Reverse Engineering the FRB/US Model in R

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Contents

Chapter 1

Introduction

I am starting to reverse engineer[1] 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 for byte and reverse engineer the structure of the model. Then I

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[1]The 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.

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$

17a   ⟨*variable ECO* 17a⟩≡   (211)
```
    ECO         = Consumer expenditures on non-durable goods and non-housing services, cw 2009$
```
Defines:
  `ECO`, used in chunks 178c and 223.

17b   ⟨*equation eco* 17b⟩≡   (244)
```
    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 21d, 24c, and 111c.
Uses `qeco` 20b, `y_eco` 17c, `yhl` 81d, `yht` 84f, and `zeco` 179a.

17c   ⟨*coefficient y_eco* 17c⟩≡   (253)
```
    y_eco    4        0.1088704831212408,0.4609714707829828,1,0.252176379778204
```
Defines:
  `y_eco`, used in chunk 17b.

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

18a   ⟨*variable ECD* 18a⟩≡   (211)
```
ECD      = Consumer expenditures on durable goods, cw 2009$
```
Defines:
  ECD, used in chunks 179c, 180c, and 223.

18b   ⟨*equation ecd* 18b⟩≡   (244)
```
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 21d, 22e, 80d, 111c, and 155a.
Uses qecd 20e, y_ecd 18c, zecd 180a, and zgapc2 180d.

18c   ⟨*coefficient y_ecd* 18c⟩≡   (253)
```
y_ecd    4        0.1553557918476032,-0.05860156240430123,1,9.039065475739223
```
Defines:
  y_ecd, used in chunk 18b.

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

18d   ⟨*variable EH* 18d⟩≡   (211)
```
EH       = Residential investment expenditures, cw 2009$
```
Defines:
  EH, used in chunks 181a and 223.

18e   ⟨*equation eh* 18e⟩≡   (244)
```
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 22c, 23a, 48b, and 51a.
Uses d83 196b, qeh 21a, rme 152a, y_eh 18f, and zeh 181b.

18f   ⟨*coefficient y_eh* 18f⟩≡   (253)
```
y_eh     6        0.01184830003855771,0.3575993755366778,0.2161402157869259,1,-0.051357
```
Defines:
  y_eh, used in chunk 18e.

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

19a   ⟨*variable ECH* 19a⟩≡   (211)
```
ECH     = Consumer expenditures on housing services, cw 2009$
```
Defines:
   ECH, used in chunk 223.

19b   ⟨*equation ech* 19b⟩≡   (244)
```
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 21d, 24c, and 111c.
Uses kh 23a, rrmet 157f, and y_ech 19c.

19c   ⟨*coefficient y_ech* 19c⟩≡   (253)
```
y_ech    4       0.002890569762594884,-0.02415873224871467,0.5006794105950545,0.0017367936693711
```
Defines:
   y_ech, used in chunk 19b.

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

19d   ⟨*variable QEC* 19d⟩≡   (211)
```
QEC     = Desired level of consumption (FRBUS definition)
```
Defines:
   QEC, used in chunks 187–89 and 223.

19e   ⟨*equation qec* 19e⟩≡   (244)
```
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 20 and 21a.
Uses dcon 196e, wpo 156a, wps 153e, y_qec 19f, zyh 188a, zyhp 188d, and zyht 189b.

19f   ⟨*coefficient y_qec* 19f⟩≡   (253)
```
y_qec    5       0.7592609842874721,0.002578773939057793,0.2407390157125279,-0.2514158240890368,
```
Defines:
   y_qec, used in chunk 19e.

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

20a   ⟨*variable QECO* 20a⟩≡   (211)
```
QECO     = Desired level of consumption of nondurable goods and nonhousing services
```
Defines:
    QECO, used in chunk 223.

20b   ⟨*equation qeco* 20b⟩≡   (244)
```
qeco: log(qeco) - qeco_aerr = log(qec) - log(pcor) + y_qeco(1)
```

Defines:
    qeco, used in chunks 17b and 179a.
Uses pcor 111c, qec 19e, and y_qeco 20c.

20c   ⟨*coefficient y_qeco* 20c⟩≡   (253)
```
y_qeco  1        -0.3372292498223053
```
Defines:
    y_qeco, used in chunk 20b.

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

20d   ⟨*variable QECD* 20d⟩≡   (211)
```
QECD     = Target level of consumption of durable goods, trending component
```
Defines:
    QECD, used in chunk 223.

20e   ⟨*equation qecd* 20e⟩≡   (244)
```
qecd: qecd - qecd_aerr = qec _
                * (jrcd/4 + hggdpt/400 + y_qecd(1)*hgpcdr/400) _
                * exp(y_qecd(2) + y_qecd(3)*log(pcdr*rccd))
```

Defines:
    qecd, used in chunks 18b and 180a.
Uses hggdpt 60d, hgpcdr 199f, jrcd 199h, pcdr 112f, qec 19e, rccd 23c, and y_qecd 20f.

20f   ⟨*coefficient y_qecd* 20f⟩≡   (253)
```
y_qecd  3        -0.6165972226120303,2.557266037164673,-0.6165972226120303
```
Defines:
    y_qecd, used in chunk 20e.

2.1.8   a.8 QEH: Target level of residential investment

20g   ⟨*variable QEH* 20g⟩≡   (211)
```
QEH      = Target level of residential investment
```
Defines:
    QEH, used in chunk 223.

21a   ⟨*equation qeh* 21a⟩≡   (244)
```
qeh: qeh - qeh_aerr = qec _
              * (jrh/4 + hggdpt/400) _
              * exp(y_qeh(1) - log(phr*pxp/pcnia) + y_qeh(2)*log(rcch))
```

Defines:
  qeh, used in chunks 18e and 181b.
Uses hggdpt 60d, jrh 200a, pcnia 89b, phr 95d, pxp 93b, qec 19e, rcch 23e, and y_qeh 21b.

21b   ⟨*coefficient y_qeh* 21b⟩≡   (253)
```
y_qeh    2        1.935026993649364,-0.1570195518635583
```
Defines:
  y_qeh, used in chunk 21a.

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

21c   ⟨*variable ECNIA* 21c⟩≡   (211)
```
ECNIA    = Personal consumption expenditures, cw 2009$ (NIPA definition)
```
Defines:
  ECNIA, used in chunk 223.

21d   ⟨*equation ecnia* 21d⟩≡   (244)
```
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)
```

Defines:
  ecnia, used in chunks 22a, 48b, and 51a.
Uses ecd 18b, ech 19b, ecnian 22a, eco 17b, pcdr 112f, pchr 112a, pcnia 89b, and pcor 111c.

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

21e   ⟨*variable ECNIAN* 21e⟩≡   (211)
```
ECNIAN   = Personal consumption expenditures, current $ (NIPA definition)
```
Defines:
  ECNIAN, used in chunk 223.

22a   ⟨*equation ecnian* 22a⟩≡   (244)
```
ecnian: ecnian - ecnian_aerr = .01*pcnia*ecnia
```

Defines:
    ecnian, used in chunks 21d, 48b, 51a, 80d, 84d, 93b, 98a, 111c, 131c, 137b, and 155a.
Uses ecnia 21d and pcnia 89b.

2.1.11   a.11 EHN: Residential investment expenditures

22b   ⟨*variable EHN* 22b⟩≡   (211)
```
EHN       = Residential investment expenditures
```
Defines:
    EHN, used in chunk 223.

22c   ⟨*equation ehn* 22c⟩≡   (244)
```
ehn: ehn - ehn_aerr = .01 * phr * pxp * eh
```

Defines:
    ehn, used in chunks 38c, 48b, 51a, and 98a.
Uses eh 18e, phr 95d, and pxp 93b.

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

22d   ⟨*variable KCD* 22d⟩≡   (211)
```
KCD       = Stock of consumer durables, cw 2009$
```
Defines:
    KCD, used in chunk 223.

22e   ⟨*equation kcd* 22e⟩≡   (244)
```
kcd: kcd - kcd_aerr = .25*ecd + (1-jrcd/4)*kcd(-1)
```

Defines:
    kcd, used in chunk 24.
Uses ecd 18b and jrcd 199h.

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

22f   ⟨*variable KH* 22f⟩≡   (211)
```
KH        = Stock of residential structures, cw 2009$
```
Defines:
    KH, used in chunk 223.

23a $\langle$*equation kh* 23a$\rangle$≡   (244)
```
kh: kh - kh_aerr = .25*eh + (1-jrh/4)*kh(-1)
```

Defines:
    kh, used in chunks 19b, 72, 75d, and 155a.
Uses eh 18e and jrh 200a.

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

23b $\langle$*variable RCCD* 23b$\rangle$≡   (211)
```
RCCD      = Cost of capital for consumer durables
```
Defines:
    RCCD, used in chunks 173c and 223.

23c $\langle$*equation rccd* 23c$\rangle$≡   (244)
```
rccd: rccd - rccd_aerr = (@recode((100*jrcd + rcar - zpi5)>( .01),100*jrcd + rcar - zpi5, .01))
```

Defines:
    rccd, used in chunk 20e.
Uses jrcd 199h, rcar 151d, and zpi5 173d.

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

23d $\langle$*variable RCCH* 23d$\rangle$≡   (211)
```
RCCH      = Cost of capital for residential investment
```
Defines:
    RCCH, used in chunks 174d and 223.

23e $\langle$*equation rcch* 23e$\rangle$≡   (244)
```
rcch: rcch - rcch_aerr = (@recode((100*jrh + (1-trfpm/100)*(rme+100*trspp) - zpi10)>( .1),100*j
```

Defines:
    rcch, used in chunk 21a.
Uses jrh 200a, rme 152a, trfpm 203g, trspp 204c, and zpi10 174e.

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

23f $\langle$*variable JKCD* 23f$\rangle$≡   (211)
```
JKCD      = Consumption of fixed capital, consumer durables
```
Defines:
    JKCD, used in chunk 223.

24a   ⟨*equation jkcd* 24a⟩≡   (244)
         jkcd: jkcd - jkcd_aerr = jrcd * kcd(-1)

Defines:
   jkcd, used in chunks 24c and 155a.
Uses jrcd 199h and kcd 22e.

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

24b   ⟨*variable EC* 24b⟩≡   (211)
         EC   = Consumption, cw 2009$ (FRB/US definition)
Defines:
   EC, used in chunk 223.

24c   ⟨*equation ec* 24c⟩≡   (244)
         ec: log(ec) - ec_aerr = log(ec(-1)) + _
               .5 * (pcor*pcnia*eco/(ec*pcnia) _
                 + pcor(-1)*pcnia(-1)*eco(-1)/(ec(-1)*pcnia(-1))) _
                 * d(log(eco), 0, 1) _
             + .5 * (pchr*pcnia*ech/(ec*pcnia) _
                 + pchr(-1)*pcnia(-1)*ech(-1)/(ec(-1)*pcnia(-1))) _
                 * d(log(ech), 0, 1) _
             + .5 * ((pcdr*pcnia*yhpcd+pcdr*pcnia*jkcd)/(ec*pcnia) _
                 + (pcdr(-1)*pcnia(-1)*yhpcd(-1)+pcdr(-1)*pcnia(-1)*jkcd(-1))/(ec(-1)*pcnia(-
                 * d(log(yhpcd+jkcd), 0, 1)

Defines:
   ec, never used.
Uses ech 19b, eco 17b, jkcd 24a, pcdr 112f, pchr 112a, pcnia 89b, pcor 111c, and yhpcd 24e.

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

24d   ⟨*variable YHPCD* 24d⟩≡   (211)
         YHPCD   = Imputed income of the stock of consumer durables, 2009$
Defines:
   YHPCD, used in chunk 223.

24e   ⟨*equation yhpcd* 24e⟩≡   (244)
         yhpcd: log(yhpcd) - yhpcd_aerr = log(y_yhpcd(1)) + log(kcd(-1))

Defines:
   yhpcd, used in chunks 24c and 83a.
Uses kcd 22e and y_yhpcd 25a.

25a   ⟨*coefficient y_yhpcd* 25a⟩≡   (253)
      `y_yhpcd 1        0.053750000000000000E+00`
Defines:
    `y_yhpcd`, used in chunk 24e.

2.2   Business Expenditures

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

25b   ⟨*variable EPD* 25b⟩≡   (211)
    `EPD      = Investment in equipment, cw 2009$`
Defines:
    `EPD`, used in chunks 95f, 182c, 184c, and 223.

25c   ⟨*equation epd* 25c⟩≡   (244)
```
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))
```

Defines:
    `epd`, used in chunks 29g, 35d, 48b, 51a, and 132c.
Uses `hgvpd` 34d, `qepd` 28a, `xbo` 50e, `y_epd` 25d, `zvpd` 182d, and `zxbd` 184d.

25d   ⟨*coefficient y_epd* 25d⟩≡   (253)
    `y_epd   4      0.1639648722427122,0.4446158979500308,0.3699597791648127,0.5`
Defines:
    `y_epd`, used in chunk 25c.

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

25e   ⟨*variable EPI* 25e⟩≡   (211)
    `EPI      = Investment in intellectual property, cw 2009$`
Defines:
    `EPI`, used in chunks 96b, 183b, 185b, and 223.

26a   ⟨*equation epi* 26a⟩≡   (244)
```
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 30b, 35f, 48b, and 51a.
Uses qepi 29a, xbo 50e, y_epi 26b, zvpi 183c, and zxbi 185c.

26b   ⟨*coefficient y_epi* 26b⟩≡   (253)
```
y_epi    4       0.01211724517486588,0.6819035622357826,0.1766782129232528,0.2122945277
```
Defines:
   y_epi, used in chunk 26a.

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

26c   ⟨*variable EPS* 26c⟩≡   (211)
```
EPS      = Investment in nonresidential structures, cw 2009$
```
Defines:
   EPS, used in chunks 183e, 185e, and 223.

26d   ⟨*equation eps* 26d⟩≡   (244)
```
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 30d, 36b, 48b, and 51a.
Uses d01q4 195a, qeps 28d, xbo 50e, y_eps 26e, zvps 184a, and zxbs 186a.

26e   ⟨*coefficient y_eps* 26e⟩≡   (253)
```
y_eps    5       0.06660965676110558,0.5425646472109228,0.3261733908091358,0.5,-0.0969
```
Defines:
   y_eps, used in chunk 26d.

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

27a   ⟨*variable KI* 27a⟩≡   (211)
```
KI       = Stock of private inventories, cw 2009$
```
Defines:
  KI, used in chunk 223.

27b   ⟨*equation ki* 27b⟩≡   (244)
```
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 )
```

Defines:
    ki, used in chunks 27e, 31a, and 78f.
Uses `qkir` 29d, `xfs` 48b, and `y_ki` 27c.

27c   ⟨*coefficient y_ki* 27c⟩≡   (253)
```
y_ki    5       0.01679108530917215,0.451650730999944,0.2617948535758293,0.2865544154242267,-0.
```
Defines:
    `y_ki`, used in chunk 27b.

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

27d   ⟨*variable EI* 27d⟩≡   (211)
```
EI       = Change in private inventories, cw 2009$
```
Defines:
  EI, used in chunks 87d and 223.

27e   ⟨*equation ei* 27e⟩≡   (244)
```
ei: ei - ei_aerr = 4*d( ki, 0, 1 )
```

Defines:
    ei, used in chunks 36d and 49a.
Uses `ki` 27b.

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

27f   ⟨*variable QEPD* 27f⟩≡   (211)
```
QEPD     = Desired level of investment in equipment
```
Defines:
  QEPD, used in chunk 223.

28a   ⟨*equation qepd* 28a⟩≡   (244)
```
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 )
```

Defines:
  qepd, used in chunk 25c.
Uses hgx 59e, jrpd 200b, vpd 33d, xbo 50e, and y‗qepd 28b.

28b   ⟨*coefficient y_qepd* 28b⟩≡   (253)
```
y_qepd  4       0,1.000000000000000000e+00,1.000000000000000000e+00,1.000000000000000
```
Defines:
  y‗qepd, used in chunk 28a.

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

28c   ⟨*variable QEPS* 28c⟩≡   (211)
```
QEPS     = Desired level of investment in structures
```
Defines:
  QEPS, used in chunk 223.

28d   ⟨*equation qeps* 28d⟩≡   (244)
```
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 )
```

Defines:
  qeps, used in chunk 26d.
Uses hgx 59e, jrps 200d, vps 34b, xbo 50e, and y‗qeps 28e.

28e   ⟨*coefficient y_qeps* 28e⟩≡   (253)
```
y_qeps  4       0,1.000000000000000000e+00,1.000000000000000000e+00,1.000000000000000
```
Defines:
  y‗qeps, used in chunk 28d.

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

28f   ⟨*variable QEPI* 28f⟩≡   (211)
```
QEPI     = Desired level of investment in intellectual property
```
Defines:
  QEPI, used in chunk 223.

29a   ⟨*equation qepi* 29a⟩≡   (244)
```
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 )
```

Defines:
  qepi, used in chunk 26a.
Uses hgx 59e, jrpi 200c, vpi 33f, xbo 50e, and y_qepi 29b.

29b   ⟨*coefficient y_qepi* 29b⟩≡   (253)
```
y_qepi  4       0,1.000000000000000000e+00,1.000000000000000000e+00,1.000000000000000000e+00
```
Defines:
  y_qepi, used in chunk 29a.

2.2.9   b.9 QKIR: Desired Inventory Sales Ratio

29c   ⟨*variable QKIR* 29c⟩≡   (211)
```
QKIR     = Desired Inventory Sales Ratio
```
Defines:
  QKIR, used in chunk 223.

29d   ⟨*equation qkir* 29d⟩≡   (244)
```
qkir: log(qkir) - qkir_aerr = (1-dglprd)*y_qkir(1) + log(qkir(-1))
```

Defines:
  qkir, used in chunk 27b.
Uses dglprd 197d and y_qkir 29e.

29e   ⟨*coefficient y_qkir* 29e⟩≡   (253)
```
y_qkir  1       -0.001885366737710053
```
Defines:
  y_qkir, used in chunk 29d.

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

29f   ⟨*variable KPD* 29f⟩≡   (211)
```
KPD      = Capital stock - Equipment, 2009$
```
Defines:
  KPD, used in chunks 107d and 223.

29g   ⟨*equation kpd* 29g⟩≡   (244)
```
kpd: kpd - kpd_aerr = 0.25 * epd + (1-jrpd/4) * kpd(-1)
```

Defines:
  kpd, used in chunks 31a, 72c, and 79b.
Uses epd 25c and jrpd 200b.

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

30a $\langle$ *variable KPI* 30a$\rangle\equiv$ (211)
```
KPI       = Capital Stock - Intellectual Property, 2009$
```
Defines:
  KPI, used in chunk 223.

30b $\langle$ *equation kpi* 30b$\rangle\equiv$ (244)
```
kpi: kpi - kpi_aerr = 0.25 * epi + (1-jrpi/4) * kpi(-1)
```

Defines:
  kpi, never used.
Uses epi 26a and jrpi 200c.

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

30c $\langle$ *variable KPS* 30c$\rangle\equiv$ (211)
```
KPS       = Capital stock - nonresidential structures, 2009$
```
Defines:
  KPS, used in chunk 223.

30d $\langle$ *equation kps* 30d$\rangle\equiv$ (244)
```
kps: kps - kps_aerr = 0.25 * eps + (1-jrps/4) * kps(-1)
```

Defines:
  kps, used in chunks 31a, 72c, and 79d.
Uses eps 26d and jrps 200d.

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

30e $\langle$ *variable HKS* 30e$\rangle\equiv$ (211)
```
HKS       = Growth rate of KS, cw 2009$ (compound annual rate)
```
Defines:
  HKS, used in chunk 223.
Uses KS 31b.

31a   ⟨*equation hks* 31a⟩≡   (244)
```
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
```

Defines:
   hks, used in chunks 31c and 59e.
Uses hksr 199g, ki 27b, kpd 29g, kps 30d, ykin 78f, ykpdn 79b, and ykpsn 79d.

2.2.14   b.14 KS: Capital services, 2009 $

31b   ⟨*variable KS* 31b⟩≡   (211)
```
KS        = Capital services, 2009 $
```
Defines:
   KS, used in chunks 30e and 223.

31c   ⟨*equation ks* 31c⟩≡   (244)
```
ks: log(ks) - ks_aerr = log(ks(-1)) + hks/400
```

Defines:
   ks, used in chunk 52c.
Uses hks 31a.

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

31d   ⟨*variable RPD* 31d⟩≡   (211)
```
RPD       = After-tax real financial cost of capital for business investment
```
Defines:
   RPD, used in chunks 174a and 223.

31e   ⟨*equation rpd* 31e⟩≡   (244)
```
rpd: rpd - rpd_aerr = 0.5*(7.2 + (1-trfcim)*(rg5e + rbbbe- rg10e) - zpib5) + 0.5*req
```

Defines:
   rpd, used in chunks 32, 33b, 37a, and 38a.
Uses rbbbe 150f, req 153a, rg10e 148d, rg5e 147c, trfcim 203e, and zpib5 174b.

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

31f   ⟨*variable RTPD* 31f⟩≡   (211)
```
RTPD      = User cost of capital for equipment
```
Defines:
   RTPD, used in chunk 223.

32a   ⟨*equation rtpd* 32a⟩≡   (244)
```
rtpd: rtpd - rtpd_aerr = (.01*rpd + jrpd - .01*hgpdr) _
                    * ((1-.01*tapdt-trfcim*(1-tapddp*.01*tapdt)*tapdd)/(1-trfcim)) _
                    * ( ( pxp*pkpdr +  pxp(-1)*pkpdr(-1)) /2)/pxb
```

Defines:
    rtpd, used in chunks 33d and 79b.
Uses hgpdr 108f, jrpd 200b, pkpdr 107e, pxb 108d, pxp 93b, rpd 31e, tapdd 38a, tapddp 202g,
    tapdt 203a, and trfcim 203e.

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

32b   ⟨*variable RTPI* 32b⟩≡   (211)
```
RTPI     = User cost of capital for intellectual property
```
Defines:
    RTPI, used in chunk 223.

32c   ⟨*equation rtpi* 32c⟩≡   (244)
```
rtpi: rtpi - rtpi_aerr = (.01*rpd + jrpi - .01*hgpir) _
                    * ( ( pxp*ppir +  pxp(-1)*ppir(-1)) /2)/pxb
```

Defines:
    rtpi, used in chunk 33f.
Uses hgpir 109c, jrpi 200c, ppir 96c, pxb 108d, pxp 93b, and rpd 31e.

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

32d   ⟨*variable RTPS* 32d⟩≡   (211)
```
RTPS     = User cost of capital for nonresidential structures
```
Defines:
    RTPS, used in chunk 223.

32e   ⟨*equation rtps* 32e⟩≡   (244)
```
rtps: rtps - rtps_aerr = (@recode(((.01*rpd + jrps - .01*hgppsr)  _
                    * ((1-trfcim*tapsda)/(1-trfcim)) _
                    * ( ( pxp*ppsr +  pxp(-1)*ppsr(-1)) /2)/pxb)>( .02),(.01*rpd + jrps
                    * ((1-trfcim*tapsda)/(1-trfcim)) _
                    * ( ( pxp*ppsr +  pxp(-1)*ppsr(-1)) /2)/pxb, .02))
```

Defines:
    rtps, used in chunks 34b and 79d.
Uses hgppsr 110b, jrps 200d, ppsr 96e, pxb 108d, pxp 93b, rpd 31e, tapsda 37a,
    and trfcim 203e.

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

33a   ⟨*variable RTINV* 33a⟩≡   (211)
    RTINV   = User cost of capital for inventories
    Defines:
      RTINV, used in chunk 223.

33b   ⟨*equation rtinv* 33b⟩≡   (244)
    rtinv: rtinv - rtinv_aerr = (.01*rpd - .01*hgpkir) _
                  * ((pxp*pkir + pxp(-1)*pkir(-1)) /2)/pxb

    Defines:
      rtinv, used in chunk 78f.
    Uses hgpkir 109f, pkir 201d, pxb 108d, pxp 93b, and rpd 31e.

2.2.20   b.20 VPD: Desired equipment-output ratio

33c   ⟨*variable VPD* 33c⟩≡   (211)
    VPD   = Desired equipment-output ratio
    Defines:
      VPD, used in chunks 34c, 208d, and 223.

33d   ⟨*equation vpd* 33d⟩≡   (244)
    vpd: vpd - vpd_aerr = uvpd*(pkpdr/ppdr)/rtpd

    Defines:
      vpd, used in chunks 28a, 34d, 182d, and 184d.
    Uses pkpdr 107e, ppdr 95g, rtpd 32a, and uvpd 208d.

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

33e   ⟨*variable VPI* 33e⟩≡   (211)
    VPI   = Desired intellectual property-output ratio
    Defines:
      VPI, used in chunks 38d, 208e, and 223.

33f   ⟨*equation vpi* 33f⟩≡   (244)
    vpi: vpi - vpi_aerr = uvpi/rtpi

    Defines:
      vpi, used in chunks 29a, 38e, 183c, and 185c.
    Uses rtpi 32c and uvpi 208e.

2.2.22   b.22 VPS: Desired structures-output ratio

34a   ⟨*variable VPS* 34a⟩≡   (211)
```
VPS      = Desired structures-output ratio
```
Defines:
   VPS, used in chunks 34f, 208f, and 223.

34b   ⟨*equation vps* 34b⟩≡   (244)
```
vps: vps - vps_aerr = uvps/rtps
```

Defines:
   vps, used in chunks 28d, 35a, 184a, and 186a.
Uses rtps 32e and uvps 208f.

2.2.23   b.23 HGVPD: Trend Growth of VPD

34c   ⟨*variable HGVPD* 34c⟩≡   (211)
```
HGVPD      = Trend Growth of VPD
```
Defines:
   HGVPD, used in chunk 223.
Uses VPD 33c.

34d   ⟨*equation hgvpd* 34d⟩≡   (244)
```
hgvpd: hgvpd - hgvpd_aerr = y_hgvpd(1) * hgvpd(-1) _
                    + y_hgvpd(2) * log(vpd/vpd(-1))
```

Defines:
   hgvpd, used in chunks 25c and 182d.
Uses vpd 33d and y_hgvpd 34e.

34e   ⟨*coefficient y_hgvpd* 34e⟩≡   (253)
```
y_hgvpd 2        0.97,0.03
```
Defines:
   y_hgvpd, used in chunk 34d.

2.2.24   b.24 HGVPS: Trend growth rate of VPS

34f   ⟨*variable HGVPS* 34f⟩≡   (211)
```
HGVPS      = Trend growth rate of VPS
```
Defines:
   HGVPS, used in chunk 223.
Uses VPS 34a.

35a ⟨*equation hgvps* 35a⟩≡ (244)
```
hgvps: hgvps - hgvps_aerr = y_hgvps(1) * hgvps(-1) _
                      + y_hgvps(2) * log(vps/vps(-1))
```

Defines:
  `hgvps`, used in chunk 184a.
Uses `vps` 34b and `y_hgvps` 35b.

35b ⟨*coefficient y_hgvps* 35b⟩≡ (253)
```
y_hgvps 2        0.97,0.03
```
Defines:
  `y_hgvps`, used in chunk 35a.

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

35c ⟨*variable EPDN* 35c⟩≡ (211)
```
EPDN     = Investment in equipment, current $
```
Defines:
  `EPDN`, used in chunk 223.

35d ⟨*equation epdn* 35d⟩≡ (244)
```
epdn: epdn - epdn_aerr = 0.01*ppdr*pxp*epd
```

Defines:
  `epdn`, used in chunks 38c, 48b, 51a, and 98a.
Uses `epd` 25c, `ppdr` 95g, and `pxp` 93b.

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

35e ⟨*variable EPIN* 35e⟩≡ (211)
```
EPIN     = Investment in intellectual property, current $
```
Defines:
  `EPIN`, used in chunk 223.

35f ⟨*equation epin* 35f⟩≡ (244)
```
epin: epin - epin_aerr = 0.01*ppir*pxp*epi
```

Defines:
  `epin`, used in chunks 38c, 48b, 51a, and 98a.
Uses `epi` 26a, `ppir` 96c, and `pxp` 93b.

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

36a   ⟨*variable EPSN* 36a⟩≡   (211)
```
EPSN      = Investment in nonresidential structures, current $
```
Defines:
   EPSN, used in chunk 223.

36b   ⟨*equation epsn* 36b⟩≡   (244)
```
epsn: epsn - epsn_aerr = .01 * ppsr * pxp * eps
```

Defines:
   epsn, used in chunks 38c, 48b, 51a, and 98a.
Uses eps 26d, ppsr 96e, and pxp 93b.

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

36c   ⟨*variable EIN* 36c⟩≡   (211)
```
EIN       = Change in business inventories, current $
```
Defines:
   EIN, used in chunk 223.

36d   ⟨*equation ein* 36d⟩≡   (244)
```
ein: ein - ein_aerr = .01*pxp*pkir*ei
```

Defines:
   ein, used in chunks 38c and 70.
Uses ei 27e, pkir 201d, and pxp 93b.

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

36e   ⟨*variable TAPSDA* 36e⟩≡   (211)
```
TAPSDA    = Present value of depreciation allowances for nonresidential structures
```
Defines:
   TAPSDA, used in chunk 223.

37a   ⟨*equation tapsda* 37a⟩≡   (244)
```
tapsda: tapsda - tapsda_aerr = (1-tapsad)*(1-exp(-0.01*(rpd+zpib5)*tapssl))/ _
                    (0.01*(rpd+zpib5)*tapssl) + _
                    tapsad*(1-d69) * 2 *  _
                    (1 - (1-exp(-0.01*(rpd+zpib5)*tapssl))/ _
                    (0.01*(rpd+zpib5)*tapssl)) / (0.01*(rpd+zpib5)*tapssl) _
                    + tapsad*(d69-d81) *(  (1.5 /  _
                    (1.5 + .01 * tapssl * (rpd + zpib5))) *  _
                    (1 - exp(-0.5-0.33*(0.01*(rpd+zpib5)*tapssl))) + _
                    (exp(-0.5)/(0.67*(0.01*(rpd+zpib5)*tapssl)))* _
                    (exp(-0.33*(0.01*(rpd+zpib5)*tapssl)) -  _
                    exp(-(0.01*(rpd+zpib5)*tapssl))) ) _
                    + tapsad * (d81-d86) *(  (1.75 /  _
                    (1.75 + .01 * tapssl * (rpd + zpib5))) *  _
                    (1 - exp(-0.75-0.428*(0.01*(rpd+zpib5)*tapssl))) + _
                    (exp(-0.75)/(0.572*(0.01*(rpd+zpib5)*tapssl)))* _
                    (exp(-0.428*(0.01*(rpd+zpib5)*tapssl)) -  _
                    exp(-(0.01*(rpd+zpib5)*tapssl))) ) _
                    + tapsad * d86 * (1-exp(-0.01*(rpd+zpib5)*tapssl))/ _
                    (0.01*(rpd+zpib5)*tapssl)
```

Defines:
   tapsda, used in chunk 32e.
Uses d69 195d, d81 196a, d86 196c, rpd 31e, tapsad 203b, tapssl 203c, and zpib5 174b.

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

37b   ⟨*variable TAPDD* 37b⟩≡   (211)
```
TAPDD    = Present value of depreciation allowances for equipment
```
Defines:
   TAPDD, used in chunk 223.

38a   ⟨*equation tapdd* 38a⟩≡   (244)
```
tapdd: tapdd - tapdd_aerr = .5 * d2003 + .5 * d2003 * (2.0 / (2.0 + .01 * tapds * (rp
                          + .3 * d2002 + .7 * d2002 * (2.0 / (2.0 + .01 * tapds * (rpd + z
                          + (d87 - d2002 - d2003) * (2.0 / (2.0 + .01 * tapds * (rpd + zp:
                          + (d81-d87) * (1.5 / (1.5 + .01 * tapds * (rpd + zpib5))) _
                          + (1-d81) _
                                  * (((1-tapdad)*(1-exp(-(.01*tapds*(rpd+zpib5)))) _
                                            /(.01*tapds*(rpd+zpib5))) _
                                      + tapdad *2*(1-(1-exp(-(.01*tapds*(rpd+zpib5)))) _
                                            /(.01*tapds*(rpd+zpib5))) _
                                            /(.01 * tapds * (rpd + zpib5)))
```

Defines:
   tapdd, used in chunk 32a.
Uses d2002 195b, d2003 195c, d81 196a, d87 196d, rpd 31e, tapdad 202f, tapds 202h,
   and zpib5 174b.

2.2.31   b.31 EGPDIN: Gross private domestic investment

38b   ⟨*variable EGPDIN* 38b⟩≡   (211)
```
EGPDIN   = Gross private domestic investment
```
Defines:
   EGPDIN, used in chunk 223.

38c   ⟨*equation egpdin* 38c⟩≡   (244)
```
egpdin: egpdin - egpdin_aerr = epdn + epsn + epin + ehn + ein
```

Defines:
   egpdin, never used.
Uses ehn 22c, ein 36d, epdn 35d, epin 35f, and epsn 36b.

2.2.32   b.32 HGVPI: Trend growth rate of VPI

38d   ⟨*variable HGVPI* 38d⟩≡   (211)
```
HGVPI    = Trend growth rate of VPI
```
Defines:
   HGVPI, used in chunk 223.
Uses VPI 33e.

38e   ⟨*equation hgvpi* 38e⟩≡   (244)
```
hgvpi: hgvpi - hgvpi_aerr = y_hgvpi(1) * hgvpi(-1) _
                          + y_hgvpi(2) * log(vpi/vpi(-1))
```

Defines:
   hgvpi, used in chunk 183c.
Uses vpi 33f and y_hgvpi 39a.

39a   ⟨*coefficient y_hgvpi* 39a⟩≡   (253)
```
y_hgvpi 2        0.97,0.03
```
Defines:
    `y_hgvpi`, used in chunk 38e.

2.3   Foreign Trade

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

39b   ⟨*variable EX* 39b⟩≡   (211)
```
EX       = Exports of goods and services, cw 2009 $
```
Defines:
    `EX`, used in chunk 223.

39c   ⟨*equation ex* 39c⟩≡   (244)
```
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
```

Defines:
    `ex`, used in chunks 39, 40, 48b, 49e, 51a, 62f, 63b, 67, 87a, 91d, 93f, 94f, 101c, 105d, 117,
       118, 122, 123, 154f, 155e, and 223.
Uses ddockx 196g, `fgdp` 158e, `fpc` 161b, `fpx` 164d, `fxgap` 158b, `pxp` 93b, `pxr` 97b,
    and `y_ex` 39d.

39d   ⟨*coefficient y_ex* 39d⟩≡   (253)
```
y_ex    5        0.8118629319610274,-0.1074807087618527,1.38575824141273,1.092856118288064,1.014
```
Defines:
    `y_ex`, used in chunk 39c.

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

39e   ⟨*variable EXN* 39e⟩≡   (211)
```
EXN      = Exports of goods and services, current $
```
Defines:
    `EXN`, used in chunk 223.

39f   ⟨*equation exn* 39f⟩≡   (244)
```
exn: exn - exn_aerr = .01*pxp*pxr*ex
```

Defines:
    `exn`, used in chunks 43a, 48b, 49e, 51a, 71a, and 98a.
Uses `ex` 39c, `pxp` 93b, and `pxr` 97b.

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

40a   ⟨*variable EMO* 40a⟩≡   (211)
```
EMO      = Imports of goods and services ex. petroleum, cw 2009$
```
Defines:
  EMO, used in chunk 223.
Uses ex 39c.

40b   ⟨*equation emo* 40b⟩≡   (244)
```
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))
```

Defines:
  emo, used in chunks 40e, 42e, 48b, and 49e.
Uses ddockm 196f, pmo 105e, uemot 204f, xgap2 59c, xgden 71a, and y_emo 40c.

40c   ⟨*coefficient y_emo* 40c⟩≡   (253)
```
y_emo   6        0.01701497186817749,-0.1984753225812535,1.352328263830308,1.67397668
```
Defines:
  y_emo, used in chunk 40b.

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

40d   ⟨*variable EMON* 40d⟩≡   (211)
```
EMON     = Imports of goods and services ex. petroleum
```
Defines:
  EMON, used in chunks 204f and 223.
Uses ex 39c.

40e   ⟨*equation emon* 40e⟩≡   (244)
```
emon: emon - emon_aerr = .01 * pmo * emo
```

Defines:
  emon, used in chunks 42, 48b, 49e, and 88c.
Uses emo 40b and pmo 105e.

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

41a   ⟨*variable CENG* 41a⟩≡   (211)
```
CENG      = Consumption of crude energy (oil, coal, natural gas),  2009 $
```
Defines:
   CENG, used in chunk 223.

41b   ⟨*equation ceng* 41b⟩≡   (244)
```
ceng: d( log(ceng), 0, 1 ) - ceng_aerr = _
                   y_ceng(1) * (log(ceng(-1))-log(xg(-1)*veoa(-1))) _
                 + y_ceng(2) * d( log(xg), 0, 1 ) _
                 + y_ceng(3) * d( log(xg(-1)), 0, 1 ) _
                 + y_ceng(4) * d( log(ceng(-1)), 0, 1 ) _
                 + y_ceng(5) * d( log(veoa(-1)), 0, 1 ) _
                 + y_ceng(6) * hgx(-1)/400
```

Defines:
   ceng, used in chunks 41e, 52a, 55a, 60b, 104d, and 110e.
Uses hgx 59e, veoa 54a, xg 52a, and y_ceng 41c.

41c   ⟨*coefficient y_ceng* 41c⟩≡   (253)
```
y_ceng  6       -0.1483451935619194,0.475653118183134,0.5437644321944857,-0.2301598753097478,0.
```
Defines:
   y_ceng, used in chunk 41b.

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

41d   ⟨*variable EMP* 41d⟩≡   (211)
```
EMP       = Petroleum imports, cw 2009$
```
Defines:
   EMP, used in chunks 204g and 223.

41e   ⟨*equation emp* 41e⟩≡   (244)
```
emp: emp - emp_aerr = uemp*(ceng-xeng)
```

Defines:
   emp, used in chunks 42, 44f, 48b, 49e, 52a, 54d, 55a, 62c, 93f, 94f, and 223.
Uses ceng 41b, uemp 204g, and xeng 55e.

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

41f   ⟨*variable EMPN* 41f⟩≡   (211)
```
EMPN      = Petroleum imports, current $
```
Defines:
   EMPN, used in chunk 223.

42a   ⟨*equation empn* 42a⟩≡   (244)
```
empn: empn - empn_aerr = .01*pmp*emp
```

Defines:
    empn, used in chunks 42, 48b, 49e, 52a, 55a, 60b, and 71e.
Uses emp 41e and pmp 102b.

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

42b   ⟨*variable EMN* 42b⟩≡   (211)
```
EMN       = Imports of goods and services, current $
```
Defines:
    EMN, used in chunk 223.

42c   ⟨*equation emn* 42c⟩≡   (244)
```
emn: emn - emn_aerr = emon + empn
```

Defines:
    emn, used in chunks 42e, 43a, 70c, and 71a.
Uses emon 40e and empn 42a.

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

42d   ⟨*variable EM* 42d⟩≡   (211)
```
EM        = Imports of goods and services, cw 2009$
```
Defines:
    EM, used in chunk 223.

42e   ⟨*equation em* 42e⟩≡   (244)
```
em: log(em) - em_aerr = log(em(-1))    _
                 + .5 * (emon/emn + emon(-1)/emn(-1)) * d(log(emo), 0, 1) _
                 + .5 * (empn/emn + empn(-1)/emn(-1)) * d(log(emp), 0, 1)
```

Defines:
    em, never used.
Uses emn 42c, emo 40b, emon 40e, emp 41e, and empn 42a.

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

42f   ⟨*variable FCBN* 42f⟩≡   (211)
```
FCBN      = US current account balance, current $
```
Defines:
    FCBN, used in chunk 223.

43a   ⟨*equation fcbn* 43a⟩≡   (244)
          ```
          fcbn: fcbn - fcbn_aerr = exn - emn + fynin + fcbrn
          ```

Defines:
    `fcbn`, used in chunk 43e.
Uses `emn` 42c, `exn` 39f, `fcbrn` 43c, and `fynin` 44d.

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

43b   ⟨*variable FCBRN* 43b⟩≡   (211)
          ```
          FCBRN     = US current account balance residual, current $
          ```
Defines:
    `FCBRN`, used in chunks 204h and 223.

43c   ⟨*equation fcbrn* 43c⟩≡   (244)
          ```
          fcbrn: fcbrn - fcbrn_aerr = ufcbr*pxg*xgpot/100
          ```

Defines:
    `fcbrn`, used in chunk 43a.
Uses `pxg` 108b, `ufcbr` 204h, and `xgpot` 52c.

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

43d   ⟨*variable FNIN* 43d⟩≡   (211)
          ```
          FNIN      = Net stock of claims of US residents on the rest of the world, current $
          ```
Defines:
    `FNIN`, used in chunk 223.

43e   ⟨*equation fnin* 43e⟩≡   (244)
          ```
          fnin: d( fnin, 0, 1 ) - fnin_aerr = .25*fcbn  _
                                  + .54 * (d( log(fpc), 0, 1) * fnicn(-1)) _
                                  - .32 * (d( log(pgdp), 0, 1) * fniln(-1))   _
                                  - .67 * (d( log(fpx), 0, 1) * fnicn(-1)) _
                                  + .06 * (d( log(fpx), 0, 1) * fniln(-1))  _
                                  + fnirn
          ```

Defines:
    `fnin`, used in chunks 45e, 75d, and 163d.
Uses `fcbn` 43a, `fnicn` 45c, `fniln` 45e, `fnirn` 47e, `fpc` 161b, `fpx` 164d, and `pgdp` 106f.

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

44a   ⟨*variable FTCIN* 44a⟩≡   (211)
```
FTCIN    = Corporate taxes paid to rest of world, current $
```
Defines:
   FTCIN, used in chunks 205d and 223.

44b   ⟨*equation ftcin* 44b⟩≡   (244)
```
ftcin: ftcin - ftcin_aerr = uftcin * ynicpn
```

Defines:
   ftcin, used in chunk 78d.
Uses uftcin 205d and ynicpn 77b.

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

44c   ⟨*variable FYNIN* 44c⟩≡   (211)
```
FYNIN    = Net investment income received from the rest of the world, current $
```
Defines:
   FYNIN, used in chunk 223.

44d   ⟨*equation fynin* 44d⟩≡   (244)
```
fynin: fynin - fynin_aerr = fynicn - fyniln
```

Defines:
   fynin, used in chunks 43a and 74d.
Uses fynicn 46a and fyniln 46c.

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

44e   ⟨*variable HGEMP* 44e⟩≡   (211)
```
HGEMP    = Petroleum imports, cw 2009$, trend growth rate
```
Defines:
   HGEMP, used in chunk 223.

44f   ⟨*equation hgemp* 44f⟩≡   (244)
```
hgemp: hgemp - hgemp_aerr = y_hgemp(1) * hgemp(-1) _
                    + y_hgemp(2) * 400*log(emp/emp(-1))
```

Defines:
   hgemp, never used.
Uses emp 41e and y_hgemp 45a.

45a   ⟨*coefficient y_hgemp* 45a⟩≡   (253)
       `y_hgemp 2         .9,.1`
       Defines:
         y_hgemp, used in chunk 44f.

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

45b   ⟨*variable FNICN* 45b⟩≡   (211)
       `FNICN    = Gross stock of claims of US residents on the rest of the world, current $`
       Defines:
         FNICN, used in chunks 202b and 223.

45c   ⟨*equation fnicn* 45c⟩≡   (244)
```
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  _
                                 + rfnict
```

       Defines:
         fnicn, used in chunks 43e, 45e, and 46a.
       Uses fpc 161b, fpx 164d, rfnict 202b, and xgdptn 61a.

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

45d   ⟨*variable FNILN* 45d⟩≡   (211)
       `FNILN    = Gross stock of liabilities of US residents to the rest of the world, current $`
       Defines:
         FNILN, used in chunk 223.

45e   ⟨*equation fniln* 45e⟩≡   (244)
```
fniln: fniln - fniln_aerr = fnicn - fnin
```

       Defines:
         fniln, used in chunks 43e and 46c.
       Uses fnicn 45c and fnin 43e.

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

45f   ⟨*variable FYNICN* 45f⟩≡   (211)
       `FYNICN   = Gross investment income received from the rest of the world, current $`
       Defines:
         FYNICN, used in chunk 223.

46a   ⟨*equation fynicn* 46a⟩≡   (244)
          fynicn: fynicn - fynicn_aerr = .01*rfynic*fnicn(-1)

        Defines:
          fynicn, used in chunk 44d.
        Uses fnicn 45c and rfynic 46e.

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

46b   ⟨*variable FYNILN* 46b⟩≡   (211)
          FYNILN   = Gross investment income paid to the rest of the world, current $
        Defines:
          FYNILN, used in chunk 223.

46c   ⟨*equation fyniln* 46c⟩≡   (244)
          fyniln: fyniln - fyniln_aerr = .01*rfynil*fniln(-1)

        Defines:
          fyniln, used in chunk 44d.
        Uses fniln 45e and rfynil 47b.

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

46d   ⟨*variable RFYNIC* 46d⟩≡   (211)
          RFYNIC   = Average yield earned on gross claims of US residents on the rest of the wo
        Defines:
          RFYNIC, used in chunk 223.

46e   ⟨*equation rfynic* 46e⟩≡   (244)
          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)

        Defines:
          rfynic, used in chunk 46a.
        Uses rfynil 47b and y_rfynic 46f.

46f   ⟨*coefficient y_rfynic* 46f⟩≡   (253)
          y_rfynic   4   0.2599432734430575,-0.1468767116652314,0.1482396937168886,0.6
        Defines:
          y_rfynic, used in chunk 46e.

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

47a   ⟨*variable RFYNIL* 47a⟩≡   (211)
    RFYNIL   = Average yield earned on liabilities of US residents on the rest of the world
Defines:
    RFYNIL, used in chunk 223.

47b   ⟨*equation rfynil* 47b⟩≡   (244)
    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)

Defines:
    rfynil, used in chunk 46.
Uses reqp 152d, rg10 148f, rtb 146d, and y_rfynil 47c.

47c   ⟨*coefficient y_rfynil* 47c⟩≡   (253)
    y_rfynil   9   0.1878356791714486,-0.2435367622231839,0.07902780819914431,0.088801519(
Defines:
    y_rfynil, used in chunk 47b.

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

47d   ⟨*variable FNIRN* 47d⟩≡   (211)
    FNIRN   = Net stock of claims of US residents on the rest of the world, residual
Defines:
    FNIRN, used in chunks 205a and 223.

47e   ⟨*equation fnirn* 47e⟩≡   (244)
    fnirn: fnirn - fnirn_aerr = ufnir * xgdpn

Defines:
    fnirn, used in chunk 43e.
Uses ufnir 205a and xgdpn 70c.

2.4   Aggregate Output Identities

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

48a   ⟨*variable XFS* 48a⟩≡   (211)

