunk 231.

67a $\langle \text{equation } xgap \text{ 67a} \rangle \equiv$ (252)

$$xgap: xgap - xgap_aerr = 100 * \log(xgo/xgpot)$$

Defines:

xgap, used in chunks 178–84 and 190–95.

Uses **xgo** 58b and **xgpot** 60c.

2.5.7 d.21 XGAP2: Output gap for GDP (100*log(actual/potential)

67b $\langle \text{variable } XGAP2 \text{ 67b} \rangle \equiv$ (219)

$$XGAP2 = \text{Output gap for GDP (100*log(actual/potential)}$$

Defines:

XGAP2, used in chunk 231.

67c $\langle \text{equation } xgap2 \text{ 67c} \rangle \equiv$ (252)

$$xgap2: xgap2 - xgap2_aerr = 100 * \log(xgdo/xgdpt)$$

Defines:

xgap2, used in chunks 48b, 58, 70d, 94b, 122d, 124a, 125d, 127e, 129b, 130d, 135d, 138b, 140–44, 147–49, 162a, 166b, 185–89, 196, and 197b.

Uses **xgdo** 64c and **xgdpt** 63c.

2.5.8 d.22 HGX: Trend growth rate of XG, cw 2009\$ (annual rate)

67d $\langle \text{variable } HGX \text{ 67d} \rangle \equiv$ (219)

$$HGX = \text{Trend growth rate of XG, cw 2009$ (annual rate)}$$

Defines:

HGX, used in chunk 231.

Uses **XG** 59d.

67e $\langle \text{equation } hgx \text{ 67e} \rangle \equiv$ (252)

$$hgx: hgx - hgx_aerr = (.7 * (hlept + hqlww + 400 * d(\log(lqualt), 0, 1)) + .265 * hks + .035 * 400 * d(\log(veoa), 0, 1) + hmfpt) / .965$$

Defines:

hgx, used in chunks 36, 37a, 49b, 62d, 68b, 77c, and 192–94.

Uses **hks** 39a, **hlept** 76d, **hmfpt** 60f, **hqlww** 69e, **lqualt** 208f, and **veoa** 62a.

2.5.9 d.23 HXBT: Trend rate of growth of XB , cw 2009\$ (annual rate)

68a $\langle \text{variable } HXBT \text{ 68a} \rangle \equiv$ (219)
 $HXBT = \text{Trend rate of growth of XB , cw 2009\$ (annual rate)}$

Defines:

$HXBT$, used in chunk 231.

Uses XB 59b.

68b $\langle \text{equation } hxbt \text{ 68b} \rangle \equiv$ (252)

$$hxbt: hxbt - hxbt_aerr = (hgx -$$

$$- .5 * (.035 * empn / (.01 * pceng * ceng) + .035 * empn(-1) / (.01 * pceng(-1) * ceng(-1))) * 400 *$$

$$(1 - .5 * (.035 * empn / (.01 * pceng * ceng) + .035 * empn(-1) / (.01 * pceng(-1) * ceng(-1))))$$

Defines:

$hxbt$, used in chunk 68d.

Uses $ceng$ 49b, $empn$ 50a, $empt$ 62d, hgx 67e, and $pceng$ 111a.

2.5.10 d.24 HGGDPT: Trend growth rate of XGDP, cw 2009\$ (annual rate)

68c $\langle \text{variable } HGGDPT \text{ 68c} \rangle \equiv$ (219)
 $HGGDPT = \text{Trend growth rate of XGDP, cw 2009\$ (annual rate)}$

Defines:

$HGGDPT$, used in chunk 231.

Uses $XGDP$ 56c.

68d $\langle \text{equation } hggdpt \text{ 68d} \rangle \equiv$ (252)
 $hggdpt: hggdpt - hggdpt_aerr = hxbt + huxb$

Defines:

$hggdpt$, used in chunks 28e, 29a, 123c, 125a, 126d, 128e, 130–32, 134a, 167b, 187–89, and 195c.

Uses $huxb$ 66e and $hxbt$ 68b.

2.5.11 d.25 XGDPTN: Potential GDP, current \$

68e $\langle \text{variable } XGDPTN \text{ 68e} \rangle \equiv$ (219)
 $XGDPTN = \text{Potential GDP, current \$}$

Defines:

$XGDPTN$, used in chunk 231.

69a $\langle \text{equation } xgdptn \text{ 69a} \rangle \equiv$ (252)

$$xgdptn: xgdptn - xgdptn_aerr = .01 * pgdp * xgdpt$$

Defines:

`xgdptn`, used in chunks 53c, 92d, 123c, 125a, 126d, 128e, 130–32, and 134a.
 Uses `pgdp` 114f and `xgdpt` 63c.

2.5.12 e.4 QLWW: Trend workweek, business sector (employee and self-employed)

69b $\langle \text{variable } QLWW \text{ 69b} \rangle \equiv$ (219)

$$QLWW = \text{Trend workweek, business sector (employee and self-employed)}$$

Defines:

`QLWW`, used in chunk 231.

69c $\langle \text{equation } qlww \text{ 69c} \rangle \equiv$ (252)

$$qlww: \log(qlww) - qlww_aerr = \log(qlww(-1)) + hqlww(-1)/400$$

Defines:

`qlww`, used in chunks 60c, 65e, 74d, and 77a.
 Uses `hqlww` 69e.

2.5.13 e.5 HQLWW: Trend growth rate of workweek

69d $\langle \text{variable } HQLWW \text{ 69d} \rangle \equiv$ (219)

$$HQLWW = \text{Trend growth rate of workweek}$$

Defines:

`HQLWW`, used in chunk 231.

69e $\langle \text{equation } hqlww \text{ 69e} \rangle \equiv$ (252)

$$hqlww: hqlww - hqlww_aerr = y_hqlww(1) * hqlww(-1) + (1 - y_hqlww(1)) * y_hqlww(2)$$

Defines:

`hqlww`, used in chunks 65e, 67e, 69c, 77c, and 190a.
 Uses `y_hqlww` 69f.

69f $\langle \text{coefficient } y_hqlww \text{ 69f} \rangle \equiv$ (261)

$$y_hqlww \text{ 2} \quad .95, -0.3129029344874886$$

Defines:

`y_hqlww`, used in chunk 69e.

2.5.14 e.6 LEP: Employment in business sector (employee and self-employed)

70a $\langle \text{variable } LEP \text{ 70a} \rangle \equiv$ (219)
 $LEP = \text{Employment in business sector (employee and self-employed)}$
 Defines:
 LEP , used in chunks 76c and 231.

70b $\langle \text{equation } lep \text{ 70b} \rangle \equiv$ (252)
 $lep: lep - lep_aerr = lhp / lww$

Defines:
 lep , used in chunk 71e.
 Uses lhp 64e and lww 65e.

2.5.15 e.7 LEO: Difference between household and business sector payroll employment, less gov't emp.

70c $\langle \text{variable } LEO \text{ 70c} \rangle \equiv$ (219)
 $LEO = \text{Difference between household and business sector payroll employment, less gov't emp.}$
 Defines:
 LEO , used in chunk 231.
 Uses emp 49e.

70d $\langle \text{equation } leo \text{ 70d} \rangle \equiv$ (252)
 $leo: \log(leo) - leo_aerr = \log(qleor * qlf) + y_leo(1) * \log(leo(-1) / (qleor(-1) * qlf(-1))) + y_leo(2) * xgap2(-1)$

Defines:
 leo , used in chunk 71e.
 Uses $qleor$ 209g, qlf 74f, $xgap2$ 67c, and y_leo 70e.

70e $\langle \text{coefficient } y_leo \text{ 70e} \rangle \equiv$ (261)
 $y_leo \quad 2 \quad 0.6995814979956745, -0.01620869768699893$
 Defines:
 y_leo , used in chunk 70d.

2.5.16 e.8 LEF: Federal civilian employment ex. gov. enterprise

70f $\langle \text{variable } LEF \text{ 70f} \rangle \equiv$ (219)
 $LEF = \text{Federal civilian employment ex. gov. enterprise}$
 Defines:
 LEF , used in chunks 215a and 231.
 Uses ex 47c.

71a $\langle \text{equation } lef \text{ 71a} \rangle \equiv$ (252)

$$\begin{aligned} lef: & d(\log(lef), 0, 1) - lef_aerr = d(\log(ulef), 0, 1) - \\ & + d(\log(egfl), 0, 1) - \\ & - dglprd*(d(\log(lprdt), 0, 1)) \end{aligned}$$

Defines:

`lef`, used in chunks 71e and 75b.

Uses `dglprd` 205d, `egfl` 124a, `lprdt` 77a, and `ulef` 215a.

2.5.17 e.9 LES: S&L government employment ex. gov. enterprise

71b $\langle \text{variable } LES \text{ 71b} \rangle \equiv$ (219)

$$LES = \text{S\&L government employment ex. gov. enterprise}$$

Defines:

`LES`, used in chunks 215b and 231.

Uses `ex` 47c.

71c $\langle \text{equation } les \text{ 71c} \rangle \equiv$ (252)

$$\begin{aligned} les: & d(\log(les), 0, 1) - les_aerr = d(\log(ules), 0, 1) - \\ & + d(\log(egsl), 0, 1) - \\ & - dglprd*(d(\log(lprdt), 0, 1)) \end{aligned}$$

Defines:

`les`, used in chunks 71e and 75e.

Uses `dglprd` 205d, `egsl` 129b, `lprdt` 77a, and `ules` 215b.

2.5.18 e.10 LEH: Civilian employment (break adjusted)

71d $\langle \text{variable } LEH \text{ 71d} \rangle \equiv$ (219)

$$LEH = \text{Civilian employment (break adjusted)}$$

Defines:

`LEH`, used in chunk 231.

71e $\langle \text{equation } leh \text{ 71e} \rangle \equiv$ (252)

$$leh: leh - leh_aerr = lep + leo + les + lef$$

Defines:

`leh`, used in chunk 73f.

Uses `lef` 71a, `leo` 70d, `lep` 70b, and `les` 71c.

2.5.19 e.11 LFPR: Labor force participation rate

$$\begin{aligned} 72a \quad \langle \text{variable } LFPR \text{ 72a} \rangle &\equiv & (219) \\ LFPR &= \text{Labor force participation rate} \end{aligned}$$

Defines:

LFPR, used in chunk 231.

$$\begin{aligned} 72b \quad \langle \text{equation } lfpr \text{ 72b} \rangle &\equiv & (252) \\ lfpr: d(lfpr, 0, 1) - lfpr_aerr &= hqlfpr_ \\ &+ y_lfpr(1) * (qlfpr(-1) - lfpr(-1)) - \\ &+ y_lfpr(2) * (lur(-1) - lurnat(-1)) \end{aligned}$$

Defines:

lfpr, used in chunk 73d.

Uses hqlfpr 73a, lur 73f, lurnat 77e, qlfpr 72e, and y_lfpr 72c.

$$\begin{aligned} 72c \quad \langle \text{coefficient } y_lfpr \text{ 72c} \rangle &\equiv & (261) \\ y_lfpr \quad 2 & \quad 0.5580285205989896, -0.0008755566736369085 \end{aligned}$$

Defines:

y_lfpr, used in chunk 72b.

2.5.20 e.12 QLFPR: Trend labor force participation rate

$$\begin{aligned} 72d \quad \langle \text{variable } QLFPR \text{ 72d} \rangle &\equiv & (219) \\ QLFPR &= \text{Trend labor force participation rate} \end{aligned}$$

Defines:

QLFPR, used in chunks 72f and 231.

$$\begin{aligned} 72e \quad \langle \text{equation } qlfpr \text{ 72e} \rangle &\equiv & (252) \\ qlfpr: qlfpr - qlfpr_aerr &= qlfpr(-1) + hqlfpr \end{aligned}$$

Defines:

qlfpr, used in chunks 72b, 74f, and 76d.

Uses hqlfpr 73a.

2.5.21 e.13 HQLFPR: Drift component of change in QLFPR

$$\begin{aligned} 72f \quad \langle \text{variable } HQLFPR \text{ 72f} \rangle &\equiv & (219) \\ HQLFPR &= \text{Drift component of change in QLFPR} \end{aligned}$$

Defines:

HQLFPR, used in chunk 231.

Uses QLFPR 72d.

$$73a \quad \langle \text{equation } hqlfpr \text{ 73a} \rangle \equiv \quad (252)$$

$$hqlfpr: hqlfpr - hqlfpr_aerr = y_hqlfpr(1) + y_hqlfpr(2)*hqlfpr(-1)$$

Defines:

`hqlfpr`, used in chunks 72, 75, and 76d.

Uses `y_hqlfpr` 73b.

$$73b \quad \langle \text{coefficient } y_hqlfpr \text{ 73b} \rangle \equiv \quad (261)$$

$$y_hqlfpr \quad \quad \quad 2 \quad \quad \quad 0.00, 0.95$$

Defines:

`y_hqlfpr`, used in chunk 73a.

2.5.22 e.14 LF: Civilian labor force (break adjusted)

$$73c \quad \langle \text{variable } LF \text{ 73c} \rangle \equiv \quad (219)$$

$$LF \quad \quad \quad = \text{Civilian labor force (break adjusted)}$$

Defines:

`LF`, used in chunk 231.

$$73d \quad \langle \text{equation } lf \text{ 73d} \rangle \equiv \quad (252)$$

$$lf: lf - lf_aerr = lfpr * n16$$

Defines:

`lf`, used in chunk 73f.

Uses `lfpr` 72b and `n16` 208h.

2.5.23 e.15 LUR: Civilian unemployment rate (break adjusted)

$$73e \quad \langle \text{variable } LUR \text{ 73e} \rangle \equiv \quad (219)$$

$$LUR \quad \quad \quad = \text{Civilian unemployment rate (break adjusted)}$$

Defines:

`LUR`, used in chunk 231.

$$73f \quad \langle \text{equation } lur \text{ 73f} \rangle \equiv \quad (252)$$

$$lur: lur - lur_aerr = 100*(1 - leh/lf)$$

Defines:

`lur`, used in chunks 72b, 74b, 95e, 147e, 149c, 151b, 185a, and 186a.

Uses `leh` 71e and `lf` 73d.

2.5.24 e.16 LURBLS: Civilian unemployment rate (published)

$$74a \quad \langle \text{variable } LURBLS \text{ 74a} \rangle \equiv \text{LURBLS} = \text{Civilian unemployment rate (published)} \quad (219)$$

Defines:

LURBLS, used in chunk 231.

$$74b \quad \langle \text{equation } lurbles \text{ 74b} \rangle \equiv \text{lurbles: lurbles} - \text{lurbles_aerr} = \text{lur} \quad (252)$$

Defines:

lurbles, never used.

Uses lur 73f.

2.5.25 e.17 QLEP: Desired level of business employment

$$74c \quad \langle \text{variable } QLEP \text{ 74c} \rangle \equiv \text{QLEP} = \text{Desired level of business employment} \quad (219)$$

Defines:

QLEP, used in chunk 231.

$$74d \quad \langle \text{equation } qlep \text{ 74d} \rangle \equiv \text{qlep: qlep} - \text{qlep_aerr} = \text{lhp} / \text{qlww} \quad (252)$$

Defines:

qlep, never used.

Uses lhp 64e and qlww 69c.

2.5.26 e.18 QLF: Desired level of civilian labor force

$$74e \quad \langle \text{variable } QLF \text{ 74e} \rangle \equiv \text{QLF} = \text{Desired level of civilian labor force} \quad (219)$$

Defines:

QLF, used in chunk 231.

$$74f \quad \langle \text{equation } qlf \text{ 74f} \rangle \equiv \text{qlf: qlf} - \text{qlf_aerr} = \text{qlfpr} * \text{n16} \quad (252)$$

Defines:

qlf, used in chunks 70d and 76b.

Uses n16 208h and qlfpr 72e.

2.5.27 e.19 LEFT: Federal civilian employment ex. gov. enterprise, trend

75a $\langle \text{variable } LEFT \text{ 75a} \rangle \equiv$ (219)
 $LEFT = \text{Federal civilian employment ex. gov. enterprise, trend}$
 Defines:
 $LEFT$, used in chunk 231.
 Uses **ex** 47c.

75b $\langle \text{equation left 75b} \rangle \equiv$ (252)
 $left: left - left_aerr = y_left(1) * left(-1) * (hqlfpr+n16/n16(-1)) -$
 $+ y_left(2) * lef$

Defines:
 $left$, used in chunk 76.
 Uses **hqlfpr** 73a, **lef** 71a, **n16** 208h, and y_left 75c.

75c $\langle \text{coefficient } y_left \text{ 75c} \rangle \equiv$ (261)
 $y_left \quad 2 \quad 0.9000000000000000E+00, 0.1000000000000000E+00$
 Defines:
 y_left , used in chunk 75b.

2.5.28 e.20 LEST: S&L government employment ex. gov. enterprise, trend

75d $\langle \text{variable } LEST \text{ 75d} \rangle \equiv$ (219)
 $LEST = \text{S\&L government employment ex. gov. enterprise, trend}$
 Defines:
 $LEST$, used in chunk 231.
 Uses **ex** 47c.

75e $\langle \text{equation lest 75e} \rangle \equiv$ (252)
 $lest: lest - lest_aerr = y_lest(1) * lest(-1) * (hqlfpr+n16/n16(-1)) -$
 $+ y_lest(2) * les$

Defines:
 $lest$, used in chunk 76.
 Uses **hqlfpr** 73a, **les** 71c, **n16** 208h, and y_lest 75f.

75f $\langle \text{coefficient } y_lest \text{ 75f} \rangle \equiv$ (261)
 $y_lest \quad 2 \quad 0.9000000000000000E+00, 0.1000000000000000E+00$
 Defines:
 y_lest , used in chunk 75e.

2.5.29 e.21 LEPPOT: Potential employment in business sector

76a $\langle \text{variable } LEPPOT \text{ 76a} \rangle \equiv$ (219)

LEPPOT = Potential employment in business sector

Defines:

LEPPOT, used in chunk 231.

76b $\langle \text{equation } leppot \text{ 76b} \rangle \equiv$ (252)

leppot: leppot - leppot_aerr = qlf*(1-.01*lurnat - qleor) - left - lest

Defines:

leppot, used in chunks 60c, 76d, and 77a.

Uses left 75b, lest 75e, lurnat 77e, qleor 209g, and qlf 74f.

2.5.30 e.22 HLEPT: Trend growth rate of LEP (annual rate)

76c $\langle \text{variable } HLEPT \text{ 76c} \rangle \equiv$ (219)

HLEPT = Trend growth rate of LEP (annual rate)

Defines:

HLEPT, used in chunk 231.

Uses LEP 70a.

76d $\langle \text{equation } hlept \text{ 76d} \rangle \equiv$ (252)

hlept: hlept - hlept_aerr = (1-dmpstb) * 400 * _
 (hqlfpr * n16 * (1-.01*lurnat-qleor) _
 + d(n16, 0, 1) * qlfpr * (1-.01*lurnat-qleor) _
 - d(left, 0, 1) _
 - d(lest, 0, 1)) _
 / (leppot/2 + leppot(-1)/2) _
 + dmpstb * 400 * d(log(n16), 0, 1)

Defines:

hlept, used in chunks 65e, 67e, 77c, and 190a.

Uses dmpstb 206a, hqlfpr 73a, left 75b, leppot 76b, lest 75e, lurnat 77e, n16 208h, qleor 209g, and qlfpr 72e.

2.5.31 e.23 LPRDT: Trend labor productivity

76e $\langle \text{variable } LPRDT \text{ 76e} \rangle \equiv$ (219)

LPRDT = Trend labor productivity

Defines:

LPRDT, used in chunk 231.

77a $\langle \text{equation } lprdt \text{ 77a} \rangle \equiv$ (252)

$$lprdt: \log(lprdt) - lprdt_aerr = \log(xgpot) - \log(leppot) - \log(qlww)$$

Defines:

`lprdt`, used in chunks 65c, 71, 99e, 115, and 190a.

Uses `leppot` 76b, `qlww` 69c, and `xgpot` 60c.

2.5.32 e.24 HLPRTD: Trend growth rate of output per hour

77b $\langle \text{variable } HLPRTD \text{ 77b} \rangle \equiv$ (219)

$$HLPRTD = \text{Trend growth rate of output per hour}$$

Defines:

`HLPRTD`, used in chunk 231.

77c $\langle \text{equation } hlprdt \text{ 77c} \rangle \equiv$ (252)

$$hlprdt: hlprdt - hlprdt_aerr = hgx - hlept - hqlww$$

Defines:

`hlprdt`, used in chunks 64e, 95e, 185a, and 186a.

Uses `hgx` 67e, `hlept` 76d, and `hqlww` 69e.

2.5.33 e.25 LURNAT: Natural rate of unemployment

77d $\langle \text{variable } LURNAT \text{ 77d} \rangle \equiv$ (219)

$$LURNAT = \text{Natural rate of unemployment}$$

Defines:

`LURNAT`, used in chunk 231.

77e $\langle \text{equation } lurnat \text{ 77e} \rangle \equiv$ (252)

$$lurnat: lurnat - lurnat_aerr = lurnat(-1)$$

Defines:

`lurnat`, used in chunks 72b, 76, 95e, 147e, 149c, 185a, and 186a.

2.6 Nominal Income

2.6.1 f.1 XPN: Final sales plus imports less government labor, current \$

77f $\langle \text{variable } XPN \text{ 77f} \rangle \equiv$ (219)

$$XPN = \text{Final sales plus imports less government labor, current \$}$$

Defines:

`XPN`, used in chunk 231.

$$\begin{aligned} 78a \quad \langle \text{equation } xpn \text{ 78a} \rangle \equiv & \quad (252) \\ xpn: xpn - xpn_aerr = .01 * pxp * xp \end{aligned}$$

Defines:

xpn, used in chunks 59a, 78c, 96c, 100d, 101b, and 106a.

Uses **pxp** 101b and **xp** 59a.

2.6.2 f.2 XGDPN: GDP, current \$

$$\begin{aligned} 78b \quad \langle \text{variable } XGDPN \text{ 78b} \rangle \equiv & \quad (219) \\ XGDPN &= \text{GDP, current \$} \end{aligned}$$

Defines:

XGDPN, used in chunk 231.

$$\begin{aligned} 78c \quad \langle \text{equation } xgdpn \text{ 78c} \rangle \equiv & \quad (252) \\ xgdpn: xgdpn - xgdpn_aerr = xpn + ein - emn + egfln + egsln \end{aligned}$$

Defines:

xgdpn, used in chunks 55e, 57, 78, 79, 85b, 114f, 141d, 143e, and 171d.

Uses **egfln** 124d, **egsln** 129e, **ein** 44d, **emn** 50c, and **xpn** 78a.

2.6.3 f.3 XFSN: Final sales of gross domestic product, current \$

$$\begin{aligned} 78d \quad \langle \text{variable } XFSN \text{ 78d} \rangle \equiv & \quad (219) \\ XFSN &= \text{Final sales of gross domestic product, current \$} \end{aligned}$$

Defines:

XFSN, used in chunk 231.

$$\begin{aligned} 78e \quad \langle \text{equation } xfsn \text{ 78e} \rangle \equiv & \quad (252) \\ xfsn: xfsn - xfsn_aerr = xgdpn - ein \end{aligned}$$

Defines:

xfsn, used in chunks 56b and 57a.

Uses **ein** 44d and **xgdpn** 78c.

2.6.4 f.4 XGDEN: Nominal Absorption, current \$

$$\begin{aligned} 78f \quad \langle \text{variable } XGDEN \text{ 78f} \rangle \equiv & \quad (219) \\ XGDEN &= \text{Nominal Absorption, current \$} \end{aligned}$$

Defines:

XGDEN, used in chunks 212f and 231.

79a $\langle \text{equation } xgden \text{ 79a} \rangle \equiv$ (252)

$$xgden: xgden - xgden_aerr = xgdpn + emn - exn$$

Defines:

xgden, used in chunks 48b and 57e.

Uses **emn** 50c, **exn** 47f, and **xgdpn** 78c.

2.6.5 f.5 XBN: Business output (BEA definition), current \$

79b $\langle \text{variable } XBN \text{ 79b} \rangle \equiv$ (219)

$$XBN = \text{Business output (BEA definition), current \$}$$

Defines:

XBN, used in chunk 231.

79c $\langle \text{equation } xbn \text{ 79c} \rangle \equiv$ (252)

$$xbn: xbn - xbn_aerr = pxb/100*xbo + xgdpn - xgdo*pgdp/100$$

Defines:

xbn, used in chunks 59c, 79e, 83b, and 136c.

Uses **pgdp** 114f, **pxb** 116d, **xbo** 58e, **xgdo** 64c, and **xgdpn** 78c.

2.6.6 f.6 XGN: Output of business sector plus oil imports, current \$

79d $\langle \text{variable } XGN \text{ 79d} \rangle \equiv$ (219)

$$XGN = \text{Output of business sector plus oil imports, current \$}$$

Defines:

XGN, used in chunk 231.

79e $\langle \text{equation } xgn \text{ 79e} \rangle \equiv$ (252)

$$xgn: xgn - xgn_aerr = xbn + empn$$

Defines:

xgn, used in chunks 100d and 116b.

Uses **empn** 50a and **xbn** 79c.

2.6.7 f.7 JCCACN: Consumption of fixed capital, corporate, current \$

79f $\langle \text{variable } JCCACN \text{ 79f} \rangle \equiv$ (219)

$$JCCACN = \text{Consumption of fixed capital, corporate, current \$}$$

Defines:

JCCACN, used in chunks 214c and 231.

80a $\langle \text{equation } jccacn \text{ 80a} \rangle \equiv$ (252)

$$jccacn: jccacn - jccacn_aerr = ujccac*(jccan - jygfgn - jygfen - jygsgn - jygsen - .01*jrh*phr(-1)*pxp(-1)*kh(-1))$$

Defines:

jccacn, used in chunks 82b and 86d.

Uses *jccan* 80c, *jrh* 208a, *jygfen* 80e, *jygfgn* 81b, *jygsen* 81d, *jygsgn* 81f, *kh* 31a, *phr* 103d, *pxp* 101b, and *ujccac* 214c.

2.6.8 f.8 JCCAN: Consumption of fixed capital, current \$

80b $\langle \text{variable } JCCAN \text{ 80b} \rangle \equiv$ (219)

$$JCCAN = \text{Consumption of fixed capital, current \$}$$

Defines:

JCCAN, used in chunks 214b and 231.

80c $\langle \text{equation } jccan \text{ 80c} \rangle \equiv$ (252)

$$jccan: jccan - jccan_aerr = jygfgn + jygfen + jygsgn + jygsen + .01*ujcca*pxp(-1) * (phr(-1)*kh(-1)*jrh + ppsr(-1)*kps(-1)*jrps + pkpdr(-1)*kpd(-1)*jrpd)$$

Defines:

jccan, used in chunks 80a and 82.

Uses *jrh* 208a, *jrpd* 208b, *jrps* 208d, *jygfen* 80e, *jygfgn* 81b, *jygsen* 81d, *jygsgn* 81f, *kh* 31a, *kpd* 37g, *kps* 38d, *phr* 103d, *pkpdr* 115e, *pps* 104e, *pxp* 101b, and *ujcca* 214b.

2.6.9 f.9 JYGFEN: CFC, federal government enterprises, current \$

80d $\langle \text{variable } JYGFEN \text{ 80d} \rangle \equiv$ (219)

$$JYGFEN = \text{CFC, federal government enterprises, current \$}$$

Defines:

JYGFEN, used in chunks 214d and 231.

80e $\langle \text{equation } jygfen \text{ 80e} \rangle \equiv$ (252)

$$jygfen: jygfen - jygfen_aerr = ujugfe * (.01 * pgdp * xgdpt)$$

Defines:

jygfen, used in chunks 80, 82b, 132a, 141d, and 146b.

Uses *pgdp* 114f, *ujugfe* 214d, and *xgdpt* 63c.

2.6.10 f.10 JYGFGN: CFC, federal government, general, current \$

$$81a \quad \langle \text{variable } JYGFGN \text{ 81a} \rangle \equiv \quad (219)$$

$$JYGFGN = \text{CFC, federal government, general, current \$}$$

Defines:

JYGFGN, used in chunks 214e and 231.

$$81b \quad \langle \text{equation } jygfgn \text{ 81b} \rangle \equiv \quad (252)$$

$$jygfgn: jygfgn - jygfgn_aerr = ujygfg * (.01 * pgdp * xgdpt)$$

Defines:

jygfgn, used in chunks 80, 82b, 132a, 141d, and 146b.

Uses pgdp 114f, ujygfg 214e, and xgdpt 63c.

2.6.11 f.11 JYGSEN: CFC, state and local government enterprises, current \$

$$81c \quad \langle \text{variable } JYGSEN \text{ 81c} \rangle \equiv \quad (219)$$

$$JYGSEN = \text{CFC, state and local government enterprises, current \$}$$

Defines:

JYGSEN, used in chunks 214f and 231.

$$81d \quad \langle \text{equation } jygsen \text{ 81d} \rangle \equiv \quad (252)$$

$$jygsen: jygsen - jygsen_aerr = ujygse * (.01 * pgdp * xgdpt)$$

Defines:

jygsen, used in chunks 80, 82b, 136a, 143e, and 146d.

Uses pgdp 114f, ujygse 214f, and xgdpt 63c.

2.6.12 f.12 JYGSGN: CFC, state and local government, general, current \$

$$81e \quad \langle \text{variable } JYGSGN \text{ 81e} \rangle \equiv \quad (219)$$

$$JYGSGN = \text{CFC, state and local government, general, current \$}$$

Defines:

JYGSGN, used in chunks 214g and 231.

$$81f \quad \langle \text{equation } jygsn \text{ 81f} \rangle \equiv \quad (252)$$

$$jygsn: jygsn - jygsn_aerr = ujygsg * (.01 * pgdp * xgdpt)$$

Defines:

jygsn, used in chunks 80, 82b, 136a, 143e, and 146d.

Uses pgdp 114f, ujygsg 214g, and xgdpt 63c.

2.6.13 f.13 JYNCN: Noncorporate business CFC, current \$

$$82a \quad \langle \text{variable } JYNCN \text{ 82a} \rangle \equiv \text{JYNCN} = \text{Noncorporate business CFC, current \$} \quad (219)$$

Defines:

JYNCN, used in chunk 231.

$$82b \quad \langle \text{equation } jyncn \text{ 82b} \rangle \equiv \text{jyncn: jyncn} - \text{jyncn_aerr} = \text{jccan} - \text{jccacn} - \text{jygfgn} - \text{jygfen} - \text{jygsgn} - \text{jygsgen} \quad (252)$$

Defines:

jyncn, never used.

Uses jccacn 80a, jccan 80c, jygfen 80e, jygfgn 81b, jygsen 81d, and jygsen 81f.

2.6.14 f.14 YNIN: National income

$$82c \quad \langle \text{variable } YNIN \text{ 82c} \rangle \equiv \text{YNIN} = \text{National income} \quad (219)$$

Defines:

YNIN, used in chunks 217h and 231.

$$82d \quad \langle \text{equation } ynin \text{ 82d} \rangle \equiv \text{ynin: ynin} - \text{ynin_aerr} = \text{yni} * (\text{xgdin} + \text{fynin} - \text{jccan}) \quad (252)$$

Defines:

ynin, used in chunks 83d, 85b, and 94b.

Uses fynin 52d, jccan 80c, yni 217h, and xgdin 94e.

2.6.15 f.15 YNILN: Labor income (national income component)

$$82e \quad \langle \text{variable } YNILN \text{ 82e} \rangle \equiv \text{YNILN} = \text{Labor income (national income component)} \quad (219)$$

Defines:

YNILN, used in chunk 231.

$$82f \quad \langle \text{equation } ynln \text{ 82f} \rangle \equiv \text{ynln: ynln} - \text{ynln_aerr} = 0.01 * \text{uyl} * (\text{pl*lhp} + \text{pgfl*egfl} + \text{pgsl*egsl}) \quad (252)$$

Defines:

ynln, used in chunks 83d, 85b, 89f, 94b, 140a, and 145f.

Uses egfl 124a, egsl 129b, lhp 64e, pgfl 115a, pgsl 115c, pl 98d, and uyl 217g.

2.6.16 f.16 YNISEN: Proprietors' income (national income component)

83a $\langle \text{variable } YNISEN \text{ 83a} \rangle \equiv$ (219)
 YNISEN = Proprietors' income (national income component)

Defines:

 YNISEN, used in chunk 231.

83b $\langle \text{equation } ynisen \text{ 83b} \rangle \equiv$ (252)
 ynisen: ynisen - ynisen_aerr = uysen*xbn

Defines:

 ynisen, used in chunks 85b and 91e.

Uses uysen 218c and xbn 79c.

2.6.17 f.17 YNIIN: Net interest and rental income (national income component)

83c $\langle \text{variable } YNIIN \text{ 83c} \rangle \equiv$ (219)
 YNIIN = Net interest and rental income (national income component)

Defines:

 YNIIN, used in chunk 231.

83d $\langle \text{equation } yniin \text{ 83d} \rangle \equiv$ (252)
 yniin: yniin/(ynin(-1)-yniln(-1)) - yniin_aerr _
 = y_yniin(1) _
 + y_yniin(2) * (yniin(-1)/(ynin(-2)-yniln(-2))) _
 + y_yniin(3) * (.01*rrmet*.01*phr(-1)*pxp(-1)*kh(-1)/(ynin(-1)-yniln(-1))) _
 + y_yniin(4) * ((.01*rbbbe)*(wdnfc(-1)/(ynin(-1)-yniln(-1)))) _
 + y_yniin(5) * (.01*d(rbbbe*(wdnfc(-1)/(ynin(-1)-yniln(-1))), 0, 1)) _
 + y_yniin(6) * (.01*fnin(-1)/(ynin(-1)-yniln(-1)))

Defines:

 yniin, used in chunks 85b and 89b.

Uses fnin 51e, kh 31a, phr 103d, pxp 101b, rbbbe 158f, rrmet 165f, wdnfc 94b, y_yniin 83e, yniln 82f, and ynin 82d.

83e $\langle \text{coefficient } y_yniin \text{ 83e} \rangle \equiv$ (261)
 y_yniin 6 0.01335460515030035,0.8715712577633621,0.03107757397810296,0.1284287422366379,0

Defines:

 y_yniin, used in chunk 83d.

2.6.18 f.18 QYNIDN: Desired level of dividends

84a $\langle \text{variable } QYNIDN \text{ 84a} \rangle \equiv$ (219)
 QYNIDN = Desired level of dividends

Defines:

QYNIDN, used in chunk 231.

84b $\langle \text{equation } qynidn \text{ 84b} \rangle \equiv$ (252)
 qynidn: log(qynidn) - qynidn_aerr = y_qynidn(1) _
 + y_qynidn(2)*d79a _
 + y_qynidn(3)*log((@recode((ynicpn-tfcin-tscin)>(.01),ynicp

Defines:

qynidn, used in chunks 84e and 195c.

Uses tfcin 139a, tscin 144f, y_qynidn 84c, and ynicpn 85b.

84c $\langle \text{coefficient } y_qynidn \text{ 84c} \rangle \equiv$ (261)
 y_qynidn 3 -0.9889159016018153, 0.3614481909275686, 1

Defines:

y_qynidn, used in chunk 84b.

2.6.19 f.19 YNIDN: Dividends (national income component)

84d $\langle \text{variable } YNIDN \text{ 84d} \rangle \equiv$ (219)
 YNIDN = Dividends (national income component)

Defines:

YNIDN, used in chunks 195b and 231.

84e $\langle \text{equation } ynidn \text{ 84e} \rangle \equiv$ (252)
 ynidn: d(log((ynidn-ymsdn)/pxb), 0, 1) - ynidn_aerr = _
 y_ynidn(1) * log(qynidn(-1)/(ynidn(-1)-ymsdn(-1))) _
 + y_ynidn(2) * d(log((ynidn(-1)-ymsdn(-1))/pxb(-1)), 0, 1)
 + y_ynidn(3) * zynid

Defines:

ynidn, used in chunks 86d and 91.

Uses pxb 116d, qynidn 84b, y_ynidn 84f, ymsdn 218d, and zynid 195c.

84f $\langle \text{coefficient } y_ynidn \text{ 84f} \rangle \equiv$ (261)
 y_ynidn 3 0.0903554997290158, -0.1364018197288298, 1

Defines:

y_ynidn, used in chunk 84e.

2.6.20 f.20 YNICPN: Corporate profits (national income component)

$$85a \quad \langle \text{variable } YNICPN \text{ 85a} \rangle \equiv \quad (219)$$

$$YNICPN = \text{Corporate profits (national income component)}$$

Defines:

YNICPN, used in chunks 218a and 231.

$$85b \quad \langle \text{equation } ynicpn \text{ 85b} \rangle \equiv \quad (252)$$

$$ynicpn: ynicpn - ynicpn_aerr = uynicp * (@recode((ynin-yniln-yniin-ynisen-tfibn-tsibn+gfsubn+gs$$

Defines:

y nicpn , used in chunks 52b, 84b, 86d, 91a, 139a, 140c, 144f, 161c, 194d, and 197e.

Uses g fsubn 134d, g ssubn 137b, t fcin 139a, t fibn 139c, t scin 144f, t sibn 145b,

u ynicp 218a, x gdpn 78c, y niin 83d, y niln 82f, y nin 82d, and y nisen 83b.

2.6.21 f.21 YPN: Personal income

$$85c \quad \langle \text{variable } YPN \text{ 85c} \rangle \equiv \quad (219)$$

$$YPN = \text{Personal income}$$

Defines:

YPN, used in chunks 218b and 231.

$$85d \quad \langle \text{equation } ypn \text{ 85d} \rangle \equiv \quad (252)$$

$$ypn: ypn - ypn_aerr = uyp * (yhln + yhtn + yhptn)$$

Defines:

y pn , used in chunks 85f, 139e, and 145d.

Uses u yp 218b, y hl n 89f, y hptn 91e, and y htn 93d.

2.6.22 f.22 YDN: Disposable income

$$85e \quad \langle \text{variable } YDN \text{ 85e} \rangle \equiv \quad (219)$$

$$YDN = \text{Disposable income}$$

Defines:

YDN, used in chunks 217a and 231.

$$85f \quad \langle \text{equation } ydn \text{ 85f} \rangle \equiv \quad (252)$$

$$ydn: ydn - ydn_aerr = uyd * (ypn - tfpn - tspn)$$

Defines:

y dn , used in chunks 86b and 163a.

Uses t fpn 139e, t spn 145d, u yd 217a, and y pn 85d.

2.6.23 f.23 RSPNIA: Personal saving rate

86a $\langle \text{variable } RSPNIA \text{ 86a} \rangle \equiv$ (219)
 RSPNIA = Personal saving rate

Defines:
 RSPNIA, used in chunk 231.

86b $\langle \text{equation } rspnia \text{ 86b} \rangle \equiv$ (252)
 rspnia: rspnia - rspnia_aerr = 100 * yhsn / ydn

Defines:
 rspnia, never used.
 Uses ydn 85f and yhsn 92d.

2.6.24 f.24 YCSN: Net corporate cash flow with IVA and CCA

86c $\langle \text{variable } YCSN \text{ 86c} \rangle \equiv$ (219)
 YCSN = Net corporate cash flow with IVA and CCA

Defines:
 YCSN, used in chunk 231.

86d $\langle \text{equation } ycsn \text{ 86d} \rangle \equiv$ (252)
 ycsn: ycsn - ycsn_aerr = ynicpn - tfcin - tscin - ftcin - ynidn + jccacn

Defines:
 ycsn, never used.
 Uses ftcin 52b, jccacn 80a, tfcin 139a, tscin 144f, ynicpn 85b, and ynidn 84e.

2.6.25 f.25 YKIN: Income from stock of inventories

86e $\langle \text{variable } YKIN \text{ 86e} \rangle \equiv$ (219)
 YKIN = Income from stock of inventories

Defines:
 YKIN, used in chunk 231.

86f $\langle \text{equation } ykin \text{ 86f} \rangle \equiv$ (252)
 ykin: ykin - ykin_aerr = .01*rtinv*pxb* (ki + ki(-1)) /2

Defines:
 ykin, used in chunk 39a.
 Uses ki 35b, pxb 116d, and rtinv 41b.

2.6.26 f.26 YKPDN: Income from stock of equipment

$$87a \quad \langle \text{variable } YKPDN \text{ 87a} \rangle \equiv \quad (219)$$

$$YKPDN = \text{Income from stock of equipment}$$

Defines:

`YKPDN`, used in chunk 231.

$$87b \quad \langle \text{equation } ykpdn \text{ 87b} \rangle \equiv \quad (252)$$

$$ykpdn: ykpdn - ykpdn_aerr = .01 * rtpd * pxb * (kpd + kpd(-1)) / 2$$

Defines:

`ykpdn`, used in chunk 39a.

Uses `kpd` 37g, `pxb` 116d, and `rtpd` 40a.

2.6.27 f.27 YKPSN: Income from stock of nonresidential structures

$$87c \quad \langle \text{variable } YKPSN \text{ 87c} \rangle \equiv \quad (219)$$

$$YKPSN = \text{Income from stock of nonresidential structures}$$

Defines:

`YKPSN`, used in chunk 231.

$$87d \quad \langle \text{equation } ykpsn \text{ 87d} \rangle \equiv \quad (252)$$

$$ykpsn: ykpsn - ykpsn_aerr = .01 * rtps * pxb * (kps + kps(-1)) / 2$$

Defines:

`ykpsn`, used in chunk 39a.

Uses `kps` 38d, `pxb` 116d, and `rtps` 40e.

2.6.28 f.28 YH: Income, household, total (real after-tax)

$$87e \quad \langle \text{variable } YH \text{ 87e} \rangle \equiv \quad (219)$$

$$YH = \text{Income, household, total (real after-tax)}$$

Defines:

`YH`, used in chunks 90c, 91b, 93, and 231.

$$87f \quad \langle \text{equation } yh \text{ 87f} \rangle \equiv \quad (252)$$

$$yh: yh - yh_aerr = yhl + yht + yhp$$

Defines:

`yh`, used in chunks 91–93.

Uses `yhl` 89d, `yhp` 90b, and `yht` 92f.

2.6.29 f.29 YHGAP: Income, household, total, ratio to XGDP, cyclical component (real after-tax)

88a $\langle \text{variable } YHGAP \text{ 88a} \rangle \equiv$ (219)
 $YHGAP = \text{Income, household, total, ratio to XGDP, cyclical component (real after-tax)}$
 Defines:
 $YHGAP$, used in chunk 231.
 Uses $XGDP$ 56c.

88b $\langle \text{equation } yhgap \text{ 88b} \rangle \equiv$ (252)
 $yhgap: yhgap - yhgap_aerr = 100*(yhshr/zyhst-1)$

Defines:
 $yhgap$, used in chunks 187–89, 196, and 197b.
 Uses $yhshr$ 92b and $zyhst$ 175a.

2.6.30 f.30 YHIBN: Consumer interest payments to business

88c $\langle \text{variable } YHIBN \text{ 88c} \rangle \equiv$ (219)
 $YHIBN = \text{Consumer interest payments to business}$
 Defines:
 $YHIBN$, used in chunk 231.

88d $\langle \text{equation } yhibn \text{ 88d} \rangle \equiv$ (252)
 $yhibn: d(\log(yhibn), 0, 1) - yhibn_aerr _$
 $= y_yhibn(1) * (\text{picxfe}/1600 + \text{picxfe}(-1)/1600 + \text{picxfe}(-2)/1600$
 $+ y_yhibn(2) _$
 $+ y_yhibn(3) * \log(\text{ecnian}(-1)/yhibn(-1)) _$
 $+ y_yhibn(4) * (d(\log(yhibn(-1)), 0, 1) - (\text{picxfe}(-1)/1600$
 $+ y_yhibn(5) * d79a _$
 $+ y_yhibn(6) * \text{rcar}(-1) _$
 $+ y_yhibn(7) * \log(.01*\text{pcdr}(-1)*\text{pcnia}(-1)*\text{ecd}(-1)/\text{ecnian}(-1)) _$
 $+ y_yhibn(8) * d(\text{rffe}, 0, 1)$

Defines:
 $yhibn$, used in chunks 89b, 91a, 92d, and 163a.
 Uses ecd 26b, $ecnian$ 30a, $pcdr$ 120f, $pcnia$ 97b, $picxfe$ 95b, $rcar$ 159d, $rffe$ 152e,
 and y_yhibn 88e.

88e $\langle \text{coefficient } y_yhibn \text{ 88e} \rangle \equiv$ (261)
 $y_yhibn \text{ 8 } 1, -0.1336307554530098, 0.06545518537060361, 0.2942182559897778, 0.023569$
 Defines:
 y_yhibn , used in chunk 88d.

2.6.31 f.31 YHIN: Income, household, net interest and rent

$$89a \quad \langle \text{variable } YHIN \text{ 89a} \rangle \equiv \quad (219)$$

$$YHIN = \text{Income, household, net interest and rent}$$

Defines:

$YHIN$, used in chunks 217b and 231.

$$89b \quad \langle \text{equation } yhin \text{ 89b} \rangle \equiv \quad (252)$$

$$yhin: yhin - yhin_aerr = uyhi * (yniin + gfintn + gsintn + yhibn)$$

Defines:

$yhin$, used in chunk 91e.

Uses $gfintn$ 132c, $gsintn$ 136c, $uyhi$ 217b, $yhibn$ 88d, and $yniin$ 83d.

2.6.32 f.32 YHL: Income, household, labor compensation (real after-tax)

$$89c \quad \langle \text{variable } YHL \text{ 89c} \rangle \equiv \quad (219)$$

$$YHL = \text{Income, household, labor compensation (real after-tax)}$$

Defines:

YHL , used in chunk 231.

$$89d \quad \langle \text{equation } yhl \text{ 89d} \rangle \equiv \quad (252)$$

$$yhl: yhl - yhl_aerr = (1 - tryh) * yhln / (.01 * pcnia)$$

Defines:

yhl , used in chunks 25b and 87f.

Uses $pcnia$ 97b, $tryh$ 146f, and $yhln$ 89f.

2.6.33 f.33 YHLN: Income, household, labor compensation

$$89e \quad \langle \text{variable } YHLN \text{ 89e} \rangle \equiv \quad (219)$$

$$YHLN = \text{Income, household, labor compensation}$$

Defines:

$YHLN$, used in chunks 217c and 231.

$$89f \quad \langle \text{equation } yhln \text{ 89f} \rangle \equiv \quad (252)$$

$$yhln: yhln - yhln_aerr = uyhln * (yniln - tfsin - tssin)$$

Defines:

$yhln$, used in chunks 85d, 89d, 92d, and 146f.

Uses $tfsin$ 140a, $tssin$ 145f, $uyhln$ 217c, and $yniln$ 82f.

2.6.34 f.34 YHP: Income, household, property (real after-tax)

$$90a \quad \langle \text{variable } YHP \text{ 90a} \rangle \equiv \text{YHP} = \text{Income, household, property (real after-tax)} \quad (219)$$

Defines:

YHP, used in chunk 231.

$$90b \quad \langle \text{equation } yhp \text{ 90b} \rangle \equiv \text{yhp: yhp} - \text{yhp_aerr} = ((1 - \text{tryh}) * \text{yhptn} + \text{yhpntn}) / (.01 * \text{pcnia}) \quad (252)$$

Defines:

yhp, used in chunks 87f and 91c.

Uses pcnia 97b, tryh 146f, yhpntn 91a, and yhptn 91e.

2.6.35 f.35 YHPGAP: Income, household, property, ratio to YH, cyclical component (real after-tax)

$$90c \quad \langle \text{variable } YHPGAP \text{ 90c} \rangle \equiv \text{YHPGAP} = \text{Income, household, property, ratio to YH, cyclical component (real after-tax)} \quad (219)$$

Defines:

YHPGAP, used in chunk 231.

Uses YH 87e.

$$90d \quad \langle \text{equation } yhpgap \text{ 90d} \rangle \equiv \text{yhpgap: yhpgap} - \text{yhpgap_aerr} = 100 * (\text{yhpshr} / \text{zyhpst} - 1) \quad (252)$$

Defines:

yhpgap, used in chunks 187–89 and 196d.

Uses yhpshr 91c and zyhpst 175d.

2.6.36 f.36 YHPNTN: Income, household, property, non-taxable component

$$90e \quad \langle \text{variable } YHPNTN \text{ 90e} \rangle \equiv \text{YHPNTN} = \text{Income, household, property, non-taxable component} \quad (219)$$

Defines:

YHPNTN, used in chunks 182d and 231.

91a $\langle \text{equation } yhpntn \text{ 91a} \rangle \equiv$ (252)

$$\begin{aligned} yhpntn: yhpntn - yhpntn_aerr = & .01*pcnia*pcdr*yhpcd _ \\ & - yhibn + ynicpn - tfcin - tscin - ynidn _ \\ & - .01 * zpi10 *(gfdbtn+gsdbtn) \end{aligned}$$

Defines:

`yhpntn`, used in chunk 90b.