```
XFS       = Final sales of gross domestic product, cw 2009$
```
Defines:
   XFS, used in chunk 223.

48b   ⟨*equation xfs* 48b⟩≡   (244)

```
xfs: log(xfs) - xfs_aerr = log(xfs(-1)) _
   + .5*( (ecnian/xfsn + ecnian(-1)/xfsn(-1)) * d(log(ecnia), 0, 1) _
   + (ehn/xfsn + ehn(-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))
```

Defines:
   xfs, used in chunks 27b and 49a.
Uses ecnia 21d, ecnian 22a, egfi 114d, egfin 115a, egfl 116a, egfln 116d, egfo 117d,
   egfon 118b, egsi 119e, egsin 120c, egsl 121b, egsln 121e, egso 122d, egson 123b, eh 18e,
   ehn 22c, emo 40b, emon 40e, emp 41e, empn 42a, epd 25c, epdn 35d, epi 26a, epin 35f,
   eps 26d, epsn 36b, ex 39c, exn 39f, and xfsn 70e.

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

48c   ⟨*variable XGDP* 48c⟩≡   (211)

```
XGDP      = GDP, cw 2009$
```
Defines:
   XGDP, used in chunks 60c, 80a, 84a, 156b, and 223.

49a   ⟨*equation xgdp* 49a⟩≡   (244)
```
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)))
```

Defines:
   xgdp, used in chunks 49, 56c, 84b, and 106f.
Uses ei 27e, pkir 201d, pxp 93b, xfs 48b, xfsn 70e, and xgdpn 70c.

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

49b   ⟨*variable HGGDP* 49b⟩≡   (211)
```
HGGDP     = Growth rate of GDP, cw 2009$ (annual rate)
```
Defines:
   HGGDP, used in chunk 223.

49c   ⟨*equation hggdp* 49c⟩≡   (244)
```
hggdp: hggdp - hggdp_aerr = 400*d( log(xgdp), 0, 1 )
```

Defines:
   hggdp, never used.
Uses xgdp 49a.

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

49d   ⟨*variable XGDE* 49d⟩≡   (211)
```
XGDE      = Domestic absorption, cw 2009$
```
Defines:
   XGDE, used in chunk 223.

49e   ⟨*equation xgde* 49e⟩≡   (244)
```
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))
```

Defines:
   xgde, never used.
Uses emo 40b, emon 40e, emp 41e, empn 42a, ex 39c, exn 39f, xgden 71a, xgdp 49a,
   and xgdpn 70c.

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

50a   ⟨*variable XGO* 50a⟩≡   (211)
```
XGO      = Output of business sector plus oil imports, adjusted for measurement erro
```
Defines:
   XGO, used in chunk 223.

50b   ⟨*equation xgo* 50b⟩≡   (244)
```
xgo: log(xgo) - xgo_aerr =  log(xgpot) + y_xgo(1) * xgap2/100
```

Defines:
   xgo, used in chunks 56e, 57c, 59a, and 182a.
Uses xgap2 59c, xgpot 52c, and y_xgo 50c.

50c   ⟨*coefficient y_xgo* 50c⟩≡   (253)
```
y_xgo    1         1.313096
```
Defines:
   y_xgo, used in chunk 50b.

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

50d   ⟨*variable XBO* 50d⟩≡   (211)
```
XBO      = Business output, adjusted for measurement error, cw  2009$
```
Defines:
   XBO, used in chunk 223.

50e   ⟨*equation xbo* 50e⟩≡   (244)
```
xbo: log(xbo) - xbo_aerr =  log(xbt) + y_xbo(1) * xgap2/100
```

Defines:
   xbo, used in chunks 25, 26, 28, 29a, 71c, and 182–86.
Uses xbt 55a, xgap2 59c, and y_xbo 50f.

50f   ⟨*coefficient y_xbo* 50f⟩≡   (253)
```
y_xbo    1         1.338129148984226
```
Defines:
   y_xbo, used in chunk 50e.

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

50g   ⟨*variable XP* 50g⟩≡   (211)
```
XP       = Final sales plus imports less government labor, cw 2009$
```
Defines:
   XP, used in chunk 223.

51a   ⟨*equation xp* 51a⟩≡   (244)
```
    xp: log(xp) - xp_aerr = log(xp(-1)) _
      + .5 * (ecnian/xpn + ecnian(-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)
```

Defines:
   xp, used in chunks 70a, 92d, and 110e.
Uses ecnia 21d, ecnian 22a, egfi 114d, egfin 115a, egfo 117d, egfon 118b, egsi 119e,
   egsin 120c, egso 122d, egson 123b, eh 18e, ehn 22c, epd 25c, epdn 35d, epi 26a, epin 35f,
   eps 26d, epsn 36b, ex 39c, exn 39f, and xpn 70a.

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

51b   ⟨*variable XB* 51b⟩≡   (211)
```
    XB        = Business output (BEA definition), cw 2009$
```
Defines:
   XB, used in chunks 60a and 223.

51c   ⟨*equation xb* 51c⟩≡   (244)
```
    xb: xb - xb_aerr =  xbn/ (pxb/100)
```

Defines:
   xb, used in chunks 52a and 55a.
Uses pxb 108d and xbn 71c.

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

51d   ⟨*variable XG* 51d⟩≡   (211)
```
    XG        = Output of  business sector plus oil imports, cw 2009$
```
Defines:
   XG, used in chunks 59d and 223.

52a   ⟨*equation xg* 52a⟩≡   (244)
```
   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
```

Defines:
    xg, used in chunks 41b, 55a, 92d, 104d, and 108b.
Uses ceng 41b, emp 41e, empn 42a, pceng 103a, and xb 51c.

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

52b   ⟨*variable XGPOT* 52b⟩≡   (211)
```
   XGPOT    = Potential output of  business sector plus oil imports,  cw 2009$
```
Defines:
    XGPOT, used in chunk 223.

52c   ⟨*equation xgpot* 52c⟩≡   (244)
```
   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))
```

Defines:
    xgpot, used in chunks 43c, 50b, 55, 59a, and 69a.
Uses ks 31c, leppot 68b, lqualt 200f, mfpt 53c, qlww 61c, veoa 54a, and y_xgpot 52d.

52d   ⟨*coefficient y_xgpot* 52d⟩≡   (253)
```
   y_xgpot 4         .7000,.265,.035,.035
```
Defines:
    y_xgpot, used in chunk 52c.

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

52e   ⟨*variable HMFPT* 52e⟩≡   (211)
```
   HMFPT    = Trend growth rate of multifactor productivity
```
Defines:
    HMFPT, used in chunk 223.

52f   ⟨*equation hmfpt* 52f⟩≡   (244)
```
   hmfpt: hmfpt - hmfpt_aerr = y_hmfpt(1) + y_hmfpt(2)*hmfpt(-1)
```

Defines:
    hmfpt, used in chunks 53c, 56e, and 59e.
Uses y_hmfpt 53a.

53a ⟨*coefficient y_hmfpt* 53a⟩≡   (253)
     `y_hmfpt 2         0.055,0.95`
     Defines:
        y_hmfpt, used in chunk 52f.

2.4.12   d.12 MFPT: Multifactor productivity, trend level

53b ⟨*variable MFPT* 53b⟩≡   (211)
     `MFPT      = Multifactor productivity, trend level`
     Defines:
        MFPT, used in chunk 223.

53c ⟨*equation mfpt* 53c⟩≡   (244)
     `mfpt: log(mfpt) - mfpt_aerr = y_mfpt(1) + log(mfpt(-1)) + hmfpt/400`

     Defines:
        mfpt, used in chunks 52c and 56e.
     Uses hmfpt 52f and y_mfpt 53d.

53d ⟨*coefficient y_mfpt* 53d⟩≡   (253)
     `y_mfpt  1         0.0`
     Defines:
        y_mfpt, used in chunk 53c.

2.4.13   d.13 VEO: Desired energy-output ratio

53e ⟨*variable VEO* 53e⟩≡   (211)
     `VEO       = Desired energy-output ratio`
     Defines:
        VEO, used in chunk 223.

53f ⟨*equation veo* 53f⟩≡   (244)
     `veo: log(veo) - veo_aerr = log(pxb/pceng)`

     Defines:
        veo, used in chunk 54a.
     Uses pceng 103a and pxb 108d.

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

53g ⟨*variable VEOA* 53g⟩≡   (211)
     `VEOA      = Average energy-output ratio of existing capital stock`
     Defines:
        VEOA, used in chunks 208c and 223.

54a   ⟨*equation veoa* 54a⟩≡   (244)
```
veoa: log(veoa) - veoa_aerr = y_veoa(1) * log(veoa(-1)) _
                            + y_veoa(2) * log(veo(-1)) _
                            + uveoa
```

Defines:
    veoa, used in chunks 41b, 52c, and 59e.
Uses uveoa 208c, veo 53f, and y_veoa 54b.

54b   ⟨*coefficient y_veoa* 54b⟩≡   (253)
```
y_veoa  2        0.988,0.012
```
Defines:
    y_veoa, used in chunk 54a.

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

54c   ⟨*variable EMPT* 54c⟩≡   (211)
```
EMPT     = Petroleum imports trend, cw 2009$
```
Defines:
    EMPT, used in chunk 223.

54d   ⟨*equation empt* 54d⟩≡   (244)
```
empt: d( log(empt), 0, 1) - empt_aerr  _
                  = y_empt(1) * log(emp(-1)/empt(-1)) _
                  + y_empt(2) * hgx/400
```

Defines:
    empt, used in chunks 55a and 60b.
Uses emp 41e, hgx 59e, and y_empt 54e.

54e   ⟨*coefficient y_empt* 54e⟩≡   (253)
```
y_empt  2        0.10000000000000000E+00,1.00000000000000000E+00
```
Defines:
    y_empt, used in chunk 54d.

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

54f   ⟨*variable XBT* 54f⟩≡   (211)
```
XBT      = Potential business output, cw 2009$
```
Defines:
    XBT, used in chunks 58a and 223.

55a   ⟨*equation xbt* 55a⟩≡   (244)
```
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(empt/emp))
   (1 -  .5 *(.035*empn/(.01*pceng*ceng) + .035*empn(-1)/(.01*pceng(-1)*ceng(-1))))
```

Defines:
   xbt, used in chunks 50e and 55c.
Uses ceng 41b, emp 41e, empn 42a, empt 54d, pceng 103a, xb 51c, xg 52a, and xgpot 52c.

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

55b   ⟨*variable XGDPT* 55b⟩≡   (211)
```
XGDPT    = Potential GDP, cw 2009$
```
Defines:
   XGDPT, used in chunks 58a and 223.

55c   ⟨*equation xgdpt* 55c⟩≡   (244)
```
xgdpt: log(xgdpt) - xgdpt_aerr = log(xbt) + log(uxbt)
```

Defines:
   xgdpt, used in chunks 59c, 61a, 72, 73, 126f, 129f, 130e, 159b, 188, and 189b.
Uses uxbt 58b and xbt 55a.

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

55d   ⟨*variable XENG* 55d⟩≡   (211)
```
XENG     = Crude energy production, cw 2009$
```
Defines:
   XENG, used in chunks 208g and 223.

55e   ⟨*equation xeng* 55e⟩≡   (244)
```
xeng: xeng - xeng_aerr = uxeng * xgpot
```

Defines:
   xeng, used in chunk 41e.
Uses uxeng 208g and xgpot 52c.

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

55f   ⟨*variable XGDI* 55f⟩≡   (211)
```
XGDI     = Gross domestic income, cw 2009$
```
Defines:
   XGDI, used in chunks 155b and 223.

56a   ⟨*equation xgdi* 56a⟩≡   (244)
```
xgdi: xgdi - xgdi_aerr = xgdo*mei
```

Defines:
   `xgdi`, used in chunk 86e.
Uses `mei` 155c and `xgdo` 56c.

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

56b   ⟨*variable XGDO* 56b⟩≡   (211)
```
XGDO     = Gross domestic product, adjusted for measurement error, cw 2009$
```
Defines:
   `XGDO`, used in chunks 155b, 156b, and 223.

56c   ⟨*equation xgdo* 56c⟩≡   (244)
```
xgdo: xgdo - xgdo_aerr = xgdp/mep
```

Defines:
   `xgdo`, used in chunks 56a, 59c, and 71c.
Uses `mep` 156c and `xgdp` 49a.

2.5   Labor Market

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

56d   ⟨*variable LHP* 56d⟩≡   (211)
```
LHP      = Aggregate labor hours,  business sector (employee and  self-employed)
```
Defines:
   `LHP`, used in chunk 223.

56e   ⟨*equation lhp* 56e⟩≡   (244)
```
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, :
                  + y_lhp(5) * (d( log(xgo(-1)), 0, 1 ) - hlprdt(-2)/400 - d( hmfpt(-
```

Defines:
   `lhp`, used in chunks 57e, 62b, 66d, and 74f.
Uses `hlprdt` 69c, `hmfpt` 52f, `mfpt` 53c, `qlhp` 57c, `xgo` 50b, `y_lhp` 57a, and `zlhp` 182a.

57a   ⟨*coefficient y_lhp* 57a⟩≡   (253)
           y_lhp   5   0.255040531063274,0.1491232069118806,0.3902648422452434,0.6097351577547565,-0.0
           Defines:
             y_lhp, used in chunk 56e.

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

57b   ⟨*variable QLHP* 57b⟩≡   (211)
           QLHP   = Desired level of business labor hours
           Defines:
             QLHP, used in chunk 223.

57c   ⟨*equation qlhp* 57c⟩≡   (244)
           qlhp: qlhp - qlhp_aerr = xgo/lprdt

           Defines:
             qlhp, used in chunk 56e.
           Uses lprdt 69a and xgo 50b.

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

57d   ⟨*variable LWW* 57d⟩≡   (211)
           LWW   = Workweek, business sector (employee and self-employed)
           Defines:
             LWW, used in chunk 223.

57e   ⟨*equation lww* 57e⟩≡   (244)
           lww: d(log(lww), 0, 1) - lww_aerr _
                              = hqlww/400 _
                              + y_lww(1) * log(qlww(-1)/lww(-1)) _
                                  + y_lww(2) * (d(log(lhp), 0, 1) - (hlept + hqlww)/400)

           Defines:
             lww, used in chunk 62b.
           Uses hlept 68d, hqlww 61e, lhp 56e, qlww 61c, and y_lww 57f.

57f   ⟨*coefficient y_lww* 57f⟩≡   (253)
           y_lww   2   0.1984470411422383,0.3128887644653584
           Defines:
             y_lww, used in chunk 57e.

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

58a ⟨*variable UXBT* 58a⟩≡   (211)
```
UXBT    = Stochastic component of trend ratio of XGDPT to XBT
```
Defines:
  UXBT, used in chunks 58d and 223.
Uses XBT 54f and XGDPT 55b.

58b ⟨*equation uxbt* 58b⟩≡   (244)
```
uxbt: log(uxbt) - uxbt_aerr = y_uxbt(1) + log(uxbt(-1)) + .0025*huxb
```

Defines:
  uxbt, used in chunk 55c.
Uses huxb 58e and y_uxbt 58c.

58c ⟨*coefficient y_uxbt* 58c⟩≡   (253)
```
y_uxbt  1        0.0
```
Defines:
  y_uxbt, used in chunk 58b.

2.5.5   d.19 HUXB: Drift term in UXBT

58d ⟨*variable HUXB* 58d⟩≡   (211)
```
HUXB    = Drift term in UXBT
```
Defines:
  HUXB, used in chunk 223.
Uses UXBT 58a.

58e ⟨*equation huxb* 58e⟩≡   (244)
```
huxb: huxb - huxb_aerr = (1-dglprd) *(y_huxb(1) + y_huxb(2)*huxb(-1))
```

Defines:
  huxb, used in chunks 58b and 60d.
Uses dglprd 197d and y_huxb 58f.

58f ⟨*coefficient y_huxb* 58f⟩≡   (253)
```
y_huxb  2        -0.01817091647656927,0.95
```
Defines:
  y_huxb, used in chunk 58e.

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

58g ⟨*variable XGAP* 58g⟩≡   (211)
```
XGAP    = Output gap for  business plus oil imports  (100*log(actual/potential)
```
Defines:
  XGAP, used in chunk 223.

59a $\langle$*equation xgap* 59a$\rangle\equiv$ (244)
    `xgap: xgap - xgap_aerr = 100*log(xgo/xgpot)`

Defines:
   `xgap`, used in chunks 170–76 and 182–87.
Uses `xgo` 50b and `xgpot` 52c.

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

59b $\langle$*variable XGAP2* 59b$\rangle\equiv$ (211)
    `XGAP2     = Output gap for GDP (100*log(actual/potential)`
Defines:
   `XGAP2`, used in chunk 223.

59c $\langle$*equation xgap2* 59c$\rangle\equiv$ (244)
    `xgap2: xgap2 - xgap2_aerr = 100 * log(xgdo/xgdpt)`

Defines:
   `xgap2`, used in chunks 40b, 50, 62d, 86b, 114d, 116a, 117d, 119e, 121b, 122d, 127d, 130b,
    132–36, 139–41, 154a, 158b, 177–81, 188, and 189b.
Uses `xgdo` 56c and `xgdpt` 55c.

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

59d $\langle$*variable HGX* 59d$\rangle\equiv$ (211)
    `HGX       = Trend growth rate of XG, cw 2009$ (annual rate)`
Defines:
   `HGX`, used in chunk 223.
Uses `XG` 51d.

59e $\langle$*equation hgx* 59e$\rangle\equiv$ (244)
    `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 28, 29a, 41b, 54d, 60b, 69c, and 184–86.
Uses `hks` 31a, `hlept` 68d, `hmfpt` 52f, `hqlww` 61e, `lqualt` 200f, and `veoa` 54a.

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

60a   ⟨*variable HXBT* 60a⟩≡   (211)
```
HXBT     = Trend rate of growth of XB   , cw 2009$ (annual rate)
```
Defines:
  HXBT, used in chunk 223.
Uses XB 51b.

60b   ⟨*equation hxbt* 60b⟩≡   (244)
```
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 60d.
Uses ceng 41b, empn 42a, empt 54d, hgx 59e, and pceng 103a.

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

60c   ⟨*variable HGGDPT* 60c⟩≡   (211)
```
HGGDPT   = Trend growth rate of XGDP, cw 2009$ (annual rate)
```
Defines:
  HGGDPT, used in chunk 223.
Uses XGDP 48c.

60d   ⟨*equation hggdpt* 60d⟩≡   (244)
```
hggdpt: hggdpt - hggdpt_aerr = hxbt + huxb
```

Defines:
  hggdpt, used in chunks 20e, 21a, 115c, 117a, 118d, 120e, 122–24, 126a, 159b, 179–81,
    and 187c.
Uses huxb 58e and hxbt 60b.

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

60e   ⟨*variable XGDPTN* 60e⟩≡   (211)
```
XGDPTN   = Potential GDP, current $
```
Defines:
  XGDPTN, used in chunk 223.

61a ⟨*equation xgdptn* 61a⟩≡ (244)
```
xgdptn: xgdptn - xgdptn_aerr = .01*pgdp*xgdpt
```

Defines:
  xgdptn, used in chunks 45c, 84d, 115c, 117a, 118d, 120e, 122–24, and 126a.
Uses pgdp 106f and xgdpt 55c.

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

61b ⟨*variable QLWW* 61b⟩≡ (211)
```
QLWW     = Trend workweek,  business sector (employee and  self-employed)
```
Defines:
  QLWW, used in chunk 223.

61c ⟨*equation qlww* 61c⟩≡ (244)
```
qlww: log(qlww) - qlww_aerr = log(qlww(-1)) + hqlww(-1)/400
```

Defines:
  qlww, used in chunks 52c, 57e, 66d, and 69a.
Uses hqlww 61e.

2.5.13   e.5 HQLWW: Trend growth rate of workweek

61d ⟨*variable HQLWW* 61d⟩≡ (211)
```
HQLWW    = Trend growth rate of workweek
```
Defines:
  HQLWW, used in chunk 223.

61e ⟨*equation hqlww* 61e⟩≡ (244)
```
hqlww: hqlww - hqlww_aerr = y_hqlww(1) * hqlww(-1) + (1-y_hqlww(1)) * y_hqlww(2)
```

Defines:
  hqlww, used in chunks 57e, 59e, 61c, 69c, and 182a.
Uses y_hqlww 61f.

61f ⟨*coefficient y_hqlww* 61f⟩≡ (253)
```
y_hqlww 2       .95,-0.3129029344874886
```
Defines:
  y_hqlww, used in chunk 61e.

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

62a   ⟨*variable LEP* 62a⟩≡   (211)
```
LEP      = Employment in  business sector (employee and  self-employed)
```
Defines:
    LEP, used in chunks 68c and 223.

62b   ⟨*equation lep* 62b⟩≡   (244)
```
lep: lep - lep_aerr = lhp / lww
```

Defines:
    lep, used in chunk 63e.
Uses lhp 56e and lww 57e.

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

62c   ⟨*variable LEO* 62c⟩≡   (211)
```
LEO      = Difference between household and business sector payroll employment, less
```
Defines:
    LEO, used in chunk 223.
Uses emp 41e.

62d   ⟨*equation leo* 62d⟩≡   (244)
```
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 63e.
Uses qleor 201g, qlf 66f, xgap2 59c, and y_leo 62e.

62e   ⟨*coefficient y_leo* 62e⟩≡   (253)
```
y_leo    2        0.6995814979956745,-0.01620869768699893
```
Defines:
    y_leo, used in chunk 62d.

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

62f   ⟨*variable LEF* 62f⟩≡   (211)
```
LEF      = Federal civilian employment ex. gov. enterprise
```
Defines:
    LEF, used in chunks 207a and 223.
Uses ex 39c.

63a   ⟨*equation lef* 63a⟩≡   (244)
```
lef: d( log(lef), 0, 1 ) - lef_aerr = d( log(ulef), 0, 1 )  _
                      + d( log(egfl), 0, 1 )  _
                - dglprd*(d( log(lprdt), 0, 1 ))
```

Defines:
  `lef`, used in chunks 63e and 67b.
Uses `dglprd` 197d, `egfl` 116a, `lprdt` 69a, and `ulef` 207a.

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

63b   ⟨*variable LES* 63b⟩≡   (211)
```
LES     = S&L government employment ex. gov. enterprise
```
Defines:
  `LES`, used in chunks 207b and 223.
Uses `ex` 39c.

63c   ⟨*equation les* 63c⟩≡   (244)
```
les: d( log(les), 0, 1 ) - les_aerr = d( log(ules), 0, 1 )  _
                      + d( log(egsl), 0, 1 )  _
                - dglprd*(d( log(lprdt), 0, 1 ))
```

Defines:
  `les`, used in chunks 63e and 67e.
Uses `dglprd` 197d, `egsl` 121b, `lprdt` 69a, and `ules` 207b.

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

63d   ⟨*variable LEH* 63d⟩≡   (211)
```
LEH     = Civilian employment (break adjusted)
```
Defines:
  `LEH`, used in chunk 223.

63e   ⟨*equation leh* 63e⟩≡   (244)
```
leh: leh - leh_aerr = lep + leo + les + lef
```

Defines:
  `leh`, used in chunk 65f.
Uses `lef` 63a, `leo` 62d, `lep` 62b, and `les` 63c.

2.5.19   e.11 LFPR: Labor force participation rate

64a   ⟨*variable LFPR* 64a⟩≡   (211)
         LFPR   = Labor force participation rate
         Defines:
           LFPR, used in chunk 223.

64b   ⟨*equation lfpr* 64b⟩≡   (244)
         lfpr: d(lfpr, 0, 1) - lfpr_aerr = hqlfpr _
                                   + y_lfpr(1) * (qlfpr(-1) - lfpr(-1)) _
                                   + y_lfpr(2) * (lur(-1) - lurnat(-1))

         Defines:
           lfpr, used in chunk 65d.
         Uses hqlfpr 65a, lur 65f, lurnat 69e, qlfpr 64e, and y_lfpr 64c.

64c   ⟨*coefficient y_lfpr* 64c⟩≡   (253)
         y_lfpr 2   0.5580285205989896,-0.00087555667363690850
         Defines:
           y_lfpr, used in chunk 64b.

2.5.20   e.12 QLFPR: Trend labor force participation rate

64d   ⟨*variable QLFPR* 64d⟩≡   (211)
         QLFPR   = Trend labor force participation rate
         Defines:
           QLFPR, used in chunks 64f and 223.

64e   ⟨*equation qlfpr* 64e⟩≡   (244)
         qlfpr: qlfpr - qlfpr_aerr = qlfpr(-1) + hqlfpr

         Defines:
           qlfpr, used in chunks 64b, 66f, and 68d.
         Uses hqlfpr 65a.

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

64f   ⟨*variable HQLFPR* 64f⟩≡   (211)
         HQLFPR   = Drift component of change in QLFPR
         Defines:
           HQLFPR, used in chunk 223.
         Uses QLFPR 64d.

65a   ⟨*equation hqlfpr* 65a⟩≡   (244)
```
hqlfpr: hqlfpr - hqlfpr_aerr = y_hqlfpr(1) + y_hqlfpr(2)*hqlfpr(-1)
```

Defines:
   hqlfpr, used in chunks 64, 67, and 68d.
Uses y_hqlfpr 65b.

65b   ⟨*coefficient y_hqlfpr* 65b⟩≡   (253)
```
y_hqlfpr          2          0.00,0.95
```
Defines:
   y_hqlfpr, used in chunk 65a.

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

65c   ⟨*variable LF* 65c⟩≡   (211)
```
LF        = Civilian labor force (break adjusted)
```
Defines:
   LF, used in chunk 223.

65d   ⟨*equation lf* 65d⟩≡   (244)
```
lf: lf - lf_aerr = lfpr * n16
```

Defines:
   lf, used in chunk 65f.
Uses lfpr 64b and n16 200h.

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

65e   ⟨*variable LUR* 65e⟩≡   (211)
```
LUR        = Civilian unemployment rate (break adjusted)
```
Defines:
   LUR, used in chunk 223.

65f   ⟨*equation lur* 65f⟩≡   (244)
```
lur: lur - lur_aerr = 100*(1 - leh/lf)
```

Defines:
   lur, used in chunks 64b, 66b, 87e, 139e, 141c, 143b, 177a, and 178a.
Uses leh 63e and lf 65d.

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

66a   ⟨*variable LURBLS* 66a⟩≡   (211)
```
LURBLS   = Civilian unemployment rate (published)
```
Defines:
     `LURBLS`, used in chunk 223.

66b   ⟨*equation lurbls* 66b⟩≡   (244)
```
lurbls: lurbls - lurbls_aerr = lur
```

Defines:
     `lurbls`, never used.
Uses `lur` 65f.

2.5.25   e.17 QLEP: Desired level of business employment

66c   ⟨*variable QLEP* 66c⟩≡   (211)
```
QLEP     = Desired level of  business employment
```
Defines:
     `QLEP`, used in chunk 223.

66d   ⟨*equation qlep* 66d⟩≡   (244)
```
qlep: qlep - qlep_aerr = lhp / qlww
```

Defines:
     `qlep`, never used.
Uses `lhp` 56e and `qlww` 61c.

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

66e   ⟨*variable QLF* 66e⟩≡   (211)
```
QLF      = Desired level of civilian labor force
```
Defines:
     `QLF`, used in chunk 223.

66f   ⟨*equation qlf* 66f⟩≡   (244)
```
qlf: qlf - qlf_aerr = qlfpr * n16
```

Defines:
     `qlf`, used in chunks 62d and 68b.
Uses `n16` 200h and `qlfpr` 64e.

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

67a   ⟨*variable LEFT* 67a⟩≡   (211)
           LEFT   = Federal civilian employment ex. gov. enterprise, trend
           Defines:
             LEFT, used in chunk 223.
           Uses ex 39c.

67b   ⟨*equation left* 67b⟩≡   (244)
           left: left - left_aerr = y_left(1) * left(-1) * (hqlfpr+n16/n16(-1))   _
                            + y_left(2) * lef

           Defines:
             left, used in chunk 68.
           Uses hqlfpr 65a, lef 63a, n16 200h, and y_left 67c.

67c   ⟨*coefficient y_left* 67c⟩≡   (253)
           y_left 2   0.90000000000000000E+00,0.10000000000000000E+00
           Defines:
             y_left, used in chunk 67b.

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

67d   ⟨*variable LEST* 67d⟩≡   (211)
           LEST   = S&L government employment ex. gov. enterprise, trend
           Defines:
             LEST, used in chunk 223.
           Uses ex 39c.

67e   ⟨*equation lest* 67e⟩≡   (244)
           lest: lest - lest_aerr = y_lest(1) * lest(-1) * (hqlfpr+n16/n16(-1))   _
                            + y_lest(2) * les

           Defines:
             lest, used in chunk 68.
           Uses hqlfpr 65a, les 63c, n16 200h, and y_lest 67f.

67f   ⟨*coefficient y_lest* 67f⟩≡   (253)
           y_lest 2   0.90000000000000000E+00,0.10000000000000000E+00
           Defines:
             y_lest, used in chunk 67e.

2.5.29   e.21 LEPPOT: Potential employment in business sector

68a   ⟨*variable LEPPOT* 68a⟩≡   (211)
```
LEPPOT   = Potential employment in  business sector
```
Defines:
   LEPPOT, used in chunk 223.

68b   ⟨*equation leppot* 68b⟩≡   (244)
```
leppot: leppot - leppot_aerr = qlf*(1-.01*lurnat - qleor) - left - lest
```

Defines:
   leppot, used in chunks 52c, 68d, and 69a.
Uses left 67b, lest 67e, lurnat 69e, qleor 201g, and qlf 66f.

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

68c   ⟨*variable HLEPT* 68c⟩≡   (211)
```
HLEPT    = Trend growth rate of LEP (annual rate)
```
Defines:
   HLEPT, used in chunk 223.
Uses LEP 62a.

68d   ⟨*equation hlept* 68d⟩≡   (244)
```
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 57e, 59e, 69c, and 182a.
Uses dmpstb 198a, hqlfpr 65a, left 67b, leppot 68b, lest 67e, lurnat 69e, n16 200h,
   qleor 201g, and qlfpr 64e.

2.5.31   e.23 LPRDT: Trend labor productivity

68e   ⟨*variable LPRDT* 68e⟩≡   (211)
```
LPRDT    = Trend labor productivity
```
Defines:
   LPRDT, used in chunk 223.

69a   ⟨*equation lprdt* 69a⟩≡   (244)

```
lprdt: log(lprdt) - lprdt_aerr  = log(xgpot) - log(leppot) - log(qlww)
```

Defines:
    lprdt, used in chunks 57c, 63, 91e, 107, and 182a.
Uses leppot 68b, qlww 61c, and xgpot 52c.

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

69b   ⟨*variable HLPRDT* 69b⟩≡   (211)

```
HLPRDT   = Trend growth rate of output per hour
```
Defines:
    HLPRDT, used in chunk 223.

69c   ⟨*equation hlprdt* 69c⟩≡   (244)

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

Defines:
    hlprdt, used in chunks 56e, 87e, 177a, and 178a.
Uses hgx 59e, hlept 68d, and hqlww 61e.

2.5.33   e.25 LURNAT: Natural rate of unemployment

69d   ⟨*variable LURNAT* 69d⟩≡   (211)

```
LURNAT   = Natural rate of unemployment
```
Defines:
    LURNAT, used in chunk 223.

69e   ⟨*equation lurnat* 69e⟩≡   (244)

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

Defines:
    lurnat, used in chunks 64b, 68, 87e, 139e, 141c, 177a, and 178a.

2.6   Nominal Income

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

69f   ⟨*variable XPN* 69f⟩≡   (211)

```
XPN      = Final sales plus imports less government labor, current $
```
Defines:
    XPN, used in chunk 223.

70a $\langle equation\ xpn\ 70a\rangle\equiv$ (244)
```
xpn: xpn - xpn_aerr = .01 * pxp * xp
```

Defines:
    xpn, used in chunks 51a, 70c, 88c, 92d, 93b, and 98a.
Uses pxp 93b and xp 51a.

2.6.2   f.2 XGDPN: GDP, current \$

70b $\langle variable\ XGDPN\ 70b\rangle\equiv$ (211)
```
XGDPN     = GDP, current $
```
Defines:
    XGDPN, used in chunk 223.

70c $\langle equation\ xgdpn\ 70c\rangle\equiv$ (244)
```
xgdpn: xgdpn - xgdpn_aerr = xpn + ein - emn + egfln + egsln
```

Defines:
    xgdpn, used in chunks 47e, 49, 70, 71, 77b, 106f, 133d, 135e, and 163d.
Uses egfln 116d, egsln 121e, ein 36d, emn 42c, and xpn 70a.

2.6.3   f.3 XFSN: Final sales of gross domestic product, current \$

70d $\langle variable\ XFSN\ 70d\rangle\equiv$ (211)
```
XFSN      = Final sales of gross domestic product, current $
```
Defines:
    XFSN, used in chunk 223.

70e $\langle equation\ xfsn\ 70e\rangle\equiv$ (244)
```
xfsn: xfsn - xfsn_aerr = xgdpn - ein
```

Defines:
    xfsn, used in chunks 48b and 49a.
Uses ein 36d and xgdpn 70c.

2.6.4   f.4 XGDEN: Nominal Absorption, current \$

70f $\langle variable\ XGDEN\ 70f\rangle\equiv$ (211)
```
XGDEN     = Nominal Absorption, current $
```
Defines:
    XGDEN, used in chunks 204f and 223.

71a   ⟨*equation xgden* 71a⟩≡   (244)
             xgden: xgden - xgden_aerr = xgdpn + emn - exn

Defines:
    xgden, used in chunks 40b and 49e.
Uses emn 42c, exn 39f, and xgdpn 70c.

2.6.5   f.5 XBN: Business output (BEA definition), current $

71b   ⟨*variable XBN* 71b⟩≡   (211)
             XBN   = Business output (BEA definition), current $
Defines:
    XBN, used in chunk 223.

71c   ⟨*equation xbn* 71c⟩≡   (244)
             xbn: xbn - xbn_aerr = pxb/100*xbo + xgdpn -xgdo*pgdp/100

Defines:
    xbn, used in chunks 51c, 71e, 75b, and 128c.
Uses pgdp 106f, pxb 108d, xbo 50e, xgdo 56c, and xgdpn 70c.

2.6.6   f.6 XGN: Output of business sector plus oil imports, current $

71d   ⟨*variable XGN* 71d⟩≡   (211)
             XGN   = Output of business sector plus oil imports, current $
Defines:
    XGN, used in chunk 223.

71e   ⟨*equation xgn* 71e⟩≡   (244)
             xgn: xgn - xgn_aerr = xbn + empn

Defines:
    xgn, used in chunks 92d and 108b.
Uses empn 42a and xbn 71c.

2.6.7   f.7 JCCACN: Consumption of fixed capital, corporate, current $

71f   ⟨*variable JCCACN* 71f⟩≡   (211)
             JCCACN   = Consumption of fixed capital, corporate, current $
Defines:
    JCCACN, used in chunks 206c and 223.

72a   ⟨equation jccacn 72a⟩≡   (244)
```
jccacn: jccacn - jccacn_aerr = ujccac*(jccan - jygfgn - jygfen - jygsgn - jygsen _
                               -.01*jrh*phr(-1)*pxp(-1)*kh(-1))
```

Defines:
   jccacn, used in chunks 74b and 78d.
Uses jccan 72c, jrh 200a, jygfen 72e, jygfgn 73b, jygsen 73d, jygsgn 73f, kh 23a, phr 95d,
   pxp 93b, and ujccac 206c.

2.6.8   f.8 JCCAN: Consumption of fixed capital, current $

72b   ⟨variable JCCAN 72b⟩≡   (211)
```
JCCAN     = Consumption of fixed capital, current $
```
Defines:
   JCCAN, used in chunks 206b and 223.