Uses `gfdbtn` 132a, `gsdbtn` 136a, `pcdr` 120f, `pcnia` 97b, `tfcin` 139a, `tscin` 144f, `yhibn` 88d, `yhpcd` 32e, `ynicpn` 85b, `ynidn` 84e, and `zpi10` 182e.

2.6.37 f.37 YHPSHR: Income, household, property, ratio to YH (real after-tax)

91b $\langle \text{variable } YHPSHR \text{ 91b} \rangle \equiv$ (219)

$$YHPSHR = \text{Income, household, property, ratio to YH (real after-tax)}$$

Defines:

`YHPSHR`, used in chunk 231.

Uses `YH` 87e.

91c $\langle \text{equation } yhpshr \text{ 91c} \rangle \equiv$ (252)

$$yhpshr: yhpshr - yhpshr_aerr = yhp/yh$$

Defines:

`yhpshr`, used in chunks 90d and 175d.

Uses `yh` 87f and `yhp` 90b.

2.6.38 f.38 YHPTN: Income, household, property, taxable component

91d $\langle \text{variable } YHPTN \text{ 91d} \rangle \equiv$ (219)

$$YHPTN = \text{Income, household, property, taxable component}$$

Defines:

`YHPTN`, used in chunks 217d and 231.

91e $\langle \text{equation } yhptn \text{ 91e} \rangle \equiv$ (252)

$$yhptn: yhptn - yhptn_aerr = uyhptn*(ynisen+yhin+ynidn)$$

Defines:

`yhptn`, used in chunks 85d, 90b, 92d, and 146f.

Uses `uyhptn` 217d, `yhin` 89b, `ynidn` 84e, and `ynisen` 83b.

$\langle \text{variable } YHSHR \text{ 92a} \rangle \equiv$ (219)
 $YHSHR = \text{Income, household, total, ratio to XGDP (real after-tax)}$
 Defines:
 $YHSHR$, used in chunk 231.
 Uses $XGDP$ 56c.

Defines:
YHSR, used in chunk 231.
 Uses **XGDP** 56c.

Defines:
 yhshr, used in chunks 88b and 175a.
 Uses **xgdp** 57a and **yh** 87f.

Defines:
YHSN, used in chunk 231.

Defines:
 yhsn, used in chunk 86b.
 Uses ecnian 30a, tfpn 139e, tspn 145d, uyhsn 217e, xgdptn 69a, yhbn 88d, yhln 89f,
 yhptn 91e, and yhtn 93d.

Defines:
YHT, used in chunk 231.

Defines:
`yht`, used in chunks 25b, 87f, and 93f.
 Uses `pcnia` 97b and `yhtn` 93d.

2.6.42 f.42 YHTGAP: Income, household, transfer, ratio to YH, cyclical component (real after-tax)

93a $\langle \text{variable } YHTGAP \text{ 93a} \rangle \equiv$ (219)
 $YHTGAP = \text{Income, household, transfer, ratio to YH, cyclical component (real after-tax)}$
 Defines:
 $YHTGAP$, used in chunk 231.
 Uses YH 87e.

93b $\langle \text{equation } yhtgap \text{ 93b} \rangle \equiv$ (252)
 $yhtgap: yhtgap - yhtgap_aerr = 100*(yhtshr/zyhtst-1)$

Defines:
 $yhtgap$, used in chunks 187–89 and 197b.
 Uses $yhtshr$ 93f and $zyhtst$ 176a.

2.6.43 f.43 YHTN: Income, household, transfer payments. net basis

93c $\langle \text{variable } YHTN \text{ 93c} \rangle \equiv$ (219)
 $YHTN = \text{Income, household, transfer payments. net basis}$
 Defines:
 $YHTN$, used in chunks 217f and 231.

93d $\langle \text{equation } yhtn \text{ 93d} \rangle \equiv$ (252)
 $yhtn: yhtn - yhtn_aerr = uyhtn*(gftn+gstn)$

Defines:
 $yhtn$, used in chunks 85d and 92.
 Uses $gftn$ 135b, $gstn$ 137d, and $uyhtn$ 217f.

2.6.44 f.44 YHTSHR: Income, household, transfer, ratio to YH (real after-tax)

93e $\langle \text{variable } YHTSHR \text{ 93e} \rangle \equiv$ (219)
 $YHTSHR = \text{Income, household, transfer, ratio to YH (real after-tax)}$
 Defines:
 $YHTSHR$, used in chunk 231.
 Uses YH 87e.

93f $\langle \text{equation } yhtshr \text{ 93f} \rangle \equiv$ (252)
 $yhtshr: yhtshr - yhtshr_aerr = yht/yh$

Defines:
 $yhtshr$, used in chunks 93b and 176a.
 Uses yh 87f and yht 92f.

2.6.45 f.45 WDNFCN: Net financial liabilities, nonfinancial nonfarm corporations

94a $\langle \text{variable } WDNFCN \text{ 94a} \rangle \equiv$ (219)
 WDNFCN = Net financial liabilities, nonfinancial nonfarm corporations
 Defines:
 WDNFCN, used in chunk 231.

94b $\langle \text{equation } wdnfcn \text{ 94b} \rangle \equiv$ (252)
 wdnfcn: d(log(wdnfcn), 0, 1) - wdnfcn_aerr _
 = y_wdnfcn(1) * log(wdnfcn(-1)/(ynin(-1)-yniln(-1))) _
 + y_wdnfcn(2) _
 + y_wdnfcn(3) * d(log(wdnfcn(-1)), 0, 1) _
 + y_wdnfcn(4) * d(log(wdnfcn(-2)), 0, 1) _
 + y_wdnfcn(5) * xgap2

Defines:
 wdnfcn, used in chunk 83d.
 Uses xgap2 67c, y_wdnfcn 94c, yniln 82f, and ynin 82d.

94c $\langle \text{coefficient } y_wdnfcn \text{ 94c} \rangle \equiv$ (261)
 y_wdnfcn 5 -0.02207644135378071, 0.01442097831747879, 0.2375257265379373,
 Defines:
 y_wdnfcn, used in chunk 94b.

2.6.46 f.46 XGDIN: Gross domestic income, current \$

94d $\langle \text{variable } XGDIN \text{ 94d} \rangle \equiv$ (219)
 XGDIN = Gross domestic income, current \$
 Defines:
 XGDIN, used in chunk 231.

94e $\langle \text{equation } xgdin \text{ 94e} \rangle \equiv$ (252)
 xgdin: xgdin - xgdin_aerr = xgdi *(pgdp/100)

Defines:
 xgdin, used in chunk 82d.
 Uses pgdp 114f and xgdi 64a.

2.7 Wages and Prices

2.7.1 g.1 PICXFE: Inflation rate, personal consumption expenditures, ex. food and energy, cw

95a $\langle \text{variable PICXFE 95a} \rangle \equiv$ (219)
 PICXFE = Inflation rate, personal consumption expenditures, ex. food and energy, cw
 Defines:
 PICXFE, used in chunk 231.
 Uses ex 47c.

95b $\langle \text{equation picxfe 95b} \rangle \equiv$ (252)
 picxfe: picxfe - picxfe_aerr = (y_picxfe(1)*picxfe(-1) _
 + y_picxfe(3)*zpicxfe _
 + (1-y_picxfe(3))*(1-y_picxfe(1))*ptr(-1) _
 + y_picxfe(2)*400*log(qpcnia(-1)/pcnia(-1))) / (1+y_picxfe(1)*y_picxfe(3))

Defines:
 picxfe, used in chunks 88d, 96f, 109d, 147–50, 153e, 176d, 184–86, and 231.
 Uses pcnia 97b, ptr 176d, qpcnia 100f, y_picxfe 95c, and zpicxfe 185a.

95c $\langle \text{coefficient y-picxfe 95c} \rangle \equiv$ (261)
 y_picxfe 3 0.644974342322, 0.00373609153735, 0.98
 Defines:
 y_picxfe, used in chunk 95b.

2.7.2 g.2 PIECI: Annualized rate of growth of EI hourly compensation

95d $\langle \text{variable PIECI 95d} \rangle \equiv$ (219)
 PIECI = Annualized rate of growth of EI hourly compensation
 Defines:
 PIECI, used in chunk 231.
 Uses EI 35d.

95e $\langle \text{equation pieci 95e} \rangle \equiv$ (252)
 pieci: pieci - pieci_aerr = (.25*y_pieci(1)*((1-y_pieci(4))*(pieci(-1)+pieci(-2)+pieci(-3)) + p
 + y_pieci(4)*zpieci _
 + (1-y_pieci(4))*(1-y_pieci(1))*(ptr(-1) + hlprdt(-1) - 400*huqpct(-1)) _
 + y_pieci(2)*(lur(-1)-lurnat(-1)) _
 + y_pieci(3)*400*log(qpl(-1)/pl(-1))) / (1+.25*y_pieci(1)*y_pieci(4))

Defines:
 pieci, used in chunks 98b, 185, 186a, and 231.
 Uses hlprdt 77c, huqpct 108d, lur 73f, lurnat 77e, pl 98d, ptr 176d, qpl 100a, y_pieci 96a,
 and zpieci 186a.

96a $\langle \text{coefficient } y_pieci \text{ 96a} \rangle \equiv$ (261)
 $y_pieci \ 4 \quad 0.811777544324, -0.0148780773818, 0.00186804576867, 0.98$

Defines:
 y_pieci , used in chunk 95e.

2.7.3 g.3 PIPXNC: Inflation rate, price of adjusted final sales excluding consumption (annual rate)

96b $\langle \text{variable } PIPXNC \text{ 96b} \rangle \equiv$ (219)
 $PIPXNC = \text{Inflation rate, price of adjusted final sales excluding consumption (annual rate)}$

Defines:
 $PIPXNC$, used in chunk 231.

96c $\langle \text{equation } pipxnc \text{ 96c} \rangle \equiv$ (252)

$$\begin{aligned} pipxnc: pipxnc - pipxnc_aerr = & picnia - 1.99 * 400 * huqpcr_ \\ & + y_pipxnc(1) * (pipxnc(-1) - picnia(-1) + 1.99 * 400 * huqpcr(-1) \\ & + y_pipxnc(2) * (pipxnc(-2) - picnia(-2) + 1.99 * 400 * huqpcr(-2) \\ & + y_pipxnc(3) * .5 * ((emon/xpn) + (emon(-1)/xpn(-1)))) * 4 \end{aligned}$$

Defines:
 $pipxnc$, used in chunks 98f and 101–106.
 Uses $emon$ 48e, $fpxr$ 171d, $huqpcr$ 108d, $picnia$ 96f, xpn 78a, and y_pipxnc 96d.

96d $\langle \text{coefficient } y_pipxnc \text{ 96d} \rangle \equiv$ (261)
 $y_pipxnc \quad 3 \quad .462801, .229745, -.284477$

Defines:
 y_pipxnc , used in chunk 96c.

2.7.4 g.4 PICNIA: Inflation rate, personal consumption expenditures, cw

96e $\langle \text{variable } PICNIA \text{ 96e} \rangle \equiv$ (219)
 $PICNIA = \text{Inflation rate, personal consumption expenditures, cw}$

Defines:
 $PICNIA$, used in chunk 231.

96f $\langle \text{equation } picnia \text{ 96f} \rangle \equiv$ (252)

$$\begin{aligned} picnia: picnia - picnia_aerr = & picxfe_ \\ & + ((ucfs + ucfs(-1)) / 2) * 400 * d(\log(pcfcr), 0, 1) _ \\ & + ((uces + uces(-1)) / 2) * 400 * d(\log(pcer), 0, 1) \end{aligned}$$

Defines:
 $picnia$, used in chunks 96c, 97b, 140c, 149c, 178–84, and 187–97.
 Uses $pcer$ 111c, $pcfr$ 112a, $picxfe$ 95b, $uces$ 112d, and $ucfs$ 113b.

2.7.5 g.5 PCNIA: Price index for personal consumption expenditures, cw (NIPA definition)

97a $\langle \text{variable } PCNIA \text{ 97a} \rangle \equiv$ (219)
 $PCNIA = \text{Price index for personal consumption expenditures, cw (NIPA definition)}$

Defines:

$PCNIA$, used in chunks 107f, 108c, 119, 120e, 207f, and 231.

97b $\langle \text{equation } pcnia \text{ 97b} \rangle \equiv$ (252)
 $pcnia: d(\log(pcnia), 0, 1) - pcnia_aerr = picnia / 400$

Defines:

$pcnia$, used in chunks 29, 30a, 32c, 88–92, 95b, 97d, 101b, 107d, 119c, 121c, 149c, 161–64, 185a, and 186a.

Uses $picnia$ 96f.

2.7.6 g.6 PCPI: Consumer price index,total

97c $\langle \text{variable } PCPI \text{ 97c} \rangle \equiv$ (219)
 $PCPI = \text{Consumer price index,total}$

Defines:

$PCPI$, used in chunks 215c and 231.

97d $\langle \text{equation } pcpi \text{ 97d} \rangle \equiv$ (252)
 $pcpi: pcpi - pcpi_aerr = upcpi * \exp(.025 * \log(pcer)) * pcnia$

Defines:

$pcpi$, used in chunk 172d.

Uses $pcer$ 111c, $pcnia$ 97b, and $upcpi$ 215c.

2.7.7 g.7 PCPIX: Consumer price index,excluding food and energy

97e $\langle \text{variable } PCPIX \text{ 97e} \rangle \equiv$ (219)
 $PCPIX = \text{Consumer price index,excluding food and energy}$

Defines:

$PCPIX$, used in chunks 215d and 231.

97f $\langle \text{equation } pcpix \text{ 97f} \rangle \equiv$ (252)
 $pcpix: pcpix - pcpix_aerr = upcpix * pcxfe$

Defines:

$pcpix$, never used.

Uses $pcxfe$ 109d and $upcpix$ 215d.

2.7.8 g.8 PIPL: Rate of growth of PL

$$\langle \text{variable } PIPL \text{ 98a} \rangle \equiv \quad (219)$$

$$PIPL = \text{Rate of growth of PL}$$

Defines:

PIPL, used in chunk 231.

Uses PL 98c.

$$\langle \text{equation } pipl \text{ 98b} \rangle \equiv \quad (252)$$

$$pipl: pipl - pipl_aerr = pieci$$

Defines:

pipl, used in chunk 98d.

Uses pieci 95e.

2.7.9 g.9 PL: Compensation per hour, business

$$\langle \text{variable } PL \text{ 98c} \rangle \equiv \quad (219)$$

$$PL = \text{Compensation per hour, business}$$

Defines:

PL, used in chunks 98a and 231.

$$\langle \text{equation } pl \text{ 98d} \rangle \equiv \quad (252)$$

$$pl: \log(pl) - pl_aerr = \log(pl(-1)) + pipl/400$$

Defines:

pl, used in chunks 82f, 95e, 99e, 100a, 107b, 115, 185a, and 186a.

Uses pipl 98b.

2.7.10 g.10 PXNC: Price of adjusted final sales excluding consumption

$$\langle \text{variable } PXNC \text{ 98e} \rangle \equiv \quad (219)$$

$$PXNC = \text{Price of adjusted final sales excluding consumption}$$

Defines:

PXNC, used in chunk 231.

$$\langle \text{equation } pxnc \text{ 98f} \rangle \equiv \quad (252)$$

$$pxnc: d(\log(pxnc), 0, 1) - pxnc_aerr = pipxnc/400$$

Defines:

pxnc, used in chunks 101b and 107d.

Uses pipxnc 96c.

2.7.11 g.11 PWSTAR: Equilibrium business sector price markup

99a $\langle \text{variable } PWSTAR \text{ 99a} \rangle \equiv$ (219)

`PWSTAR` = Equilibrium NFB price markup

Defines:

`PWSTAR`, used in chunk 231.

99b $\langle \text{equation } pwstar \text{ 99b} \rangle \equiv$ (252)

`pwstar`: `pwstar - pwstar_aerr = y_pwstar(1) + y_pwstar(2)*pwstar(-1)`

Defines:

`pwstr`, never used.

Uses `y_pwstar` 99c.

99c $\langle \text{coefficient } y_pwstar \text{ 99c} \rangle \equiv$ (261)

`y_pwstar` 2 0.00, 1.00

Defines:

`y_pwstar`, used in chunk 99b.

2.7.12 g.12 QPXG: Desired price level of private output ex. energy, housing, and farm

99d $\langle \text{variable } QPXG \text{ 99d} \rangle \equiv$ (219)

`QPXG` = Desired price level of private output ex. energy, housing, and farm

Defines:

`QPXG`, used in chunk 231.

Uses `ex` 47c.

99e $\langle \text{equation } qpxg \text{ 99e} \rangle \equiv$ (252)

`qpxg`: `log(qpxg) - qpxg_aerr = log(pwstar) + y_qpxg(1) + y_qpxg(2)*log(pl/lprdt)`

Defines:

`qpxg`, used in chunk 100.

Uses `lprdt` 77a, `pl` 98d, and `y_qpxg` 99f.

99f $\langle \text{coefficient } y_qpxg \text{ 99f} \rangle \equiv$ (261)

`y_qpxg` 2 0.0, 1

Defines:

`y_qpxg`, used in chunk 99e.

2.7.13 g.13 QPL: Desired level of compensation per hour, trending component

99g $\langle \text{variable } QPL \text{ 99g} \rangle \equiv$ (219)

`QPL` = Desired level of compensation per hour, trending component

Defines:

`QPL`, used in chunk 231.

$$100a \quad \langle \text{equation } qpl \text{ } 100a \rangle \equiv \quad (252)$$

$$qpl: \log(qpl) - qpl_aerr = \log(pl) + y_qpl(1) * \log(pxg/qpxg)$$

Defines:

qpl, used in chunks 95e, 185a, and 186a.

Uses **pl** 98d, **pxg** 116b, **qpxg** 99e, and **y_qpl** 100b.

$$100b \quad \langle \text{coefficient } y_qpl \text{ } 100b \rangle \equiv \quad (261)$$

$$y_qpl \quad 1 \quad 1.0$$

Defines:

y_qpl, used in chunk 100a.

2.7.14 g.14 QPXP: Desired price level of adjusted final sales

$$100c \quad \langle \text{variable } QPXP \text{ } 100c \rangle \equiv \quad (219)$$

$$QPXP \quad = \text{Desired price level of adjusted final sales}$$

Defines:

QPXP, used in chunk 231.

$$100d \quad \langle \text{equation } qpxp \text{ } 100d \rangle \equiv \quad (252)$$

$$qpxp: qpxp - qpxp_aerr = 100*(xpn + (.01*qpxg*xg-xgn))/xp$$

Defines:

qpxp, used in chunks 100f and 107d.

Uses **qpxg** 99e, **xg** 60a, **xgn** 79e, **xp** 59a, and **xpn** 78a.

2.7.15 g.15 QPCNIA: Desired level of consumption price

$$100e \quad \langle \text{variable } QPCNIA \text{ } 100e \rangle \equiv \quad (219)$$

$$QPCNIA \quad = \text{Desired level of consumption price}$$

Defines:

QPCNIA, used in chunk 231.

$$100f \quad \langle \text{equation } qpcnia \text{ } 100f \rangle \equiv \quad (252)$$

$$qpcnia: \log(qpcnia) - qpcnia_aerr = \log(qpxp) + \log(uqpct)$$

Defines:

qpcnia, used in chunks 95b, 107d, 185a, and 186a.

Uses **qpxp** 100d and **uqpct** 108a.

2.7.16 g.16 PXP: Price index for final sales plus imports less gov. labor

101a $\langle \text{variable } PXP \text{ 101a} \rangle \equiv$ (219)
 PXP = Price index for final sales plus imports less gov. labor

Defines:

PXP, used in chunks 101–105, 107f, 108c, 115d, 209d, and 231.

101b $\langle \text{equation } pxp \text{ 101b} \rangle \equiv$ (252)
 pxp: $d(\log(pxp), 0, 1) - pxp_aerr =$
 $.5 * (ecnian/xpn + ecnian(-1)/xpn(-1)) * d(\log(pcnia), 0, 1) -$
 $+ .5 * ((xpn - ecnian)/xpn + (xpn(-1) - ecnian(-1))/xpn(-1)) * d(\log(pxnc), 0, 1)$

Defines:

pxp, used in chunks 29a, 30c, 40, 41b, 43, 44, 47, 57a, 78a, 80, 83d, 101–107, 118e, 123, 126, 128, 131, and 140c.

Uses ecnian 30a, pcnia 97b, pxnc 98f, and xpn 78a.

2.7.17 g.17 PGFIR: Price index for federal gov. investment, cw (relative to PXP)

101c $\langle \text{variable } PGFIR \text{ 101c} \rangle \equiv$ (219)
 PGFIR = Price index for federal gov. investment, cw (relative to PXP)

Defines:

PGFIR, used in chunk 231.

Uses PXP 101a.

101d $\langle \text{equation } pgfir \text{ 101d} \rangle \equiv$ (252)
 pgfir: $\log(pgfir) - pgfir_aerr - \log(pgfir(-1)) = y_pgfir(1) + pipxnc/400 + dpadj - d(\log(pxp),$

Defines:

pgfir, used in chunks 106a and 123.

Uses dpadj 106c, pipxnc 96c, pxp 101b, and y_pgfir 101e.

101e $\langle \text{coefficient } y_pgfir \text{ 101e} \rangle \equiv$ (261)
 y_pgfir 1 0.0

Defines:

y_pgfir, used in chunk 101d.

2.7.18 g.18 PGFOR: Price index for federal governemnt consumption ex. emp. comp., cw (relative to PXP)

101f $\langle \text{variable } PGFOR \text{ 101f} \rangle \equiv$ (219)
 PGFOR = Price index for federal governemnt consumption ex. emp. comp., cw (relative to PXP)

Defines:

PGFOR, used in chunk 231.

Uses emp 49e, ex 47c, and PXP 101a.

$$102a \quad \langle \text{equation } pgfor \text{ } 102a \rangle \equiv \quad (252)$$

$$pgfor: \log(pgfor) - pgfor_aerr - \log(pgfor(-1)) = y_pgfor(1) + pipxnc/400 + dpadj - c$$

Defines:

pgfor, used in chunks 106a and 126.

Uses **dpadj** 106c, **pipxnc** 96c, **pxp** 101b, and **y_pgfor** 102b.

$$102b \quad \langle \text{coefficient } y_pgfor \text{ } 102b \rangle \equiv \quad (261)$$

$$y_pgfor \text{ } 1 \quad 0.0$$

Defines:

y_pgfor, used in chunk 102a.

2.7.19 g.19 PGSIR: Price index for S&L government investment (relative to PXP)

$$102c \quad \langle \text{variable } PGSIR \text{ } 102c \rangle \equiv \quad (219)$$

$$PGSIR \quad = \text{Price index for S\&L government investment (relative to PXP)}$$

Defines:

PGSIR, used in chunk 231.

Uses **PXP** 101a.

$$102d \quad \langle \text{equation } pgsir \text{ } 102d \rangle \equiv \quad (252)$$

$$pgsir: \log(pgsir) - pgsir_aerr - \log(pgsir(-1)) = y_pgsir(1) + pipxnc/400 + dpadj - c$$

Defines:

pgsir, used in chunks 106a and 128.

Uses **dpadj** 106c, **pipxnc** 96c, **pxp** 101b, and **y_pgsir** 102e.

$$102e \quad \langle \text{coefficient } y_pgsir \text{ } 102e \rangle \equiv \quad (261)$$

$$y_pgsir \text{ } 1 \quad 0.0$$

Defines:

y_pgsir, used in chunk 102d.

2.7.20 g.20 PGSOR: Price index for S&L government consumption ex. emp. comp., cw (relative to PXP)

$$102f \quad \langle \text{variable } PGSOR \text{ } 102f \rangle \equiv \quad (219)$$

$$PGSOR \quad = \text{Price index for S\&L government consumption ex. emp. comp., cw (relative to PXP)}$$

Defines:

PGSOR, used in chunk 231.

Uses **emp** 49e, **ex** 47c, and **PXP** 101a.

103a $\langle \text{equation } pgsor \text{ 103a} \rangle \equiv$ (252)

$$pgsor: \log(pgsor) - pgsor_aerr - \log(pgsor(-1)) = y_pgsor(1) + pipxnc/400 + dpadj - d(\log(pxp),$$

Defines:

pgsor, used in chunks 106a and 131.

Uses **dpadj** 106c, **pipxnc** 96c, **pxp** 101b, and **y_pgsor** 103b.

103b $\langle \text{coefficient } y_pgsor \text{ 103b} \rangle \equiv$ (261)

$$y_pgsor \quad 1 \quad \quad 0.0$$

Defines:

y_pgsor, used in chunk 103a.

2.7.21 g.21 PHR: Price index for residential investment, cw (relative to PXP)

103c $\langle \text{variable } PHR \text{ 103c} \rangle \equiv$ (219)

$$PHR \quad \quad = \text{Price index for residential investment, cw (relative to PXP)}$$

Defines:

PHR, used in chunk 231.

Uses **PXP** 101a.

103d $\langle \text{equation } phr \text{ 103d} \rangle \equiv$ (252)

$$phr: \log(phr) - phr_aerr - \log(phr(-1)) = y_phr(1) + pipxnc/400 + dpadj - d(\log(pxp), 0, 1)$$

Defines:

phr, used in chunks 29a, 30c, 80, 83d, and 106a.

Uses **dpadj** 106c, **pipxnc** 96c, **pxp** 101b, and **y_phr** 103e.

103e $\langle \text{coefficient } y_phr \text{ 103e} \rangle \equiv$ (261)

$$y_phr \quad 1 \quad \quad 0.0$$

Defines:

y_phr, used in chunk 103d.

2.7.22 g.22 PPDR: Price level of EPD compared to PXP

103f $\langle \text{variable } PPDR \text{ 103f} \rangle \equiv$ (219)

$$PPDR \quad \quad = \text{Price level of EPD compared to PXP}$$

Defines:

PPDR, used in chunks 116e and 231.

Uses **EPD** 33b and **PXP** 101a.

103g $\langle \text{equation } ppdr \text{ 103g} \rangle \equiv$ (252)

$$ppdr: \log(ppdr) - ppdr_aerr - \log(ppdr(-1)) = y_ppdr(1) + pipxnc/400 + dpadj - d(\log(pxp), 0, 1)$$

Defines:

ppdr, used in chunks 41d, 43d, 106a, 115e, 116f, and 140c.

Uses **dpadj** 106c, **pipxnc** 96c, **pxp** 101b, and **y_ppdr** 104a.

$$104a \quad \langle \text{coefficient } y_ppdr \text{ } 104a \rangle \equiv \text{y_ppdr } 1 \quad 0.0 \quad (261)$$

Defines:

`y_ppdr`, used in chunk 103g.

2.7.23 g.23 PPIR: Price level of EPI compared to PXP

$$104b \quad \langle \text{variable } PPIR \text{ } 104b \rangle \equiv \text{PPIR} = \text{Price level of EPI compared to PXP} \quad (219)$$

Defines:

`PPIR`, used in chunks 117b and 231.

Uses `EPI` 33e and `PXP` 101a.

$$104c \quad \langle \text{equation } ppir \text{ } 104c \rangle \equiv \text{ppir: } \log(\text{ppir}) - \text{ppir_aerr} - \log(\text{ppir}(-1)) = \text{pipxnc}/400 + \text{dpadj} - d(\log(\text{pxp}), 0, 1) \quad (252)$$

Defines:

`ppir`, used in chunks 40c, 43f, 106a, and 117c.

Uses `dpadj` 106c, `pipxnc` 96c, and `pxp` 101b.

2.7.24 g.24 PPSR: Price index for nonresidential structures, cw (relative to PXP)

$$104d \quad \langle \text{variable } PPSR \text{ } 104d \rangle \equiv \text{PPSR} = \text{Price index for nonresidential structures, cw (relative to PXP)} \quad (219)$$

Defines:

`PPSR`, used in chunks 118a and 231.

Uses `PXP` 101a.

$$104e \quad \langle \text{equation } ppsr \text{ } 104e \rangle \equiv \text{ppsr: } \log(\text{ppsr}) - \text{ppsr_aerr} - \log(\text{ppsr}(-1)) = \text{y_ppsr}(1) + \text{pipxnc}/400 + \text{dpadj} - d(\log(\text{pxp}), 0, 1) \quad (252)$$

Defines:

`ppsr`, used in chunks 40e, 44b, 80c, 106a, and 118b.

Uses `dpadj` 106c, `pipxnc` 96c, `pxp` 101b, and `y_ppsr` 104f.

$$104f \quad \langle \text{coefficient } y_ppsr \text{ } 104f \rangle \equiv \text{y_ppsr } 1 \quad 0.0 \quad (261)$$

Defines:

`y_ppsr`, used in chunk 104e.

2.7.25 g.25 PXR: Price index for exports, cw (relative to PXP)

$$105a \quad \langle \text{variable } PXR \text{ } 105a \rangle \equiv \quad (219)$$

$$PXR = \text{Price index for exports, cw (relative to PXP)}$$

Defines:

PXR, used in chunk 231.

Uses PXP 101a.

$$105b \quad \langle \text{equation } pxr \text{ } 105b \rangle \equiv \quad (252)$$

$$pxr: \log(pxr) - pxr_aerr - \log(pxr(-1)) = y_pxr(1) + pipxnc/400 + dpadj - d(\log(pxp), 0, 1)$$

Defines:

pxr, used in chunks 47 and 106a.

Uses dpadj 106c, pipxnc 96c, pxp 101b, and y_pxr 105c.

$$105c \quad \langle \text{coefficient } y_pxr \text{ } 105c \rangle \equiv \quad (261)$$

$$y_pxr \quad 1 \quad 0.0$$

Defines:

y_pxr, used in chunk 105b.

2.7.26 g.26 DPGAP: Price inflation aggregation discrepancy

$$105d \quad \langle \text{variable } DPGAP \text{ } 105d \rangle \equiv \quad (219)$$

$$DPGAP = \text{Price inflation aggregation discrepancy}$$

Defines:

DPGAP, used in chunk 231.

106a $\langle \text{equation } dpgap \text{ 106a} \rangle \equiv$ (252)

```

dpgap: dpgap - dpgap_aerr = pipxnc/400 - ( _
    .5 * (ehn/(xpn - ecnian)+ ehn(-1)/(xpn(-1) - ecnian(-1))) _
        * d(log(phr*pxp), 0, 1) _
    + .5 * (epdn/(xpn - ecnian)+ epdn(-1)/(xpn(-1) - ecnian(-1))) _
        * d(log(ppdr*pxp), 0, 1) _
    + .5 * (epin/(xpn - ecnian)+ epin(-1)/(xpn(-1) - ecnian(-1))) _
        * d(log(ppir*pxp), 0, 1) _
    + .5 * (epsn/(xpn - ecnian)+ epsn(-1)/(xpn(-1) - ecnian(-1))) _
        * d(log(ppsr*pxp), 0, 1) _
    + .5 * (egfon/(xpn - ecnian)+ egfon(-1)/(xpn(-1) - ecnian(-1))) _
        * d(log(pgfor*pxp), 0, 1) _
    + .5 * (egfin/(xpn - ecnian)+ egfin(-1)/(xpn(-1) - ecnian(-1))) _
        * d(log(pgfir*pxp), 0, 1) _
    + .5 * (egson/(xpn - ecnian)+ egson(-1)/(xpn(-1) - ecnian(-1))) _
        * d(log(pgsor*pxp), 0, 1) _
    + .5 * (egsin/(xpn - ecnian)+ egsin(-1)/(xpn(-1) - ecnian(-1))) _
        * d(log(pgsir*pxp), 0, 1) _
    + .5 * (exn/(xpn - ecnian)+ exn(-1)/(xpn(-1) - ecnian(-1))) _
        * d(log(pxr*pxp), 0, 1))

```

Defines:

dpgap, used in chunk 106c.

Uses **ecnian** 30a, **egfin** 123a, **egfon** 126b, **egsin** 128c, **egson** 131b, **ehn** 30c, **epdn** 43d, **epin** 43f, **epsn** 44b, **exn** 47f, **pgfir** 101d, **pgfor** 102a, **pgsir** 102d, **pgsor** 103a, **phr** 103d, **pipxnc** 96c, **ppdr** 103g, **ppir** 104c, **ppsr** 104e, **pxp** 101b, **pxr** 105b, and **xpn** 78a.

2.7.27 g.27 DPADJ: Price inflation aggregation adjustment

106b $\langle \text{variable } DPADJ \text{ 106b} \rangle \equiv$ (219)

```

DPADJ = Price inflation aggregation adjustment

```

Defines:

DPADJ, used in chunk 231.

106c $\langle \text{equation } dpadj \text{ 106c} \rangle \equiv$ (252)

```

dpadj: dpadj - dpadj_aerr - dpadj(-1) = y_dpadj(1) * dpgap(-1)

```

Defines:

dpadj, used in chunks 101–105.

Uses **dpgap** 106a and **y_dpadj** 106d.

106d $\langle \text{coefficient } y_dpadj \text{ 106d} \rangle \equiv$ (261)

```

y_dpadj 1 1.0000

```

Defines:

y_dpadj, used in chunk 106c.

2.7.28 g.28 PLMIN: Minimum wage

$$107a \quad \langle \text{variable } PLMIN \text{ } 107a \rangle \equiv \quad (219)$$

$$PLMIN = \text{Minimum wage}$$

Defines:

PLMIN, used in chunk 231.

$$107b \quad \langle \text{equation } plmin \text{ } 107b \rangle \equiv \quad (252)$$

$$plmin: plmin - plmin_aerr = plminr*.01*pl$$

Defines:

plmin, never used.

Uses pl 98d and plminr 209e.

2.7.29 g.29 QPXNC: Desired level of nonconsumption price

$$107c \quad \langle \text{variable } QPXNC \text{ } 107c \rangle \equiv \quad (219)$$

$$QPXNC = \text{Desired level of nonconsumption price}$$

Defines:

QPXNC, used in chunk 231.

$$107d \quad \langle \text{equation } qpxnc \text{ } 107d \rangle \equiv \quad (252)$$

$$qpxnc: \log(qpxnc) - qpxnc_aerr = \log(pxnc) -$$

$$+ y_qpxnc(1) * \log(qpxp/pxp) -$$

$$+ y_qpxnc(2) * \log(qpcnia/pcnia)$$

Defines:

qpxnc, never used.

Uses pcnia 97b, pxnc 98f, pxp 101b, qpcnia 100f, qpxp 100d, and y_qpxnc 107e.

$$107e \quad \langle \text{coefficient } y_qpxnc \text{ } 107e \rangle \equiv \quad (261)$$

$$y_qpxnc \quad 2 \quad 2.98507462687, -1.98507462687$$

Defines:

y_qpxnc, used in chunk 107d.

2.7.30 g.30 UQPCT: Stochastic component of trend ratio of PCNIA to PXP

$$107f \quad \langle \text{variable } UQPCT \text{ } 107f \rangle \equiv \quad (219)$$

$$UQPCT = \text{Stochastic component of trend ratio of PCNIA to PXP}$$

Defines:

UQPCT, used in chunk 231.

Uses PCNIA 97a and PXP 101a.

$$108a \quad \langle \text{equation } uqpct \text{ 108a} \rangle \equiv \quad (252)$$

$$uqpct: \log(uqpct) - uqpct_aerr = y_uqpct(1) + \log(uqpct(-1)) + huqpct$$

Defines:
uqpct, used in chunk 100f.
 Uses huqpct 108d and y_uqpct 108b.

$$108b \quad \langle \text{coefficient } y_uqpct \text{ 108b} \rangle \equiv \quad (261)$$

$$y_uqpct \quad 1 \quad 0.0$$

Defines:
y_uqpct, used in chunk 108a.

2.7.31 g.31 HUQPCT: Drift term in stochastic component of trend ratio of PCNIA to PXP

$$108c \quad \langle \text{variable } HUQPCT \text{ 108c} \rangle \equiv \quad (219)$$

$$HUQPCT = \text{Drift term in stochastic component of trend ratio of PCNIA to PXP}$$

Defines:
HUQPCT, used in chunk 231.
 Uses PCNIA 97a and PXP 101a.

$$108d \quad \langle \text{equation } huqpct \text{ 108d} \rangle \equiv \quad (252)$$

$$huqpct: huqpct - huqpct_aerr = y_huqpct(1) + y_huqpct(2)*huqpct(-1)$$

Defines:
huqpct, used in chunks 95e, 96c, 108a, 185a, and 186a.
 Uses y_huqpct 108e.

$$108e \quad \langle \text{coefficient } y_huqpct \text{ 108e} \rangle \equiv \quad (261)$$

$$y_huqpct \quad 2 \quad 0.00, 0.95$$

Defines:
y_huqpct, used in chunk 108d.

2.7.32 g.32 POILR: Price of imported oil, relative to price index for bus. sector output

$$108f \quad \langle \text{variable } POILR \text{ 108f} \rangle \equiv \quad (219)$$

$$POILR = \text{Price of imported oil, relative to price index for bus. sector output}$$

Defines:
POILR, used in chunk 231.

109a $\langle \text{equation } \textit{poilr} \text{ 109a} \rangle \equiv$ (252)

```

    poilr: d( log(poilr), 0, 1 ) - poilr_aerr _
              = y_poilr(1) * log(poilr(-1)/poilrt(-1)) _
              + y_poilr(2) _
              + y_poilr(3) * d( log(poilr(-1)), 0, 1 ) _
              + y_poilr(4) * d( log(poilrt), 0, 1 )

```

Defines:

`poilr`, used in chunks 109f, 110d, and 167e.

Uses `poilrt` 209f and `y_poilr` 109b.

109b $\langle \text{coefficient } \textit{y_poilr} \text{ 109b} \rangle \equiv$ (261)

```

    y_poilr 4      -0.2386347615324657, -0.003817963307816998, 0.3988973185364578, 0.2246596594065311

```

Defines:

`y_poilr`, used in chunk 109a.

2.7.33 g.33 PCXFE: Price index for personal consumption expendits ex. food and energy, cw (NIPA defini- tion)

109c $\langle \text{variable } \textit{PCXFE} \text{ 109c} \rangle \equiv$ (219)

```

    PCXFE      = Price index for personal consumption expendits ex. food and energy, cw (NIPA defini

```

Defines:

`PCXFE`, used in chunks 111 and 231.

Uses `ex` 47c.

109d $\langle \text{equation } \textit{pcxfe} \text{ 109d} \rangle \equiv$ (252)

```

    pcxfe: d(log(pcxfe), 0, 1) - pcxfe_aerr = picxfe/400

```

Defines:

`pcxfe`, used in chunks 97f, 111c, and 120d.

Uses `picxfe` 95b.

2.7.34 g.34 POIL: Price of imported oil (\$ per barrel)

109e $\langle \text{variable } \textit{POIL} \text{ 109e} \rangle \equiv$ (219)

```

    POIL      = Price of imported oil ($ per barrel)

```

Defines:

`POIL`, used in chunk 231.

109f $\langle \text{equation } \textit{poil} \text{ 109f} \rangle \equiv$ (252)

```

    poil: poil - poil_aerr = poilr*pxb

```

Defines:

`poil`, used in chunk 110b.

Uses `poilr` 109a and `pxb` 116d.

2.7.35 g.35 PMP: Price index for petroleum imports

$$110a \quad \langle variable \ PMP_{110a} \rangle \equiv \quad (219)$$

PMP = Price index for petroleum imports

Defines:
PMP, used in chunks 216a and 231.

110b $\langle equation \ pmp \ 110b \rangle \equiv$ (252)

pmp: pmp - pmp_aerr = upmp*poil

Defines:
 pmp, used in chunk 50a.
 Uses **poil** 109f and **upmp** 216a.

2.7.36 g.36 PCENGR: Price index for aggregate energy consumption (relative to PXB)

110c $\langle variable\ PCENGR\ 110c \rangle \equiv$ (219)
PCENGR = Price index for aggregate energy consumption (relative to PXB)

Defines:
PCENGR, used in chunk 231.
 Uses **PXB** 116c.

$$\begin{aligned} \text{110d} \quad \langle \text{equation } pcengr \text{ 110d} \rangle \equiv & \quad (252) \\ & pcengr: d(\log(pcengr), 0, 1) - pcengr_aerr - \\ & \quad = y_pcengr(1) - \\ & \quad + y_pcengr(2) * d(\log(pcengr(-1)), 0, 1) \\ & \quad + y_pcengr(3) * \log(pcengr(-1)) - \\ & \quad + y_pcengr(4) * \log(poilr(-1)) - \\ & \quad + y_pcengr(5) * d(\log(poilr), 0, 1) \end{aligned}$$

Defines:
 pcengr, used in chunk 111a.
 Uses **poilr** 109a and **y_pcengr** 110e.

$${}^{110}\text{e} \quad \langle \text{coefficient } y\text{-pcengr} \quad {}^{110}\text{e} \rangle \equiv \quad (261)$$

$$y_pcengr \quad 5 \quad 0.04621048926220116, -0.01053548206463643, -0.0961735014875454$$

Defines:
 y_pcengr, used in chunk 110d.

2.7.37 g.37 PCENG: Price index for aggregate energy consumption

$${}_{110f} \langle variable PCENG {}_{110f} \rangle \equiv \text{PCENG} = \text{Price index for aggregate energy consumption} \quad (219)$$

Defines:
PCENG, used in chunk 231.

$$111a \quad \langle \text{equation } pceng \text{ 111a} \rangle \equiv \quad (252)$$

$$pceng: pceng - pceng_aerr = pcengr*pxb$$

Defines:

pceng, used in chunks 60a, 61f, 63a, 68b, 111c, and 118e.

Uses **pcengr** 110d and **pxb** 116d.

2.7.38 g.38 PCER: Price index for personal consumption expenditures on energy (relative to PCXFE)

$$111b \quad \langle \text{variable } PCER \text{ 111b} \rangle \equiv \quad (219)$$

$$PCER = \text{Price index for personal consumption expenditures on energy (relative to PCXFE)}$$

Defines:

PCER, used in chunk 231.

Uses **PCXFE** 109c.

$$111c \quad \langle \text{equation } pcer \text{ 111c} \rangle \equiv \quad (252)$$

$$pcer: d(\log(pcer), 0, 1) - pcer_aerr _$$

$$= y_pcer(1) * \log((y_pcer(2) * pceng(-1) + (1-y_pcer(2))*pcxfe(-1))/(pcer(-1)$$

$$+ y_pcer(3) * d(\log((y_pcer(2) * pceng + (1-y_pcer(2))*pcxfe)/pcxfe), 0, 1)$$

$$+ y_pcer(4) * d(\log((y_pcer(2) * pceng(-1) + (1-y_pcer(2))*pcxfe(-1))/pcxfe$$

Defines:

pcer, used in chunks 96f, 97d, and 112d.

Uses **pceng** 111a, **pcxfe** 109d, and **y_pcer** 111d.

$$111d \quad \langle \text{coefficient } y_pcer \text{ 111d} \rangle \equiv \quad (261)$$

$$y_pcer \quad 4 \quad 0.1050137345817281, 0.5632388610140522, 0.6858569548199248, 0.04030768373454912$$

Defines:

y_pcer, used in chunk 111c.

2.7.39 g.39 PCFR: Price index for personal consumption expenditures on food (relative to PCXFE)

$$111e \quad \langle \text{variable } PCFR \text{ 111e} \rangle \equiv \quad (219)$$

$$PCFR = \text{Price index for personal consumption expenditures on food (relative to PCXFE)}$$

Defines:

PCFR, used in chunk 231.

Uses **PCXFE** 109c.

112a $\langle \text{equation } pcfr \text{ 112a} \rangle \equiv$ (252)

$$\begin{aligned} pcfr: & d(\log(pcfr), 0, 1) - pcfr_aerr_ \\ & = y_pcfr(1) * \log(pcfr(-1)/pcfrt(-1))_ \\ & + y_pcfr(2)_ \\ & + (y_pcfr(3) * d(\log(pcfr(-1)), 0, 1) + y_pcfr(4) * d(\log \\ & + y_pcfr(6) * d(\log(pcfrt), 0, 1)) \end{aligned}$$

Defines:

`pcfr`, used in chunks 96f and 113b.

Uses `pcfrt` 208i and `y_pcfr` 112b.

112b $\langle \text{coefficient } y_pcfr \text{ 112b} \rangle \equiv$ (261)

$$y_pcfr \quad 6 \quad -0.1757649679968763, -7.899990101672884e-05, 0.3777936884215714, 0.02349$$

Defines:

`y_pcfr`, used in chunk 112a.

2.7.40 g.40 UCES: Energy share of nominal consumption expenditures

112c $\langle \text{variable } UCES \text{ 112c} \rangle \equiv$ (219)

$$UCES = \text{Energy share of nominal consumption expenditures}$$

Defines:

`UCES`, used in chunk 231.

112d $\langle \text{equation } uces \text{ 112d} \rangle \equiv$ (252)

$$\begin{aligned} uces: & d(\log(uces), 0, 1) - uces_aerr_ \\ & = y_uces(1) * \log(uces(-1))_ \\ & + y_uces(2) * \log(pcer(-1))_ \\ & + y_uces(3) * \log(ceng(-1)/xg(-1))_ \\ & + y_uces(4) * t47_ \\ & + y_uces(5)_ \\ & + y_uces(6) * d(\log(uces(-1)), 0, 1)_ \\ & + y_uces(7) * d(\log(pcer), 0, 1)_ \\ & + y_uces(8) * d(\log(ceng/xg), 0, 1) \end{aligned}$$

Defines:

`uces`, used in chunk 96f.

Uses `ceng` 49b, `pcer` 111c, `t47` 210e, `xg` 60a, and `y_uces` 112e.

112e $\langle \text{coefficient } y_uces \text{ 112e} \rangle \equiv$ (261)

$$y_uces \quad 8 \quad -0.1834529206587357, 0.1554187181683198, 0.08000391518229149, -0.000441$$

Defines:

`y_uces`, used in chunk 112d.

2.7.41 g.41 UCFS: Food share of nominal consumption expenditures

113a $\langle \text{variable } UCFS \text{ 113a} \rangle \equiv$ (219)
 UCFS = Food share of nominal consumption expenditures

Defines:

UCFS, used in chunk 231.

113b $\langle \text{equation } ucfs \text{ 113b} \rangle \equiv$ (252)
 ucfs: d(log(ucfs), 0, 1) - ucfs_aerr _
 = y_ucfs(1) * log(ucfs(-1)) _
 + y_ucfs(2) * log(pcf(-1)) _
 + y_ucfs(3) * t47 _
 + y_ucfs(4) _
 + y_ucfs(5) * d(log(ucfs(-1)), 0, 1) _
 + y_ucfs(6) * d(log(pcf), 0, 1) _
 + y_ucfs(7) * d(log(pcf/pcf), 0, 1)

Defines:

ucfs, used in chunk 96f.

Uses pcf 112a, pcf 208i, t47 210e, and y_ucfs 113c.

113c $\langle \text{coefficient } y_ucfs \text{ 113c} \rangle \equiv$ (261)
 y_ucfs 7 -0.03523462021069426, 0.0453107908363, -0.0001497160154925362, -0.0564600435216084

Defines:

y_ucfs, used in chunk 113b.

2.7.42 g.42 PMO: Price index for imports ex. petroleum, cw

113d $\langle \text{variable } PMO \text{ 113d} \rangle \equiv$ (219)
 PMO = Price index for imports ex. petroleum, cw

Defines:

PMO, used in chunk 231.

Uses ex 47c.

113e $\langle \text{equation } pmo \text{ 113e} \rangle \equiv$ (252)
 pmo: d(log(pmo), 0, 1) - pmo_aerr = y_pmo(1) _
 + y_pmo(2) * (log(qpmo) + .64*log(fpcm(-1)/fpxm(-1)) + .36*log(pxb(-1)) _
 - log(pmo(-1))) _
 + y_pmo(3) * d(log(fpcm/fpxm), 0, 1) _
 + y_pmo(4) * d(log(pxb), 0, 1)

Defines:

pmo, used in chunk 48.

Uses fpcm 169d, fpxm 172f, pxb 116d, qpmo 114c, and y_pmo 114a.

114a $\langle \text{coefficient } y_{pmo} \text{ 114a} \rangle \equiv$ (261)
 $y_{pmo} \quad 4 \quad -0.003166815111887241, 0.4492916534287926, 0.2944651755345454, 0.705534$
 Defines:
 y_{pmo} , used in chunk 113e.

2.7.43 g.43 QPMO: Random walk component of non-oil import prices

114b $\langle \text{variable } QPMO \text{ 114b} \rangle \equiv$ (219)
 $QPMO = \text{Random walk component of non-oil import prices}$
 Defines:
 $QPMO$, used in chunk 231.

114c $\langle \text{equation } qpmo \text{ 114c} \rangle \equiv$ (252)
 $qpmo: \log(qpmo) - qpmo_aerr = \log(qpmo(-1)) + y_qpmo(1)$
 Defines:
 $qpmo$, used in chunk 113e.
 Uses y_qpmo 114d.

114d $\langle \text{coefficient } y_qpmo \text{ 114d} \rangle \equiv$ (261)
 $y_qpmo \quad 1 \quad -.003347$
 Defines:
 y_qpmo , used in chunk 114c.

2.7.44 g.44 PGDP: Price index for GDP, cw

114e $\langle \text{variable } PGDP \text{ 114e} \rangle \equiv$ (219)
 $PGDP = \text{Price index for GDP, cw}$
 Defines:
 $PGDP$, used in chunks 132–34, 137e, 138d, and 231.

114f $\langle \text{equation } pgdp \text{ 114f} \rangle \equiv$ (252)
 $pgdp: pgdp - pgdp_aerr = 100 * xgdpn / xgdp$
 Defines:
 $pgdp$, used in chunks 51e, 69a, 79–81, 94e, 116d, 119a, 133–35, and 137.
 Uses $xgdp$ 57a and $xgdpn$ 78c.

2.7.45 g.45 PGFL: Price index for federal government employee compensation, cw

114g $\langle \text{variable } PGFL \text{ 114g} \rangle \equiv$ (219)
 $PGFL = \text{Price index for federal government employee compensation, cw}$
 Defines:
 $PGFL$, used in chunks 215e and 231.

115a $\langle \text{equation } pgfl \text{ 115a} \rangle \equiv$ (252)

$$pgfl: d(\log(pgfl), 0, 1) - pgfl_aerr = d(\log(upgfl), 0, 1) -$$

$$+ d(\log(pl), 0, 1) -$$

$$- dglprd*(d(\log(lprdt), 0, 1))$$

Defines:

pgfl, used in chunks 82f, 124d, and 125a.

Uses **dglprd** 205d, **lprdt** 77a, **pl** 98d, and **upgfl** 215e.

2.7.46 g.46 PGSL: Price index for S&L government employee compensation, cw

115b $\langle \text{variable } PGSL \text{ 115b} \rangle \equiv$ (219)

PGSL = Price index for S&L government employee compensation, cw

Defines:

PGSL, used in chunks 215f and 231.

115c $\langle \text{equation } pgsl \text{ 115c} \rangle \equiv$ (252)

$$pgsl: d(\log(pgsl), 0, 1) - pgsl_aerr = d(\log(upgsl), 0, 1) -$$

$$+ d(\log(pl), 0, 1) -$$

$$- dglprd*(d(\log(lprdt), 0, 1))$$

Defines:

pgsl, used in chunks 82f, 129e, and 130a.

Uses **dglprd** 205d, **lprdt** 77a, **pl** 98d, and **upgsl** 215f.

2.7.47 g.47 PKPDR: Ratio of price of equipment stock (KPD) to PXP

115d $\langle \text{variable } PKPDR \text{ 115d} \rangle \equiv$ (219)

PKPDR = Ratio of price of equipment stock (KPD) to PXP

Defines:

PKPDR, used in chunks 215g and 231.

Uses **KPD** 37f and **PXP** 101a.

115e $\langle \text{equation } pkpdr \text{ 115e} \rangle \equiv$ (252)

$$pkpdr: pkpdr - pkpdr_aerr = upkpd * ppdr$$

Defines:

pkpdr, used in chunks 40a, 41d, and 80c.

Uses **ppdr** 103g and **upkpd** 215g.

2.7.48 g.48 PXG: Price index for business output plus oil imports

$${}_{116a} \langle variable PXG {}_{116a} \rangle \equiv \quad (219)$$

PXG = Price index for business output plus oil imports

Defines:

PXG, used in chunk 231.

$$116b \quad \langle equation \ p x g \ 116b \rangle \equiv \quad (252)$$

Defines:

pxg, used in chunks 51c, 100a, 194d, and 197e.

Uses xg 60a and xgn 79e.

2.7.49 g.49 PXB: Price index for business sector output

$$116c \quad \langle variable \ PXB \ 116c \rangle \equiv \quad \quad \quad (219)$$

PXB = Price index for NFB output

Defines:

PXB, used in chunks 110c, 216b, and 231.

$$116d \quad \langle equation \ pxb \ 116d \rangle = \quad (252)$$

Defines:

pxb, used in chunks 40, 41b, 59c, 61f, 79c, 84e, 86, 87, 109f, 111a, 113e, 182b, and 195c.

Uses pgdp 114f and upxb 216b.

2.7.50 g.50 HGPDR: Trend Price Growth of PPDR

$$116e \quad \langle variable \ HGPDR_{116e} \rangle \equiv \quad (219)$$

Defines:

HGPDR, used in chunk 231.

Uses PPDR 103f.

$$\begin{aligned} 116f \quad \langle equation \ hgpdr \ 116f \rangle \equiv & \quad (252) \\ & \quad hgpdr: hgpdr - hgpdr_aerr = y_hgpdr(1) * hgpdr(-1) - \\ & \quad \quad \quad + y_hgpdr(2) * 400 * \log(ppdr/ppdr(-1)) \end{aligned}$$

Defines:

hgpdrr, used in chunk 40a.

Uses ppdr 103g and y_hgpdr 117a.

$$117a \quad \langle \text{coefficient } y_{hgpd} \text{ } 117a \rangle \equiv \quad (261)$$

$$y_{hgpd} \text{ } 2 \quad .9, .1$$

Defines:

y_{hgpd} , used in chunk 116f.

2.7.51 g.51 HGPIR: Trend Price Growth of PPIR

$$117b \quad \langle \text{variable } HGPIR \text{ } 117b \rangle \equiv \quad (219)$$

$$HGPIR = \text{Trend Price Growth of PPIR}$$

Defines:

$HGPIR$, used in chunk 231.

Uses $PPIR$ 104b.

$$117c \quad \langle \text{equation } hgp \text{ } 117c \rangle \equiv \quad (252)$$

$$hgp: hgp - hgp_{aerr} = y_{hgp}(1) * hgp(-1) _$$

$$+ y_{hgp}(2) * 400 * \log(ppir/ppir(-1))$$

Defines:

hgp , used in chunk 40c.

Uses $ppir$ 104c and y_{hgp} 117d.

$$117d \quad \langle \text{coefficient } y_{hgp} \text{ } 117d \rangle \equiv \quad (261)$$

$$y_{hgp} \text{ } 2 \quad .9, .1$$

Defines:

y_{hgp} , used in chunk 117c.

2.7.52 g.52 HGPKIR: Trend growth rate of PKIR

$$117e \quad \langle \text{variable } HGPKIR \text{ } 117e \rangle \equiv \quad (219)$$

$$HGPKIR = \text{Trend growth rate of PKIR}$$

Defines:

$HGPKIR$, used in chunk 231.

Uses $PKIR$ 209d.

$$117f \quad \langle \text{equation } hgp \text{ } 117f \rangle \equiv \quad (252)$$

$$hgp: hgp - hgp_{aerr} = y_{hgp}(1) * hgp(-1) _$$

$$+ y_{hgp}(2) * 400 * \log(pkir/pkir(-1))$$

Defines:

hgp , used in chunk 41b.

Uses $pkir$ 209d and y_{hgp} 117g.

$$117g \quad \langle \text{coefficient } y_{hgp} \text{ } 117g \rangle \equiv \quad (261)$$

$$y_{hgp} \text{ } 2 \quad .9, .1$$

Defines:

y_{hgp} , used in chunk 117f.

2.7.53 g.53 HGPPSR: Trend growth rate of PPSR

$$118a \quad \langle variable \textit{HGPPSR} \ 118a \rangle \equiv \quad (219)$$

HGPPSR = Trend growth rate of PPSR

Defines:

HGPPSR, used in chunk 231.

Uses PPSR 104d.

$$118b \quad \langle equation \ hgpps \ 118b \rangle \equiv \quad (252)$$
[illegible]

Defines:

hgppsr, used in chunk 40e.

Uses ppsr 104e and y_hgppsr 118c.

$$118c \quad \langle coefficient \ y_hgppsr \ 118c \rangle \equiv \quad (261)$$

| | | |
|----------|---|--------|
| y_hgppsr | 2 | .9, .1 |
|----------|---|--------|

Defines:

y_hgppsr, used in chunk 118b.

2.7.54 g.54 PICNGR: Weighted growth rate of relative energy price

$$118d \quad \langle variable \textit{PICNGR}_{118d} \rangle \equiv \quad (219)$$

PICNGR = Weighted growth rate of relative energy price

Defines:

PICNGR, used in chunk 231.

$$118e \quad \langle equation picngr 118e \rangle \equiv \quad (252)$$

```
picngr: picngr - picngr_aerr = (d( log(piceng/pxp(-1)), 0, 1 ) * _
      ( piceng*ceng/(pxp*xp) + piceng(-1)*ceng(-1)/(pxp(-1)*xp(-1)))
```

Defines:

picngr, never used.

Uses **ceng** 49b, **pceng** 111a, **pxp** 101b, and **xp** 59a.

2.7.55 g.55 PIGDP: Inflation rate, GDP, cw

$$118f \quad \langle variable \textit{PIGDP}_{118f} \rangle \equiv \quad (219)$$

PIGDP = Inflation rate, GDP, cw

Defines:

PIGDP, used in chunk 231.

119a $\langle \text{equation } \text{pigdp} \text{ 119a} \rangle \equiv$ (252)

$$\text{pigdp: pigdp} - \text{pigdp_aerr} = 400 * d(\log(\text{pgdp}), 0, 1)$$

Defines:

igdp, never used.

Uses **gdp** 114f.

2.7.56 g.56 PCOR: Price index for non-durable goods and non-housing services, cw (relative to to PCNIA)

119b $\langle \text{variable } \text{PCOR} \text{ 119b} \rangle \equiv$ (219)

PCOR = Price index for non-durable goods and non-housing services, cw (relative to to PCNIA)

Defines:

PCOR, used in chunk 231.

Uses **PCNIA** 97a.

119c $\langle \text{equation } \text{pcor} \text{ 119c} \rangle \equiv$ (252)

$$\begin{aligned} \text{pcor: } \log(\text{pcor}) - \log(\text{pcor}(-1)) - \text{pcor_aerr} = & _ \\ & (-.5 * .01 * (\text{pcdr} * \text{pcnia} * \text{ecd} / \text{ecnian} _ \\ & + \text{pcdr}(-1) * \text{pcnia}(-1) * \text{ecd}(-1) / \text{ecnian}(-1))) _ \\ & / (.5 * .01 * (\text{pcor} * \text{pcnia} * \text{eco} / \text{ecnian} _ \\ & + \text{pcor}(-1) * \text{pcnia}(-1) * \text{eco}(-1) / \text{ecnian}(-1))) _ \\ & * d(\log(\text{pcdr}), 0, 1) _ \\ - .5 * .01 * (\text{pchr} * \text{pcnia} * \text{ech} / \text{ecnian} _ \\ & + \text{pchr}(-1) * \text{pcnia}(-1) * \text{ech}(-1) / \text{ecnian}(-1)) _ \\ & * d(\log(\text{pchr}), 0, 1) _ \\ & / (.5 * .01 * (\text{pcor} * \text{pcnia} * \text{eco} / \text{ecnian} _ \\ & + \text{pcor}(-1) * \text{pcnia}(-1) * \text{eco}(-1) / \text{ecnian}(-1))) \end{aligned}$$

Defines:

pcor, used in chunks 28b, 29d, and 32c.

Uses **ecd** 26b, **ech** 27b, **ecnian** 30a, **eco** 25b, **pcdr** 120f, **pchr** 120a, and **pcnia** 97b.

2.7.57 g.57 PCHR: Price index for housing services, cw (relative to to PCNIA)

119d $\langle \text{variable } \text{PCHR} \text{ 119d} \rangle \equiv$ (219)

PCHR = Price index for housing services, cw (relative to to PCNIA)

Defines:

PCHR, used in chunk 231.

Uses **PCNIA** 97a.

120a $\langle \text{equation } pchr \text{ 120a} \rangle \equiv$ (252)

$$pchr: d(\log(pchr), 0, 1) - pchr_aerr = y_pchr(1) -$$

$$+ y_pchr(2)*d(\log(pchr(-1)), 0, 1)$$

Defines:

`pchr`, used in chunks 29d, 32c, 119c, and 162d.

Uses `y_pchr` 120b.

120b $\langle \text{coefficient } y_pchr \text{ 120b} \rangle \equiv$ (261)

$$y_pchr \quad 2 \quad 0.0005315862255843622, 0.5948038682986249$$

Defines:

`y_pchr`, used in chunk 120a.

2.7.58 g.58 PICX4: Four-quarter percent change core in PCE prices

120c $\langle \text{variable } PICX4 \text{ 120c} \rangle \equiv$ (219)

$$PICX4 \quad = \text{Four-quarter percent change core in PCE prices}$$

Defines:

`PICX4`, used in chunk 231.

120d $\langle \text{equation } picx4 \text{ 120d} \rangle \equiv$ (252)

$$picx4: \quad picx4 - picx4_aerr = 100*(pcxfe/pcxfe(-4) - 1)$$

Defines:

`picx4`, used in chunk 162a.

Uses `pcxfe` 109d.

2.7.59 g.59 PCDR: Price index for consumer durables, cw (relative to to PCNIA)

120e $\langle \text{variable } PCDR \text{ 120e} \rangle \equiv$ (219)

$$PCDR \quad = \text{Price index for consumer durables, cw (relative to to PCNIA)}$$

Defines:

`PCDR`, used in chunk 231.

Uses `PCNIA` 97a.

120f $\langle \text{equation } pcdr \text{ 120f} \rangle \equiv$ (252)

$$pcdr: d(\log(pcdr), 0, 1) - pcdr_aerr = y_pcdr(1) -$$

$$+ y_pcdr(2)*d(\log(pcdr(-1)), 0, 1)$$

Defines:

`pcdr`, used in chunks 28e, 29d, 32c, 88d, 91a, 119c, and 163a.

Uses `y_pcdr` 121a.

$$121a \quad \langle coefficient \ y_pcdr \ 121a \rangle \equiv \quad (261)$$

$$y_pcdr \ 2 \quad -0.003205436686618677, 0.5065758198036935$$

Defines:

`y_pcdr`, used in chunk 120f.

2.7.60 g.60 PIC4: Four-quarter percent change in PCE prices

$$121b \quad \langle variable \ PIC4 \ 121b \rangle \equiv \quad (219)$$

$$PIC4 \quad = \text{Four-quarter percent change in PCE prices}$$

Defines:

`PIC4`, used in chunk 231.

$$121c \quad \langle equation \ pic4 \ 121c \rangle \equiv \quad (252)$$

$$pic4: \quad pic4 - pic4_aerr = 100*(pcnia/pcnia(-4) - 1)$$

Defines:

`pic4`, never used.

Uses `pcnia` 97b.

2.8 Government

2.8.1 h.1 EGF: Federal government consumption and gross investment, cw 2009\$

$$121d \quad \langle variable \ EGF \ 121d \rangle \equiv \quad (219)$$

$$EGF \quad = \text{Federal government consumption and gross investment, cw 2009\$}$$

Defines:

`EGF`, used in chunk 231.

$$121e \quad \langle equation \ egf \ 121e \rangle \equiv \quad (252)$$

$$\begin{aligned} egf: & \log(egf) - egf_aerr = \log(egf(-1)) _ \\ & + .5 * (egfon/egfn + egfon(-1)/egfn(-1)) * d(\log(egfo), 0, 1) _ \\ & + .5 * (egfin/egfn + egfin(-1)/egfn(-1)) * d(\log(egfi), 0, 1) _ \\ & + .5 * (egfln/egfn + egfln(-1)/egfn(-1)) * d(\log(egfl), 0, 1) \end{aligned}$$

Defines:

`egf`, never used.

Uses `egfi` 122d, `egfin` 123a, `egfl` 124a, `egfln` 124d, `egfn` 122b, `egfo` 125d, and `egfon` 126b.

2.8.2 h.2 EGFN: Federal government consumption and gross investment, current \$

122a $\langle \text{variable } EGFN \text{ 122a} \rangle \equiv$ (219)
 $EGFN = \text{Federal government consumption and gross investment, current \$}$
 Defines:
 $EGFN$, used in chunk 231.

122b $\langle \text{equation } egfn \text{ 122b} \rangle \equiv$ (252)
 $egfn: egfn - egfn_aerr = egfln + egfin + egfon$

Defines:
 $egfn$, used in chunk 121e.
 Uses $egfin$ 123a, $egfln$ 124d, and $egfon$ 126b.

2.8.3 h.3 EGFI: Federal government gross investment, cw 2009\$

122c $\langle \text{variable } EGFI \text{ 122c} \rangle \equiv$ (219)
 $EGFI = \text{Federal government gross investment, cw 2009\$}$
 Defines:
 $EGFI$, used in chunk 231.

122d $\langle \text{equation } egfi \text{ 122d} \rangle \equiv$ (252)
 $egfi: d(\log(egfi), 0, 1) - egfi_aerr _$
 $= y_egfi(1) _$
 $+ y_egfi(2) * \log(egfi(-1)/egfit(-1)) _$
 $+ (y_egfi(3) * d(\log(egfi(-1)), 0, 1) + y_egfi(4) * d(\log$
 $+ y_egfi(5) * d(\log(egfit), 0, 1) _$
 $+ (y_egfi(6) * xgap2 + y_egfi(7) * xgap2(-1))$

Defines:
 $egfi$, used in chunks 56b, 59a, 121e, and 123a.
 Uses $egfit$ 123c, $xgap2$ 67c, and y_egfi 122e.

122e $\langle \text{coefficient } y_egfi \text{ 122e} \rangle \equiv$ (261)
 $y_egfi \ 7 \quad -0.001620944144695763, -0.1243761665741676, -0.1946254304372423, -0.102$
 Defines:
 y_egfi , used in chunk 122d.

2.8.4 h.4 EGFIN: Federal government gross investment, current \$

122f $\langle \text{variable } EGFIN \text{ 122f} \rangle \equiv$ (219)
 $EGFIN = \text{Federal government gross investment, current \$}$
 Defines:
 $EGFIN$, used in chunk 231.

123a $\langle \text{equation } egfin \text{ 123a} \rangle \equiv$ (252)

$$egfin: egfin - egfin_aerr = .01 * pxp * pgfir * egfi$$

Defines:

egfin, used in chunks 56b, 59a, 106a, 121e, 122b, 132a, and 141d.
 Uses **egfi** 122d, **pgfir** 101d, and **pxp** 101b.

2.8.5 h.5 EGFIT: Federal government gross investment, cw 2009\$, trend

123b $\langle \text{variable } EGFIT \text{ 123b} \rangle \equiv$ (219)

$$EGFIT = \text{Federal government gross investment, cw 2009$, trend}$$

Defines:

EGFIT, used in chunk 231.

123c $\langle \text{equation } egfit \text{ 123c} \rangle \equiv$ (252)

$$\begin{aligned} egfit: d(\log(egfit), 0, 1) - egfit_aerr \quad & _ \\ & = y_egfit(1) \quad _ \\ & + y_egfit(2) * \log(.01*pgfir(-1)*pxp(-1)*egfit(-1)/xgdptn(-1)) \quad _ \\ & + y_egfit(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600 \end{aligned}$$

Defines:

egfit, used in chunk 122d.
 Uses **hggdpt** 68d, **pgfir** 101d, **pxp** 101b, **xgdptn** 69a, and **y_egfit** 123d.

123d $\langle \text{coefficient } y_egfit \text{ 123d} \rangle \equiv$ (261)

$$y_egfit \quad 3 \quad \quad \quad -.4027, -.1, 1.0$$

Defines:

y_egfit, used in chunk 123c.

2.8.6 h.6 EGFL: Federal government employee compensation, cw 2009\$

123e $\langle \text{variable } EGFL \text{ 123e} \rangle \equiv$ (219)

$$EGFL = \text{Federal government employee compensation, cw 2009$}$$

Defines:

EGFL, used in chunk 231.

124a $\langle \text{equation } egfl \text{ 124a} \rangle \equiv$ (252)

$$\begin{aligned} egfl: & d(\log(egfl), 0, 1) - egfl_aerr _ \\ & = y_egfl(1) _ \\ & + y_egfl(2) * \log(egfl(-1)/egflt(-1)) _ \\ & + (y_egfl(3) * d(\log(egfl(-1)), 0, 1) + y_egfl(4) * d(\log \\ & + y_egfl(5) * d(\log(egflt), 0, 1) _ \\ & + (y_egfl(6) * xgap2 + y_egfl(7) * xgap2(-1)) \end{aligned}$$

Defines:

egfl, used in chunks 56b, 71a, 82f, 121e, and 124d.

Uses **egflt** 125a, **xgap2** 67c, and **y_egfl** 124b.

124b $\langle \text{coefficient } y_egfl \text{ 124b} \rangle \equiv$ (261)

$$y_egfl \quad 7 \quad -6.057249900438316e-05, -0.06931736294593471, 0.3048866347485139, -0.04$$

Defines:

y_egfl, used in chunk 124a.

2.8.7 h.7 EGFLN: Federal government employee compensation, current \$

124c $\langle \text{variable } EGFLN \text{ 124c} \rangle \equiv$ (219)

$$EGFLN \quad = \text{Federal government employee compensation, current \$}$$

Defines:

EGFLN, used in chunk 231.

124d $\langle \text{equation } egfln \text{ 124d} \rangle \equiv$ (252)

$$egfln: egfln - egfln_aerr = .01 * pgfl * egfl$$

Defines:

egfln, used in chunks 56b, 78c, 121e, 122b, and 133d.

Uses **egfl** 124a and **pgfl** 115a.

2.8.8 h.8 EGFLT: Federal government employee compensation, cw 2009\$, trend

124e $\langle \text{variable } EGFLT \text{ 124e} \rangle \equiv$ (219)

$$EGFLT \quad = \text{Federal government employee compensation, cw 2009$, trend}$$

Defines:

EGFLT, used in chunk 231.

125a $\langle \text{equation } egflt \text{ 125a} \rangle \equiv$ (252)

$$\begin{aligned} egflt: & d(\log(egflt), 0, 1) - egflt_aerr _ \\ & = y_egflt(1) _ \\ & + y_egflt(2) * \log(.01*pgfl(-1)*egflt(-1)/xgdptn(-1)) _ \\ & + y_egflt(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600 \end{aligned}$$

Defines:

`egflt`, used in chunk 124a.

Uses `hggdpt` 68d, `pgfl` 115a, `xgdptn` 69a, and `y_egflt` 125b.

125b $\langle \text{coefficient } y_egflt \text{ 125b} \rangle \equiv$ (261)

$$y_egflt \ 3 \quad - .375978, -.1, 1.0$$

Defines:

`y_egflt`, used in chunk 125a.

2.8.9 h.9 EGFO: Federal government consumption ex. employee comp., cw 2009\$

125c $\langle \text{variable } EGFO \text{ 125c} \rangle \equiv$ (219)

$$EGFO \quad = \text{Federal government consumption ex. employee comp., cw 2009\$}$$

Defines:

`EGFO`, used in chunk 231.

Uses `ex` 47c.

125d $\langle \text{equation } egfo \text{ 125d} \rangle \equiv$ (252)

$$\begin{aligned} egfo: & d(\log(egfo), 0, 1) - egfo_aerr _ \\ & = y_egfo(1) _ \\ & + y_egfo(2) * \log(egfo(-1)/egfot(-1)) _ \\ & + (y_egfo(3) * d(\log(egfo(-1)), 0, 1) + y_egfo(4) * d(\log(egfo(-2))), \\ & + y_egfo(5) * d(\log(egfot), 0, 1) _ \\ & + (y_egfo(6) * xgap2 + y_egfo(7) * xgap2(-1)) \end{aligned}$$

Defines:

`egfo`, used in chunks 56b, 59a, 121e, and 126b.

Uses `egfot` 126d, `xgap2` 67c, and `y_egfo` 125e.

125e $\langle \text{coefficient } y_egfo \text{ 125e} \rangle \equiv$ (261)

$$y_egfo \ 7 \quad -0.00272437480660757, -0.165188738562342, -0.2655033775214354, -0.1381332991300448$$

Defines:

`y_egfo`, used in chunk 125d.

2.8.10 h.10 EGFON: Federal government consumption ex. employee comp., current \$

126a $\langle \text{variable } EGFON \text{ 126a} \rangle \equiv$ (219)
 EGFON = Federal government consumption ex. employee comp., current \$
 Defines:
 EGFON, used in chunk 231.
 Uses **ex** 47c.

126b $\langle \text{equation } egfon \text{ 126b} \rangle \equiv$ (252)
 egfon: egfon - egfon_aerr = .01 * pxp * pgfor * egfo

Defines:
 egfon, used in chunks 56b, 59a, 106a, 121e, 122b, and 133d.
 Uses **egfo** 125d, **pgfor** 102a, and **pxp** 101b.

2.8.11 h.11 EGFOT: Federal government consumption ex. employee comp., cw 2009\$, trend

126c $\langle \text{variable } EGFOT \text{ 126c} \rangle \equiv$ (219)
 EGFOT = Federal government consumption ex. employee comp., cw 2009\$, trend
 Defines:
 EGFOT, used in chunk 231.
 Uses **ex** 47c.

126d $\langle \text{equation } egfot \text{ 126d} \rangle \equiv$ (252)
 egfot: d(log(egfot), 0, 1) - egfot_aerr _
 = y_egfot(1) _
 + y_egfot(2) * log(.01*pgfor(-1)*pxp(-1)*egfot(-1)/xgdptn(-1)) _
 + y_egfot(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600

Defines:
 egfot, used in chunk 125d.
 Uses **hggdpt** 68d, **pgfor** 102a, **pxp** 101b, **xgdptn** 69a, and **y_egfot** 126e.

126e $\langle \text{coefficient } y_egfot \text{ 126e} \rangle \equiv$ (261)
 y_egfot 3 - .342813, -.1, 1.0
 Defines:
 y_egfot, used in chunk 126d.

2.8.12 h.12 EGS: S&L government consumption and gross investment, cw 2009\$

126f $\langle \text{variable } EGS \text{ 126f} \rangle \equiv$ (219)
 EGS = S&L government consumption and gross investment, cw 2009\$
 Defines:
 EGS, used in chunk 231.

127a $\langle \text{equation } \text{egs } 127a \rangle \equiv$ (252)

$$\begin{aligned} \text{egs: } & \log(\text{egs}) - \text{egs_aerr} = \log(\text{egs}(-1)) _ \\ & + .5 * (\text{egson}/\text{egsn} + \text{egson}(-1)/\text{egsn}(-1)) * d(\log(\text{egso}), 0, 1) _ \\ & + .5 * (\text{egsin}/\text{egsn} + \text{egsin}(-1)/\text{egsn}(-1)) * d(\log(\text{egsi}), 0, 1) _ \\ & + .5 * (\text{egsln}/\text{egsn} + \text{egsln}(-1)/\text{egsn}(-1)) * d(\log(\text{egsl}), 0, 1) \end{aligned}$$

Defines:

egs, never used.

Uses **egsi** 127e, **egsin** 128c, **egsl** 129b, **egsln** 129e, **egsn** 127c, **egso** 130d, and **egson** 131b.

2.8.13 h.13 EGSN: S&L government consumption and gross investment, current \$

127b $\langle \text{variable } \text{EGSN } 127b \rangle \equiv$ (219)

$$\text{EGSN} = \text{S\&L government consumption and gross investment, current \$}$$

Defines:

EGSN, used in chunk 231.

127c $\langle \text{equation } \text{egsn } 127c \rangle \equiv$ (252)

$$\text{egsn: } \text{egsn} - \text{egsn_aerr} = \text{egsln} + \text{egsin} + \text{egson}$$

Defines:

egsn, used in chunk 127a.

Uses **egsin** 128c, **egsln** 129e, and **egson** 131b.

2.8.14 h.14 EGSI: S&L government gross investment, cw 2009\$

127d $\langle \text{variable } \text{EGSI } 127d \rangle \equiv$ (219)

$$\text{EGSI} = \text{S\&L government gross investment, cw 2009\$}$$

Defines:

EGSI, used in chunk 231.

127e $\langle \text{equation } \text{egsi } 127e \rangle \equiv$ (252)

$$\begin{aligned} \text{egsi: } & d(\log(\text{egsi}), 0, 1) - \text{egsi_aerr} _ \\ & = \text{y_egsi}(1) _ \\ & + \text{y_egsi}(2) * \log(\text{egsi}(-1)/\text{egsit}(-1)) _ \\ & + (\text{y_egsi}(3) * d(\log(\text{egsi}(-1)), 0, 1) + \text{y_egsi}(4) * d(\log(\text{egsi}(-2))), \\ & + \text{y_egsi}(5) * d(\log(\text{egsit}), 0, 1) _ \\ & + (\text{y_egsi}(6) * \text{xgap2} + \text{y_egsi}(7) * \text{xgap2}(-1)) \end{aligned}$$

Defines:

egsi, used in chunks 56b, 59a, 127a, and 128c.

Uses **egsit** 128e, **xgap2** 67c, and **y_egsi** 128a.

128a $\langle \text{coefficient } y_egsi \text{ 128a} \rangle \equiv$ (261)
 $y_egsi \ 7 \quad -1.405740361028989e-05, -0.2020609033108234, 0.05134522874864941, -0.080$
 Defines:
 y_egsi , used in chunk 127e.

2.8.15 h.15 EGSIN: S&L government gross investment, current \$

128b $\langle \text{variable } EGSIN \text{ 128b} \rangle \equiv$ (219)
 $EGSIN = \text{S\&L government gross investment, current \$}$
 Defines:
 $EGSIN$, used in chunk 231.

128c $\langle \text{equation } eg sin \text{ 128c} \rangle \equiv$ (252)
 $egsin: eg sin - eg sin_aerr = .01 * p xp * pgsir * eg si$
 Defines:
 $egsin$, used in chunks 56b, 59a, 106a, 127, 136a, and 143e.
 Uses $egsi$ 127e, $pgsir$ 102d, and $p xp$ 101b.

2.8.16 h.16 EGSIT: S&L government gross investment, cw 2009\$, trend

128d $\langle \text{variable } EGSIT \text{ 128d} \rangle \equiv$ (219)
 $EGSIT = \text{S\&L government gross investment, cw 2009$, trend}$
 Defines:
 $EGSIT$, used in chunk 231.

128e $\langle \text{equation } eg sit \text{ 128e} \rangle \equiv$ (252)
 $egsit: d(\log(egsit), 0, 1) - eg sit_aerr _$
 $\quad \quad \quad = y_egsit(1) _$
 $\quad \quad \quad + y_egsit(2) * \log(.01*pgsir(-1)*p xp(-1)*egsit(-1)/xgdptn(-1)) _$
 $\quad \quad \quad + y_egsit(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600$
 Defines:
 $egsit$, used in chunk 127e.
 Uses $hggdpt$ 68d, $pgsir$ 102d, $p xp$ 101b, $xgdptn$ 69a, and y_egsit 128f.

128f $\langle \text{coefficient } y_egsit \text{ 128f} \rangle \equiv$ (261)
 $y_egsit \ 3 \quad -.379944, -.1, 1.0$
 Defines:
 y_egsit , used in chunk 128e.

2.8.17 h.17 EGSL: S&L government employee compensation, cw 2009\$

129a $\langle \text{variable } EGSL \text{ 129a} \rangle \equiv$ (219)
 EGSL = S&L government employee compensation, cw 2009\$

Defines:

EGSL, used in chunk 231.

129b $\langle \text{equation } egsl \text{ 129b} \rangle \equiv$ (252)
 egsl: d(log(egsl), 0, 1) - egsl_aerr _
 = y_egsl(1) _
 + y_egsl(2) * log(egsl(-1)/egslt(-1)) _
 + (y_egsl(3) * d(log(egsl(-1)), 0, 1) + y_egsl(4) * d(log(egsl(-2)),
 + y_egsl(5) * d(log(egslt), 0, 1) _
 + (y_egsl(6) * xgap2 + y_egsl(7) * xgap2(-1))

Defines:

egsl, used in chunks 56b, 71c, 82f, 127a, and 129e.

Uses egslt 130a, xgap2 67c, and y_egsl 129c.

129c $\langle \text{coefficient } y_egsl \text{ 129c} \rangle \equiv$ (261)
 y_egsl 7 0.000432632357275569, -0.1411968485071547, 0.173955823870621, 0.03758904468718688,

Defines:

y_egsl, used in chunk 129b.

2.8.18 h.18 EGSLN: S&L government employee compensation, current \$

129d $\langle \text{variable } EGSLN \text{ 129d} \rangle \equiv$ (219)
 EGSLN = S&L government employee compensation, current \$

Defines:

EGSLN, used in chunk 231.

129e $\langle \text{equation } egsln \text{ 129e} \rangle \equiv$ (252)
 egsln: egsln - egsln_aerr = .01 * pgsl * egsl

Defines:

egsln, used in chunks 56b, 78c, 127, and 136e.

Uses egsl 129b and pgsl 115c.

2.8.19 h.19 EGSLT: S&L government employee compensation, cw 2009\$, trend

129f $\langle \text{variable } EGSLT \text{ 129f} \rangle \equiv$ (219)
 EGSLT = S&L government employee compensation, cw 2009\$, trend

Defines:

EGSLT, used in chunk 231.

130a $\langle \text{equation } \text{egslt } 130a \rangle \equiv$ (252)

$$\begin{aligned} \text{egslt: } & d(\log(\text{egslt}), 0, 1) - \text{egslt_aerr} _ \\ & = y_egslt(1) _ \\ & + y_egslt(2) * \log(.01 * \text{pgsl}(-1) * \text{egslt}(-1) / \text{xdptn}(-1)) _ \\ & + y_egslt(3) * (\text{hggdpt} + \text{hggdpt}(-1) + \text{hggdpt}(-2) + \text{hggdpt}(-3)) / 1600 \end{aligned}$$

Defines:

egslt, used in chunk 129b.

Uses **hggdpt** 68d, **pgsl** 115c, **xdptn** 69a, and **y_egslt** 130b.

130b $\langle \text{coefficient } y_egslt \text{ } 130b \rangle \equiv$ (261)

$$y_egslt \text{ } 3 \quad - .259779, - .1, 1.0$$

Defines:

y_egslt, used in chunk 130a.

2.8.20 h.20 EGSO: S&L government consumption ex. employee comp., cw 2009\$

130c $\langle \text{variable } \text{EGSO } 130c \rangle \equiv$ (219)

$$\text{EGSO} \quad = \text{S\&L government consumption ex. employee comp., cw 2009\$}$$

Defines:

EGSO, used in chunk 231.

Uses **ex** 47c.

130d $\langle \text{equation } \text{egso } 130d \rangle \equiv$ (252)

$$\begin{aligned} \text{egso: } & d(\log(\text{egso}), 0, 1) - \text{egso_aerr} _ \\ & = y_egso(1) _ \\ & + y_egso(2) * \log(\text{egso}(-1) / \text{egsot}(-1)) _ \\ & + (y_egso(3) * d(\log(\text{egso}(-1)), 0, 1) + y_egso(4) * d(\log \\ & + y_egso(5) * d(\log(\text{egsot}), 0, 1) _ \\ & + (y_egso(6) * \text{xgap2} + y_egso(7) * \text{xgap2}(-1)) \end{aligned}$$

Defines:

egso, used in chunks 56b, 59a, 127a, and 131b.

Uses **egsot** 131d, **xgap2** 67c, and **y_egso** 130e.

130e $\langle \text{coefficient } y_egso \text{ } 130e \rangle \equiv$ (261)

$$y_egso \text{ } 7 \quad -0.0002007505801469657, -0.09372198933526569, 0.5475507872556951, 0.164$$

Defines:

y_egso, used in chunk 130d.

2.8.21 h.21 EGSON: S&L government consumption ex.
employee comp., current \$

131a *<variable EGSON 131a>*≡ (219)
 EGSON = S&L government consumption ex. employee comp., current \$
 Defines:
 EGSON, used in chunk 231.
 Uses **ex** 47c.

$$131b \quad \langle equation \text{ egson } 131b \rangle \equiv \quad (252)$$

Defines:
egson, used in chunks 56b, 59a, 106a, 127, and 136e.
 Uses **egso** 130d, **pgsor** 103a, and **pxp** 101b.

2.8.22 h.22 EGSOT: S&L government consumption ex.
employee comp., cw 2009\$, trend

131c $\langle variable\ EGSOT\ 131c \rangle \equiv$ (219)
 EGSOT = S&L government consumption ex. employee comp., cw 2009\$, trend
 Defines:
 EGSOT, used in chunk 231.
 Uses **ex** 47c.

$$\begin{aligned} 131d \quad \langle equation \text{ egsot } 131d \rangle \equiv & \quad (252) \\ & \text{egsot: d(log(egsot), 0, 1) - egsot_aerr} \\ & \quad = \text{y_egsot(1)} \\ & \quad + \text{y_egsot(2) * log(.01*pgsor(-1)*p xp(-1)*egsot(-1)/xgdptn(-1))} \\ & \quad + \text{y_egsot(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600} \end{aligned}$$

Defines:
 egsot, used in chunk 130d.
 Uses **hggdpt** 68d, **pgsor** 103a, **pxp** 101b, **xgdptn** 69a, and **y_egsot** 131e.

131e $\langle \text{coefficient } y_{\text{egsot } 131e} \rangle \equiv$ (261)
 $y_{\text{egsot } 3} \quad - .382643, -.1, 1.0$
 Defines:
 y_{egsot} , used in chunk 131d.

2.8.23 h.23 GFDBTN: Federal government debt stock, current \$

131f $\langle variable\ GFDBTN\ 131f \rangle \equiv$ (219)
GFDBTN = Federal government debt stock, current \$
Defines:
GFDBTN, used in chunks 213e and 231.

$$\begin{aligned}
 \langle \text{equation } gfdbtn \text{ 132a} \rangle &\equiv (252) \\
 gfdbtn: gfdbtn - gfdbtn_aerr &= ugfdbt*(gfdbtn(-1) - .25*gfsrpn + .25*egfin_ \\
 &\quad - .25*jygfgn - .25*jygfen)
 \end{aligned}$$

Defines:

gfdbtn, used in chunks 91a, 132c, 141d, and 165c.

Uses **egfin** 123a, **gfsrpn** 133d, **jygfen** 80e, **jygfgn** 81b, and **ugfdbt** 213e.

2.8.24 h.24 GFINTN: Federal government net interest payments, current \$

$$\begin{aligned}
 \langle \text{variable } GFINTN \text{ 132b} \rangle &\equiv (219) \\
 GFINTN &= \text{Federal government net interest payments, current \$}
 \end{aligned}$$

Defines:

GFINTN, used in chunk 231.

$$\begin{aligned}
 \langle \text{equation } gfintn \text{ 132c} \rangle &\equiv (252) \\
 gfintn: gfintn - gfintn_aerr &= rgfint*gfdbtn(-1)
 \end{aligned}$$

Defines:

gfintn, used in chunks 89b and 133d.

Uses **gfdbtn** 132a and **rgfint** 165c.

2.8.25 h.25 GFS: Federal government grants-in-aid to S&L government, deflated by PGDP

$$\begin{aligned}
 \langle \text{variable } GFS \text{ 132d} \rangle &\equiv (219) \\
 GFS &= \text{Federal government grants-in-aid to S\&L government, deflated by PGDP}
 \end{aligned}$$

Defines:

GFS, used in chunk 231.

Uses **PGDP** 114e.

$$\begin{aligned}
 \langle \text{equation } gfs \text{ 132e} \rangle &\equiv (252) \\
 gfs: d(\log(gfs), 0, 1) - gfs_aerr &\quad - \\
 &= y_gfs(1) \quad - \\
 &\quad + y_gfs(2) * \log(gfsn(-1)/xgdptn(-1)) \quad - \\
 &\quad + y_gfs(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600
 \end{aligned}$$

Defines:

gfs, used in chunk 133b.

Uses **gfsn** 133b, **hggdpt** 68d, **xgdptn** 69a, and **y_gfs** 132f.

$$\begin{aligned}
 \langle \text{coefficient } y_gfs \text{ 132f} \rangle &\equiv (261) \\
 y_gfs \quad 3 &\quad - .361185, -.1, 1.0
 \end{aligned}$$

Defines:

y_gfs, used in chunk 132e.

2.8.26 h.26 GFSN: Federal government grants-in-aid to S&L government, current \$

$$133a \quad \langle \text{variable } GFSN \text{ 133a} \rangle \equiv \quad (219)$$

$$GFSN = \text{Federal government grants-in-aid to S\&L government, current \$}$$

Defines:

`GFSN`, used in chunk 231.

$$133b \quad \langle \text{equation } gfsn \text{ 133b} \rangle \equiv \quad (252)$$

$$gfsn: gfsn - gfsn_aerr = .01 * pgdp * gfs$$

Defines:

`gfsn`, used in chunks 132e, 133d, and 136e.

Uses `gfs` 132e and `pgdp` 114f.

2.8.27 h.27 GFSRPN: Federal government budget surplus, current \$

$$133c \quad \langle \text{variable } GFSRPN \text{ 133c} \rangle \equiv \quad (219)$$

$$GFSRPN = \text{Federal government budget surplus, current \$}$$

Defines:

`GFSRPN`, used in chunk 231.

$$133d \quad \langle \text{equation } gfsrpn \text{ 133d} \rangle \equiv \quad (252)$$

$$gfsrpn: gfsrpn - gfsrpn_aerr = tfpn + tfcin + tfibn + tfsin + tfdiv _ \\ - egfln - egfon - gftn - gfintn _ \\ - gfsbn - gfsn$$

Defines:

`gfsrpn`, used in chunks 132a, 141d, and 146b.

Uses `egfln` 124d, `egfon` 126b, `gfintn` 132c, `gfsn` 133b, `gfsbn` 134d, `gftn` 135b, `tfcin` 139a, `tfibn` 139c, `tfpn` 139e, and `tfsin` 140a.

2.8.28 h.28 GFSUB: Federal government subsidies less surplus, deflated by PGDP

$$133e \quad \langle \text{variable } GFSUB \text{ 133e} \rangle \equiv \quad (219)$$

$$GFSUB = \text{Federal government subsidies less surplus, deflated by PGDP}$$

Defines:

`GFSUB`, used in chunk 231.

Uses `PGDP` 114e.

134a $\langle \text{equation } gfsub \text{ 134a} \rangle \equiv$ (252)

$$\begin{aligned} gfsub: & d(\log(gfsub), 0, 1) - gfsub_aerr _ \\ & = y_gfsub(1) _ \\ & + y_gfsub(2) * \log(gfsubn(-1)/xgdptn(-1)) _ \\ & + y_gfsub(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600 \end{aligned}$$

Defines:

`gfsub`, used in chunk 134d.

Uses `gfsubn` 134d, `hggdpt` 68d, `xgdptn` 69a, and `y_gfsub` 134b.

134b $\langle \text{coefficient } y_gfsub \text{ 134b} \rangle \equiv$ (261)

$$y_gfsub \text{ 3} \quad - .550087, -.1, 1.0$$

Defines:

`y_gfsub`, used in chunk 134a.

2.8.29 h.29 GFSUBN: Federal government subsidies less surplus, current \$

134c $\langle \text{variable } GFSUBN \text{ 134c} \rangle \equiv$ (219)

$$GFSUBN = \text{Federal government subsidies less surplus, current \$}$$

Defines:

`GFSUBN`, used in chunk 231.

134d $\langle \text{equation } gfsubn \text{ 134d} \rangle \equiv$ (252)

$$gfsubn: gfsubn - gfsubn_aerr = .01*pgdp*gfsub$$

Defines:

`gfsubn`, used in chunks 85b, 133d, and 134a.

Uses `gfsub` 134a and `pgdp` 114f.

2.8.30 h.30 GFT: Federal government net transfer payments, deflated by PGDP

134e $\langle \text{variable } GFT \text{ 134e} \rangle \equiv$ (219)

$$GFT = \text{Federal government net transfer payments, deflated by PGDP}$$

Defines:

`GFT`, used in chunk 231.

Uses `PGDP` 114e.

134f $\langle \text{equation } gft \text{ 134f} \rangle \equiv$ (252)

$$gft: gft - gft_aerr = (gftrd+gftrt)*xgdpt$$

Defines:

`gft`, used in chunk 135b.

Uses `gftrd` 135d, `gftrt` 207b, and `xgdpt` 63c.

2.8.31 h.31 GFTN: Federal government net transfer payments, current \$

$$135a \quad \langle \text{variable } GFTN \text{ 135a} \rangle \equiv \quad (219)$$

$$GFTN = \text{Federal government net transfer payments, current \$}$$

Defines:

GFTN, used in chunk 231.

$$135b \quad \langle \text{equation } gftn \text{ 135b} \rangle \equiv \quad (252)$$

$$gftn: gftn - gftn_aerr = .01 * pgdp * gft$$

Defines:

gftn, used in chunks 93d, 133d, 139e, and 145d.

Uses gft 134f and pgdp 114f.

2.8.32 h.32 GFTRD: Deviation of ratio of federal transfers to GDP from trend ratio

$$135c \quad \langle \text{variable } GFTRD \text{ 135c} \rangle \equiv \quad (219)$$

$$GFTRD = \text{Deviation of ratio of federal transfers to GDP from trend ratio}$$

Defines:

GFTRD, used in chunk 231.

$$135d \quad \langle \text{equation } gftrd \text{ 135d} \rangle \equiv \quad (252)$$

$$gftrd: gftrd - gftrd_aerr = y_gftrd(1) _ \\ + y_gftrd(2) * gftrd(-1) _ \\ + y_gftrd(3) * xgap2$$

Defines:

gftrd, used in chunk 134f.

Uses xgap2 67c and y_gftrd 135e.

$$135e \quad \langle \text{coefficient } y_gftrd \text{ 135e} \rangle \equiv \quad (261)$$

$$y_gftrd \text{ 3} \quad -3.598159243340642e-05, 0.6589196196672864, -0.0002408286743628969$$

Defines:

y_gftrd, used in chunk 135d.

2.8.33 h.33 GSDBTN: S&L government debt stock, current \$

$$135f \quad \langle \text{variable } GSDBTN \text{ 135f} \rangle \equiv \quad (219)$$

$$GSDBTN = \text{S\&L government debt stock, current \$}$$

Defines:

GSDBTN, used in chunks 213f and 231.

136a $\langle \text{equation } gsdbtn \text{ 136a} \rangle \equiv$ (252)

$$gsdbtn: gsdbtn - gsdbtn_aerr = ugsdbt*(gsdbtn(-1) - .25*gssrpn + .25 * eg\sin _$$

$$- .25*jygsgn - .25*jyg\sin)$$

Defines:

gsdbtn, used in chunks 91a, 136c, and 143e.

Uses **egsin** 128c, **gssrpn** 136e, **jygsgn** 81d, **jygsgn** 81f, and **ugsdbt** 213f.

2.8.34 h.34 GSINTN: S&L government net interest payments, current \$

136b $\langle \text{variable } GSINTN \text{ 136b} \rangle \equiv$ (219)

$$GSINTN = \text{S\&L government net interest payments, current \$}$$

Defines:

GSINTN, used in chunks 213g and 231.

136c $\langle \text{equation } gsintn \text{ 136c} \rangle \equiv$ (252)

$$gsintn: gsintn - gsintn_aerr = rgfint*gsdbtn(-1) + ugsint*xbn$$

Defines:

gsintn, used in chunks 89b and 136e.

Uses **gsdbtn** 136a, **rgfint** 165c, **ugsint** 213g, and **xbn** 79c.

2.8.35 h.35 GSSRPN: S&L government budget surplus, current \$

136d $\langle \text{variable } GSSRPN \text{ 136d} \rangle \equiv$ (219)

$$GSSRPN = \text{S\&L government budget surplus, current \$}$$

Defines:

GSSRPN, used in chunk 231.

136e $\langle \text{equation } gssrpn \text{ 136e} \rangle \equiv$ (252)

$$gssrpn: gssrpn - gssrpn_aerr = tspn + tscin + tsibn + tssin + gfsn _$$

$$- egsln - egson - g\sin - gsintn - gssubn$$

Defines:

gssrpn, used in chunks 136a, 143e, and 146d.

Uses **egsln** 129e, **egson** 131b, **gfsn** 133b, **gsintn** 136c, **gssubn** 137b, **g\sin** 137d, **tscin** 144f, **tsibn** 145b, **tspn** 145d, and **tssin** 145f.

2.8.36 h.36 GSSUBN: S&L government subsidies less surplus, current \$

$$137a \quad \langle \text{variable } GSSUBN \text{ 137a} \rangle \equiv \quad (219)$$

$$GSSUBN = \text{S\&L government subsidies less surplus, current \$}$$

Defines:

`GSSUBN`, used in chunk 231.

$$137b \quad \langle \text{equation } gssubn \text{ 137b} \rangle \equiv \quad (252)$$

$$gssubn: gssubn - gssubn_aerr = .01 * pgdp * gssub$$

Defines:

`gssubn`, used in chunks 85b and 136e.

Uses `gssub` 138e and `pgdp` 114f.