72c   ⟨equation jccan 72c⟩≡   (244)
```
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 72a and 74.
Uses jrh 200a, jrpd 200b, jrps 200d, jygfen 72e, jygfgn 73b, jygsen 73d, jygsgn 73f,
   kh 23a, kpd 29g, kps 30d, phr 95d, pkpdr 107e, ppsr 96e, pxp 93b, and ujcca 206b.

2.6.9   f.9 JYGFEN: CFC, federal government enterprises, current $

72d   ⟨variable JYGFEN 72d⟩≡   (211)
```
JYGFEN    = CFC, federal government enterprises, current $
```
Defines:
   JYGFEN, used in chunks 206d and 223.

72e   ⟨equation jygfen 72e⟩≡   (244)
```
jygfen: jygfen - jygfen_aerr = ujygfe *  (.01 * pgdp * xgdpt)
```

Defines:
   jygfen, used in chunks 72, 74b, 124a, 133d, and 138b.
Uses pgdp 106f, ujygfe 206d, and xgdpt 55c.

2.6.10   f.10 JYGFGN: CFC, federal government, general, current $

73a   ⟨*variable JYGFGN* 73a⟩≡   (211)
         JYGFGN   = CFC, federal government, general, current $
         Defines:
            JYGFGN, used in chunks 206e and 223.

73b   ⟨*equation jygfgn* 73b⟩≡   (244)
         jygfgn: jygfgn - jygfgn_aerr = ujygfg * (.01 * pgdp * xgdpt)

         Defines:
            jygfgn, used in chunks 72, 74b, 124a, 133d, and 138b.
         Uses pgdp 106f, ujygfg 206e, and xgdpt 55c.

2.6.11   f.11 JYGSEN: CFC, state and local government enterprises, current $

73c   ⟨*variable JYGSEN* 73c⟩≡   (211)
         JYGSEN   = CFC, state and local government enterprises, current $
         Defines:
            JYGSEN, used in chunks 206f and 223.

73d   ⟨*equation jygsen* 73d⟩≡   (244)
         jygsen: jygsen - jygsen_aerr = ujygse * (.01 * pgdp * xgdpt)

         Defines:
            jygsen, used in chunks 72, 74b, 128a, 135e, and 138d.
         Uses pgdp 106f, ujygse 206f, and xgdpt 55c.

2.6.12   f.12 JYGSGN: CFC, state and local government, general, current $

73e   ⟨*variable JYGSGN* 73e⟩≡   (211)
         JYGSGN   = CFC, state and local government, general, current $
         Defines:
            JYGSGN, used in chunks 206g and 223.

73f   ⟨*equation jygsgn* 73f⟩≡   (244)
         jygsgn: jygsgn - jygsgn_aerr = ujygsg * (.01 * pgdp * xgdpt)

         Defines:
            jygsgn, used in chunks 72, 74b, 128a, 135e, and 138d.
         Uses pgdp 106f, ujygsg 206g, and xgdpt 55c.

2.6.13   f.13 JYNCN: Noncorporate business CFC, current $

74a   ⟨*variable JYNCN* 74a⟩≡   (211)
        ```
        JYNCN     = Noncorporate business CFC, current $
        ```
        Defines:
            JYNCN, used in chunk 223.

74b   ⟨*equation jyncn* 74b⟩≡   (244)
        ```
        jyncn: jyncn - jyncn_aerr = jccan - jccacn - jygfgn - jygfen - jygsgn - jygsen
        ```

        Defines:
            jyncn, never used.
        Uses jccacn 72a, jccan 72c, jygfen 72e, jygfgn 73b, jygsen 73d, and jygsgn 73f.

2.6.14   f.14 YNIN: National income

74c   ⟨*variable YNIN* 74c⟩≡   (211)
        ```
        YNIN      = National income
        ```
        Defines:
            YNIN, used in chunks 209h and 223.

74d   ⟨*equation ynin* 74d⟩≡   (244)
        ```
        ynin: ynin - ynin_aerr = uyni*(xgdin+fynin-jccan)
        ```

        Defines:
            ynin, used in chunks 75d, 77b, and 86b.
        Uses fynin 44d, jccan 72c, uyni 209h, and xgdin 86e.

2.6.15   f.15 YNILN: Labor income (national income component)

74e   ⟨*variable YNILN* 74e⟩≡   (211)
        ```
        YNILN     = Labor income (national income component)
        ```
        Defines:
            YNILN, used in chunk 223.

74f   ⟨*equation yniln* 74f⟩≡   (244)
        ```
        yniln: yniln - yniln_aerr = 0.01 *  uyl * (pl*lhp + pgfl*egfl + pgsl*egsl)
        ```

        Defines:
            yniln, used in chunks 75d, 77b, 81f, 86b, 132a, and 137f.
        Uses egfl 116a, egsl 121b, lhp 56e, pgfl 107a, pgsl 107c, pl 90d, and uyl 209g.

2.6.16   f.16 YNISEN: Propprietors' income (national income component)

75a   ⟨*variable YNISEN* 75a⟩≡   (211)
    YNISEN   = Propprietors' income (national income component)
   Defines:
    YNISEN, used in chunk 223.

75b   ⟨*equation ynisen* 75b⟩≡   (244)
    ynisen: ynisen - ynisen_aerr = uysen*xbn

   Defines:
    ynisen, used in chunks 77b and 83e.
   Uses uysen 210c and xbn 71c.

2.6.17   f.17 YNIIN: Net interest and rental income (national income component)

75c   ⟨*variable YNIIN* 75c⟩≡   (211)
    YNIIN   = Net interest and rental income (national income component)
   Defines:
    YNIIN, used in chunk 223.

75d   ⟨*equation yniin* 75d⟩≡   (244)
```
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)*(wdnfcn(-1)/(ynin(-1)-yniln(-1)))) _
                 + y_yniin(5) * (.01*d( rbbbe*(wdnfcn(-1)/(ynin(-1)-yniln(-1))), 0, 1 )) _
                 + y_yniin(6) * (.01*fnin(-1)/(ynin(-1)-yniln(-1)))
```

   Defines:
    yniin, used in chunks 77b and 81b.
   Uses fnin 43e, kh 23a, phr 95d, pxp 93b, rbbbe 150f, rrmet 157f, wdnfcn 86b, y_yniin 75e,
    yniln 74f, and ynin 74d.

75e   ⟨*coefficient y_yniin* 75e⟩≡   (253)
    y_yniin 6   0.01335460515030035,0.8715712577633621,0.03107757397810296,0.1284287422366379,0
   Defines:
    y_yniin, used in chunk 75d.

2.6.18   f.18 QYNIDN: Desired level of dividends

76a   ⟨*variable QYNIDN* 76a⟩≡   (211)
           ```
           QYNIDN   = Desired level of dividends
           ```
           Defines:
              QYNIDN, used in chunk 223.

76b   ⟨*equation qynidn* 76b⟩≡   (244)
           ```
           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 76e and 187c.
           Uses tfcin 131a, tscin 136f, y_qynidn 76c, and ynicpn 77b.

76c   ⟨*coefficient y_qynidn* 76c⟩≡   (253)
           ```
           y_qynidn         3          -0.9889159016018153,0.3614481909275686,1
           ```
           Defines:
              y_qynidn, used in chunk 76b.

2.6.19   f.19 YNIDN: Dividends (national income component)

76d   ⟨*variable YNIDN* 76d⟩≡   (211)
           ```
           YNIDN    = Dividends (national income component)
           ```
           Defines:
              YNIDN, used in chunks 187b and 223.

76e   ⟨*equation ynidn* 76e⟩≡   (244)
           ```
           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 78d and 83.
           Uses pxb 108d, qynidn 76b, y_ynidn 76f, ymsdn 210d, and zynid 187c.

76f   ⟨*coefficient y_ynidn* 76f⟩≡   (253)
           ```
           y_ynidn 3        0.0903554997290158,-0.1364018197288298,1
           ```
           Defines:
              y_ynidn, used in chunk 76e.

2.6.20   f.20 YNICPN: Corporate profits (national income component)

77a   ⟨*variable YNICPN* 77a⟩≡   (211)
          YNICPN   = Corporate profits (national income component)
          Defines:
             YNICPN, used in chunks 210a and 223.

77b   ⟨*equation ynicpn* 77b⟩≡   (244)
          ynicpn: ynicpn - ynicpn_aerr = uynicp * (@recode((ynin-yniln-yniin-ynisen-tfibn-tsibn+gfsubn+gs

          Defines:
             ynicpn, used in chunks 44b, 76b, 78d, 83a, 131a, 132c, 136f, 153c, 186d, and 189e.
          Uses gfsubn 126d, gssubn 129b, tfcin 131a, tfibn 131c, tscin 136f, tsibn 137b,
             uynicp 210a, xgdpn 70c, yniin 75d, yniln 74f, ynin 74d, and ynisen 75b.

2.6.21   f.21 YPN: Personal income

77c   ⟨*variable YPN* 77c⟩≡   (211)
          YPN   = Personal income
          Defines:
             YPN, used in chunks 210b and 223.

77d   ⟨*equation ypn* 77d⟩≡   (244)
          ypn: ypn - ypn_aerr = uyp * (yhln + yhtn + yhptn)

          Defines:
             ypn, used in chunks 77f, 131e, and 137d.
          Uses uyp 210b, yhln 81f, yhptn 83e, and yhtn 85d.

2.6.22   f.22 YDN: Disposable income

77e   ⟨*variable YDN* 77e⟩≡   (211)
          YDN   = Disposable income
          Defines:
             YDN, used in chunks 209a and 223.

77f   ⟨*equation ydn* 77f⟩≡   (244)
          ydn: ydn - ydn_aerr = uyd * (ypn - tfpn - tspn)

          Defines:
             ydn, used in chunks 78b and 155a.
          Uses tfpn 131e, tspn 137d, uyd 209a, and ypn 77d.

2.6.23   f.23 RSPNIA: Personal saving rate

78a   ⟨*variable RSPNIA* 78a⟩≡   (211)
```
RSPNIA   = Personal saving rate
```
Defines:
   RSPNIA, used in chunk 223.

78b   ⟨*equation rspnia* 78b⟩≡   (244)
```
rspnia: rspnia - rspnia_aerr =  100 * yhsn / ydn
```

Defines:
   rspnia, never used.
Uses ydn 77f and yhsn 84d.

2.6.24   f.24 YCSN: Net corporate cash flow with IVA and CCA

78c   ⟨*variable YCSN* 78c⟩≡   (211)
```
YCSN     = Net corporate cash flow with IVA and CCA
```
Defines:
   YCSN, used in chunk 223.

78d   ⟨*equation ycsn* 78d⟩≡   (244)
```
ycsn: ycsn - ycsn_aerr = ynicpn - tfcin - tscin - ftcin - ynidn + jccacn
```

Defines:
   ycsn, never used.
Uses ftcin 44b, jccacn 72a, tfcin 131a, tscin 136f, ynicpn 77b, and ynidn 76e.

2.6.25   f.25 YKIN: Income from stock of inventories

78e   ⟨*variable YKIN* 78e⟩≡   (211)
```
YKIN     = Income from stock of inventories
```
Defines:
   YKIN, used in chunk 223.

78f   ⟨*equation ykin* 78f⟩≡   (244)
```
ykin: ykin - ykin_aerr = .01*rtinv*pxb* (ki + ki(-1)) /2
```

Defines:
   ykin, used in chunk 31a.
Uses ki 27b, pxb 108d, and rtinv 33b.

2.6.26   f.26 YKPDN: Income from stock of equipment

79a   ⟨*variable YKPDN* 79a⟩≡   (211)

```
YKPDN    = Income from stock of equipment
```

Defines:
   YKPDN, used in chunk 223.

79b   ⟨*equation ykpdn* 79b⟩≡   (244)

```
ykpdn: ykpdn - ykpdn_aerr = .01*rtpd*pxb* ( kpd +  kpd(-1)) /2
```

Defines:
   ykpdn, used in chunk 31a.
Uses kpd 29g, pxb 108d, and rtpd 32a.

2.6.27   f.27 YKPSN: Income from stock of nonresidential structures

79c   ⟨*variable YKPSN* 79c⟩≡   (211)

```
YKPSN    = Income from stock of nonresidential structures
```

Defines:
   YKPSN, used in chunk 223.

79d   ⟨*equation ykpsn* 79d⟩≡   (244)

```
ykpsn: ykpsn - ykpsn_aerr = .01*rtps*pxb* ( kps +  kps(-1)) /2
```

Defines:
   ykpsn, used in chunk 31a.
Uses kps 30d, pxb 108d, and rtps 32e.

2.6.28   f.28 YH: Income, household, total (real after-tax)

79e   ⟨*variable YH* 79e⟩≡   (211)

```
YH       = Income, household, total (real after-tax)
```

Defines:
   YH, used in chunks 82c, 83b, 85, and 223.

79f   ⟨*equation yh* 79f⟩≡   (244)

```
yh: yh - yh_aerr = yhl + yht + yhp
```

Defines:
   yh, used in chunks 83–85.
Uses yhl 81d, yhp 82b, and yht 84f.

2.6.29   f.29 YHGAP: Income, household, total, ratio to XGDP, cyclical component (real after-tax)

80a   ⟨*variable YHGAP* 80a⟩≡   (211)

```
YHGAP    = Income, household, total, ratio to XGDP, cyclical component (real after-ta
```

Defines:
    YHGAP, used in chunk 223.
Uses XGDP 48c.

80b   ⟨*equation yhgap* 80b⟩≡   (244)

```
yhgap: yhgap - yhgap_aerr = 100*(yhshr/zyhst-1)
```

Defines:
    yhgap, used in chunks 179–81, 188, and 189b.
Uses yhshr 84b and zyhst 167a.

2.6.30   f.30 YHIBN: Consumer interest payments to business

80c   ⟨*variable YHIBN* 80c⟩≡   (211)

```
YHIBN    = Consumer interest payments to business
```

Defines:
    YHIBN, used in chunk 223.

80d   ⟨*equation yhibn* 80d⟩≡   (244)

```
yhibn: d( log(yhibn), 0, 1 ) - yhibn_aerr _
                        = y_yhibn(1) * ( picxfe/1600 +  picxfe(-1)/1600 +  picxfe
                        + y_yhibn(2)  _
                        + y_yhibn(3) * log(ecnian(-1)/yhibn(-1)) _
                        + y_yhibn(4) * (d( log(yhibn(-1)), 0, 1 ) - ( picxfe(-1)/1
                        + y_yhibn(5) * d79a _
                        + y_yhibn(6) * rcar(-1) _
                        + y_yhibn(7) * log(.01*pcdr(-1)*pcnia(-1)*ecd(-1)/ecnian(-1
                        + y_yhibn(8) * d( rffe, 0, 1 )
```

Defines:
    yhibn, used in chunks 81b, 83a, 84d, and 155a.
Uses ecd 18b, ecnian 22a, pcdr 112f, pcnia 89b, picxfe 87b, rcar 151d, rffe 144e,
    and y_yhibn 80e.

80e   ⟨*coefficient y_yhibn* 80e⟩≡   (253)

```
y_yhibn 8        1,-0.1336307554530098,0.06545518537060361,0.2942182559897778,0.023569
```

Defines:
    y_yhibn, used in chunk 80d.

2.6.31 f.31 YHIN: Income, household, net interest and rent

81a ⟨*variable YHIN* 81a⟩≡ (211)
```
YHIN     = Income, household, net interest and rent
```
Defines:
  YHIN, used in chunks 209b and 223.

81b ⟨*equation yhin* 81b⟩≡ (244)
```
yhin: yhin - yhin_aerr = uyhi * (yniin + gfintn + gsintn + yhibn)
```

Defines:
  yhin, used in chunk 83e.
Uses gfintn 124c, gsintn 128c, uyhi 209b, yhibn 80d, and yniin 75d.

2.6.32 f.32 YHL: Income, household, labor compensation (real after-tax)

81c ⟨*variable YHL* 81c⟩≡ (211)
```
YHL      = Income, household, labor compensation (real after-tax)
```
Defines:
  YHL, used in chunk 223.

81d ⟨*equation yhl* 81d⟩≡ (244)
```
yhl: yhl - yhl_aerr = (1-tryh)*yhln/(.01*pcnia)
```

Defines:
  yhl, used in chunks 17b and 79f.
Uses pcnia 89b, tryh 138f, and yhln 81f.

2.6.33 f.33 YHLN: Income, household, labor compensation

81e ⟨*variable YHLN* 81e⟩≡ (211)
```
YHLN     = Income, household, labor compensation
```
Defines:
  YHLN, used in chunks 209c and 223.

81f ⟨*equation yhln* 81f⟩≡ (244)
```
yhln: yhln - yhln_aerr = uyhln * (yniln - tfsin - tssin)
```

Defines:
  yhln, used in chunks 77d, 81d, 84d, and 138f.
Uses tfsin 132a, tssin 137f, uyhln 209c, and yniln 74f.

2.6.34   f.34 YHP: Income, household, property (real after-tax)

82a   ⟨*variable YHP* 82a⟩≡   (211)
```
YHP      = Income, household, property (real after-tax)
```
Defines:
    YHP, used in chunk 223.

82b   ⟨*equation yhp* 82b⟩≡   (244)
```
yhp: yhp - yhp_aerr = ((1-tryh)*yhptn+yhpntn)/(.01*pcnia)
```

Defines:
    yhp, used in chunks 79f and 83c.
Uses `pcnia` 89b, `tryh` 138f, `yhpntn` 83a, and `yhptn` 83e.

2.6.35   f.35 YHPGAP: Income, household, property, ratio to YH, cyclical component (real after-tax)

82c   ⟨*variable YHPGAP* 82c⟩≡   (211)
```
YHPGAP   = Income, household, property, ratio to YH, cyclical component (real after-t
```
Defines:
    YHPGAP, used in chunk 223.
Uses `YH` 79e.

82d   ⟨*equation yhpgap* 82d⟩≡   (244)
```
yhpgap: yhpgap - yhpgap_aerr = 100*(yhpshr/zyhpst-1)
```

Defines:
    yhpgap, used in chunks 179–81 and 188d.
Uses `yhpshr` 83c and `zyhpst` 167d.

2.6.36   f.36 YHPNTN: Income, household, property, non-taxable component

82e   ⟨*variable YHPNTN* 82e⟩≡   (211)
```
YHPNTN   = Income, household, property, non-taxable component
```
Defines:
    YHPNTN, used in chunks 174d and 223.

83a   ⟨*equation yhpntn* 83a⟩≡   (244)

```
yhpntn: yhpntn - yhpntn_aerr = .01*pcnia*pcdr*yhpcd  _
                      - yhibn + ynicpn - tfcin - tscin - ynidn _
                      - .01 * zpi10 *(gfdbtn+gsdbtn)
```

Defines:
    yhpntn, used in chunk 82b.
Uses gfdbtn 124a, gsdbtn 128a, pcdr 112f, pcnia 89b, tfcin 131a, tscin 136f, yhibn 80d,
    yhpcd 24e, ynicpn 77b, ynidn 76e, and zpi10 174e.

2.6.37   f.37 YHPSHR: Income, household, property, ratio to YH (real after-tax)

83b   ⟨*variable YHPSHR* 83b⟩≡   (211)

```
YHPSHR   = Income, household, property, ratio to YH (real after-tax)
```

Defines:
    YHPSHR, used in chunk 223.
Uses YH 79e.

83c   ⟨*equation yhpshr* 83c⟩≡   (244)

```
yhpshr: yhpshr - yhpshr_aerr = yhp/yh
```

Defines:
    yhpshr, used in chunks 82d and 167d.
Uses yh 79f and yhp 82b.

2.6.38   f.38 YHPTN: Income, household, property, taxable component

83d   ⟨*variable YHPTN* 83d⟩≡   (211)

```
YHPTN    = Income, household, property, taxable component
```

Defines:
    YHPTN, used in chunks 209d and 223.

83e   ⟨*equation yhptn* 83e⟩≡   (244)

```
yhptn: yhptn - yhptn_aerr = uyhptn*(ynisen+yhin+ynidn)
```

Defines:
    yhptn, used in chunks 77d, 82b, 84d, and 138f.
Uses uyhptn 209d, yhin 81b, ynidn 76e, and ynisen 75b.

2.6.39   f.39 YHSHR: Income, household, total, ratio to XGDP (real after-tax)

84a   ⟨*variable YHSHR* 84a⟩≡   (211)
```
YHSHR    = Income, household, total, ratio to XGDP (real after-tax)
```
Defines:
    YHSHR, used in chunk 223.
Uses XGDP 48c.

84b   ⟨*equation yhshr* 84b⟩≡   (244)
```
yhshr: yhshr - yhshr_aerr = yh/xgdp
```

Defines:
    yhshr, used in chunks 80b and 167a.
Uses xgdp 49a and yh 79f.

2.6.40   f.40 YHSN: Personal saving

84c   ⟨*variable YHSN* 84c⟩≡   (211)
```
YHSN     = Personal saving
```
Defines:
    YHSN, used in chunk 223.

84d   ⟨*equation yhsn* 84d⟩≡   (244)
```
yhsn: yhsn - yhsn_aerr = yhln + yhtn + yhptn - tfpn - tspn - ecnian - yhibn _
                + uyhsn * xgdptn
```

Defines:
    yhsn, used in chunk 78b.
Uses ecnian 22a, tfpn 131e, tspn 137d, uyhsn 209e, xgdptn 61a, yhibn 80d, yhln 81f,
    yhptn 83e, and yhtn 85d.

2.6.41   f.41 YHT: Income, household, transfer (real after-tax), net basis

84e   ⟨*variable YHT* 84e⟩≡   (211)
```
YHT      = Income, household, transfer (real after-tax), net basis
```
Defines:
    YHT, used in chunk 223.

84f   ⟨*equation yht* 84f⟩≡   (244)
```
yht: yht - yht_aerr = yhtn/(.01*pcnia)
```

Defines:
    yht, used in chunks 17b, 79f, and 85f.
Uses pcnia 89b and yhtn 85d.

2.6.42   f.42 YHTGAP: Income, household, transfer, ratio to YH, cyclical component (real after-tax)

85a ⟨*variable YHTGAP* 85a⟩≡   (211)
     YHTGAP   = Income, household, transfer, ratio to YH, cyclical component (real after-tax)
   Defines:
      YHTGAP, used in chunk 223.
   Uses YH 79e.

85b ⟨*equation yhtgap* 85b⟩≡   (244)
     yhtgap: yhtgap - yhtgap_aerr = 100*(yhtshr/zyhtst-1)

   Defines:
      yhtgap, used in chunks 179–81 and 189b.
   Uses yhtshr 85f and zyhtst 168a.

2.6.43   f.43 YHTN: Income, household, transfer payments. net basis

85c ⟨*variable YHTN* 85c⟩≡   (211)
     YHTN   = Income, household, transfer payments. net basis
   Defines:
      YHTN, used in chunks 209f and 223.

85d ⟨*equation yhtn* 85d⟩≡   (244)
     yhtn: yhtn - yhtn_aerr = uyhtn*(gftn+gstn)

   Defines:
      yhtn, used in chunks 77d and 84.
   Uses gftn 127b, gstn 129d, and uyhtn 209f.

2.6.44   f.44 YHTSHR: Income, household, transfer, ratio to YH (real after-tax)

85e ⟨*variable YHTSHR* 85e⟩≡   (211)
     YHTSHR   = Income, household, transfer, ratio to YH (real after-tax)
   Defines:
      YHTSHR, used in chunk 223.
   Uses YH 79e.

85f ⟨*equation yhtshr* 85f⟩≡   (244)
     yhtshr: yhtshr - yhtshr_aerr = yht/yh

   Defines:
      yhtshr, used in chunks 85b and 168a.
   Uses yh 79f and yht 84f.

2.6.45   f.45 WDNFCN: Net financial liabilities, nonfinancial nonfarm corporations

86a   ⟨*variable WDNFCN* 86a⟩≡   (211)
    WDNFCN   = Net financial liabilities, nonfinancial nonfarm corporations

Defines:
  WDNFCN, used in chunk 223.

86b   ⟨*equation wdnfcn* 86b⟩≡   (244)
    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 75d.
Uses xgap2 59c, y_wdnfcn 86c, yniln 74f, and ynin 74d.

86c   ⟨*coefficient y_wdnfcn* 86c⟩≡   (253)
    y_wdnfcn   5   -0.02207644135378071,0.01442097831747879,0.2375257265379373,(

Defines:
  y_wdnfcn, used in chunk 86b.

2.6.46   f.46 XGDIN: Gross domestic income, current $

86d   ⟨*variable XGDIN* 86d⟩≡   (211)
    XGDIN   = Gross domestic income, current $

Defines:
  XGDIN, used in chunk 223.

86e   ⟨*equation xgdin* 86e⟩≡   (244)
    xgdin: xgdin - xgdin_aerr = xgdi *(pgdp/100)

Defines:
  xgdin, used in chunk 74d.
Uses pgdp 106f and xgdi 56a.

2.7   Wages and Prices

2.7.1   g.1 PICXFE: Inflation rate, personal consumption expenditures, ex. food and energy, cw

87a $\langle$*variable PICXFE* 87a$\rangle\equiv$ (211)
```
PICXFE   = Inflation rate, personal consumption expenditures, ex. food and energy, cw
```
Defines:
  PICXFE, used in chunk 223.
Uses ex 39c.

87b $\langle$*equation picxfe* 87b$\rangle\equiv$ (244)
```
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 80d, 88f, 101d, 139–42, 145e, 168d, 176–78, and 223.
Uses pcnia 89b, ptr 168d, qpcnia 92f, y_picxfe 87c, and zpicxfe 177a.

87c $\langle$*coefficient y_picxfe* 87c$\rangle\equiv$ (253)
```
y_picxfe       3        0.644974342322,0.00373609153735,0.98
```
Defines:
  y_picxfe, used in chunk 87b.

2.7.2   g.2 PIECI: Annualized rate of growth of EI hourly compensation

87d $\langle$*variable PIECI* 87d$\rangle\equiv$ (211)
```
PIECI    = Annualized rate of growth of EI hourly compensation
```
Defines:
  PIECI, used in chunk 223.
Uses EI 27d.

87e $\langle$*equation pieci* 87e$\rangle\equiv$ (244)
```
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 90b, 177, 178a, and 223.
Uses hlprdt 69c, huqpct 100d, lur 65f, lurnat 69e, pl 90d, ptr 168d, qpl 92a, y_pieci 88a,
  and zpieci 178a.

88a   ⟨coefficient y_pieci 88a⟩≡   (253)
       y_pieci 4   0.811777544324,-0.0148780773818,0.00186804576867,0.98
       Defines:
         y_pieci, used in chunk 87e.

2.7.3   g.3 PIPXNC: Inflation rate, price of adjusted final sales excluding consumption (annual rate)

88b   ⟨variable PIPXNC 88b⟩≡   (211)
       PIPXNC   = Inflation rate, price of adjusted final sales excluding consumption (annua
       Defines:
         PIPXNC, used in chunk 223.

88c   ⟨equation pipxnc 88c⟩≡   (244)
       pipxnc: pipxnc - pipxnc_aerr = picnia - 1.99 * 400 * huqpct _
                              + y_pipxnc(1) * (pipxnc(-1) - picnia(-1) + 1.99 * 400 * huqpct(-
                              + y_pipxnc(2) * (pipxnc(-2) - picnia(-2) + 1.99 * 400 * huqpct(-
                              + y_pipxnc(3) * .5 * (((emon/xpn) + (emon(-1)/xpn(-1)))) * 4

       Defines:
         pipxnc, used in chunks 90f and 93–98.
       Uses emon 40e, fpxr 163d, huqpct 100d, picnia 88f, xpn 70a, and y_pipxnc 88d.

88d   ⟨coefficient y_pipxnc 88d⟩≡   (253)
       y_pipxnc   3   .462801,.229745,-.284477
       Defines:
         y_pipxnc, used in chunk 88c.

2.7.4   g.4 PICNIA: Inflation rate, personal consumption expenditures, cw

88e   ⟨variable PICNIA 88e⟩≡   (211)
       PICNIA   = Inflation rate, personal consumption expenditures, cw
       Defines:
         PICNIA, used in chunk 223.

88f   ⟨equation picnia 88f⟩≡   (244)
       picnia: picnia - picnia_aerr = picxfe _
                              + ((ucfs + ucfs(-1)) /2) * 400 * d(log(pcfr), 0, 1) _
                              + ((uces + uces(-1)) /2) * 400 * d(log(pcer), 0, 1)

       Defines:
         picnia, used in chunks 88c, 89b, 132c, 141c, 170–76, and 179–89.
       Uses pcer 103c, pcfr 104a, picxfe 87b, uces 104d, and ucfs 105b.

2.7.5   g.5 PCNIA: Price index for personal consumption expenditures, cw (NIPA definition)

89a   ⟨*variable PCNIA* 89a⟩≡   (211)
      PCNIA   = Price index for personal consumption expenditures, cw (NIPA definition)
Defines:
    PCNIA, used in chunks 99f, 100c, 111, 112e, 199f, and 223.

89b   ⟨*equation pcnia* 89b⟩≡   (244)
      pcnia: d(log(pcnia), 0, 1) - pcnia_aerr = picnia / 400

Defines:
    pcnia, used in chunks 21, 22a, 24c, 80–84, 87b, 89d, 93b, 99d, 111c, 113c, 141c, 153–56,
      177a, and 178a.
Uses picnia 88f.

2.7.6   g.6 PCPI: Consumer price index,total

89c   ⟨*variable PCPI* 89c⟩≡   (211)
      PCPI   = Consumer price index,total
Defines:
    PCPI, used in chunks 207c and 223.

89d   ⟨*equation pcpi* 89d⟩≡   (244)
      pcpi: pcpi - pcpi_aerr = upcpi * exp(.025*log(pcer)) * pcnia

Defines:
    pcpi, used in chunk 164d.
Uses pcer 103c, pcnia 89b, and upcpi 207c.

2.7.7   g.7 PCPIX: Consumer price index,excluding food and energy

89e   ⟨*variable PCPIX* 89e⟩≡   (211)
      PCPIX   = Consumer price index,excluding food and energy
Defines:
    PCPIX, used in chunks 207d and 223.

89f   ⟨*equation pcpix* 89f⟩≡   (244)
      pcpix: pcpix - pcpix_aerr = upcpix * pcxfe

Defines:
    pcpix, never used.
Uses pcxfe 101d and upcpix 207d.

2.7.8   g.8 PIPL: Rate of growth of PL

90a   ⟨*variable PIPL* 90a⟩≡   (211)
```
PIPL     = Rate of growth of PL
```
Defines:
   PIPL, used in chunk 223.
Uses PL 90c.

90b   ⟨*equation pipl* 90b⟩≡   (244)
```
pipl: pipl - pipl_aerr = pieci
```

Defines:
   pipl, used in chunk 90d.
Uses pieci 87e.

2.7.9   g.9 PL: Compensation per hour, business

90c   ⟨*variable PL* 90c⟩≡   (211)
```
PL       = Compensation per hour,  business
```
Defines:
   PL, used in chunks 90a and 223.

90d   ⟨*equation pl* 90d⟩≡   (244)
```
pl: log(pl) - pl_aerr = log(pl(-1)) + pipl/400
```

Defines:
   pl, used in chunks 74f, 87e, 91e, 92a, 99b, 107, 177a, and 178a.
Uses pipl 90b.

2.7.10   g.10 PXNC: Price of adjusted final sales excluding consumption

90e   ⟨*variable PXNC* 90e⟩≡   (211)
```
PXNC     = Price of adjusted final sales excluding consumption
```
Defines:
   PXNC, used in chunk 223.

90f   ⟨*equation pxnc* 90f⟩≡   (244)
```
pxnc: d( log(pxnc), 0, 1 ) - pxnc_aerr = pipxnc/400
```

Defines:
   pxnc, used in chunks 93b and 99d.
Uses pipxnc 88c.

2.7.11   g.11 PWSTAR: Equilibrium business sector price markup

91a   ⟨*variable PWSTAR* 91a⟩≡   (211)
```
PWSTAR   = Equilibrium NFB price markup
```
Defines:
   `PWSTAR`, used in chunk 223.

91b   ⟨*equation pwstar* 91b⟩≡   (244)
```
pwstar: pwstar - pwstar_aerr = y_pwstar(1) + y_pwstar(2)*pwstar(-1)
```

Defines:
   `pwstr`, never used.
Uses `y_pwstar` 91c.

91c   ⟨*coefficient y_pwstar* 91c⟩≡   (253)
```
y_pwstar        2          0.00,1.00
```
Defines:
   `y_pwstar`, used in chunk 91b.

2.7.12   g.12 QPXG: Desired price level of private output ex. energy, housing, and farm

91d   ⟨*variable QPXG* 91d⟩≡   (211)
```
QPXG      = Desired price level of private output ex. energy, housing, and farm
```
Defines:
   `QPXG`, used in chunk 223.
Uses `ex` 39c.

91e   ⟨*equation qpxg* 91e⟩≡   (244)
```
qpxg: log(qpxg) - qpxg_aerr = log(pwstar) + y_qpxg(1) + y_qpxg(2)*log(pl/lprdt)
```

Defines:
   `qpxg`, used in chunk 92.
Uses `lprdt` 69a, `pl` 90d, and `y_qpxg` 91f.

91f   ⟨*coefficient y_qpxg* 91f⟩≡   (253)
```
y_qpxg   2         0.0,1
```
Defines:
   `y_qpxg`, used in chunk 91e.

2.7.13   g.13 QPL: Desired level of compensation per hour, trending component

91g   ⟨*variable QPL* 91g⟩≡   (211)
```
QPL       = Desired level of compensation per hour, trending component
```
Defines:
   `QPL`, used in chunk 223.

92a   ⟨*equation qpl* 92a⟩≡   (244)
        qpl: log(qpl) - qpl_aerr = log(pl) + y_qpl(1) * log(pxg/qpxg)

Defines:
    qpl, used in chunks 87e, 177a, and 178a.
Uses pl 90d, pxg 108b, qpxg 91e, and y_qpl 92b.

92b   ⟨*coefficient y_qpl* 92b⟩≡   (253)
        y_qpl   1   1.0
Defines:
    y_qpl, used in chunk 92a.

2.7.14   g.14 QPXP: Desired price level of adjusted final sales

92c   ⟨*variable QPXP* 92c⟩≡   (211)
        QPXP   = Desired price level of adjusted final sales
Defines:
    QPXP, used in chunk 223.

92d   ⟨*equation qpxp* 92d⟩≡   (244)
        qpxp: qpxp - qpxp_aerr = 100*(xpn + (.01*qpxg*xg-xgn))/xp

Defines:
    qpxp, used in chunks 92f and 99d.
Uses qpxg 91e, xg 52a, xgn 71e, xp 51a, and xpn 70a.

2.7.15   g.15 QPCNIA: Desired level of consumption price

92e   ⟨*variable QPCNIA* 92e⟩≡   (211)
        QPCNIA   = Desired level of consumption price
Defines:
    QPCNIA, used in chunk 223.

92f   ⟨*equation qpcnia* 92f⟩≡   (244)
        qpcnia: log(qpcnia) - qpcnia_aerr = log(qpxp) + log(uqpct)

Defines:
    qpcnia, used in chunks 87b, 99d, 177a, and 178a.
Uses qpxp 92d and uqpct 100a.

2.7.16   g.16 PXP: Price index for final sales plus imports less gov. labor

93a   ⟨*variable PXP* 93a⟩≡   (211)
     PXP   = Price index for final sales plus imports less gov. labor
Defines:
  PXP, used in chunks 93–97, 99f, 100c, 107d, 201d, and 223.

93b   ⟨*equation pxp* 93b⟩≡   (244)
     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 21a, 22c, 32, 33b, 35, 36, 39, 49a, 70a, 72, 75d, 93–99, 110e, 115, 118,
    120, 123, and 132c.
Uses ecnian 22a, pcnia 89b, pxnc 90f, and xpn 70a.

2.7.17   g.17 PGFIR: Price index for federal gov. investment, cw (relative to PXP)

93c   ⟨*variable PGFIR* 93c⟩≡   (211)
     PGFIR   = Price index for federal gov. investment, cw (relative to PXP)
Defines:
  PGFIR, used in chunk 223.
Uses PXP 93a.

93d   ⟨*equation pgfir* 93d⟩≡   (244)
     pgfir: log(pgfir) - pgfir_aerr - log(pgfir(-1)) = y_pgfir(1) + pipxnc/400 + dpadj - d(log(pxp),

Defines:
  pgfir, used in chunks 98a and 115.
Uses dpadj 98c, pipxnc 88c, pxp 93b, and y_pgfir 93e.

93e   ⟨*coefficient y_pgfir* 93e⟩≡   (253)
     y_pgfir 1   0.0
Defines:
  y_pgfir, used in chunk 93d.

2.7.18   g.18 PGFOR: Price index for federal governemnt consumption ex. emp. comp., cw (relative to PXP)

93f   ⟨*variable PGFOR* 93f⟩≡   (211)
     PGFOR   = Price index for federal governemnt consumption ex. emp. comp., cw (relative to PXP)
Defines:
  PGFOR, used in chunk 223.
Uses emp 41e, ex 39c, and PXP 93a.

94a   ⟨*equation pgfor* 94a⟩≡   (244)
         pgfor: log(pgfor) - pgfor_aerr - log(pgfor(-1)) = y_pgfor(1) + pipxnc/400 + dpadj -

Defines:
   pgfor, used in chunks 98a and 118.
Uses dpadj 98c, pipxnc 88c, pxp 93b, and y_pgfor 94b.

94b   ⟨*coefficient y_pgfor* 94b⟩≡   (253)
         y_pgfor 1   0.0
Defines:
   y_pgfor, used in chunk 94a.

2.7.19   g.19 PGSIR: Price index for S&L government investment (relative to PXP)

94c   ⟨*variable PGSIR* 94c⟩≡   (211)
         PGSIR   = Price index for S&L government investment (relative to PXP)
Defines:
   PGSIR, used in chunk 223.
Uses PXP 93a.

94d   ⟨*equation pgsir* 94d⟩≡   (244)
         pgsir: log(pgsir) - pgsir_aerr - log(pgsir(-1)) = y_pgsir(1) + pipxnc/400 + dpadj -

Defines:
   pgsir, used in chunks 98a and 120.
Uses dpadj 98c, pipxnc 88c, pxp 93b, and y_pgsir 94e.

94e   ⟨*coefficient y_pgsir* 94e⟩≡   (253)
         y_pgsir 1   0.0
Defines:
   y_pgsir, used in chunk 94d.

2.7.20   g.20 PGSOR: Price index for S&L government consumption ex. emp. comp., cw (relative to PXP)

94f   ⟨*variable PGSOR* 94f⟩≡   (211)
         PGSOR   = Price index for S&L government consumption ex. emp. comp., cw (relative to
Defines:
   PGSOR, used in chunk 223.
Uses emp 41e, ex 39c, and PXP 93a.

95a   ⟨*equation pgsor* 95a⟩≡   (244)
         pgsor: log(pgsor) - pgsor_aerr - log(pgsor(-1)) = y_pgsor(1) + pipxnc/400 + dpadj - d(log(pxp),

         Defines:
            pgsor, used in chunks 98a and 123.
         Uses dpadj 98c, pipxnc 88c, pxp 93b, and y_pgsor 95b.

95b   ⟨*coefficient y_pgsor* 95b⟩≡   (253)
         y_pgsor 1   0.0
         Defines:
            y_pgsor, used in chunk 95a.

2.7.21   g.21 PHR: Price index for residential investment, cw (relative to PXP)

95c   ⟨*variable PHR* 95c⟩≡   (211)
         PHR   = Price index for residential investment, cw (relative to PXP)
         Defines:
            PHR, used in chunk 223.
         Uses PXP 93a.

95d   ⟨*equation phr* 95d⟩≡   (244)
         phr: log(phr) - phr_aerr - log(phr(-1)) = y_phr(1) + pipxnc/400 + dpadj - d(log(pxp), 0, 1)

         Defines:
            phr, used in chunks 21a, 22c, 72, 75d, and 98a.
         Uses dpadj 98c, pipxnc 88c, pxp 93b, and y_phr 95e.

95e   ⟨*coefficient y_phr* 95e⟩≡   (253)
         y_phr   1   0.0
         Defines:
            y_phr, used in chunk 95d.

2.7.22   g.22 PPDR: Price level of EPD compared to PXP

95f   ⟨*variable PPDR* 95f⟩≡   (211)
         PPDR   = Price level of EPD compared to PXP
         Defines:
            PPDR, used in chunks 108e and 223.
         Uses EPD 25b and PXP 93a.

95g   ⟨*equation ppdr* 95g⟩≡   (244)
         ppdr: log(ppdr) - ppdr_aerr - log(ppdr(-1)) = y_ppdr(1) + pipxnc/400 + dpadj - d(log(pxp), 0, 1

         Defines:
            ppdr, used in chunks 33d, 35d, 98a, 107e, 108f, and 132c.
         Uses dpadj 98c, pipxnc 88c, pxp 93b, and y_ppdr 96a.

96a   ⟨*coefficient y_ppdr* 96a⟩≡   (253)
        y_ppdr 1   0.0
        Defines:
          y_ppdr, used in chunk 95g.

2.7.23   g.23 PPIR: Price level of EPI compared to PXP

96b   ⟨*variable PPIR* 96b⟩≡   (211)
        PPIR   = Price level of EPI compared to PXP
        Defines:
          PPIR, used in chunks 109b and 223.
        Uses EPI 25e and PXP 93a.

96c   ⟨*equation ppir* 96c⟩≡   (244)
        ppir: log(ppir) - ppir_aerr - log(ppir(-1)) = pipxnc/400 + dpadj - d(log(pxp), 0, 1)

        Defines:
          ppir, used in chunks 32c, 35f, 98a, and 109c.
        Uses dpadj 98c, pipxnc 88c, and pxp 93b.

2.7.24   g.24 PPSR: Price index for nonresidential struc-
tures, cw (relative to PXP)

96d   ⟨*variable PPSR* 96d⟩≡   (211)
        PPSR   = Price index for nonresidential structures, cw (relative to PXP)
        Defines:
          PPSR, used in chunks 110a and 223.
        Uses PXP 93a.

96e   ⟨*equation ppsr* 96e⟩≡   (244)
        ppsr: log(ppsr) - ppsr_aerr - log(ppsr(-1)) = y_ppsr(1) + pipxnc/400 + dpadj - d(log(

        Defines:
          ppsr, used in chunks 32e, 36b, 72c, 98a, and 110b.
        Uses dpadj 98c, pipxnc 88c, pxp 93b, and y_ppsr 96f.

96f   ⟨*coefficient y_ppsr* 96f⟩≡   (253)
        y_ppsr 1   0.0
        Defines:
          y_ppsr, used in chunk 96e.

2.7.25   g.25 PXR: Price index for exports, cw (relative to PXP)

97a   ⟨*variable PXR* 97a⟩≡   (211)
    PXR   = Price index for exports, cw (relative to PXP)

Defines:
  PXR, used in chunk 223.
Uses PXP 93a.

97b   ⟨*equation pxr* 97b⟩≡   (244)
    pxr: log(pxr) - pxr_aerr - log(pxr(-1)) = y_pxr(1) + pipxnc/400 + dpadj - d(log(pxp), 0, 1)

Defines:
  pxr, used in chunks 39 and 98a.
Uses dpadj 98c, pipxnc 88c, pxp 93b, and y_pxr 97c.

97c   ⟨*coefficient y_pxr* 97c⟩≡   (253)
    y_pxr   1   0.0

Defines:
  y_pxr, used in chunk 97b.

2.7.26   g.26 DPGAP: Price inflation aggregation discrepancy

97d   ⟨*variable DPGAP* 97d⟩≡   (211)
    DPGAP   = Price inflation aggregation discrepancy

Defines:
  DPGAP, used in chunk 223.

98a   ⟨*equation dpgap* 98a⟩≡   (244)
```
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 98c.
Uses ecnian 22a, egfin 115a, egfon 118b, egsin 120c, egson 123b, ehn 22c, epdn 35d,
  epin 35f, epsn 36b, exn 39f, pgfir 93d, pgfor 94a, pgsir 94d, pgsor 95a, phr 95d,
  pipxnc 88c, ppdr 95g, ppir 96c, ppsr 96e, pxp 93b, pxr 97b, and xpn 70a.

2.7.27   g.27 DPADJ: Price inflation aggregation adjustment

98b   ⟨*variable DPADJ* 98b⟩≡   (211)
```
DPADJ    = Price inflation aggregation adjustment
```
Defines:
  DPADJ, used in chunk 223.

98c   ⟨*equation dpadj* 98c⟩≡   (244)
```
dpadj: dpadj - dpadj_aerr - dpadj(-1) = y_dpadj(1) * dpgap(-1)
```

Defines:
  dpadj, used in chunks 93–97.
Uses dpgap 98a and y_dpadj 98d.

98d   ⟨*coefficient y_dpadj* 98d⟩≡   (253)
```
y_dpadj 1           1.0000
```
Defines:
  y_dpadj, used in chunk 98c.

2.7.28   g.28 PLMIN: Minimum wage

99a   ⟨*variable PLMIN* 99a⟩≡   (211)
```
PLMIN    = Minimum wage
```
Defines:
   PLMIN, used in chunk 223.

99b   ⟨*equation plmin* 99b⟩≡   (244)
```
plmin: plmin - plmin_aerr = plminr*.01*pl
```

Defines:
   plmin, never used.
Uses `pl` 90d and `plminr` 201e.

2.7.29   g.29 QPXNC: Desired level of nonconsumption price

99c   ⟨*variable QPXNC* 99c⟩≡   (211)
```
QPXNC    = Desired level of nonconsumption price
```
Defines:
   QPXNC, used in chunk 223.

99d   ⟨*equation qpxnc* 99d⟩≡   (244)
```
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` 89b, `pxnc` 90f, `pxp` 93b, `qpcnia` 92f, `qpxp` 92d, and `y_qpxnc` 99e.

99e   ⟨*coefficient y_qpxnc* 99e⟩≡   (253)
```
y_qpxnc 2        2.98507462687,-1.98507462687
```
Defines:
   y_qpxnc, used in chunk 99d.

2.7.30   g.30 UQPCT: Stochastic component of trend ratio of PCNIA to PXP

99f   ⟨*variable UQPCT* 99f⟩≡   (211)
```
UQPCT    = Stochastic component of trend ratio of PCNIA to PXP
```
Defines:
   UQPCT, used in chunk 223.
Uses `PCNIA` 89a and `PXP` 93a.

100a   ⟨*equation uqpct* 100a⟩≡   (244)
```
uqpct: log(uqpct) - uqpct_aerr = y_uqpct(1) + log(uqpct(-1)) + huqpct
```

Defines:
    `uqpct`, used in chunk 92f.
Uses `huqpct` 100d and `y_uqpct` 100b.

100b   ⟨*coefficient y_uqpct* 100b⟩≡   (253)
```
y_uqpct 1        0.0
```
Defines:
    `y_uqpct`, used in chunk 100a.

2.7.31   g.31 HUQPCT: Drift term in stochastic component of trend ratio of PCNIA to PXP

100c   ⟨*variable HUQPCT* 100c⟩≡   (211)
```
HUQPCT   = Drift term in stochastic component of trend ratio of PCNIA to PXP
```
Defines:
    `HUQPCT`, used in chunk 223.
Uses `PCNIA` 89a and `PXP` 93a.

100d   ⟨*equation huqpct* 100d⟩≡   (244)
```
huqpct: huqpct - huqpct_aerr = y_huqpct(1) + y_huqpct(2)*huqpct(-1)
```

Defines:
    `huqpct`, used in chunks 87e, 88c, 100a, 177a, and 178a.
Uses `y_huqpct` 100e.

100e   ⟨*coefficient y_huqpct* 100e⟩≡   (253)
```
y_huqpct        2        0.00,0.95
```
Defines:
    `y_huqpct`, used in chunk 100d.

2.7.32   g.32 POILR: Price of imported oil, relative to price index for bus. sector output

100f   ⟨*variable POILR* 100f⟩≡   (211)
```
POILR    = Price of imported oil, relative to price index for bus. sector output
```
Defines:
    `POILR`, used in chunk 223.

101a   ⟨*equation poilr* 101a⟩≡   (244)
```
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 101f, 102d, and 159e.
Uses poilrt 201f and y_poilr 101b.

101b   ⟨*coefficient y_poilr* 101b⟩≡   (253)
```
y_poilr 4        -0.2386347615324657,-0.003817963307816998,0.3988973185364578,0.2246596594065311
```
Defines:
  y_poilr, used in chunk 101a.

2.7.33   g.33 PCXFE: Price index for personal consumption expendits ex. food and energy, cw (NIPA definition)

101c   ⟨*variable PCXFE* 101c⟩≡   (211)
```
PCXFE    = Price index for personal consumption expendits ex. food and energy, cw (NIPA definit
```
Defines:
  PCXFE, used in chunks 103 and 223.
Uses ex 39c.

101d   ⟨*equation pcxfe* 101d⟩≡   (244)
```
pcxfe: d(log(pcxfe), 0, 1) - pcxfe_aerr = picxfe/400
```

Defines:
  pcxfe, used in chunks 89f, 103c, and 112d.
Uses picxfe 87b.