2.8.37 h.37 GSTN: S&L government net transfer payments, current \$

$$137c \quad \langle \text{variable } GSTN \text{ 137c} \rangle \equiv \quad (219)$$

$$GSTN = \text{S\&L government net transfer payments, current \$}$$

Defines:

`GSTN`, used in chunk 231.

$$137d \quad \langle \text{equation } gstn \text{ 137d} \rangle \equiv \quad (252)$$

$$gstn: gstn - gstn_aerr = .01 * pgdp * gst$$

Defines:

`gstn`, used in chunks 93d, 136e, 139e, and 145d.

Uses `gst` 137f and `pgdp` 114f.

2.8.38 h.38 GST: S&L government net transfer payments, deflated by PGDP

$$137e \quad \langle \text{variable } GST \text{ 137e} \rangle \equiv \quad (219)$$

$$GST = \text{S\&L government net transfer payments, deflated by PGDP}$$

Defines:

`GST`, used in chunk 231.

Uses `PGDP` 114e.

$$137f \quad \langle \text{equation } gst \text{ 137f} \rangle \equiv \quad (252)$$

$$gst: gst - gst_aerr = (gstrd + gstrt) * xgdpt$$

Defines:

`gst`, used in chunk 137d.

Uses `gstrd` 138b, `gstrt` 207e, and `xgdpt` 63c.

2.8.39 h.39 GSTRD: Deviation of ratio of S&L transfers to GDP from trend ratio

138a $\langle \text{variable } GSTRD \text{ 138a} \rangle \equiv$ (219)
 GSTRD = Deviation of ratio of S&L transfers to GDP from trend ratio
 Defines:
 GSTRD, used in chunk 231.

138b $\langle \text{equation } gstrd \text{ 138b} \rangle \equiv$ (252)
 gstrd: gstrd - gstrd_aerr = y_gstrd(1) _
 + y_gstrd(2) * gstrd(-1) _
 + y_gstrd(3) * xgap2

Defines:
 gstrd, used in chunk 137f.
 Uses xgap2 67c and y_gstrd 138c.

138c $\langle \text{coefficient } y_gstrd \text{ 138c} \rangle \equiv$ (261)
 y_gstrd 3 -1.235658095172135e-05,0.7366990097980338,-4.483509762335216e-05
 Defines:
 y_gstrd, used in chunk 138b.

2.8.40 h.40 GSSUB: S&L government subsidies less surplus, deflated by PGDP

138d $\langle \text{variable } GSSUB \text{ 138d} \rangle \equiv$ (219)
 GSSUB = S&L government subsidies less surplus, deflated by PGDP
 Defines:
 GSSUB, used in chunks 214a and 231.
 Uses PGDP 114e.

138e $\langle \text{equation } gssub \text{ 138e} \rangle \equiv$ (252)
 gssub: gssub - gssub_aerr = ugssub*xgdpt

Defines:
 gssub, used in chunk 137b.
 Uses ugssub 214a and xgdpt 63c.

2.8.41 h.41 TFCIN: Federal corporate income tax accruals, current \$

138f $\langle \text{variable } TFCIN \text{ 138f} \rangle \equiv$ (219)
 TFCIN = Federal corporate income tax accruals, current \$
 Defines:
 TFCIN, used in chunk 231.

139a $\langle \text{equation } tfcin \text{ 139a} \rangle \equiv$ (252)

$$tfcin: tfcin - tfcin_aerr = trfci * ynicpn$$

Defines:

`tfcin`, used in chunks 84–86, 91a, 133d, 161c, 194d, and 197e.
 Uses `trfci` 140c and `ynicpn` 85b.

2.8.42 h.42 TFIBN: Federal indirect business tax receipts, current \$

139b $\langle \text{variable } TFIBN \text{ 139b} \rangle \equiv$ (219)

$$TFIBN = \text{Federal indirect business tax receipts, current \$}$$

Defines:

`TFIBN`, used in chunk 231.

139c $\langle \text{equation } tfibn \text{ 139c} \rangle \equiv$ (252)

$$tfibn: tfibn - tfibn_aerr = trfib * ecnian$$

Defines:

`tfibn`, used in chunks 85b and 133d.
 Uses `ecnian` 30a and `trfib` 211f.

2.8.43 h.43 TFPN: Federal personal income tax and non-tax receipts, current \$

139d $\langle \text{variable } TFPN \text{ 139d} \rangle \equiv$ (219)

$$TFPN = \text{Federal personal income tax and nontax receipts, current \$}$$

Defines:

`TFPN`, used in chunk 231.

139e $\langle \text{equation } tfpn \text{ 139e} \rangle \equiv$ (252)

$$tfpn: tfpn - tfpn_aerr = trfp * (ypn - gftn - gstn)$$

Defines:

`tfpn`, used in chunks 85f, 92d, 133d, and 146f.
 Uses `gftn` 135b, `gstn` 137d, `trfp` 141a, and `ypn` 85d.

2.8.44 h.44 TFSIN: Federal social insurance tax receipts

139f $\langle \text{variable } TFSIN \text{ 139f} \rangle \equiv$ (219)

$$TFSIN = \text{Federal social insurance tax receipts}$$

Defines:

`TFSIN`, used in chunk 231.

$$140a \quad \langle \text{equation } tfsin \text{ 140a} \rangle \equiv \quad (252)$$

$$tfsin: tfsin - tfsin_aerr = trfsi * yniln$$

Defines:

tfsin, used in chunks 89f and 133d.

Uses **trfsi** 211i and **yniln** 82f.

2.8.45 h.45 TRFCI: Average federal corporate income tax rate

$$140b \quad \langle \text{variable } TRFCI \text{ 140b} \rangle \equiv \quad (219)$$

$$TRFCI = \text{Average federal corporate income tax rate}$$

Defines:

TRFCI, used in chunk 231.

$$140c \quad \langle \text{equation } trfci \text{ 140c} \rangle \equiv \quad (252)$$

$$trfci: trfci - trfci_aerr = y_trfci(1) _ \\ + y_trfci(2) * trfci(-1) _ \\ + y_trfci(3) * trfcim _ \\ + y_trfci(4) * .01*pxp*epd*ppdr*.01*tapdt/ynicpn _ \\ + y_trfci(5) * xgap2 _ \\ + y_trfci(6) * picnia$$

Defines:

trfci, used in chunks 139a and 142b.

Uses **epd** 33c, **picnia** 96f, **ppdr** 103g, **pxp** 101b, **tapdt** 211a, **trfcim** 211e, **xgap2** 67c, **y_trfci** 140d, and **ynicpn** 85b.

$$140d \quad \langle \text{coefficient } y_trfci \text{ 140d} \rangle \equiv \quad (261)$$

$$y_trfci \text{ 6} \quad 0.00133892767133083, 0.8130157141532537, 0.1085501838146501, -0.2191884$$

Defines:

y_trfci, used in chunk 140c.

2.8.46 h.46 TRFP: Average federal tax rate for personal income tax and nontax receipts

$$140e \quad \langle \text{variable } TRFP \text{ 140e} \rangle \equiv \quad (219)$$

$$TRFP = \text{Average federal tax rate for personal income tax and nontax receipts}$$

Defines:

TRFP, used in chunk 231.

141a $\langle \text{equation } \text{trfp } 141a \rangle \equiv$ (252)

$$\begin{aligned} \text{trfp: } \text{trfp} - \text{trfp_aerr} = & \text{y_trfp}(1) * \text{trfpt_} \\ & + (\text{y_trfp}(2) * (\text{trfp}(-1) - \text{trfpt}(-1)) + \text{y_trfp}(3) * (\text{trfp}(-2) - \text{trfpt}(-2))) \\ & + \text{y_trfp}(4) * \text{xgap2}(-1) \end{aligned}$$

Defines:

trfp, used in chunks 139e and 143b.

Uses **trfpt** 141d, **xgap2** 67c, and **y_trfp** 141b.

141b $\langle \text{coefficient } \text{y_trfp } 141b \rangle \equiv$ (261)

$$\text{y_trfp } 4 \quad 1, 0.6249369098272274, 0.2896464773374296, 0.0003722869429144596$$

Defines:

y_trfp, used in chunk 141a.

2.8.47 h.47 TRFPT: Average federal tax rate for personal income tax, trend

141c $\langle \text{variable } \text{TRFPT } 141c \rangle \equiv$ (219)

$$\text{TRFPT} = \text{Average federal tax rate for personal income tax, trend}$$

Defines:

TRFPT, used in chunk 231.

141d $\langle \text{equation } \text{trfpt } 141d \rangle \equiv$ (252)

$$\begin{aligned} \text{trfpt: } \text{trfpt} - \text{trfpt_aerr} = & \text{dfpex} * \text{trfptx_} \\ & + \text{dfpdbt} * (\text{trfpt}(-1) - \\ & \quad + \text{y_trfpt}(1) * (\text{gfdbtn}(-1)/\text{xgdpn}(-1) - \text{gfdrt}(-1)) - \\ & \quad + \text{y_trfpt}(2) * \text{d}(\text{gfdbtn}(-1)/\text{xgdpn}(-1) - \text{gfdrt}(-1), 0, 1)) - \\ & + \text{dfpsrp} * (\text{trfpt}(-1) - \\ & \quad + \text{y_trfpt}(3) * ((\text{gfsrpn}(-1) - \text{egfin}(-1) + \text{jygfgn}(-1) - \\ & \quad + \text{jygfen}(-1))/\text{xgdpn}(-1) - \text{gfsrt}(-1))) \end{aligned}$$

Defines:

trfpt, used in chunk 141a.

Uses **dfpdbt** 205a, **dfpex** 205b, **dfpsrp** 205c, **egfin** 123a, **gfdbtn** 132a, **gfdrt** 206h, **gfsrpn** 133d, **gfsrt** 207a, **jygfen** 80e, **jygfgn** 81b, **trfptx** 211h, **xgdpn** 78c, and **y_trfpt** 141e.

141e $\langle \text{coefficient } \text{y_trfpt } 141e \rangle \equiv$ (261)

$$\text{y_trfpt } 3 \quad 0.05000000000000000E+00, 0.5000000000000000E+00, -0.10000000000000000E+00$$

Defines:

y_trfpt, used in chunk 141d.

2.8.48 h.48 TRSCI: Average S&L corporate income tax rate

$$142a \quad \langle \text{variable } TRSCI \text{ } 142a \rangle \equiv \quad (219)$$

$$TRSCI = \text{Average S\&L corporate income tax rate}$$

Defines:

TRSCI, used in chunk 231.

$$142b \quad \langle \text{equation } trsci \text{ } 142b \rangle \equiv \quad (252)$$

$$\begin{aligned} trsci: trsci - trsci_aerr = & y_trsci(1) * trsci(-1) _ \\ & + (y_trsci(2) * trscit + y_trsci(3) * trscit(-1)) _ \\ & + (y_trsci(4) * xgap2 + y_trsci(5) * xgap2(-1)) _ \\ & + y_trsci(6) * d(trfci, 0, 1) \end{aligned}$$

Defines:

trsci, used in chunk 144f.

Uses trfci 140c, trscit 212a, xgap2 67c, and y_trsci 142c.

$$142c \quad \langle \text{coefficient } y_trsci \text{ } 142c \rangle \equiv \quad (261)$$

$$y_trsci \text{ } 6 \quad 0.791150698521011, 0.9058859419794156, -0.6970366405004266, -0.00076812$$

Defines:

y_trsci, used in chunk 142b.

2.8.49 h.49 TRSIB: Average S&L indirect business tax rate

$$142d \quad \langle \text{variable } TRSIB \text{ } 142d \rangle \equiv \quad (219)$$

$$TRSIB = \text{Average S\&L indirect business tax rate}$$

Defines:

TRSIB, used in chunk 231.

$$142e \quad \langle \text{equation } trsib \text{ } 142e \rangle \equiv \quad (252)$$

$$\begin{aligned} trsib: trsib - trsib_aerr = & y_trsib(1) * trsib(-1) _ \\ & + (y_trsib(2) * trsibt + y_trsib(3) * trsibt(-1)) _ \\ & + y_trsib(4) * xgap2 \end{aligned}$$

Defines:

trsib, used in chunk 145b.

Uses trsibt 212b, xgap2 67c, and y_trsib 142f.

$$142f \quad \langle \text{coefficient } y_trsib \text{ } 142f \rangle \equiv \quad (261)$$

$$y_trsib \text{ } 4 \quad 0.9134383490112551, 1.33647889726315, -1.249917246274406, -3.3538066843$$

Defines:

y_trsib, used in chunk 142e.

2.8.50 h.50 TRSP: Average S&L tax rate for personal income tax and nontax receipts

143a $\langle \text{variable } TRSP \text{ 143a} \rangle \equiv$ (219)
 $TRSP = \text{Average S\&L tax rate for personal income tax and nontax receipts}$
 Defines:
 $TRSP$, used in chunk 231.

143b $\langle \text{equation } trsp \text{ 143b} \rangle \equiv$ (252)

$$\begin{aligned} trsp: trsp - trsp_aerr = & y_trsp(1) * trsp(-1) _ \\ & + (y_trsp(2) * trspt + y_trsp(3) * trspt(-1)) _ \\ & + y_trsp(4) * xgap2(-1) _ \\ & + y_trsp(5) * d(trfp, 0, 1) \end{aligned}$$

Defines:
 $trsp$, used in chunk 145d.
 Uses $trfp$ 141a, $trspt$ 143e, $xgap2$ 67c, and y_trsp 143c.

143c $\langle \text{coefficient } y_trsp \text{ 143c} \rangle \equiv$ (261)
 $y_trsp \ 5 \quad 0.632946369509944, 0.882450152119161, -0.515396521629105, 2.414664053290023e-05, 0.$
 Defines:
 y_trsp , used in chunk 143b.

2.8.51 h.51 TRSPT: Trend S&L personal income tax rate

143d $\langle \text{variable } TRSPT \text{ 143d} \rangle \equiv$ (219)
 $TRSPT = \text{Trend S\&L personal income tax rate}$
 Defines:
 $TRSPT$, used in chunk 231.

143e $\langle \text{equation } trspt \text{ 143e} \rangle \equiv$ (252)

$$\begin{aligned} trspt: trspt - trspt_aerr = & dfpex * trsptx _ \\ & + dfpdbt * (trspt(-1) _ \\ & \quad + y_trspt(1) * (gsdbtn(-1)/xgdpn(-1) - gsdrtr(-1)) _ \\ & \quad + y_trspt(2) * d(gsdbtn(-1)/xgdpn(-1) - gsdrtr(-1), 0, 1)) _ \\ & + dfpsrp * (trspt(-1) _ \\ & \quad + y_trspt(3) * ((gssrpn(-1) - egsgn(-1) + jygsgrn(-1) _ \\ & \quad \quad + jygsen(-1))/xgdpn(-1) - gssrt(-1))) \end{aligned}$$

Defines:
 $trspt$, used in chunk 143b.
 Uses $dfpdbt$ 205a, $dfpex$ 205b, $dfpsrp$ 205c, $egsgn$ 128c, $gsdbtn$ 136a, $gsdrtr$ 207c, $gssrpn$ 136e, $gssrt$ 207d, $jygsgrn$ 81d, $jygsen$ 81f, $trsptx$ 212d, $xgdpn$ 78c, and y_trspt 144a.

144a $\langle \text{coefficient } y_{\text{trspt}} \text{ 144a} \rangle \equiv$ (261)
 $y_{\text{trspt}} \text{ 3} \quad 0.050000000000000000\text{E}+00, 0.500000000000000000\text{E}+00, -0.250000000000000000\text{E}+00$
 Defines:
 y_{trspt} , used in chunk 143e.

2.8.52 h.52 TRSSI: Average S&L social insurance tax rate

144b $\langle \text{variable } TRSSI \text{ 144b} \rangle \equiv$ (219)
 $TRSSI = \text{Average S\&L social insurance tax rate}$
 Defines:
 $TRSSI$, used in chunk 231.

144c $\langle \text{equation } trssi \text{ 144c} \rangle \equiv$ (252)
 $trssi: trssi - trssi_aerr = (y_trssi(1) * trssi(-1) + y_trssi(2) * trssi(-2))$
 $+ (y_trssi(3) * trssit + y_trssi(4) * trssit(-1))$
 $+ y_trssi(5) * xgap2$

Defines:
 $trssi$, used in chunk 145f.
 Uses $trssit$ 212e, $xgap2$ 67c, and y_trssi 144d.

144d $\langle \text{coefficient } y_{\text{trssi}} \text{ 144d} \rangle \equiv$ (261)
 $y_{\text{trssi}} \text{ 5} \quad 1.18174981903228, -0.2318024453193926, 1.575674530080275, -1.52562190379$
 Defines:
 y_{trssi} , used in chunk 144c.

2.8.53 h.53 TSCIN: S&L corporate income tax accruals, current \$

144e $\langle \text{variable } TSCIN \text{ 144e} \rangle \equiv$ (219)
 $TSCIN = \text{S\&L corporate income tax accruals, current \$}$
 Defines:
 $TSCIN$, used in chunk 231.

144f $\langle \text{equation } tscin \text{ 144f} \rangle \equiv$ (252)
 $tscin: tscin - tscin_aerr = trsci * ynicpn$

Defines:
 $tscin$, used in chunks 84–86, 91a, 136e, 161c, 194d, and 197e.
 Uses $trsci$ 142b and $ynicpn$ 85b.

2.8.54 h.54 TSIBN: S&L indirect business tax receipts, current \$

145a $\langle \text{variable } TSIBN \text{ 145a} \rangle \equiv$ (219)
 $TSIBN = \text{S\&L indirect business tax receipts, current \$}$

Defines:

$TSIBN$, used in chunk 231.

145b $\langle \text{equation } tsibn \text{ 145b} \rangle \equiv$ (252)
 $tsibn: tsibn - tsibn_aerr = trsib * ecnian$

Defines:

$tsibn$, used in chunks 85b and 136e.

Uses $ecnian$ 30a and $trsib$ 142e.

2.8.55 h.55 TSPN: S&L personal income tax and nontax receipts, current \$

145c $\langle \text{variable } TSPN \text{ 145c} \rangle \equiv$ (219)
 $TSPN = \text{S\&L personal income tax and nontax receipts, current \$}$

Defines:

$TSPN$, used in chunk 231.

145d $\langle \text{equation } tspn \text{ 145d} \rangle \equiv$ (252)
 $tspn: tspn - tspn_aerr = trsp * (ypn - gftn - gsn)$

Defines:

$tspn$, used in chunks 85f, 92d, 136e, and 146f.

Uses $gftn$ 135b, gsn 137d, $trsp$ 143b, and ypn 85d.

2.8.56 h.56 TSSIN: S&L social insurance tax receipts, current \$

145e $\langle \text{variable } TSSIN \text{ 145e} \rangle \equiv$ (219)
 $TSSIN = \text{S\&L social insurance tax receipts, current \$}$

Defines:

$TSSIN$, used in chunk 231.

145f $\langle \text{equation } tssin \text{ 145f} \rangle \equiv$ (252)
 $tssin: tssin - tssin_aerr = trssi * yniln$

Defines:

$tssin$, used in chunks 89f and 136e.

Uses $trssi$ 144c and $yniln$ 82f.

2.8.57 h.57 YGFSN: Federal government saving

146a $\langle \text{variable } YGFSN \text{ 146a} \rangle \equiv$ (219)
 YGFSN = Federal government saving

Defines:

YGFSN, used in chunk 231.

146b $\langle \text{equation } ygfsn \text{ 146b} \rangle \equiv$ (252)
 ygfsn: ygfsn - ygfsn_aerr = gfsrpn + jygfgn + jygfen

Defines:

ygfsn, never used.

Uses gfsrpn 133d, jygfen 80e, and jygfgn 81b.

2.8.58 h.58 YGSSN: State and Local government saving

146c $\langle \text{variable } YGSSN \text{ 146c} \rangle \equiv$ (219)
 YGSSN = State and Local government saving

Defines:

YGSSN, used in chunk 231.

146d $\langle \text{equation } ygssn \text{ 146d} \rangle \equiv$ (252)
 ygssn: ygssn - ygssn_aerr = gssrpn + jygsn + jygsen

Defines:

ygssn, never used.

Uses gssrpn 136e, jygsen 81d, and jygsn 81f.

2.8.59 h.59 TRYH: Average tax rate on household income

146e $\langle \text{variable } TRYH \text{ 146e} \rangle \equiv$ (219)
 TRYH = Average tax rate on household income

Defines:

TRYH, used in chunk 231.

146f $\langle \text{equation } tryh \text{ 146f} \rangle \equiv$ (252)
 tryh: tryh - tryh_aerr = (tfpn+tspn)/(yhln+yhptn)

Defines:

tryh, used in chunks 89d and 90b.

Uses tfpn 139e, tspn 145d, yhln 89f, and yhptn 91e.

2.9 Financial Sector

2.9.1 i.1 RFFTAY: Value of eff. federal funds rate given by the Taylor rule with output gap

147a $\langle \text{variable } RFFTAY \text{ 147a} \rangle \equiv$ (219)
 $RFFTAY = \text{Value of eff. federal funds rate given by the Taylor rule with output gap}$
 Defines:
 $RFFTAY$, used in chunk 231.

147b $\langle \text{equation } rfftay \text{ 147b} \rangle \equiv$ (252)

$$\begin{aligned} rfftay: rfftay - rfftay_aerr = rstar _ \\ + (picxfe + picxfe(-1) + picxfe(-2) + picxfe(-3)) / 4 _ \\ + y_rfftay(1) * ((picxfe + picxfe(-1) + picxfe(-2) + picxfe(-3)) / 4 \\ + y_rfftay(2) * xgap2 \end{aligned}$$

Defines:
 $rfftay$, used in chunk 150d.
 Uses $picxfe$ 95b, $pitarg$ 209b, $rstar$ 150a, $xgap2$ 67c, and y_rfftay 147c.

147c $\langle \text{coefficient } y_rfftay \text{ 147c} \rangle \equiv$ (261)
 $y_rfftay \quad 2 \quad 0.5, 1.0$
 Defines:
 y_rfftay , used in chunk 147b.

2.9.2 i.2 RFFTLR: Value of eff. federal funds rate given by the Taylor rule with unemployment gap

147d $\langle \text{variable } RFFTLR \text{ 147d} \rangle \equiv$ (219)
 $RFFTLR = \text{Value of eff. federal funds rate given by the Taylor rule with unemployment gap}$
 Defines:
 $RFFTLR$, used in chunk 231.

147e $\langle \text{equation } rfftlr \text{ 147e} \rangle \equiv$ (252)

$$\begin{aligned} rfftlr: rfftlr - rfftlr_aerr = rstar _ \\ + y_rfftlr(1) * pitarg _ \\ + y_rfftlr(2) * ((picxfe + picxfe(-1) + picxfe(-2) + picxfe(-3))) \\ + y_rfftlr(3) * (lurnat + deuc * leuc - lur) \end{aligned}$$

Defines:
 $rfftlr$, used in chunk 150d.
 Uses $deuc$ 204h, $leuc$ 208e, lur 73f, $lurnat$ 77e, $picxfe$ 95b, $pitarg$ 209b, $rstar$ 150a, and y_rfftlr 147f.

147f $\langle \text{coefficient } y_rfftlr \text{ 147f} \rangle \equiv$ (261)
 $y_rfftlr \quad 3 \quad -0.5, .375, 1.1$
 Defines:
 y_rfftlr , used in chunk 147e.

148a $\langle \text{variable } RFFINTAY_{148a} \rangle \equiv$ (219)
 RFFINTAY = Value of eff. federal funds rate given by the inertial Taylor rule
 Defines:
 RFFINTAY, used in chunk 231.

Defines:
rffintay, used in chunk 150d.
 Uses **picxf** 95b, **pitarg** 209b, **rffe** 152e, **rstar** 150a, **xgap2** 67c, and **y_rffintay** 148c.

148d $\langle variable\ RFFALT\ 148d \rangle \equiv$ (219)
RFFALT = Value of eff. federal funds rate given by estimated policy rule
Defines:
RFFALT, used in chunk 231.

Defines:
rffalt, used in chunk 150d.
 Uses **picxfe** 95b, **rff** 153a, **xgap2** 67c, and **y_rffalt** 149a.

149a $\langle \text{coefficient } y_rffalt \text{ 149a} \rangle \equiv$ (261)

$$y_rffalt \quad 6 \quad .0551, 1.2, -.39, .6954, -.5168, .3287$$

Defines:

`y_rffalt`, used in chunk 148e.

2.9.5 i.5 RFFGEN: Value of eff. federal funds rate given by the generalized reaction function

149b $\langle \text{variable } RFFGEN \text{ 149b} \rangle \equiv$ (219)

$$RFFGEN = \text{Value of eff. federal funds rate given by the generalized reaction function}$$

Defines:

`RFFGEN`, used in chunks 209a and 231.

149c $\langle \text{equation } rffgen \text{ 149c} \rangle \equiv$ (252)

$$\begin{aligned} rffgen: rffgen - rffgen_aerr = & y_rffgen(1) _ \\ & + (y_rffgen(2) * rffe(-1) + y_rffgen(3) * rffe(-2) + y_rffgen(4) * \\ & + (y_rffgen(6) * picnia + y_rffgen(7) * picnia(-1) + y_rffgen(8) * \\ & + (y_rffgen(11) * xgap2 + y_rffgen(12) * xgap2(-1) + y_rffgen(13) * \\ & + (y_rffgen(16) * lur + y_rffgen(17) * lur(-1) + y_rffgen(18) * lur \\ & + (y_rffgen(21) * pcnia + y_rffgen(22) * pcnia(-1) + y_rffgen(23) * \\ & + (y_rffgen(26) * rstar + y_rffgen(27) * rstar(-1) + y_rffgen(28) * \\ & + (y_rffgen(31) * pitarg + y_rffgen(32) * pitarg(-1) + y_rffgen(33) * \\ & + (y_rffgen(36) * lurnat + y_rffgen(37) * lurnat(-1) + y_rffgen(38) * \\ & + (y_rffgen(41) * pcstar + y_rffgen(42) * pcstar(-1) + y_rffgen(43) * \\ & + (y_rffgen(46) * picxfe + y_rffgen(47) * picxfe(-1) + y_rffgen(48) * \end{aligned}$$

Defines:

`rffgen`, used in chunk 150d.

Uses `lur` 73f, `lurnat` 77e, `pcnia` 97b, `pcstar` 209a, `picnia` 96f, `picxfe` 95b, `pitarg` 209b,

`rffe` 152e, `rstar` 150a, `xgap2` 67c, and `y_rffgen` 149d.

149d $\langle \text{coefficient } y_rffgen \text{ 149d} \rangle \equiv$ (261)

$$y_rffgen \quad 50 \quad 0.000000000000000000e+00, 0.000000000000000000e+00, 0.000000000000000000e+00,$$

Defines:

`y_rffgen`, used in chunk 149c.

2.9.6 i.6 RSTAR: Equilibrium real federal funds rate (for monetary policy reaction functions)

149e $\langle \text{variable } RSTAR \text{ 149e} \rangle \equiv$ (219)

$$RSTAR = \text{Equilibrium real federal funds rate (for monetary policy reaction functions)}$$

Defines:

`RSTAR`, used in chunks 206e and 231.

150a $\langle \text{equation } rstar \text{ 150a} \rangle \equiv$ (252)

$$rstar: rstar - rstar_aerr = rstar(-1) _ \\ + y_rstar(1) * ((rrffe-rstar(-1))*drstar)$$

Defines:

rstar, used in chunks 147–49.

Uses **drstar** 206e, **rrffe** 153e, and **y_rstar** 150b.

150b $\langle \text{coefficient } y_rstar \text{ 150b} \rangle \equiv$ (261)

$$y_rstar \text{ 1 } .05$$

Defines:

y_rstar, used in chunk 150a.

2.9.7 i.7 RFFRULE: Federal funds rate (effective ann. yield)

150c $\langle \text{variable } RFFRULE \text{ 150c} \rangle \equiv$ (219)

$$RFFRULE = \text{Federal funds rate (effective ann. yield)}$$

Defines:

RFFRULE, used in chunk 231.

150d $\langle \text{equation } rffrule \text{ 150d} \rangle \equiv$ (252)

$$rffrule: rffrule - rffrule_aerr = (@recode((dmpex * 100 * ((1+rfffix/36000)^365-1) _ \\ + dmprr * (rrfix + (picxfe + picxfe(-1) + picxfe(-2) + p \\ + dmptay * rfftay _ \\ + dmptlr * rfftlr _ \\ + dmpintay * rffintay _ \\ + dmpalt * 100*((1+rffalt/36000)^365-1) _ \\ + dmpgen * rffgen)>(rffmin),dmpex * 100 * ((1+rfffix/36000)^3 \\ + dmprr * (rrfix + (picxfe + picxfe(-1) + picxfe(-2) + p \\ + dmptay * rfftay _ \\ + dmptlr * rfftlr _ \\ + dmpintay * rffintay _ \\ + dmpalt * 100*((1+rffalt/36000)^365-1) _ \\ + dmpgen * rffgen,rffmin))$$

Defines:

rffrule, used in chunk 152e.

Uses **dmpalt** 205e, **dmpex** 205f, **dmpgen** 205g, **dmpintay** 205h, **dmprr** 205i, **dmptay** 206b, **dmptlr** 206c, **picxfe** 95b, **rffalt** 148e, **rfffix** 209h, **rffgen** 149c, **rffintay** 148b, **rffmin** 210a, **rfftay** 147b, **rfftlr** 147e, and **rrfix** 210d.

2.9.8 i.8 DMPTLUR: Monetary policy indicator for unemployment threshold

151a $\langle \text{variable } DMPTLUR \text{ 151a} \rangle \equiv$ (219)
 DMPTLUR = Monetary policy indicator for unemployment threshold

Defines:

 DMPTLUR, used in chunk 231.

151b $\langle \text{equation } dmptlur \text{ 151b} \rangle \equiv$ (252)
 dmptlur: dmptlur - dmptlur_aerr = $1/(1+\exp(y_dmptlur(1)*(lur-lurtrsh)))$

Defines:

 dmptlur, used in chunk 152a.

Uses lur 73f, lurtrsh 208g, and y_dmptlur 151c.

151c $\langle \text{coefficient } y_dmptlur \text{ 151c} \rangle \equiv$ (261)
 y_dmptlur 1 25

Defines:

 y_dmptlur, used in chunk 151b.

2.9.9 i.9 DMPTPI: Monetary policy indicator for inflation threshold

151d $\langle \text{variable } DMPTPI \text{ 151d} \rangle \equiv$ (219)
 DMPTPI = Monetary policy indicator for inflation threshold

Defines:

 DMPTPI, used in chunk 231.

151e $\langle \text{equation } dmptpi \text{ 151e} \rangle \equiv$ (252)
 dmptpi: dmptpi - dmptpi_aerr = $1/(1+\exp(y_dmptpi(1)*(zpic58-pitrsh)))$

Defines:

 dmptpi, used in chunk 152a.

Uses pitrsh 209c, y_dmptpi 151f, and zpic58 184b.

151f $\langle \text{coefficient } y_dmptpi \text{ 151f} \rangle \equiv$ (261)
 y_dmptpi 1 -25

Defines:

 y_dmptpi, used in chunk 151e.

2.9.10 i.10 DMPTMAX: Monetary policy indicator for both thresholds

151g $\langle \text{variable } DMPTMAX \text{ 151g} \rangle \equiv$ (219)
 DMPTMAX = Monetary policy indicator for both thresholds

Defines:

 DMPTMAX, used in chunk 231.

152a $\langle \text{equation } dmptmax \text{ 152a} \rangle \equiv$ (252)
 $dmptmax: dmptmax - dmptmax_aerr = (@recode((dmptlur) > (dmptpi), dmptlur, dmptpi))$

Defines:

$dmptmax$, used in chunk 152c.

Uses $dmptlur$ 151b and $dmptpi$ 151e.

2.9.11 i.11 DMPTR: Monetary policy indicator for policy rule thresholds

152b $\langle \text{variable } DMPTR \text{ 152b} \rangle \equiv$ (219)
 $DMPTR = \text{Monetary policy indicator for policy rule thresholds}$

Defines:

$DMPTR$, used in chunk 231.

152c $\langle \text{equation } dmptr \text{ 152c} \rangle \equiv$ (252)
 $dmptr: dmptr - dmptr_aerr = (@recode((dmptmax) > (dmptr(-1)), dmptmax, dmptr(-1)))$

Defines:

$dmptr$, used in chunk 152e.

Uses $dmptmax$ 152a.

2.9.12 i.12 RFFE: Federal funds rate (effective ann. yield)

152d $\langle \text{variable } RFFE \text{ 152d} \rangle \equiv$ (219)
 $RFFE = \text{Federal funds rate (effective ann. yield)}$

Defines:

$RFFE$, used in chunk 231.

152e $\langle \text{equation } rffe \text{ 152e} \rangle \equiv$ (252)
 $rffe: rffe - rffe_aerr = (1 - dmptrsh) * (@recode((rffrule) > (rffmin), rffrule, rffmin))$
 $+ dmptrsh * (@recode(((dmptr(-1) * rffrule + (1 - dmptr(-1)) * rffmin)))$

Defines:

$rffe$, used in chunks 88d, 148b, 149c, 153, 154a, and 178–97.

Uses $dmptr$ 152c, $dmptrsh$ 206d, $rffmin$ 210a, and $rffrule$ 150d.

2.9.13 i.13 RFF: Federal funds rate

152f $\langle \text{variable } RFF \text{ 152f} \rangle \equiv$ (219)
 $RFF = \text{Federal funds rate}$

Defines:

RFF , used in chunk 231.

153a $\langle \text{equation } rff \text{ 153a} \rangle \equiv$ (252)

$$rff: rff - rff_aerr = 36000 * ((1+.01*rffe)^{(1/365)} - 1)$$

Defines:

rff, used in chunks 148e and 153c.

Uses **rffe** 152e.

2.9.14 i.14 DELRFF: Federal funds rate, first diff

153b $\langle \text{variable } DELRFF \text{ 153b} \rangle \equiv$ (219)

$$DELRFF = \text{Federal funds rate, first diff}$$

Defines:

DELRFF, used in chunk 231.

153c $\langle \text{equation } delrff \text{ 153c} \rangle \equiv$ (252)

$$delrff: delrff - delrff_aerr = rff - rff(-1)$$

Defines:

delrff, never used.

Uses **rff** 153a.

2.9.15 i.15 RRFEE: Real federal funds rate (effective ann. yield)

153d $\langle \text{variable } RRFEE \text{ 153d} \rangle \equiv$ (219)

$$RRFEE = \text{Real federal funds rate (effective ann. yield)}$$

Defines:

RRFEE, used in chunk 231.

153e $\langle \text{equation } rrffe \text{ 153e} \rangle \equiv$ (252)

$$rrffe: rrffe - rrffe_aerr = rffe - (\text{picxfe} + \text{picxfe}(-1) + \text{picxfe}(-2) + \text{picxfe}(-3)) / 4$$

Defines:

rrffe, used in chunks 150a and 177a.

Uses **picxfe** 95b and **rffe** 152e.

2.9.16 i.16 RTBE: 3-month Treasury bill rate (effective ann. yield)

153f $\langle \text{variable } RTBE \text{ 153f} \rangle \equiv$ (219)

$$RTBE = \text{3-month Treasury bill rate (effective ann. yield)}$$

Defines:

RTBE, used in chunk 231.

154a $\langle \text{equation } rtbe \text{ 154a} \rangle \equiv$ (252)

$$\begin{aligned} rtbe: rtbe - rtbe_aerr = & y_rtbe(1) _ \\ & + (y_rtbe(2) * rtbe(-1) + y_rtbe(3) * rtbe(-2)) _ \\ & + (y_rtbe(4) * rffe + y_rtbe(5) * rffe(-1)) \end{aligned}$$

Defines:

rtbe, used in chunk 154d.

Uses **rffe** 152e and **y_rtbe** 154b.

154b $\langle \text{coefficient } y_rtbe \text{ 154b} \rangle \equiv$ (261)

$$y_rtbe \quad 5 \quad -0.06677368009690213, 0.7720707564737897, 0.1224099968713681, 0.78509523$$

Defines:

y_rtbe, used in chunk 154a.

2.9.17 i.17 RTB: 3-month Treasury bill rate

154c $\langle \text{variable } RTB \text{ 154c} \rangle \equiv$ (219)

$$RTB = \text{3-month Treasury bill rate}$$

Defines:

RTB, used in chunk 231.

154d $\langle \text{equation } rtb \text{ 154d} \rangle \equiv$ (252)

$$rtb: rtb - rtb_aerr = 36000/90 * (1 - (.01 * rtbe + 1)^{-90/365})$$

Defines:

rtb, used in chunks 55b and 164f.

Uses **rtbe** 154a.

2.9.18 i.18 RG5P: 5-year Treasury note rate. term premium

154e $\langle \text{variable } RG5P \text{ 154e} \rangle \equiv$ (219)

$$RG5P = \text{5-year Treasury note rate. term premium}$$

Defines:

RG5P, used in chunk 231.

154f $\langle \text{equation } rg5p \text{ 154f} \rangle \equiv$ (252)

$$\begin{aligned} rg5p: rg5p - rg5p_aerr = & y_rg5p(1) _ \\ & + y_rg5p(2) * zgap05 _ \\ & + y_rg5p(3) * (rg5p(-1) - y_rg5p(1) - y_rg5p(2) * zgap05(-1)) \end{aligned}$$

Defines:

rg5p, used in chunk 155c.

Uses **y_rg5p** 155a and **zgap05** 179e.

155a $\langle \text{coefficient } y_rg5p \text{ 155a} \rangle \equiv$ (261)
 $y_rg5p \quad 3 \quad 0.7478923780795074, -0.3984697511015516, 0.9119509672669279$
 Defines:
 y_rg5p , used in chunk 154f.

2.9.19 i.19 RG5E: 5-year Treasury note rate (effective ann. yield)

155b $\langle \text{variable } RG5E \text{ 155b} \rangle \equiv$ (219)
 $RG5E \quad = \text{5-year Treasury note rate (effective ann. yield)}$
 Defines:
 $RG5E$, used in chunks 177e, 179d, and 231.

155c $\langle \text{equation } rg5e \text{ 155c} \rangle \equiv$ (252)
 $rg5e: rg5e - rg5e_aerr = zrff5 + rg5p$

Defines:
 $rg5e$, used in chunks 39e and 155e.
 Uses $rg5p$ 154f and $zrff5$ 178a.

2.9.20 i.20 RG5: 5-year Treasury note rate

155d $\langle \text{variable } RG5 \text{ 155d} \rangle \equiv$ (219)
 $RG5 \quad = \text{5-year Treasury note rate}$
 Defines:
 $RG5$, used in chunk 231.

155e $\langle \text{equation } rg5 \text{ 155e} \rangle \equiv$ (252)
 $rg5: rg5 - rg5_aerr = (((.01*rg5e + 1)^.5 - 1) * 200)$

Defines:
 $rg5$, used in chunks 159d and 164f.
 Uses $rg5e$ 155c.

2.9.21 i.21 RG10P: 10-year Treasury bond rate, term premium

155f $\langle \text{variable } RG10P \text{ 155f} \rangle \equiv$ (219)
 $RG10P \quad = \text{10-year Treasury bond rate, term premium}$
 Defines:
 $RG10P$, used in chunk 231.

156a $\langle \text{equation } rg10p \text{ 156a} \rangle \equiv$ (252)

$$\begin{aligned} \text{rg10p: rg10p} - \text{rg10p_aerr} = & \text{y_rg10p}(1) _ \\ & + \text{y_rg10p}(2) * \text{zgap10} _ \\ & + \text{y_rg10p}(3) * \text{d8095} _ \\ & + \text{y_rg10p}(4) * (\text{rg10p}(-1) - \text{y_rg10p}(1) - \text{y_rg10p}(2) * \text{zgap10}(-1) - \end{aligned}$$

Defines:

rg10p, used in chunk 156d.

Uses **d8095** 203f, **y_rg10p** 156b, and **zgap10** 180c.

156b $\langle \text{coefficient } y_rg10p \text{ 156b} \rangle \equiv$ (261)

$$\text{y_rg10p } 4 \quad 0.9985065593208419, -0.4718548432007495, 0.7314217770878953, 0.89593363$$

Defines:

y_rg10p, used in chunk 156a.

2.9.22 i.22 RG10E: 10-year Treasury bond rate (effective ann. yield)

156c $\langle \text{variable } RG10E \text{ 156c} \rangle \equiv$ (219)

$$\text{RG10E} = \text{10-year Treasury bond rate (effective ann. yield)}$$

Defines:

RG10E, used in chunks 178c, 180b, and 231.

156d $\langle \text{equation } rg10e \text{ 156d} \rangle \equiv$ (252)

$$\text{rg10e: rg10e} - \text{rg10e_aerr} = \text{zrff10} + \text{rg10p}$$

Defines:

rg10e, used in chunks 39e, 156f, 158f, 160a, and 171d.

Uses **rg10p** 156a and **zrff10** 178d.

2.9.23 i.23 RG10: 10-year Treasury bond rate

156e $\langle \text{variable } RG10 \text{ 156e} \rangle \equiv$ (219)

$$\text{RG10} = \text{10-year Treasury bond rate}$$

Defines:

RG10, used in chunk 231.

156f $\langle \text{equation } rg10 \text{ 156f} \rangle \equiv$ (252)

$$\text{rg10: rg10} - \text{rg10_aerr} = (((.01 * \text{rg10e} + 1)^{.5} - 1) * 200)$$

Defines:

rg10, used in chunks 55b and 164f.

Uses **rg10e** 156d.

2.9.24 i.24 RG30P: 30-year Treasury bond rate, term premium

$$157a \quad \langle \text{variable } RG30P \text{ } 157a \rangle \equiv \quad (219)$$

$$RG30P = 30\text{-year Treasury bond rate, term premium}$$

Defines:

RG30P, used in chunk 231.

$$157b \quad \langle \text{equation } rg30p \text{ } 157b \rangle \equiv \quad (252)$$

$$\begin{aligned} rg30p: rg30p - rg30p_aerr = & y_rg30p(1) _ \\ & + y_rg30p(2) * zgap30 _ \\ & + y_rg30p(3) * d8095 _ \\ & + y_rg30p(4) * (rg30p(-1) - y_rg30p(1) - y_rg30p(2)*zgap30(-1) - y_rg30p(3)* \end{aligned}$$

Defines:

rg30p, used in chunk 157e.

Uses d8095 203f, y_rg30p 157c, and zgap30 181a.

$$157c \quad \langle \text{coefficient } y_rg30p \text{ } 157c \rangle \equiv \quad (261)$$

$$y_rg30p \text{ } 4 \quad 1.337544689343979, -0.5892843861420656, 0.8365523842356651, 0.9045588991659449$$

Defines:

y_rg30p, used in chunk 157b.

2.9.25 i.25 RG30E: 30-year Treasury bond rate (effective ann. yield)

$$157d \quad \langle \text{variable } RG30E \text{ } 157d \rangle \equiv \quad (219)$$

$$RG30E = 30\text{-year Treasury bond rate (effective ann. yield)}$$

Defines:

RG30E, used in chunks 179a, 180e, and 231.

$$157e \quad \langle \text{equation } rg30e \text{ } 157e \rangle \equiv \quad (252)$$

$$rg30e: rg30e - rg30e_aerr = zrff30 + rg30p$$

Defines:

rg30e, used in chunks 158a and 161a.

Uses rg30p 157b and zrff30 179b.

2.9.26 i.26 RG30: 30-year Treasury bond rate

$$157f \quad \langle \text{variable } RG30 \text{ } 157f \rangle \equiv \quad (219)$$

$$RG30 = 30\text{-year Treasury bond rate}$$

Defines:

RG30, used in chunk 231.

$$\langle \text{equation } rg30 \text{ 158a} \rangle \equiv \quad (252)$$

$$rg30: rg30 - rg30_aerr = (((.01*rg30e + 1)^.5 - 1) * 200)$$

Defines:

rg30, used in chunk 164f.

Uses **rg30e** 157e.

2.9.27 i.27 RBBBP: S&P BBB corporate bond rate, risk/term premium

$$\langle \text{variable } RBBBP \text{ 158b} \rangle \equiv \quad (219)$$

$$RBBBP = \text{S\&P BBB corporate bond rate, risk/term premium}$$

Defines:

RBBBP, used in chunk 231.

$$\langle \text{equation } rbbbp \text{ 158c} \rangle \equiv \quad (252)$$

$$rbbbp: rbbbp - rbbbp_aerr = y_rbbbp(1) _ \\ + y_rbbbp(2) * zgap10 _ \\ + y_rbbbp(3) * (rbbbp(-1) - y_rbbbp(4) - y_rbbbp(5)*zgap10(-1))$$

Defines:

rbbbp, used in chunks 158f and 160d.

Uses **y_rbbbp** 158d and **zgap10** 180c.

$$\langle \text{coefficient } y_rbbbp \text{ 158d} \rangle \equiv \quad (261)$$

$$y_rbbbp \ 5 \quad 1.663544231588651, -0.1493888609930089, 0.8866986585299741, 1.663544231588651$$

Defines:

y_rbbbp, used in chunk 158c.

2.9.28 i.28 RBBBE: S&P BBB corporate bond rate (effective ann. yield)

$$\langle \text{variable } RBBBE \text{ 158e} \rangle \equiv \quad (219)$$

$$RBBBE = \text{S\&P BBB corporate bond rate (effective ann. yield)}$$

Defines:

RBBBE, used in chunk 231.

$$\langle \text{equation } rbbbe \text{ 158f} \rangle \equiv \quad (252)$$

$$rbbbe: rbbbe - rbbbe_aerr = rbbbp + rg10e$$

Defines:

rbbbe, used in chunks 39e, 83d, and 159b.

Uses **rbbbp** 158c and **rg10e** 156d.

2.9.29 i.29 RBBB: S&P BBB corporate bond rate

$$\langle \text{variable } RBBB \text{ 159a} \rangle \equiv \quad (219)$$

$$RBBB = \text{S\&P BBB corporate bond rate}$$

Defines:

`RBBB`, used in chunk 231.

$$\langle \text{equation } rbbb \text{ 159b} \rangle \equiv \quad (252)$$

$$rbbb: rbbb - rbbb_aerr = (((0.01*rbbbe + 1)^{.5} - 1) * 200)$$

Defines:

`rbbb`, never used.

Uses `rbbbe` 158f.

2.9.30 i.30 RCAR: New car loan rate at finance companies

$$\langle \text{variable } RCAR \text{ 159c} \rangle \equiv \quad (219)$$

$$RCAR = \text{New car loan rate at finance companies}$$

Defines:

`RCAR`, used in chunk 231.

$$\langle \text{equation } rcar \text{ 159d} \rangle \equiv \quad (252)$$

$$\begin{aligned} rcar: rcar - rcar_aerr = & y_rcar(1) _ \\ & + y_rcar(2) * d79a _ \\ & + y_rcar(3) * ((1-d79a)*t47) _ \\ & + y_rcar(4) * rcar(-1) _ \\ & + (y_rcar(5) * rg5 + y_rcar(6) * rg5(-1)) \end{aligned}$$

Defines:

`rcar`, used in chunks 31c and 88d.

Uses `rg5` 155e, `t47` 210e, and `y_rcar` 159e.

$$\langle \text{coefficient } y_rcar \text{ 159e} \rangle \equiv \quad (261)$$

$$y_rcar \quad 6 \quad 2.100170296931854, -1.167642954704071, -0.008386800063101975, 0.6937687101118568, 0$$

Defines:

`y_rcar`, used in chunk 159d.

2.9.31 i.31 RME: Interest rate on conventional mortgages (effective ann. yield)

$$\langle \text{variable } RME \text{ 159f} \rangle \equiv \quad (219)$$

$$RME = \text{Interest rate on conventional mortgages (effective ann. yield)}$$

Defines:

`RME`, used in chunk 231.

160a $\langle \text{equation } rme \text{ 160a} \rangle \equiv$ (252)

```
rme: d( rme, 0, 1 ) - rme_aerr = y_rme(1) _
      + y_rme(2) * d( rg10e, 0, 1) _
      + y_rme(3) * d87 * d( rg10e, 0, 1) _
      + y_rme(4) * (rg10e(-1)-rme(-1)) _
      + y_rme(5) * d87 * (rg10e(-1)-rme(-1))
```

Defines:

rme, used in chunks 26e, 31e, and 165f.

Uses **d87** 204d, **rg10e** 156d, and **y_rme** 160b.

160b $\langle \text{coefficient } y_rme \text{ 160b} \rangle \equiv$ (261)

```
y_rme 5 0.4927100798849811,0.6776016328060693,0.2424386344238626,0.230503798
```

Defines:

y_rme, used in chunk 160a.

2.9.32 i.32 REQP: Real expected rate of return on equity, premium component

160c $\langle \text{variable } REQP \text{ 160c} \rangle \equiv$ (219)

REQP = Real expected rate of return on equity, premium component

Defines:

REQP, used in chunk 231.

160d $\langle \text{equation } reqp \text{ 160d} \rangle \equiv$ (252)

```
reqp: reqp - reqp_aerr = y_reqp(1) + y_reqp(2) * rbbbp _
      + y_reqp(3) * (reqp(-1) - y_reqp(4) - y_reqp(5)*rbbbp(-1))
```

Defines:

reqp, used in chunks 55b and 161a.

Uses **rbbbp** 158c and **y_reqp** 160e.

160e $\langle \text{coefficient } y_reqp \text{ 160e} \rangle \equiv$ (261)

```
y_reqp 5 2.882980324228344,0.6395674906531285,0.8185047577678474,2.8829803242
```

Defines:

y_reqp, used in chunk 160d.

2.9.33 i.33 REQ: Real expected rate of return on equity

160f $\langle \text{variable } REQ \text{ 160f} \rangle \equiv$ (219)

REQ = Real expected rate of return on equity

Defines:

REQ, used in chunks 183d and 231.

$$161a \quad \langle \text{equation req 161a} \rangle \equiv \quad (252)$$

$$\text{req: req} - \text{req_aerr} = \text{rg30e} - \text{zpic30} + \text{reqp}$$

Defines:

req, used in chunks 39e and 161c.

Uses **reqp** 160d, **rg30e** 157e, and **zpic30** 183e.

2.9.34 i.34 WPSN: Household stock market wealth, current \$

$$161b \quad \langle \text{variable WPSN 161b} \rangle \equiv \quad (219)$$

$$\text{WPSN} = \text{Household stock market wealth, current \$}$$

Defines:

WPSN, used in chunks 194c and 231.

$$161c \quad \langle \text{equation wpsn 161c} \rangle \equiv \quad (252)$$

$$\begin{aligned} \text{wpsn: } \log(\text{wpsn}) - \text{wpsn_aerr} = & \log((\text{ynicpn}-\text{tfcin}-\text{tscin}) \cdot .5) - \\ & - .25 * (\text{req}-\text{zdivgr}) - \\ & + \log(25) + 1 \end{aligned}$$

Defines:

wpsn, used in chunk 161e.

Uses **req** 161a, **tfcin** 139a, **tscin** 144f, **ynicpn** 85b, and **zdivgr** 194d.

2.9.35 i.35 WPS: Household stock market wealth, real

$$161d \quad \langle \text{variable WPS 161d} \rangle \equiv \quad (219)$$

$$\text{WPS} = \text{Household stock market wealth, real}$$

Defines:

WPS, used in chunk 231.

$$161e \quad \langle \text{equation wps 161e} \rangle \equiv \quad (252)$$

$$\text{wps: wps} - \text{wps_aerr} = \text{wpsn}/(.01 \cdot \text{pcnia})$$

Defines:

wps, used in chunk 27e.

Uses **pcnia** 97b and **wpsn** 161c.

2.9.36 i.36 RCGAIN: Rate of capital gain on the non-equity portion of household wealth

$$161f \quad \langle \text{variable RCGAIN 161f} \rangle \equiv \quad (219)$$

$$\text{RCGAIN} = \text{Rate of capital gain on the non-equity portion of household wealth}$$

Defines:

RCGAIN, used in chunk 231.

162a $\langle \text{equation } rcgain \text{ 162a} \rangle \equiv$ (252)

$$\begin{aligned} rcgain: rcgain - rcgain_aerr = & picx4 + y_rcgain(1) _ \\ & + y_rcgain(2) * xgap2 _ \\ & + y_rcgain(3) * (rcgain(-1) - picx4(-1) - y_rcgain(4) _ \\ & - y_rcgain(5) * xgap2(-1)) \end{aligned}$$

Defines:

`rcgain`, used in chunk 163a.

Uses `picx4` 120d, `xgap2` 67c, and `y_rcgain` 162b.

162b $\langle \text{coefficient } y_rcgain \text{ 162b} \rangle \equiv$ (261)

$$y_rcgain \quad 5 \quad 0.1522590051966577, 0.2987109747902424, 0.2513416212164487, 0.15$$

Defines:

`y_rcgain`, used in chunk 162a.

2.9.37 i.37 PHOUSE: Loan Performance House Price Index

162c $\langle \text{variable } PHOUSE \text{ 162c} \rangle \equiv$ (219)

$$PHOUSE = \text{Loan Performance House Price Index}$$

Defines:

`PHOUSE`, used in chunk 231.

162d $\langle \text{equation } phouse \text{ 162d} \rangle \equiv$ (252)

$$\begin{aligned} phouse: d(\log(phouse), 0, 1) - phouse_aerr = & y_phouse(1) + y_phouse(2) * d(\log(phouse) \\ & + y_phouse(3) * \log(phouse(-1)/(pchr(-1)*pcnia(-1))) \end{aligned}$$

Defines:

`phouse`, used in chunk 163a.

Uses `pchr` 120a, `pcnia` 97b, and `y_phouse` 162e.

162e $\langle \text{coefficient } y_phouse \text{ 162e} \rangle \equiv$ (261)

$$y_phouse \quad 3 \quad 0.004817103239693556, 0.8898461413782496, -0.01120829645070205$$

Defines:

`y_phouse`, used in chunk 162d.

2.9.38 i.38 WPON: Household property wealth ex. stock market, current \$

162f $\langle \text{variable } WPON \text{ 162f} \rangle \equiv$ (219)

$$WPON = \text{Household property wealth ex. stock market, current \$}$$

Defines:

`WPON`, used in chunk 231.

Uses `ex` 47c.

163a $\langle \text{equation } wpon \text{ 163a} \rangle \equiv$ (252)

$$\begin{aligned} wpon: wpon - wpon_aerr = & wpon(-1) * \exp((1 - ((phouse(-1) * kh(-1) / 116) / wpon(-1))) * rcgain / 400 \\ & + ((phouse(-1) * kh(-1) / 116) / wpon(-1)) * d(\log(phouse), 0, 1)) _ \\ & + .25 * (ydn - ecnian - yhibn) _ \\ & + .25 * (.01 * pcdr * pcnia * (ecd - jkcd)) \end{aligned}$$

Defines:

`wpon`, used in chunk 164a.

Uses `ecd` 26b, `ecnian` 30a, `jkcd` 32a, `kh` 31a, `pcdr` 120f, `pcnia` 97b, `phouse` 162d, `rcgain` 162a, `ydn` 85f, and `yhibn` 88d.

2.9.39 i.39 MEI: Multiplicative discrepancy for the difference between XGDI and XGDO

163b $\langle \text{variable } MEI \text{ 163b} \rangle \equiv$ (219)

$$MEI = \text{Multiplicative discrepancy for the difference between XGDI and XGDO}$$

Defines:

`MEI`, used in chunk 231.

Uses `XGDI` 63f and `XGDO` 64b.

163c $\langle \text{equation } mei \text{ 163c} \rangle \equiv$ (252)

$$mei: \log(me_i) - mei_aerr = y_mei(1) * \log(me_i(-1))$$

Defines:

`mei`, used in chunk 64a.

Uses `y_mei` 163d.

163d $\langle \text{coefficient } y_mei \text{ 163d} \rangle \equiv$ (261)

$$y_mei \quad 1 \quad 0.86$$

Defines:

`y_mei`, used in chunk 163c.

2.9.40 i.40 WPO: Household property wealth ex. stock market, real

163e $\langle \text{variable } WPO \text{ 163e} \rangle \equiv$ (219)

$$WPO = \text{Household property wealth ex. stock market, real}$$

Defines:

`WPO`, used in chunk 231.

Uses `ex` 47c.

$$164a \quad \langle \text{equation } wpo \text{ 164a} \rangle \equiv \quad (252)$$

$$wpo: wpo - wpo_aerr = wpon / (.01 * pcnia)$$

Defines:

`wpo`, used in chunk 27e.

Uses `pcnia` 97b and `wpon` 163a.

2.9.41 i.41 MEP: Multiplicative discrepancy for the difference between XGDP and XGDO

$$164b \quad \langle \text{variable } MEP \text{ 164b} \rangle \equiv \quad (219)$$

$$MEP = \text{Multiplicative discrepancy for the difference between XGDP and XGDO}$$

Defines:

`MEP`, used in chunk 231.

Uses `XGDO` 64b and `XGDP` 56c.

$$164c \quad \langle \text{equation } mep \text{ 164c} \rangle \equiv \quad (252)$$

$$mep: \log(mep) - mep_aerr = y_mep(1) * \log(mep(-1))$$

Defines:

`mep`, used in chunk 64c.

Uses `y_mep` 164d.

$$164d \quad \langle \text{coefficient } y_mep \text{ 164d} \rangle \equiv \quad (261)$$

$$y_mep \quad 1 \quad 0.86$$

Defines:

`y_mep`, used in chunk 164c.

2.9.42 i.42 RGW: Approximate average rate of interest on new federal debt

$$164e \quad \langle \text{variable } RGW \text{ 164e} \rangle \equiv \quad (219)$$

$$RGW = \text{Approximate average rate of interest on new federal debt}$$

Defines:

`RGW`, used in chunk 231.

$$164f \quad \langle \text{equation } rgw \text{ 164f} \rangle \equiv \quad (252)$$

$$rgw: rgw - rgw_aerr = y_rgw(1) * rtb_ + y_rgw(2) * rg5_ + y_rgw(3) * rg10_ + y_rgw(4) * rg30$$

Defines:

`rgw`, used in chunk 165c.

Uses `rg10` 156f, `rg30` 158a, `rg5` 155e, `rtb` 154d, and `y_rg` 165a.

$$165a \quad \langle \text{coefficient } y_{\text{rgw}} \text{ 165a} \rangle \equiv \quad (261)$$

$$y_{\text{rgw}} \quad 4 \quad .00495, .00271, .00129, .00105$$

Defines:

y_{rgw} , used in chunk 164f.

2.9.43 i.43 RGFINT: Average rate of interest on existing federal debt

$$165b \quad \langle \text{variable } RGFINT \text{ 165b} \rangle \equiv \quad (219)$$

$$RGFINT \quad = \text{Average rate of interest on existing federal debt}$$

Defines:

$RGFINT$, used in chunk 231.

$$165c \quad \langle \text{equation } rgfint \text{ 165c} \rangle \equiv \quad (252)$$

$$\begin{aligned} rgfint: rgfint - rgfint_aerr \quad & \\ & = (y_{\text{rgfint}}(1) * rgfint(-1) + (1 - y_{\text{rgfint}}(1)) * rgw(-1)) * (gfdbtn(-2) / gfdbtn(-1)) \\ & + rgw(-1) * (1 - gfdbtn(-2) / gfdbtn(-1)) + y_{\text{rgfint}}(2) \end{aligned}$$

Defines:

$rgfint$, used in chunks 132c and 136c.

Uses $gfdbtn$ 132a, rgw 164f, and y_{rgfint} 165d.

$$165d \quad \langle \text{coefficient } y_{\text{rgfint}} \text{ 165d} \rangle \equiv \quad (261)$$

$$y_{\text{rgfint}} \quad 2 \quad 0.86, 0.005417428040208504$$

Defines:

y_{rgfint} , used in chunk 165c.

2.9.44 i.44 RRMET: Real mortgage rate, trend

$$165e \quad \langle \text{variable } RRMET \text{ 165e} \rangle \equiv \quad (219)$$

$$RRMET \quad = \text{Real mortgage rate, trend}$$

Defines:

$RRMET$, used in chunks 182d and 231.

$$165f \quad \langle \text{equation } rrmnet \text{ 165f} \rangle \equiv \quad (252)$$

$$\begin{aligned} rrmnet: rrmnet - rrmnet_aerr = y_{\text{rrmet}}(1) * rrmnet(-1) \quad & \\ & + y_{\text{rrmet}}(2) * (rme - zpi10) \end{aligned}$$

Defines:

$rrmet$, used in chunks 27b and 83d.

Uses rme 160a, y_{rrmet} 165g, and $zpi10$ 182e.

$$165g \quad \langle \text{coefficient } y_{\text{rrmet}} \text{ 165g} \rangle \equiv \quad (261)$$

$$y_{\text{rrmet}} \quad 2 \quad .9048, .0952$$

Defines:

y_{rrmet} , used in chunk 165f.

2.10 Foreign Activity

2.10.1 j.1 FXGAP: Foreign output gap (world, bilateral export weights)

166a $\langle \text{variable } FXGAP \text{ 166a} \rangle \equiv$ (219)
 FXGAP = Foreign output gap (world, bilateral export weights)

Defines:
 FXGAP, used in chunk 231.

166b $\langle \text{equation } fxgap \text{ 166b} \rangle \equiv$ (252)
 fxgap: fxgap - fxgap_aerr = _
 + y_fxgap(1) * fxgap(-1) _
 + y_fxgap(2) * fxgap(-2) _
 + y_fxgap(3) * ((frs10(-1) _
 -(fpi10(-1)+fpi10(-2)+fpi10(-3)+fpi10(-4))/4 + frs10(-2) _
 -(fpi10(-2)+fpi10(-3)+fpi10(-4)+fpi10(-5))/4 + frs10(-3) _
 -(fpi10(-3)+fpi10(-4)+fpi10(-5)+fpi10(-6))/4) /3-frstar) _
 + y_fxgap(4) * xgap2(-1)

Defines:
 fxgap, used in chunks 47c, 166e, 167e, 170a, and 171a.
 Uses fpi10 167e, frs10 170a, frstar 170d, xgap2 67c, and y_fxgap 166c.

166c $\langle \text{coefficient } y_fxgap \text{ 166c} \rangle \equiv$ (261)
 y_fxgap 4 1.284002584226955, -0.4544105287732581, -0.05, 0.02742233318740996
 Defines:
 y_fxgap, used in chunk 166b.

2.10.2 j.2 FGDP: Foreign aggregate GDP (world, bilateral export weights)

166d $\langle \text{variable } FGDP \text{ 166d} \rangle \equiv$ (219)
 FGDP = Foreign aggregate GDP (world, bilateral export weights)

Defines:
 FGDP, used in chunk 231.

166e $\langle \text{equation } fgdp \text{ 166e} \rangle \equiv$ (252)
 fgdp: fgdp - fgdp_aerr = fgdpt*exp(fxgap/100)

Defines:
 fgdp, used in chunk 47c.
 Uses fgdp 167b and fxgap 166b.

2.10.3 j.3 FGDPT: Foreign aggregate GDP (world, bilateral export weights), trend

167a $\langle variable\ FGDPT\ 167a \rangle \equiv$ (219)
 FGDPT = Foreign aggregate GDP (world, bilateral export weights), trend
 Defines:
 FGDPT, used in chunk 231.

$$\begin{aligned} \text{fgdpt: } d(\log(\text{fgdpt}), 0, 1) - \text{fgdpt_aerr} &= \text{y_fgdpt}(1) - \\ &+ \text{y_fgdpt}(2) * \log(\text{fgdpt}(-1)/\text{xgdpt}(-1)) - \\ &+ \text{y_fgdpt}(3) * (\text{hggdpt} + \text{hggdpt}(-1) + \text{hggdpt}(-2) + \text{hggdpt}(-3)) / 1600 \end{aligned} \quad (252)$$

167c $\langle \text{coefficient } y_fgdpt \text{ } 167c \rangle \equiv$ (261)
 $y_fgdpt \text{ } 3 \quad - .458264, - .1, 1.0$
 Defines:
 y_fgdpt , used in chunk 167b.

2.10.4 j.4 FPI10: Foreign consumer price inflation (G10)

167d $\langle \text{variable FPI10 167d} \rangle \equiv$ (219)
 FPI10 = Foreign consumer price inflation (G10)
 Defines:
 FPI10, used in chunk 231.

```

167e      <equation fpi10 167e>≡ (252)
      fpi10: fpi10-fpi10_aerr = y_fpi10(1) * ( ( fpi10(-1) +  fpi10(-2) +  fpi10(-3) +  fpi10(-4)) /
      + y_fpi10(2) * fpi1trg _
      + y_fpi10(3) * fxi1gap(-1) _
      + ( y_fpi10(4) * d( log(poilr), 0, 1 ) +  y_fpi10(5) * d( log(poilr(-1)), 0,

```

167f $\langle \text{coefficient } y_fpi10 \text{ 167f} \rangle \equiv$ (261)
 $y_fpi10 \ 5 \quad 0.7045829169372979, 0.2954170830627021, 0.2531839520282475, 5.324212789847609, 0.91$
 Defines:
 y_fpi10 , used in chunk 167e.

2.10.5 j.5 FPI10T: Foreign consumer price inflation, trend (G10)

$$168a \quad \langle variable \ FPI10T \ 168a \rangle \equiv \quad (219)$$

FPI10T = Foreign consumer price inflation, trend (G10)

Defines:

FPI10T, used in chunk 231.

$$168b \quad \langle equation \ fpi10t \ 168b \rangle \equiv \quad (252)$$

$$fpi10t: fpi10t - fpi10t_aerr = y_fpi10t(1) * fpi10t(-1) -$$

$$+ y_fpi10t(2) * fpi10$$

Defines:

fpi10t, used in chunk 171d.

Uses `fpi10` 167e and `y_fpi10t` 168c.

$${}^{168}\text{c} \quad \langle \text{coefficient } y\text{-fpi10t} \text{ }^{168}\text{c} \rangle \equiv \frac{{}^{168}\text{c}}{y\text{-fpi10t}} \quad (261)$$

Defines:

y_fpi10t, used in chunk 168b.

2.10.6 j.6 FPIC: Foreign consumer price inflation (G39, bilateral export trade weights)

$${}_{168d} \langle variable \text{ FPIC } {}_{168d} \rangle \equiv \quad (219)$$

FPIC = Foreign consumer price inflation (G39, bilateral export trade weights)

Defines:

FPIC, used in chunk 231.

$$168e \quad \langle \text{equation } fpic \text{ } 168e \rangle \equiv \quad (252)$$

$$fpic: fpic - fpic_aerr = y_fpic(1) -$$

$$+ y_fpic(2) * fpi10 -$$

$$+ y_fpic(3) * fpic(-1)$$

Defines:

fpic, used in chunk 169b.

Uses `fpi10` 167e and `y_fpic` 168f.

$$168f \quad \langle coefficient \ y_fpic \ 168f \rangle \equiv \quad (261)$$

$$y_fpic \ 3 \quad 2.174669585864584, 0.6994194241702426, 0.3005805758297574$$

Defines:

y_fpic, used in chunk 168e.

2.10.7 j.7 FPC: Foreign aggregate consumer price (G39, import/export trade weights)

169a $\langle \text{variable } FPC \text{ 169a} \rangle \equiv$ (219)
 FPC = Foreign aggregate consumer price (G39, import/export trade weights)
 Defines:
 FPC, used in chunk 231.

169b $\langle \text{equation } fpc \text{ 169b} \rangle \equiv$ (252)
 fpc: fpc - fpc_aerr = fpc(-1)*exp(fpic/400)

Defines:
 fpc, used in chunks 47c, 51e, 53c, 169d, and 172.
 Uses fpic 168e.

2.10.8 j.8 FPCM: Foreign aggregate consumer price (G39, bilateral non-oil import trade weights)

169c $\langle \text{variable } FPCM \text{ 169c} \rangle \equiv$ (219)
 FPCM = Foreign aggregate consumer price (G39, bilateral non-oil import trade weights)
 Defines:
 FPCM, used in chunks 213b and 231.

169d $\langle \text{equation } fpcm \text{ 169d} \rangle \equiv$ (252)
 fpcm: fpcm - fpcm_aerr = ufpcm*fpc

Defines:
 fpcm, used in chunks 113e and 172f.
 Uses fpc 169b and ufpcm 213b.

2.10.9 j.9 FRS10: Foreign short-term interest rate (G10)

169e $\langle \text{variable } FRS10 \text{ 169e} \rangle \equiv$ (219)
 FRS10 = Foreign short-term interest rate (G10)
 Defines:
 FRS10, used in chunk 231.

170a $\langle \text{equation frs10 170a} \rangle \equiv$ (252)

```
frs10: frs10 - frs10_aerr = dfmprrr * (y_frs10(1) _
      + y_frs10(2) * frstar(-1) _
      + y_frs10(3) * ( ( fpi10 + fpi10(-1) + fpi10(-2) + fpi10(-3))
      + y_frs10(4) * ( ( fpi10 + fpi10(-1) + fpi10(-2) + fpi10(-3))
      + y_frs10(5) * fxgap) _
      + (1-dfmprrr) * (rfrs10 + ( fpi10 + fpi10(-1) + fpi10(-2) + fp
```

Defines:

frs10, used in chunks 166b, 170d, and 171a.

Uses dfmprrr 204i, fpi10 167e, fpi10 167e, fpi10 167e, frstar 170d, fxgap 166b, rfrs10 210c,
and y_frs10 170b.

170b $\langle \text{coefficient y_frs10 170b} \rangle \equiv$ (261)

```
y_frs10 5 0.0,1.0,1.0,0.5,1.0
```

Defines:

y_frs10, used in chunk 170a.

2.10.10 j.10 FRSTAR: Equilibrium real short-term interest rate used in foreign Taylor rule

170c $\langle \text{variable FRSTAR 170c} \rangle \equiv$ (219)

FRSTAR = Equilibrium real short-term interest rate used in foreign Taylor rule

Defines:

FRSTAR, used in chunk 231.

170d $\langle \text{equation frstar 170d} \rangle \equiv$ (252)

```
frstar: frstar - frstar_aerr = y_frstar(1) * frstar(-1) _
      + y_frstar(2) * (frs10 - ( fpi10 + fpi10(-1) + fpi10(-2) + f
```

Defines:

frstar, used in chunks 166b and 170a.

Uses fpi10 167e, frs10 170a, and y_frstar 170e.

170e $\langle \text{coefficient y_frstar 170e} \rangle \equiv$ (261)

```
y_frstar 2 .95,.05
```

Defines:

y_frstar, used in chunk 170d.

2.10.11 j.11 FRL10: Foreign long-term interest rate (G10)

170f $\langle \text{variable FRL10 170f} \rangle \equiv$ (219)

FRL10 = Foreign long-term interest rate (G10)

Defines:

FRL10, used in chunk 231.

171a $\langle \text{equation } frl10 \text{ 171a} \rangle \equiv$ (252)

$$\begin{aligned} frl10: frl10 - frl10(-1) - frl10_aerr = & y_frl10(1) _ \\ & + y_frl10(2) * (frl10(-1) - frs10(-1)) _ \\ & + y_frl10(3) * (frl10(-1) - frl10(-2)) _ \\ & + y_frl10(4) * (frs10 - frs10(-1)) _ \\ & + y_frl10(5) * (fxgap - fxgap(-1)) \end{aligned}$$

Defines:

`frl10`, used in chunk 171d.

Uses `frs10` 170a, `fxgap` 166b, and `y_fr110` 171b.

171b $\langle \text{coefficient } y_frl10 \text{ 171b} \rangle \equiv$ (261)

$$y_frl10 \quad 5 \quad 0.03993364460261257, -0.07293669623744157, 0.08403561227292196, 0.3637926024013994$$

Defines:

`y_fr110`, used in chunk 171a.

2.10.12 j.12 FPXR: Real exchange rate (G39, import/export trade weights)

171c $\langle \text{variable } FPXR \text{ 171c} \rangle \equiv$ (219)

$$FPXR = \text{Real exchange rate (G39, import/export trade weights)}$$

Defines:

`FPXR`, used in chunks 183b and 231.

171d $\langle \text{equation } fpxr \text{ 171d} \rangle \equiv$ (252)

$$\begin{aligned} fpxr: \log(fpxr) - fpxr_aerr - \log(fpxrr) = & _ \\ & y_fpxr(1)*(rg10e-zpi10f-frl10+fpi10t) _ \\ & + y_fpxr(2)*(fnin/xgdpn) \end{aligned}$$

Defines:

`fpxr`, used in chunks 96c and 172d.

Uses `fnin` 51e, `fpi10t` 168b, `fpxrr` 172a, `frl10` 171a, `rg10e` 156d, `xgdpn` 78c, `y_fpxr` 171e, and `zpi10f` 183c.

171e $\langle \text{coefficient } y_fpxr \text{ 171e} \rangle \equiv$ (261)

$$y_fpxr \quad 2 \quad 0.048, 0.5$$

Defines:

`y_fpxr`, used in chunk 171d.

2.10.13 j.13 FPXRR: Real exchange rate residual

171f $\langle \text{variable } FPXRR \text{ 171f} \rangle \equiv$ (219)

$$FPXRR = \text{Real exchange rate residual}$$

Defines:

`FPXRR`, used in chunk 231.

172a $\langle \text{equation } fpxrr \text{ 172a} \rangle \equiv$ (252)

$$\begin{aligned} fpxrr: d(\log(fpxrr), 0, 1) - fpxrr_aerr _ \\ = y_fpxrr(1) * \log(fpxrr(-1)/fpxrr(-1)) _ \\ + y_fpxrr(2) * d(\log(fpxrr(-1)), 0, 1) _ \\ + (1-y_fpxrr(2)) * d(\log(fpxrr), 0, 1) \end{aligned}$$

Defines:

fpxrr, used in chunk 171d.

Uses **fpxrrt** 206g and **y_fpxrr** 172b.

172b $\langle \text{coefficient } y_fpxrr \text{ 172b} \rangle \equiv$ (261)

$$y_fpxrr \text{ 2} \quad 0.03011994048459088, 0.2026244928161041$$

Defines:

y_fpxrr, used in chunk 172a.

2.10.14 j.14 FPX: Nominal exchange rate (G39, import/export trade weights)

172c $\langle \text{variable } FPX \text{ 172c} \rangle \equiv$ (219)

$$FPX = \text{Nominal exchange rate (G39, import/export trade weights)}$$

Defines:

FPX, used in chunk 231.

172d $\langle \text{equation } fpx \text{ 172d} \rangle \equiv$ (252)

$$fpx: fpx - fpx_aerr = fpxr*fpc/pcpi$$

Defines:

fpx, used in chunks 47c, 51e, 53c, and 172f.

Uses **fpc** 169b, **fpxr** 171d, and **pcpi** 97d.

2.10.15 j.15 FPXM: Nominal exchange rate (G39, bilateral import trade weights)

172e $\langle \text{variable } FPXM \text{ 172e} \rangle \equiv$ (219)

$$FPXM = \text{Nominal exchange rate (G39, bilateral import trade weights)}$$

Defines:

FPXM, used in chunks 213c and 231.

172f $\langle \text{equation } fpxm \text{ 172f} \rangle \equiv$ (252)

$$fpxm: fpxm - fpxm_aerr = ufpxm*fpx*fpcm/fpc$$

Defines:

fpxm, used in chunk 113e.

Uses **fpc** 169b, **fpcm** 169d, **fpx** 172d, and **ufpxm** 213c.

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2.11 Expectations

- 2.11.1 z1.1 PTR: 10-year expected PCE price inflation (Survey of Professional Forecasters)
- 2.11.2 z1.2 RRTR: Expected long-run real federal funds rate
- 2.11.3 z1.3 RTR: Expected federal funds rate in the long run (Blue Chip)
- 2.11.4 z1.4 ZRFF5: Expected federal funds rate, for RG5E eq. (5-yr mat.) (VAR exp.)
- 2.11.5 z1.5 ZRFF10: Expected federal funds rate, for RG10E eq. (10-yr mat.) (VAR exp.)
- 2.11.6 z1.6 ZRFF30: Expected federal funds rate, for RG30E eq. (30-yr mat.) (VAR exp.)
- 2.11.7 z1.7 ZGAP05: Expected output gap, for RG5E eq. (VAR exp.)
- 2.11.8 z1.8 ZGAP10: Expected output gap, for RG10E eq. (VAR exp.)
- 2.11.9 z1.9 ZGAP30: Expected output gap, for RG30E eq. (VAR exp.)
- 2.11.10 z1.10 ZPI5: Expected cons. price infl., for RCCD eq. (5-yr mat.) (VAR exp.)
- 2.11.11 z1.11 ZPIB5: Expected output price infl., for RPD eq. (5-yr mat.) (VAR exp.)
- 2.11.12 z1.12 ZPI10: Expected cons. price infl., for RCCH, RRMET, and YHPNTN eqs. (10-yr mat.) (VAR exp.)
- 2.11.13 z1.13 ZPI10F: Expected cons. price infl., for FPXR eq. (10-yr mat.) (VAR exp.)
- 2.11.14 z1.14 ZPIC30: Expected cons. price infl., for REQ eq. (30-yr mat.) (VAR exp.)
- 2.11.15 z1.15 ZPIC58: Expected 4-qtr consumer price inflation (8 qtrs. in the future) (VAR exp.)
- 2.11.16 z1.16 ZPICXFE: Expected value of picxfe in the next quarter (VAR exp.)
- 2.11.17 z1.17 ZPIECI: Expected value of pieci in the next quarter (VAR exp.)
- 2.11.18 z1.18 ZECO: Expected growth rate of target non-durables and nonhousing services, for ECO eq (VAR exp.)

ZYHST = Expected trend ratio of household income to GDP

Defines:

ZYHST, used in chunk 231.

$$\begin{aligned} 175a \quad \langle \text{equation } zy_{hst} \text{ 175a} \rangle &\equiv (252) \\ zy_{hst}: zy_{hst} - zy_{hst_aerr} &= zy_{hst}(-1) + y_{zy_{hst}}(1) * (yhshr - zy_{hst}(-1)) \end{aligned}$$

Defines:

zy_{hst}, used in chunks 88b, 196, and 197b.

Uses y_{zy_{hst}} 175b and yhshr 92b.

$$\begin{aligned} 175b \quad \langle \text{coefficient } y_{zy_{hst}} \text{ 175b} \rangle &\equiv (261) \\ y_{zy_{hst}} \quad 1 & \quad 0.050000000000000000E+00 \end{aligned}$$

Defines:

y_{zy_{hst}}, used in chunk 175a.

2.11.35 z1.35 ZYHPST: Expected trend share of property income in household income

$$\begin{aligned} 175c \quad \langle \text{variable } ZYHPST \text{ 175c} \rangle &\equiv (219) \\ ZYHPST &= \text{Expected trend share of property income in household income} \end{aligned}$$

Defines:

ZYHPST, used in chunk 231.

$$\begin{aligned} 175d \quad \langle \text{equation } zy_{hpst} \text{ 175d} \rangle &\equiv (252) \\ zy_{hpst}: zy_{hpst} - zy_{hpst_aerr} &= zy_{hpst}(-1) + y_{zy_{hpst}}(1) * (yhpsr - zy_{hpst}(-1)) \end{aligned}$$

Defines:

zy_{hpst}, used in chunks 90d and 196d.

Uses y_{zy_{hpst}} 175e and yhpsr 91c.

$$\begin{aligned} 175e \quad \langle \text{coefficient } y_{zy_{hpst}} \text{ 175e} \rangle &\equiv (261) \\ y_{zy_{hpst}} \quad 1 & \quad 0.050000000000000000E+00 \end{aligned}$$

Defines:

y_{zy_{hpst}}, used in chunk 175d.

2.11.36 z1.36 ZYHTST: Expected trend share of transfer income in household income

$$\begin{aligned} 175f \quad \langle \text{variable } ZYHTST \text{ 175f} \rangle &\equiv (219) \\ ZYHTST &= \text{Expected trend share of transfer income in household income} \end{aligned}$$

Defines:

ZYHTST, used in chunk 231.

176a $\langle \text{equation } zyhtst \text{ 176a} \rangle \equiv$ (252)

$$zyhtst: zyhtst - zyhtst_aerr = zyhtst(-1) + y_zyhtst(1)*(yhtshr-zyhtst(-1))$$

Defines:

zyhtst, used in chunks 93b and 197b.

Uses **y_zyhtst** 176b and **yhtshr** 93f.

176b $\langle \text{coefficient } y_zyhtst \text{ 176b} \rangle \equiv$ (261)

$$y_zyhtst \quad 1 \quad 0.05000000000000000E+00$$

Defines:

y_zyhtst, used in chunk 176a.

2.11.37 z1.37 HGYNID: Growth rate of real after-tax corporate profits

2.12 Model-Consistent Expectations

2.12.1 z2.1 PTR: 10-year expected PCE price inflation (Survey of Professional Forecasters)

176c $\langle \text{variable } PTR \text{ 176c} \rangle \equiv$ (219)

$$PTR = 10\text{-year expected PCE price inflation (Survey of Professional Forecasters)}$$

Defines:

PTR, used in chunk 231.

176d $\langle \text{equation } ptr \text{ 176d} \rangle \equiv$ (252)

$$ptr: ptr - ptr_aerr = y_ptr(1)*ptr(-1) + y_ptr(2)*picxfe(-1) + y_ptr(3)*pitarg(-1)$$

Defines:

ptr, used in chunks 95 and 177–97.

Uses **picxfe** 95b, **pitarg** 209b, and **y_ptr** 176e.

176e $\langle \text{coefficient } y_ptr \text{ 176e} \rangle \equiv$ (261)

$$y_ptr \quad 3 \quad 0.9, 0.05, 0.05$$

Defines:

y_ptr, used in chunk 176d.

2.12.2 z2.2 RRTR: Expected long-run real federal funds rate

176f $\langle \text{variable } RRTR \text{ 176f} \rangle \equiv$ (219)

$$RRTR = \text{Expected long-run real federal funds rate}$$

Defines:

RRTR, used in chunk 231.

177a $\langle \text{equation } rrtr \text{ 177a} \rangle \equiv$ (252)

$$rrtr: rrtr - rrtr_aerr = y_rrtr(1) * rrtr(-1) _ \\ + y_rrtr(2) * rrffe$$

Defines:

rrtr, used in chunk 177d.

Uses **rrffe** 153e and **y_rrtr** 177b.

177b $\langle \text{coefficient } y_rrtr \text{ 177b} \rangle \equiv$ (261)

$$y_rrtr \quad 2 \quad .97, .03$$

Defines:

y_rrtr, used in chunk 177a.

2.12.3 z2.3 RTR: Expected federal funds rate in the long run (Blue Chip)

177c $\langle \text{variable } RTR \text{ 177c} \rangle \equiv$ (219)

$$RTR = \text{Expected federal funds rate in the long run (Blue Chip)}$$

Defines:

RTR, used in chunk 231.

177d $\langle \text{equation } rtr \text{ 177d} \rangle \equiv$ (252)

$$rtr: rtr - rtr_aerr = rrtr + ptr$$

Defines:

rtr, used in chunks 178–97.

Uses **ptr** 176d and **rrtr** 177a.

2.12.4 z2.4 ZRFF5: Expected federal funds rate, for RG5E eq. (5-yr mat.) (MCE exp.)

177e $\langle \text{variable } ZRFF5 \text{ 177e} \rangle \equiv$ (219)

$$ZRFF5 = \text{Expected federal funds rate, for RG5E eq. (5-yr mat.)}$$

Defines:

ZRFF5, used in chunk 231.

Uses **RG5E** 155b.

178a $\langle \text{equation } zrff5 \text{ 178a} \rangle \equiv$ (252)

$$\begin{aligned} zrff5: \quad & zrff5-zrff5_aerr = y_zrff5(1) _ \\ & + (y_zrff5(2) * picnia + y_zrff5(3) * picnia(-1) + y_zrff5(4) \\ & + (y_zrff5(6) * rfte + y_zrff5(7) * rfte(-1) + y_zrff5(8) * \\ & + y_zrff5(10) * rtr _ \\ & + y_zrff5(11) * ptr _ \\ & + (y_zrff5(12) * xgap + y_zrff5(13) * xgap(-1) + y_zrff5(14) \end{aligned}$$

Defines:

zrff5, used in chunk 155c.

Uses **picnia** 96f, **ptr** 176d, **rfte** 152e, **rtr** 177d, **xgap** 67a, and **y_zrff5** 178b.

178b $\langle \text{coefficient } y_zrff5 \text{ 178b} \rangle \equiv$ (261)

$$y_zrff5 \text{ 15} \quad -2.893994419845934e-13, -0.03329615692337154, -0.01651377444295286, -0.0$$

Defines:

y_zrff5, used in chunk 178a.

2.12.5 z2.5 ZRFF10: Expected federal funds rate, for RG10E eq. (10-yr mat.) (MCE exp.)

178c $\langle \text{variable } ZRFF10 \text{ 178c} \rangle \equiv$ (219)

$$ZRFF10 = \text{Expected federal funds rate, for RG10E eq. (10-yr mat.)}$$

Defines:

ZRFF10, used in chunk 231.

Uses **RG10E** 156c.

178d $\langle \text{equation } zrff10 \text{ 178d} \rangle \equiv$ (252)

$$\begin{aligned} zrff10: \quad & zrff10-zrff10_aerr = y_zrff10(1) _ \\ & + (y_zrff10(2) * picnia + y_zrff10(3) * picnia(-1) + y_zrff10(4) \\ & + (y_zrff10(6) * rfte + y_zrff10(7) * rfte(-1) + y_zrff10(8) \\ & + y_zrff10(10) * rtr _ \\ & + y_zrff10(11) * ptr _ \\ & + (y_zrff10(12) * xgap + y_zrff10(13) * xgap(-1) + y_zrff10(14) \end{aligned}$$

Defines:

zrff10, used in chunk 156d.

Uses **picnia** 96f, **ptr** 176d, **rfte** 152e, **rtr** 177d, **xgap** 67a, and **y_zrff10** 178e.

178e $\langle \text{coefficient } y_zrff10 \text{ 178e} \rangle \equiv$ (261)

$$y_zrff10 \text{ 15} \quad -1.225928191740291e-13, -0.02771619956382117, -0.01188080871189$$

Defines:

y_zrff10, used in chunk 178d.

2.12.6 z2.6 ZRFF30: Expected federal funds rate, for RG30E eq. (30-yr mat.) (MCE exp.)

179a $\langle \text{variable } ZRFF30 \text{ 179a} \rangle \equiv$ (219)
 ZRFF30 = Expected federal funds rate, for RG30E eq. (30-yr mat.)

Defines:

 ZRFF30, used in chunk 231.

Uses RG30E 157d.

179b $\langle \text{equation } zrff30 \text{ 179b} \rangle \equiv$ (252)
 zrff30: zrff30-zrff30_aerr = y_zrff30(1) _
 + (y_zrff30(2) * picnia + y_zrff30(3) * picnia(-1) + y_zrff30(4) * p
 + (y_zrff30(6) * rffe + y_zrff30(7) * rffe(-1) + y_zrff30(8) * rffe
 + y_zrff30(10) * rtr _
 + y_zrff30(11) * ptr _
 + (y_zrff30(12) * xgap + y_zrff30(13) * xgap(-1) + y_zrff30(14) * xg

Defines:

 zrff30, used in chunk 157e.

Uses picnia 96f, ptr 176d, rffe 152e, rtr 177d, xgap 67a, and y_zrff30 179c.

179c $\langle \text{coefficient } y_zrff30 \text{ 179c} \rangle \equiv$ (261)
 y_zrff30 15 -6.431098710768743e-14, -0.01469452480129645, -0.006366611548946281, -0.01

Defines:

 y_zrff30, used in chunk 179b.

2.12.7 z2.7 ZGAP05: Expected output gap, for RG5E eq. (MCE exp.)

179d $\langle \text{variable } ZGAP05 \text{ 179d} \rangle \equiv$ (219)
 ZGAP05 = Expected output gap, for RG5E eq.

Defines:

 ZGAP05, used in chunk 231.

Uses RG5E 155b.

179e $\langle \text{equation } zgap05 \text{ 179e} \rangle \equiv$ (252)
 zgap05: zgap05-zgap05_aerr = y_zgap05(1) _
 + (y_zgap05(2) * picnia + y_zgap05(3) * picnia(-1) + y_zgap05(4) * p
 + (y_zgap05(6) * rffe + y_zgap05(7) * rffe(-1) + y_zgap05(8) * rffe
 + y_zgap05(10) * rtr _
 + y_zgap05(11) * ptr _
 + (y_zgap05(12) * xgap + y_zgap05(13) * xgap(-1) + y_zgap05(14) * xg

Defines:

 zgap05, used in chunk 154f.

Uses picnia 96f, ptr 176d, rffe 152e, rtr 177d, xgap 67a, and y_zgap05 180a.

180a $\langle \text{coefficient } y_zgap05 \text{ 180a} \rangle \equiv$ (261)
 $y_zgap05 \quad 15 \quad 2.257007909357927e-15, -0.1597149595303493, -0.0271459642153113$
 Defines:
 y_zgap05 , used in chunk 179e.

2.12.8 z2.8 ZGAP10: Expected output gap, for RG10E eq. (MCE exp.)

180b $\langle \text{variable } ZGAP10 \text{ 180b} \rangle \equiv$ (219)
 $ZGAP10 = \text{Expected output gap, for RG10E eq.}$
 Defines:
 $ZGAP10$, used in chunk 231.
 Uses RG10E 156c.

180c $\langle \text{equation } zgap10 \text{ 180c} \rangle \equiv$ (252)
 $zgap10: \quad zgap10 - zgap10_aerr = y_zgap10(1) _$
 $\quad + (y_zgap10(2) * picnia + y_zgap10(3) * picnia(-1) + y_zgap10(4) * rffe$
 $\quad + (y_zgap10(6) * rffe + y_zgap10(7) * rffe(-1) + y_zgap10(8) * rtr$
 $\quad + y_zgap10(10) * rtr _$
 $\quad + y_zgap10(11) * ptr _$
 $\quad + (y_zgap10(12) * xgap + y_zgap10(13) * xgap(-1) + y_zgap10(14) * xgap$

Defines:
 $zgap10$, used in chunks 156a and 158c.
 Uses $picnia$ 96f, ptr 176d, $rffe$ 152e, rtr 177d, $xgap$ 67a, and y_zgap10 180d.

180d $\langle \text{coefficient } y_zgap10 \text{ 180d} \rangle \equiv$ (261)
 $y_zgap10 \quad 15 \quad 1.913550184020851e-15, -0.08856716084344839, -0.015147933533409$
 Defines:
 y_zgap10 , used in chunk 180c.

2.12.9 z2.9 ZGAP30: Expected output gap, for RG30E eq. (MCE exp.)

180e $\langle \text{variable } ZGAP30 \text{ 180e} \rangle \equiv$ (219)
 $ZGAP30 = \text{Expected output gap, for RG30E eq.}$
 Defines:
 $ZGAP30$, used in chunk 231.
 Uses RG30E 157d.

181a $\langle \text{equation } zgap30 \text{ 181a} \rangle \equiv$ (252)

```

zgap30:  zgap30-zgap30_aerr = y_zgap30(1) _
        + ( y_zgap30(2) * picnia + y_zgap30(3) * picnia(-1) + y_zgap30(4) * p
        + ( y_zgap30(6) * rfte + y_zgap30(7) * rfte(-1) + y_zgap30(8) * rfte
        + y_zgap30(10) * rtr _
        + y_zgap30(11) * ptr _
        + ( y_zgap30(12) * xgap + y_zgap30(13) * xgap(-1) + y_zgap30(14) * xg

```

Defines:

zgap30, used in chunk 157b.

Uses **picnia** 96f, **ptr** 176d, **rfte** 152e, **rtr** 177d, **xgap** 67a, and **y_zgap30** 181b.

181b $\langle \text{coefficient } y_zgap30 \text{ 181b} \rangle \equiv$ (261)

```

y_zgap30      15      9.185040883300084e-15,-0.04699887854311754,-0.008064404203305675,-0.016

```

Defines:

y_zgap30, used in chunk 181a.

2.12.10 z2.10 ZPI5: Expected cons. price infl., for RCCD eq. (5-yr mat.) (MCE exp.)

181c $\langle \text{variable } ZPI5 \text{ 181c} \rangle \equiv$ (219)

```

ZPI5      = Expected cons. price infl., for RCCD eq. (5-yr mat.)

```

Defines:

ZPI5, used in chunk 231.

Uses **RCCD** 31b.

181d $\langle \text{equation } zpi5 \text{ 181d} \rangle \equiv$ (252)

```

zpi5:  zpi5-zpi5_aerr = ( y_zpi5(1) * picnia(-1) + y_zpi5(2) * picnia(-2) + y_zpi5(3) * p
        + ( y_zpi5(5) * rfte(-1) + y_zpi5(6) * rfte(-2) + y_zpi5(7) * rfte(-3) +
        + y_zpi5(9) * rtr(-1) _
        + y_zpi5(10) * ptr(-1) _
        + ( y_zpi5(11) * xgap(-1) + y_zpi5(12) * xgap(-2) + y_zpi5(13) * xgap(-3)

```

Defines:

zpi5, used in chunk 31c.

Uses **picnia** 96f, **ptr** 176d, **rfte** 152e, **rtr** 177d, **xgap** 67a, and **y_zpi5** 181e.

181e $\langle \text{coefficient } y_zpi5 \text{ 181e} \rangle \equiv$ (261)

```

y_zpi5      14      0.06758353158403318,0.02161485431596137,0.01782456814136856,0.00296452469821149

```

Defines:

y_zpi5, used in chunk 181d.

2.12.11 z2.11 ZPIB5: Expected output price infl., for RPD eq. (5-yr mat.) (MCE exp.)

182a $\langle \text{variable } ZPIB5 \text{ 182a} \rangle \equiv$ (219)

ZPIB5 = Expected output price infl., for RPD eq. (5-yr mat.)

Defines:

ZPIB5, used in chunk 231.

Uses RPD 39d.

182b $\langle \text{equation } zpib5 \text{ 182b} \rangle \equiv$ (252)

```
zpib5: zpib5-zpib5_aerr = y_zpib5(1) _
      + ( y_zpib5(2) * picnia(-1) + y_zpib5(3) * picnia(-2) + y_zpib5(4) *
      + ( y_zpib5(6) * rffe(-1) + y_zpib5(7) * rffe(-2) + y_zpib5(8) * rffe(-3)
      + y_zpib5(10) * rtr(-1) _
      + y_zpib5(11) * ptr(-1) _
      + ( y_zpib5(12) * xgap(-1) + y_zpib5(13) * xgap(-2) + y_zpib5(14) * xgap(-3)
      + ( y_zpib5(16) * (400*d( log(pxb(-1)), 0, 1 )) + y_zpib5(17) * (400*d(
```

Defines:

zpib5, used in chunks 39e, 45a, and 46a.

Uses picnia 96f, ptr 176d, pxb 116d, rffe 152e, rtr 177d, xgap 67a, and y_zpib5 182c.

182c $\langle \text{coefficient } y_zpib5 \text{ 182c} \rangle \equiv$ (261)

y_zpib5 19 2.014761562942157e-14,0.08381220448829916,0.03966837250165698,0.02966837250165698

Defines:

y_zpib5, used in chunk 182b.

2.12.12 z2.12 ZPI10: Expected cons. price infl., for RCCH, RRMET, and YHPNTN eqs. (10-yr mat.) (MCE exp.)

182d $\langle \text{variable } ZPI10 \text{ 182d} \rangle \equiv$ (219)

ZPI10 = Expected cons. price infl., for RCCH, RRMET, and YHPNTN eqs. (10-yr mat.)

Defines:

ZPI10, used in chunk 231.

Uses RCCH 31d, RRMET 165e, and YHPNTN 90e.

182e $\langle \text{equation } zpi10 \text{ 182e} \rangle \equiv$ (252)

```
zpi10: zpi10-zpi10_aerr = ( y_zpi10(1) * picnia(-1) + y_zpi10(2) * picnia(-2) +
      + ( y_zpi10(5) * rffe(-1) + y_zpi10(6) * rffe(-2) + y_zpi10(7) * rffe(-3)
      + y_zpi10(9) * rtr(-1) _
      + y_zpi10(10) * ptr(-1) _
      + ( y_zpi10(11) * xgap(-1) + y_zpi10(12) * xgap(-2) + y_zpi10(13) * xgap(-3)
```

Defines:

zpi10, used in chunks 31e, 91a, 165f, and 183c.

Uses picnia 96f, ptr 176d, rffe 152e, rtr 177d, xgap 67a, and y_zpi10 183a.

183a $\langle \text{coefficient } y_zpi10 \text{ 183a} \rangle \equiv$ (261)
 $y_zpi10 \ 14 \quad 0.03879756717884661, 0.01310655690781879, 0.01249073978840772, 0.00201364444700266$
 Defines:
 y_zpi10 , used in chunk 182e.

2.12.13 z2.13 ZPI10F: Expected cons. price infl., for FPXR eq. (10-yr mat.) (MCE exp.)

183b $\langle \text{variable } ZPI10F \text{ 183b} \rangle \equiv$ (219)
 $ZPI10F \quad = \text{Expected cons. price infl., for FPXR eq. (10-yr mat.)}$
 Defines:
 $ZPI10F$, used in chunk 231.
 Uses FPXR 171c.

183c $\langle \text{equation } zpi10f \text{ 183c} \rangle \equiv$ (252)
 $zpi10f: \quad zpi10f-zpi10f_aerr = zpi10$

Defines:
 $zpi10f$, used in chunk 171d.
 Uses $zpi10$ 182e.