2.7.34   g.34 POIL: Price of imported oil ($ per barrel)

101e   ⟨*variable POIL* 101e⟩≡   (211)
```
POIL     = Price of imported oil ($ per barrel)
```
Defines:
  POIL, used in chunk 223.

101f   ⟨*equation poil* 101f⟩≡   (244)
```
poil: poil - poil_aerr = poilr*pxb
```

Defines:
  poil, used in chunk 102b.
Uses poilr 101a and pxb 108d.

2.7.35   g.35 PMP: Price index for petroleum imports

102a   ⟨*variable PMP* 102a⟩≡   (211)
```
PMP       = Price index for petroleum imports
```
Defines:
  PMP, used in chunks 208a and 223.

102b   ⟨*equation pmp* 102b⟩≡   (244)
```
pmp: pmp - pmp_aerr = upmp*poil
```

Defines:
  pmp, used in chunk 42a.
Uses poil 101f and upmp 208a.

2.7.36   g.36 PCENGR: Price index for aggregate energy consumption (relative to PXB)

102c   ⟨*variable PCENGR* 102c⟩≡   (211)
```
PCENGR   = Price index for aggregate energy consumption (relative to PXB  )
```
Defines:
  PCENGR, used in chunk 223.
Uses PXB 108c.

102d   ⟨*equation pcengr* 102d⟩≡   (244)
```
pcengr: d( log(pcengr), 0, 1 ) - pcengr_aerr _
                    = y_pcengr(1) _
                    + y_pcengr(2) * d( log(pcengr(-1)), 0, 1 ) _
                    + y_pcengr(3) * log(pcengr(-1)) _
                    + y_pcengr(4) * log(poilr(-1)) _
                    + y_pcengr(5) * d( log(poilr), 0, 1 )
```

Defines:
  pcengr, used in chunk 103a.
Uses poilr 101a and y_pcengr 102e.

102e   ⟨*coefficient y_pcengr* 102e⟩≡   (253)
```
y_pcengr        5        0.04621048926220116,-0.01053548206463643,-0.0961735014875454
```
Defines:
  y_pcengr, used in chunk 102d.

2.7.37   g.37 PCENG: Price index for aggregate energy consumption

102f   ⟨*variable PCENG* 102f⟩≡   (211)
```
PCENG    = Price index for aggregate energy consumption
```
Defines:
  PCENG, used in chunk 223.

103a   ⟨*equation pceng* 103a⟩≡   (244)
          pceng: pceng - pceng_aerr = pcengr*pxb

          Defines:
             pceng, used in chunks 52a, 53f, 55a, 60b, 103c, and 110e.
          Uses pcengr 102d and pxb 108d.

2.7.38   g.38 PCER: Price index for personal consumption expenditures on energy (relative to PCXFE)

103b   ⟨*variable PCER* 103b⟩≡   (211)
          PCER   = Price index for personal consumption expenditures on energy (relative to PCXFE)
          Defines:
             PCER, used in chunk 223.
          Uses PCXFE 101c.

103c   ⟨*equation pcer* 103c⟩≡   (244)
          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 88f, 89d, and 104d.
          Uses pceng 103a, pcxfe 101d, and y_pcer 103d.

103d   ⟨*coefficient y_pcer* 103d⟩≡   (253)
          y_pcer 4   0.1050137345817281,0.5632388610140522,0.6858569548199248,0.04030768373454912
          Defines:
             y_pcer, used in chunk 103c.

2.7.39   g.39 PCFR: Price index for personal consumption expenditures on food (relative to PCXFE)

103e   ⟨*variable PCFR* 103e⟩≡   (211)
          PCFR   = Price index for personal consumption expenditures on food (relative to PCXFE)
          Defines:
             PCFR, used in chunk 223.
          Uses PCXFE 101c.

104a   ⟨*equation pcfr* 104a⟩≡   (244)
          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)

          Defines:
            pcfr, used in chunks 88f and 105b.
          Uses pcfrt 200i and y_pcfr 104b.

104b   ⟨*coefficient y_pcfr* 104b⟩≡   (253)
          y_pcfr 6   -0.1757649679968763,-7.899990101672884e-05,0.3777936884215714,0.02349
          Defines:
            y_pcfr, used in chunk 104a.

2.7.40   g.40 UCES: Energy share of nominal consumption expenditures

104c   ⟨*variable UCES* 104c⟩≡   (211)
          UCES   = Energy share of nominal consumption expenditures
          Defines:
            UCES, used in chunk 223.

104d   ⟨*equation uces* 104d⟩≡   (244)
          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)

          Defines:
            uces, used in chunk 88f.
          Uses ceng 41b, pcer 103c, t47 202e, xg 52a, and y_uces 104e.

104e   ⟨*coefficient y_uces* 104e⟩≡   (253)
          y_uces 8   -0.1834529206587357,0.1554187181683198,0.08000391518229149,-0.0004411
          Defines:
            y_uces, used in chunk 104d.

2.7.41   g.41 UCFS: Food share of nominal consumption expenditures

105a   ⟨*variable UCFS* 105a⟩≡   (211)
      UCFS   = Food share of nominal consumption expenditures
      Defines:
        UCFS, used in chunk 223.

105b   ⟨*equation ucfs* 105b⟩≡   (244)
```
ucfs: d( log(ucfs), 0, 1 ) - ucfs_aerr  _
                  = y_ucfs(1) * log(ucfs(-1)) _
                  + y_ucfs(2) * log(pcfr(-1)) _
                  + y_ucfs(3) * t47 _
                  + y_ucfs(4) _
                  + y_ucfs(5) * d( log(ucfs(-1)), 0, 1 ) _
                  + y_ucfs(6) * d( log(pcfrt), 0, 1 ) _
                  + y_ucfs(7) * d( log(pcfr/pcfrt), 0, 1 )
```

      Defines:
        ucfs, used in chunk 88f.
      Uses pcfr 104a, pcfrt 200i, t47 202e, and y_ucfs 105c.

105c   ⟨*coefficient y_ucfs* 105c⟩≡   (253)
      y_ucfs   7   -0.03523462021069426,0.0453107908363,-0.0001497160154925362,-0.0564600435216084
      Defines:
        y_ucfs, used in chunk 105b.

2.7.42   g.42 PMO: Price index for imports ex. petroleum, cw

105d   ⟨*variable PMO* 105d⟩≡   (211)
      PMO   = Price index for imports ex. petroleum, cw
      Defines:
        PMO, used in chunk 223.
      Uses ex 39c.

105e   ⟨*equation pmo* 105e⟩≡   (244)
```
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 40.
      Uses fpcm 161d, fpxm 164f, pxb 108d, qpmo 106c, and y_pmo 106a.

106a   ⟨*coefficient y_pmo* 106a⟩≡   (253)
     y_pmo   4   -0.003166815111887241,0.4492916534287926,0.2944651755345454,0.7055348
     Defines:
      y_pmo, used in chunk 105e.

2.7.43   g.43 QPMO: Random walk component of non-oil import prices

106b   ⟨*variable QPMO* 106b⟩≡   (211)
     QPMO   = Random walk component of non-oil import prices
     Defines:
      QPMO, used in chunk 223.

106c   ⟨*equation qpmo* 106c⟩≡   (244)
     qpmo: log(qpmo) - qpmo_aerr = log(qpmo(-1)) + y_qpmo(1)

     Defines:
      qpmo, used in chunk 105e.
     Uses y_qpmo 106d.

106d   ⟨*coefficient y_qpmo* 106d⟩≡   (253)
     y_qpmo   1   -.003347
     Defines:
      y_qpmo, used in chunk 106c.

2.7.44   g.44 PGDP: Price index for GDP, cw

106e   ⟨*variable PGDP* 106e⟩≡   (211)
     PGDP   = Price index for GDP, cw
     Defines:
      PGDP, used in chunks 124–26, 129e, 130d, and 223.

106f   ⟨*equation pgdp* 106f⟩≡   (244)
     pgdp: pgdp - pgdp_aerr = 100*xgdpn/xgdp

     Defines:
      pgdp, used in chunks 43e, 61a, 71–73, 86e, 108d, 111a, 125–27, and 129.
     Uses xgdp 49a and xgdpn 70c.

2.7.45   g.45 PGFL: Price index for federal government employee compensation, cw

106g   ⟨*variable PGFL* 106g⟩≡   (211)
     PGFL   = Price index for federal government employee compensation, cw
     Defines:
      PGFL, used in chunks 207e and 223.

107a   ⟨*equation pgfl* 107a⟩≡   (244)
```
      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 74f, 116d, and 117a.
Uses `dglprd` 197d, `lprdt` 69a, `pl` 90d, and `upgfl` 207e.

2.7.46   g.46 PGSL: Price index for S&L government employee compensation, cw

107b   ⟨*variable PGSL* 107b⟩≡   (211)
```
      PGSL     = Price index for S&L government employee compensation, cw
```
Defines:
    `PGSL`, used in chunks 207f and 223.

107c   ⟨*equation pgsl* 107c⟩≡   (244)
```
      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 74f, 121e, and 122a.
Uses `dglprd` 197d, `lprdt` 69a, `pl` 90d, and `upgsl` 207f.

2.7.47   g.47 PKPDR: Ratio of price of equipment stock (KPD) to PXP

107d   ⟨*variable PKPDR* 107d⟩≡   (211)
```
      PKPDR    = Ratio of price of equipment stock (KPD) to PXP
```
Defines:
    `PKPDR`, used in chunks 207g and 223.
Uses `KPD` 29f and `PXP` 93a.

107e   ⟨*equation pkpdr* 107e⟩≡   (244)
```
      pkpdr: pkpdr - pkpdr_aerr = upkpd * ppdr
```

Defines:
    `pkpdr`, used in chunks 32a, 33d, and 72c.
Uses `ppdr` 95g and `upkpd` 207g.

2.7.48   g.48 PXG: Price index for business output plus oil imports

108a   ⟨*variable PXG* 108a⟩≡   (211)
```
PXG      = Price index for  business output plus oil imports
```
Defines:
  PXG, used in chunk 223.

108b   ⟨*equation pxg* 108b⟩≡   (244)
```
pxg: pxg - pxg_aerr = 100*xgn/xg
```

Defines:
  pxg, used in chunks 43c, 92a, 186d, and 189e.
Uses xg 52a and xgn 71e.

2.7.49   g.49 PXB: Price index for business sector output

108c   ⟨*variable PXB* 108c⟩≡   (211)
```
PXB      = Price index for NFB output
```
Defines:
  PXB, used in chunks 102c, 208b, and 223.

108d   ⟨*equation pxb* 108d⟩≡   (244)
```
pxb: pxb - pxb_aerr = upxb*pgdp
```

Defines:
  pxb, used in chunks 32, 33b, 51c, 53f, 71c, 76e, 78, 79, 101f, 103a, 105e, 174b, and 187c.
Uses pgdp 106f and upxb 208b.

2.7.50   g.50 HGPDR: Trend Price Growth of PPDR

108e   ⟨*variable HGPDR* 108e⟩≡   (211)
```
HGPDR    = Trend Price Growth of PPDR
```
Defines:
  HGPDR, used in chunk 223.
Uses PPDR 95f.

108f   ⟨*equation hgpdr* 108f⟩≡   (244)
```
hgpdr: hgpdr - hgpdr_aerr = y_hgpdr(1) * hgpdr(-1) _
                       + y_hgpdr(2) * 400*log(ppdr/ppdr(-1))
```

Defines:
  hgpdr, used in chunk 32a.
Uses ppdr 95g and y_hgpdr 109a.

109a   ⟨*coefficient y_hgpdr* 109a⟩≡   (253)
    y_hgpdr 2   .9,.1
    Defines:
       y_hgpdr, used in chunk 108f.

2.7.51   g.51 HGPIR: Trend Price Growth of PPIR

109b   ⟨*variable HGPIR* 109b⟩≡   (211)
    HGPIR   = Trend Price Growth of PPIR
    Defines:
       HGPIR, used in chunk 223.
    Uses PPIR 96b.

109c   ⟨*equation hgpir* 109c⟩≡   (244)
    hgpir: hgpir - hgpir_aerr = y_hgpir(1) * hgpir(-1) _
                   + y_hgpir(2) * 400*log(ppir/ppir(-1))

    Defines:
       hgpir, used in chunk 32c.
    Uses ppir 96c and y_hgpir 109d.

109d   ⟨*coefficient y_hgpir* 109d⟩≡   (253)
    y_hgpir 2   .9,.1
    Defines:
       y_hgpir, used in chunk 109c.

2.7.52   g.52 HGPKIR: Trend growth rate of PKIR

109e   ⟨*variable HGPKIR* 109e⟩≡   (211)
    HGPKIR   = Trend growth rate of PKIR
    Defines:
       HGPKIR, used in chunk 223.
    Uses PKIR 201d.

109f   ⟨*equation hgpkir* 109f⟩≡   (244)
    hgpkir: hgpkir - hgpkir_aerr = y_hgpkir(1) * hgpkir(-1) _
                   + y_hgpkir(2) * 400*log(pkir/pkir(-1))

    Defines:
       hgpkir, used in chunk 33b.
    Uses pkir 201d and y_hgpkir 109g.

109g   ⟨*coefficient y_hgpkir* 109g⟩≡   (253)
    y_hgpkir   2   .9,.1
    Defines:
       y_hgpkir, used in chunk 109f.

2.7.53   g.53 HGPPSR: Trend growth rate of PPSR

110a   ⟨*variable HGPPSR* 110a⟩≡   (211)
       HGPPSR   = Trend growth rate of PPSR

Defines:
   HGPPSR, used in chunk 223.
Uses PPSR 96d.

110b   ⟨*equation hgppsr* 110b⟩≡   (244)
       hgppsr: hgppsr - hgppsr_aerr = y_hgppsr(1) * hgppsr(-1) _
                           + y_hgppsr(2) * 400*log(ppsr/ppsr(-1))

Defines:
   hgppsr, used in chunk 32e.
Uses ppsr 96e and y_hgppsr 110c.

110c   ⟨*coefficient y_hgppsr* 110c⟩≡   (253)
       y_hgppsr   2   .9,.1
Defines:
   y_hgppsr, used in chunk 110b.

2.7.54   g.54 PICNGR: Weighted growth rate of relative energy price

110d   ⟨*variable PICNGR* 110d⟩≡   (211)
       PICNGR   = Weighted growth rate of relative energy price
Defines:
   PICNGR, used in chunk 223.

110e   ⟨*equation picngr* 110e⟩≡   (244)
       picngr: picngr - picngr_aerr = (d(log(pceng/pxp(-1)), 0, 1) * _
                           (pceng*ceng/(pxp*xp) + pceng(-1)*ceng(-1)/(pxp(-1)*xp(-1))

Defines:
   picngr, never used.
Uses ceng 41b, pceng 103a, pxp 93b, and xp 51a.

2.7.55   g.55 PIGDP: Inflation rate, GDP, cw

110f   ⟨*variable PIGDP* 110f⟩≡   (211)
       PIGDP   = Inflation rate, GDP, cw
Defines:
   PIGDP, used in chunk 223.

111a   ⟨*equation pigdp* 111a⟩≡   (244)
         pigdp: pigdp - pigdp_aerr = 400*d(log(pgdp), 0, 1)

         Defines:
            pigdp, never used.
         Uses pgdp 106f.

2.7.56   g.56 PCOR: Price index for non-durable goods and non-housing services, cw (relative to to PCNIA)

111b   ⟨*variable PCOR* 111b⟩≡   (211)
         PCOR   = Price index for non-durable goods and non-housing services, cw (relative to to PCNIA
         Defines:
            PCOR, used in chunk 223.
         Uses PCNIA 89a.

111c   ⟨*equation pcor* 111c⟩≡   (244)
         pcor: log(pcor) - log(pcor(-1)) - pcor_aerr =   _
                   (- .5 * .01 * (pcdr*pcnia*ecd/ecnian   _
                   + pcdr(-1)*pcnia(-1)*ecd(-1)/ecnian(-1)))   _
                   / (.5 * .01 * (pcor*pcnia*eco/ecnian   _
                   + pcor(-1)*pcnia(-1)*eco(-1)/ecnian(-1)) _
                     * d(log(pcdr), 0, 1) _
                - .5 * .01 * (pchr*pcnia*ech/ecnian   _
                   + pchr(-1)*pcnia(-1)*ech(-1)/ecnian(-1))   _
                     * d(log(pchr), 0, 1) _
                / (.5 * .01 * (pcor*pcnia*eco/ecnian   _
                   + pcor(-1)*pcnia(-1)*eco(-1)/ecnian(-1)))

         Defines:
            pcor, used in chunks 20b, 21d, and 24c.
         Uses ecd 18b, ech 19b, ecnian 22a, eco 17b, pcdr 112f, pchr 112a, and pcnia 89b.

2.7.57   g.57 PCHR: Price index for housing services, cw (relative to to PCNIA)

111d   ⟨*variable PCHR* 111d⟩≡   (211)
         PCHR   = Price index for housing services, cw (relative to to PCNIA)
         Defines:
            PCHR, used in chunk 223.
         Uses PCNIA 89a.

112a   ⟨*equation pchr* 112a⟩≡   (244)
```
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 21d, 24c, 111c, and 154d.
Uses `y_pchr` 112b.

112b   ⟨*coefficient y_pchr* 112b⟩≡   (253)
```
y_pchr   2       0.0005315862255843622,0.5948038682986249
```
Defines:
  `y_pchr`, used in chunk 112a.

2.7.58   g.58 PICX4: Four-quarter percent change core in PCE prices

112c   ⟨*variable PICX4* 112c⟩≡   (211)
```
PICX4    = Four-quarter percent change core in PCE prices
```
Defines:
  `PICX4`, used in chunk 223.

112d   ⟨*equation picx4* 112d⟩≡   (244)
```
picx4:          picx4 - picx4_aerr = 100*(pcxfe/pcxfe(-4) - 1)
```

Defines:
  `picx4`, used in chunk 154a.
Uses `pcxfe` 101d.

2.7.59   g.59 PCDR: Price index for consumer durables, cw (relative to to PCNIA)

112e   ⟨*variable PCDR* 112e⟩≡   (211)
```
PCDR     = Price index for consumer durables, cw (relative to to PCNIA)
```
Defines:
  `PCDR`, used in chunk 223.
Uses `PCNIA` 89a.

112f   ⟨*equation pcdr* 112f⟩≡   (244)
```
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 20e, 21d, 24c, 80d, 83a, 111c, and 155a.
Uses `y_pcdr` 113a.

113a   ⟨*coefficient y_pcdr* 113a⟩≡   (253)
           y_pcdr 2   -0.003205436686618677,0.5065758198036935
       Defines:
           y_pcdr, used in chunk 112f.

2.7.60   g.60 PIC4: Four-quarter percent change in PCE prices

113b   ⟨*variable PIC4* 113b⟩≡   (211)
           PIC4   = Four-quarter percent change in PCE prices
       Defines:
           PIC4, used in chunk 223.

113c   ⟨*equation pic4* 113c⟩≡   (244)
           pic4:   pic4 - pic4_aerr = 100*(pcnia/pcnia(-4) - 1)

       Defines:
           pic4, never used.
       Uses pcnia 89b.

2.8   Government

2.8.1   h.1 EGF: Federal government consumption and gross investment, cw 2009$

113d   ⟨*variable EGF* 113d⟩≡   (211)
           EGF   = Federal government consumption and gross investment, cw 2009$
       Defines:
           EGF, used in chunk 223.

113e   ⟨*equation egf* 113e⟩≡   (244)
           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)

       Defines:
           egf, never used.
       Uses egfi 114d, egfin 115a, egfl 116a, egfln 116d, egfn 114b, egfo 117d, and egfon 118b.

2.8.2   h.2 EGFN: Federal government consumption and gross investment, current \$

114a   ⟨*variable EGFN* 114a⟩≡   (211)
```
EGFN      = Federal government consumption and gross investment, current $
```
Defines:
    EGFN, used in chunk 223.

114b   ⟨*equation egfn* 114b⟩≡   (244)
```
egfn: egfn - egfn_aerr = egfln + egfin + egfon
```

Defines:
    egfn, used in chunk 113e.
Uses `egfin` 115a, `egfln` 116d, and `egfon` 118b.

2.8.3   h.3 EGFI: Federal government gross investment, cw 2009\$

114c   ⟨*variable EGFI* 114c⟩≡   (211)
```
EGFI      = Federal government gross investment, cw 2009$
```
Defines:
    EGFI, used in chunk 223.

114d   ⟨*equation egfi* 114d⟩≡   (244)
```
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 48b, 51a, 113e, and 115a.
Uses `egfit` 115c, `xgap2` 59c, and `y_egfi` 114e.

114e   ⟨*coefficient y_egfi* 114e⟩≡   (253)
```
y_egfi  7        -0.001620944144695763,-0.1243761665741676,-0.1946254304372423,-0.1028
```
Defines:
    y_egfi, used in chunk 114d.

2.8.4   h.4 EGFIN: Federal government gross investment, current \$

114f   ⟨*variable EGFIN* 114f⟩≡   (211)
```
EGFIN      = Federal government gross investment, current $
```
Defines:
    EGFIN, used in chunk 223.

115a   ⟨*equation egfin* 115a⟩≡   (244)
            egfin: egfin - egfin_aerr = .01 * pxp * pgfir * egfi

Defines:
    egfin, used in chunks 48b, 51a, 98a, 113e, 114b, 124a, and 133d.
Uses egfi 114d, pgfir 93d, and pxp 93b.

2.8.5   h.5 EGFIT: Federal government gross investment, cw 2009\$, trend

115b   ⟨*variable EGFIT* 115b⟩≡   (211)
            EGFIT   = Federal government gross investment, cw 2009\$, trend
Defines:
    EGFIT, used in chunk 223.

115c   ⟨*equation egfit* 115c⟩≡   (244)
            egfit: d(log(egfit), 0, 1) - egfit_aerr _
                              = y_egfit(1) _
                              + y_egfit(2) * log(.01*pgfir(-1)*pxp(-1)*egfit(-1)/xgdptn(-1)) _
                              + y_egfit(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600

Defines:
    egfit, used in chunk 114d.
Uses hggdpt 60d, pgfir 93d, pxp 93b, xgdptn 61a, and y_egfit 115d.

115d   ⟨*coefficient y_egfit* 115d⟩≡   (253)
            y_egfit 3   -.4027,-.1,1.0
Defines:
    y_egfit, used in chunk 115c.

2.8.6   h.6 EGFL: Federal government employee compensation, cw 2009\$

115e   ⟨*variable EGFL* 115e⟩≡   (211)
            EGFL   = Federal government employee compensation, cw 2009\$
Defines:
    EGFL, used in chunk 223.

116a   ⟨*equation egfl* 116a⟩≡   (244)
            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))

Defines:
   egfl, used in chunks 48b, 63a, 74f, 113e, and 116d.
Uses egflt 117a, xgap2 59c, and y_egfl 116b.

116b   ⟨*coefficient y_egfl* 116b⟩≡   (253)
            y_egfl 7   -6.057249900438316e-05,-0.06931736294593471,0.3048866347485139,-0.049
Defines:
   y_egfl, used in chunk 116a.

2.8.7   h.7 EGFLN: Federal government employee compensation, current $

116c   ⟨*variable EGFLN* 116c⟩≡   (211)
            EGFLN   = Federal government employee compensation, current $
Defines:
   EGFLN, used in chunk 223.

116d   ⟨*equation egfln* 116d⟩≡   (244)
            egfln: egfln - egfln_aerr = .01 * pgfl * egfl

Defines:
   egfln, used in chunks 48b, 70c, 113e, 114b, and 125d.
Uses egfl 116a and pgfl 107a.

2.8.8   h.8 EGFLT: Federal government employee compensation, cw 2009$, trend

116e   ⟨*variable EGFLT* 116e⟩≡   (211)
            EGFLT   = Federal government employee compensation, cw 2009$, trend
Defines:
   EGFLT, used in chunk 223.

117a $\langle$*equation egflt* 117a$\rangle\equiv$ (244)
```
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
```

Defines:
  egflt, used in chunk 116a.
Uses hggdpt 60d, pgfl 107a, xgdptn 61a, and y_egflt 117b.

117b $\langle$*coefficient y_egflt* 117b$\rangle\equiv$ (253)
```
y_egflt 3          -.375978,-.1,1.0
```
Defines:
  y_egflt, used in chunk 117a.

2.8.9   h.9 EGFO: Federal government consumption ex. employee comp., cw 2009$

117c $\langle$*variable EGFO* 117c$\rangle\equiv$ (211)
```
EGFO      = Federal government consumption ex. employee comp., cw 2009$
```
Defines:
  EGFO, used in chunk 223.
Uses ex 39c.

117d $\langle$*equation egfo* 117d$\rangle\equiv$ (244)
```
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))
```

Defines:
  egfo, used in chunks 48b, 51a, 113e, and 118b.
Uses egfot 118d, xgap2 59c, and y_egfo 117e.

117e $\langle$*coefficient y_egfo* 117e$\rangle\equiv$ (253)
```
y_egfo  7          -0.00272437480660757,-0.165188738562342,-0.2655033775214354,-0.1381332991300448
```
Defines:
  y_egfo, used in chunk 117d.

2.8.10   h.10 EGFON: Federal government consumption ex. employee comp., current $

118a   ⟨*variable EGFON* 118a⟩≡   (211)
```
EGFON    = Federal government consumption ex. employee comp., current $
```
Defines:
  `EGFON`, used in chunk 223.
Uses `ex` 39c.

118b   ⟨*equation egfon* 118b⟩≡   (244)
```
egfon: egfon - egfon_aerr = .01 * pxp * pgfor * egfo
```

Defines:
  `egfon`, used in chunks 48b, 51a, 98a, 113e, 114b, and 125d.
Uses `egfo` 117d, `pgfor` 94a, and `pxp` 93b.

2.8.11   h.11 EGFOT: Federal government consumption ex. employee comp., cw 2009$, trend

118c   ⟨*variable EGFOT* 118c⟩≡   (211)
```
EGFOT    = Federal government consumption ex. employee comp., cw 2009$, trend
```
Defines:
  `EGFOT`, used in chunk 223.
Uses `ex` 39c.

118d   ⟨*equation egfot* 118d⟩≡   (244)
```
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 117d.
Uses `hggdpt` 60d, `pgfor` 94a, `pxp` 93b, `xgdptn` 61a, and `y_egfot` 118e.

118e   ⟨*coefficient y_egfot* 118e⟩≡   (253)
```
y_egfot 3        -.342813,-.1,1.0
```
Defines:
  `y_egfot`, used in chunk 118d.

2.8.12   h.12 EGS: S&L government consumption and gross investment, cw 2009$

118f   ⟨*variable EGS* 118f⟩≡   (211)
```
EGS      = S&L government consumption and gross investment, cw 2009$
```
Defines:
  `EGS`, used in chunk 223.

119a   ⟨*equation egs* 119a⟩≡   (244)
```
egs: log(egs) - egs_aerr = log(egs(-1)) _
      + .5 * (egson/egsn + egson(-1)/egsn(-1)) * d(log(egso), 0, 1) _
      + .5 * (egsin/egsn + egsin(-1)/egsn(-1)) * d(log(egsi), 0, 1) _
      + .5 * (egsln/egsn + egsln(-1)/egsn(-1)) * d(log(egsl), 0, 1)
```

Defines:
   `egs`, never used.
Uses `egsi` 119e, `egsin` 120c, `egsl` 121b, `egsln` 121e, `egsn` 119c, `egso` 122d, and `egson` 123b.

2.8.13   h.13 EGSN: S&L government consumption and gross investment, current $

119b   ⟨*variable EGSN* 119b⟩≡   (211)
```
EGSN     = S&L government consumption and gross investment, current $
```
Defines:
   `EGSN`, used in chunk 223.

119c   ⟨*equation egsn* 119c⟩≡   (244)
```
egsn: egsn - egsn_aerr = egsln + egsin + egson
```

Defines:
   `egsn`, used in chunk 119a.
Uses `egsin` 120c, `egsln` 121e, and `egson` 123b.

2.8.14   h.14 EGSI: S&L government gross investment, cw 2009$

119d   ⟨*variable EGSI* 119d⟩≡   (211)
```
EGSI     = S&L government gross investment, cw 2009$
```
Defines:
   `EGSI`, used in chunk 223.

119e   ⟨*equation egsi* 119e⟩≡   (244)
```
egsi: d( log(egsi), 0, 1 ) - egsi_aerr _
                   = y_egsi(1) _
                   + y_egsi(2) * log(egsi(-1)/egsit(-1)) _
                   + ( y_egsi(3) *  d( log(egsi(-1)), 0, 1 ) +  y_egsi(4) *  d( log(egsi(-2)),
                   + y_egsi(5) * d( log(egsit), 0, 1 ) _
                   + ( y_egsi(6) *  xgap2 +  y_egsi(7) *  xgap2(-1))
```

Defines:
   `egsi`, used in chunks 48b, 51a, 119a, and 120c.
Uses `egsit` 120e, `xgap2` 59c, and `y_egsi` 120a.

120a   ⟨*coefficient y_egsi* 120a⟩≡   (253)
         y_egsi 7   -1.405740361028989e-05,-0.2020609033108234,0.05134522874864941,-0.080
         Defines:
           y_egsi, used in chunk 119e.

2.8.15   h.15 EGSIN: S&L government gross investment, current $

120b   ⟨*variable EGSIN* 120b⟩≡   (211)
         EGSIN   = S&L government gross investment, current $
         Defines:
           EGSIN, used in chunk 223.

120c   ⟨*equation egsin* 120c⟩≡   (244)
         egsin: egsin - egsin_aerr = .01 * pxp * pgsir * egsi

         Defines:
           egsin, used in chunks 48b, 51a, 98a, 119, 128a, and 135e.
         Uses egsi 119e, pgsir 94d, and pxp 93b.

2.8.16   h.16 EGSIT: S&L government gross investment, cw 2009$, trend

120d   ⟨*variable EGSIT* 120d⟩≡   (211)
         EGSIT   = S&L government gross investment, cw 2009$, trend
         Defines:
           EGSIT, used in chunk 223.

120e   ⟨*equation egsit* 120e⟩≡   (244)
         egsit: d(log(egsit), 0, 1) - egsit_aerr _
                            = y_egsit(1) _
                            + y_egsit(2) * log(.01*pgsir(-1)*pxp(-1)*egsit(-1)/xgdptn(-1)) _
                            + y_egsit(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600

         Defines:
           egsit, used in chunk 119e.
         Uses hggdpt 60d, pgsir 94d, pxp 93b, xgdptn 61a, and y_egsit 120f.

120f   ⟨*coefficient y_egsit* 120f⟩≡   (253)
         y_egsit 3   -.379944,-.1,1.0
         Defines:
           y_egsit, used in chunk 120e.

2.8.17   h.17 EGSL: S&L government employee compensation, cw 2009$

121a ⟨*variable EGSL* 121a⟩≡   (211)
```
EGSL    = S&L government employee compensation, cw 2009$
```
Defines:
   EGSL, used in chunk 223.

121b ⟨*equation egsl* 121b⟩≡   (244)
```
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 48b, 63c, 74f, 119a, and 121e.
Uses egslt 122a, xgap2 59c, and y_egsl 121c.

121c ⟨*coefficient y_egsl* 121c⟩≡   (253)
```
y_egsl  7       0.000432632357275569,-0.1411968485071547,0.173955823870621,0.03758904468718688,
```
Defines:
   y_egsl, used in chunk 121b.

2.8.18   h.18 EGSLN: S&L government employee compensation, current $

121d ⟨*variable EGSLN* 121d⟩≡   (211)
```
EGSLN    = S&L government employee compensation, current $
```
Defines:
   EGSLN, used in chunk 223.

121e ⟨*equation egsln* 121e⟩≡   (244)
```
egsln: egsln - egsln_aerr = .01 * pgsl * egsl
```

Defines:
   egsln, used in chunks 48b, 70c, 119, and 128e.
Uses egsl 121b and pgsl 107c.

2.8.19   h.19 EGSLT: S&L government employee compensation, cw 2009$, trend

121f ⟨*variable EGSLT* 121f⟩≡   (211)
```
EGSLT    = S&L government employee compensation, cw 2009$, trend
```
Defines:
   EGSLT, used in chunk 223.

122a   ⟨*equation egslt* 122a⟩≡   (244)
         egslt: d(log(egslt), 0, 1) - egslt_aerr _
                             = y_egslt(1) _
                             + y_egslt(2) * log(.01*pgsl(-1)*egslt(-1)/xgdptn(-1)) _
                             + y_egslt(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600

         Defines:
            egslt, used in chunk 121b.
         Uses hggdpt 60d, pgsl 107c, xgdptn 61a, and y_egslt 122b.

122b   ⟨*coefficient y_egslt* 122b⟩≡   (253)
         y_egslt 3   -.259779,-.1,1.0
         Defines:
            y_egslt, used in chunk 122a.

2.8.20   h.20 EGSO: S&L government consumption ex. employee comp., cw 2009$

122c   ⟨*variable EGSO* 122c⟩≡   (211)
         EGSO   = S&L government consumption ex. employee comp., cw 2009$
         Defines:
            EGSO, used in chunk 223.
         Uses ex 39c.

122d   ⟨*equation egso* 122d⟩≡   (244)
         egso: d(log(egso), 0, 1) - egso_aerr _
                             = y_egso(1) _
                             + y_egso(2) * log(egso(-1)/egsot(-1)) _
                             + (y_egso(3) * d(log(egso(-1)), 0, 1) + y_egso(4) * d(log(
                             + y_egso(5) * d(log(egsot), 0, 1) _
                             + (y_egso(6) * xgap2 + y_egso(7) * xgap2(-1))

         Defines:
            egso, used in chunks 48b, 51a, 119a, and 123b.
         Uses egsot 123d, xgap2 59c, and y_egso 122e.

122e   ⟨*coefficient y_egso* 122e⟩≡   (253)
         y_egso 7   -0.0002007505801469657,-0.09372198933526569,0.5475507872556951,0.164(
         Defines:
            y_egso, used in chunk 122d.

2.8.21   h.21 EGSON: S&L government consumption ex. employee comp., current $

123a   ⟨*variable EGSON* 123a⟩≡   (211)
     EGSON   = S&L government consumption ex. employee comp., current $
     Defines:
        EGSON, used in chunk 223.
     Uses ex 39c.

123b   ⟨*equation egson* 123b⟩≡   (244)
     egson: egson - egson_aerr = .01 * pxp * pgsor * egso

     Defines:
        egson, used in chunks 48b, 51a, 98a, 119, and 128e.
     Uses egso 122d, pgsor 95a, and pxp 93b.

2.8.22   h.22 EGSOT: S&L government consumption ex. employee comp., cw 2009$, trend

123c   ⟨*variable EGSOT* 123c⟩≡   (211)
     EGSOT   = S&L government consumption ex. employee comp., cw 2009$, trend
     Defines:
        EGSOT, used in chunk 223.
     Uses ex 39c.

123d   ⟨*equation egsot* 123d⟩≡   (244)
     egsot: d(log(egsot), 0, 1) - egsot_aerr _
                        = y_egsot(1) _
                        + y_egsot(2) * log(.01*pgsor(-1)*pxp(-1)*egsot(-1)/xgdptn(-1)) _
                        + y_egsot(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600

     Defines:
        egsot, used in chunk 122d.
     Uses hggdpt 60d, pgsor 95a, pxp 93b, xgdptn 61a, and y_egsot 123e.

123e   ⟨*coefficient y_egsot* 123e⟩≡   (253)
     y_egsot 3   -.382643,-.1,1.0
     Defines:
        y_egsot, used in chunk 123d.

2.8.23   h.23 GFDBTN: Federal government debt stock, current $

123f   ⟨*variable GFDBTN* 123f⟩≡   (211)
     GFDBTN   = Federal government debt stock, current $
     Defines:
        GFDBTN, used in chunks 205e and 223.

124a   ⟨*equation gfdbtn* 124a⟩≡   (244)
```
gfdbtn: gfdbtn - gfdbtn_aerr = ugfdbt*(gfdbtn(-1) - .25*gfsrpn + .25*egfin _
                               - .25*jygfgn - .25*jygfen)
```


Defines:
    gfdbtn, used in chunks 83a, 124c, 133d, and 157c.
Uses `egfin` 115a, `gfsrpn` 125d, `jygfen` 72e, `jygfgn` 73b, and `ugfdbt` 205e.

2.8.24   h.24 GFINTN: Federal government net interest payments, current $

124b   ⟨*variable GFINTN* 124b⟩≡   (211)
```
GFINTN    = Federal government net interest payments, current $
```
Defines:
    GFINTN, used in chunk 223.

124c   ⟨*equation gfintn* 124c⟩≡   (244)
```
gfintn: gfintn - gfintn_aerr = rgfint*gfdbtn(-1)
```


Defines:
    gfintn, used in chunks 81b and 125d.
Uses `gfdbtn` 124a and `rgfint` 157c.

2.8.25   h.25 GFS: Federal government grants-in-aid to S&L government, deflated by PGDP

124d   ⟨*variable GFS* 124d⟩≡   (211)
```
GFS       = Federal government grants-in-aid to S&L government, deflated by PGDP
```
Defines:
    GFS, used in chunk 223.
Uses `PGDP` 106e.

124e   ⟨*equation gfs* 124e⟩≡   (244)
```
gfs: d( log(gfs), 0, 1 ) - gfs_aerr  _
                  = y_gfs(1) _
                  + y_gfs(2) * log(gfsn(-1)/xgdptn(-1)) _
                  + y_gfs(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600
```


Defines:
    gfs, used in chunk 125b.
Uses `gfsn` 125b, `hggdpt` 60d, `xgdptn` 61a, and `y_gfs` 124f.

124f   ⟨*coefficient y_gfs* 124f⟩≡   (253)
```
y_gfs    3         -.361185,-.1,1.0
```
Defines:
    y_gfs, used in chunk 124e.

2.8.26   h.26 GFSN: Federal government grants-in-aid to S&L government, current $

125a $\langle$*variable GFSN* 125a$\rangle\equiv$ (211)

```
GFSN      = Federal government grants-in-aid to S&L government, current $
```

Defines:
  GFSN, used in chunk 223.

125b $\langle$*equation gfsn* 125b$\rangle\equiv$ (244)

```
gfsn: gfsn - gfsn_aerr = .01*pgdp*gfs
```

Defines:
  gfsn, used in chunks 124e, 125d, and 128e.
Uses gfs 124e and pgdp 106f.

2.8.27   h.27 GFSRPN: Federal government budget surplus, current $

125c $\langle$*variable GFSRPN* 125c$\rangle\equiv$ (211)

```
GFSRPN   = Federal government budget surplus, current $
```

Defines:
  GFSRPN, used in chunk 223.

125d $\langle$*equation gfsrpn* 125d$\rangle\equiv$ (244)

```
gfsrpn: gfsrpn - gfsrpn_aerr = tfpn + tfcin + tfibn + tfsin + tfdiv _
                   - egfln - egfon - gftn - gfintn _
                   - gfsubn - gfsn
```

Defines:
  gfsrpn, used in chunks 124a, 133d, and 138b.
Uses egfln 116d, egfon 118b, gfintn 124c, gfsn 125b, gfsubn 126d, gftn 127b, tfcin 131a,
  tfibn 131c, tfpn 131e, and tfsin 132a.

2.8.28   h.28 GFSUB: Federal government subsidies less surplus, deflated by PGDP

125e $\langle$*variable GFSUB* 125e$\rangle\equiv$ (211)

```
GFSUB     = Federal government subsidies less surplus, deflated by PGDP
```

Defines:
  GFSUB, used in chunk 223.
Uses PGDP 106e.

126a   ⟨*equation gfsub* 126a⟩≡   (244)
```
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
```

Defines:
  `gfsub`, used in chunk 126d.
Uses `gfsubn` 126d, `hggdpt` 60d, `xgdptn` 61a, and `y_gfsub` 126b.

126b   ⟨*coefficient y_gfsub* 126b⟩≡   (253)
```
y_gfsub 3        -.550087,-.1,1.0
```
Defines:
  `y_gfsub`, used in chunk 126a.

2.8.29 h.29 GFSUBN: Federal government subsidies less surplus, current $

126c   ⟨*variable GFSUBN* 126c⟩≡   (211)
```
GFSUBN   = Federal government subsidies less surplus, current $
```
Defines:
  `GFSUBN`, used in chunk 223.

126d   ⟨*equation gfsubn* 126d⟩≡   (244)
```
gfsubn: gfsubn - gfsubn_aerr = .01*pgdp*gfsub
```

Defines:
  `gfsubn`, used in chunks 77b, 125d, and 126a.
Uses `gfsub` 126a and `pgdp` 106f.

2.8.30 h.30 GFT: Federal government net transfer payments, deflated by PGDP

126e   ⟨*variable GFT* 126e⟩≡   (211)
```
GFT      = Federal government net transfer payments, deflated by PGDP
```
Defines:
  `GFT`, used in chunk 223.
Uses `PGDP` 106e.

126f   ⟨*equation gft* 126f⟩≡   (244)
```
gft: gft - gft_aerr = (gftrd+gftrt)*xgdpt
```

Defines:
  `gft`, used in chunk 127b.
Uses `gftrd` 127d, `gftrt` 199b, and `xgdpt` 55c.

2.8.31   h.31 GFTN: Federal government net transfer payments, current $

127a   ⟨*variable GFTN* 127a⟩≡   (211)
      GFTN   = Federal government net transfer payments, current $

Defines:
    GFTN, used in chunk 223.

127b   ⟨*equation gftn* 127b⟩≡   (244)
      gftn: gftn - gftn_aerr = .01*pgdp*gft

Defines:
    gftn, used in chunks 85d, 125d, 131e, and 137d.
Uses gft 126f and pgdp 106f.

2.8.32   h.32 GFTRD: Deviation of ratio of federal transfers to GDP from trend ratio

127c   ⟨*variable GFTRD* 127c⟩≡   (211)
      GFTRD   = Deviation of ratio of federal transfers to GDP from trend ratio

Defines:
    GFTRD, used in chunk 223.

127d   ⟨*equation gftrd* 127d⟩≡   (244)
      gftrd: gftrd - gftrd_aerr = y_gftrd(1) _
                  + y_gftrd(2) * gftrd(-1) _
                  + y_gftrd(3) * xgap2

Defines:
    gftrd, used in chunk 126f.
Uses xgap2 59c and y_gftrd 127e.

127e   ⟨*coefficient y_gftrd* 127e⟩≡   (253)
      y_gftrd 3   -3.598159243340642e-05,0.6589196196672864,-0.0002408286743628969

Defines:
    y_gftrd, used in chunk 127d.

2.8.33   h.33 GSDBTN: S&L government debt stock, current $

127f   ⟨*variable GSDBTN* 127f⟩≡   (211)
      GSDBTN   = S&L government debt stock, current $

Defines:
    GSDBTN, used in chunks 205f and 223.

128a   ⟨*equation gsdbtn* 128a⟩≡   (244)
            ```
            gsdbtn: gsdbtn - gsdbtn_aerr = ugsdbt*(gsdbtn(-1) - .25*gssrpn + .25 * egsin _
                                    - .25*jygsgn - .25*jygsen)
            ```

            Defines:
                gsdbtn, used in chunks 83a, 128c, and 135e.
            Uses egsin 120c, gssrpn 128e, jygsen 73d, jygsgn 73f, and ugsdbt 205f.

2.8.34   h.34 GSINTN: S&L government net interest payments, current $

128b   ⟨*variable GSINTN* 128b⟩≡   (211)
            ```
            GSINTN   = S&L government net interest payments, current $
            ```
            Defines:
                GSINTN, used in chunks 205g and 223.

128c   ⟨*equation gsintn* 128c⟩≡   (244)
            ```
            gsintn: gsintn - gsintn_aerr = rgfint*gsdbtn(-1) + ugsint*xbn
            ```

            Defines:
                gsintn, used in chunks 81b and 128e.
            Uses gsdbtn 128a, rgfint 157c, ugsint 205g, and xbn 71c.