2.12.14 z2.14 ZPIC30: Expected cons. price infl., for REQ eq. (30-yr mat.) (MCE exp.)

183d $\langle \text{variable } ZPIC30 \text{ 183d} \rangle \equiv$ (219)
 $ZPIC30 \quad = \text{Expected cons. price infl., for REQ eq. (30-yr mat.)}$
 Defines:
 $ZPIC30$, used in chunk 231.
 Uses REQ 160f.

183e $\langle \text{equation } zpic30 \text{ 183e} \rangle \equiv$ (252)
 $zpic30: \quad zpic30-zpic30_aerr = y_zpic30(1) _$
 $\quad + (y_zpic30(2) * picnia + y_zpic30(3) * picnia(-1) + y_zpic30(4) * picnia(-2)$
 $\quad + (y_zpic30(6) * rffe + y_zpic30(7) * rffe(-1) + y_zpic30(8) * rffe(-2) + y_z$
 $\quad + y_zpic30(10) * rtr _$
 $\quad + y_zpic30(11) * ptr _$
 $\quad + (y_zpic30(12) * xgap + y_zpic30(13) * xgap(-1) + y_zpic30(14) * xgap(-2) +$

Defines:
 $zpic30$, used in chunk 161a.
 Uses $picnia$ 96f, ptr 176d, $rffe$ 152e, rtr 177d, $xgap$ 67a, and y_zpic30 183f.

183f $\langle \text{coefficient } y_zpic30 \text{ 183f} \rangle \equiv$ (261)
 $y_zpic30 \quad 15 \quad 9.998348776898279e-14, 0.03772442939281018, 0.00691792724638696, 0.0066112$
 Defines:
 y_zpic30 , used in chunk 183e.

2.12.15 z2.15 ZPIC58: Expected 4-qtr consumer price inflation (8 qtrs. in the future) (MCE exp.)

184a $\langle \text{variable } ZPIC58 \text{ 184a} \rangle \equiv$ (219)
 ZPIC58 = Expected 4-qtr consumer price inflation (8 qtrs. in the future)
 Defines:
 ZPIC58, used in chunk 231.

184b $\langle \text{equation } zpic58 \text{ 184b} \rangle \equiv$ (252)
 zpic58: zpic58-zpic58_aerr = (y_zpic58(1) * picnia + y_zpic58(2) * picnia(-1) -
 + (y_zpic58(5) * rffe + y_zpic58(6) * rffe(-1) + y_zpic58(7)
 + y_zpic58(9) * rtr _
 + y_zpic58(10) * ptr _
 + (y_zpic58(11) * xgap + y_zpic58(12) * xgap(-1) + y_zpic58(

Defines:
 zpic58, used in chunk 151e.
 Uses picnia 96f, ptr 176d, rffe 152e, rtr 177d, xgap 67a, and y_zpic58 184c.

184c $\langle \text{coefficient } y_zpic58 \text{ 184c} \rangle \equiv$ (261)
 y_zpic58 14 0.3419924857225884, 0.05029077146057983, 0.04280461383060537, -
 Defines:
 y_zpic58, used in chunk 184b.

2.12.16 z2.16 ZPICXFE: Expected value of picxfe in the next quarter (MCE exp.)

184d $\langle \text{variable } ZPICXFE \text{ 184d} \rangle \equiv$ (219)
 ZPICXFE = Expected value of picxfe in the next quarter
 Defines:
 ZPICXFE, used in chunk 231.
 Uses picxfe 95b.

185a $\langle \text{equation } \text{zpicxfe } 185a \rangle \equiv$ (252)

```

zpicxfe:  zpicxfe-zpicxfe_aerr = ( y_zpicxfe(1) * picxfe(-1) + y_zpicxfe(2) * picxfe(-2) +
+ ( y_zpicxfe(5) * pieci(-1) + y_zpicxfe(6) * pieci(-2) + y_zpicxfe(7) *
+ ( y_zpicxfe(9) * rffe(-1) + y_zpicxfe(10) * rffe(-2) + y_zpicxfe(11) *
+ ( y_zpicxfe(13) * xgap2(-1) + y_zpicxfe(14) * xgap2(-2) + y_zpicxfe(15)
+ y_zpicxfe(17) * rtr(-1) _
+ y_zpicxfe(18) * ptr(-1) _
+ y_zpicxfe(19) * log(qpcnia(-1)/pcnia(-1)) _
+ y_zpicxfe(20) * log(qpl(-1)/pl(-1)) _
+ y_zpicxfe(21) * (hlprdt(-1) - 400*huqpct(-1)) _
+ ( y_zpicxfe(22) * (lur(-1) - lurnat(-1)) + y_zpicxfe(23) * (lur(-2) - lurnat(-2)) )

```

Defines:

zpicxfe, used in chunk 95b.

Uses hlprdt 77c, huqpct 108d, lur 73f, lurnat 77e, pcnia 97b, picxfe 95b, pieci 95e, pl 98d, ptr 176d, qpcnia 100f, qpl 100a, rffe 152e, rtr 177d, xgap2 67c, and y_zpicxfe 185b.

185b $\langle \text{coefficient } \text{y_zpicxfe } 185b \rangle \equiv$ (261)

```

y_zpicxfe      23      0.323685055125,-0.00320254773354,0.000957688783119,0.0104690425827,0.07

```

Defines:

y_zpicxfe, used in chunk 185a.

2.12.17 z2.17 ZPIECI: Expected value of pieci in the next quarter (MCE exp.)

185c $\langle \text{variable } \text{ZPIECI } 185c \rangle \equiv$ (219)

```

ZPIECI      = Expected value of pieci in the next quarter

```

Defines:

ZPIECI, used in chunk 231.

Uses pieci 95e.

186a $\langle \text{equation } zpieci \text{ 186a} \rangle \equiv$ (252)

```

zpieci:  zpieci-zpieci_aerr = ( y_zpieci(1) * picxfe(-1) + y_zpieci(2) * picxfe
      + ( y_zpieci(5) * pieci(-1) + y_zpieci(6) * pieci(-2) + y_zpieci(7) * pieci(-3)
      + ( y_zpieci(9) * rffe(-1) + y_zpieci(10) * rffe(-2) + y_zpieci(11) * rffe(-3)
      + ( y_zpieci(13) * xgap2(-1) + y_zpieci(14) * xgap2(-2) + y_zpieci(15) * xgap2(-3)
      + y_zpieci(17) * rtr(-1) _
      + y_zpieci(18) * ptr(-1) _
      + y_zpieci(19) * log(qpcnia(-1)/pcnia(-1)) _
      + y_zpieci(20) * log(qpl(-1)/pl(-1)) _
      + y_zpieci(21) * (hlprdt(-1) - 400*huqpct(-1)) _
      + ( y_zpieci(22) * (lur(-1) - lurnat(-1)) + y_zpieci(23) * (lur(-1) - lurnat(-1)) )

```

Defines:

`zpieci`, used in chunk 95e.

Uses `hlprdt` 77c, `huqpct` 108d, `lur` 73f, `lurnat` 77e, `pcnia` 97b, `picxfe` 95b, `pieci` 95e, `pl` 98d, `ptr` 176d, `qpcnia` 100f, `qpl` 100a, `rffe` 152e, `rtr` 177d, `xgap2` 67c, and `y_zpieci` 186b.

186b $\langle \text{coefficient } y_zpieci \text{ 186b} \rangle \equiv$ (261)

```

y_zpieci      23      -0.0173696976108,-0.00564002523431,0.000750046022225,0.01864

```

Defines:

`y_zpieci`, used in chunk 186a.

2.12.18 z2.18 ZECO: Expected growth rate of target non-durables and nonhousing services, for ECO eq (MCE exp.)

186c $\langle \text{variable } ZECO \text{ 186c} \rangle \equiv$ (219)

```

ZECO      = Expected growth rate of target nondurables and nonhousing services, for ECO eq

```

Defines:

`ZECO`, used in chunk 231.

Uses `ECO` 25a.

187a $\langle \text{equation zeco 187a} \rangle \equiv$ (252)

$$\begin{aligned} \text{zeco: zeco-zeco_aerr} = & _ \\ & (\text{y_zeco}(1) * \text{picnia}(-1) + \text{y_zeco}(2) * \text{picnia}(-2) + \text{y_zeco}(3) * \text{picnia}(-3) \\ & + (\text{y_zeco}(5) * \text{rffe}(-1) + \text{y_zeco}(6) * \text{rffe}(-2) + \text{y_zeco}(7) * \text{rffe}(-3) + \text{y_zeco}(8) * \text{rffe}(-4) \\ & + (\text{y_zeco}(9) * \text{xgap2}(-1) + \text{y_zeco}(10) * \text{xgap2}(-2) + \text{y_zeco}(11) * \text{xgap2}(-3) \\ & + \text{y_zeco}(13) * \text{ptr}(-1) _ \\ & + \text{y_zeco}(14) * \text{rtr}(-1) _ \\ & + (\text{y_zeco}(15) * \text{yhgap}(-1) + \text{y_zeco}(16) * \text{yhgap}(-2) + \text{y_zeco}(17) * \text{yhgap}(-3) \\ & + (\text{y_zeco}(19) * \text{yhtgap}(-1) + \text{y_zeco}(20) * \text{yhtgap}(-2) + \text{y_zeco}(21) * \text{yhtgap}(-3) \\ & + (\text{y_zeco}(23) * \text{yhpgap}(-1) + \text{y_zeco}(24) * \text{yhpgap}(-2) + \text{y_zeco}(25) * \text{yhpgap}(-3) \\ & + \text{y_zeco}(27) * ((\text{hggdpt}(-1)/400)) _ \\ & + (\text{y_zeco}(28) _ \\ & * (\text{d}(\log(\text{qeco}(-1)), 0, 1)) + \text{y_zeco}(29) _ \\ & * (\text{d}(\log(\text{qeco}(-2)), 0, 1)) + \text{y_zeco}(30) _ \\ & * (\text{d}(\log(\text{qeco}(-3)), 0, 1)) + \text{y_zeco}(31) _ \\ & * (\text{d}(\log(\text{qeco}(-4)), 0, 1))) \end{aligned}$$

Defines:

zeco, used in chunk 25b.

Uses **hggdpt** 68d, **picnia** 96f, **ptr** 176d, **qeco** 28b, **rffe** 152e, **rtr** 177d, **xgap2** 67c, **y_zeco** 187b, **yhgap** 88b, **yhpgap** 90d, and **yhtgap** 93b.

187b $\langle \text{coefficient y_zeco 187b} \rangle \equiv$ (261)

$$\text{y_zeco } 31 \quad -8.302302840394758\text{e-}05, -8.481341005195437\text{e-}05, -1.070919356458063\text{e-}05, 9.38149440\text{e-}05$$

Defines:

y_zeco, used in chunk 187a.

2.12.19 z2.19 ZECD: Expected growth rate of target durable consumption, for ECD eq. (MCE exp.)

187c $\langle \text{variable ZECD 187c} \rangle \equiv$ (219)

$$\text{ZECD} = \text{Expected growth rate of target durable consumption, for ECD eq.}$$

Defines:

ZECD, used in chunk 231.

Uses **ECD** 26a.

```

188a      (equation zecd 188a)≡
      zecd: zecd-zecd_aerr = ( y_zecd(1) * picnia(-1) + y_zecd(2) * picnia(-2) + y_zecd(3) *
      + ( y_zecd(5) * rffe(-1) + y_zecd(6) * rffe(-2) + y_zecd(7) * rffe(-3) +
      + ( y_zecd(9) * xgap2(-1) + y_zecd(10) * xgap2(-2) + y_zecd(11) * xgap2(-3) +
      + y_zecd(13) * ptr(-1) _
      + y_zecd(14) * rtr(-1) _
      + ( y_zecd(15) * yhgap(-1) + y_zecd(16) * yhgap(-2) + y_zecd(17) * yhgap(-3) +
      + ( y_zecd(19) * yhtgap(-1) + y_zecd(20) * yhtgap(-2) + y_zecd(21) * yhtgap(-3) +
      + ( y_zecd(23) * yhpgap(-1) + y_zecd(24) * yhpgap(-2) + y_zecd(25) * yhpgap(-3) +
      + y_zecd(27)* (hggdpt(-1)/400) _
      + y_zecd(28)* (hgpcdr(-1)/400) _
      + ( y_zecd(29) * d( log(qecd(-1)), 0, 1 ) + y_zecd(30) * d( log(qecd(-1)), 0, 1 )

```

Defines:

zecd, used in chunk 26b.

Uses hggdpt 68d, hgpcdr 207f, picnia 96f, ptr 176d, qecd 28e, rffe 152e, rtr 177d, xgap2 67c, y_zecd 188b, yhgap 88b, yhpgap 90d, and yhtgap 93b.

$$188b \quad \langle coefficient \ y_zcd \ 188b \rangle \equiv \quad (261)$$

$$y_zcd \ 32 \quad -0.0005835440697737298, -0.0004890487384829661, -0.0003178601486946526$$

Defines:

y_zecd, used in chunk 188a.

2.12.20 z2.20 ZGAPC2: Expected output gap, for ECD eq. (MCE exp.)

$$188c \quad \langle \text{variable } ZGAPC2 \text{ } 188c \rangle \equiv \quad (219)$$

$$ZGAPC2 = \text{Expected output gap, for ECD eq.}$$

Defines:

ZGAPC2, used in chunk 231.

Uses ECD 26a.

$$188d \quad \langle \text{equation } zgapc2 \text{ } 188d \rangle \equiv \quad (252)$$

$$\begin{aligned} zgapc2: \quad & zgapc2 - zgapc2_aerr = (y_zgapc2(1) * picnia(-1) + y_zgapc2(2) * picnia(-1) \\ & + (y_zgapc2(5) * rffe(-1) + y_zgapc2(6) * rffe(-2) + y_zgapc2(7) * rffe(-3) \\ & + (y_zgapc2(9) * xgap2(-1) + y_zgapc2(10) * xgap2(-2) + y_zgapc2(11) * xgap2(-3) \\ & + y_zgapc2(13) * ptr(-1) - \\ & + y_zgapc2(14) * rtr(-1) \end{aligned}$$

Defines:

zgapc2, used in chunk 26b.

Uses `picnia` 96f, `ptr` 176d, `rf` 152e, `rtr` 177d, `xgap2` 67c, and `y_zgapc2` 188e.

$$\frac{\langle \text{coefficient } y_z\text{gapc2} \rangle_{188e}}{y_z\text{gapc2}} \equiv \frac{(261)}{14} = -0.01642348362157579, -0.003669559326500591, -0.008031103190068$$

Defines:

y_zgapc2, used in chunk 188d.

2.12.21 z2.21 ZEH: Expected growth rate of target residential investment, for EH eq. (MCE exp.)

189a $\langle \text{variable } ZEH \text{ 189a} \rangle \equiv$ (219)
 $ZEH = \text{Expected growth rate of target residential investment, for EH eq.}$

Defines:

ZEH , used in chunk 231.

Uses EH 26d.

189b $\langle \text{equation } zeh \text{ 189b} \rangle \equiv$ (252)

$$\begin{aligned} zeh: zeh-zeh_aerr = & _ \\ & (y_zeh(1) * picnia(-1) + y_zeh(2) * picnia(-2) + y_zeh(3) * picnia(-3) + \\ & + (y_zeh(5) * rffe(-1) + y_zeh(6) * rffe(-2) + y_zeh(7) * rffe(-3) + y_zeh(8) * rffe(-4) + \\ & + (y_zeh(9) * xgap2(-1) + y_zeh(10) * xgap2(-2) + y_zeh(11) * xgap2(-3) + \\ & + y_zeh(13) * ptr(-1) _ \\ & + y_zeh(14) * rtr(-1) _ \\ & + (y_zeh(15) * yhgap(-1) + y_zeh(16) * yhgap(-2) + y_zeh(17) * yhgap(-3) + \\ & + (y_zeh(19) * yhtgap(-1) + y_zeh(20) * yhtgap(-2) + y_zeh(21) * yhtgap(-3) + \\ & + (y_zeh(23) * yhpgap(-1) + y_zeh(24) * yhpgap(-2) + y_zeh(25) * yhpgap(-3) + \\ & + y_zeh(27) * (hggdpt(-1)/400) _ \\ & + (y_zeh(28) * d(\log(qeh(-1)), 0, 1) + y_zeh(29) * d(\log(qeh(-2)), 0, 1) \end{aligned}$$

Defines:

zeh , used in chunk 26e.

Uses hggdpt 68d, picnia 96f, ptr 176d, qeh 29a, rffe 152e, rtr 177d, xgap2 67c, y_zeh 189c, yhgap 88b, yhpgap 90d, and yhtgap 93b.

189c $\langle \text{coefficient } y_zeh \text{ 189c} \rangle \equiv$ (261)
 $y_zeh \quad 31 \quad -0.0001475636416872941, -3.032365273125124e-05, -4.473855969321594e-06, 1.84015972e-07$

Defines:

y_zeh , used in chunk 189b.

2.12.22 z2.22 ZLHP: Expected growth rate of target aggregate hours (MCE exp.)

189d $\langle \text{variable } ZLHP \text{ 189d} \rangle \equiv$ (219)
 $ZLHP = \text{Expected growth rate of target aggregate hours}$

Defines:

$ZLHP$, used in chunk 231.

190a $\langle \text{equation } zlhp \text{ 190a} \rangle \equiv$ (252)

$$\begin{aligned} zlhp: \quad zlhp-zlhp_aerr = & (y_zlhp(1) * picnia(-1) + y_zlhp(2) * picnia(-2) + y_zlhp(3) * \\ & + (y_zlhp(5) * rffe(-1) + y_zlhp(6) * rffe(-2) + y_zlhp(7) * rffe(-3) + \\ & + y_zlhp(9) * rtr(-1) + \\ & + y_zlhp(10) * ptr(-1) + \\ & + (y_zlhp(11) * xgap(-1) + y_zlhp(12) * xgap(-2) + y_zlhp(13) * xgap(-3) + \\ & + y_zlhp(15) * (d(\log(xgo(-1))), 0, 1) - (d(\log(lprdt(-1))), 0, 1)) + \\ & + y_zlhp(16) * ((hlept(-1) - hqlww(-1))/400) \end{aligned}$$

Defines:

`zlhp`, used in chunk 64e.

Uses `hlept` 76d, `hqlww` 69e, `lprdt` 77a, `picnia` 96f, `ptr` 176d, `rffe` 152e, `rtr` 177d, `xgap` 67a, `xgo` 58b, and `y_zlhp` 190b.

190b $\langle \text{coefficient } y_zlhp \text{ 190b} \rangle \equiv$ (261)

$$y_zlhp \quad 16 \quad -0.0002522439372141123, -5.098270125007645e-05, -0.0002552621374828649$$

Defines:

`y_zlhp`, used in chunk 190a.

2.12.23 z2.23 ZVPD: Expected growth rate of capital-output ratio, for EPD (MCE exp.)

190c $\langle \text{variable } ZVPD \text{ 190c} \rangle \equiv$ (219)

$$ZVPD = \text{Expected growth rate of capital-output ratio, for EPD}$$

Defines:

`ZVPD`, used in chunk 231.

Uses `EPD` 33b.

190d $\langle \text{equation } zvdp \text{ 190d} \rangle \equiv$ (252)

$$\begin{aligned} zvdp: \quad zvdp-zvdp_aerr = & y_zvdp(1) + \\ & + (y_zvdp(2) * picnia(-1) + y_zvdp(3) * picnia(-2) + y_zvdp(4) * picnia(-3) + \\ & + (y_zvdp(6) * rffe(-1) + y_zvdp(7) * rffe(-2) + y_zvdp(8) * rffe(-3) + \\ & + y_zvdp(10) * rtr(-1) + \\ & + y_zvdp(11) * ptr(-1) + \\ & + (y_zvdp(12) * xgap(-1) + y_zvdp(13) * xgap(-2) + y_zvdp(14) * xgap(-3) + \\ & + (y_zvdp(16) * d(\log(xbo(-1))), 0, 1) + y_zvdp(17) * d(\log(xbo(-2))), 0, 1) + \\ & + (y_zvdp(20) * d(\log(vpd(-1))), 0, 1) + y_zvdp(21) * d(\log(vpd(-2))), 0, 1) + \\ & + y_zvdp(24) * hgvpd(-1) \end{aligned}$$

Defines:

`zvdp`, used in chunk 33c.

Uses `hgvpd` 42d, `picnia` 96f, `ptr` 176d, `rffe` 152e, `rtr` 177d, `vpd` 41d, `xbo` 58e, `xgap` 67a, and `y_zvdp` 191a.

191a $\langle \text{coefficient } y_zvdp \text{ 191a} \rangle \equiv$ (261)
 $y_zvdp \quad 24 \quad -3.503545878896081e-16, -0.0002563318120287816, -0.0003053817493858787, 0.00027546$
 Defines:
 y_zvdp , used in chunk 190d.

2.12.24 z2.24 ZVPI: Expected growth rate of capital-output ratio, for EPI (MCE exp.)

191b $\langle \text{variable } ZVPI \text{ 191b} \rangle \equiv$ (219)
 $ZVPI \quad = \text{Expected growth rate of capital-output ratio, for EPI}$
 Defines:
 $ZVPI$, used in chunk 231.
 Uses EPI 33e.

191c $\langle \text{equation } zvpi \text{ 191c} \rangle \equiv$ (252)
 $zvpi: \quad zvpi-zvpi_aerr = (y_zvpi(1) * picnia(-1) + y_zvpi(2) * picnia(-2) + y_zvpi(3) * p$
 $\quad + (y_zvpi(5) * rffe(-1) + y_zvpi(6) * rffe(-2) + y_zvpi(7) * rffe(-3) +$
 $\quad + y_zvpi(9) * rtr(-1) _$
 $\quad + y_zvpi(10) * ptr(-1) _$
 $\quad + (y_zvpi(11) * xgap(-1) + y_zvpi(12) * xgap(-2) + y_zvpi(13) * xgap(-3)$
 $\quad + (y_zvpi(15) * d(\log(xbo(-1))), 0, 1) + y_zvpi(16) * d(\log(xbo(-2))), 0,$
 $\quad + (y_zvpi(19) * d(\log(vpi(-1))), 0, 1) + y_zvpi(20) * d(\log(vpi(-2))), 0,$
 $\quad + y_zvpi(23) * hgvpi(-1)$

Defines:
 $zvpi$, used in chunk 34a.
 Uses $hgvpi$ 46e, $picnia$ 96f, ptr 176d, $rffe$ 152e, rtr 177d, vpi 41f, xbo 58e, $xgap$ 67a,
 and y_zvpi 191d.

191d $\langle \text{coefficient } y_zvpi \text{ 191d} \rangle \equiv$ (261)
 $y_zvpi \quad 23 \quad 3.869791235963136e-05, 3.80256114092935e-06, 2.612181181174604e-05, 2.057197909940$
 Defines:
 y_zvpi , used in chunk 191c.

2.12.25 z2.25 ZVPS: Expected growth rate of des. capital-output ratio, for EPS eq. (MCE exp.)

191e $\langle \text{variable } ZVPS \text{ 191e} \rangle \equiv$ (219)
 $ZVPS \quad = \text{Expected growth rate of des. capital-output ratio, for EPS eq.}$
 Defines:
 $ZVPS$, used in chunk 231.
 Uses EPS 34c.

Defines:
zvps, used in chunk 34d.
 Uses **hgups** 43a, **picnia** 96f, **ptr** 176d, **rfpe** 152e, **rtr** 177d, **vps** 42b, **xbo** 58e, **xgap** 67a,
 and **y_zvps** 192b.

2.12.26 z2.26 ZXBD: Expected growth rate of business output for EPD (MCE exp.)

$$\langle \text{equation } \text{zxbd } 192d \rangle \equiv \quad (252)$$

$$\begin{aligned} \text{zxbd: } & \text{zxbd-zxbd_aerr} = \text{y_zxbd}(1) _ \\ & + (\text{y_zxbd}(2) * \text{picnia}(-1) + \text{y_zxbd}(3) * \text{picnia}(-2) + \text{y_zxbd}(4) * \\ & + (\text{y_zxbd}(6) * \text{rffe}(-1) + \text{y_zxbd}(7) * \text{rffe}(-2) + \text{y_zxbd}(8) * \text{rffe}(-3) \\ & + \text{y_zxbd}(10) * \text{rtr}(-1) _ \\ & + \text{y_zxbd}(11) * \text{ptr}(-1) _ \\ & + (\text{y_zxbd}(12) * \text{xgap}(-1) + \text{y_zxbd}(13) * \text{xgap}(-2) + \text{y_zxbd}(14) * \\ & + (\text{y_zxbd}(16) * \text{d}(\log(\text{xbo}(-1)), 0, 1) + \text{y_zxbd}(17) * \text{d}(\log(\text{xbo}(-2)), 0, 1) \\ & + (\text{y_zxbd}(20) * \text{d}(\log(\text{vpd}(-1)), 0, 1) + \text{y_zxbd}(21) * \text{d}(\log(\text{vpd}(-2)), 0, 1) \\ & + \text{y_zxbd}(24) * \text{hgx}(-1)/400 \end{aligned}$$

Defines:
 zxbd, used in chunk 33c.
 Uses **hgx** 67e, **picnia** 96f, **ptr** 176d, **rffe** 152e, **rtr** 177d, **vpd** 41d, **xbo** 58e, **xgap** 67a,
 and **v_zxbd** 193a.

193a $\langle \text{coefficient } y_zxbd \text{ 193a} \rangle \equiv$ (261)
 $y_zxbd \quad 24 \quad -2.515799209424174e-16, -0.0001835522663957102, -9.20694428089123e-05, -0.00016905$

Defines:

y_zxbd , used in chunk 192d.

2.12.27 z2.27 ZXBI: Expected growth rate of business output, for EPI (MCE exp.)

193b $\langle \text{variable } ZXBI \text{ 193b} \rangle \equiv$ (219)
 $ZXBI \quad = \text{Expected growth rate of business output, for EPI}$

Defines:

$ZXBI$, used in chunk 231.

Uses EPI 33e.

193c $\langle \text{equation } zxbi \text{ 193c} \rangle \equiv$ (252)
 $zxbi: \quad zxbi-zxbi_aerr = \quad$
 $\quad (y_zxbi(1) * picnia(-1) + y_zxbi(2) * picnia(-2) + y_zxbi(3) * picnia(-3)$
 $\quad + (y_zxbi(5) * rffe(-1) + y_zxbi(6) * rffe(-2) + y_zxbi(7) * rffe(-3) + y$
 $\quad + y_zxbi(9) * rtr(-1) \quad$
 $\quad + y_zxbi(10) * ptr(-1) \quad$
 $\quad + (y_zxbi(11) * xgap(-1) + y_zxbi(12) * xgap(-2) + y_zxbi(13) * xgap(-3) +$
 $\quad + (y_zxbi(15) * d(\log(xbo(-1))), 0, 1) + y_zxbi(16) * d(\log(xbo(-2))), 0, 1$
 $\quad + (y_zxbi(19) * d(\log(vpi(-1))), 0, 1) + y_zxbi(20) * d(\log(vpi(-2))), 0, 1$
 $\quad + y_zxbi(23) * hgx(-1)/400$

Defines:

$zxbi$, used in chunk 34a.

Uses hgx 67e, $picnia$ 96f, ptr 176d, $rffe$ 152e, rtr 177d, vpi 41f, xbo 58e, $xgap$ 67a,
and y_zxbi 193d.

193d $\langle \text{coefficient } y_zxbi \text{ 193d} \rangle \equiv$ (261)
 $y_zxbi \quad 23 \quad -3.907288119414607e-05, -1.536565753314579e-05, -1.048653204032815e-05, 1.11106479$

Defines:

y_zxbi , used in chunk 193c.

2.12.28 z2.28 ZXBS: Expected growth rate of business output, for EPS (MCE exp.)

193e $\langle \text{variable } ZXBS \text{ 193e} \rangle \equiv$ (219)
 $ZXBS \quad = \text{Expected growth rate of business output, for EPS}$

Defines:

$ZXBS$, used in chunk 231.

Uses EPS 34c.

194a $\langle \text{equation } z\text{xs } 194a \rangle \equiv$ (252)

$$\begin{aligned} z\text{xs}: z\text{xs}-z\text{xs_aerr} = & _ \\ & (y_z\text{xs}(1) * \text{picnia}(-1) + y_z\text{xs}(2) * \text{picnia}(-2) + y_z\text{xs}(3) * \\ & + (y_z\text{xs}(5) * \text{rffe}(-1) + y_z\text{xs}(6) * \text{rffe}(-2) + y_z\text{xs}(7) * \text{rffe}(-3) \\ & + y_z\text{xs}(9) * \text{rtr}(-1) _ \\ & + y_z\text{xs}(10) * \text{ptr}(-1) _ \\ & + (y_z\text{xs}(11) * \text{xgap}(-1) + y_z\text{xs}(12) * \text{xgap}(-2) + y_z\text{xs}(13) * \\ & + (y_z\text{xs}(15) * \text{d}(\log(\text{xbo}(-1)), 0, 1) + y_z\text{xs}(16) * \text{d}(\log(\text{xbo}(-2)), 0, 1) \\ & + (y_z\text{xs}(19) * \text{d}(\log(\text{vps}(-1)), 0, 1) + y_z\text{xs}(20) * \text{d}(\log(\text{vps}(-2)), 0, 1) \\ & + y_z\text{xs}(23) * \text{hgx}(-1)/400 \end{aligned}$$

Defines:

`zxs`, used in chunk 34d.

Uses `hgx` 67e, `picnia` 96f, `ptr` 176d, `rffe` 152e, `rtr` 177d, `vps` 42b, `xbo` 58e, `xgap` 67a, and `y_zxs` 194b.

194b $\langle \text{coefficient } y_z\text{xs } 194b \rangle \equiv$ (261)

$$y_z\text{xs} \quad 23 \quad -0.0001994456999380124, -7.214041996312615\text{e-}05, -7.99329702758048\text{e-}05, 2.0001994456999380124, 7.214041996312615\text{e-}05, 7.99329702758048\text{e-}05,$$

Defines:

`y_zxs`, used in chunk 194a.

2.12.29 z2.29 ZDIVGR: Expected growth rate of real dividends, for WPSN eq. (MCE exp.)

194c $\langle \text{variable } Z\text{DIVGR } 194c \rangle \equiv$ (219)

$$Z\text{DIVGR} = \text{Expected growth rate of real dividends, for WPSN eq.}$$

Defines:

`ZDIVGR`, used in chunk 231.

Uses `WPSN` 161b.

194d $\langle \text{equation } z\text{divgr } 194d \rangle \equiv$ (252)

$$\begin{aligned} z\text{divgr}: z\text{divgr}-z\text{divgr_aerr} = & y_z\text{divgr}(1) _ \\ & + (y_z\text{divgr}(2) * \text{picnia} + y_z\text{divgr}(3) * \text{picnia}(-1) + y_z\text{divgr}(4) * \text{picnia}(-2) \\ & + (y_z\text{divgr}(6) * \text{rffe} + y_z\text{divgr}(7) * \text{rffe}(-1) + y_z\text{divgr}(8) * \text{rffe}(-2) \\ & + y_z\text{divgr}(10) * \text{rtr} _ \\ & + y_z\text{divgr}(11) * \text{ptr} _ \\ & + (y_z\text{divgr}(12) * \text{xgap} + y_z\text{divgr}(13) * \text{xgap}(-1) + y_z\text{divgr}(14) * \text{xgap}(-2) \\ & + (y_z\text{divgr}(16) * (400 * \text{d}(\log((\text{ynicpn}-\text{tfcin}-\text{tscin}) * .5 / (.01 * \text{pxg})), 0, 1) \\ & + y_z\text{divgr}(20) * \text{hgx} \end{aligned}$$

Defines:

`zdivgr`, used in chunk 161c.

Uses `hgx` 67e, `picnia` 96f, `ptr` 176d, `pxg` 116b, `rffe` 152e, `rtr` 177d, `tfcin` 139a, `tscin` 144f, `xgap` 67a, `y_zdivgr` 195a, and `ynicpn` 85b.

195a $\langle \text{coefficient } y_zdivgr \text{ 195a} \rangle \equiv$ (261)
 $y_zdivgr \quad 20 \quad 1.511071172206618e-15, -0.009111480239164081, 0.03183741780107196, 0.02833$
 Defines:
 y_zdivgr , used in chunk 194d.

2.12.30 z2.30 ZYNID: Expected rate of growth of target real dividends, for YNIDN eq. (MCE exp.)

195b $\langle \text{variable } ZYNID \text{ 195b} \rangle \equiv$ (219)
 $ZYNID = \text{Expected rate of growth of target real dividends, for YNIDN eq.}$
 Defines:
 $ZYNID$, used in chunk 231.
 Uses YNIDN 84d.

195c $\langle \text{equation } zynid \text{ 195c} \rangle \equiv$ (252)
 $zynid: zynid - zynid_aerr = y_zynid(1) _$
 $\quad + (y_zynid(2) * picnia(-1) + y_zynid(3) * picnia(-2) + y_zynid(4) * p$
 $\quad + (y_zynid(6) * rffe(-1) + y_zynid(7) * rffe(-2) + y_zynid(8) * rffe$
 $\quad + y_zynid(10) * rtr(-1) _$
 $\quad + y_zynid(11) * ptr(-1) _$
 $\quad + (y_zynid(12) * xgap(-1) + y_zynid(13) * xgap(-2) + y_zynid(14) * xg$
 $\quad + (y_zynid(16) * d(\log(qynidn(-1)/pxb(-1)), 0, 1) + y_zynid(17) * d($
 $\quad + y_zynid(20) * (hggdpt(-1)/400)$

Defines:
 $zynid$, used in chunk 84e.
 Uses hggdpt 68d, picnia 96f, ptr 176d, pxb 116d, qynidn 84b, rffe 152e, rtr 177d, xgap 67a,
 and y_zynid 195d.

195d $\langle \text{coefficient } y_zynid \text{ 195d} \rangle \equiv$ (261)
 $y_zynid \quad 20 \quad -5.177745029596233e-16, 3.507527558415562e-05, 0.0004354171509883335, 0.0003765833$
 Defines:
 y_zynid , used in chunk 195c.

2.12.31 z2.31 ZYH: Expected level of real after-tax household income, for QEC eq. (MCE exp.)

195e $\langle \text{variable } ZYH \text{ 195e} \rangle \equiv$ (219)
 $ZYH = \text{Expected level of real after-tax household income, for QEC eq.}$
 Defines:
 ZYH , used in chunk 231.
 Uses QEC 27d.

Defines:
zyh, used in chunk 27e.
 Uses **picnia** 96f, **ptr** 176d, **rffe** 152e, **rtr** 177d, **xgap2** 67c, **xgdpt** 63c, **y_zyh** 196b, **yhgap** 88b,
 and **zvhst** 175a.

2.12.32 z2.32 ZYHP: Expected level of real after-tax property income, for QEC eq. (MCE exp.)

Defines:
 ZYHP, used in chunk 231.
 Uses QEC 27d.

Defines:
 zyhp, used in chunk 27e.
 Uses picnia 96f, ptr 176d, rffe 152e, rtr 177d, xgap2 67c, xgdpt 63c, y_zyhp 196e,
 yhgap 88b, yhpgap 90d, zyhpst 175d, and zybst 175a.

Defines:
y_zyhp, used in chunk 196d.

2.12.33 z2.33 ZYHT: Expected level of real transfer income, for QEC eq. (MCE exp.)

197a $\langle \text{variable } ZYHT \text{ 197a} \rangle \equiv$ (219)
 ZYHT = Expected level of real transfer income, for QEC eq.

Defines:

 ZYHT, used in chunk 231.

Uses QEC 27d.

197b $\langle \text{equation } zyht \text{ 197b} \rangle \equiv$ (252)
 zyht: $\log(zyht) - zyht_aerr = (y_zyht(1) * picnia + y_zyht(2) * picnia(-1) + y_zyht(3) * \\ + (y_zyht(5) * rffe + y_zyht(6) * rffe(-1) + y_zyht(7) * rffe(-2) \\ + (y_zyht(9) * xgap2 + y_zyht(10) * xgap2(-1) + y_zyht(11) * xgap \\ + y_zyht(13) * ptr_ \\ + y_zyht(14) * rtr_ \\ + (y_zyht(15) * yhgap + y_zyht(16) * yhgap(-1) + y_zyht(17) * yhg \\ + (y_zyht(19) * yhtgap + y_zyht(20) * yhtgap(-1) + y_zyht(21) * y \\ + \log(zyhtst*zyhst*xgdpt)$

Defines:

 zyht, used in chunk 27e.

Uses picnia 96f, ptr 176d, rffe 152e, rtr 177d, xgap2 67c, xgdpt 63c, y_zyht 197c,

 yhgap 88b, yhtgap 93b, zyhst 175a, and zyhtst 176a.

197c $\langle \text{coefficient } y_zyht \text{ 197c} \rangle \equiv$ (261)
 y_zyht 22 -0.0005375756842287296,0.0004256398977551294,0.000429593178783961,0.00034142717

Defines:

 y_zyht, used in chunk 197b.

2.12.34 z2.37 HGYNID: Growth rate of real after-tax corporate profits

197d $\langle \text{variable } HGYNID \text{ 197d} \rangle \equiv$ (219)
 HGYNID = Growth rate of real after-tax corporate profits

Defines:

 HGYNID, used in chunk 231.

197e $\langle \text{equation } hgynid \text{ 197e} \rangle \equiv$ (252)
 hgynid: $hgynid - hgynid_aerr = 400*d(\log((ynicpn-tfcin-tscin)*.5/pxg), 0, 1)$

Defines:

 hgynid, never used.

Uses pxg 116b, tfcin 139a, tscin 144f, and ynicpn 85b.

Chapter 3

Speculation on What We Can Do With This

So far the Fed's model is just a set of simultaneous equations that have been estimated from the data supplied. We assume that there is an underlying structure to the model that represents the Federal Open Market Committee (FOMC) concerns in setting monetary policy. They use Eview to analyze consequences for various actions that they could take.

One reason for replicating the FRB/US Model in R would be that anyone could then perform similar analyses. Another reason is that the replication process provides an opportunity to look closely at the details and learn how the economy works.

Noah Smith, on the Noahpinion blog, announced the Fed's release of the model and discusses the significance.

A few days ago, the Fed released its workhorse model of the macroeconomy - the FRB/US model - to the public. The model had been only semi-private before, since the Fed would send it to interested researchers, and revealed some information about it to the general public. But now the model is fully public. How should we interpret that action?

After talking about why they might not want to release the model, he follows that with this:

So if my guess is right, the Fed's publication of FRB/US indicates that whatever embarrassment existed is now essentially gone. That is kind of interesting.

This is suggesting that there is a lot of room to modernize the model. That's where an FRBUS R package for the R-project community might come in. I'm an amateur at all of this, so I'll have to see if I can find people who will want to work with me on it.

Stephen Williamson also commented on the release of the model.

The FRB/US model, used by the Board for forecasting and policy analysis, is the culmination of perhaps 45 years of work. Various generations of management at the Board have directed some smart people to work on this thing, and you can feel the weight of the large quantity of quality-adjusted hours of work that went into putting it together. But is it any good? Could the Board do just as well or better at forecasting with a much simpler tool? Could a well-educated and well-informed economist do a respectable job of central banking without ever looking at the output of the FRB/US model?

What's interesting to me about this statement is that in the early 70's I was a programmer at the San Francisco Federal Reserve bank. One week I spent a few hours helping another programmer find some bugs in code that he had written to do symbolic differentiation. Apparently that code was related to this model. You have to realize that personal computers didn't come until the 1980's and in those days we were running batch jobs on main frames. That started my lifelong interest in econometrics and macro-economics, even though I've never had an opportunity to do anything with it.

Appendices

Appendix A

Exogenous Variables

- 203a $\langle \text{variable } D01Q4 \text{ 203a} \rangle \equiv$ (219)
 $D01Q4 = \text{Dummy, destruction of World Trade Center}$
 Defines:
 $D01Q4$, used in chunk 231.
 $d01q4$, used in chunk 34d.
- 203b $\langle \text{variable } D2002 \text{ 203b} \rangle \equiv$ (219)
 $D2002 = \text{Dummy,}$
 Defines:
 $D2002$, used in chunk 231.
 $d2002$, used in chunk 46a.
- 203c $\langle \text{variable } D2003 \text{ 203c} \rangle \equiv$ (219)
 $D2003 = \text{Dummy,}$
 Defines:
 $D2003$, used in chunk 231.
 $d2003$, used in chunk 46a.
- 203d $\langle \text{variable } D69 \text{ 203d} \rangle \equiv$ (219)
 $D69 = \text{Dummy, post-1968 indicator}$
 Defines:
 $D69$, used in chunk 231.
 $d69$, used in chunk 45a.
- 203e $\langle \text{variable } D79A \text{ 203e} \rangle \equiv$ (219)
 $D79A = \text{Dummy, post-1979 indicator}$
 Defines:
 $d78a$, never used.
 $D79A$, used in chunk 231.
- 203f $\langle \text{variable } D8095 \text{ 203f} \rangle \equiv$ (219)
 $D8095 = \text{Dummy, 1980-1995 indicator}$
 Defines:
 $D8095$, used in chunk 231.
 $d8095$, used in chunks 156a and 157b.

- 204a $\langle \text{variable } D81 \text{ 204a} \rangle \equiv$ (219)
 D81 = Dummy, post-1980 indicator
 Defines:
 D81, used in chunk 231.
 d81, used in chunks 45a and 46a.
- 204b $\langle \text{variable } D83 \text{ 204b} \rangle \equiv$ (219)
 D83 = Dummy, post-1983 indicator
 Defines:
 D83, used in chunk 231.
 d83, used in chunk 26e.
- 204c $\langle \text{variable } D86 \text{ 204c} \rangle \equiv$ (219)
 D86 = Dummy, post-1985 indicator
 Defines:
 D86, used in chunk 231.
 d86, used in chunk 45a.
- 204d $\langle \text{variable } D87 \text{ 204d} \rangle \equiv$ (219)
 D87 = Dummy, post-1986 indicator
 Defines:
 D87, used in chunk 231.
 d87, used in chunks 46a and 160a.
- 204e $\langle \text{variable } DCON \text{ 204e} \rangle \equiv$ (219)
 DCON = Dummy, 0 prior to 1986, 1 after 1988, with a linear trend in between
 Defines:
 DCON, used in chunk 231.
 dcon, used in chunk 27e.
- 204f $\langle \text{variable } DDOCKM \text{ 204f} \rangle \equiv$ (219)
 DDOCKM = Dock strike dummy, import equation
 Defines:
 DDOCKM, used in chunk 231.
 ddockm, used in chunk 48b.
- 204g $\langle \text{variable } DDOCKX \text{ 204g} \rangle \equiv$ (219)
 DDOCKX = Dock strike dummy, export equation
 Defines:
 DDOCKX, used in chunk 231.
 ddockx, used in chunk 47c.
- 204h $\langle \text{variable } DEUC \text{ 204h} \rangle \equiv$ (219)
 DEUC = EUC switch: 1 for including EUC, 0 for not including
 Defines:
 DEUC, used in chunk 231.
 deuc, used in chunk 147e.
- 204i $\langle \text{variable } DFMPRR \text{ 204i} \rangle \equiv$ (219)
 DFMPRR = Dummy, Foreign monetary policy switch: Exogenous real interest rate
 Defines:
 DFMPRR, used in chunk 231.
 dfmpr, used in chunk 170a.

- 205a $\langle \text{variable } DFPDBT \text{ 205a} \rangle \equiv$ (219)
 DFPDBT = Fiscal policy switch: 1 for debt ratio stabilization
 Defines:
 DFPDBT, used in chunk 231.
 dfpdbt, used in chunks 141d and 143e.
- 205b $\langle \text{variable } DFPEX \text{ 205b} \rangle \equiv$ (219)
 DFPEX = Fiscal policy switch: 1 for exogenous personal income trend tax rates
 Defines:
 DFPEX, used in chunk 231.
 dfpex, used in chunks 141d and 143e.
- 205c $\langle \text{variable } DFPSRP \text{ 205c} \rangle \equiv$ (219)
 DFPSRP = Fiscal policy switch: 1 for surplus ratio stabilization
 Defines:
 DFPSRP, used in chunk 231.
 dfpsrp, used in chunks 141d and 143e.
- 205d $\langle \text{variable } DGLPRD \text{ 205d} \rangle \equiv$ (219)
 DGLPRD = Switch to control for long-run productivity growth in the government sector
 Defines:
 DGLPRD, used in chunk 231.
 dglprd, used in chunks 37d, 66e, 71, and 115.
- 205e $\langle \text{variable } DMPALT \text{ 205e} \rangle \equiv$ (219)
 DMPALT = Monetary policy switch: MA rule
 Defines:
 DMPALT, used in chunk 231.
 dmpalt, used in chunk 150d.
- 205f $\langle \text{variable } DMPEX \text{ 205f} \rangle \equiv$ (219)
 DMPEX = Monetary policy switch: exogenous federal funds rate
 Defines:
 DMPEX, used in chunk 231.
 dmpex, used in chunk 150d.
- 205g $\langle \text{variable } DMPGEN \text{ 205g} \rangle \equiv$ (219)
 DMPGEN = Monetary policy switch: Generalized reaction function
 Defines:
 DMPGEN, used in chunk 231.
 dmpgen, used in chunk 150d.
- 205h $\langle \text{variable } DMPINTAY \text{ 205h} \rangle \equiv$ (219)
 DMPINTAY = Monetary policy switch: inertial taylor rule
 Defines:
 DMPINTAY, used in chunk 231.
 dmpintay, used in chunk 150d.
- 205i $\langle \text{variable } DMPRR \text{ 205i} \rangle \equiv$ (219)
 DMPRR = Monetary policy switch: exogenous real federal funds rate
 Defines:
 DMPRR, used in chunk 231.
 dmprr, used in chunk 150d.

- 206a $\langle \text{variable } DMPSTB \text{ 206a} \rangle \equiv$ (219)
 DMPSTB = Stabilization switch: 0 for standard applications, 1 for stochastic simulation
 Defines:
 DMPSTB, used in chunk 231.
 dmpstb, used in chunk 76d.
- 206b $\langle \text{variable } DMPTAY \text{ 206b} \rangle \equiv$ (219)
 DMPTAY = Monetary policy switch: Taylor's reaction function
 Defines:
 DMPTAY, used in chunk 231.
 dmptay, used in chunk 150d.
- 206c $\langle \text{variable } DMPTLR \text{ 206c} \rangle \equiv$ (219)
 DMPTLR = Monetary policy switch: Taylor's reaction function with unemployment gap
 Defines:
 DMPTLR, used in chunk 231.
 dmptlr, used in chunk 150d.
- 206d $\langle \text{variable } DMPTRSH \text{ 206d} \rangle \equiv$ (219)
 DMPTRSH = Monetary policy threshold switch: 0 for no threshold, 1 for threshold
 Defines:
 DMPTRSH, used in chunk 231.
 dmptrsh, used in chunk 152e.
- 206e $\langle \text{variable } DRSTAR \text{ 206e} \rangle \equiv$ (219)
 DRSTAR = RSTAR updating switch: 1 is on, 0 is off
 Defines:
 DRSTAR, used in chunk 231.
 drstar, used in chunk 150a.
 Uses RSTAR 149e.
- 206f $\langle \text{variable } FPITRG \text{ 206f} \rangle \equiv$ (219)
 FPITRG = Foreign target consumer price inflation (G10)
 Defines:
 FPITRG, used in chunk 231.
 fpitrg, used in chunks 167e and 170a.
- 206g $\langle \text{variable } FPXRRT \text{ 206g} \rangle \equiv$ (219)
 FPXRRT = Real exchange rate residual, trend
 Defines:
 FPXRRT, used in chunk 231.
 fpxrrt, used in chunk 172a.
- 206h $\langle \text{variable } GFDRT \text{ 206h} \rangle \equiv$ (219)
 GFDRT = Federal government target debt-to-GDP ratio
 Defines:
 GFDRT, used in chunk 231.
 gfdrt, used in chunk 141d.