2.8.35   h.35 GSSRPN: S&L government budget surplus, current $

128d   ⟨*variable GSSRPN* 128d⟩≡   (211)
            ```
            GSSRPN   = S&L government budget surplus, current $
            ```
            Defines:
                GSSRPN, used in chunk 223.

128e   ⟨*equation gssrpn* 128e⟩≡   (244)
            ```
            gssrpn: gssrpn - gssrpn_aerr = tspn + tscin + tsibn + tssin + gfsn  _
                                    - egsln - egson - gstn - gsintn - gssubn
            ```

            Defines:
                gssrpn, used in chunks 128a, 135e, and 138d.
            Uses egsln 121e, egson 123b, gfsn 125b, gsintn 128c, gssubn 129b, gstn 129d, tscin 136f,
                tsibn 137b, tspn 137d, and tssin 137f.

2.8.36   h.36 GSSUBN: S&L government subsidies less sur-plus, current \$

129a   ⟨*variable GSSUBN* 129a⟩≡   (211)
            ```
            GSSUBN   = S&L government subsidies less surplus, current $
            ```
Defines:
    GSSUBN, used in chunk 223.

129b   ⟨*equation gssubn* 129b⟩≡   (244)
            ```
            gssubn: gssubn - gssubn_aerr = .01*pgdp*gssub
            ```

Defines:
    gssubn, used in chunks 77b and 128e.
Uses gssub 130e and pgdp 106f.

2.8.37   h.37 GSTN: S&L government net transfer payments, current \$

129c   ⟨*variable GSTN* 129c⟩≡   (211)
            ```
            GSTN     = S&L government net transfer payments, current $
            ```
Defines:
    GSTN, used in chunk 223.

129d   ⟨*equation gstn* 129d⟩≡   (244)
            ```
            gstn: gstn - gstn_aerr = .01*pgdp*gst
            ```

Defines:
    gstn, used in chunks 85d, 128e, 131e, and 137d.
Uses gst 129f and pgdp 106f.

2.8.38   h.38 GST: S&L government net transfer payments, deflated by PGDP

129e   ⟨*variable GST* 129e⟩≡   (211)
            ```
            GST      = S&L government net transfer payments, deflated by PGDP
            ```
Defines:
    GST, used in chunk 223.
Uses PGDP 106e.

129f   ⟨*equation gst* 129f⟩≡   (244)
            ```
            gst: gst - gst_aerr = (gstrd+gstrt)*xgdpt
            ```

Defines:
    gst, used in chunk 129d.
Uses gstrd 130b, gstrt 199e, and xgdpt 55c.

2.8.39   h.39 GSTRD: Deviation of ratio of S&L transfers to GDP from trend ratio

130a   ⟨*variable GSTRD* 130a⟩≡   (211)

```
GSTRD    = Deviation of ratio of S&L transfers to GDP from trend ratio
```
Defines:
   GSTRD, used in chunk 223.

130b   ⟨*equation gstrd* 130b⟩≡   (244)

```
gstrd: gstrd - gstrd_aerr = y_gstrd(1) _
                  + y_gstrd(2) * gstrd(-1) _
                  + y_gstrd(3) * xgap2
```

Defines:
   gstrd, used in chunk 129f.
Uses xgap2 59c and y_gstrd 130c.

130c   ⟨*coefficient y_gstrd* 130c⟩≡   (253)

```
y_gstrd 3      -1.235658095172135e-05,0.7366990097980338,-4.483509762335216e-05
```
Defines:
   y_gstrd, used in chunk 130b.

2.8.40   h.40 GSSUB: S&L government subsidies less surplus, deflated by PGDP

130d   ⟨*variable GSSUB* 130d⟩≡   (211)

```
GSSUB    = S&L government subsidies less surplus, deflated by PGDP
```
Defines:
   GSSUB, used in chunks 206a and 223.
Uses PGDP 106e.

130e   ⟨*equation gssub* 130e⟩≡   (244)

```
gssub: gssub - gssub_aerr = ugssub*xgdpt
```

Defines:
   gssub, used in chunk 129b.
Uses ugssub 206a and xgdpt 55c.

2.8.41   h.41 TFCIN: Federal corporate income tax accruals, current $

130f   ⟨*variable TFCIN* 130f⟩≡   (211)

```
TFCIN    = Federal corporate income tax accruals, current $
```
Defines:
   TFCIN, used in chunk 223.

131a   ⟨*equation tfcin* 131a⟩≡   (244)
         tfcin: tfcin - tfcin_aerr = trfci * ynicpn

         Defines:
            tfcin, used in chunks 76–78, 83a, 125d, 153c, 186d, and 189e.
         Uses trfci 132c and ynicpn 77b.

2.8.42   h.42 TFIBN: Federal indirect business tax receipts, current $

131b   ⟨*variable TFIBN* 131b⟩≡   (211)
         TFIBN   = Federal indirect business tax receipts, current $
         Defines:
            TFIBN, used in chunk 223.

131c   ⟨*equation tfibn* 131c⟩≡   (244)
         tfibn: tfibn - tfibn_aerr = trfib * ecnian

         Defines:
            tfibn, used in chunks 77b and 125d.
         Uses ecnian 22a and trfib 203f.

2.8.43   h.43 TFPN: Federal personal income tax and non-tax receipts, current $

131d   ⟨*variable TFPN* 131d⟩≡   (211)
         TFPN   = Federal personal income tax and nontax receipts, current $
         Defines:
            TFPN, used in chunk 223.

131e   ⟨*equation tfpn* 131e⟩≡   (244)
         tfpn: tfpn - tfpn_aerr = trfp * (ypn - gftn - gstn)

         Defines:
            tfpn, used in chunks 77f, 84d, 125d, and 138f.
         Uses gftn 127b, gstn 129d, trfp 133a, and ypn 77d.

2.8.44   h.44 TFSIN: Federal social insurance tax receipts

131f   ⟨*variable TFSIN* 131f⟩≡   (211)
         TFSIN   = Federal social insurance tax receipts
         Defines:
            TFSIN, used in chunk 223.

132a   ⟨*equation tfsin* 132a⟩≡   (244)
        ```
        tfsin: tfsin - tfsin_aerr = trfsi * yniln
        ```

Defines:
    tfsin, used in chunks 81f and 125d.
Uses trfsi 203i and yniln 74f.

2.8.45   h.45 TRFCI: Average federal corporate income tax rate

132b   ⟨*variable TRFCI* 132b⟩≡   (211)
        ```
        TRFCI    = Average federal corporate income tax rate
        ```
Defines:
    TRFCI, used in chunk 223.

132c   ⟨*equation trfci* 132c⟩≡   (244)
        ```
        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 131a and 134b.
Uses epd 25c, picnia 88f, ppdr 95g, pxp 93b, tapdt 203a, trfcim 203e, xgap2 59c,
    y_trfci 132d, and ynicpn 77b.

132d   ⟨*coefficient y_trfci* 132d⟩≡   (253)
        ```
        y_trfci 6        0.00133892767133083,0.8130157141532537,0.1085501838146501,-0.2191884
        ```
Defines:
    y_trfci, used in chunk 132c.

2.8.46   h.46 TRFP: Average federal tax rate for personal income tax and nontax receipts

132e   ⟨*variable TRFP* 132e⟩≡   (211)
        ```
        TRFP     = Average federal tax rate for personal income tax and nontax receipts
        ```
Defines:
    TRFP, used in chunk 223.

133a   ⟨*equation trfp* 133a⟩≡   (244)
            ```
            trfp: trfp - trfp_aerr = y_trfp(1) * trfpt _
                            + ( y_trfp(2) *  (trfp(-1)-trfpt(-1)) +  y_trfp(3) *  (trfp(-2)-trfpt(-2)))
                            + y_trfp(4) * xgap2(-1)
            ```

Defines:
   trfp, used in chunks 131e and 135b.
Uses trfpt 133d, xgap2 59c, and y_trfp 133b.

133b   ⟨*coefficient y_trfp* 133b⟩≡   (253)
            ```
            y_trfp  4        1,0.6249369098272274,0.2896464773374296,0.0003722869429144596
            ```
Defines:
   y_trfp, used in chunk 133a.

2.8.47   h.47 TRFPT: Average federal tax rate for personal income tax, trend

133c   ⟨*variable TRFPT* 133c⟩≡   (211)
            ```
            TRFPT    = Average federal tax rate for personal income tax, trend
            ```
Defines:
   TRFPT, used in chunk 223.

133d   ⟨*equation trfpt* 133d⟩≡   (244)
            ```
            trfpt: trfpt - trfpt_aerr = dfpex * trfptx _
                            + dfpdbt * ( trfpt(-1) _
                                + y_trfpt(1) * (gfdbtn(-1)/xgdpn(-1) - gfdrt(-1))  _
                                + y_trfpt(2) * d( gfdbtn(-1)/xgdpn(-1) - gfdrt(-1), 0, 1 ) ) ) _
                            + dfpsrp * ( trfpt(-1) _
                                + y_trfpt(3) * ((gfsrpn(-1) - egfin(-1) + jygfgn(-1) _
                                    + jygfen(-1))/xgdpn(-1) - gfsrt(-1)))
            ```

Defines:
   trfpt, used in chunk 133a.
Uses dfpdbt 197a, dfpex 197b, dfpsrp 197c, egfin 115a, gfdbtn 124a, gfdrt 198h,
   gfsrpn 125d, gfsrt 199a, jygfen 72e, jygfgn 73b, trfptx 203h, xgdpn 70c,
   and y_trfpt 133e.

133e   ⟨*coefficient y_trfpt* 133e⟩≡   (253)
            ```
            y_trfpt 3        0.0500000000000000E+00,0.5000000000000000E+00,-0.1000000000000000E+00
            ```
Defines:
   y_trfpt, used in chunk 133d.

2.8.48   h.48 TRSCI: Average S&L corporate income tax rate

134a   ⟨*variable TRSCI* 134a⟩≡   (211)
         TRSCI   = Average S&L corporate income tax rate
         Defines:
           TRSCI, used in chunk 223.

134b   ⟨*equation trsci* 134b⟩≡   (244)
         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)

         Defines:
           trsci, used in chunk 136f.
         Uses trfci 132c, trscit 204a, xgap2 59c, and y_trsci 134c.

134c   ⟨*coefficient y_trsci* 134c⟩≡   (253)
         y_trsci 6   0.791150698521011,0.9058859419794156,-0.6970366405004266,-0.000768122
         Defines:
           y_trsci, used in chunk 134b.

2.8.49   h.49 TRSIB: Average S&L indirect business tax rate

134d   ⟨*variable TRSIB* 134d⟩≡   (211)
         TRSIB   = Average S&L indirect business tax rate
         Defines:
           TRSIB, used in chunk 223.

134e   ⟨*equation trsib* 134e⟩≡   (244)
         trsib: trsib - trsib_aerr = y_trsib(1) * trsib(-1) _
                         + (y_trsib(2) * trsibt + y_trsib(3) * trsibt(-1)) _
                         + y_trsib(4) * xgap2

         Defines:
           trsib, used in chunk 137b.
         Uses trsibt 204b, xgap2 59c, and y_trsib 134f.

134f   ⟨*coefficient y_trsib* 134f⟩≡   (253)
         y_trsib 4   0.9134383490112551,1.33647889726315,-1.249917246274406,-3.35380668439
         Defines:
           y_trsib, used in chunk 134e.

2.8.50   h.50 TRSP: Average S&L tax rate for personal income tax and nontax receipts

135a   ⟨*variable TRSP* 135a⟩≡   (211)
```
TRSP     = Average S&L tax rate for personal income tax and nontax receipts
```
Defines:
   TRSP, used in chunk 223.

135b   ⟨*equation trsp* 135b⟩≡   (244)
```
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 )
```

Defines:
   trsp, used in chunk 137d.
Uses trfp 133a, trspt 135e, xgap2 59c, and y_trsp 135c.

135c   ⟨*coefficient y_trsp* 135c⟩≡   (253)
```
y_trsp  5      0.632946369509944,0.882450152119161,-0.515396521629105,2.414664053290023e-05,0.
```
Defines:
   y_trsp, used in chunk 135b.

2.8.51   h.51 TRSPT: Trend S&L personal income tax rate

135d   ⟨*variable TRSPT* 135d⟩≡   (211)
```
TRSPT    = Trend S&L personal income tax rate
```
Defines:
   TRSPT, used in chunk 223.

135e   ⟨*equation trspt* 135e⟩≡   (244)
```
trspt: trspt - trspt_aerr = dfpex * trsptx _
              + dfpdbt * ( trspt(-1) _
                   + y_trspt(1) * (gsdbtn(-1)/xgdpn(-1) - gsdrt(-1))  _
                   + y_trspt(2) * d( gsdbtn(-1)/xgdpn(-1) - gsdrt(-1), 0, 1 ) ) _
              + dfpsrp * ( trspt(-1) _
                   + y_trspt(3) * ((gssrpn(-1) - egsin(-1) + jygsgn(-1) _
                        + jygsen(-1))/xgdpn(-1) - gssrt(-1)))
```

Defines:
   trspt, used in chunk 135b.
Uses dfpdbt 197a, dfpex 197b, dfpsrp 197c, egsin 120c, gsdbtn 128a, gsdrt 199c,
   gssrpn 128e, gssrt 199d, jygsen 73d, jygsgn 73f, trsptx 204d, xgdpn 70c,
   and y_trspt 136a.

136a   ⟨*coefficient y_trspt* 136a⟩≡   (253)
    y_trspt 3   0.05000000000000000E+00,0.50000000000000000E+00,-0.2500000000000000E-

Defines:
  y_trspt, used in chunk 135e.

2.8.52   h.52 TRSSI: Average S&L social insurance tax rate

136b   ⟨*variable TRSSI* 136b⟩≡   (211)
    TRSSI   = Average S&L social insurance tax rate

Defines:
  TRSSI, used in chunk 223.

136c   ⟨*equation trssi* 136c⟩≡   (244)
    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 137f.
Uses trssit 204e, xgap2 59c, and y_trssi 136d.

136d   ⟨*coefficient y_trssi* 136d⟩≡   (253)
    y_trssi 5   1.18174981903228,-0.2318024453193926,1.575674530080275,-1.5256219037

Defines:
  y_trssi, used in chunk 136c.

2.8.53   h.53 TSCIN: S&L corporate income tax accruals, current $

136e   ⟨*variable TSCIN* 136e⟩≡   (211)
    TSCIN   = S&L corporate income tax accruals, current $

Defines:
  TSCIN, used in chunk 223.

136f   ⟨*equation tscin* 136f⟩≡   (244)
    tscin: tscin - tscin_aerr = trsci * ynicpn

Defines:
  tscin, used in chunks 76–78, 83a, 128e, 153c, 186d, and 189e.
Uses trsci 134b and ynicpn 77b.

2.8.54   h.54 TSIBN: S&L indirect business tax receipts, current $

137a   ⟨*variable TSIBN* 137a⟩≡   (211)
            TSIBN   = S&L indirect business tax receipts, current $
            Defines:
              TSIBN, used in chunk 223.

137b   ⟨*equation tsibn* 137b⟩≡   (244)
            tsibn: tsibn - tsibn_aerr = trsib * ecnian

            Defines:
              tsibn, used in chunks 77b and 128e.
            Uses ecnian 22a and trsib 134e.

2.8.55   h.55 TSPN: S&L personal income tax and nontax receipts, current $

137c   ⟨*variable TSPN* 137c⟩≡   (211)
            TSPN   = S&L personal income tax and nontax receipts, current $
            Defines:
              TSPN, used in chunk 223.

137d   ⟨*equation tspn* 137d⟩≡   (244)
            tspn: tspn - tspn_aerr = trsp * (ypn - gftn - gstn)

            Defines:
              tspn, used in chunks 77f, 84d, 128e, and 138f.
            Uses gftn 127b, gstn 129d, trsp 135b, and ypn 77d.

2.8.56   h.56 TSSIN: S&L social insurance tax receipts, current $

137e   ⟨*variable TSSIN* 137e⟩≡   (211)
            TSSIN   = S&L social insurance tax receipts, current $
            Defines:
              TSSIN, used in chunk 223.

137f   ⟨*equation tssin* 137f⟩≡   (244)
            tssin: tssin - tssin_aerr = trssi * yniln

            Defines:
              tssin, used in chunks 81f and 128e.
            Uses trssi 136c and yniln 74f.

2.8.57   h.57 YGFSN: Federal government saving

138a   ⟨*variable YGFSN* 138a⟩≡   (211)
    ```
    YGFSN    = Federal government saving
    ```
Defines:
    YGFSN, used in chunk 223.

138b   ⟨*equation ygfsn* 138b⟩≡   (244)
    ```
    ygfsn: ygfsn - ygfsn_aerr = gfsrpn + jygfgn + jygfen
    ```

Defines:
    ygfsn, never used.
Uses gfsrpn 125d, jygfen 72e, and jygfgn 73b.

2.8.58   h.58 YGSSN: State and Local government saving

138c   ⟨*variable YGSSN* 138c⟩≡   (211)
    ```
    YGSSN    = State and Local government saving
    ```
Defines:
    YGSSN, used in chunk 223.

138d   ⟨*equation ygssn* 138d⟩≡   (244)
    ```
    ygssn: ygssn - ygssn_aerr = gssrpn + jygsgn + jygsen
    ```

Defines:
    ygssn, never used.
Uses gssrpn 128e, jygsen 73d, and jygsgn 73f.

2.8.59   h.59 TRYH: Average tax rate on household income

138e   ⟨*variable TRYH* 138e⟩≡   (211)
    ```
    TRYH    = Average tax rate on household income
    ```
Defines:
    TRYH, used in chunk 223.

138f   ⟨*equation tryh* 138f⟩≡   (244)
    ```
    tryh: tryh - tryh_aerr = (tfpn+tspn)/(yhln+yhptn)
    ```

Defines:
    tryh, used in chunks 81d and 82b.
Uses tfpn 131e, tspn 137d, yhln 81f, and yhptn 83e.

2.9   Financial Sector

2.9.1   i.1 RFFTAY: Value of eff. federal funds rate given by the Taylor rule with output gap

139a   ⟨*variable RFFTAY* 139a⟩≡   (211)
    ```
    RFFTAY   = Value of eff. federal funds rate given by the Taylor rule with output gap
    ```
    Defines:
      RFFTAY, used in chunk 223.

139b   ⟨*equation rfftay* 139b⟩≡   (244)
    ```
    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
    ```

    Defines:
      rfftay, used in chunk 142d.
    Uses picxfe 87b, pitarg 201b, rstar 142a, xgap2 59c, and y_rfftay 139c.

139c   ⟨*coefficient y_rfftay* 139c⟩≡   (253)
    ```
    y_rfftay       2        0.5,1.0
    ```
    Defines:
      y_rfftay, used in chunk 139b.

2.9.2   i.2 RFFTLR: Value of eff. federal funds rate given by the Taylor rule with unemployment gap

139d   ⟨*variable RFFTLR* 139d⟩≡   (211)
    ```
    RFFTLR   = Value of eff. federal funds rate given by the Taylor rule with unemployment gap
    ```
    Defines:
      RFFTLR, used in chunk 223.

139e   ⟨*equation rfftlr* 139e⟩≡   (244)
    ```
    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)
    ```

    Defines:
      rfftlr, used in chunk 142d.
    Uses deuc 196h, leuc 200e, lur 65f, lurnat 69e, picxfe 87b, pitarg 201b, rstar 142a,
      and y_rfftlr 139f.

139f   ⟨*coefficient y_rfftlr* 139f⟩≡   (253)
    ```
    y_rfftlr       3        -0.5,.375,1.1
    ```
    Defines:
      y_rfftlr, used in chunk 139e.

2.9.3   i.3 RFFINTAY: Value of eff. federal funds rate given by the inertial Taylor rule

140a   ⟨*variable RFFINTAY* 140a⟩≡   (211)
```
RFFINTAY = Value of eff. federal funds rate given by the inertial Taylor rule
```
Defines:
  RFFINTAY, used in chunk 223.

140b   ⟨*equation rffintay* 140b⟩≡   (244)
```
rffintay: rffintay - rffintay_aerr = y_rffintay(3) * rffe(-1) _
                    + (1-y_rffintay(3)) * (rstar _
                    + ( picxfe +  picxfe(-1) +  picxfe(-2) +  picxfe(-3)) / 4  _
                    + y_rffintay(1) * ( ( picxfe +  picxfe(-1) +  picxfe(-2) +  pic
                    + y_rffintay(2) * xgap2)
```

Defines:
  rffintay, used in chunk 142d.
Uses picxfe 87b, pitarg 201b, rffe 144e, rstar 142a, xgap2 59c, and y_rffintay 140c.

140c   ⟨*coefficient y_rffintay* 140c⟩≡   (253)
```
y_rffintay     3        0.5,1.0,.85
```
Defines:
  y_rffintay, used in chunk 140b.

2.9.4   i.4 RFFALT: Value of eff. federal funds rate given by estimated policy rule

140d   ⟨*variable RFFALT* 140d⟩≡   (211)
```
RFFALT   = Value of eff. federal funds rate given by estimated policy rule
```
Defines:
  RFFALT, used in chunk 223.

140e   ⟨*equation rffalt* 140e⟩≡   (244)
```
rffalt: rffalt - rffalt_aerr = y_rffalt(1) _
                    + y_rffalt(2) * rff(-1) _
                    + y_rffalt(3) * rff(-2) _
                    + y_rffalt(4) * xgap2 _
                    + y_rffalt(5) * xgap2(-1) _
                    + y_rffalt(6) * ( ( picxfe +  picxfe(-1) +  picxfe(-2) +  picxfe
```

Defines:
  rffalt, used in chunk 142d.
Uses picxfe 87b, rff 145a, xgap2 59c, and y_rffalt 141a.

141a   ⟨*coefficient y_rffalt* 141a⟩≡   (253)
          y_rffalt   6   .0551,1.2,-.39,.6954,-.5168,.3287
          Defines:
             y_rffalt, used in chunk 140e.

2.9.5   i.5 RFFGEN: Value of eff. federal funds rate given by the generalized reaction function

141b   ⟨*variable RFFGEN* 141b⟩≡   (211)
          RFFGEN   = Value of eff. federal funds rate given by the generalized reaction function
          Defines:
             RFFGEN, used in chunks 201a and 223.

141c   ⟨*equation rffgen* 141c⟩≡   (244)
          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) * lu
                              + (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)

          Defines:
             rffgen, used in chunk 142d.
          Uses lur 65f, lurnat 69e, pcnia 89b, pcstar 201a, picnia 88f, picxfe 87b, pitarg 201b,
             rffe 144e, rstar 142a, xgap2 59c, and y_rffgen 141d.

141d   ⟨*coefficient y_rffgen* 141d⟩≡   (253)
          y_rffgen   50   0.000000000000000000e+00,0.000000000000000000e+00,0.000000000000000000e
          Defines:
             y_rffgen, used in chunk 141c.

2.9.6   i.6 RSTAR: Equilibrium real federal funds rate (for monetary policy reaction functions)

141e   ⟨*variable RSTAR* 141e⟩≡   (211)
          RSTAR   = Equilibrium real federal funds rate (for monetary policy reaction functions)
          Defines:
             RSTAR, used in chunks 198e and 223.

142a   ⟨*equation rstar* 142a⟩≡   (244)

```
rstar: rstar - rstar_aerr = rstar(-1) _
                    + y_rstar(1) * ((rrffe-rstar(-1))*drstar)
```

Defines:
    rstar, used in chunks 139–41.
Uses drstar 198e, rrffe 145e, and y_rstar 142b.

142b   ⟨*coefficient y_rstar* 142b⟩≡   (253)

```
y_rstar 1         .05
```

Defines:
    y_rstar, used in chunk 142a.

2.9.7   i.7 RFFRULE: Federal funds rate (effective ann. yield)

142c   ⟨*variable RFFRULE* 142c⟩≡   (211)

```
RFFRULE  = Federal funds rate (effective ann. yield)
```

Defines:
    RFFRULE, used in chunk 223.

142d   ⟨*equation rffrule* 142d⟩≡   (244)

```
rffrule: rffrule - rffrule_aerr =  (@recode((dmpex * 100 * ((1+rfffix/36000)^365-1) _
                    + dmprr  * (rrfix + ( picxfe +  picxfe(-1) +  picxfe(-2) +  
                    + dmptay * rfftay  _
                    + dmptlr * rfftlr  _
                    + dmpintay * rffintay  _
                    + dmpalt * 100*((1+rffalt/36000)^365-1) _
                    + dmpgen * rffgen)>(rffmin),dmpex * 100 * ((1+rfffix/36000)^36
                    + dmprr  * (rrfix + ( picxfe +  picxfe(-1) +  picxfe(-2) +  
                    + dmptay * rfftay  _
                    + dmptlr * rfftlr  _
                    + dmpintay * rffintay  _
                    + dmpalt * 100*((1+rffalt/36000)^365-1) _
                    + dmpgen * rffgen,rffmin))
```

Defines:
    rffrule, used in chunk 144e.
Uses dmpalt 197e, dmpex 197f, dmpgen 197g, dmpintay 197h, dmprr 197i, dmptay 198b,
    dmptlr 198c, picxfe 87b, rffalt 140e, rfffix 201h, rffgen 141c, rffintay 140b,
    rffmin 202a, rfftay 139b, rfftlr 139e, and rrfix 202d.

2.9.8   i.8 DMPTLUR: Monetary policy indicator for un-employment threshold

143a   ⟨*variable DMPTLUR* 143a⟩≡   (211)
```
DMPTLUR  = Monetary policy indicator for unemployment threshold
```
Defines:
  DMPTLUR, used in chunk 223.

143b   ⟨*equation dmptlur* 143b⟩≡   (244)
```
dmptlur: dmptlur - dmptlur_aerr = 1/(1+exp(y_dmptlur(1)*(lur-lurtrsh)))
```

Defines:
  dmptlur, used in chunk 144a.
Uses `lur` 65f, `lurtrsh` 200g, and `y_dmptlur` 143c.

143c   ⟨*coefficient y_dmptlur* 143c⟩≡   (253)
```
y_dmptlur        1         25
```
Defines:
  y_dmptlur, used in chunk 143b.

2.9.9   i.9 DMPTPI: Monetary policy indicator for inflation threshold

143d   ⟨*variable DMPTPI* 143d⟩≡   (211)
```
DMPTPI   = Monetary policy indicator for inflation threshold
```
Defines:
  DMPTPI, used in chunk 223.

143e   ⟨*equation dmptpi* 143e⟩≡   (244)
```
dmptpi: dmptpi - dmptpi_aerr = 1/(1+exp(y_dmptpi(1)*(zpic58-pitrsh)))
```

Defines:
  dmptpi, used in chunk 144a.
Uses `pitrsh` 201c, `y_dmptpi` 143f, and `zpic58` 176b.

143f   ⟨*coefficient y_dmptpi* 143f⟩≡   (253)
```
y_dmptpi         1         -25
```
Defines:
  y_dmptpi, used in chunk 143e.

2.9.10   i.10 DMPTMAX: Monetary policy indicator for both thresholds

143g   ⟨*variable DMPTMAX* 143g⟩≡   (211)
```
DMPTMAX  = Monetary policy indicator for both thresholds
```
Defines:
  DMPTMAX, used in chunk 223.

144a   ⟨*equation dmptmax* 144a⟩≡   (244)
```
dmptmax: dmptmax - dmptmax_aerr = (@recode((dmptlur)>(dmptpi),dmptlur,dmptpi))
```

Defines:
    `dmptmax`, used in chunk 144c.
Uses `dmptlur` 143b and `dmptpi` 143e.

2.9.11   i.11 DMPTR: Monetary policy indicator for policy rule thresholds

144b   ⟨*variable DMPTR* 144b⟩≡   (211)
```
DMPTR    = Monetary policy indicator for policy rule thresholds
```
Defines:
    `DMPTR`, used in chunk 223.

144c   ⟨*equation dmptr* 144c⟩≡   (244)
```
dmptr: dmptr - dmptr_aerr = (@recode((dmptmax)>(dmptr(-1)),dmptmax,dmptr(-1)))
```

Defines:
    `dmptr`, used in chunk 144e.
Uses `dmptmax` 144a.

2.9.12   i.12 RFFE: Federal funds rate (effective ann. yield)

144d   ⟨*variable RFFE* 144d⟩≡   (211)
```
RFFE    = Federal funds rate (effective ann. yield)
```
Defines:
    `RFFE`, used in chunk 223.

144e   ⟨*equation rffe* 144e⟩≡   (244)
```
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 80d, 140b, 141c, 145, 146a, and 170–89.
Uses `dmptr` 144c, `dmptrsh` 198d, `rffmin` 202a, and `rffrule` 142d.

2.9.13   i.13 RFF: Federal funds rate

144f   ⟨*variable RFF* 144f⟩≡   (211)
```
RFF     = Federal funds rate
```
Defines:
    `RFF`, used in chunk 223.

145a   ⟨*equation rff* 145a⟩≡   (244)
         rff: rff - rff_aerr = 36000*((1+.01*rffe)^(1/365) - 1)

Defines:
    rff, used in chunks 140e and 145c.
Uses rffe 144e.

2.9.14   i.14 DELRFF: Federal funds rate, first diff

145b   ⟨*variable DELRFF* 145b⟩≡   (211)
         DELRFF   = Federal funds rate, first diff
Defines:
    DELRFF, used in chunk 223.

145c   ⟨*equation delrff* 145c⟩≡   (244)
         delrff: delrff - delrff_aerr = rff - rff(-1)

Defines:
    delrff, never used.
Uses rff 145a.

2.9.15   i.15 RRFFE: Real federal funds rate (effective ann. yield)

145d   ⟨*variable RRFFE* 145d⟩≡   (211)
         RRFFE   = Real federal funds rate (effective ann. yield)
Defines:
    RRFFE, used in chunk 223.

145e   ⟨*equation rrffe* 145e⟩≡   (244)
         rrffe: rrffe - rrffe_aerr = rffe - (picxfe + picxfe(-1) + picxfe(-2) + picxfe(-3)) / 4

Defines:
    rrffe, used in chunks 142a and 169a.
Uses picxfe 87b and rffe 144e.

2.9.16   i.16 RTBE: 3-month Treasury bill rate (effective ann. yield)

145f   ⟨*variable RTBE* 145f⟩≡   (211)
         RTBE   = 3-month Treasury bill rate (effective ann. yield)
Defines:
    RTBE, used in chunk 223.

146a   ⟨*equation rtbe* 146a⟩≡   (244)
```
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))
```

Defines:
  rtbe, used in chunk 146d.
Uses rffe 144e and y_rtbe 146b.

146b   ⟨*coefficient y_rtbe* 146b⟩≡   (253)
```
y_rtbe  5       -0.06677368009690213,0.7720707564737897,0.1224099968713681,0.7850952
```
Defines:
  y_rtbe, used in chunk 146a.

2.9.17   i.17 RTB: 3-month Treasury bill rate

146c   ⟨*variable RTB* 146c⟩≡   (211)
```
RTB      = 3-month Treasury bill rate
```
Defines:
  RTB, used in chunk 223.

146d   ⟨*equation rtb* 146d⟩≡   (244)
```
rtb: rtb - rtb_aerr = 36000/90 * (1-(.01*rtbe+1)^(-90/365))
```

Defines:
  rtb, used in chunks 47b and 156f.
Uses rtbe 146a.

2.9.18   i.18 RG5P: 5-year Treasury note rate. term premium

146e   ⟨*variable RG5P* 146e⟩≡   (211)
```
RG5P     = 5-year Treasury note rate. term premium
```
Defines:
  RG5P, used in chunk 223.

146f   ⟨*equation rg5p* 146f⟩≡   (244)
```
rg5p: rg5p - rg5p_aerr = y_rg5p(1) _
               + y_rg5p(2) * zgap05 _
               + y_rg5p(3) * (rg5p(-1) - y_rg5p(1) - y_rg5p(2)*zgap05(-1))
```

Defines:
  rg5p, used in chunk 147c.
Uses y_rg5p 147a and zgap05 171e.

147a   ⟨*coefficient y_rg5p* 147a⟩≡   (253)

```
y_rg5p  3        0.7478923780795074,-0.3984697511015516,0.9119509672669279
```
Defines:
   y_rg5p, used in chunk 146f.

2.9.19   i.19 RG5E: 5-year Treasury note rate (effective ann. yield)

147b   ⟨*variable RG5E* 147b⟩≡   (211)

```
RG5E    = 5-year Treasury note rate (effective ann. yield)
```
Defines:
   RG5E, used in chunks 169e, 171d, and 223.

147c   ⟨*equation rg5e* 147c⟩≡   (244)

```
rg5e: rg5e - rg5e_aerr = zrff5 + rg5p
```

Defines:
   rg5e, used in chunks 31e and 147e.
Uses rg5p 146f and zrff5 170a.

2.9.20   i.20 RG5: 5-year Treasury note rate

147d   ⟨*variable RG5* 147d⟩≡   (211)

```
RG5     = 5-year Treasury note rate
```
Defines:
   RG5, used in chunk 223.

147e   ⟨*equation rg5* 147e⟩≡   (244)

```
rg5: rg5 - rg5_aerr = (( (.01*rg5e + 1)^.5 - 1) * 200)
```

Defines:
   rg5, used in chunks 151d and 156f.
Uses rg5e 147c.

2.9.21   i.21 RG10P: 10-year Treasury bond rate, term premium

147f   ⟨*variable RG10P* 147f⟩≡   (211)

```
RG10P   = 10-year Treasury bond rate, term premium
```
Defines:
   RG10P, used in chunk 223.

148a   ⟨*equation rg10p* 148a⟩≡   (244)
```
rg10p: rg10p - rg10p_aerr = y_rg10p(1) _
                  + y_rg10p(2) * zgap10 _
                  + y_rg10p(3) * d8095 _
                  + y_rg10p(4) * (rg10p(-1) - y_rg10p(1)  - y_rg10p(2)*zgap10(-1) -
```

Defines:
  `rg10p`, used in chunk 148d.
Uses `d8095` 195f, `y_rg10p` 148b, and `zgap10` 172c.

148b   ⟨*coefficient y_rg10p* 148b⟩≡   (253)
```
y_rg10p 4        0.9985065593208419,-0.4718548432007495,0.7314217770878953,0.89593363
```
Defines:
  `y_rg10p`, used in chunk 148a.

2.9.22   i.22 RG10E: 10-year Treasury bond rate (effective ann. yield)

148c   ⟨*variable RG10E* 148c⟩≡   (211)
```
RG10E    = 10-year Treasury bond rate (effective ann. yield)
```
Defines:
  `RG10E`, used in chunks 170c, 172b, and 223.

148d   ⟨*equation rg10e* 148d⟩≡   (244)
```
rg10e: rg10e - rg10e_aerr = zrff10 + rg10p
```

Defines:
  `rg10e`, used in chunks 31e, 148f, 150f, 152a, and 163d.
Uses `rg10p` 148a and `zrff10` 170d.

2.9.23   i.23 RG10: 10-year Treasury bond rate

148e   ⟨*variable RG10* 148e⟩≡   (211)
```
RG10     = 10-year Treasury bond rate
```
Defines:
  `RG10`, used in chunk 223.

148f   ⟨*equation rg10* 148f⟩≡   (244)
```
rg10: rg10 - rg10_aerr = (( (.01*rg10e + 1)^.5 - 1) * 200)
```

Defines:
  `rg10`, used in chunks 47b and 156f.
Uses `rg10e` 148d.

2.9.24   i.24 RG30P: 30-year Treasury bond rate, term premium

149a   ⟨*variable RG30P* 149a⟩≡   (211)
```
RG30P    = 30-year Treasury bond rate, term premium
```
Defines:
   RG30P, used in chunk 223.

149b   ⟨*equation rg30p* 149b⟩≡   (244)
```
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)*
```

Defines:
   rg30p, used in chunk 149e.
Uses d8095 195f, y_rg30p 149c, and zgap30 173a.

149c   ⟨*coefficient y_rg30p* 149c⟩≡   (253)
```
y_rg30p 4        1.337544689343979,-0.5892843861420656,0.8365523842356651,0.9045588991659449
```
Defines:
   y_rg30p, used in chunk 149b.

2.9.25   i.25 RG30E: 30-year Treasury bond rate (effective ann. yield)

149d   ⟨*variable RG30E* 149d⟩≡   (211)
```
RG30E    = 30-year Treasury bond rate (effective ann. yield)
```
Defines:
   RG30E, used in chunks 171a, 172e, and 223.

149e   ⟨*equation rg30e* 149e⟩≡   (244)
```
rg30e: rg30e - rg30e_aerr = zrff30 + rg30p
```

Defines:
   rg30e, used in chunks 150a and 153a.
Uses rg30p 149b and zrff30 171b.

2.9.26   i.26 RG30: 30-year Treasury bond rate

149f   ⟨*variable RG30* 149f⟩≡   (211)
```
RG30     = 30-year Treasury bond rate
```
Defines:
   RG30, used in chunk 223.

150a   ⟨*equation rg30* 150a⟩≡   (244)
```
rg30: rg30 - rg30_aerr = (( (.01*rg30e + 1)^.5 - 1) * 200)
```

Defines:
  `rg30`, used in chunk 156f.
Uses `rg30e` 149e.

2.9.27   i.27 RBBBP: S&P BBB corporate bond rate, risk/term premium

150b   ⟨*variable RBBBP* 150b⟩≡   (211)
```
RBBBP    = S&P BBB corporate bond rate, risk/term premium
```
Defines:
  `RBBBP`, used in chunk 223.

150c   ⟨*equation rbbbp* 150c⟩≡   (244)
```
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 150f and 152d.
Uses `y_rbbbp` 150d and `zgap10` 172c.

150d   ⟨*coefficient y_rbbbp* 150d⟩≡   (253)
```
y_rbbbp 5        1.663544231588651,-0.1493888609930089,0.8866986585299741,1.6635442315
```
Defines:
  `y_rbbbp`, used in chunk 150c.

2.9.28   i.28 RBBBE: S&P BBB corporate bond rate (effective ann. yield)

150e   ⟨*variable RBBBE* 150e⟩≡   (211)
```
RBBBE    = S&P BBB corporate bond rate (effective ann. yield)
```
Defines:
  `RBBBE`, used in chunk 223.

150f   ⟨*equation rbbbe* 150f⟩≡   (244)
```
rbbbe: rbbbe - rbbbe_aerr = rbbbp + rg10e
```

Defines:
  `rbbbe`, used in chunks 31e, 75d, and 151b.
Uses `rbbbp` 150c and `rg10e` 148d.

2.9.29   i.29 RBBB: S&P BBB corporate bond rate

151a   ⟨*variable RBBB* 151a⟩≡   (211)
    RBBB   = S&P BBB corporate bond rate
    Defines:
      RBBB, used in chunk 223.

151b   ⟨*equation rbbb* 151b⟩≡   (244)
    rbbb: rbbb - rbbb_aerr = (((0.01*rbbbe + 1)^.5 - 1) * 200)

    Defines:
      rbbb, never used.
    Uses rbbbe 150f.

2.9.30   i.30 RCAR: New car loan rate at finance companies

151c   ⟨*variable RCAR* 151c⟩≡   (211)
    RCAR   = New car loan rate at finance companies
    Defines:
      RCAR, used in chunk 223.

151d   ⟨*equation rcar* 151d⟩≡   (244)
    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))

    Defines:
      rcar, used in chunks 23c and 80d.
    Uses rg5 147e, t47 202e, and y_rcar 151e.

151e   ⟨*coefficient y_rcar* 151e⟩≡   (253)
    y_rcar 6   2.100170296931854,-1.167642954704071,-0.008386800063101975,0.6937687101118568,0
    Defines:
      y_rcar, used in chunk 151d.

2.9.31   i.31 RME: Interest rate on conventional mortgages (effective ann. yield)

151f   ⟨*variable RME* 151f⟩≡   (211)
    RME   = Interest rate on conventional mortgages (effective ann. yield)
    Defines:
      RME, used in chunk 223.

152a   ⟨*equation rme* 152a⟩≡   (244)
```
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 18e, 23e, and 157f.
Uses `d87` 196d, `rg10e` 148d, and `y_rme` 152b.

152b   ⟨*coefficient y_rme* 152b⟩≡   (253)
```
y_rme   5       0.4927100798849811,0.6776016328060693,0.2424386344238626,0.230503798
```
Defines:
   `y_rme`, used in chunk 152a.

2.9.32   i.32 REQP: Real expected rate of return on equity, premium component

152c   ⟨*variable REQP* 152c⟩≡   (211)
```
REQP     = Real expected rate of return on equity, premium component
```
Defines:
   `REQP`, used in chunk 223.

152d   ⟨*equation reqp* 152d⟩≡   (244)
```
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 47b and 153a.
Uses `rbbbp` 150c and `y_reqp` 152e.

152e   ⟨*coefficient y_reqp* 152e⟩≡   (253)
```
y_reqp  5       2.882980324228344,0.6395674906531285,0.8185047577678474,2.882980324228
```
Defines:
   `y_reqp`, used in chunk 152d.

2.9.33   i.33 REQ: Real expected rate of return on equity

152f   ⟨*variable REQ* 152f⟩≡   (211)
```
REQ      = Real expected rate of return on equity
```
Defines:
   `REQ`, used in chunks 175d and 223.

153a   ⟨*equation req* 153a⟩≡   (244)
      req: req - req_aerr = rg30e - zpic30 + reqp

Defines:
  req, used in chunks 31e and 153c.
Uses reqp 152d, rg30e 149e, and zpic30 175e.

2.9.34   i.34 WPSN: Household stock market wealth, current $

153b   ⟨*variable WPSN* 153b⟩≡   (211)
      WPSN   = Household stock market wealth, current $
Defines:
  WPSN, used in chunks 186c and 223.

153c   ⟨*equation wpsn* 153c⟩≡   (244)
      wpsn: log(wpsn) - wpsn_aerr = log((ynicpn-tfcin-tscin)*.5) _
                          - .25 * (req-zdivgr) _
                          + log(25) + 1

Defines:
  wpsn, used in chunk 153e.
Uses req 153a, tfcin 131a, tscin 136f, ynicpn 77b, and zdivgr 186d.

2.9.35   i.35 WPS: Household stock market wealth, real

153d   ⟨*variable WPS* 153d⟩≡   (211)
      WPS   = Household stock market wealth, real
Defines:
  WPS, used in chunk 223.

153e   ⟨*equation wps* 153e⟩≡   (244)
      wps: wps - wps_aerr = wpsn/(.01*pcnia)

Defines:
  wps, used in chunk 19e.
Uses pcnia 89b and wpsn 153c.

2.9.36   i.36 RCGAIN: Rate of capital gain on the non-equity portion of household wealth

153f   ⟨*variable RCGAIN* 153f⟩≡   (211)
      RCGAIN   = Rate of capital gain on the non-equity portion of household wealth
Defines:
  RCGAIN, used in chunk 223.

154a   ⟨*equation rcgain* 154a⟩≡   (244)
```
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) )
```

Defines:
   rcgain, used in chunk 155a.
Uses picx4 112d, xgap2 59c, and y_rcgain 154b.

154b   ⟨*coefficient y_rcgain* 154b⟩≡   (253)
```
y_rcgain        5        0.1522590051966577,0.2987109747902424,0.2513416212164487,0.15
```
Defines:
   y_rcgain, used in chunk 154a.

2.9.37   i.37 PHOUSE: Loan Performance House Price Index

154c   ⟨*variable PHOUSE* 154c⟩≡   (211)
```
PHOUSE   = Loan Performance House Price Index
```
Defines:
   PHOUSE, used in chunk 223.

154d   ⟨*equation phouse* 154d⟩≡   (244)
```
phouse: d( log(phouse), 0, 1) - phouse_aerr = y_phouse(1) + y_phouse(2) * d( log(phou
                    + y_phouse(3) * log(phouse(-1)/(pchr(-1)*pcnia(-1)))
```

Defines:
   phouse, used in chunk 155a.
Uses pchr 112a, pcnia 89b, and y_phouse 154e.

154e   ⟨*coefficient y_phouse* 154e⟩≡   (253)
```
y_phouse        3        0.004817103239693556,0.8898461413782496,-0.01120829645070205
```
Defines:
   y_phouse, used in chunk 154d.

2.9.38   i.38 WPON: Household property wealth ex. stock market, current $

154f   ⟨*variable WPON* 154f⟩≡   (211)
```
WPON     = Household property wealth ex. stock market, current $
```
Defines:
   WPON, used in chunk 223.
Uses ex 39c.

155a   ⟨*equation wpon* 155a⟩≡   (244)
```
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))
```

Defines:
    wpon, used in chunk 156a.
Uses ecd 18b, ecnian 22a, jkcd 24a, kh 23a, pcdr 112f, pcnia 89b, phouse 154d, rcgain 154a,
    ydn 77f, and yhibn 80d.

2.9.39   i.39 MEI: Multiplicative discrepancy for the difference between XGDI and XGDO

155b   ⟨*variable MEI* 155b⟩≡   (211)
```
MEI      = Multiplicative discrepancy for the difference between XGDI and XGDO
```
Defines:
    MEI, used in chunk 223.
Uses XGDI 55f and XGDO 56b.

155c   ⟨*equation mei* 155c⟩≡   (244)
```
mei: log(mei) - mei_aerr = y_mei(1) * log(mei(-1))
```

Defines:
    mei, used in chunk 56a.
Uses y_mei 155d.

155d   ⟨*coefficient y_mei* 155d⟩≡   (253)
```
y_mei   1        0.86
```
Defines:
    y_mei, used in chunk 155c.

2.9.40   i.40 WPO: Household property wealth ex. stock market, real

155e   ⟨*variable WPO* 155e⟩≡   (211)
```
WPO      = Household property wealth ex. stock market, real
```
Defines:
    WPO, used in chunk 223.
Uses ex 39c.

156a   ⟨*equation wpo* 156a⟩≡   (244)
            wpo: wpo - wpo_aerr = wpon/(.01*pcnia)

            Defines:
              wpo, used in chunk 19e.
            Uses pcnia 89b and wpon 155a.

2.9.41   i.41 MEP: Multiplicative discrepancy for the difference between XGDP and XGDO

156b   ⟨*variable MEP* 156b⟩≡   (211)
            MEP   = Multiplicative discrepancy for the difference between XGDP and XGDO
            Defines:
              MEP, used in chunk 223.
            Uses XGDO 56b and XGDP 48c.

156c   ⟨*equation mep* 156c⟩≡   (244)
            mep: log(mep) - mep_aerr = y_mep(1) * log(mep(-1))

            Defines:
              mep, used in chunk 56c.
            Uses y_mep 156d.

156d   ⟨*coefficient y_mep* 156d⟩≡   (253)
            y_mep   1   0.86
            Defines:
              y_mep, used in chunk 156c.

2.9.42   i.42 RGW: Approximate average rate of interest on new federal debt

156e   ⟨*variable RGW* 156e⟩≡   (211)
            RGW   = Approximate average rate of interest on new federal debt
            Defines:
              RGW, used in chunk 223.

156f   ⟨*equation rgw* 156f⟩≡   (244)
            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 157c.
            Uses rg10 148f, rg30 150a, rg5 147e, rtb 146d, and y_rgw 157a.

157a   ⟨coefficient y_rgw 157a⟩≡   (253)
            y_rgw   4   .00495,.00271,.00129,.00105
            Defines:
              y_rgw, used in chunk 156f.

2.9.43   i.43 RGFINT: Average rate of interest on existing federal debt

157b   ⟨variable RGFINT 157b⟩≡   (211)
            RGFINT   = Average rate of interest on existing federal debt
            Defines:
              RGFINT, used in chunk 223.

157c   ⟨equation rgfint 157c⟩≡   (244)
            rgfint: rgfint - rgfint_aerr   _
                            = (y_rgfint(1) * rgfint(-1) + (1-y_rgfint(1))*rgw(-1))*(gfdbtn(-2)/gfdbtn(-1))
                            + rgw(-1)*(1-gfdbtn(-2)/gfdbtn(-1)) + y_rgfint(2)

            Defines:
              rgfint, used in chunks 124c and 128c.
            Uses gfdbtn 124a, rgw 156f, and y_rgfint 157d.

157d   ⟨coefficient y_rgfint 157d⟩≡   (253)
            y_rgfint   2   0.86,0.005417428040208504
            Defines:
              y_rgfint, used in chunk 157c.

2.9.44   i.44 RRMET: Real mortgage rate, trend

157e   ⟨variable RRMET 157e⟩≡   (211)
            RRMET   = Real mortgage rate, trend
            Defines:
              RRMET, used in chunks 174d and 223.

157f   ⟨equation rrmet 157f⟩≡   (244)
            rrmet: rrmet - rrmet_aerr = y_rrmet(1) * rrmet(-1) _
                            + y_rrmet(2) * (rme-zpi10)

            Defines:
              rrmet, used in chunks 19b and 75d.
            Uses rme 152a, y_rrmet 157g, and zpi10 174e.

157g   ⟨coefficient y_rrmet 157g⟩≡   (253)
            y_rrmet 2   .9048,.0952
            Defines:
              y_rrmet, used in chunk 157f.

2.10 Foreign Activity

2.10.1 j.1 FXGAP: Foreign output gap (world, bilateral export weights)

158a   ⟨*variable FXGAP* 158a⟩≡   (211)
```
FXGAP    = Foreign output gap (world, bilateral export weights)
```
Defines:
  FXGAP, used in chunk 223.

158b   ⟨*equation fxgap* 158b⟩≡   (244)
```
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 39c, 158e, 159e, 162a, and 163a.
Uses fpi10 159e, frs10 162a, frstar 162d, xgap2 59c, and y_fxgap 158c.

158c   ⟨*coefficient y_fxgap* 158c⟩≡   (253)
```
y_fxgap 4       1.284002584226955,-0.4544105287732581,-0.05,0.02742233318740996
```
Defines:
  y_fxgap, used in chunk 158b.

2.10.2 j.2 FGDP: Foreign aggregate GDP (world, bilateral export weights)

158d   ⟨*variable FGDP* 158d⟩≡   (211)
```
FGDP    = Foreign aggregate GDP (world, bilateral export weights)
```
Defines:
  FGDP, used in chunk 223.

158e   ⟨*equation fgdp* 158e⟩≡   (244)
```
fgdp: fgdp - fgdp_aerr = fgdpt*exp(fxgap/100)
```

Defines:
  fgdp, used in chunk 39c.
Uses fgdpt 159b and fxgap 158b.

2.10.3 j.3 FGDPT: Foreign aggregate GDP (world, bilateral export weights), trend

159a   ⟨*variable FGDPT* 159a⟩≡   (211)

```
FGDPT    = Foreign aggregate GDP (world, bilateral export weights), trend
```
Defines:
    FGDPT, used in chunk 223.

159b   ⟨*equation fgdpt* 159b⟩≡   (244)

```
fgdpt: d( log(fgdpt), 0, 1 ) - fgdpt_aerr  _
                   = y_fgdpt(1) _
                   + y_fgdpt(2) * log(fgdpt(-1)/xgdpt(-1)) _
                   + y_fgdpt(3) * (hggdpt+hggdpt(-1)+hggdpt(-2)+hggdpt(-3)) / 1600
```

Defines:
    fgdpt, used in chunk 158e.
Uses hggdpt 60d, xgdpt 55c, and y␣fgdpt 159c.

159c   ⟨*coefficient y_fgdpt* 159c⟩≡   (253)

```
y_fgdpt 3        -.458264,-.1,1.0
```
Defines:
    y␣fgdpt, used in chunk 159b.

2.10.4 j.4 FPI10: Foreign consumer price inflation (G10)

159d   ⟨*variable FPI10* 159d⟩≡   (211)

```
FPI10    = Foreign consumer price inflation (G10)
```
Defines:
    FPI10, used in chunk 223.

159e   ⟨*equation fpi10* 159e⟩≡   (244)

```
fpi10: fpi10-fpi10_aerr = y_fpi10(1) * ( ( fpi10(-1) +  fpi10(-2) +  fpi10(-3) +  fpi10(-4)) /
                  + y_fpi10(2) * fpitrg _
                  + y_fpi10(3) * fxgap(-1) _
                  + ( y_fpi10(4) * d( log(poilr), 0, 1 ) +  y_fpi10(5) * d( log(poilr(-1)), 0,
```

Defines:
    fpi10, used in chunks 158b, 160, and 162.
Uses fpitrg 198f, fxgap 158b, poilr 101a, and y␣fpi10 159f.

159f   ⟨*coefficient y_fpi10* 159f⟩≡   (253)

```
y_fpi10 5        0.7045829169372979,0.2954170830627021,0.2531839520282475,5.324212789847609,0.91
```
Defines:
    y␣fpi10, used in chunk 159e.

2.10.5   j.5 FPI10T: Foreign consumer price inflation, trend (G10)

160a   ⟨*variable FPI10T* 160a⟩≡   (211)
```
FPI10T   = Foreign consumer price inflation, trend (G10)
```
Defines:
  FPI10T, used in chunk 223.

160b   ⟨*equation fpi10t* 160b⟩≡   (244)
```
fpi10t: fpi10t-fpi10t_aerr = y_fpi10t(1) * fpi10t(-1) _
                     + y_fpi10t(2) * fpi10
```

Defines:
  fpi10t, used in chunk 163d.
Uses fpi10 159e and y_fpi10t 160c.

160c   ⟨*coefficient y_fpi10t* 160c⟩≡   (253)
```
y_fpi10t        2        9.500000000000000000e-01,5.000000000000000000e-02
```
Defines:
  y_fpi10t, used in chunk 160b.

2.10.6   j.6 FPIC: Foreign consumer price inflation (G39, bilateral export trade weights)

160d   ⟨*variable FPIC* 160d⟩≡   (211)
```
FPIC     = Foreign consumer price inflation (G39, bilateral export trade weights)
```
Defines:
  FPIC, used in chunk 223.

160e   ⟨*equation fpic* 160e⟩≡   (244)
```
fpic: fpic-fpic_aerr = y_fpic(1) _
               + y_fpic(2) * fpi10 _
               + y_fpic(3) * fpic(-1)
```

Defines:
  fpic, used in chunk 161b.
Uses fpi10 159e and y_fpic 160f.

160f   ⟨*coefficient y_fpic* 160f⟩≡   (253)
```
y_fpic  3       2.174669585864584,0.6994194241702426,0.3005805758297574
```
Defines:
  y_fpic, used in chunk 160e.

2.10.7   j.7 FPC: Foreign aggregate consumer price (G39, import/export trade weights)

161a   ⟨*variable FPC* 161a⟩≡   (211)

```
FPC      = Foreign aggregate consumer price (G39, import/export trade weights)
```

Defines:
   FPC, used in chunk 223.

161b   ⟨*equation fpc* 161b⟩≡   (244)

```
fpc: fpc - fpc_aerr = fpc(-1)*exp(fpic/400)
```

Defines:
   fpc, used in chunks 39c, 43e, 45c, 161d, and 164.
Uses fpic 160e.

2.10.8   j.8 FPCM: Foreign aggregate consumer price (G39, bilateral non-oil import trade weights)

161c   ⟨*variable FPCM* 161c⟩≡   (211)

```
FPCM     = Foreign aggregate consumer price (G39, bilateral non-oil import trade weights)
```

Defines:
   FPCM, used in chunks 205b and 223.

161d   ⟨*equation fpcm* 161d⟩≡   (244)

```
fpcm: fpcm - fpcm_aerr = ufpcm*fpc
```

Defines:
   fpcm, used in chunks 105e and 164f.
Uses fpc 161b and ufpcm 205b.

2.10.9   j.9 FRS10: Foreign short-term interest rate (G10)

161e   ⟨*variable FRS10* 161e⟩≡   (211)

```
FRS10    = Foreign short-term interest rate (G10)
```

Defines:
   FRS10, used in chunk 223.

162a   ⟨*equation frs10* 162a⟩≡   (244)
```
frs10: frs10 - frs10_aerr = dfmprr * (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-dfmprr) * (rfrs10 +  ( fpi10 +  fpi10(-1) +  fpi10(-2) +  fp
```

Defines:
  frs10, used in chunks 158b, 162d, and 163a.
Uses dfmprr 196i, fpi10 159e, fpitrg 198f, frstar 162d, fxgap 158b, rfrs10 202c,
  and y_frs10 162b.

162b   ⟨*coefficient y_frs10* 162b⟩≡   (253)
```
y_frs10 5         0.0,1.0,1.0,0.5,1.0
```
Defines:
  y_frs10, used in chunk 162a.

2.10.10   j.10 FRSTAR: Equilibrium real short-term interest rate used in foreign Taylor rule

162c   ⟨*variable FRSTAR* 162c⟩≡   (211)
```
FRSTAR   = Equilibrium real short-term interest rate used in foreign Taylor rule
```
Defines:
  FRSTAR, used in chunk 223.

162d   ⟨*equation frstar* 162d⟩≡   (244)
```
frstar: frstar - frstar_aerr = y_frstar(1) * frstar(-1) _
                    + y_frstar(2) * (frs10 -  ( fpi10 +  fpi10(-1) +  fpi10(-2) +  f
```

Defines:
  frstar, used in chunks 158b and 162a.
Uses fpi10 159e, frs10 162a, and y_frstar 162e.

162e   ⟨*coefficient y_frstar* 162e⟩≡   (253)
```
y_frstar         2          .95,.05
```
Defines:
  y_frstar, used in chunk 162d.

2.10.11   j.11 FRL10: Foreign long-term interest rate (G10)

162f   ⟨*variable FRL10* 162f⟩≡   (211)
```
FRL10    = Foreign long-term interest rate (G10)
```
Defines:
  FRL10, used in chunk 223.

163a   ⟨*equation frl10* 163a⟩≡   (244)
```
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))
```

Defines:
   frl10, used in chunk 163d.
Uses frs10 162a, fxgap 158b, and y_frl10 163b.

163b   ⟨*coefficient y_frl10* 163b⟩≡   (253)
```
y_frl10 5        0.03993364460261257,-0.07293669623744157,0.08403561227292196,0.3637926024013994
```
Defines:
   y_frl10, used in chunk 163a.

2.10.12   j.12 FPXR: Real exchange rate (G39, import/export trade weights)

163c   ⟨*variable FPXR* 163c⟩≡   (211)
```
FPXR     = Real exchange rate (G39, import/export trade weights)
```
Defines:
   FPXR, used in chunks 175b and 223.

163d   ⟨*equation fpxr* 163d⟩≡   (244)
```
fpxr: log(fpxr) - fpxr_aerr - log(fpxrr) = _
                        y_fpxr(1)*(rg10e-zpi10f-frl10+fpi10t) _
                + y_fpxr(2)*(fnin/xgdpn)
```

Defines:
   fpxr, used in chunks 88c and 164d.
Uses fnin 43e, fpi10t 160b, fpxrr 164a, frl10 163a, rg10e 148d, xgdpn 70c, y_fpxr 163e,
   and zpi10f 175c.

163e   ⟨*coefficient y_fpxr* 163e⟩≡   (253)
```
y_fpxr  2         0.048,0.5
```
Defines:
   y_fpxr, used in chunk 163d.

2.10.13   j.13 FPXRR: Real exchange rate residual

163f   ⟨*variable FPXRR* 163f⟩≡   (211)
```
FPXRR    = Real exchange rate residual
```
Defines:
   FPXRR, used in chunk 223.

164a   ⟨*equation fpxrr* 164a⟩≡   (244)
```
fpxrr: d( log(fpxrr), 0, 1 ) - fpxrr_aerr _
                   = y_fpxrr(1) * log(fpxrrt(-1)/fpxrr(-1)) _
                   + y_fpxrr(2) * d( log(fpxrr(-1)), 0, 1 ) _
                   + (1-y_fpxrr(2)) * d( log(fpxrrt), 0, 1 )
```

Defines:
    fpxrr, used in chunk 163d.
Uses fpxrrt 198g and y_fpxrr 164b.

164b   ⟨*coefficient y_fpxrr* 164b⟩≡   (253)
```
y_fpxrr 2        0.03011994048459088,0.2026244928161041
```
Defines:
    y_fpxrr, used in chunk 164a.

2.10.14   j.14 FPX: Nominal exchange rate (G39, import/export trade weights)

164c   ⟨*variable FPX* 164c⟩≡   (211)
```
FPX       = Nominal exchange rate (G39, import/export trade weights)
```
Defines:
    FPX, used in chunk 223.

164d   ⟨*equation fpx* 164d⟩≡   (244)
```
fpx: fpx - fpx_aerr = fpxr*fpc/pcpi
```

Defines:
    fpx, used in chunks 39c, 43e, 45c, and 164f.
Uses fpc 161b, fpxr 163d, and pcpi 89d.

2.10.15   j.15 FPXM: Nominal exchange rate (G39, bilateral import trade weights)

164e   ⟨*variable FPXM* 164e⟩≡   (211)
```
FPXM      = Nominal exchange rate (G39, bilateral import trade weights)
```
Defines:
    FPXM, used in chunks 205c and 223.

164f   ⟨*equation fpxm* 164f⟩≡   (244)
```
fpxm: fpxm - fpxm_aerr = ufpxm*fpx*fpcm/fpc
```

Defines:
    fpxm, used in chunk 105e.
Uses fpc 161b, fpcm 161d, fpx 164d, and ufpxm 205c.

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 223.

167a   ⟨*equation zyhst* 167a⟩≡   (244)
```
   zyhst: zyhst-zyhst_aerr = zyhst(-1) + y_zyhst(1)*(yhshr-zyhst(-1))
```

Defines:
   `zyhst`, used in chunks 80b, 188, and 189b.
Uses `y_zyhst` 167b and `yhshr` 84b.

167b   ⟨*coefficient y_zyhst* 167b⟩≡   (253)
```
   y_zyhst 1         0.05000000000000000E+00
```
Defines:
   `y_zyhst`, used in chunk 167a.

2.11.35   z1.35 ZYHPST: Expected trend share of property income in household income

167c   ⟨*variable ZYHPST* 167c⟩≡   (211)
```
   ZYHPST   = Expected trend share of property income in household income
```
Defines:
   `ZYHPST`, used in chunk 223.

167d   ⟨*equation zyhpst* 167d⟩≡   (244)
```
   zyhpst: zyhpst-zyhpst_aerr = zyhpst(-1) + y_zyhpst(1)*(yhpshr-zyhpst(-1))
```

Defines:
   `zyhpst`, used in chunks 82d and 188d.
Uses `y_zyhpst` 167e and `yhpshr` 83c.

167e   ⟨*coefficient y_zyhpst* 167e⟩≡   (253)
```
   y_zyhpst         1         0.05000000000000000E+00
```
Defines:
   `y_zyhpst`, used in chunk 167d.

2.11.36   z1.36 ZYHTST: Expected trend share of transfer income in household income

167f   ⟨*variable ZYHTST* 167f⟩≡   (211)
```
   ZYHTST   = Expected trend share of transfer income in household income
```
Defines:
   `ZYHTST`, used in chunk 223.

168a $\langle equation\ zyhtst\ 168a\rangle\equiv$ (244)
```
zyhtst: zyhtst - zyhtst_aerr = zyhtst(-1) + y_zyhtst(1)*(yhtshr-zyhtst(-1))
```

Defines:
  zyhtst, used in chunks 85b and 189b.
Uses y_zyhtst 168b and yhtshr 85f.

168b $\langle coefficient\ y\_zyhtst\ 168b\rangle\equiv$ (253)
```
y_zyhtst        1          0.05000000000000000E+00
```
Defines:
  y_zyhtst, used in chunk 168a.

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)

168c $\langle variable\ PTR\ 168c\rangle\equiv$ (211)
```
PTR     = 10-year expected PCE price inflation (Survey of Professional Forecasters)
```
Defines:
  PTR, used in chunk 223.

168d $\langle equation\ ptr\ 168d\rangle\equiv$ (244)
```
ptr: ptr - ptr_aerr = y_ptr(1)*ptr(-1) + y_ptr(2)*picxfe(-1)+ y_ptr(3)*pitarg(-1)
```

Defines:
  ptr, used in chunks 87 and 169–89.
Uses picxfe 87b, pitarg 201b, and y_ptr 168e.

168e $\langle coefficient\ y\_ptr\ 168e\rangle\equiv$ (253)
```
y_ptr   3         0.9,0.05,0.05
```
Defines:
  y_ptr, used in chunk 168d.

2.12.2   z2.2 RRTR: Expected long-run real federal funds rate

168f $\langle variable\ RRTR\ 168f\rangle\equiv$ (211)
```
RRTR     = Expected long-run real federal funds rate
```
Defines:
  RRTR, used in chunk 223.

169a   ⟨*equation rrtr* 169a⟩≡   (244)
            ```
            rrtr: rrtr - rrtr_aerr = y_rrtr(1) * rrtr(-1) _
                            + y_rrtr(2) * rrffe
            ```

            Defines:
              rrtr, used in chunk 169d.
            Uses rrffe 145e and y_rrtr 169b.

169b   ⟨*coefficient y_rrtr* 169b⟩≡   (253)
            ```
            y_rrtr   2          .97,.03
            ```
            Defines:
              y_rrtr, used in chunk 169a.

2.12.3   z2.3 RTR: Expected federal funds rate in the long run (Blue Chip)

169c   ⟨*variable RTR* 169c⟩≡   (211)
            ```
            RTR       = Expected federal funds rate in the long run (Blue Chip)
            ```
            Defines:
              RTR, used in chunk 223.

169d   ⟨*equation rtr* 169d⟩≡   (244)
            ```
            rtr: rtr - rtr_aerr = rrtr + ptr
            ```

            Defines:
              rtr, used in chunks 170–89.
            Uses ptr 168d and rrtr 169a.

2.12.4   z2.4 ZRFF5: Expected federal funds rate, for RG5E eq. (5-yr mat.) (MCE exp.)

169e   ⟨*variable ZRFF5* 169e⟩≡   (211)
            ```
            ZRFF5     = Expected federal funds rate, for RG5E eq. (5-yr mat.)
            ```
            Defines:
              ZRFF5, used in chunk 223.
            Uses RG5E 147b.

170a   ⟨*equation zrff5* 170a⟩≡   (244)
```
zrff5:  zrff5-zrff5_aerr = y_zrff5(1) _
                   + ( y_zrff5(2) *  picnia +  y_zrff5(3) *  picnia(-1) +  y_zrff5(4)
                   + ( y_zrff5(6) *  rffe +  y_zrff5(7) *  rffe(-1) +  y_zrff5(8) *
                   + y_zrff5(10) * rtr _
                   + y_zrff5(11) * ptr _
                   + ( y_zrff5(12) *  xgap +  y_zrff5(13) *  xgap(-1) +  y_zrff5(14)
```

Defines:
  `zrff5`, used in chunk 147c.
Uses `picnia` 88f, `ptr` 168d, `rffe` 144e, `rtr` 169d, `xgap` 59a, and `y_zrff5` 170b.

170b   ⟨*coefficient y_zrff5* 170b⟩≡   (253)
```
y_zrff5 15      -2.893994419845934e-13,-0.03329615692337154,-0.01651377444295286,-0.0
```
Defines:
  `y_zrff5`, used in chunk 170a.

2.12.5   z2.5 ZRFF10: Expected federal funds rate, for RG10E eq. (10-yr mat.) (MCE exp.)

170c   ⟨*variable ZRFF10* 170c⟩≡   (211)
```
ZRFF10   = Expected federal funds rate, for RG10E eq. (10-yr mat.)
```
Defines:
  `ZRFF10`, used in chunk 223.
Uses `RG10E` 148c.

170d   ⟨*equation zrff10* 170d⟩≡   (244)
```
zrff10:  zrff10-zrff10_aerr = y_zrff10(1) _
                   + ( y_zrff10(2) *  picnia +  y_zrff10(3) *  picnia(-1) +  y_zrff
                   + ( y_zrff10(6) *  rffe +  y_zrff10(7) *  rffe(-1) +  y_zrff10(8
                   + y_zrff10(10) * rtr _
                   + y_zrff10(11) * ptr _
                   + ( y_zrff10(12) *  xgap +  y_zrff10(13) *  xgap(-1) +  y_zrff10(
```

Defines:
  `zrff10`, used in chunk 148d.
Uses `picnia` 88f, `ptr` 168d, `rffe` 144e, `rtr` 169d, `xgap` 59a, and `y_zrff10` 170e.

170e   ⟨*coefficient y_zrff10* 170e⟩≡   (253)
```
y_zrff10        15      -1.225928191740291e-13,-0.02771619956382117,-0.0118808087118
```
Defines:
  `y_zrff10`, used in chunk 170d.

2.12.6   z2.6 ZRFF30: Expected federal funds rate, for RG30E eq. (30-yr mat.) (MCE exp.)

171a   ⟨*variable ZRFF30* 171a⟩≡   (211)
           ZRFF30   = Expected federal funds rate, for RG30E eq. (30-yr mat.)
           Defines:
             ZRFF30, used in chunk 223.
           Uses RG30E 149d.

171b   ⟨*equation zrff30* 171b⟩≡   (244)
           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 149e.
           Uses picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap 59a, and y_zrff30 171c.

171c   ⟨*coefficient y_zrff30* 171c⟩≡   (253)
           y_zrff30   15   -6.431098710768743e-14,-0.01469452480129645,-0.006366611548946281,-0.01
           Defines:
             y_zrff30, used in chunk 171b.

2.12.7   z2.7 ZGAP05: Expected output gap, for RG5E eq. (MCE exp.)

171d   ⟨*variable ZGAP05* 171d⟩≡   (211)
           ZGAP05   = Expected output gap, for RG5E eq.
           Defines:
             ZGAP05, used in chunk 223.
           Uses RG5E 147b.

171e   ⟨*equation zgap05* 171e⟩≡   (244)
           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 146f.
           Uses picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap 59a, and y_zgap05 172a.

172a   ⟨coefficient y_zgap05 172a⟩≡   (253)
    y_zgap05   15   2.257007909357927e-15,-0.1597149595303493,-0.0271459642153113
    Defines:
     y_zgap05, used in chunk 171e.

2.12.8   z2.8 ZGAP10: Expected output gap, for RG10E eq. (MCE exp.)

172b   ⟨variable ZGAP10 172b⟩≡   (211)
    ZGAP10   = Expected output gap, for RG10E eq.
    Defines:
     ZGAP10, used in chunk 223.
    Uses RG10E 148c.

172c   ⟨equation zgap10 172c⟩≡   (244)
    zgap10: zgap10-zgap10_aerr = y_zgap10(1) _
                     + (y_zgap10(2) * picnia + y_zgap10(3) * picnia(-1) + y_zgap
                     + (y_zgap10(6) * rffe + y_zgap10(7) * rffe(-1) + y_zgap10(8
                     + y_zgap10(10) * rtr _
                     + y_zgap10(11) * ptr _
                     + (y_zgap10(12) * xgap + y_zgap10(13) * xgap(-1) + y_zgap10(

    Defines:
     zgap10, used in chunks 148a and 150c.
    Uses picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap 59a, and y_zgap10 172d.

172d   ⟨coefficient y_zgap10 172d⟩≡   (253)
    y_zgap10   15   1.913550184020851e-15,-0.08856716084344839,-0.015147933533409
    Defines:
     y_zgap10, used in chunk 172c.

2.12.9   z2.9 ZGAP30: Expected output gap, for RG30E eq. (MCE exp.)

172e   ⟨variable ZGAP30 172e⟩≡   (211)
    ZGAP30   = Expected output gap, for RG30E eq.
    Defines:
     ZGAP30, used in chunk 223.
    Uses RG30E 149d.

173a   ⟨*equation zgap30* 173a⟩≡   (244)
```
   zgap30:  zgap30-zgap30_aerr = y_zgap30(1) _
                      + ( y_zgap30(2) *  picnia + y_zgap30(3) *  picnia(-1) + y_zgap30(4) *  p
                      + ( y_zgap30(6) *  rffe + y_zgap30(7) *  rffe(-1) + y_zgap30(8) *  rffe(
                      + 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 149b.
Uses picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap 59a, and y_zgap30 173b.

173b   ⟨*coefficient y_zgap30* 173b⟩≡   (253)
```
   y_zgap30       15      9.185040883300084e-15,-0.04699887854311754,-0.008064404203305675,-0.016
```
Defines:
   y_zgap30, used in chunk 173a.

2.12.10   z2.10 ZPI5: Expected cons. price infl., for RCCD
           eq. (5-yr mat.) (MCE exp.)

173c   ⟨*variable ZPI5* 173c⟩≡   (211)
```
   ZPI5      = Expected cons. price infl., for RCCD eq. (5-yr mat.)
```
Defines:
   ZPI5, used in chunk 223.
Uses RCCD 23b.

173d   ⟨*equation zpi5* 173d⟩≡   (244)
```
   zpi5:  zpi5-zpi5_aerr =  ( y_zpi5(1) *  picnia(-1) + y_zpi5(2) *  picnia(-2) + y_zpi5(3) *  p
                      + ( y_zpi5(5) *  rffe(-1) + y_zpi5(6) *  rffe(-2) + y_zpi5(7) *  rffe(-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 23c.
Uses picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap 59a, and y_zpi5 173e.

173e   ⟨*coefficient y_zpi5* 173e⟩≡   (253)
```
   y_zpi5  14      0.06758353158403318,0.02161485431596137,0.01782456814136856,0.00296452469821149
```
Defines:
   y_zpi5, used in chunk 173d.

2.12.11   z2.11 ZPIB5: Expected output price infl., for RPD eq. (5-yr mat.) (MCE exp.)

174a   ⟨*variable ZPIB5* 174a⟩≡   (211)
```
ZPIB5    = Expected output price infl., for RPD eq. (5-yr mat.)
```
Defines:
  ZPIB5, used in chunk 223.
Uses RPD 31d.

174b   ⟨*equation zpib5* 174b⟩≡   (244)
```
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
            + y_zpib5(10) * rtr(-1) _
            + y_zpib5(11) * ptr(-1) _
            + ( y_zpib5(12) * xgap(-1) + y_zpib5(13) * xgap(-2) + y_zpib5(14) * x
            + ( y_zpib5(16) * (400*d( log(pxb(-1)), 0, 1 )) + y_zpib5(17) * (400*d(
```

Defines:
  zpib5, used in chunks 31e, 37a, and 38a.
Uses picnia 88f, ptr 168d, pxb 108d, rffe 144e, rtr 169d, xgap 59a, and y_zpib5 174c.

174c   ⟨*coefficient y_zpib5* 174c⟩≡   (253)
```
y_zpib5 19      2.014761562942157e-14,0.08381220448829916,0.03966837250165698,0.02968
```
Defines:
  y_zpib5, used in chunk 174b.

2.12.12   z2.12 ZPI10: Expected cons. price infl., for RCCH, RRMET, and YHPNTN eqs. (10-yr mat.) (MCE exp.)

174d   ⟨*variable ZPI10* 174d⟩≡   (211)
```
ZPI10    = Expected cons. price infl., for RCCH, RRMET, and YHPNTN eqs. (10-yr mat.)
```
Defines:
  ZPI10, used in chunk 223.
Uses RCCH 23d, RRMET 157e, and YHPNTN 82e.

174e   ⟨*equation zpi10* 174e⟩≡   (244)
```
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)
                + y_zpi10(9) * rtr(-1) _
                + y_zpi10(10) * ptr(-1) _
                + ( y_zpi10(11) * xgap(-1) + y_zpi10(12) * xgap(-2) + y_zpi10(
```

Defines:
  zpi10, used in chunks 23e, 83a, 157f, and 175c.
Uses picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap 59a, and y_zpi10 175a.

175a   ⟨*coefficient y_zpi10* 175a⟩≡   (253)
         y_zpi10 14   0.03879756717884661,0.01310655690781879,0.01249073978840772,0.00201364444700266

Defines:
  y_zpi10, used in chunk 174e.

2.12.13   z2.13 ZPI10F: Expected cons. price infl., for FPXR eq. (10-yr mat.) (MCE exp.)

175b   ⟨*variable ZPI10F* 175b⟩≡   (211)
         ZPI10F   = Expected cons. price infl., for FPXR eq. (10-yr mat.)

Defines:
  ZPI10F, used in chunk 223.
Uses FPXR 163c.

175c   ⟨*equation zpi10f* 175c⟩≡   (244)
         zpi10f: zpi10f-zpi10f_aerr = zpi10

Defines:
  zpi10f, used in chunk 163d.
Uses zpi10 174e.

2.12.14   z2.14 ZPIC30: Expected cons. price infl., for REQ eq. (30-yr mat.) (MCE exp.)

175d   ⟨*variable ZPIC30* 175d⟩≡   (211)
         ZPIC30   = Expected cons. price infl., for REQ eq. (30-yr mat.)

Defines:
  ZPIC30, used in chunk 223.
Uses REQ 152f.

175e   ⟨*equation zpic30* 175e⟩≡   (244)
         zpic30:   zpic30-zpic30_aerr = y_zpic30(1) _
                     + (y_zpic30(2) * picnia + y_zpic30(3) * picnia(-1) + y_zpic30(4) * picnia(-2)
                     + (y_zpic30(6) * rffe + y_zpic30(7) * rffe(-1) + y_zpic30(8) * rffe(-2) + y_z
                     + y_zpic30(10) * rtr _
                     + y_zpic30(11) * ptr _
                     + (y_zpic30(12) * xgap + y_zpic30(13) * xgap(-1) + y_zpic30(14) * xgap(-2) +

Defines:
  zpic30, used in chunk 153a.
Uses picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap 59a, and y_zpic30 175f.

175f   ⟨*coefficient y_zpic30* 175f⟩≡   (253)
         y_zpic30   15   9.998348776898279e-14,0.03772442939281018,0.00691792724638696,0.0066112

Defines:
  y_zpic30, used in chunk 175e.

2.12.15   z2.15 ZPIC58: Expected 4-qtr consumer price inflation (8 qtrs. in the future) (MCE exp.)

176a   ⟨*variable ZPIC58* 176a⟩≡   (211)
```
ZPIC58   = Expected 4-qtr consumer price inflation (8 qtrs. in the future)
```
Defines:
  ZPIC58, used in chunk 223.

176b   ⟨*equation zpic58* 176b⟩≡   (244)
```
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(1
```

Defines:
  zpic58, used in chunk 143e.
Uses picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap 59a, and y_zpic58 176c.

176c   ⟨*coefficient y_zpic58* 176c⟩≡   (253)
```
y_zpic58       14       0.3419924857225884,0.05029077146057983,0.04280461383060537,-0
```
Defines:
  y_zpic58, used in chunk 176b.

2.12.16   z2.16 ZPICXFE: Expected value of picxfe in the next quarter (MCE exp.)

176d   ⟨*variable ZPICXFE* 176d⟩≡   (211)
```
ZPICXFE  = Expected value of picxfe in the next quarter
```
Defines:
  ZPICXFE, used in chunk 223.
Uses picxfe 87b.

177a   ⟨*equation zpicxfe* 177a⟩≡   (244)
            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) - lurn

Defines:
    zpicxfe, used in chunk 87b.
Uses hlprdt 69c, huqpct 100d, lur 65f, lurnat 69e, pcnia 89b, picxfe 87b, pieci 87e, pl 90d,
    ptr 168d, qpcnia 92f, qpl 92a, rffe 144e, rtr 169d, xgap2 59c, and y_zpicxfe 177b.

177b   ⟨*coefficient y_zpicxfe* 177b⟩≡   (253)
            y_zpicxfe   23   0.323685055125,-0.00320254773354,0.000957688783119,0.0104690425827,0.07
Defines:
    y_zpicxfe, used in chunk 177a.

2.12.17   z2.17 ZPIECI: Expected value of pieci in the next quarter (MCE exp.)

177c   ⟨*variable ZPIECI* 177c⟩≡   (211)
            ZPIECI   = Expected value of pieci in the next quarter
Defines:
    ZPIECI, used in chunk 223.
Uses pieci 87e.

178a   ⟨equation zpieci 178a⟩≡   (244)
```
zpieci:  zpieci-zpieci_aerr = ( y_zpieci(1) * picxfe(-1) + y_zpieci(2) * picxfe(
                     + ( y_zpieci(5) * pieci(-1) + y_zpieci(6) * pieci(-2) + y_zpiec
                     + ( y_zpieci(9) * rffe(-1) + y_zpieci(10) * rffe(-2) + y_zpiec:
                     + ( y_zpieci(13) * xgap2(-1) + y_zpieci(14) * xgap2(-2) + y_zp:
                     + 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(-2
```

Defines:
  zpieci, used in chunk 87e.
Uses hlprdt 69c, huqpct 100d, lur 65f, lurnat 69e, pcnia 89b, picxfe 87b, pieci 87e,
  pl 90d, ptr 168d, qpcnia 92f, qpl 92a, rffe 144e, rtr 169d, xgap2 59c, and y_zpieci 178b.

178b   ⟨coefficient y_zpieci 178b⟩≡   (253)
```
y_zpieci        23       -0.0173696976108,-0.00564002523431,0.000750046022225,0.018644
```
Defines:
  y_zpieci, used in chunk 178a.

2.12.18   z2.18 ZECO: Expected growth rate of target non-durables and nonhousing services, for ECO eq (MCE exp.)

178c   ⟨variable ZECO 178c⟩≡   (211)
```
ZECO      = Expected growth rate of target nondurables and nonhousing services, for EC
```
Defines:
  ZECO, used in chunk 223.
Uses ECO 17a.

179a   ⟨*equation zeco* 179a⟩≡   (244)
```
zeco: zeco-zeco_aerr =  _
                  ( y_zeco(1) *  picnia(-1) + y_zeco(2) *  picnia(-2) + y_zeco(3) *  picnia(-3)
              + ( y_zeco(5) *  rffe(-1) + y_zeco(6) *  rffe(-2) + y_zeco(7) *  rffe(-3) + y_
              + ( y_zeco(9) *  xgap2(-1) + y_zeco(10) *  xgap2(-2) + y_zeco(11) *  xgap2(-3)
              + y_zeco(13) * ptr(-1) _
              + y_zeco(14) * rtr(-1) _
              + ( y_zeco(15) *  yhgap(-1) + y_zeco(16) *  yhgap(-2) + y_zeco(17) *  yhgap(-3)
              + ( y_zeco(19) *  yhtgap(-1) + y_zeco(20) *  yhtgap(-2) + y_zeco(21) *  yhtgap(
              + ( y_zeco(23) *  yhpgap(-1) + y_zeco(24) *  yhpgap(-2) + y_zeco(25) *  yhpgap(
              + y_zeco(27)* ((hggdpt(-1)/400)) _
              + ( y_zeco(28)    _
              * (d( log(qeco(-1)), 0, 1 )) +  y_zeco(29)   _
              * (d( log(qeco(-2)), 0, 1 )) +  y_zeco(30)   _
              * (d( log(qeco(-3)), 0, 1 )) +  y_zeco(31)   _
              * (d( log(qeco(-4)), 0, 1 )))
```

Defines:
  zeco, used in chunk 17b.
Uses hggdpt 60d, picnia 88f, ptr 168d, qeco 20b, rffe 144e, rtr 169d, xgap2 59c,
  y_zeco 179b, yhgap 80b, yhpgap 82d, and yhtgap 85b.

179b   ⟨*coefficient y_zeco* 179b⟩≡   (253)
```
  y_zeco   31       -8.302302840394758e-05,-8.481341005195437e-05,-1.070919356458063e-05,9.3814944C
```
Defines:
  y_zeco, used in chunk 179a.

2.12.19   z2.19 ZECD: Expected growth rate of target durable consumption, for ECD eq. (MCE exp.)

179c   ⟨*variable ZECD* 179c⟩≡   (211)
```
  ZECD     = Expected growth rate of target durable consumption, for ECD eq.
```
Defines:
  ZECD, used in chunk 223.
Uses ECD 18a.

180a   ⟨equation zecd 180a⟩≡   (244)
         zecd: zecd-zecd_aerr = (y_zecd(1) * picnia(-1) + y_zecd(2) * picnia(-2) + y_zec
                    + (y_zecd(5) * rffe(-1) + y_zecd(6) * rffe(-2) + y_zecd(7) * rf
                    + (y_zecd(9) * xgap2(-1) + y_zecd(10) * xgap2(-2) + y_zecd(11) *
                    + y_zecd(13) * ptr(-1) _
                    + y_zecd(14) * rtr(-1) _
                    + (y_zecd(15) * yhgap(-1) + y_zecd(16) * yhgap(-2) + y_zecd(17)
                    + (y_zecd(19) * yhtgap(-1) + y_zecd(20) * yhtgap(-2) + y_zecd(2
                    + (y_zecd(23) * yhpgap(-1) + y_zecd(24) * yhpgap(-2) + y_zecd(25
                    + 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(qe

         Defines:
           zecd, used in chunk 18b.
         Uses hggdpt 60d, hgpcdr 199f, picnia 88f, ptr 168d, qecd 20e, rffe 144e, rtr 169d,
           xgap2 59c, y_zecd 180b, yhgap 80b, yhpgap 82d, and yhtgap 85b.

180b   ⟨coefficient y_zecd 180b⟩≡   (253)
         y_zecd   32   -0.0005835440697737298,-0.0004890487384829661,-0.0003178601486946526,
         Defines:
           y_zecd, used in chunk 180a.

2.12.20   z2.20 ZGAPC2: Expected output gap, for ECD
eq. (MCE exp.)

180c   ⟨variable ZGAPC2 180c⟩≡   (211)
         ZGAPC2   = Expected output gap, for ECD eq.
         Defines:
           ZGAPC2, used in chunk 223.
         Uses ECD 18a.

180d   ⟨equation zgapc2 180d⟩≡   (244)
         zgapc2: zgapc2-zgapc2_aerr = (y_zgapc2(1) * picnia(-1) + y_zgapc2(2) * picnia(-
                    + (y_zgapc2(5) * rffe(-1) + y_zgapc2(6) * rffe(-2) + y_zgapc2(7)
                    + (y_zgapc2(9) * xgap2(-1) + y_zgapc2(10) * xgap2(-2) + y_zgapc2
                    + y_zgapc2(13) * ptr(-1) _
                    + y_zgapc2(14) * rtr(-1)

         Defines:
           zgapc2, used in chunk 18b.
         Uses picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap2 59c, and y_zgapc2 180e.

180e   ⟨coefficient y_zgapc2 180e⟩≡   (253)
         y_zgapc2   14   -0.01642348362157579,-0.003669559326500591,-0.008031103190068
         Defines:
           y_zgapc2, used in chunk 180d.

2.12.21   z2.21 ZEH: Expected growth rate of target residential investment, for EH eq. (MCE exp.)

181a $\langle$*variable ZEH* 181a$\rangle\equiv$ (211)

    ZEH   = Expected growth rate of target residential investment, for EH eq.

Defines:
    ZEH, used in chunk 223.
Uses EH 18d.

181b $\langle$*equation zeh* 181b$\rangle\equiv$ (244)

    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
                  + (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)

Defines:
    zeh, used in chunk 18e.
Uses hggdpt 60d, picnia 88f, ptr 168d, qeh 21a, rffe 144e, rtr 169d, xgap2 59c, y_zeh 181c,
    yhgap 80b, yhpgap 82d, and yhtgap 85b.

181c $\langle$*coefficient y_zeh* 181c$\rangle\equiv$ (253)

    y_zeh   31   -0.0001475636416872941,-3.032365273125124e-05,-4.473855969321594e-06,1.84015972

Defines:
    y_zeh, used in chunk 181b.

2.12.22   z2.22 ZLHP: Expected growth rate of target aggregate hours (MCE exp.)

181d $\langle$*variable ZLHP* 181d$\rangle\equiv$ (211)

    ZLHP   = Expected growth rate of target aggregate hours

Defines:
    ZLHP, used in chunk 223.

182a   ⟨*equation zlhp* 182a⟩≡   (244)
```
zlhp:  zlhp-zlhp_aerr = ( y_zlhp(1) *  picnia(-1) +  y_zlhp(2) * picnia(-2) +  y_zl
                + ( y_zlhp(5) *  rffe(-1) +  y_zlhp(6) *  rffe(-2) +  y_zlhp(7) *  r
                + y_zlhp(9) * rtr(-1) _
                + y_zlhp(10) * ptr(-1) _
                + ( y_zlhp(11) *  xgap(-1) +  y_zlhp(12) *  xgap(-2) + y_zlhp(13) *
                + y_zlhp(15) * (d( log(xgo(-1)), 0, 1 ) - (d( log(lprdt(-1)), 0, 1 )
                + y_zlhp(16) * ((hlept(-1) - hqlww(-1))/400)
```

Defines:
  zlhp, used in chunk 56e.
Uses hlept 68d, hqlww 61e, lprdt 69a, picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap 59a,
  xgo 50b, and y_zlhp 182b.

182b   ⟨*coefficient y_zlhp* 182b⟩≡   (253)
```
y_zlhp  16      -0.0002522439372141123,-5.098270125007645e-05,-0.0002552621374828649
```
Defines:
  y_zlhp, used in chunk 182a.

2.12.23   z2.23 ZVPD: Expected growth rate of capital-output
ratio, for EPD (MCE exp.)

182c   ⟨*variable ZVPD* 182c⟩≡   (211)
```
ZVPD      = Expected growth rate of capital-output ratio, for EPD
```
Defines:
  ZVPD, used in chunk 223.
Uses EPD 25b.

182d   ⟨*equation zvpd* 182d⟩≡   (244)
```
zvpd:  zvpd-zvpd_aerr = y_zvpd(1) _
                + ( y_zvpd(2) *  picnia(-1) +  y_zvpd(3) * picnia(-2) +  y_zvpd(4)
                + ( y_zvpd(6) *  rffe(-1) +  y_zvpd(7) *  rffe(-2) +  y_zvpd(8) *  r
                + y_zvpd(10) * rtr(-1) _
                + y_zvpd(11) * ptr(-1) _
                + ( y_zvpd(12) *  xgap(-1) +  y_zvpd(13) *  xgap(-2) + y_zvpd(14) *
                + ( y_zvpd(16) * d( log(xbo(-1)), 0, 1 ) +  y_zvpd(17) *  d( log(xb
                + ( y_zvpd(20) * d( log(vpd(-1)), 0, 1 ) +  y_zvpd(21) *  d( log(vp
                + y_zvpd(24) * hgvpd(-1)
```

Defines:
  zvpd, used in chunk 25c.
Uses hgvpd 34d, picnia 88f, ptr 168d, rffe 144e, rtr 169d, vpd 33d, xbo 50e, xgap 59a,
  and y_zvpd 183a.

183a   ⟨*coefficient y_zvpd* 183a⟩≡   (253)
          y_zvpd 24   -3.503545878896081e-16,-0.0002563318120287816,-0.0003053817493858787,0.00027546
          Defines:
          y_zvpd, used in chunk 182d.

2.12.24   z2.24 ZVPI: Expected growth rate of capital-output ratio, for EPI (MCE exp.)

183b   ⟨*variable ZVPI* 183b⟩≡   (211)
          ZVPI   = Expected growth rate of capital-output ratio, for EPI
          Defines:
          ZVPI, used in chunk 223.
          Uses EPI 25e.

183c   ⟨*equation zvpi* 183c⟩≡   (244)
          zvpi: zvpi-zvpi_aerr = (y_zvpi(1) * picnia(-1) + y_zvpi(2) * picnia(-2) + y_zvpi(3) * p
                          + (y_zvpi(5) * rffe(-1) + y_zvpi(6) * rffe(-2) + y_zvpi(7) * rffe(-3) +
                          + y_zvpi(9) * rtr(-1) _
                          + y_zvpi(10) * ptr(-1) _
                          + (y_zvpi(11) * xgap(-1) + y_zvpi(12) * xgap(-2) + y_zvpi(13) * xgap(-3)
                          + (y_zvpi(15) * d(log(xbo(-1)), 0, 1) + y_zvpi(16) * d(log(xbo(-2)), 0,
                          + (y_zvpi(19) * d(log(vpi(-1)), 0, 1) + y_zvpi(20) * d(log(vpi(-2)), 0,
                          + y_zvpi(23) * hgvpi(-1)

          Defines:
          zvpi, used in chunk 26a.
          Uses hgvpi 38e, picnia 88f, ptr 168d, rffe 144e, rtr 169d, vpi 33f, xbo 50e, xgap 59a,
          and y_zvpi 183d.

183d   ⟨*coefficient y_zvpi* 183d⟩≡   (253)
          y_zvpi 23   3.869791235963136e-05,3.80256114092935e-06,2.612181181174604e-05,2.05719790994C
          Defines:
          y_zvpi, used in chunk 183c.

2.12.25   z2.25 ZVPS: Expected growth rate of des. capital-output ratio, for EPS eq. (MCE exp.)

183e   ⟨*variable ZVPS* 183e⟩≡   (211)
          ZVPS   = Expected growth rate of des. capital-output ratio, for EPS eq.
          Defines:
          ZVPS, used in chunk 223.
          Uses EPS 26c.

184a   ⟨*equation zvps* 184a⟩≡   (244)
```
zvps:  zvps-zvps_aerr = ( y_zvps(1) *  picnia(-1) +  y_zvps(2) * picnia(-2) +  y_zv
                + ( y_zvps(5) *  rffe(-1) +  y_zvps(6) *  rffe(-2) +  y_zvps(7) *  r
                + y_zvps(9) * rtr(-1) _
                + y_zvps(10) * ptr(-1) _
                + ( y_zvps(11) *  xgap(-1) +  y_zvps(12) *  xgap(-2) +  y_zvps(13) *
                + ( y_zvps(15) *  d( log(xbo(-1)), 0, 1 ) +  y_zvps(16) *  d( log(xb
                + ( y_zvps(19) *  d( log(vps(-1)), 0, 1 ) +  y_zvps(20) *  d( log(vp
                + y_zvps(23) * hgvps(-1)
```

Defines:
    zvps, used in chunk 26d.
Uses hgvps 35a, picnia 88f, ptr 168d, rffe 144e, rtr 169d, vps 34b, xbo 50e, xgap 59a,
    and y_zvps 184b.

184b   ⟨*coefficient y_zvps* 184b⟩≡   (253)
```
y_zvps   23      0.0007852314783589356,-0.0001325502846474631,0.0001060837434901873,0.
```
Defines:
    y_zvps, used in chunk 184a.

2.12.26   z2.26 ZXBD: Expected growth rate of buisiness output for EPD (MCE exp.)

184c   ⟨*variable ZXBD* 184c⟩≡   (211)
```
ZXBD      = Expected growth rate of buisiness output for EPD
```
Defines:
    ZXBD, used in chunk 223.
Uses EPD 25b.

184d   ⟨*equation zxbd* 184d⟩≡   (244)
```
zxbd:  zxbd-zxbd_aerr = y_zxbd(1) _
                + ( y_zxbd(2) *  picnia(-1) +  y_zxbd(3) * picnia(-2) +  y_zxbd(4) *
                + ( y_zxbd(6) *  rffe(-1) +  y_zxbd(7) *  rffe(-2) +  y_zxbd(8) *  rf
                + y_zxbd(10) * rtr(-1) _
                + y_zxbd(11) * ptr(-1) _
                + ( y_zxbd(12) *  xgap(-1) +  y_zxbd(13) *  xgap(-2) +  y_zxbd(14) *
                + ( y_zxbd(16) *  d( log(xbo(-1)), 0, 1 ) +  y_zxbd(17) *  d( log(xbo
                + ( y_zxbd(20) *  d( log(vpd(-1)), 0, 1 ) +  y_zxbd(21) *  d( log(vpd
                + y_zxbd(24) * hgx(-1)/400
```

Defines:
    zxbd, used in chunk 25c.
Uses hgx 59e, picnia 88f, ptr 168d, rffe 144e, rtr 169d, vpd 33d, xbo 50e, xgap 59a,
    and y_zxbd 185a.

185a   ⟨*coefficient y_zxbd* 185a⟩≡   (253)
         y_zxbd   24   -2.515799209424174e-16,-0.0001835522663957102,-9.20694428089123e-05,-0.00016905
         Defines:
           y_zxbd, used in chunk 184d.

2.12.27   z2.27 ZXBI: Expected growth rate of business output, for EPI (MCE exp.)

185b   ⟨*variable ZXBI* 185b⟩≡   (211)
         ZXBI   = Expected growth rate of business output, for EPI
         Defines:
           ZXBI, used in chunk 223.
         Uses EPI 25e.

185c   ⟨*equation zxbi* 185c⟩≡   (244)
         zxbi: zxbi-zxbi_aerr = _
                        (y_zxbi(1) * picnia(-1) + y_zxbi(2) * picnia(-2) + y_zxbi(3) * picnia(-3
                      + (y_zxbi(5) * rffe(-1) + y_zxbi(6) * rffe(-2) + y_zxbi(7) * rffe(-3) + y
                      + y_zxbi(9) * rtr(-1) _
                      + y_zxbi(10) * ptr(-1) _
                      + (y_zxbi(11) * xgap(-1) + y_zxbi(12) * xgap(-2) + y_zxbi(13) * xgap(-3) +
                      + (y_zxbi(15) * d(log(xbo(-1)), 0, 1) + y_zxbi(16) * d(log(xbo(-2)), 0, 1
                      + (y_zxbi(19) * d(log(vpi(-1)), 0, 1) + y_zxbi(20) * d(log(vpi(-2)), 0, 1
                      + y_zxbi(23) * hgx(-1)/400

         Defines:
           zxbi, used in chunk 26a.
         Uses hgx 59e, picnia 88f, ptr 168d, rffe 144e, rtr 169d, vpi 33f, xbo 50e, xgap 59a,
           and y_zxbi 185d.

185d   ⟨*coefficient y_zxbi* 185d⟩≡   (253)
         y_zxbi   23   -3.907288119414607e-05,-1.536565753314579e-05,-1.048653204032815e-05,1.11106479
         Defines:
           y_zxbi, used in chunk 185c.

2.12.28   z2.28 ZXBS: Expected growth rate of business output, for EPS (MCE exp.)

185e   ⟨*variable ZXBS* 185e⟩≡   (211)
         ZXBS   = Expected growth rate of business output, for EPS
         Defines:
           ZXBS, used in chunk 223.
         Uses EPS 26c.

186a   ⟨*equation zxbs* 186a⟩≡   (244)