- 207a $\langle \text{variable } GFSRT \text{ 207a} \rangle \equiv$ (219)
 $GFSRT = \text{Federal government target surplus-to-GDP ratio}$
 Defines:
 $GFSRT$, used in chunk 231.
 $gfsrt$, used in chunk 141d.
- 207b $\langle \text{variable } GFTRT \text{ 207b} \rangle \equiv$ (219)
 $GFTRT = \text{Federal government, trend ratio of transfer payments to GDP}$
 Defines:
 $GFTRT$, used in chunk 231.
 $gftrt$, used in chunk 134f.
- 207c $\langle \text{variable } GSDRT \text{ 207c} \rangle \equiv$ (219)
 $GSDRT = \text{S\&L government target debt-to-GDP ratio}$
 Defines:
 $GSDRT$, used in chunk 231.
 $gsdrt$, used in chunk 143e.
- 207d $\langle \text{variable } GSSRT \text{ 207d} \rangle \equiv$ (219)
 $GSSRT = \text{State and local government, target surplus-to-GDP ratio}$
 Defines:
 $GSSRT$, used in chunk 231.
 $gssrt$, used in chunk 143e.
- 207e $\langle \text{variable } GSTRT \text{ 207e} \rangle \equiv$ (219)
 $GSTRT = \text{S\&L government, trend ratio of transfer payments to GDP}$
 Defines:
 $GSTRT$, used in chunk 231.
 $gstrt$, used in chunk 137f.
- 207f $\langle \text{variable } HGPCDR \text{ 207f} \rangle \equiv$ (219)
 $HGPCDR = \text{Trend growth rate of price of consumer durable goods (relative to PCNIA)}$
 Defines:
 $HGPCDR$, used in chunk 231.
 $hgpcdr$, used in chunks 28e and 188a.
 Uses PCNIA 97a.
- 207g $\langle \text{variable } HKSR \text{ 207g} \rangle \equiv$ (219)
 $HKSR = \text{Residual growth of capital services}$
 Defines:
 $HKSR$, used in chunk 231.
 $hksr$, used in chunk 39a.
- 207h $\langle \text{variable } JRCD \text{ 207h} \rangle \equiv$ (219)
 $JRCD = \text{Depreciation rate, consumer durables}$
 Defines:
 $JRCD$, used in chunk 231.
 $jrcd$, used in chunks 28e and 30–32.

- 208a $\langle \text{variable } JRH \text{ 208a} \rangle \equiv$ (219)
 JRH = Depreciation rate, housing
 Defines:
 JRH, used in chunk 231.
 jrh, used in chunks 29a, 31, and 80.
- 208b $\langle \text{variable } JRPD \text{ 208b} \rangle \equiv$ (219)
 JRPD = Depreciation rate, equipment
 Defines:
 JRPD, used in chunk 231.
 jrp d, used in chunks 36a, 37g, 40a, and 80c.
- 208c $\langle \text{variable } JRPI \text{ 208c} \rangle \equiv$ (219)
 JRPI = Depreciation rate, intellectual property
 Defines:
 JRPI, used in chunk 231.
 jrpi, used in chunks 37a, 38b, and 40c.
- 208d $\langle \text{variable } JRPS \text{ 208d} \rangle \equiv$ (219)
 JRPS = Depreciation rate, nonresidential structures
 Defines:
 JRPS, used in chunk 231.
 jrps, used in chunks 36d, 38d, 40e, and 80c.
- 208e $\langle \text{variable } LEUC \text{ 208e} \rangle \equiv$ (219)
 LEUC = Emergency unemployment compensation (EUC)
 Defines:
 LEUC, used in chunk 231.
 leuc, used in chunk 147e.
- 208f $\langle \text{variable } LQUALT \text{ 208f} \rangle \equiv$ (219)
 LQUALT = Labor quality, trend level
 Defines:
 LQUALT, used in chunk 231.
 lqualt, used in chunks 60c and 67e.
- 208g $\langle \text{variable } LURTRSH \text{ 208g} \rangle \equiv$ (219)
 LURTRSH = Unemployment threshold
 Defines:
 LURTRSH, used in chunk 231.
 lurtrsh, used in chunk 151b.
- 208h $\langle \text{variable } N16 \text{ 208h} \rangle \equiv$ (219)
 N16 = Noninstitutional population, aged 16 and over (break adjusted)
 Defines:
 N16, used in chunk 231.
 n16, used in chunks 73–76.
- 208i $\langle \text{variable } PCFRT \text{ 208i} \rangle \equiv$ (219)
 PCFRT = Real PCE price of food, trend
 Defines:
 PCFRT, used in chunk 231.
 pcf rt, used in chunks 112a and 113b.

- 209a $\langle \text{variable } PCSTAR \text{ 209a} \rangle \equiv$ (219)
 $PCSTAR = \text{Target consumption price level (used in RFFGEN policy rule)}$
 Defines:
 $PCSTAR$, used in chunk 231.
 $pcstar$, used in chunk 149c.
 Uses RFFGEN 149b.
- 209b $\langle \text{variable } PITARG \text{ 209b} \rangle \equiv$ (219)
 $PITARG = \text{Target rate of consumption price inflation (used in policy reaction functions)}$
 Defines:
 $PITARG$, used in chunk 231.
 $pitarg$, used in chunks 147–49 and 176d.
- 209c $\langle \text{variable } PITRSH \text{ 209c} \rangle \equiv$ (219)
 $PITRSH = \text{Inflation threshold}$
 Defines:
 $PITRSH$, used in chunk 231.
 $pitrsh$, used in chunk 151e.
- 209d $\langle \text{variable } PKIR \text{ 209d} \rangle \equiv$ (219)
 $PKIR = \text{Price index for stock of inventories, cw (relative to PXP)}$
 Defines:
 $PKIR$, used in chunks 117e and 231.
 $pkir$, used in chunks 41b, 44d, 57a, and 117f.
 Uses PXP 101a.
- 209e $\langle \text{variable } PLMINR \text{ 209e} \rangle \equiv$ (219)
 $PLMINR = \text{Ratio of hourly minimum wage to compensation per hour (times 100)}$
 Defines:
 $PLMINR$, used in chunk 231.
 $plminr$, used in chunk 107b.
- 209f $\langle \text{variable } POILRT \text{ 209f} \rangle \equiv$ (219)
 $POILRT = \text{Price of imported oil, relative to price index for bus. sector output, trend}$
 Defines:
 $POILRT$, used in chunk 231.
 $poilrt$, used in chunk 109a.
- 209g $\langle \text{variable } QLEOR \text{ 209g} \rangle \equiv$ (219)
 $QLEOR = \text{Desired ratio of employment discrepancy to the labor force}$
 Defines:
 $QLEOR$, used in chunk 231.
 $qleor$, used in chunks 70d and 76.
- 209h $\langle \text{variable } RFFFIX \text{ 209h} \rangle \equiv$ (219)
 $RFFFIX = \text{Federal funds rate given by fixed, pre-determined funds rate path}$
 Defines:
 $RFFFIX$, used in chunk 231.
 $rfffix$, used in chunk 150d.

- 210a $\langle \text{variable } RFFMIN \text{ 210a} \rangle \equiv$ (219)
 $RFFMIN$ = Minimum nominal funds rate (set at 0 to impose zero lower bound)
 Defines:
 $RFFMIN$, used in chunk 231.
 $rffmin$, used in chunks 150d and 152e.
- 210b $\langle \text{variable } RFNICT \text{ 210b} \rangle \equiv$ (219)
 $RFNICT$ = Residual in FNICN equation
 Defines:
 $RFNICT$, used in chunk 231.
 $rfnict$, used in chunk 53c.
 Uses $FNICN$ 53b.
- 210c $\langle \text{variable } RFRS10 \text{ 210c} \rangle \equiv$ (219)
 $RFRS10$ = Real foreign short-term interest rate
 Defines:
 $RFRS10$, used in chunk 231.
 $rfrs10$, used in chunk 170a.
- 210d $\langle \text{variable } RRFIX \text{ 210d} \rangle \equiv$ (219)
 $RRFIX$ = Real federal funds rate given by fixed, pre-determined real funds rate p
 Defines:
 $RRFIX$, used in chunk 231.
 $rrfix$, used in chunk 150d.
- 210e $\langle \text{variable } T47 \text{ 210e} \rangle \equiv$ (219)
 $T47$ = Time trend, begins in 1947q1 (0 before)
 Defines:
 $T47$, used in chunk 231.
 $t47$, used in chunks 112d, 113b, and 159d.
- 210f $\langle \text{variable } TAPDAD \text{ 210f} \rangle \equiv$ (219)
 $TAPDAD$ = Proportion of investment in equipment using accelerated depreciation
 Defines:
 $TAPDAD$, used in chunk 231.
 $tapdad$, used in chunk 46a.
- 210g $\langle \text{variable } TAPDDP \text{ 210g} \rangle \equiv$ (219)
 $TAPDDP$ = Proportion of investment tax credit deducted from depr. base
 Defines:
 $TAPDDP$, used in chunk 231.
 $tapddp$, used in chunk 40a.
- 210h $\langle \text{variable } TAPDS \text{ 210h} \rangle \equiv$ (219)
 $TAPDS$ = Tax service life of equipment
 Defines:
 $TAPDS$, used in chunk 231.
 $tapds$, used in chunk 46a.

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211a $\langle \text{variable } TAPDT \text{ 211a} \rangle \equiv$ (219)

`TAPDT` = Investment tax credit rate for equipment

Defines:

`TAPDT`, used in chunk 231.

`tapdt`, used in chunks 40a and 140c.

211b $\langle \text{variable } TAPSAD \text{ 211b} \rangle \equiv$ (219)

`TAPSAD` = Proportion of investment in nonresidential structures using accelerated depreciation

Defines:

`TAPSAD`, used in chunk 231.

`tapsad`, used in chunk 45a.

211c $\langle \text{variable } TAPSSL \text{ 211c} \rangle \equiv$ (219)

`TAPSSL` = Tax service life of nonresidential structures

Defines:

`TAPSSL`, used in chunk 231.

`tapssl`, used in chunk 45a.

211d $\langle \text{variable } TFDIV \text{ 211d} \rangle \equiv$ (219)

`TFDIV` = Federal income receipts on assets, dividends, current \$

Defines:

`TFDIV`, used in chunk 231.

`Tfdiv`, never used.

211e $\langle \text{variable } TRFCIM \text{ 211e} \rangle \equiv$ (219)

`TRFCIM` = Marginal federal corporate income tax rate

Defines:

`TRFCIM`, used in chunk 231.

`trfcim`, used in chunks 39, 40, and 140c.

211f $\langle \text{variable } TRFIB \text{ 211f} \rangle \equiv$ (219)

`TRFIB` = Average federal indirect business tax rate

Defines:

`TRFIB`, used in chunk 231.

`trfib`, used in chunk 139c.

211g $\langle \text{variable } TRFPM \text{ 211g} \rangle \equiv$ (219)

`TRFPM` = Marginal federal personal income tax rate (at twice median family income)

Defines:

`TRFPM`, used in chunk 231.

`trfpm`, used in chunk 31e.

211h $\langle \text{variable } TRFPTX \text{ 211h} \rangle \equiv$ (219)

`TRFPTX` = Average federal tax rate for personal income tax, trend, policy setting

Defines:

`TRFPTX`, used in chunk 231.

`trfptx`, used in chunk 141d.

211i $\langle \text{variable } TRFSI \text{ 211i} \rangle \equiv$ (219)

`TRFSI` = Average federal social insurance tax rate

Defines:

`TRFSI`, used in chunk 231.

`trfsi`, used in chunk 140a.

- 212a $\langle \text{variable } TRSCIT \text{ 212a} \rangle \equiv$ (219)
 $TRSCIT = \text{Average S\&L corporate income tax rate, trend}$
 Defines:
 $TRSCIT$, used in chunk 231.
 $trscit$, used in chunk 142b.
- 212b $\langle \text{variable } TRSIBT \text{ 212b} \rangle \equiv$ (219)
 $TRSIBT = \text{Average S\&L indirect business tax rate, trend}$
 Defines:
 $TRSIBT$, used in chunk 231.
 $trsibt$, used in chunk 142e.
- 212c $\langle \text{variable } TRSPP \text{ 212c} \rangle \equiv$ (219)
 $TRSPP = \text{Marginal S\&L tax rate on personal property}$
 Defines:
 $TRSPP$, used in chunk 231.
 $trsp$, used in chunk 31e.
- 212d $\langle \text{variable } TRSPTX \text{ 212d} \rangle \equiv$ (219)
 $TRSPTX = \text{Average state and local tax rate for personal income, trend}$
 Defines:
 $TRSPTX$, used in chunk 231.
 $trsptx$, used in chunk 143e.
- 212e $\langle \text{variable } TRSSIT \text{ 212e} \rangle \equiv$ (219)
 $TRSSIT = \text{Average S\&L social insurance tax rate, trend}$
 Defines:
 $TRSSIT$, used in chunk 231.
 $trssit$, used in chunk 144c.
- 212f $\langle \text{variable } UEMOT \text{ 212f} \rangle \equiv$ (219)
 $UEMOT = \text{Trend in ratio of EMON to XGDEN}$
 Defines:
 $UEMOT$, used in chunk 231.
 $uemot$, used in chunk 48b.
 Uses $EMON$ 48d and $XGDEN$ 78f.
- 212g $\langle \text{variable } UEMP \text{ 212g} \rangle \equiv$ (219)
 $UEMP = \text{Multiplicative factor in EMP identity}$
 Defines:
 $UEMP$, used in chunk 231.
 $uemp$, used in chunk 49e.
 Uses EMP 49d.
- 212h $\langle \text{variable } UFCBR \text{ 212h} \rangle \equiv$ (219)
 $UFCBR = \text{Multiplicative factor in FCBRN identity}$
 Defines:
 $UFCBR$, used in chunk 231.
 $ufcbr$, used in chunk 51c.
 Uses $FCBRN$ 51b.

- 213a $\langle \text{variable } UFNIR \text{ 213a} \rangle \equiv$ (219)
 $UFNIR = \text{Multiplicative factor in FNIRN identity}$
 Defines:
 $UFNIR$, used in chunk 231.
 $ufnir$, used in chunk 55e.
 Uses $FNIRN$ 55d.
- 213b $\langle \text{variable } UFPCM \text{ 213b} \rangle \equiv$ (219)
 $UFPCM = \text{Multiplicative factor in FPCM identity}$
 Defines:
 $UFPCM$, used in chunk 231.
 $ufpcm$, used in chunk 169d.
 Uses $FPCM$ 169c.
- 213c $\langle \text{variable } UFPXM \text{ 213c} \rangle \equiv$ (219)
 $UFPXM = \text{Multiplicative factor in FPXM identity}$
 Defines:
 $UFPXM$, used in chunk 231.
 $ufpxm$, used in chunk 172f.
 Uses $FPXM$ 172e.
- 213d $\langle \text{variable } UFTCIN \text{ 213d} \rangle \equiv$ (219)
 $UFTCIN = \text{Multiplicative factor in FTCIN identity}$
 Defines:
 $UFTCIN$, used in chunk 231.
 $uftcin$, used in chunk 52b.
 Uses $FTCIN$ 52a.
- 213e $\langle \text{variable } UGFDBT \text{ 213e} \rangle \equiv$ (219)
 $UGFDBT = \text{Multiplicative factor in GFDBTN identity}$
 Defines:
 $UGFDBT$, used in chunk 231.
 $ugfdbt$, used in chunk 132a.
 Uses $GFDBTN$ 131f.
- 213f $\langle \text{variable } UGSDBT \text{ 213f} \rangle \equiv$ (219)
 $UGSDBT = \text{Multiplicative factor in GSDBTN identity}$
 Defines:
 $UGSDBT$, used in chunk 231.
 $ugsdbt$, used in chunk 136a.
 Uses $GSDBTN$ 135f.
- 213g $\langle \text{variable } UGSINT \text{ 213g} \rangle \equiv$ (219)
 $UGSINT = \text{Multiplicative factor in GSINTN identity}$
 Defines:
 $UGSINT$, used in chunk 231.
 $ugsint$, used in chunk 136c.
 Uses $GSINTN$ 136b.

- 214a $\langle \text{variable } UGSSUB \text{ 214a} \rangle \equiv$ (219)
 $UGSSUB = \text{Multiplicative factor in GSSUB identity}$
 Defines:
 $UGSSUB$, used in chunk 231.
 $ugssub$, used in chunk 138e.
 Uses $GSSUB$ 138d.
- 214b $\langle \text{variable } UJCCA \text{ 214b} \rangle \equiv$ (219)
 $UJCCA = \text{Multiplicative factor in JCCAN identity}$
 Defines:
 $UJCCA$, used in chunk 231.
 $ujcca$, used in chunk 80c.
 Uses $JCCAN$ 80b.
- 214c $\langle \text{variable } UJCCAC \text{ 214c} \rangle \equiv$ (219)
 $UJCCAC = \text{Multiplicative factor in JCCACN identity}$
 Defines:
 $UJCCAC$, used in chunk 231.
 $ujccac$, used in chunk 80a.
 Uses $JCCACN$ 79f.
- 214d $\langle \text{variable } UJYGFE \text{ 214d} \rangle \equiv$ (219)
 $UJYGFE = \text{Multiplicative factor in JYGFEN identity}$
 Defines:
 $UJYGFE$, used in chunk 231.
 $ujygfe$, used in chunk 80e.
 Uses $JYGFEN$ 80d.
- 214e $\langle \text{variable } UJYGFG \text{ 214e} \rangle \equiv$ (219)
 $UJYGFG = \text{Multiplicative factor in JYGFGN identity}$
 Defines:
 $UJYGFG$, used in chunk 231.
 $ujygfg$, used in chunk 81b.
 Uses $JYGFGN$ 81a.
- 214f $\langle \text{variable } UJYGSE \text{ 214f} \rangle \equiv$ (219)
 $UJYGSE = \text{Multiplicative factor in JYGSEN identity}$
 Defines:
 $UJYGSE$, used in chunk 231.
 $ujygse$, used in chunk 81d.
 Uses $JYGSEN$ 81c.
- 214g $\langle \text{variable } UJYGSG \text{ 214g} \rangle \equiv$ (219)
 $UJYGSG = \text{Multiplicative factor in JYGSGN identity}$
 Defines:
 $UJYGSG$, used in chunk 231.
 $ujygsg$, used in chunk 81f.
 Uses $JYGSGN$ 81e.

- 215a $\langle \text{variable } ULEF \text{ 215a} \rangle \equiv$ (219)
 $ULEF = \text{Multiplicative factor in LEF identity}$
 Defines:
 $ULEF$, used in chunk 231.
 $ulef$, used in chunk 71a.
 Uses LEF 70f.
- 215b $\langle \text{variable } ULES \text{ 215b} \rangle \equiv$ (219)
 $ULES = \text{Multiplicative factor in LES identity}$
 Defines:
 $ULES$, used in chunk 231.
 $ules$, used in chunk 71c.
 Uses LES 71b.
- 215c $\langle \text{variable } UPCPI \text{ 215c} \rangle \equiv$ (219)
 $UPCPI = \text{Multiplicative factor in PCPI identity}$
 Defines:
 $UPCPI$, used in chunk 231.
 $upcpi$, used in chunk 97d.
 Uses PCPI 97c.
- 215d $\langle \text{variable } UPCPIX \text{ 215d} \rangle \equiv$ (219)
 $UPCPIX = \text{Multiplicative factor in PCPIX identity}$
 Defines:
 $UPCPIX$, used in chunk 231.
 $upcpix$, used in chunk 97f.
 Uses PCPIX 97e.
- 215e $\langle \text{variable } UPGFL \text{ 215e} \rangle \equiv$ (219)
 $UPGFL = \text{Multiplicative factor in PGFL identity}$
 Defines:
 $UPGFL$, used in chunk 231.
 $upgfl$, used in chunk 115a.
 Uses PGFL 114g.
- 215f $\langle \text{variable } UPGSL \text{ 215f} \rangle \equiv$ (219)
 $UPGSL = \text{Multiplicative factor in PGSL identity}$
 Defines:
 $UPGSL$, used in chunk 231.
 $upgs1$, used in chunk 115c.
 Uses PGSL 115b.
- 215g $\langle \text{variable } UPKPD \text{ 215g} \rangle \equiv$ (219)
 $UPKPD = \text{Multiplicative factor in PKPDR identity}$
 Defines:
 $UPKPD$, used in chunk 231.
 $upkpd$, used in chunk 115e.
 Uses PKPDR 115d.

- 216a $\langle \text{variable } UPMP \text{ 216a} \rangle \equiv$ (219)
 $UPMP = \text{Multiplicative factor in PMP identity}$
 Defines:
 $UPMP$, used in chunk 231.
 $upmp$, used in chunk 110b.
 Uses PMP 110a.
- 216b $\langle \text{variable } UPXB \text{ 216b} \rangle \equiv$ (219)
 $UPXB = \text{Multiplicative factor in PXB identity}$
 Defines:
 $UPXB$, used in chunk 231.
 $upxb$, used in chunk 116d.
 Uses PXB 116c.
- 216c $\langle \text{variable } UVEOA \text{ 216c} \rangle \equiv$ (219)
 $UVEOA = \text{Multiplicative factor in VEOA identity}$
 Defines:
 $UVEOA$, used in chunk 231.
 $uveoa$, used in chunk 62a.
 Uses $VEOA$ 61g.
- 216d $\langle \text{variable } UVPD \text{ 216d} \rangle \equiv$ (219)
 $UVPD = \text{Multiplicative factor in VPD identity}$
 Defines:
 $UVPD$, used in chunk 231.
 $uvpd$, used in chunk 41d.
 Uses VPD 41c.
- 216e $\langle \text{variable } UVPI \text{ 216e} \rangle \equiv$ (219)
 $UVPI = \text{Multiplicative factor in VPI identity}$
 Defines:
 $UVPI$, used in chunk 231.
 $uvpi$, used in chunk 41f.
 Uses VPI 41e.
- 216f $\langle \text{variable } UVPS \text{ 216f} \rangle \equiv$ (219)
 $UVPS = \text{Multiplicative factor in VPS identity}$
 Defines:
 $UVPS$, used in chunk 231.
 $uvps$, used in chunk 42b.
 Uses VPS 42a.
- 216g $\langle \text{variable } UXENG \text{ 216g} \rangle \equiv$ (219)
 $UXENG = \text{Multiplicative factor in XENG identity}$
 Defines:
 $UXENG$, used in chunk 231.
 $uxeng$, used in chunk 63e.
 Uses $XENG$ 63d.

217a $\langle \text{variable } UYD \text{ 217a} \rangle \equiv$ (219)

`UYD` = Multiplicative factor in YDN identity

Defines:

`UYD`, used in chunk 231.

`uyd`, used in chunk 85f.

Uses YDN 85e.

217b $\langle \text{variable } UYHI \text{ 217b} \rangle \equiv$ (219)

`UYHI` = Multiplicative factor in YHIN identity

Defines:

`UYHI`, used in chunk 231.

`uyhi`, used in chunk 89b.

Uses YHIN 89a.

217c $\langle \text{variable } UYHLN \text{ 217c} \rangle \equiv$ (219)

`UYHLN` = Multiplicative factor in YHLN identity

Defines:

`UYHLN`, used in chunk 231.

`uyhln`, used in chunk 89f.

Uses YHLN 89e.

217d $\langle \text{variable } UYHPTN \text{ 217d} \rangle \equiv$ (219)

`UYHPTN` = Multiplicative factor in YHPTN identity

Defines:

`UYHPTN`, used in chunk 231.

`uyhptn`, used in chunk 91e.

Uses YHPTN 91d.

217e $\langle \text{variable } UYHSN \text{ 217e} \rangle \equiv$ (219)

`UYHSN` = Multiplicative factor in personal saving identity (accounts for transfers to foreign

Defines:

`UYHSN`, used in chunk 231.

`uyhsn`, used in chunk 92d.

217f $\langle \text{variable } UYHTN \text{ 217f} \rangle \equiv$ (219)

`UYHTN` = Multiplicative factor in YHTN identity

Defines:

`UYHTN`, used in chunk 231.

`uyhtn`, used in chunk 93d.

Uses YHTN 93c.

217g $\langle \text{variable } UYL \text{ 217g} \rangle \equiv$ (219)

`UYL` = Multiplicative factor in YLN identity

Defines:

`UYL`, used in chunk 231.

`uy1`, used in chunk 82f.

217h $\langle \text{variable } UYNI \text{ 217h} \rangle \equiv$ (219)

`UYNI` = Multiplicative factor in YNIN identity

Defines:

`UYNI`, used in chunk 231.

`yni`, used in chunk 82d.

Uses YNIN 82c.

218a $\langle \textit{variable UYNICP 218a} \rangle \equiv$ (219)
 UYNICP = Multiplicative factor in YNICPN identity

Defines:

 UYNICP, used in chunk 231.

 uynicp, used in chunk 85b.

Uses YNICPN 85a.

218b $\langle \textit{variable UYP 218b} \rangle \equiv$ (219)
 UYP = Multiplicative factor in YPN identity

Defines:

 UYP, used in chunk 231.

 uyp, used in chunk 85d.

Uses YPN 85c.

218c $\langle \textit{variable UYSEN 218c} \rangle \equiv$ (219)
 UYSEN = Multiplicative factor in YSEN identity

Defines:

 UYSEN, used in chunk 231.

 uysen, used in chunk 83b.

218d $\langle \textit{variable YMSDN 218d} \rangle \equiv$ (219)
 YMSDN = Microsoft one-time dividend payout in 2004Q4

Defines:

 YMSDN, used in chunk 231.

 ymsdn, used in chunk 84e.

Appendix B

Original Files

The variables are listed in FRB/US dataset and variable listing (ZIP) (Updated database: March 17, 2016) as the *variables.txt* file and the model description in FRB/US model package (ZIP).

I'll produce the files so that they can be compared byte for byte to the originals; "variables.txt", "stdver_varinfo", "stdver_eqs.txt", and "stdver_coeffs.txt". Because of file name limitations with noweb, I've had to modify the file names that I create.

B.1 List of Variables with the Data

219 $\langle \text{srcEview/data.only.package/variables.txt} \ 219 \rangle \equiv$
 $\langle \text{variable CENG} \ 49\text{a} \rangle$
 $\langle \text{variable D01Q4} \ 203\text{a} \rangle$
 $\langle \text{variable D2002} \ 203\text{b} \rangle$
 $\langle \text{variable D2003} \ 203\text{c} \rangle$
 $\langle \text{variable D69} \ 203\text{d} \rangle$
 $\langle \text{variable D79A} \ 203\text{e} \rangle$
 $\langle \text{variable D8095} \ 203\text{f} \rangle$
 $\langle \text{variable D81} \ 204\text{a} \rangle$
 $\langle \text{variable D83} \ 204\text{b} \rangle$
 $\langle \text{variable D86} \ 204\text{c} \rangle$
 $\langle \text{variable D87} \ 204\text{d} \rangle$
 $\langle \text{variable DCON} \ 204\text{e} \rangle$
 $\langle \text{variable DDOCKM} \ 204\text{f} \rangle$
 $\langle \text{variable DDOCKX} \ 204\text{g} \rangle$
 $\langle \text{variable DELRFF} \ 153\text{b} \rangle$
 $\langle \text{variable DEUC} \ 204\text{h} \rangle$
 $\langle \text{variable DFMPRR} \ 204\text{i} \rangle$
 $\langle \text{variable DFPDBT} \ 205\text{a} \rangle$
 $\langle \text{variable DFPEX} \ 205\text{b} \rangle$

⟨variable *DFPSRP* 205c⟩
 ⟨variable *DGLPRD* 205d⟩
 ⟨variable *DMPALT* 205e⟩
 ⟨variable *DMPEX* 205f⟩
 ⟨variable *DMPGEN* 205g⟩
 ⟨variable *DMPINTAY* 205h⟩
 ⟨variable *DMPRR* 205i⟩
 ⟨variable *DMPSTB* 206a⟩
 ⟨variable *DMPTAY* 206b⟩
 ⟨variable *DMPTLR* 206c⟩
 ⟨variable *DMPTLUR* 151a⟩
 ⟨variable *DMPTMAX* 151g⟩
 ⟨variable *DMPTPI* 151d⟩
 ⟨variable *DMPTR* 152b⟩
 ⟨variable *DMPTRSH* 206d⟩
 ⟨variable *DPADJ* 106b⟩
 ⟨variable *DPGAP* 105d⟩
 ⟨variable *DRSTAR* 206e⟩
 ⟨variable *EC* 32b⟩
 ⟨variable *ECD* 26a⟩
 ⟨variable *ECH* 27a⟩
 ⟨variable *ECNIA* 29c⟩
 ⟨variable *ECNIAN* 29e⟩
 ⟨variable *ECO* 25a⟩
 ⟨variable *EGF* 121d⟩
 ⟨variable *EGFI* 122c⟩
 ⟨variable *EGFIN* 122f⟩
 ⟨variable *EGFIT* 123b⟩
 ⟨variable *EGFL* 123e⟩
 ⟨variable *EGFLN* 124c⟩
 ⟨variable *EGFLT* 124e⟩
 ⟨variable *EGFN* 122a⟩
 ⟨variable *EGFO* 125c⟩
 ⟨variable *EGFON* 126a⟩
 ⟨variable *EGFOT* 126c⟩
 ⟨variable *EGPDIN* 46b⟩
 ⟨variable *EGS* 126f⟩
 ⟨variable *EGSI* 127d⟩
 ⟨variable *EGSIN* 128b⟩
 ⟨variable *EGSIT* 128d⟩
 ⟨variable *EGSL* 129a⟩
 ⟨variable *EGSLN* 129d⟩
 ⟨variable *EGSLT* 129f⟩
 ⟨variable *EGSN* 127b⟩
 ⟨variable *EGSO* 130c⟩
 ⟨variable *EGSON* 131a⟩

⟨variable EGSOT 131c⟩
 ⟨variable EH 26d⟩
 ⟨variable EHN 30b⟩
 ⟨variable EI 35d⟩
 ⟨variable EIN 44c⟩
 ⟨variable EM 50d⟩
 ⟨variable EMN 50b⟩
 ⟨variable EMO 48a⟩
 ⟨variable EMON 48d⟩
 ⟨variable EMP 49d⟩
 ⟨variable EMPN 49f⟩
 ⟨variable EMPT 62c⟩
 ⟨variable EPD 33b⟩
 ⟨variable EPDN 43c⟩
 ⟨variable EPI 33e⟩
 ⟨variable EPIN 43e⟩
 ⟨variable EPS 34c⟩
 ⟨variable EPSN 44a⟩
 ⟨variable EX 47b⟩
 ⟨variable EXN 47e⟩
 ⟨variable FCBN 50f⟩
 ⟨variable FCBRN 51b⟩
 ⟨variable FGDP 166d⟩
 ⟨variable FGDPT 167a⟩
 ⟨variable FNICN 53b⟩
 ⟨variable FNILN 53d⟩
 ⟨variable FNIN 51d⟩
 ⟨variable FNIRN 55d⟩
 ⟨variable FPC 169a⟩
 ⟨variable FPCM 169c⟩
 ⟨variable FPI10 167d⟩
 ⟨variable FPI10T 168a⟩
 ⟨variable FPIC 168d⟩
 ⟨variable FPITRG 206f⟩
 ⟨variable FPX 172c⟩
 ⟨variable FPXM 172e⟩
 ⟨variable FPXR 171c⟩
 ⟨variable FPXRR 171f⟩
 ⟨variable FPXRRRT 206g⟩
 ⟨variable FRL10 170f⟩
 ⟨variable FRS10 169e⟩
 ⟨variable FRSTAR 170c⟩
 ⟨variable FTCIN 52a⟩
 ⟨variable FXGAP 166a⟩
 ⟨variable FYNICN 53f⟩
 ⟨variable FYNILN 54b⟩

⟨variable FYNIN 52c⟩
 ⟨variable GFDBTN 131f⟩
 ⟨variable GFDRT 206h⟩
 ⟨variable GFINTN 132b⟩
 ⟨variable GFS 132d⟩
 ⟨variable GFSN 133a⟩
 ⟨variable GFSRPN 133c⟩
 ⟨variable GFSRT 207a⟩
 ⟨variable GFSUB 133e⟩
 ⟨variable GFSUBN 134c⟩
 ⟨variable GFT 134e⟩
 ⟨variable GFTN 135a⟩
 ⟨variable GFTRD 135c⟩
 ⟨variable GFTRT 207b⟩
 ⟨variable GSDBTN 135f⟩
 ⟨variable GSDRT 207c⟩
 ⟨variable GSINTN 136b⟩
 ⟨variable GSSRPN 136d⟩
 ⟨variable GSSRT 207d⟩
 ⟨variable GSSUB 138d⟩
 ⟨variable GSSUBN 137a⟩
 ⟨variable GST 137e⟩
 ⟨variable GSTN 137c⟩
 ⟨variable GSTRD 138a⟩
 ⟨variable GSTRT 207e⟩
 ⟨variable HGEMP 52e⟩
 ⟨variable HGGDP 57b⟩
 ⟨variable HGGDPT 68c⟩
 ⟨variable HGPCDR 207f⟩
 ⟨variable HGPDR 116e⟩
 ⟨variable HGPIR 117b⟩
 ⟨variable HGPKIR 117e⟩
 ⟨variable HGPPSR 118a⟩
 ⟨variable HGVPD 42c⟩
 ⟨variable HGVPI 46d⟩
 ⟨variable HGVPS 42f⟩
 ⟨variable HGX 67d⟩
 ⟨variable HGYNID 197d⟩
 ⟨variable HKS 38e⟩
 ⟨variable HKSR 207g⟩
 ⟨variable HLEPT 76c⟩
 ⟨variable HLPRDT 77b⟩
 ⟨variable HMFPT 60e⟩
 ⟨variable HQLFPR 72f⟩
 ⟨variable HQLWW 69d⟩
 ⟨variable HUQPCT 108c⟩

\langle variable *HUXB* 66d \rangle
 \langle variable *HXBT* 68a \rangle
 \langle variable *JCCACN* 79f \rangle
 \langle variable *JCCAN* 80b \rangle
 \langle variable *JKCD* 31f \rangle
 \langle variable *JRCD* 207h \rangle
 \langle variable *JRH* 208a \rangle
 \langle variable *JRPD* 208b \rangle
 \langle variable *JRPI* 208c \rangle
 \langle variable *JRPS* 208d \rangle
 \langle variable *JYGFEN* 80d \rangle
 \langle variable *JYGFGN* 81a \rangle
 \langle variable *JYGSEN* 81c \rangle
 \langle variable *JYGSGN* 81e \rangle
 \langle variable *JYNCN* 82a \rangle
 \langle variable *KCD* 30d \rangle
 \langle variable *KH* 30f \rangle
 \langle variable *KI* 35a \rangle
 \langle variable *KPD* 37f \rangle
 \langle variable *KPI* 38a \rangle
 \langle variable *KPS* 38c \rangle
 \langle variable *KS* 39b \rangle
 \langle variable *LEF* 70f \rangle
 \langle variable *LEFT* 75a \rangle
 \langle variable *LEH* 71d \rangle
 \langle variable *LEO* 70c \rangle
 \langle variable *LEP* 70a \rangle
 \langle variable *LEPPOT* 76a \rangle
 \langle variable *LES* 71b \rangle
 \langle variable *LEST* 75d \rangle
 \langle variable *LEUC* 208e \rangle
 \langle variable *LF* 73c \rangle
 \langle variable *LFPR* 72a \rangle
 \langle variable *LHP* 64d \rangle
 \langle variable *LPRDT* 76e \rangle
 \langle variable *LQUALT* 208f \rangle
 \langle variable *LUR* 73e \rangle
 \langle variable *LURBLS* 74a \rangle
 \langle variable *LURNAT* 77d \rangle
 \langle variable *LURTRSH* 208g \rangle
 \langle variable *LWW* 65d \rangle
 \langle variable *MEI* 163b \rangle
 \langle variable *MEP* 164b \rangle
 \langle variable *MFPT* 61b \rangle
 \langle variable *N16* 208h \rangle
 \langle variable *PCDR* 120e \rangle

⟨variable *PCENG* 110f⟩
 ⟨variable *PCENGR* 110c⟩
 ⟨variable *PCER* 111b⟩
 ⟨variable *PCFR* 111e⟩
 ⟨variable *PCFRT* 208i⟩
 ⟨variable *PCHR* 119d⟩
 ⟨variable *PCNIA* 97a⟩
 ⟨variable *PCOR* 119b⟩
 ⟨variable *PCPI* 97c⟩
 ⟨variable *PCPIX* 97e⟩
 ⟨variable *PCSTAR* 209a⟩
 ⟨variable *PCXFE* 109c⟩
 ⟨variable *PGDP* 114e⟩
 ⟨variable *PGFIR* 101c⟩
 ⟨variable *PGFL* 114g⟩
 ⟨variable *PGFOR* 101f⟩
 ⟨variable *PGSIR* 102c⟩
 ⟨variable *PGSL* 115b⟩
 ⟨variable *PGSOR* 102f⟩
 ⟨variable *PHOUSE* 162c⟩
 ⟨variable *PHR* 103c⟩
 ⟨variable *PIC4* 121b⟩
 ⟨variable *PICNGR* 118d⟩
 ⟨variable *PICNIA* 96e⟩
 ⟨variable *PICX4* 120c⟩
 ⟨variable *PICXFE* 95a⟩
 ⟨variable *PIECI* 95d⟩
 ⟨variable *PIGDP* 118f⟩
 ⟨variable *PIPL* 98a⟩
 ⟨variable *PIPXNC* 96b⟩
 ⟨variable *PITARG* 209b⟩
 ⟨variable *PITRSH* 209c⟩
 ⟨variable *PKIR* 209d⟩
 ⟨variable *PKPDR* 115d⟩
 ⟨variable *PL* 98c⟩
 ⟨variable *PLMIN* 107a⟩
 ⟨variable *PLMINR* 209e⟩
 ⟨variable *PMO* 113d⟩
 ⟨variable *PMP* 110a⟩
 ⟨variable *POIL* 109e⟩
 ⟨variable *POILR* 108f⟩
 ⟨variable *POILRT* 209f⟩
 ⟨variable *PPDR* 103f⟩
 ⟨variable *PPIR* 104b⟩
 ⟨variable *PPSR* 104d⟩
 ⟨variable *PTR* 176c⟩

⟨*variable PWSTAR* 99a⟩
 ⟨*variable PXB* 116c⟩
 ⟨*variable PXG* 116a⟩
 ⟨*variable PXNC* 98e⟩
 ⟨*variable PXP* 101a⟩
 ⟨*variable PXR* 105a⟩
 ⟨*variable QEC* 27d⟩
 ⟨*variable QECD* 28d⟩
 ⟨*variable QECO* 28a⟩
 ⟨*variable QEH* 28g⟩
 ⟨*variable QEPD* 35f⟩
 ⟨*variable QEPI* 36f⟩
 ⟨*variable QEPS* 36c⟩
 ⟨*variable QKIR* 37c⟩
 ⟨*variable QLEOR* 209g⟩
 ⟨*variable QLEP* 74c⟩
 ⟨*variable QLF* 74e⟩
 ⟨*variable QLFP* 72d⟩
 ⟨*variable QLHP* 65b⟩
 ⟨*variable QLWW* 69b⟩
 ⟨*variable QPCNIA* 100e⟩
 ⟨*variable QPL* 99g⟩
 ⟨*variable QPMO* 114b⟩
 ⟨*variable QPXG* 99d⟩
 ⟨*variable QPXNC* 107c⟩
 ⟨*variable QPXP* 100c⟩
 ⟨*variable QYNIDN* 84a⟩
 ⟨*variable RBBB* 159a⟩
 ⟨*variable RBBBE* 158e⟩
 ⟨*variable RBBBP* 158b⟩
 ⟨*variable RCAR* 159c⟩
 ⟨*variable RCCD* 31b⟩
 ⟨*variable RCCH* 31d⟩
 ⟨*variable RCGAIN* 161f⟩
 ⟨*variable REQ* 160f⟩
 ⟨*variable REQP* 160c⟩
 ⟨*variable RFF* 152f⟩
 ⟨*variable RFFALT* 148d⟩
 ⟨*variable RFFE* 152d⟩
 ⟨*variable RFFFIX* 209h⟩
 ⟨*variable RFFGEN* 149b⟩
 ⟨*variable RFFINTAY* 148a⟩
 ⟨*variable RFFMIN* 210a⟩
 ⟨*variable RFFRULE* 150c⟩
 ⟨*variable RFFTAY* 147a⟩
 ⟨*variable RFFTTLR* 147d⟩

⟨variable *RFNICT* 210b⟩
 ⟨variable *RFRS10* 210c⟩
 ⟨variable *RFYNIC* 54d⟩
 ⟨variable *RFYNIL* 55a⟩
 ⟨variable *RG10* 156e⟩
 ⟨variable *RG10E* 156c⟩
 ⟨variable *RG10P* 155f⟩
 ⟨variable *RG30* 157f⟩
 ⟨variable *RG30E* 157d⟩
 ⟨variable *RG30P* 157a⟩
 ⟨variable *RG5* 155d⟩
 ⟨variable *RG5E* 155b⟩
 ⟨variable *RG5P* 154e⟩
 ⟨variable *RGFINT* 165b⟩
 ⟨variable *RGW* 164e⟩
 ⟨variable *RME* 159f⟩
 ⟨variable *RPD* 39d⟩
 ⟨variable *RRFFE* 153d⟩
 ⟨variable *RRFIX* 210d⟩
 ⟨variable *RRMET* 165e⟩
 ⟨variable *RRTR* 176f⟩
 ⟨variable *RSPNIA* 86a⟩
 ⟨variable *RSTAR* 149e⟩
 ⟨variable *RTB* 154c⟩
 ⟨variable *RTBE* 153f⟩
 ⟨variable *RTINV* 41a⟩
 ⟨variable *RTPD* 39f⟩
 ⟨variable *RTPI* 40b⟩
 ⟨variable *RTPS* 40d⟩
 ⟨variable *RTR* 177c⟩
 ⟨variable *T47* 210e⟩
 ⟨variable *TAPDAD* 210f⟩
 ⟨variable *TAPDD* 45b⟩
 ⟨variable *TAPDDP* 210g⟩
 ⟨variable *TAPDS* 210h⟩
 ⟨variable *TAPDT* 211a⟩
 ⟨variable *TAPSAD* 211b⟩
 ⟨variable *TAPSDA* 44e⟩
 ⟨variable *TAPSSL* 211c⟩
 ⟨variable *TFCIN* 138f⟩
 ⟨variable *TFDIV* 211d⟩
 ⟨variable *TFIBN* 139b⟩
 ⟨variable *TFPN* 139d⟩
 ⟨variable *TFSIN* 139f⟩
 ⟨variable *TRFCI* 140b⟩
 ⟨variable *TRFCIM* 211e⟩

⟨*variable* TRFIB 211f⟩
 ⟨*variable* TRFP 140e⟩
 ⟨*variable* TRFPM 211g⟩
 ⟨*variable* TRFPT 141c⟩
 ⟨*variable* TRFPTX 211h⟩
 ⟨*variable* TRFSI 211i⟩
 ⟨*variable* TRSCI 142a⟩
 ⟨*variable* TRSCIT 212a⟩
 ⟨*variable* TRSIB 142d⟩
 ⟨*variable* TRSIBT 212b⟩
 ⟨*variable* TRSP 143a⟩
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 ⟨*variable* TRSPT 143d⟩
 ⟨*variable* TRSPTX 212d⟩
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 ⟨*variable* TRYH 146e⟩
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 ⟨*variable* TSIBN 145a⟩
 ⟨*variable* TSPN 145c⟩
 ⟨*variable* TSSIN 145e⟩
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 ⟨*variable* UCFS 113a⟩
 ⟨*variable* UEMOT 212f⟩
 ⟨*variable* UEMP 212g⟩
 ⟨*variable* UFCBR 212h⟩
 ⟨*variable* UFNIR 213a⟩
 ⟨*variable* UFPCM 213b⟩
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 ⟨*variable* UFTCIN 213d⟩
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 ⟨variable UPXB 216b⟩
 ⟨variable UQPCT 107f⟩
 ⟨variable UVEOA 216c⟩
 ⟨variable UVPD 216d⟩
 ⟨variable UVPI 216e⟩
 ⟨variable UVPS 216f⟩
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 ⟨variable UXENG 216g⟩
 ⟨variable UYD 217a⟩
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 ⟨variable UYHLN 217c⟩
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 ⟨variable UYP 218b⟩
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 ⟨variable VEOA 61g⟩
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 ⟨variable VPS 42a⟩
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 ⟨variable WPO 163e⟩
 ⟨variable WPON 162f⟩
 ⟨variable WPS 161d⟩
 ⟨variable WPSN 161b⟩
 ⟨variable XB 59b⟩
 ⟨variable XBN 79b⟩
 ⟨variable XBO 58d⟩
 ⟨variable XBT 62f⟩
 ⟨variable XENG 63d⟩
 ⟨variable XFS 56a⟩
 ⟨variable XFSN 78d⟩
 ⟨variable XG 59d⟩
 ⟨variable XGAP 66g⟩
 ⟨variable XGAP2 67b⟩
 ⟨variable XGDE 57d⟩
 ⟨variable XGDEN 78f⟩
 ⟨variable XGDI 63f⟩
 ⟨variable XGDIN 94d⟩
 ⟨variable XGDO 64b⟩

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 $\langle \text{variable } XGDPTN \ 68e \rangle$
 $\langle \text{variable } XGN \ 79d \rangle$
 $\langle \text{variable } XGO \ 58a \rangle$
 $\langle \text{variable } XGPOT \ 60b \rangle$
 $\langle \text{variable } XP \ 58g \rangle$
 $\langle \text{variable } XPN \ 77f \rangle$
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 $\langle \text{variable } YGFSN \ 146a \rangle$
 $\langle \text{variable } YGSSN \ 146c \rangle$
 $\langle \text{variable } YH \ 87e \rangle$
 $\langle \text{variable } YHGAP \ 88a \rangle$
 $\langle \text{variable } YHIBN \ 88c \rangle$
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 $\langle \text{variable } YHL \ 89c \rangle$
 $\langle \text{variable } YHLN \ 89e \rangle$
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 $\langle \text{variable } YHPCD \ 32d \rangle$
 $\langle \text{variable } YHPGAP \ 90c \rangle$
 $\langle \text{variable } YHPNTN \ 90e \rangle$
 $\langle \text{variable } YHPSHR \ 91b \rangle$
 $\langle \text{variable } YHPTN \ 91d \rangle$
 $\langle \text{variable } YHSHR \ 92a \rangle$
 $\langle \text{variable } YHSN \ 92c \rangle$
 $\langle \text{variable } YHT \ 92e \rangle$
 $\langle \text{variable } YHTGAP \ 93a \rangle$
 $\langle \text{variable } YHTN \ 93c \rangle$
 $\langle \text{variable } YHTSHR \ 93e \rangle$
 $\langle \text{variable } YKIN \ 86e \rangle$
 $\langle \text{variable } YKPDN \ 87a \rangle$
 $\langle \text{variable } YKPSN \ 87c \rangle$
 $\langle \text{variable } YMSDN \ 218d \rangle$
 $\langle \text{variable } YNICPN \ 85a \rangle$
 $\langle \text{variable } YNIDN \ 84d \rangle$
 $\langle \text{variable } YNIIN \ 83c \rangle$
 $\langle \text{variable } YNILN \ 82e \rangle$
 $\langle \text{variable } YNIN \ 82c \rangle$
 $\langle \text{variable } YNISEN \ 83a \rangle$
 $\langle \text{variable } YPN \ 85c \rangle$
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 $\langle \text{variable } ZECD \ 187c \rangle$
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 $\langle \text{variable } ZEH \ 189a \rangle$

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This code is written to file `srcEview/data.only.package/variables.txt`.

B.2 Standard Version Variable Information File

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<srcEview/frbus.package/mods/stdver.varinfo 231>≡

| | |
|-------------|--|
| 1 CENG | = Consumption of crude energy (oil, coal, natural gas), 2009 \$ |
| 2 D01Q4 | = Dummy, destruction of World Trade Center |
| 3 D2002 | = Dummy, |
| 4 D2003 | = Dummy, |
| 5 D69 | = Dummy, post-1968 indicator |
| 6 D79A | = Dummy, post-1979 indicator |
| 7 D8095 | = Dummy, 1980-1995 indicator |
| 8 D81 | = Dummy, post-1980 indicator |
| 9 D83 | = Dummy, post-1983 indicator |
| 10 D86 | = Dummy, post-1985 indicator |
| 11 D87 | = Dummy, post-1986 indicator |
| 12 DCON | = Dummy, 0 prior to 1986, 1 after 1988, with a linear trend in between |
| 13 DDCKM | = Dock strike dummy, import equation |
| 14 DDCKX | = Dock strike dummy, export equation |
| 15 DELRFF | = Federal funds rate, first diff |
| 16 DEUC | = EUC switch: 1 for including EUC, 0 for not including |
| 17 DFMPRR | = Dummy, Foreign monetary policy switch: Exogenous real interest rate |
| 18 DFPDBT | = Fiscal policy switch: 1 for debt ratio stabilization |
| 19 DFPEX | = Fiscal policy switch: 1 for exogenous personal income trend tax rates |
| 20 DFPSRP | = Fiscal policy switch: 1 for surplus ratio stabilization |
| 21 DGLPRD | = Switch to control for long-run productivity growth in the government sector |
| 22 DMPALT | = Monetary policy switch: MA rule |
| 23 DMPEX | = Monetary policy switch: exogenous federal funds rate |
| 24 DMPGEN | = Monetary policy switch: Generalized reaction function |
| 25 DMPINTAY | = Monetary policy switch: inertial taylor rule |
| 26 DMPRR | = Monetary policy switch: exogenous real federal funds rate |
| 27 DMPSTB | = Stabilization switch: 0 for standard applications, 1 for stochastic simulation |
| 28 DMPTAY | = Monetary policy switch: Taylor's reaction function |
| 29 DMPTLR | = Monetary policy switch: Taylor's reaction function with unemployment gap |
| 30 DMPTLUR | = Monetary policy indicator for unemployment threshold |
| 31 DMPTMAX | = Monetary policy indicator for both thresholds |
| 32 DMPTPI | = Monetary policy indicator for inflation threshold |
| 33 DMPTR | = Monetary policy indicator for policy rule thresholds |
| 34 DMPTRSH | = Monetary policy threshold switch: 0 for no threshold, 1 for threshold |
| 35 DPADJ | = Price inflation aggregation adjustment |
| 36 DPGAP | = Price inflation aggregation discrepancy |
| 37 DRSTAR | = RSTAR updating switch: 1 is on, 0 is off |
| 38 EC | = Consumption, cw 2009\$ (FRB/US definition) |
| 39 ECD | = Consumer expenditures on durable goods, cw 2009\$ |
| 40 ECH | = Consumer expenditures on housing services, cw 2009\$ |
| 41 ECNIA | = Personal consumption expenditures, cw 2009\$ (NIPA definition) |
| 42 ECNIAN | = Personal consumption expenditures, current \$ (NIPA definition) |
| 43 ECO | = Consumer expenditures on non-durable goods and non-housing services, cw 2009\$ |

44 EGF = Federal government consumption and gross investment, cw 2009\$
 45 EGFI = Federal government gross investment, cw 2009\$
 46 EGFIN = Federal government gross investment, current \$
 47 EGFIT = Federal government gross investment, cw 2009\$, trend
 48 EGFL = Federal government employee compensation, cw 2009\$
 49 EGFLN = Federal government employee compensation, current \$
 50 EGFLT = Federal government employee compensation, cw 2009\$, trend
 51 EGFN = Federal government consumption and gross investment, current \$
 52 EGFO = Federal government consumption ex. employee comp., cw 2009\$
 53 EG FON = Federal government consumption ex. employee comp., current \$
 54 EG FOT = Federal government consumption ex. employee comp., cw 2009\$, trend
 55 EGPDIN = Gross private domestic investment
 56 EGS = S&L government consumption and gross investment, cw 2009\$
 57 EGSI = S&L government gross investment, cw 2009\$
 58 EGSIN = S&L government gross investment, current \$
 59 EG SIT = S&L government gross investment, cw 2009\$, trend
 60 EGSL = S&L government employee compensation, cw 2009\$
 61 EGSLN = S&L government employee compensation, current \$
 62 EGSLT = S&L government employee compensation, cw 2009\$, trend
 63 EGSN = S&L government consumption and gross investment, current \$
 64 EGSO = S&L government consumption ex. employee comp., cw 2009\$
 65 EGSON = S&L government consumption ex. employee comp., current \$
 66 EG SOT = S&L government consumption ex. employee comp., cw 2009\$, trend
 67 EH = Residential investment expenditures, cw 2009\$
 68 EHN = Residential investment expenditures
 69 EI = Change in private inventories, cw 2009\$
 70 EIN = Change in business inventories, current \$
 71 EM = Imports of goods and services, cw 2009\$
 72 EMN = Imports of goods and services, current \$
 73 EMO = Imports of goods and services ex. petroleum, cw 2009\$
 74 EMON = Imports of goods and services ex. petroleum
 75 EMP = Petroleum imports, cw 2009\$
 76 EMPN = Petroleum imports, current \$
 77 EMPT = Petroleum imports trend, cw 2009\$
 78 EPD = Investment in equipment, cw 2009\$
 79 EPDN = Investment in equipment, current \$
 80 EPI = Investment in intellectual property, cw 2009\$
 81 EPIN = Investment in intellectual property, current \$
 82 EPS = Investment in nonresidential structures, cw 2009\$
 83 EPSN = Investment in nonresidential structures, current \$
 84 EX = Exports of goods and services, cw 2009 \$
 85 EXN = Exports of goods and services, current \$
 86 FCBN = US current account balance, current \$
 87 FCBRN = US current account balance residual, current \$
 88 FGDP = Foreign aggregate GDP (world, bilateral export weights)
 89 FG DPT = Foreign aggregate GDP (world, bilateral export weights), trend

| | | |
|-----|--------|---|
| 90 | FNICN | = Gross stock of claims of US residents on the rest of the world, current \$ |
| 91 | FNILN | = Gross stock of liabilities of US residents to the rest of the world, current \$ |
| 92 | FNIN | = Net stock of claims of US residents on the rest of the world, current \$ |
| 93 | FNIRN | = Net stock of claims of US residents on the rest of the world, residual |
| 94 | FPC | = Foreign aggregate consumer price (G39, import/export trade weights) |
| 95 | FPCM | = Foreign aggregate consumer price (G39, bilateral non-oil import trade weights) |
| 96 | FPI10 | = Foreign consumer price inflation (G10) |
| 97 | FPI10T | = Foreign consumer price inflation, trend (G10) |
| 98 | FPIC | = Foreign consumer price inflation (G39, bilateral export trade weights) |
| 99 | FPITRG | = Foreign target consumer price inflation (G10) |
| 100 | FPX | = Nominal exchange rate (G39, import/export trade weights) |
| 101 | FPXM | = Nominal exchange rate (G39, bilateral import trade weights) |
| 102 | FPXR | = Real exchange rate (G39, import/export trade weights) |
| 103 | FPXRR | = Real exchange rate residual |
| 104 | FPXRRT | = Real exchange rate residual, trend |
| 105 | FRL10 | = Foreign long-term interest rate (G10) |
| 106 | FRS10 | = Foreign short-term interest rate (G10) |
| 107 | FRSTAR | = Equilibrium real short-term interest rate used in foreign Taylor rule |
| 108 | FTCIN | = Corporate taxes paid to rest of world, current \$ |
| 109 | FXGAP | = Foreign output gap (world, bilateral export trade weights) |
| 110 | FYNICN | = Gross investment income received from the rest of the world, current \$ |
| 111 | FYNILN | = Gross investment income paid to the rest of the world, current \$ |
| 112 | FYNIN | = Net investment income received from the rest of the world, current \$ |
| 113 | GFDBTN | = Federal government debt stock, current \$ |
| 114 | GFDRT | = Federal government target debt-to-GDP ratio |
| 115 | GFINTN | = Federal government net interest payments, current \$ |
| 116 | GFS | = Federal government grants-in-aid to S&L government, deflated by PGDP |
| 117 | GFSN | = Federal government grants-in-aid to S&L government, current \$ |
| 118 | GFSRPN | = Federal government budget surplus, current \$ |
| 119 | GFSRT | = Federal government target surplus-to-GDP ratio |
| 120 | GFSUB | = Federal government subsidies less surplus, deflated by PGDP |
| 121 | GFSUBN | = Federal government subsidies less surplus, current \$ |
| 122 | GFT | = Federal government net transfer payments, deflated by PGDP |
| 123 | GFTN | = Federal government net transfer payments, current \$ |
| 124 | GFTRD | = Deviation of ratio of federal transfers to GDP from trend ratio |
| 125 | GFTRT | = Federal government, trend ratio of transfer payments to GDP |
| 126 | GSDBTN | = S&L government debt stock, current \$ |
| 127 | GSDRT | = S&L government target debt-to-GDP ratio |
| 128 | GSINTN | = S&L government net interest payments, current \$ |
| 129 | GSSRPN | = S&L government budget surplus, current \$ |
| 130 | GSSRT | = State and local government, target surplus-to-GDP ratio |
| 131 | GSSUB | = S&L government subsidies less surplus, deflated by PGDP |
| 132 | GSSUBN | = S&L government subsidies less surplus, current \$ |
| 133 | GST | = S&L government net transfer payments, deflated by PGDP |
| 134 | GSTN | = S&L government net transfer payments, current \$ |
| 135 | GSTRD | = Deviation of ratio of S&L transfers to GDP from trend ratio |

| | | |
|-----|--------|--|
| 136 | GSTRT | = S&L government, trend ratio of transfer payments to GDP |
| 137 | HGEMP | = Petroleum imports, cw 2009\$, trend growth rate |
| 138 | HGGDP | = Growth rate of GDP, cw 2009\$ (annual rate) |
| 139 | HGGDPT | = Trend growth rate of XGDP, cw 2009\$ (annual rate) |
| 140 | HGPCDR | = Trend growth rate of price of consumer durable goods (relative to PCN) |
| 141 | HGPDR | = Trend Price Growth of PPDR |
| 142 | HGPIR | = Trend Price Growth of PPIR |
| 143 | HGPKIR | = Trend growth rate of PKIR |
| 144 | HGPPSR | = Trend growth rate of PPSR |
| 145 | HGVDP | = Trend Growth of VPD |
| 146 | HGVPI | = Trend growth rate of VPI |
| 147 | HGVPS | = Trend growth rate of VPS |
| 148 | HGX | = Trend growth rate of XG, cw 2009\$ (annual rate) |
| 149 | HGYNID | = Growth rate of real after-tax corporate profits |
| 150 | HKS | = Growth rate of KS, cw 2009\$ (compound annual rate) |
| 151 | HKSR | = Residual growth of capital services |
| 152 | HLEPT | = Trend growth rate of LEP (annual rate) |
| 153 | HLPRDT | = Trend growth rate of output per hour |
| 154 | HMFPT | = Trend growth rate of multifactor productivity |
| 155 | HQLFPR | = Drift component of change in QLFPR |
| 156 | HQLWW | = Trend growth rate of workweek |
| 157 | HUQPCT | = Drift term in stochastic component of trend ratio of PCNIA to PXP |
| 158 | HUXB | = Drift term in UXBT |
| 159 | HXBT | = Trend rate of growth of XB , cw 2009\$ (annual rate) |
| 160 | JCCACN | = Consumption of fixed capital, corporate, current \$ |
| 161 | JCCAN | = Consumption of fixed capital, current \$ |
| 162 | JKCD | = Consumption of fixed capital, consumer durables |
| 163 | JRCD | = Depreciation rate, consumer durables |
| 164 | JRH | = Depreciation rate, housing |
| 165 | JRPD | = Depreciation rate, equipment |
| 166 | JRPI | = Depreciation rate, intellectual property |
| 167 | JRPS | = Depreciation rate, nonresidential structures |
| 168 | JYGFEN | = CFC, federal government enterprises, current \$ |
| 169 | JYFGN | = CFC, federal government, general, current \$ |
| 170 | JYGSN | = CFC, state and local government enterprises, current \$ |
| 171 | JYSGN | = CFC, state and local government, general, current \$ |
| 172 | JYNCN | = Noncorporate business CFC, current \$ |
| 173 | KCD | = Stock of consumer durables, cw 2009\$ |
| 174 | KH | = Stock of residential structures, cw 2009\$ |
| 175 | KI | = Stock of private inventories, cw 2009\$ |
| 176 | KPD | = Capital stock - Equipment, 2009\$ |
| 177 | KPI | = Capital Stock - Intellectual Property, 2009\$ |
| 178 | KPS | = Capital stock - nonresidential structures, 2009\$ |
| 179 | KS | = Capital services, 2009 \$ |
| 180 | LEF | = Federal civilian employment ex. gov. enterprise |
| 181 | LEFT | = Federal civilian employment ex. gov. enterprise, trend |

| | |
|-------------|--|
| 182 LEH | = Civilian employment (break adjusted) |
| 183 LEO | = Difference between household and business sector payroll employment, less gov't |
| 184 LEP | = Employment in business sector (employee and self-employed) |
| 185 LEPPOT | = Potential employment in business sector |
| 186 LES | = S&L government employment ex. gov. enterprise |
| 187 LEST | = S&L government employment ex. gov. enterprise, trend |
| 188 LEUC | = Emergency unemployment compensation (EUC) |
| 189 LF | = Civilian labor force (break adjusted) |
| 190 LFPR | = Labor force participation rate |
| 191 LHP | = Aggregate labor hours, business sector (employee and self-employed) |
| 192 LPRDT | = Trend labor productivity |
| 193 LQUALT | = Labor quality, trend level |
| 194 LUR | = Civilian unemployment rate (break adjusted) |
| 195 LURBLS | = Civilian unemployment rate (published) |
| 196 LURNAT | = Natural rate of unemployment |
| 197 LURTRSH | = Unemployment threshold |
| 198 LW | = Workweek, business sector (employee and self-employed) |
| 199 MEI | = Multiplicative discrepancy for the difference between XGDI and XGDO |
| 200 MEP | = Multiplicative discrepancy for the difference between XGDP and XGDO |
| 201 MFPT | = Multifactor productivity, trend level |
| 202 N16 | = Noninstitutional population, aged 16 and over (break adjusted) |
| 203 PCDR | = Price index for consumer durables, cw (relative to to PCNIA) |
| 204 PCENG | = Price index for aggregate energy consumption |
| 205 PCENGR | = Price index for aggregate energy consumption (relative to PXB) |
| 206 PCER | = Price index for personal consumption expenditures on energy (relative to PCXFE) |
| 207 PCFR | = Price index for personal consumption expenditures on food (relative to PCXFE) |
| 208 PCFRT | = Real PCE price of food, trend |
| 209 PCHR | = Price index for housing services, cw (relative to to PCNIA) |
| 210 PCNIA | = Price index for personal consumption expenditures, cw (NIPA definition) |
| 211 PCOR | = Price index for non-durable goods and non-housing services, cw (relative to to P |
| 212 PCPI | = Consumer price index, total |
| 213 PCPIX | = Consumer price index, excluding food and energy |
| 214 PCSTAR | = Target consumption price level (used in RFFGEN policy rule) |
| 215 PCXFE | = Price index for personal consumption expendits ex. food and energy, cw (NIPA def |
| 216 PGDP | = Price index for GDP, cw |
| 217 PGFIR | = Price index for federal gov. investment, cw (relative to PXP) |
| 218 PGFL | = Price index for federal government employee compensation, cw |
| 219 PGFOR | = Price index for federal governemnt consumption ex. emp. comp., cw (relative to P |
| 220 PGSIR | = Price index for S&L government investment (relative to PXP) |
| 221 PGSL | = Price index for S&L government employee compensation, cw |
| 222 PGSOR | = Price index for S&L government consumption ex. emp. comp., cw (relative to PXP) |
| 223 PHOUSE | = Loan Performance House Price Index |
| 224 PHR | = Price index for residential investment, cw (relative to PXP) |
| 225 PIC4 | = Four-quarter percent change in PCE prices |
| 226 PICNGR | = Weighted growth rate of relative energy price |
| 227 PICNIA | = Inflation rate, personal consumption expenditures, cw |

| | | |
|-----|--------|--|
| 228 | PICX4 | = Four-quarter percent change core in PCE prices |
| 229 | PICXFE | = Inflation rate, personal consumption expenditures, ex. food and energy |
| 230 | PIECI | = Annualized rate of growth of EI hourly compensation |
| 231 | PIGDP | = Inflation rate, GDP, cw |
| 232 | PIPL | = Rate of growth of PL |
| 233 | PIPXNC | = Inflation rate, price of adjusted final sales excluding consumption (a |
| 234 | PITARG | = Target rate of consumption price inflation (used in policy reaction fu |
| 235 | PITRSH | = Inflation threshold |
| 236 | PKIR | = Price index for stock of inventories, cw (relative to PXP) |
| 237 | PKPDR | = Ratio of price of equipment stock (KPD) to PXP |
| 238 | PL | = Compensation per hour, business |
| 239 | PLMIN | = Minimum wage |
| 240 | PLMINR | = Ratio of hourly minimum wage to compensation per hour (times 100) |
| 241 | PMO | = Price index for imports ex. petroleum, cw |
| 242 | PMP | = Price index for petroleum imports |
| 243 | POIL | = Price of imported oil (\$ per barrel) |
| 244 | POILR | = Price of imported oil, relative to price index for bus. sector output |
| 245 | POILRT | = Price of imported oil, relative to price index for bus. sector output |
| 246 | PPDR | = Price level of EPD compared to PXP |
| 247 | PPIR | = Price level of EPI compared to PXP |
| 248 | PPSR | = Price index for nonresidential structures, cw (relative to PXP) |
| 249 | PTR | = 10-year expected PCE price inflation (Survey of Professional Forecasts |
| 250 | PWSTAR | = Equilibrium NFB price markup |
| 251 | PXB | = Price index for NFB output |
| 252 | PXG | = Price index for business output plus oil imports |
| 253 | PXNC | = Price of adjusted final sales excluding consumption |
| 254 | PXP | = Price index for final sales plus imports less gov. labor |
| 255 | PXR | = Price index for exports, cw (relative to PXP) |
| 256 | QEC | = Desired level of consumption (FRBUS definition) |
| 257 | QECD | = Target level of consumption of durable goods, trending component |
| 258 | QECO | = Desired level of consumption of nondurable goods and nonhousing services |
| 259 | QEH | = Target level of residential investment |
| 260 | QEPD | = Desired level of investment in equipment |
| 261 | QEPI | = Desired level of investment in intellectual property |
| 262 | QEPS | = Desired level of investment in structures |
| 263 | QKIR | = Desired Inventory Sales Ratio |
| 264 | QLEOR | = Desired ratio of employment discrepancy to the labor force |
| 265 | QLEP | = Desired level of business employment |
| 266 | QLF | = Desired level of civilian labor force |
| 267 | QLFPR | = Trend labor force participation rate |
| 268 | QLHP | = Desired level of business labor hours |
| 269 | QLWW | = Trend workweek, business sector (employee and self-employed) |
| 270 | QPCNIA | = Desired level of consumption price |
| 271 | QPL | = Desired level of compensation per hour, trending component |
| 272 | QPMO | = Random walk component of non-oil import prices |
| 273 | QPXG | = Desired price level of private output ex. energy, housing, and farm |

| | |
|--------------|---|
| 274 QPXNC | = Desired level of nonconsumption price |
| 275 QPXP | = Desired price level of adjusted final sales |
| 276 QYNIDN | = Desired level of dividends |
| 277 RBBB | = S&P BBB corporate bond rate |
| 278 RBBBE | = S&P BBB corporate bond rate (effective ann. yield) |
| 279 RBBBP | = S&P BBB corporate bond rate, risk/term premium |
| 280 RCAR | = New car loan rate at finance companies |
| 281 RCCD | = Cost of capital for consumer durables |
| 282 RCCH | = Cost of capital for residential investment |
| 283 RCGAIN | = Rate of capital gain on the non-equity portion of household wealth |
| 284 REQ | = Real expected rate of return on equity |
| 285 REQP | = Real expected rate of return on equity, premium component |
| 286 RFF | = Federal funds rate |
| 287 RFFALT | = Value of eff. federal funds rate given by estimated policy rule |
| 288 RFFE | = Federal funds rate (effective ann. yield) |
| 289 RFFFIX | = Federal funds rate given by fixed, pre-determined funds rate path |
| 290 RFFGEN | = Value of eff. federal funds rate given by the generalized reaction function |
| 291 RFFINTAY | = Value of eff. federal funds rate given by the inertial Taylor rule |
| 292 RFFMIN | = Minimum nominal funds rate (set at 0 to impose zero lower bound) |
| 293 RFFRULE | = Federal funds rate (effective ann. yield) |
| 294 RFFTAY | = Value of eff. federal funds rate given by the Taylor rule with output gap |
| 295 RFFTLR | = Value of eff. federal funds rate given by the Taylor rule with unemployment gap |
| 296 RFRNICT | = Residual in FNICN equation |
| 297 RFRS10 | = Real foreign short-term interest rate |
| 298 RFYNIC | = Average yield earned on gross claims of US residents on the rest of the world |
| 299 RFYNIL | = Average yield earned on liabilities of US residents on the rest of the world |
| 300 RG10 | = 10-year Treasury bond rate |
| 301 RG10E | = 10-year Treasury bond rate (effective ann. yield) |
| 302 RG10P | = 10-year Treasury bond rate, term premium |
| 303 RG30 | = 30-year Treasury bond rate |
| 304 RG30E | = 30-year Treasury bond rate (effective ann. yield) |
| 305 RG30P | = 30-year Treasury bond rate, term premium |
| 306 RG5 | = 5-year Treasury note rate |
| 307 RG5E | = 5-year Treasury note rate (effective ann. yield) |
| 308 RG5P | = 5-year Treasury note rate. term premium |
| 309 RGFINT | = Average rate of interest on existing federal debt |
| 310 RGW | = Approximate average rate of interest on new federal debt |
| 311 RME | = Interest rate on conventional mortgages (effective ann. yield) |
| 312 RPD | = After-tax real financial cost of capital for business investment |
| 313 RRFEE | = Real federal funds rate (effective ann. yield) |
| 314 RRFIX | = Real federal funds rate given by fixed, pre-determined real funds rate path |
| 315 RRMET | = Real mortgage rate, trend |
| 316 RRTR | = Expected long-run real federal funds rate |
| 317 RSPNIA | = Personal saving rate |
| 318 RSTAR | = Equilibrium real federal funds rate (for monetary policy reaction functions) |
| 319 RTB | = 3-month Treasury bill rate |

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| 320 | RTBE | = 3-month Treasury bill rate (effective ann. yield) |
| 321 | RTINV | = User cost of capital for inventories |
| 322 | RTPD | = User cost of capital for equipment |
| 323 | RTPI | = User cost of capital for intellectual property |
| 324 | RTPS | = User cost of capital for nonresidential structures |
| 325 | RTR | = Expected federal funds rate in the long run (Blue Chip) |
| 326 | T47 | = Time trend, begins in 1947q1 (0 before) |
| 327 | TAPDAD | = Proportion of investment in equipment using accelerated depreciation |
| 328 | TAPDD | = Present value of depreciation allowances for equipment |
| 329 | TAPDDP | = Proportion of investment tax credit deducted from depr. base |
| 330 | TAPDS | = Tax service life of equipment |
| 331 | TAPDT | = Investment tax credit rate for equipment |
| 332 | TAPSAD | = Proportion of investment in nonresidential structures using accelerated depreciation |
| 333 | TAPSDA | = Present value of depreciation allowances for nonresidential structures |
| 334 | TAPSSL | = Tax service life of nonresidential structures |
| 335 | TFCIN | = Federal corporate income tax accruals, current \$ |
| 336 | TFDIV | = Federal income receipts on assets, dividends, current \$ |
| 337 | TFIBN | = Federal indirect business tax receipts, current \$ |
| 338 | TFPN | = Federal personal income tax and nontax receipts, current \$ |
| 339 | TFSIN | = Federal social insurance tax receipts |
| 340 | TRFCI | = Average federal corporate income tax rate |
| 341 | TRFCIM | = Marginal federal corporate income tax rate |
| 342 | TRFIB | = Average federal indirect business tax rate |
| 343 | TRFP | = Average federal tax rate for personal income tax and nontax receipts |
| 344 | TRFPM | = Marginal federal personal income tax rate (at twice median family income) |
| 345 | TRFPT | = Average federal tax rate for personal income tax, trend |
| 346 | TRFPTX | = Average federal tax rate for personal income tax, trend, policy setting |
| 347 | TRFSI | = Average federal social insurance tax rate |
| 348 | TRSCI | = Average S&L corporate income tax rate |
| 349 | TRSCIT | = Average S&L corporate income tax rate, trend |
| 350 | TRSI | = Average S&L indirect business tax rate |
| 351 | TRSIBT | = Average S&L indirect business tax rate, trend |
| 352 | TRSP | = Average S&L tax rate for personal income tax and nontax receipts |
| 353 | TRSPP | = Marginal S&L tax rate on personal property |
| 354 | TRSPT | = Trend S&L personal income tax rate |
| 355 | TRSPTX | = Average state and local tax rate for personal income, trend |
| 356 | TRSSI | = Average S&L social insurance tax rate |
| 357 | TRSSIT | = Average S&L social insurance tax rate, trend |
| 358 | TRYH | = Average tax rate on household income |
| 359 | TSCIN | = S&L corporate income tax accruals, current \$ |
| 360 | TSIBN | = S&L indirect business tax receipts, current \$ |
| 361 | TSPN | = S&L personal income tax and nontax receipts, current \$ |
| 362 | TSSIN | = S&L social insurance tax receipts, current \$ |
| 363 | UCES | = Energy share of nominal consumption expenditures |
| 364 | UCFS | = Food share of nominal consumption expenditures |
| 365 | UEMOT | = Trend in ratio of EMON to XGDEN |

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| 366 | UEMP | = Multiplicative factor in EMP identity |
| 367 | UFCBR | = Multiplicative factor in FCBRN identity |
| 368 | UFNIR | = Multiplicative factor in FNIRN identity |
| 369 | UFPCM | = Multiplicative factor in FPCM identity |
| 370 | UFPMX | = Multiplicative factor in FPMX identity |
| 371 | UFTCIN | = Multiplicative factor in FTCIN identity |
| 372 | UGFDBT | = Multiplicative factor in GFDBTN identity |
| 373 | UGSDBT | = Multiplicative factor in GSDBTN identity |
| 374 | UGSINT | = Multiplicative factor in GSINTN identity |
| 375 | UGSSUB | = Multiplicative factor in GSSUB identity |
| 376 | UJCCA | = Multiplicative factor in JCCAN identity |
| 377 | UJCCAC | = Multiplicative factor in JCCACN identity |
| 378 | UJYGFE | = Multiplicative factor in JYGFEN identity |
| 379 | UJYGFG | = Multiplicative factor in JYGFEN identity |
| 380 | UJYGSE | = Multiplicative factor in JYGSEN identity |
| 381 | UJYGSG | = Multiplicative factor in JYGSGN identity |
| 382 | ULEF | = Multiplicative factor in LEF identity |
| 383 | ULES | = Multiplicative factor in LES identity |
| 384 | UPCPI | = Multiplicative factor in PCPI identity |
| 385 | UPCPIX | = Multiplicative factor in PCPIX identity |
| 386 | UPGFL | = Multiplicative factor in PGFL identity |
| 387 | UPGSL | = Multiplicative factor in PGSL identity |
| 388 | UPKPD | = Multiplicative factor in PKPDR identity |
| 389 | UPMP | = Multiplicative factor in PMP identity |
| 390 | UPXB | = Multiplicative factor in PXB identity |
| 391 | UQPCT | = Stochastic component of trend ratio of PCNIA to PXP |
| 392 | UVEOA | = Multiplicative factor in VEOA identity |
| 393 | UVPD | = Multiplicative factor in VPD identity |
| 394 | UVPI | = Multiplicative factor in VPI identity |
| 395 | UVPS | = Multiplicative factor in VPS identity |
| 396 | UXBT | = Stochastic component of trend ratio of XGDPT to XBT |
| 397 | UXENG | = Multiplicative factor in XENG identity |
| 398 | UYD | = Multiplicative factor in YDN identity |
| 399 | UYHI | = Multiplicative factor in YHIN identity |
| 400 | UYHLN | = Multiplicative factor in YHLN identity |
| 401 | UYHPTN | = Multiplicative factor in YHPTN identity |
| 402 | UYHSN | = Multiplicative factor in personal saving identity (accounts for transfers to for |
| 403 | UYHTN | = Multiplicative factor in YHTN identity |
| 404 | UYL | = Multiplicative factor in YLN identity |
| 405 | UYNI | = Multiplicative factor in YNIN identity |
| 406 | UYNICP | = Multiplicative factor in YNICPN identity |
| 407 | UYYP | = Multiplicative factor in YPN identity |
| 408 | UYSEN | = Multiplicative factor in YSEN identity |
| 409 | VEO | = Desired energy-output ratio |
| 410 | VEOA | = Average energy-output ratio of existing capital stock |
| 411 | VPD | = Desired equipment-output ratio |

412 VPI = Desired intellectual property-output ratio
 413 VPS = Desired structures-output ratio
 414 WDNFCN = Net financial liabilities, nonfinancial nonfarm corporations
 415 WPO = Household property wealth ex. stock market, real
 416 WPON = Household property wealth ex. stock market, current \$
 417 WPS = Household stock market wealth, real
 418 WPSN = Household stock market wealth, current \$
 419 XB = Business output (BEA definition), cw 2009\$
 420 XBN = Business output (BEA definition), current \$
 421 XBO = Business output, adjusted for measurement error, cw 2009\$
 422 XBT = Potential business output, cw 2009\$
 423 XENG = Crude energy production, cw 2009\$
 424 XFS = Final sales of gross domestic product, cw 2009\$
 425 XFSN = Final sales of gross domestic product, current \$
 426 XG = Output of business sector plus oil imports, cw 2009\$
 427 XGAP = Output gap for business plus oil imports ($100 \cdot \log(\text{actual/potential})$)
 428 XGAP2 = Output gap for GDP ($100 \cdot \log(\text{actual/potential})$)
 429 XGDE = Domestic absorption, cw 2009\$
 430 XGDEN = Nominal Absorption, current \$
 431 XGDI = Gross domestic income, cw 2009\$
 432 XGDIN = Gross domestic income, current \$
 433 XGDO = Gross domestic product, adjusted for measurement error, cw 2009\$
 434 XGDP = GDP, cw 2009\$
 435 XGDPN = GDP, current \$
 436 XGDPT = Potential GDP, cw 2009\$
 437 XGDPTN = Potential GDP, current \$
 438 XGN = Output of business sector plus oil imports, current \$
 439 XGO = Output of business sector plus oil imports, adjusted for measurement error
 440 XGPOT = Potential output of business sector plus oil imports, cw 2009\$
 441 XP = Final sales plus imports less government labor, cw 2009\$
 442 XPN = Final sales plus imports less government labor, current \$
 443 YCSN = Net corporate cash flow with IVA and CCA
 444 YDN = Disposable income
 445 YGFSN = Federal government saving
 446 YGSSN = State and Local government saving
 447 YH = Income, household, total (real after-tax)
 448 YHGAP = Income, household, total, ratio to XGDP, cyclical component (real after-tax)
 449 YHIBN = Consumer interest payments to business
 450 YHIN = Income, household, net interest and rent
 451 YHL = Income, household, labor compensation (real after-tax)
 452 YHLN = Income, household, labor compensation
 453 YHP = Income, household, property (real after-tax)
 454 YHPCD = Imputed income of the stock of consumer durables, 2009\$
 455 YHPGAP = Income, household, property, ratio to YH, cyclical component (real after-tax)
 456 YHPNTN = Income, household, property, non-taxable component
 457 YHPSHR = Income, household, property, ratio to YH (real after-tax)

458 YHPTN = Income, household, property, taxable component
 459 YHSHR = Income, household, total, ratio to XGDP (real after-tax)
 460 YHSN = Personal saving
 461 YHT = Income, household, transfer (real after-tax), net basis
 462 YHTGAP = Income, household, transfer, ratio to YH, cyclical component (real after-tax)
 463 YHTN = Income, household, transfer payments. net basis
 464 YHTSHR = Income, household, transfer, ratio to YH (real after-tax)
 465 YKIN = Income from stock of inventories
 466 YKPDN = Income from stock of equipment
 467 YKPSN = Income from stock of nonresidential structures
 468 YMSDN = Microsoft one-time dividend payout in 2004Q4
 469 YNICPN = Corporate profits (national income component)
 470 YNIDN = Dividends (national income component)
 471 YNIIN = Net interest and rental income (national income component)
 472 YNILN = Labor income (national income component)
 473 YNIN = National income
 474 YNISEN = Proprietors' income (national income component)
 475 YPN = Personal income
 476 ZDIVGR = Expected growth rate of real dividends, for WPSN eq. (VAR exp.)
 477 ZECD = Expected growth rate of target durable consumption, for ECD eq. (VAR exp.)
 478 ZECO = Expected growth rate of target nondurables and nonhousing services, for ECO eq. (VAR exp.)
 479 ZEH = Expected growth rate of target residential investment, for EH eq. (VAR exp.)
 480 ZGAP05 = Expected output gap, for RG5E eq. (VAR exp.)
 481 ZGAP10 = Expected output gap, for RG10E eq. (VAR exp.)
 482 ZGAP30 = Expected output gap, for RG30E eq. (VAR exp.)
 483 ZGAPC2 = Expected output gap, for ECD eq. (VAR exp.)
 484 ZLHP = Expected growth rate of target aggregate hours (VAR exp.)
 485 ZPI10 = Expected cons. price infl., for RCCH, RRMET, and YHPNTN eqs. (10-yr mat.) (VAR exp.)
 486 ZPI10F = Expected cons. price infl., for FPXR eq. (10-yr mat.) (VAR exp.)
 487 ZPI5 = Expected cons. price infl., for RCCD eq. (5-yr mat.) (VAR exp.)
 488 ZPIB5 = Expected output price infl., for RPD eq. (5-yr mat.) (VAR exp.)
 489 ZPIC30 = Expected cons. price infl., for REQ eq. (30-yr mat.) (VAR exp.)
 490 ZPIC58 = Expected 4-qtr consumer price inflation (8 qtrs. in the future) (VAR exp.)
 491 ZPICXFE = Expected value of picxfe in the next quarter (VAR exp.)
 492 ZPIECI = Expected value of pieci in the next quarter (VAR exp.)
 493 ZRFF10 = Expected federal funds rate, for RG10E eq. (10-yr mat.) (VAR exp.)
 494 ZRFF30 = Expected federal funds rate, for RG30E eq. (30-yr mat.) (VAR exp.)
 495 ZRFF5 = Expected federal funds rate, for RG5E eq. (5-yr mat.) (VAR exp.)
 496 ZVPD = Expected growth rate of capital-output ratio, for EPD (VAR exp.)
 497 ZVPI = Expected growth rate of capital-output ratio, for EPI (VAR exp.)
 498 ZVPS = Expected growth rate of des. capital-output ratio, for EPS eq. (VAR exp.)
 499 ZXBD = Expected growth rate of business output for EPD (VAR exp.)
 500 ZXBI = Expected growth rate of business output, for EPI (VAR exp.)
 501 ZXBS = Expected growth rate of business output, for EPS (VAR exp.)
 502 ZYH = Expected level of real after-tax household income, for QEC eq. (VAR exp.)
 503 ZYHP = Expected level of real after-tax property income, for QEC eq. (VAR exp.)

504 ZYHPST = Expected trend share of property income in household income
505 ZYHST = Expected trend ratio of household income to GDP
506 ZYHT = Expected level of real transfer income, for QEC eq. (VAR exp.)
507 ZYHTST = Expected trend share of transfer income in household income
508 ZYNID = Expected rate of growth of target real dividends, for YNIDN eq. (VAR exp.)
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This code is written to file `srcEview/frbus.package/mods/stdver.varinfo`.

Uses CENG 49a, D01Q4 203a, D2002 203b, D2003 203c, D69 203d, D79A 203e, D8095 203f, D81 204a, D83 204b, D86 204c, D87 204d, DCON 204e, DDCKM 204f, DDCKX 204g, DELRFF 153b, DEUC 204h, DFMPRR 204i, DFPDBT 205a, DFPEX 205b, DFPSRP 205c, DGLPRD 205d, DMPALT 205e, DMPEX 205f, DMPGEN 205g, DMPINTAY 205h, DMPRR 205i, DMPSTB 206a, DMPTAY 206b, DMPTLR 206c, DMPTLUR 151a, DMPTMAX 151g, DMPTPI 151d, DMPTR 152b, DMPTRSH 206d, DPADJ 106b, DPGAP 105d, DRSTAR 206e, EC 32b, ECD 26a, ECH 27a, ECNIA 29c, ECNIAN 29e, ECO 25a, EGF 121d, EGFI 122c, EGFIN 122f, EGFIT 123b, EGFL 123e, EGFLN 124c, EGFLT 124e, EGFN 122a, EGFO 125c, EGFOF 126a, EGFOT 126c, EGPDIN 46b, EGS 126f, EGSI 127d, EGSIN 128b, EGSIT 128d, EGSL 129a, EGSLN 129d, EGSLT 129f, EGSN 127b, EGSO 130c, EGSON 131a, EGSOT 131c, EH 26d, EHN 30b, EI 35d, EIN 44c, EM 50d, EMN 50b, EMO 48a, EMON 48d, EMP 49d, emp 49e, EMPN 49f, EMPT 62c, EPD 33b, EPDN 43c, EPI 33e, EPIN 43e, EPS 34c, EPSN 44a, EX 47b, ex 47c, EXN 47e, FCBN 50f, FCBRN 51b, FGDP 166d, FGDPT 167a, FNICN 53b, FNILN 53d, FNIN 51d, FNIRN 55d, FPC 169a, FPCM 169c, FPI10 167d, FPI10T 168a, FPIC 168d, FPITRG 206f, FPX 172c, FPM 172e, FPXR 171c, FPXRR 171f, FPXRR 206g, FRL10 170f, FRS10 169e, FRSTAR 170c, FTCIN 52a, FXGAP 166a, FYNICN 53f, FYNILN 54b, FYNIN 52c, GFDBTN 131f, GFDRT 206h, GFINTN 132b, GFS 132d, GFSN 133a, GFSRPN 133c, GFSRT 207a, GFSUB 133e, GFSUBN 134c, GFT 134e, GFTN 135a, GFTRD 135c, GFTRT 207b, GSDBTN 135f, GSDRT 207c, GSINTN 136b, GSSRPN 136d, GSSRT 207d, GSSUB 138d, GSSUBN 137a, GST 137e, GSTN 137c, GSTRD 138a, GSTRT 207e, HGEMP 52e, HGGDP 57b, HGGDPT 68c, HGPCDR 207f, HGPDR 116e, HGPIR 117b, HGPKIR 117e, HGPPSR 118a, HGVDP 42c,

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 HMFPT 60e, HQLFPR 72f, HQLWW 69d, HUQPCT 108c, HUXB 66d, HXBT 68a, JCCACN 79f, JCCAN 80b,
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 LURNAT 77d, LURTRSH 208g, LW 65d, MEI 163b, MEP 164b, MFPT 61b, N16 208h, PCDR 120e,
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 QEPS 36c, QKIR 37c, QLEOR 209g, QLEP 74c, QLF 74e, QLFPR 72d, QLHP 65b, QLWW 69b,
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 RFFRULE 150c, RFFTAY 147a, RFFTLR 147d, RFNICT 210b, RFRS10 210c, RFYNIC 54d,
 RFYNIL 55a, RG10 156e, RG10E 156c, RG10P 155f, RG30 157f, RG30E 157d, RG30P 157a,
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 TAPDDP 210g, TAPDS 210h, TAPDT 211a, TAPSAD 211b, TAPSDA 44e, TAPSSL 211c, TFCIN 138f,
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 TRSSIT 212e, TRYH 146e, TSCIN 144e, TSIBN 145a, TSPN 145c, TSSIN 145e, UCES 112c,
 UCS 113a, UEMOT 212f, UEMP 212g, UFCBR 212h, UFNIR 213a, UFPCM 213b, UFPXM 213c,
 UFTCIN 213d, UGFDBT 213e, UGSDBT 213f, UGSINT 213g, UGSSUB 214a, UJCCA 214b,
 UJCCAC 214c, UJYGFE 214d, UJYGFG 214e, UJYGSE 214f, UJYSG 214g, ULEF 215a, ULES 215b,
 UPCPI 215c, UPCPIX 215d, UPGFL 215e, UPGSL 215f, UPKPD 215g, UPMP 216a, UPXB 216b,
 UQPCT 107f, UVEOA 216c, UVPD 216d, UVPI 216e, UVPS 216f, UXBT 66a, UXENG 216g, UYD 217a,
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 XENG 63d, XFS 56a, XFSN 78d, XG 59d, XGAP 66g, XGAP2 67b, XGDE 57d, XGDEN 78f, XGDI 63f,
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 YHIBN 88c, YHIN 89a, YHL 89c, YHLN 89e, YHP 90a, YHPCD 32d, YHPGAP 90c, YHPNTN 90e,
 YHPSHR 91b, YHPTN 91d, YHSHR 92a, YHSN 92c, YHT 92e, YHTGAP 93a, YHTN 93c, YHTSHR 93e,
 YKIN 86e, YKPDN 87a, YKPSN 87c, YMSDN 218d, YNICPN 85a, YNIDN 84d, YNIIN 83c, YNIN 82e,
 YNIN 82c, YNISEN 83a, YPN 85c, ZDIVGR 194c, ZECD 187c, ZECO 186c, ZEH 189a, ZGAP05 179d,
 ZGAP10 180b, ZGAP30 180e, ZGAPC2 188c, ZLHP 189d, ZPI10 182d, ZPI10F 183b, ZPI5 181c,
 ZPIB5 182a, ZPIC30 183d, ZPIC58 184a, ZPICXFE 184d, ZPIECI 185c, ZRFF10 178c,
 ZRFF30 179a, ZRFF5 177e, ZVPD 190c, ZVPI 191b, ZVPS 191e, ZXBD 192c, ZXBI 193b,
 ZXBS 193e, ZYH 195e, ZYHP 196c, ZYHPST 175c, ZYHST 174, ZYHT 197a, ZYHTST 175f,
 and ZYNID 195b.

B.3 Standard Version Equations File

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- $\langle \text{equation } delrff \text{ } 153c \rangle$
- $\langle \text{equation } dmptlur \text{ } 151b \rangle$
- $\langle \text{equation } dmptmax \text{ } 152a \rangle$
- $\langle \text{equation } dmptpi \text{ } 151e \rangle$
- $\langle \text{equation } dmptr \text{ } 152c \rangle$
- $\langle \text{equation } dpadj \text{ } 106c \rangle$
- $\langle \text{equation } dpgap \text{ } 106a \rangle$
- $\langle \text{equation } ec \text{ } 32c \rangle$
- $\langle \text{equation } ecd \text{ } 26b \rangle$
- $\langle \text{equation } ech \text{ } 27b \rangle$
- $\langle \text{equation } ecnia \text{ } 29d \rangle$
- $\langle \text{equation } ecnian \text{ } 30a \rangle$
- $\langle \text{equation } eco \text{ } 25b \rangle$
- $\langle \text{equation } egf \text{ } 121e \rangle$
- $\langle \text{equation } egfi \text{ } 122d \rangle$
- $\langle \text{equation } egfin \text{ } 123a \rangle$
- $\langle \text{equation } egfit \text{ } 123c \rangle$
- $\langle \text{equation } egfl \text{ } 124a \rangle$
- $\langle \text{equation } egfln \text{ } 124d \rangle$
- $\langle \text{equation } egflt \text{ } 125a \rangle$
- $\langle \text{equation } egfn \text{ } 122b \rangle$
- $\langle \text{equation } egfo \text{ } 125d \rangle$
- $\langle \text{equation } egfon \text{ } 126b \rangle$
- $\langle \text{equation } egfot \text{ } 126d \rangle$
- $\langle \text{equation } egpdin \text{ } 46c \rangle$
- $\langle \text{equation } egs \text{ } 127a \rangle$
- $\langle \text{equation } egsi \text{ } 127e \rangle$
- $\langle \text{equation } egsin \text{ } 128c \rangle$
- $\langle \text{equation } egstit \text{ } 128e \rangle$
- $\langle \text{equation } egsl \text{ } 129b \rangle$
- $\langle \text{equation } egsln \text{ } 129e \rangle$
- $\langle \text{equation } egslt \text{ } 130a \rangle$
- $\langle \text{equation } egsn \text{ } 127c \rangle$
- $\langle \text{equation } egso \text{ } 130d \rangle$
- $\langle \text{equation } egson \text{ } 131b \rangle$
- $\langle \text{equation } egstot \text{ } 131d \rangle$
- $\langle \text{equation } eh \text{ } 26e \rangle$
- $\langle \text{equation } ehn \text{ } 30c \rangle$
- $\langle \text{equation } ei \text{ } 35e \rangle$
- $\langle \text{equation } ein \text{ } 44d \rangle$
- $\langle \text{equation } em \text{ } 50e \rangle$
- $\langle \text{equation } emn \text{ } 50c \rangle$

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 $\langle \text{equation } emon \ 48e \rangle$
 $\langle \text{equation } emp \ 49e \rangle$
 $\langle \text{equation } empn \ 50a \rangle$
 $\langle \text{equation } empt \ 62d \rangle$
 $\langle \text{equation } epd \ 33c \rangle$
 $\langle \text{equation } epdn \ 43d \rangle$
 $\langle \text{equation } epi \ 34a \rangle$
 $\langle \text{equation } epin \ 43f \rangle$
 $\langle \text{equation } eps \ 34d \rangle$
 $\langle \text{equation } epsn \ 44b \rangle$
 $\langle \text{equation } ex \ 47c \rangle$
 $\langle \text{equation } exn \ 47f \rangle$
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 $\langle \text{equation } fgdp \ 166e \rangle$
 $\langle \text{equation } fgdp \ 167b \rangle$
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 $\langle \text{equation } fniln \ 53e \rangle$
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 $\langle \text{equation } fpc \ 169b \rangle$
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 $\langle \text{equation } frs10 \ 170a \rangle$
 $\langle \text{equation } frstar \ 170d \rangle$
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 $\langle \text{equation } fxgap \ 166b \rangle$
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 $\langle \text{equation } fyniln \ 54c \rangle$
 $\langle \text{equation } fynin \ 52d \rangle$
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 $\langle \text{equation } gft \ 134f \rangle$

$\langle \text{equation } gftn \text{ 135b} \rangle$
 $\langle \text{equation } gftd \text{ 135d} \rangle$
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 $\langle \text{equation lep 70b} \rangle$
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 $\langle \text{equation les 71c} \rangle$
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 $\langle \text{equation lprdt 77a} \rangle$
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 $\langle \text{equation lurbles 74b} \rangle$
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 $\langle \text{equation pcengr 110d} \rangle$
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 $\langle \text{equation pcor 119c} \rangle$
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 $\langle \text{equation pgfir 101d} \rangle$
 $\langle \text{equation pgfl 115a} \rangle$
 $\langle \text{equation pgfor 102a} \rangle$
 $\langle \text{equation pgsir 102d} \rangle$
 $\langle \text{equation pgsl 115c} \rangle$
 $\langle \text{equation pgsor 103a} \rangle$
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 $\langle \text{equation phr 103d} \rangle$
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 $\langle \text{equation picngr 118e} \rangle$
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 $\langle \text{equation } \textit{rbbbe} \text{ 158f} \rangle$
 $\langle \text{equation } \textit{rbbbp} \text{ 158c} \rangle$
 $\langle \text{equation } \textit{rcar} \text{ 159d} \rangle$
 $\langle \text{equation } \textit{rccd} \text{ 31c} \rangle$
 $\langle \text{equation } \textit{rcch} \text{ 31e} \rangle$
 $\langle \text{equation } \textit{rcgain} \text{ 162a} \rangle$

$\langle \text{equation req 161a} \rangle$
 $\langle \text{equation reqp 160d} \rangle$
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 $\langle \text{equation rrmnet 165f} \rangle$
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 $\langle \text{equation rtbe 154a} \rangle$
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 $\langle \text{equation } tryh \ 146f \rangle$
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 $\langle \text{equation } tsibn \ 145b \rangle$
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 $\langle \text{equation } wpsn \ 161c \rangle$
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theend

This code is written to file `srcEview/frbus.package/mods/stdver.eqs.txt`.

B.4 Standard Version Coefficients File

261 $\langle \text{srcEview/frbus.package/mods/stdver.coeffs.txt 261} \rangle \equiv$

$\langle \text{coefficient } y_{\text{ceng}} 49\text{c} \rangle$
 $\langle \text{coefficient } y_{\text{dmptlur}} 151\text{c} \rangle$
 $\langle \text{coefficient } y_{\text{dmptpi}} 151\text{f} \rangle$
 $\langle \text{coefficient } y_{\text{dpadj}} 106\text{d} \rangle$
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 $\langle \text{coefficient } y_{\text{ech}} 27\text{c} \rangle$
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 $\langle \text{coefficient } y_{\text{egfit}} 123\text{d} \rangle$
 $\langle \text{coefficient } y_{\text{egfl}} 124\text{b} \rangle$
 $\langle \text{coefficient } y_{\text{egflt}} 125\text{b} \rangle$
 $\langle \text{coefficient } y_{\text{egfo}} 125\text{e} \rangle$
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 $\langle \text{coefficient } y_{\text{egsi}} 128\text{a} \rangle$
 $\langle \text{coefficient } y_{\text{egsit}} 128\text{f} \rangle$
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 $\langle \text{coefficient } y_{\text{egslt}} 130\text{b} \rangle$
 $\langle \text{coefficient } y_{\text{egso}} 130\text{e} \rangle$
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 $\langle \text{coefficient } y_{\text{emo}} 48\text{c} \rangle$
 $\langle \text{coefficient } y_{\text{empt}} 62\text{e} \rangle$
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 $\langle \text{coefficient } y_{\text{gfsb}} 134\text{b} \rangle$
 $\langle \text{coefficient } y_{\text{gftrd}} 135\text{e} \rangle$
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theend

This code is written to file `srcEview/frbus.package/mods/stdver.coeffs.txt`.

Appendix C

Notes, Bibliography and Indexes

C.1 Chunks

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