```
    zxbs:  zxbs-zxbs_aerr =  _
                    ( y_zxbs(1) *  picnia(-1) +  y_zxbs(2) *  picnia(-2) +  y_zxbs(3) *
                    + ( y_zxbs(5) *  rffe(-1) +  y_zxbs(6) *  rffe(-2) +  y_zxbs(7) *  rff
                    + y_zxbs(9) * rtr(-1) _
                    + y_zxbs(10) * ptr(-1) _
                    + ( y_zxbs(11) *  xgap(-1) +  y_zxbs(12) *  xgap(-2) +  y_zxbs(13) *
                    + ( y_zxbs(15) *  d( log(xbo(-1)), 0, 1 ) +  y_zxbs(16) *  d( log(xbo(
                    + ( y_zxbs(19) *  d( log(vps(-1)), 0, 1 ) +  y_zxbs(20) *  d( log(vps(
                    + y_zxbs(23) * hgx(-1)/400
```

Defines:
    zxbs, used in chunk 26d.
Uses hgx 59e, picnia 88f, ptr 168d, rffe 144e, rtr 169d, vps 34b, xbo 50e, xgap 59a,
    and y_zxbs 186b.

186b   ⟨*coefficient y_zxbs* 186b⟩≡   (253)

```
    y_zxbs   23       -0.0001994456999380124,-7.214041996312615e-05,-7.99329702758048e-05,2
```
Defines:
    y_zxbs, used in chunk 186a.

2.12.29   z2.29 ZDIVGR: Expected growth rate of real div-
idends, for WPSN eq. (MCE exp.)

186c   ⟨*variable ZDIVGR* 186c⟩≡   (211)

```
    ZDIVGR   = Expected growth rate of real dividends, for WPSN eq.
```
Defines:
    ZDIVGR, used in chunk 223.
Uses WPSN 153b.

186d   ⟨*equation zdivgr* 186d⟩≡   (244)

```
    zdivgr: zdivgr-zdivgr_aerr = y_zdivgr(1) _
                    + ( y_zdivgr(2) *  picnia +  y_zdivgr(3) *  picnia(-1) +  y_zdivgr(4) *  p
                    + ( y_zdivgr(6) *  rffe +  y_zdivgr(7) *  rffe(-1) +  y_zdivgr(8) *  rffe(
                    + y_zdivgr(10) * rtr _
                    + y_zdivgr(11) * ptr _
                    + ( y_zdivgr(12) *  xgap +  y_zdivgr(13) *  xgap(-1) +  y_zdivgr(14) *  xg
                    + ( y_zdivgr(16) *  (400*d( log((ynicpn-tfcin-tscin)*.5/(.01*pxg)), 0, 1 )
                    + y_zdivgr(20) * hgx
```

Defines:
    zdivgr, used in chunk 153c.
Uses hgx 59e, picnia 88f, ptr 168d, pxg 108b, rffe 144e, rtr 169d, tfcin 131a, tscin 136f,
    xgap 59a, y_zdivgr 187a, and ynicpn 77b.

187a   ⟨*coefficient y_zdivgr* 187a⟩≡   (253)
    y_zdivgr   20   1.511071172206618e-15,-0.009111480239164081,0.03183741780107196,0.02833
Defines:
  y_zdivgr, used in chunk 186d.

2.12.30   z2.30 ZYNID: Expected rate of growth of target real dividends, for YNIDN eq. (MCE exp.)

187b   ⟨*variable ZYNID* 187b⟩≡   (211)
    ZYNID   = Expected rate of growth of target real dividends, for YNIDN eq.
Defines:
  ZYNID, used in chunk 223.
Uses YNIDN 76d.

187c   ⟨*equation zynid* 187c⟩≡   (244)
```
    zynid: zynid - zynid_aerr = y_zynid(1) _
                      + ( y_zynid(2) *  picnia(-1) + y_zynid(3) * picnia(-2) + y_zynid(4) *  p
                      + ( y_zynid(6) *  rffe(-1) +  y_zynid(7) *  rffe(-2) +  y_zynid(8) *  rffe(
                      + y_zynid(10) * rtr(-1) _
                      + y_zynid(11) * ptr(-1) _
                      + ( y_zynid(12) * xgap(-1) +  y_zynid(13) * xgap(-2) +  y_zynid(14) *  xg
                      + ( y_zynid(16) *  d( log(qynidn(-1)/pxb(-1)), 0, 1 ) +  y_zynid(17) *  d(
                      + y_zynid(20) * (hggdpt(-1)/400)
```

Defines:
  zynid, used in chunk 76e.
Uses hggdpt 60d, picnia 88f, ptr 168d, pxb 108d, qynidn 76b, rffe 144e, rtr 169d, xgap 59a,
  and y_zynid 187d.

187d   ⟨*coefficient y_zynid* 187d⟩≡   (253)
    y_zynid 20   -5.177745029596233e-16,3.507527558415562e-05,0.0004354171509883335,0.0003765833
Defines:
  y_zynid, used in chunk 187c.

2.12.31   z2.31 ZYH: Expected level of real after-tax household income, for QEC eq. (MCE exp.)

187e   ⟨*variable ZYH* 187e⟩≡   (211)
    ZYH   = Expected level of real after-tax household income, for QEC eq.
Defines:
  ZYH, used in chunk 223.
Uses QEC 19d.

188a   ⟨*equation zyh* 188a⟩≡   (244)
```
zyh: log(zyh) - zyh_aerr =  ( y_zyh(1) *  picnia +  y_zyh(2) *  picnia(-1) +  y_zyh(3
                          + ( y_zyh(5) *  rffe +  y_zyh(6) *  rffe(-1) +  y_zyh(7) *  rffe
                          + ( y_zyh(9) *  xgap2 +  y_zyh(10) *  xgap2(-1) +  y_zyh(11) *
                          + y_zyh(13) * ptr _
                          + y_zyh(14) * rtr _
                          + ( y_zyh(15) *  yhgap +  y_zyh(16) *  yhgap(-1) +  y_zyh(17) *
                          + log(zyhst*xgdpt)
```

Defines:
    zyh, used in chunk 19e.
Uses picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap2 59c, xgdpt 55c, y_zyh 188b, yhgap 80b,
    and zyhst 167a.

188b   ⟨*coefficient y_zyh* 188b⟩≡   (253)
```
y_zyh    18       -0.0002301813961999326,0.0007292083597749006,0.0006217471253906824,0.
```
Defines:
    y_zyh, used in chunk 188a.

2.12.32   z2.32 ZYHP: Expected level of real after-tax property income, for QEC eq. (MCE exp.)

188c   ⟨*variable ZYHP* 188c⟩≡   (211)
```
ZYHP     = Expected level of real after-tax property income, for QEC eq.
```
Defines:
    ZYHP, used in chunk 223.
Uses QEC 19d.

188d   ⟨*equation zyhp* 188d⟩≡   (244)
```
zyhp: log(zyhp) - zyhp_aerr =  ( y_zyhp(1) *  picnia +  y_zyhp(2) *  picnia(-1) +  y_
                            + ( y_zyhp(5) *  rffe +  y_zyhp(6) *  rffe(-1) +  y_zyhp(7) *
                            + ( y_zyhp(9) *  xgap2 +  y_zyhp(10) *  xgap2(-1) +  y_zyhp(11
                            + y_zyhp(13) * ptr _
                            + y_zyhp(14) * rtr _
                            + ( y_zyhp(15) *  yhgap +  y_zyhp(16) *  yhgap(-1) +  y_zyhp(1
                            + ( y_zyhp(19) *  yhpgap +  y_zyhp(20) *  yhpgap(-1) +  y_zyhp
                            + log(zyhpst*zyhst*xgdpt)
```

Defines:
    zyhp, used in chunk 19e.
Uses picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap2 59c, xgdpt 55c, y_zyhp 188e,
    yhgap 80b, yhpgap 82d, zyhpst 167d, and zyhst 167a.

188e   ⟨*coefficient y_zyhp* 188e⟩≡   (253)
```
y_zyhp   22       0.000384467702497963,0.001205361597423436,0.0009620980096161766,0.000
```
Defines:
    y_zyhp, used in chunk 188d.

2.12.33   z2.33 ZYHT: Expected level of real transfer income, for QEC eq. (MCE exp.)

189a $\langle variable\ ZYHT\ 189a\rangle\equiv$ (211)
            ```
            ZYHT      = Expected level of real transfer income, for QEC eq.
            ```
            Defines:
               ZYHT, used in chunk 223.
            Uses QEC 19d.

189b $\langle equation\ zyht\ 189b\rangle\equiv$ (244)
            ```
            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 19e.
            Uses picnia 88f, ptr 168d, rffe 144e, rtr 169d, xgap2 59c, xgdpt 55c, y_zyht 189c,
               yhgap 80b, yhtgap 85b, zyhst 167a, and zyhtst 168a.

189c $\langle coefficient\ y\_zyht\ 189c\rangle\equiv$ (253)
            ```
            y_zyht  22        -0.0005375756842287296,0.0004256398977551294,0.000429593178783961,0.00034142717
            ```
            Defines:
               y_zyht, used in chunk 189b.

2.12.34   z2.37 HGYNID: Growth rate of real after-tax corporate profits

189d $\langle variable\ HGYNID\ 189d\rangle\equiv$ (211)
            ```
            HGYNID   = Growth rate of real after-tax corporate profits
            ```
            Defines:
               HGYNID, used in chunk 223.

189e $\langle equation\ hgynid\ 189e\rangle\equiv$ (244)
            ```
            hgynid: hgynid - hgynid_aerr = 400*d( log((ynicpn-tfcin-tscin)*.5/pxg), 0, 1 )
            ```

            Defines:
               hgynid, never used.
            Uses pxg 108b, tfcin 131a, tscin 136f, and ynicpn 77b.

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 similiar 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

195a   ⟨*variable D01Q4* 195a⟩≡   (211)
```
D01Q4    = Dummy, destruction of World Trade Center
```
Defines:
  D01Q4, used in chunk 223.
  d01q4, used in chunk 26d.

195b   ⟨*variable D2002* 195b⟩≡   (211)
```
D2002    = Dummy,
```
Defines:
  D2002, used in chunk 223.
  d2002, used in chunk 38a.

195c   ⟨*variable D2003* 195c⟩≡   (211)
```
D2003    = Dummy,
```
Defines:
  D2003, used in chunk 223.
  d2003, used in chunk 38a.

195d   ⟨*variable D69* 195d⟩≡   (211)
```
D69      = Dummy, post-1968 indicator
```
Defines:
  D69, used in chunk 223.
  d69, used in chunk 37a.

195e   ⟨*variable D79A* 195e⟩≡   (211)
```
D79A     = Dummy, post-1979 indicator
```
Defines:
  d78a, never used.
  D79A, used in chunk 223.

195f   ⟨*variable D8095* 195f⟩≡   (211)
```
D8095    = Dummy, 1980-1995 indicator
```
Defines:
  D8095, used in chunk 223.
  d8095, used in chunks 148a and 149b.

196a   ⟨*variable D81* 196a⟩≡   (211)

```
D81       = Dummy, post-1980 indicator
```
Defines:
     D81, used in chunk 223.
     d81, used in chunks 37a and 38a.

196b   ⟨*variable D83* 196b⟩≡   (211)

```
D83       = Dummy, post-1983 indicator
```
Defines:
     D83, used in chunk 223.
     d83, used in chunk 18e.

196c   ⟨*variable D86* 196c⟩≡   (211)

```
D86       = Dummy, post-1985 indicator
```
Defines:
     D86, used in chunk 223.
     d86, used in chunk 37a.

196d   ⟨*variable D87* 196d⟩≡   (211)

```
D87       = Dummy, post-1986 indicator
```
Defines:
     D87, used in chunk 223.
     d87, used in chunks 38a and 152a.

196e   ⟨*variable DCON* 196e⟩≡   (211)

```
DCON      = Dummy, 0 prior to 1986, 1 after 1988, with a linear trend in between
```
Defines:
     DCON, used in chunk 223.
     dcon, used in chunk 19e.

196f   ⟨*variable DDOCKM* 196f⟩≡   (211)

```
DDOCKM    = Dock strike dummy, import equation
```
Defines:
     DDOCKM, used in chunk 223.
     ddockm, used in chunk 40b.

196g   ⟨*variable DDOCKX* 196g⟩≡   (211)

```
DDOCKX    = Dock strike dummy, export equation
```
Defines:
     DDOCKX, used in chunk 223.
     ddockx, used in chunk 39c.

196h   ⟨*variable DEUC* 196h⟩≡   (211)

```
DEUC      = EUC switch:  1 for including EUC, 0 for not including
```
Defines:
     DEUC, used in chunk 223.
     deuc, used in chunk 139e.

196i   ⟨*variable DFMPRR* 196i⟩≡   (211)

```
DFMPRR    = Dummy, Foreign monetary policy switch:  Exogenous real interest rate
```
Defines:
     DFMPRR, used in chunk 223.
     dfmprr, used in chunk 162a.

197a $\langle variable\ DFPDBT\ 197a \rangle \equiv$ (211)
            ```
            DFPDBT   = Fiscal policy switch:  1 for debt ratio stabilization
            ```
            Defines:
              DFPDBT, used in chunk 223.
              dfpdbt, used in chunks 133d and 135e.

197b $\langle variable\ DFPEX\ 197b \rangle \equiv$ (211)
            ```
            DFPEX    = Fiscal policy switch:  1 for exogenous personal income trend tax rates
            ```
            Defines:
              DFPEX, used in chunk 223.
              dfpex, used in chunks 133d and 135e.

197c $\langle variable\ DFPSRP\ 197c \rangle \equiv$ (211)
            ```
            DFPSRP   = Fiscal policy switch:  1 for surplus ratio stabilization
            ```
            Defines:
              DFPSRP, used in chunk 223.
              dfpsrp, used in chunks 133d and 135e.

197d $\langle variable\ DGLPRD\ 197d \rangle \equiv$ (211)
            ```
            DGLPRD   = Switch to control for long-run productivity growth in the government sector
            ```
            Defines:
              DGLPRD, used in chunk 223.
              dglprd, used in chunks 29d, 58e, 63, and 107.

197e $\langle variable\ DMPALT\ 197e \rangle \equiv$ (211)
            ```
            DMPALT   = Monetary policy switch: MA rule
            ```
            Defines:
              DMPALT, used in chunk 223.
              dmpalt, used in chunk 142d.

197f $\langle variable\ DMPEX\ 197f \rangle \equiv$ (211)
            ```
            DMPEX    = Monetary policy switch:  exogenous federal funds rate
            ```
            Defines:
              DMPEX, used in chunk 223.
              dmpex, used in chunk 142d.

197g $\langle variable\ DMPGEN\ 197g \rangle \equiv$ (211)
            ```
            DMPGEN   = Monetary policy switch:  Generalized reaction function
            ```
            Defines:
              DMPGEN, used in chunk 223.
              dmpgen, used in chunk 142d.

197h $\langle variable\ DMPINTAY\ 197h \rangle \equiv$ (211)
            ```
            DMPINTAY = Monetary policy switch:  inertial taylor rule
            ```
            Defines:
              DMPINTAY, used in chunk 223.
              dmpintay, used in chunk 142d.

197i $\langle variable\ DMPRR\ 197i \rangle \equiv$ (211)
            ```
            DMPRR    = Monetary policy switch:  exogenous real federal funds rate
            ```
            Defines:
              DMPRR, used in chunk 223.
              dmprr, used in chunk 142d.

198a   ⟨*variable DMPSTB* 198a⟩≡   (211)
            DMPSTB   = Stabilization switch: 0 for standard applications, 1 for stochastic simu
            Defines:
              DMPSTB, used in chunk 223.
              dmpstb, used in chunk 68d.

198b   ⟨*variable DMPTAY* 198b⟩≡   (211)
            DMPTAY   = Monetary policy switch: Taylor's reaction function
            Defines:
              DMPTAY, used in chunk 223.
              dmptay, used in chunk 142d.

198c   ⟨*variable DMPTLR* 198c⟩≡   (211)
            DMPTLR   = Monetary policy switch: Taylor's reaction function with unemployment gap
            Defines:
              DMPTLR, used in chunk 223.
              dmptlr, used in chunk 142d.

198d   ⟨*variable DMPTRSH* 198d⟩≡   (211)
            DMPTRSH = Monetary policy threshold switch: 0 for no threshold, 1 for threshold
            Defines:
              DMPTRSH, used in chunk 223.
              dmptrsh, used in chunk 144e.

198e   ⟨*variable DRSTAR* 198e⟩≡   (211)
            DRSTAR   = RSTAR updating switch: 1 is on, 0 is off
            Defines:
              DRSTAR, used in chunk 223.
              drstar, used in chunk 142a.
            Uses RSTAR 141e.

198f   ⟨*variable FPITRG* 198f⟩≡   (211)
            FPITRG   = Foreign target consumer price inflation (G10)
            Defines:
              FPITRG, used in chunk 223.
              fpitrg, used in chunks 159e and 162a.

198g   ⟨*variable FPXRRT* 198g⟩≡   (211)
            FPXRRT   = Real exchange rate residual, trend
            Defines:
              FPXRRT, used in chunk 223.
              fpxrrt, used in chunk 164a.

198h   ⟨*variable GFDRT* 198h⟩≡   (211)
            GFDRT   = Federal government target debt-to-GDP ratio
            Defines:
              GFDRT, used in chunk 223.
              gfdrt, used in chunk 133d.

199a   ⟨*variable GFSRT* 199a⟩≡   (211)
      GFSRT   = Federal government target surplus-to-GDP ratio
    Defines:
      GFSRT, used in chunk 223.
      gfsrt, used in chunk 133d.

199b   ⟨*variable GFTRT* 199b⟩≡   (211)
      GFTRT   = Federal government, trend ratio of transfer payments to GDP
    Defines:
      GFTRT, used in chunk 223.
      gftrt, used in chunk 126f.

199c   ⟨*variable GSDRT* 199c⟩≡   (211)
      GSDRT   = S&L government target debt-to-GDP ratio
    Defines:
      GSDRT, used in chunk 223.
      gsdrt, used in chunk 135e.

199d   ⟨*variable GSSRT* 199d⟩≡   (211)
      GSSRT   = State and local government, target surplus-to-GDP ratio
    Defines:
      GSSRT, used in chunk 223.
      gssrt, used in chunk 135e.

199e   ⟨*variable GSTRT* 199e⟩≡   (211)
      GSTRT   = S&L government, trend ratio of transfer payments to GDP
    Defines:
      GSTRT, used in chunk 223.
      gstrt, used in chunk 129f.

199f   ⟨*variable HGPCDR* 199f⟩≡   (211)
      HGPCDR   = Trend growth rate of price of consumer durable goods (relative to PCNIA)
    Defines:
      HGPCDR, used in chunk 223.
      hgpcdr, used in chunks 20e and 180a.
    Uses PCNIA 89a.

199g   ⟨*variable HKSR* 199g⟩≡   (211)
      HKSR   = Residual growth of capital services
    Defines:
      HKSR, used in chunk 223.
      hksr, used in chunk 31a.

199h   ⟨*variable JRCD* 199h⟩≡   (211)
      JRCD   = Depreciation rate, consumer durables
    Defines:
      JRCD, used in chunk 223.
      jrcd, used in chunks 20e and 22–24.

200a ⟨*variable JRH* 200a⟩≡   (211)
```
JRH       = Depreciation rate, housing
```
Defines:
  JRH, used in chunk 223.
  jrh, used in chunks 21a, 23, and 72.

200b ⟨*variable JRPD* 200b⟩≡   (211)
```
JRPD      = Depreciation rate, equipment
```
Defines:
  JRPD, used in chunk 223.
  jrpd, used in chunks 28a, 29g, 32a, and 72c.

200c ⟨*variable JRPI* 200c⟩≡   (211)
```
JRPI      = Depreciation rate, intellectual property
```
Defines:
  JRPI, used in chunk 223.
  jrpi, used in chunks 29a, 30b, and 32c.

200d ⟨*variable JRPS* 200d⟩≡   (211)
```
JRPS      = Depreciation rate, nonresidential structures
```
Defines:
  JRPS, used in chunk 223.
  jrps, used in chunks 28d, 30d, 32e, and 72c.

200e ⟨*variable LEUC* 200e⟩≡   (211)
```
LEUC      = Emergency unemployment compensation (EUC)
```
Defines:
  LEUC, used in chunk 223.
  leuc, used in chunk 139e.

200f ⟨*variable LQUALT* 200f⟩≡   (211)
```
LQUALT    = Labor quality, trend level
```
Defines:
  LQUALT, used in chunk 223.
  lqualt, used in chunks 52c and 59e.

200g ⟨*variable LURTRSH* 200g⟩≡   (211)
```
LURTRSH   = Unemployment threshold
```
Defines:
  LURTRSH, used in chunk 223.
  lurtrsh, used in chunk 143b.

200h ⟨*variable N16* 200h⟩≡   (211)
```
N16       = Noninstitutional population, aged 16 and over (break adjusted)
```
Defines:
  N16, used in chunk 223.
  n16, used in chunks 65–68.

200i ⟨*variable PCFRT* 200i⟩≡   (211)
```
PCFRT     = Real PCE price of food, trend
```
Defines:
  PCFRT, used in chunk 223.
  pcfrt, used in chunks 104a and 105b.

201a $\langle variable\ PCSTAR\ 201a\rangle\equiv$ (211)
            ```
            PCSTAR   = Target consumption price level (used in RFFGEN policy rule)
            ```
            Defines:
              PCSTAR, used in chunk 223.
              pcstar, used in chunk 141c.
            Uses RFFGEN 141b.

201b $\langle variable\ PITARG\ 201b\rangle\equiv$ (211)
            ```
            PITARG   = Target rate of consumption price inflation (used in policy reaction functions)
            ```
            Defines:
              PITARG, used in chunk 223.
              pitarg, used in chunks 139–41 and 168d.

201c $\langle variable\ PITRSH\ 201c\rangle\equiv$ (211)
            ```
            PITRSH   = Inflation threshold
            ```
            Defines:
              PITRSH, used in chunk 223.
              pitrsh, used in chunk 143e.

201d $\langle variable\ PKIR\ 201d\rangle\equiv$ (211)
            ```
            PKIR     = Price index for stock of inventories, cw (relative to PXP)
            ```
            Defines:
              PKIR, used in chunks 109e and 223.
              pkir, used in chunks 33b, 36d, 49a, and 109f.
            Uses PXP 93a.

201e $\langle variable\ PLMINR\ 201e\rangle\equiv$ (211)
            ```
            PLMINR   = Ratio of hourly minimum wage to compensation per hour (times 100)
            ```
            Defines:
              PLMINR, used in chunk 223.
              plminr, used in chunk 99b.

201f $\langle variable\ POILRT\ 201f\rangle\equiv$ (211)
            ```
            POILRT   = Price of imported oil, relative to price index for bus. sector output, trend
            ```
            Defines:
              POILRT, used in chunk 223.
              poilrt, used in chunk 101a.

201g $\langle variable\ QLEOR\ 201g\rangle\equiv$ (211)
            ```
            QLEOR    = Desired ratio of employment discrepancy to the labor force
            ```
            Defines:
              QLEOR, used in chunk 223.
              qleor, used in chunks 62d and 68.

201h $\langle variable\ RFFFIX\ 201h\rangle\equiv$ (211)
            ```
            RFFFIX   = Federal funds rate given by fixed, pre-determined funds rate path
            ```
            Defines:
              RFFFIX, used in chunk 223.
              rfffix, used in chunk 142d.

202a   ⟨*variable RFFMIN* 202a⟩≡   (211)
         ```
         RFFMIN   = Minimum nominal funds rate (set at 0 to impose zero lower bound)
         ```
         Defines:
           RFFMIN, used in chunk 223.
           rffmin, used in chunks 142d and 144e.

202b   ⟨*variable RFNICT* 202b⟩≡   (211)
         ```
         RFNICT   = Residual in FNICN equation
         ```
         Defines:
           RFNICT, used in chunk 223.
           rfnict, used in chunk 45c.
         Uses FNICN 45b.

202c   ⟨*variable RFRS10* 202c⟩≡   (211)
         ```
         RFRS10   = Real foreign short-term interest rate
         ```
         Defines:
           RFRS10, used in chunk 223.
           rfrs10, used in chunk 162a.

202d   ⟨*variable RRFIX* 202d⟩≡   (211)
         ```
         RRFIX    = Real federal funds rate given by fixed, pre-determined real funds rate pat
         ```
         Defines:
           RRFIX, used in chunk 223.
           rrfix, used in chunk 142d.

202e   ⟨*variable T47* 202e⟩≡   (211)
         ```
         T47      = Time trend, begins in 1947q1 (0 before)
         ```
         Defines:
           T47, used in chunk 223.
           t47, used in chunks 104d, 105b, and 151d.

202f   ⟨*variable TAPDAD* 202f⟩≡   (211)
         ```
         TAPDAD   = Proportion of investment in equipment using accelerated depreciation
         ```
         Defines:
           TAPDAD, used in chunk 223.
           tapdad, used in chunk 38a.

202g   ⟨*variable TAPDDP* 202g⟩≡   (211)
         ```
         TAPDDP   = Proportion of investment tax credit deducted from depr. base
         ```
         Defines:
           TAPDDP, used in chunk 223.
           tapddp, used in chunk 32a.

202h   ⟨*variable TAPDS* 202h⟩≡   (211)
         ```
         TAPDS    = Tax service life of equipment
         ```
         Defines:
           TAPDS, used in chunk 223.
           tapds, used in chunk 38a.

203a $\langle$*variable TAPDT* 203a$\rangle\equiv$ (211)
            TAPDT   = Investment tax credit rate for equipment
            Defines:
              TAPDT, used in chunk 223.
              tapdt, used in chunks 32a and 132c.

203b $\langle$*variable TAPSAD* 203b$\rangle\equiv$ (211)
            TAPSAD   = Proportion of investment in nonresidential structures using accelerated depreciation
            Defines:
              TAPSAD, used in chunk 223.
              tapsad, used in chunk 37a.

203c $\langle$*variable TAPSSL* 203c$\rangle\equiv$ (211)
            TAPSSL   = Tax service life of nonresidential structures
            Defines:
              TAPSSL, used in chunk 223.
              tapssl, used in chunk 37a.

203d $\langle$*variable TFDIV* 203d$\rangle\equiv$ (211)
            TFDIV   = Federal income receipts on assets, dividends, current $
            Defines:
              TFDIV, used in chunk 223.
              Tfdiv, never used.

203e $\langle$*variable TRFCIM* 203e$\rangle\equiv$ (211)
            TRFCIM   = Marginal federal corporate income tax rate
            Defines:
              TRFCIM, used in chunk 223.
              trfcim, used in chunks 31, 32, and 132c.

203f $\langle$*variable TRFIB* 203f$\rangle\equiv$ (211)
            TRFIB   = Average federal indirect business tax rate
            Defines:
              TRFIB, used in chunk 223.
              trfib, used in chunk 131c.

203g $\langle$*variable TRFPM* 203g$\rangle\equiv$ (211)
            TRFPM   = Marginal federal personal income tax rate (at twice median family income)
            Defines:
              TRFPM, used in chunk 223.
              trfpm, used in chunk 23e.

203h $\langle$*variable TRFPTX* 203h$\rangle\equiv$ (211)
            TRFPTX   = Average federal tax rate for personal income tax, trend, policy setting
            Defines:
              TRFPTX, used in chunk 223.
              trfptx, used in chunk 133d.

203i $\langle$*variable TRFSI* 203i$\rangle\equiv$ (211)
            TRFSI   = Average federal social insurance tax rate
            Defines:
              TRFSI, used in chunk 223.
              trfsi, used in chunk 132a.

204a $\langle variable\ TRSCIT\ 204a\rangle \equiv$ (211)
```
TRSCIT   = Average S&L corporate income tax rate, trend
```
Defines:
  TRSCIT, used in chunk 223.
  trscit, used in chunk 134b.

204b $\langle variable\ TRSIBT\ 204b\rangle \equiv$ (211)
```
TRSIBT   = Average S&L indirect business tax rate, trend
```
Defines:
  TRSIBT, used in chunk 223.
  trsibt, used in chunk 134e.

204c $\langle variable\ TRSPP\ 204c\rangle \equiv$ (211)
```
TRSPP    = Marginal S&L tax rate on personal property
```
Defines:
  TRSPP, used in chunk 223.
  trspp, used in chunk 23e.

204d $\langle variable\ TRSPTX\ 204d\rangle \equiv$ (211)
```
TRSPTX   = Average state and local tax rate for personal income, trend
```
Defines:
  TRSPTX, used in chunk 223.
  trsptx, used in chunk 135e.

204e $\langle variable\ TRSSIT\ 204e\rangle \equiv$ (211)
```
TRSSIT   = Average S&L social insurance tax rate, trend
```
Defines:
  TRSSIT, used in chunk 223.
  trssit, used in chunk 136c.

204f $\langle variable\ UEMOT\ 204f\rangle \equiv$ (211)
```
UEMOT    = Trend in ratio of EMON to XGDEN
```
Defines:
  UEMOT, used in chunk 223.
  uemot, used in chunk 40b.
Uses EMON 40d and XGDEN 70f.

204g $\langle variable\ UEMP\ 204g\rangle \equiv$ (211)
```
UEMP     = Multiplicative factor in EMP identity
```
Defines:
  UEMP, used in chunk 223.
  uemp, used in chunk 41e.
Uses EMP 41d.

204h $\langle variable\ UFCBR\ 204h\rangle \equiv$ (211)
```
UFCBR    = Multiplicative factor in FCBRN identity
```
Defines:
  UFCBR, used in chunk 223.
  ufcbr, used in chunk 43c.
Uses FCBRN 43b.

205a $\langle variable\ UFNIR\ 205a\rangle\equiv$ (211)
```
UFNIR   = Multiplicative factor in FNIRN identity
```
Defines:
  UFNIR, used in chunk 223.
  ufnir, used in chunk 47e.
Uses FNIRN 47d.

205b $\langle variable\ UFPCM\ 205b\rangle\equiv$ (211)
```
UFPCM   = Multiplicative factor in FPCM identity
```
Defines:
  UFPCM, used in chunk 223.
  ufpcm, used in chunk 161d.
Uses FPCM 161c.

205c $\langle variable\ UFPXM\ 205c\rangle\equiv$ (211)
```
UFPXM   = Multiplicative factor in FPXM identity
```
Defines:
  UFPXM, used in chunk 223.
  ufpxm, used in chunk 164f.
Uses FPXM 164e.

205d $\langle variable\ UFTCIN\ 205d\rangle\equiv$ (211)
```
UFTCIN   = Multiplicative factor in FTCIN identity
```
Defines:
  UFTCIN, used in chunk 223.
  uftcin, used in chunk 44b.
Uses FTCIN 44a.

205e $\langle variable\ UGFDBT\ 205e\rangle\equiv$ (211)
```
UGFDBT   = Multiplicative factor in GFDBTN identity
```
Defines:
  UGFDBT, used in chunk 223.
  ugfdbt, used in chunk 124a.
Uses GFDBTN 123f.

205f $\langle variable\ UGSDBT\ 205f\rangle\equiv$ (211)
```
UGSDBT   = Multiplicative factor in GSDBTN identity
```
Defines:
  UGSDBT, used in chunk 223.
  ugsdbt, used in chunk 128a.
Uses GSDBTN 127f.

205g $\langle variable\ UGSINT\ 205g\rangle\equiv$ (211)
```
UGSINT   = Multiplicative factor in GSINTN identity
```
Defines:
  UGSINT, used in chunk 223.
  ugsint, used in chunk 128c.
Uses GSINTN 128b.

206a   ⟨*variable UGSSUB* 206a⟩≡   (211)
           UGSSUB   = Multiplicative factor in GSSUB identity
           Defines:
             UGSSUB, used in chunk 223.
             ugssub, used in chunk 130e.
           Uses GSSUB 130d.

206b   ⟨*variable UJCCA* 206b⟩≡   (211)
           UJCCA   = Multiplicative factor in JCCAN identity
           Defines:
             UJCCA, used in chunk 223.
             ujcca, used in chunk 72c.
           Uses JCCAN 72b.

206c   ⟨*variable UJCCAC* 206c⟩≡   (211)
           UJCCAC   = Multiplicative factor in JCCACN identity
           Defines:
             UJCCAC, used in chunk 223.
             ujccac, used in chunk 72a.
           Uses JCCACN 71f.

206d   ⟨*variable UJYGFE* 206d⟩≡   (211)
           UJYGFE   = Multiplicative factor in JYGFEN identity
           Defines:
             UJYGFE, used in chunk 223.
             ujygfe, used in chunk 72e.
           Uses JYGFEN 72d.

206e   ⟨*variable UJYGFG* 206e⟩≡   (211)
           UJYGFG   = Multiplicative factor in JYGFGN identity
           Defines:
             UJYGFG, used in chunk 223.
             ujygfg, used in chunk 73b.
           Uses JYGFGN 73a.

206f   ⟨*variable UJYGSE* 206f⟩≡   (211)
           UJYGSE   = Multiplicative factor in JYGSEN identity
           Defines:
             UJYGSE, used in chunk 223.
             ujygse, used in chunk 73d.
           Uses JYGSEN 73c.

206g   ⟨*variable UJYGSG* 206g⟩≡   (211)
           UJYGSG   = Multiplicative factor in JYGSGN identity
           Defines:
             UJYGSG, used in chunk 223.
             ujygsg, used in chunk 73f.
           Uses JYGSGN 73e.

207a   ⟨*variable ULEF* 207a⟩≡   (211)
            ```
            ULEF      = Multiplicative factor in LEF identity
            ```
            Defines:
               ULEF, used in chunk 223.
               ulef, used in chunk 63a.
            Uses LEF 62f.

207b   ⟨*variable ULES* 207b⟩≡   (211)
            ```
            ULES      = Multiplicative factor in LES identity
            ```
            Defines:
               ULES, used in chunk 223.
               ules, used in chunk 63c.
            Uses LES 63b.

207c   ⟨*variable UPCPI* 207c⟩≡   (211)
            ```
            UPCPI     = Multiplicative factor in PCPI identity
            ```
            Defines:
               UPCPI, used in chunk 223.
               upcpi, used in chunk 89d.
            Uses PCPI 89c.

207d   ⟨*variable UPCPIX* 207d⟩≡   (211)
            ```
            UPCPIX    = Multiplicative factor in PCPIX identity
            ```
            Defines:
               UPCPIX, used in chunk 223.
               upcpix, used in chunk 89f.
            Uses PCPIX 89e.

207e   ⟨*variable UPGFL* 207e⟩≡   (211)
            ```
            UPGFL     = Multiplicative factor in PGFL identity
            ```
            Defines:
               UPGFL, used in chunk 223.
               upgfl, used in chunk 107a.
            Uses PGFL 106g.

207f   ⟨*variable UPGSL* 207f⟩≡   (211)
            ```
            UPGSL     = Multiplicative factor in PGSL identity
            ```
            Defines:
               UPGSL, used in chunk 223.
               upgsl, used in chunk 107c.
            Uses PGSL 107b.

207g   ⟨*variable UPKPD* 207g⟩≡   (211)
            ```
            UPKPD     = Multiplicative factor in PKPDR identity
            ```
            Defines:
               UPKPD, used in chunk 223.
               upkpd, used in chunk 107e.
            Uses PKPDR 107d.

208a   ⟨*variable UPMP* 208a⟩≡   (211)

```
UPMP     = Multiplicative factor in PMP identity
```

Defines:
  UPMP, used in chunk 223.
  upmp, used in chunk 102b.
Uses PMP 102a.

208b   ⟨*variable UPXB* 208b⟩≡   (211)

```
UPXB     = Multiplicative factor in PXB    identity
```

Defines:
  UPXB, used in chunk 223.
  upxb, used in chunk 108d.
Uses PXB 108c.

208c   ⟨*variable UVEOA* 208c⟩≡   (211)

```
UVEOA    = Multiplicative factor in VEOA identity
```

Defines:
  UVEOA, used in chunk 223.
  uveoa, used in chunk 54a.
Uses VEOA 53g.

208d   ⟨*variable UVPD* 208d⟩≡   (211)

```
UVPD     = Multiplicative factor in VPD identity
```

Defines:
  UVPD, used in chunk 223.
  uvpd, used in chunk 33d.
Uses VPD 33c.

208e   ⟨*variable UVPI* 208e⟩≡   (211)

```
UVPI     = Multiplicative factor in VPI identity
```

Defines:
  UVPI, used in chunk 223.
  uvpi, used in chunk 33f.
Uses VPI 33e.

208f   ⟨*variable UVPS* 208f⟩≡   (211)

```
UVPS     = Multiplicative factor in VPS identity
```

Defines:
  UVPS, used in chunk 223.
  uvps, used in chunk 34b.
Uses VPS 34a.

208g   ⟨*variable UXENG* 208g⟩≡   (211)

```
UXENG    = Multiplicative factor in XENG identity
```

Defines:
  UXENG, used in chunk 223.
  uxeng, used in chunk 55e.
Uses XENG 55d.

209a   ⟨*variable UYD* 209a⟩≡   (211)
         ```
         UYD      = Multiplicative factor in YDN identity
         ```
Defines:
  UYD, used in chunk 223.
  uyd, used in chunk 77f.
Uses YDN 77e.

209b   ⟨*variable UYHI* 209b⟩≡   (211)
         ```
         UYHI     = Multiplicative factor in YHIN identity
         ```
Defines:
  UYHI, used in chunk 223.
  uyhi, used in chunk 81b.
Uses YHIN 81a.

209c   ⟨*variable UYHLN* 209c⟩≡   (211)
         ```
         UYHLN    = Multiplicative factor in YHLN identity
         ```
Defines:
  UYHLN, used in chunk 223.
  uyhln, used in chunk 81f.
Uses YHLN 81e.

209d   ⟨*variable UYHPTN* 209d⟩≡   (211)
         ```
         UYHPTN   = Multiplicative factor in YHPTN identity
         ```
Defines:
  UYHPTN, used in chunk 223.
  uyhptn, used in chunk 83e.
Uses YHPTN 83d.

209e   ⟨*variable UYHSN* 209e⟩≡   (211)
         ```
         UYHSN    = Multiplicative factor in personal saving identity (accounts for transfers to foreign
         ```
Defines:
  UYHSN, used in chunk 223.
  uyhsn, used in chunk 84d.

209f   ⟨*variable UYHTN* 209f⟩≡   (211)
         ```
         UYHTN    = Multiplicative factor in YHTN identity
         ```
Defines:
  UYHTN, used in chunk 223.
  uyhtn, used in chunk 85d.
Uses YHTN 85c.

209g   ⟨*variable UYL* 209g⟩≡   (211)
         ```
         UYL      = Multiplicative factor in YLN identity
         ```
Defines:
  UYL, used in chunk 223.
  uyl, used in chunk 74f.

209h   ⟨*variable UYNI* 209h⟩≡   (211)
         ```
         UYNI     = Multiplicative factor in YNIN identity
         ```
Defines:
  UYNI, used in chunk 223.
  uyni, used in chunk 74d.
Uses YNIN 74c.

210a $\langle variable\ UYNICP\ 210a\rangle\equiv$ (211)
          ```
          UYNICP   = Multiplicative factor in YNICPN identity
          ```
          Defines:
            UYNICP, used in chunk 223.
            uynicp, used in chunk 77b.
          Uses YNICPN 77a.

210b $\langle variable\ UYP\ 210b\rangle\equiv$ (211)
          ```
          UYP      = Multiplicative factor in YPN identity
          ```
          Defines:
            UYP, used in chunk 223.
            uyp, used in chunk 77d.
          Uses YPN 77c.

210c $\langle variable\ UYSEN\ 210c\rangle\equiv$ (211)
          ```
          UYSEN    = Multiplicative factor in YSEN identity
          ```
          Defines:
            UYSEN, used in chunk 223.
            uysen, used in chunk 75b.

210d $\langle variable\ YMSDN\ 210d\rangle\equiv$ (211)
          ```
          YMSDN    = Microsoft one-time dividend payout in 2004Q4
          ```
          Defines:
            YMSDN, used in chunk 223.
            ymsdn, used in chunk 76e.

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

211   ⟨*variables.txt* 211⟩≡
    ⟨*variable CENG* 41a⟩
    ⟨*variable D01Q4* 195a⟩
    ⟨*variable D2002* 195b⟩
    ⟨*variable D2003* 195c⟩
    ⟨*variable D69* 195d⟩
    ⟨*variable D79A* 195e⟩
    ⟨*variable D8095* 195f⟩
    ⟨*variable D81* 196a⟩
    ⟨*variable D83* 196b⟩
    ⟨*variable D86* 196c⟩
    ⟨*variable D87* 196d⟩
    ⟨*variable DCON* 196e⟩
    ⟨*variable DDOCKM* 196f⟩
    ⟨*variable DDOCKX* 196g⟩
    ⟨*variable DELRFF* 145b⟩
    ⟨*variable DEUC* 196h⟩
    ⟨*variable DFMPRR* 196i⟩
    ⟨*variable DFPDBT* 197a⟩
    ⟨*variable DFPEX* 197b⟩

⟨*variable DFPSRP* 197c⟩
⟨*variable DGLPRD* 197d⟩
⟨*variable DMPALT* 197e⟩
⟨*variable DMPEX* 197f⟩
⟨*variable DMPGEN* 197g⟩
⟨*variable DMPINTAY* 197h⟩
⟨*variable DMPRR* 197i⟩
⟨*variable DMPSTB* 198a⟩
⟨*variable DMPTAY* 198b⟩
⟨*variable DMPTLR* 198c⟩
⟨*variable DMPTLUR* 143a⟩
⟨*variable DMPTMAX* 143g⟩
⟨*variable DMPTPI* 143d⟩
⟨*variable DMPTR* 144b⟩
⟨*variable DMPTRSH* 198d⟩
⟨*variable DPADJ* 98b⟩
⟨*variable DPGAP* 97d⟩
⟨*variable DRSTAR* 198e⟩
⟨*variable EC* 24b⟩
⟨*variable ECD* 18a⟩
⟨*variable ECH* 19a⟩
⟨*variable ECNIA* 21c⟩
⟨*variable ECNIAN* 21e⟩
⟨*variable ECO* 17a⟩
⟨*variable EGF* 113d⟩
⟨*variable EGFI* 114c⟩
⟨*variable EGFIN* 114f⟩
⟨*variable EGFIT* 115b⟩
⟨*variable EGFL* 115e⟩
⟨*variable EGFLN* 116c⟩
⟨*variable EGFLT* 116e⟩
⟨*variable EGFN* 114a⟩
⟨*variable EGFO* 117c⟩
⟨*variable EGFON* 118a⟩
⟨*variable EGFOT* 118c⟩
⟨*variable EGPDIN* 38b⟩
⟨*variable EGS* 118f⟩
⟨*variable EGSI* 119d⟩
⟨*variable EGSIN* 120b⟩
⟨*variable EGSIT* 120d⟩
⟨*variable EGSL* 121a⟩
⟨*variable EGSLN* 121d⟩
⟨*variable EGSLT* 121f⟩
⟨*variable EGSN* 119b⟩
⟨*variable EGSO* 122c⟩
⟨*variable EGSON* 123a⟩

⟨*variable EGSOT* 123c⟩
⟨*variable EH* 18d⟩
⟨*variable EHN* 22b⟩
⟨*variable EI* 27d⟩
⟨*variable EIN* 36c⟩
⟨*variable EM* 42d⟩
⟨*variable EMN* 42b⟩
⟨*variable EMO* 40a⟩
⟨*variable EMON* 40d⟩
⟨*variable EMP* 41d⟩
⟨*variable EMPN* 41f⟩
⟨*variable EMPT* 54c⟩
⟨*variable EPD* 25b⟩
⟨*variable EPDN* 35c⟩
⟨*variable EPI* 25e⟩
⟨*variable EPIN* 35e⟩
⟨*variable EPS* 26c⟩
⟨*variable EPSN* 36a⟩
⟨*variable EX* 39b⟩
⟨*variable EXN* 39e⟩
⟨*variable FCBN* 42f⟩
⟨*variable FCBRN* 43b⟩
⟨*variable FGDP* 158d⟩
⟨*variable FGDPT* 159a⟩
⟨*variable FNICN* 45b⟩
⟨*variable FNILN* 45d⟩
⟨*variable FNIN* 43d⟩
⟨*variable FNIRN* 47d⟩
⟨*variable FPC* 161a⟩
⟨*variable FPCM* 161c⟩
⟨*variable FPI10* 159d⟩
⟨*variable FPI10T* 160a⟩
⟨*variable FPIC* 160d⟩
⟨*variable FPITRG* 198f⟩
⟨*variable FPX* 164c⟩
⟨*variable FPXM* 164e⟩
⟨*variable FPXR* 163c⟩
⟨*variable FPXRR* 163f⟩
⟨*variable FPXRRT* 198g⟩
⟨*variable FRL10* 162f⟩
⟨*variable FRS10* 161e⟩
⟨*variable FRSTAR* 162c⟩
⟨*variable FTCIN* 44a⟩
⟨*variable FXGAP* 158a⟩
⟨*variable FYNICN* 45f⟩
⟨*variable FYNILN* 46b⟩

⟨*variable FYNIN* 44c⟩
⟨*variable GFDBTN* 123f⟩
⟨*variable GFDRT* 198h⟩
⟨*variable GFINTN* 124b⟩
⟨*variable GFS* 124d⟩
⟨*variable GFSN* 125a⟩
⟨*variable GFSRPN* 125c⟩
⟨*variable GFSRT* 199a⟩
⟨*variable GFSUB* 125e⟩
⟨*variable GFSUBN* 126c⟩
⟨*variable GFT* 126e⟩
⟨*variable GFTN* 127a⟩
⟨*variable GFTRD* 127c⟩
⟨*variable GFTRT* 199b⟩
⟨*variable GSDBTN* 127f⟩
⟨*variable GSDRT* 199c⟩
⟨*variable GSINTN* 128b⟩
⟨*variable GSSRPN* 128d⟩
⟨*variable GSSRT* 199d⟩
⟨*variable GSSUB* 130d⟩
⟨*variable GSSUBN* 129a⟩
⟨*variable GST* 129e⟩
⟨*variable GSTN* 129c⟩
⟨*variable GSTRD* 130a⟩
⟨*variable GSTRT* 199e⟩
⟨*variable HGEMP* 44e⟩
⟨*variable HGGDP* 49b⟩
⟨*variable HGGDPT* 60c⟩
⟨*variable HGPCDR* 199f⟩
⟨*variable HGPDR* 108e⟩
⟨*variable HGPIR* 109b⟩
⟨*variable HGPKIR* 109e⟩
⟨*variable HGPPSR* 110a⟩
⟨*variable HGVPD* 34c⟩
⟨*variable HGVPI* 38d⟩
⟨*variable HGVPS* 34f⟩
⟨*variable HGX* 59d⟩
⟨*variable HGYNID* 189d⟩
⟨*variable HKS* 30e⟩
⟨*variable HKSR* 199g⟩
⟨*variable HLEPT* 68c⟩
⟨*variable HLPRDT* 69b⟩
⟨*variable HMFPT* 52e⟩
⟨*variable HQLFPR* 64f⟩
⟨*variable HQLWW* 61d⟩
⟨*variable HUQPCT* 100c⟩

⟨*variable HUXB* 58d⟩
⟨*variable HXBT* 60a⟩
⟨*variable JCCACN* 71f⟩
⟨*variable JCCAN* 72b⟩
⟨*variable JKCD* 23f⟩
⟨*variable JRCD* 199h⟩
⟨*variable JRH* 200a⟩
⟨*variable JRPD* 200b⟩
⟨*variable JRPI* 200c⟩
⟨*variable JRPS* 200d⟩
⟨*variable JYGFEN* 72d⟩
⟨*variable JYGFGN* 73a⟩
⟨*variable JYGSEN* 73c⟩
⟨*variable JYGSGN* 73e⟩
⟨*variable JYNCN* 74a⟩
⟨*variable KCD* 22d⟩
⟨*variable KH* 22f⟩
⟨*variable KI* 27a⟩
⟨*variable KPD* 29f⟩
⟨*variable KPI* 30a⟩
⟨*variable KPS* 30c⟩
⟨*variable KS* 31b⟩
⟨*variable LEF* 62f⟩
⟨*variable LEFT* 67a⟩
⟨*variable LEH* 63d⟩
⟨*variable LEO* 62c⟩
⟨*variable LEP* 62a⟩
⟨*variable LEPPOT* 68a⟩
⟨*variable LES* 63b⟩
⟨*variable LEST* 67d⟩
⟨*variable LEUC* 200e⟩
⟨*variable LF* 65c⟩
⟨*variable LFPR* 64a⟩
⟨*variable LHP* 56d⟩
⟨*variable LPRDT* 68e⟩
⟨*variable LQUALT* 200f⟩
⟨*variable LUR* 65e⟩
⟨*variable LURBLS* 66a⟩
⟨*variable LURNAT* 69d⟩
⟨*variable LURTRSH* 200g⟩
⟨*variable LWW* 57d⟩
⟨*variable MEI* 155b⟩
⟨*variable MEP* 156b⟩
⟨*variable MFPT* 53b⟩
⟨*variable N16* 200h⟩
⟨*variable PCDR* 112e⟩

⟨*variable PCENG* 102f⟩
⟨*variable PCENGR* 102c⟩
⟨*variable PCER* 103b⟩
⟨*variable PCFR* 103e⟩
⟨*variable PCFRT* 200i⟩
⟨*variable PCHR* 111d⟩
⟨*variable PCNIA* 89a⟩
⟨*variable PCOR* 111b⟩
⟨*variable PCPI* 89c⟩
⟨*variable PCPIX* 89e⟩
⟨*variable PCSTAR* 201a⟩
⟨*variable PCXFE* 101c⟩
⟨*variable PGDP* 106e⟩
⟨*variable PGFIR* 93c⟩
⟨*variable PGFL* 106g⟩
⟨*variable PGFOR* 93f⟩
⟨*variable PGSIR* 94c⟩
⟨*variable PGSL* 107b⟩
⟨*variable PGSOR* 94f⟩
⟨*variable PHOUSE* 154c⟩
⟨*variable PHR* 95c⟩
⟨*variable PIC4* 113b⟩
⟨*variable PICNGR* 110d⟩
⟨*variable PICNIA* 88e⟩
⟨*variable PICX4* 112c⟩
⟨*variable PICXFE* 87a⟩
⟨*variable PIECI* 87d⟩
⟨*variable PIGDP* 110f⟩
⟨*variable PIPL* 90a⟩
⟨*variable PIPXNC* 88b⟩
⟨*variable PITARG* 201b⟩
⟨*variable PITRSH* 201c⟩
⟨*variable PKIR* 201d⟩
⟨*variable PKPDR* 107d⟩
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⟨*variable PLMIN* 99a⟩
⟨*variable PLMINR* 201e⟩
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⟨*variable PMP* 102a⟩
⟨*variable POIL* 101e⟩
⟨*variable POILR* 100f⟩
⟨*variable POILRT* 201f⟩
⟨*variable PPDR* 95f⟩
⟨*variable PPIR* 96b⟩
⟨*variable PPSR* 96d⟩
⟨*variable PTR* 168c⟩

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⟨*variable PXB* 108c⟩
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⟨*variable PXP* 93a⟩
⟨*variable PXR* 97a⟩
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⟨*variable QECD* 20d⟩
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⟨*variable QEPI* 28f⟩
⟨*variable QEPS* 28c⟩
⟨*variable QKIR* 29c⟩
⟨*variable QLEOR* 201g⟩
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⟨*variable QLF* 66e⟩
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⟨*variable QLWW* 61b⟩
⟨*variable QPCNIA* 92e⟩
⟨*variable QPL* 91g⟩
⟨*variable QPMO* 106b⟩
⟨*variable QPXG* 91d⟩
⟨*variable QPXNC* 99c⟩
⟨*variable QPXP* 92c⟩
⟨*variable QYNIDN* 76a⟩
⟨*variable RBBB* 151a⟩
⟨*variable RBBBE* 150e⟩
⟨*variable RBBBP* 150b⟩
⟨*variable RCAR* 151c⟩
⟨*variable RCCD* 23b⟩
⟨*variable RCCH* 23d⟩
⟨*variable RCGAIN* 153f⟩
⟨*variable REQ* 152f⟩
⟨*variable REQP* 152c⟩
⟨*variable RFF* 144f⟩
⟨*variable RFFALT* 140d⟩
⟨*variable RFFE* 144d⟩
⟨*variable RFFFIX* 201h⟩
⟨*variable RFFGEN* 141b⟩
⟨*variable RFFINTAY* 140a⟩
⟨*variable RFFMIN* 202a⟩
⟨*variable RFFRULE* 142c⟩
⟨*variable RFFTAY* 139a⟩
⟨*variable RFFTLR* 139d⟩

⟨*variable RFNICT* 202b⟩
⟨*variable RFRS10* 202c⟩
⟨*variable RFYNIC* 46d⟩
⟨*variable RFYNIL* 47a⟩
⟨*variable RG10* 148e⟩
⟨*variable RG10E* 148c⟩
⟨*variable RG10P* 147f⟩
⟨*variable RG30* 149f⟩
⟨*variable RG30E* 149d⟩
⟨*variable RG30P* 149a⟩
⟨*variable RG5* 147d⟩
⟨*variable RG5E* 147b⟩
⟨*variable RG5P* 146e⟩
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⟨*variable RGW* 156e⟩
⟨*variable RME* 151f⟩
⟨*variable RPD* 31d⟩
⟨*variable RRFFE* 145d⟩
⟨*variable RRFIX* 202d⟩
⟨*variable RRMET* 157e⟩
⟨*variable RRTR* 168f⟩
⟨*variable RSPNIA* 78a⟩
⟨*variable RSTAR* 141e⟩
⟨*variable RTB* 146c⟩
⟨*variable RTBE* 145f⟩
⟨*variable RTINV* 33a⟩
⟨*variable RTPD* 31f⟩
⟨*variable RTPI* 32b⟩
⟨*variable RTPS* 32d⟩
⟨*variable RTR* 169c⟩
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⟨*variable TAPDAD* 202f⟩
⟨*variable TAPDD* 37b⟩
⟨*variable TAPDDP* 202g⟩
⟨*variable TAPDS* 202h⟩
⟨*variable TAPDT* 203a⟩
⟨*variable TAPSAD* 203b⟩
⟨*variable TAPSDA* 36e⟩
⟨*variable TAPSSL* 203c⟩
⟨*variable TFCIN* 130f⟩
⟨*variable TFDIV* 203d⟩
⟨*variable TFIBN* 131b⟩
⟨*variable TFPN* 131d⟩
⟨*variable TFSIN* 131f⟩
⟨*variable TRFCI* 132b⟩
⟨*variable TRFCIM* 203e⟩

⟨*variable UPKPD* 207g⟩
⟨*variable UPMP* 208a⟩
⟨*variable UPXB* 208b⟩
⟨*variable UQPCT* 99f⟩
⟨*variable UVEOA* 208c⟩
⟨*variable UVPD* 208d⟩
⟨*variable UVPI* 208e⟩
⟨*variable UVPS* 208f⟩
⟨*variable UXBT* 58a⟩
⟨*variable UXENG* 208g⟩
⟨*variable UYD* 209a⟩
⟨*variable UYHI* 209b⟩
⟨*variable UYHLN* 209c⟩
⟨*variable UYHPTN* 209d⟩
⟨*variable UYHSN* 209e⟩
⟨*variable UYHTN* 209f⟩
⟨*variable UYL* 209g⟩
⟨*variable UYNI* 209h⟩
⟨*variable UYNICP* 210a⟩
⟨*variable UYP* 210b⟩
⟨*variable UYSEN* 210c⟩
⟨*variable VEO* 53e⟩
⟨*variable VEOA* 53g⟩
⟨*variable VPD* 33c⟩
⟨*variable VPI* 33e⟩
⟨*variable VPS* 34a⟩
⟨*variable WDNFCN* 86a⟩
⟨*variable WPO* 155e⟩
⟨*variable WPON* 154f⟩
⟨*variable WPS* 153d⟩
⟨*variable WPSN* 153b⟩
⟨*variable XB* 51b⟩
⟨*variable XBN* 71b⟩
⟨*variable XBO* 50d⟩
⟨*variable XBT* 54f⟩
⟨*variable XENG* 55d⟩
⟨*variable XFS* 48a⟩
⟨*variable XFSN* 70d⟩
⟨*variable XG* 51d⟩
⟨*variable XGAP* 58g⟩
⟨*variable XGAP2* 59b⟩
⟨*variable XGDE* 49d⟩
⟨*variable XGDEN* 70f⟩
⟨*variable XGDI* 55f⟩
⟨*variable XGDIN* 86d⟩
⟨*variable XGDO* 56b⟩

⟨*variable XGDP* 48c⟩
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⟨*variable XGDPT* 55b⟩
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⟨*variable XGN* 71d⟩
⟨*variable XGO* 50a⟩
⟨*variable XGPOT* 52b⟩
⟨*variable XP* 50g⟩
⟨*variable XPN* 69f⟩
⟨*variable YCSN* 78c⟩
⟨*variable YDN* 77e⟩
⟨*variable YGFSN* 138a⟩
⟨*variable YGSSN* 138c⟩
⟨*variable YH* 79e⟩
⟨*variable YHGAP* 80a⟩
⟨*variable YHIBN* 80c⟩
⟨*variable YHIN* 81a⟩
⟨*variable YHL* 81c⟩
⟨*variable YHLN* 81e⟩
⟨*variable YHP* 82a⟩
⟨*variable YHPCD* 24d⟩
⟨*variable YHPGAP* 82c⟩
⟨*variable YHPNTN* 82e⟩
⟨*variable YHPSHR* 83b⟩
⟨*variable YHPTN* 83d⟩
⟨*variable YHSHR* 84a⟩
⟨*variable YHSN* 84c⟩
⟨*variable YHT* 84e⟩
⟨*variable YHTGAP* 85a⟩
⟨*variable YHTN* 85c⟩
⟨*variable YHTSHR* 85e⟩
⟨*variable YKIN* 78e⟩
⟨*variable YKPDN* 79a⟩
⟨*variable YKPSN* 79c⟩
⟨*variable YMSDN* 210d⟩
⟨*variable YNICPN* 77a⟩
⟨*variable YNIDN* 76d⟩
⟨*variable YNIIN* 75c⟩
⟨*variable YNILN* 74e⟩
⟨*variable YNIN* 74c⟩
⟨*variable YNISEN* 75a⟩
⟨*variable YPN* 77c⟩
⟨*variable ZDIVGR* 186c⟩
⟨*variable ZECD* 179c⟩
⟨*variable ZECO* 178c⟩
⟨*variable ZEH* 181a⟩

⟨*variable ZGAP05* 171d⟩
⟨*variable ZGAP10* 172b⟩
⟨*variable ZGAP30* 172e⟩
⟨*variable ZGAPC2* 180c⟩
⟨*variable ZLHP* 181d⟩
⟨*variable ZPI10* 174d⟩
⟨*variable ZPI10F* 175b⟩
⟨*variable ZPI5* 173c⟩
⟨*variable ZPIB5* 174a⟩
⟨*variable ZPIC30* 175d⟩
⟨*variable ZPIC58* 176a⟩
⟨*variable ZPICXFE* 176d⟩
⟨*variable ZPIECI* 177c⟩
⟨*variable ZRFF10* 170c⟩
⟨*variable ZRFF30* 171a⟩
⟨*variable ZRFF5* 169e⟩
⟨*variable ZVPD* 182c⟩
⟨*variable ZVPI* 183b⟩
⟨*variable ZVPS* 183e⟩
⟨*variable ZXBD* 184c⟩
⟨*variable ZXBI* 185b⟩
⟨*variable ZXBS* 185e⟩
⟨*variable ZYH* 187e⟩
⟨*variable ZYHP* 188c⟩
⟨*variable ZYHPST* 167c⟩
⟨*variable ZYHST* 166⟩
⟨*variable ZYHT* 189a⟩
⟨*variable ZYHTST* 167f⟩
⟨*variable ZYNID* 187b⟩

This code is written to file `variables.txt`.

B.2   Standard Version Variable Information File

223   ⟨*stdver.varinfo* 223⟩≡

```
 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 DDOCKM   = Dock strike dummy, import equation
14 DDOCKX   = 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 EGFON    = Federal government consumption ex. employee comp., current $
54 EGFOT    = 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 EGSIT    = 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 EGSOT    = 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 FGDPT    = 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 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 HGVPD    = 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 JYGFGN   = CFC, federal government, general, current $
170 JYGSEN   = CFC, state and local government enterprises, current $
171 JYGSGN   = 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 LWW      = 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
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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 Forecaste
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 servic
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
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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 RFNICT   = 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 RRFFE    = 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 accelerate
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 inc
345 TRFPT     = Average federal tax rate for personal income tax, trend
346 TRFPTX    = Average federal tax rate for personal income tax, trend, policy setti
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 TRSIB     = 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 UFPXM   = Multiplicative factor in FPXM 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 JYGFGN 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 UYP     = 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
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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*log(actual/potential)
428 XGAP2    = Output gap for GDP (100*log(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 e
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 afte
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 aft
456 YHPNTN   = Income, household, property, non-taxable component
457 YHPSHR   = Income, household, property, ratio to YH (real after-tax)
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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   = Propprietors' 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 (
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 e
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 buisiness 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.)
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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 e
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This code is written to file `stdver.varinfo`.

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B.3   Standard Version Equations File

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           ⟨*equation dpgap* 98a⟩
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⟨*equation ynisen* 75b⟩
⟨*equation ypn* 77d⟩
⟨*equation zdivgr* 186d⟩
⟨*equation zecd* 180a⟩
⟨*equation zeco* 179a⟩
⟨*equation zeh* 181b⟩
⟨*equation zgap05* 171e⟩
⟨*equation zgap10* 172c⟩
⟨*equation zgap30* 173a⟩
⟨*equation zgapc2* 180d⟩
⟨*equation zlhp* 182a⟩
⟨*equation zpi10* 174e⟩
⟨*equation zpi10f* 175c⟩
⟨*equation zpi5* 173d⟩

⟨*equation zpib5* 174b⟩
⟨*equation zpic30* 175e⟩
⟨*equation zpic58* 176b⟩
⟨*equation zpicxfe* 177a⟩
⟨*equation zpieci* 178a⟩
⟨*equation zrff10* 170d⟩
⟨*equation zrff30* 171b⟩
⟨*equation zrff5* 170a⟩
⟨*equation zvpd* 182d⟩
⟨*equation zvpi* 183c⟩
⟨*equation zvps* 184a⟩
⟨*equation zxbd* 184d⟩
⟨*equation zxbi* 185c⟩
⟨*equation zxbs* 186a⟩
⟨*equation zyh* 188a⟩
⟨*equation zyhp* 188d⟩
⟨*equation zyhpst* 167d⟩
⟨*equation zyhst* 167a⟩
⟨*equation zyht* 189b⟩
⟨*equation zyhtst* 168a⟩
⟨*equation zynid* 187c⟩
theend

This code is written to file `stdver.eqs.txt`.

B.4   Standard Version Coefficients File

253   ⟨*stdver.coeffs.txt* 253⟩≡

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⟨*coefficient y_dmptlur* 143c⟩
⟨*coefficient y_dmptpi* 143f⟩
⟨*coefficient y_dpadj* 98d⟩
⟨*coefficient y_ecd* 18c⟩
⟨*coefficient y_ech* 19c⟩
⟨*coefficient y_eco* 17c⟩
⟨*coefficient y_egfi* 114e⟩
⟨*coefficient y_egfit* 115d⟩
⟨*coefficient y_egfl* 116b⟩
⟨*coefficient y_egflt* 117b⟩
⟨*coefficient y_egfo* 117e⟩
⟨*coefficient y_egfot* 118e⟩
⟨*coefficient y_egsi* 120a⟩
⟨*coefficient y_egsit* 120f⟩
⟨*coefficient y_egsl* 121c⟩
⟨*coefficient y_egslt* 122b⟩
⟨*coefficient y_egso* 122e⟩
⟨*coefficient y_egsot* 123e⟩
⟨*coefficient y_eh* 18f⟩
⟨*coefficient y_emo* 40c⟩
⟨*coefficient y_empt* 54e⟩
⟨*coefficient y_epd* 25d⟩
⟨*coefficient y_epi* 26b⟩
⟨*coefficient y_eps* 26e⟩
⟨*coefficient y_ex* 39d⟩
⟨*coefficient y_fgdpt* 159c⟩
⟨*coefficient y_fpi10* 159f⟩
⟨*coefficient y_fpi10t* 160c⟩
⟨*coefficient y_fpic* 160f⟩
⟨*coefficient y_fpxr* 163e⟩
⟨*coefficient y_fpxrr* 164b⟩
⟨*coefficient y_frl10* 163b⟩
⟨*coefficient y_frs10* 162b⟩
⟨*coefficient y_frstar* 162e⟩
⟨*coefficient y_fxgap* 158c⟩
⟨*coefficient y_gfs* 124f⟩
⟨*coefficient y_gfsub* 126b⟩
⟨*coefficient y_gftrd* 127e⟩
⟨*coefficient y_gstrd* 130c⟩
⟨*coefficient y_hgemp* 45a⟩
⟨*coefficient y_hgpdr* 109a⟩

⟨*coefficient y_hgpir* 109d⟩
⟨*coefficient y_hgpkir* 109g⟩
⟨*coefficient y_hgppsr* 110c⟩
⟨*coefficient y_hgvpd* 34e⟩
⟨*coefficient y_hgvpi* 39a⟩
⟨*coefficient y_hgvps* 35b⟩
⟨*coefficient y_hmfpt* 53a⟩
⟨*coefficient y_hqlfpr* 65b⟩
⟨*coefficient y_hqlww* 61f⟩
⟨*coefficient y_huqpct* 100e⟩
⟨*coefficient y_huxb* 58f⟩
⟨*coefficient y_ki* 27c⟩
⟨*coefficient y_left* 67c⟩
⟨*coefficient y_leo* 62e⟩
⟨*coefficient y_lest* 67f⟩
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⟨*coefficient y_mep* 156d⟩
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⟨*coefficient y_pcer* 103d⟩
⟨*coefficient y_pcfr* 104b⟩
⟨*coefficient y_pchr* 112b⟩
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⟨*coefficient y_pgsir* 94e⟩
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⟨*coefficient y_phr* 95e⟩
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⟨*coefficient y_pieci* 88a⟩
⟨*coefficient y_pipxnc* 88d⟩
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⟨*coefficient y_ppsr* 96f⟩
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⟨*coefficient y_pxr* 97c⟩
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⟨*coefficient y_qecd* 20f⟩
⟨*coefficient y_qeco* 20c⟩
⟨*coefficient y_qeh* 21b⟩

⟨*coefficient y_qepd* 28b⟩
⟨*coefficient y_qepi* 29b⟩
⟨*coefficient y_qeps* 28e⟩
⟨*coefficient y_qkir* 29e⟩
⟨*coefficient y_qpl* 92b⟩
⟨*coefficient y_qpmo* 106d⟩
⟨*coefficient y_qpxg* 91f⟩
⟨*coefficient y_qpxnc* 99e⟩
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⟨*coefficient y_rcgain* 154b⟩
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⟨*coefficient y_rfftay* 139c⟩
⟨*coefficient y_rfftlr* 139f⟩
⟨*coefficient y_rfynic* 46f⟩
⟨*coefficient y_rfynil* 47c⟩
⟨*coefficient y_rg10p* 148b⟩
⟨*coefficient y_rg30p* 149c⟩
⟨*coefficient y_rg5p* 147a⟩
⟨*coefficient y_rgfint* 157d⟩
⟨*coefficient y_rgw* 157a⟩
⟨*coefficient y_rme* 152b⟩
⟨*coefficient y_rrmet* 157g⟩
⟨*coefficient y_rrtr* 169b⟩
⟨*coefficient y_rstar* 142b⟩
⟨*coefficient y_rtbe* 146b⟩
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⟨*coefficient y_trfp* 133b⟩
⟨*coefficient y_trfpt* 133e⟩
⟨*coefficient y_trsci* 134c⟩
⟨*coefficient y_trsib* 134f⟩
⟨*coefficient y_trsp* 135c⟩
⟨*coefficient y_trspt* 136a⟩
⟨*coefficient y_trssi* 136d⟩
⟨*coefficient y_uces* 104e⟩
⟨*coefficient y_ucfs* 105c⟩
⟨*coefficient y_uqpct* 100b⟩
⟨*coefficient y_uxbt* 58c⟩
⟨*coefficient y_veoa* 54b⟩
⟨*coefficient y_wdnfcn* 86c⟩
⟨*coefficient y_xbo* 50f⟩
⟨*coefficient y_xgo* 50c⟩

⟨*coefficient y_xgpot* 52d⟩
⟨*coefficient y_yhibn* 80e⟩
⟨*coefficient y_yhpcd* 25a⟩
⟨*coefficient y_ynidn* 76f⟩
⟨*coefficient y_yniin* 75e⟩
⟨*coefficient y_zdivgr* 187a⟩
⟨*coefficient y_zecd* 180b⟩
⟨*coefficient y_zeco* 179b⟩
⟨*coefficient y_zeh* 181c⟩
⟨*coefficient y_zgap05* 172a⟩
⟨*coefficient y_zgap10* 172d⟩
⟨*coefficient y_zgap30* 173b⟩
⟨*coefficient y_zgapc2* 180e⟩
⟨*coefficient y_zlhp* 182b⟩
⟨*coefficient y_zpi10* 175a⟩
⟨*coefficient y_zpi5* 173e⟩
⟨*coefficient y_zpib5* 174c⟩
⟨*coefficient y_zpic30* 175f⟩
⟨*coefficient y_zpic58* 176c⟩
⟨*coefficient y_zpicxfe* 177b⟩
⟨*coefficient y_zpieci* 178b⟩
⟨*coefficient y_zrff10* 170e⟩
⟨*coefficient y_zrff30* 171c⟩
⟨*coefficient y_zrff5* 170b⟩
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⟨*coefficient y_zvpi* 183d⟩
⟨*coefficient y_zvps* 184b⟩
⟨*coefficient y_zxbd* 185a⟩
⟨*coefficient y_zxbi* 185d⟩
⟨*coefficient y_zxbs* 186b⟩
⟨*coefficient y_zyh* 188b⟩
⟨*coefficient y_zyhp* 188e⟩
⟨*coefficient y_zyhpst* 167e⟩
⟨*coefficient y_zyhst* 167b⟩
⟨*coefficient y_zyht* 189c⟩
⟨*coefficient y_zyhtst* 168b⟩
⟨*coefficient y_zynid* 187d⟩
theend

This code is written to file `stdver.coeffs.txt`.

Appendix C

Notes, Bibliography and Indexes

C.1   Chunks

⟨*coefficient y_ceng* 41c⟩
⟨*coefficient y_dmptlur* 143c⟩
⟨*coefficient y_dmptpi* 143f⟩
⟨*coefficient y_dpadj* 98d⟩
⟨*coefficient y_ecd* 18c⟩
⟨*coefficient y_ech* 19c⟩
⟨*coefficient y_eco* 17c⟩
⟨*coefficient y_egfi* 114e⟩
⟨*coefficient y_egfit* 115d⟩
⟨*coefficient y_egfl* 116b⟩
⟨*coefficient y_egflt* 117b⟩
⟨*coefficient y_egfo* 117e⟩
⟨*coefficient y_egfot* 118e⟩
⟨*coefficient y_egsi* 120a⟩
⟨*coefficient y_egsit* 120f⟩
⟨*coefficient y_egsl* 121c⟩
⟨*coefficient y_egslt* 122b⟩
⟨*coefficient y_egso* 122e⟩
⟨*coefficient y_egsot* 123e⟩
⟨*coefficient y_eh* 18f⟩
⟨*coefficient y_emo* 40c⟩
⟨*coefficient y_empt* 54e⟩
⟨*coefficient y_epd* 25d⟩
⟨*coefficient y_epi* 26b⟩
⟨*coefficient y_eps* 26e⟩
⟨*coefficient y_ex* 39d⟩

⟨*coefficient y_fgdpt* 159c⟩
⟨*coefficient y_fpi10* 159f⟩
⟨*coefficient y_fpi10t* 160c⟩
⟨*coefficient y_fpic* 160f⟩
⟨*coefficient y_fpxr* 163e⟩
⟨*coefficient y_fpxrr* 164b⟩
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⟨*coefficient y_frs10* 162b⟩
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⟨*coefficient y_hgvps* 35b⟩
⟨*coefficient y_hmfpt* 53a⟩
⟨*coefficient y_hqlfpr* 65b⟩
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⟨*coefficient y_huqpct* 100e⟩
⟨*coefficient y_huxb* 58f⟩
⟨*coefficient y_ki* 27c⟩
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⟨*coefficient y_leo* 62e⟩
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⟨*equation fpxm* 164f⟩
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⟨*equation frl10* 163a⟩
⟨*equation frs10* 162a⟩
⟨*equation frstar* 162d⟩
⟨*equation ftcin* 44b⟩
⟨*equation fxgap* 158b⟩
⟨*equation fynicn* 46a⟩
⟨*equation fyniln* 46c⟩
⟨*equation fynin* 44d⟩
⟨*equation gfdbtn* 124a⟩
⟨*equation gfintn* 124c⟩
⟨*equation gfs* 124e⟩
⟨*equation gfsn* 125b⟩

⟨*equation gfsrpn* 125d⟩
⟨*equation gfsub* 126a⟩
⟨*equation gfsubn* 126d⟩
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⟨*equation gftrd* 127d⟩
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⟨*equation gssub* 130e⟩
⟨*equation gssubn* 129b⟩
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⟨*equation gstn* 129d⟩
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⟨*equation jccan* 72c⟩
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⟨*equation jygfgn* 73b⟩
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⟨*equation lep* 62b⟩
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⟨*equation rffrule* 142d⟩
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⟨*equation veoa* 54a⟩
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⟨*equation wpsn* 153c⟩
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⟨*equation xbn* 71c⟩
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⟨*equation xgap2* 59c⟩
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⟨*equation zpib5* 174b⟩
⟨*equation zpic30* 175e⟩
⟨*equation zpic58* 176b⟩
⟨*equation zpicxfe* 177a⟩
⟨*equation zpieci* 178a⟩
⟨*equation zrff10* 170d⟩
⟨*equation zrff30* 171b⟩
⟨*equation zrff5* 170a⟩
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⟨*equation zxbs* 186a⟩
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⟨*equation zyhp* 188d⟩
⟨*equation zyhpst* 167d⟩
⟨*equation zyhst* 167a⟩
⟨*equation zyht* 189b⟩
⟨*equation zyhtst* 168a⟩
⟨*equation zynid* 187c⟩
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⟨*stdver.eqs.txt* 244⟩
⟨*stdver.varinfo* 223⟩
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⟨*variable D2003* 195c⟩
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⟨*variable D8095* 195f⟩
⟨*variable D81* 196a⟩
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⟨*variable D86* 196c⟩
⟨*variable D87* 196d⟩
⟨*variable DCON* 196e⟩
⟨*variable DDOCKM* 196f⟩
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⟨*variable DFMPRR* 196i⟩
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⟨*variable DFPSRP* 197c⟩
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⟨*variable DMPEX* 197f⟩
⟨*variable DMPGEN* 197g⟩
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⟨*variable DMPRR* 197i⟩
⟨*variable DMPSTB* 198a⟩
⟨*variable DMPTAY* 198b⟩
⟨*variable DMPTLR* 198c⟩
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⟨*variable DMPTMAX* 143g⟩
⟨*variable DMPTPI* 143d⟩
⟨*variable DMPTR* 144b⟩
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⟨*variable EGFIN* 114f⟩
⟨*variable EGFIT* 115b⟩
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⟨*variable EGFLN* 116c⟩
⟨*variable EGFLT* 116e⟩
⟨*variable EGFN* 114a⟩
⟨*variable EGFO* 117c⟩
⟨*variable EGFON* 118a⟩
⟨*variable EGFOT* 118c⟩
⟨*variable EGPDIN* 38b⟩
⟨*variable EGS* 118f⟩
⟨*variable EGSI* 119d⟩
⟨*variable EGSIN* 120b⟩
⟨*variable EGSIT* 120d⟩
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⟨*variable EGSLN* 121d⟩
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⟨*variable EGSOT* 123c⟩
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⟨*variable FGDPT* 159a⟩
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⟨*variable FNIRN* 47d⟩
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⟨*variable FPI10T* 160a⟩
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⟨*variable FPXR* 163c⟩
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⟨*variable FRS10* 161e⟩
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⟨*variable GFTRT* 199b⟩
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⟨*variable JRPS* 200d⟩
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⟨*variable JYGSGN* 73e⟩
⟨*variable JYNCN* 74a⟩
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⟨*variable KPD* 29f⟩
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⟨*variable LEH* 63d⟩
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⟨*variable LEP* 62a⟩
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⟨*variable LEST* 67d⟩
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⟨*variable QEH* 20g⟩
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⟨*variable QPMO* 106b⟩
⟨*variable QPXG* 91d⟩
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⟨*variable RCCH* 23d⟩
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⟨*variable REQ* 152f⟩
⟨*variable REQP* 152c⟩
⟨*variable RFF* 144f⟩
⟨*variable RFFALT* 140d⟩
⟨*variable RFFE* 144d⟩
⟨*variable RFFFIX* 201h⟩
⟨*variable RFFGEN* 141b⟩
⟨*variable RFFINTAY* 140a⟩
⟨*variable RFFMIN* 202a⟩
⟨*variable RFFRULE* 142c⟩
⟨*variable RFFTAY* 139a⟩

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