```
var y pi i r n wp ye ne wpe re a v yhat ihat rhat nhat wphat;
varexo ea ev;
parameters theta lamda rho beta gama alpha epsilon mi phi psi chi
nbar ybar omega omegabar kapa xia xiv itapi itay;

theta=1;
lamda=1;
rho=0.01;
beta=1/(1+rho);
gama=0.667;
alpha=0.333;
epsilon=6;
mi=ln(epsilon/((epsilon-1)*(1-alpha)));
phi=(1-theta)/(theta*(1-alpha)+alpha+lamda);
psi=1+(1-alpha)*phi;
chi=1-alpha*phi;
nbar=mi/(theta*(1-alpha)+alpha+lamda);
ybar=nbar*(1-alpha);
omegabar=nbar*(theta*(1-alpha)+lamda);
omega=(1-alpha)/(1-alpha+epsilon);
kapa=((((1-gama)*(1-(beta*gama)))*omega)/gama)*(((theta*(1-alpha))
+lamda+alpha)/(1-alpha));
xia=0.75;
xiv=0.5;
itapi=1.5;
itay=0.125;
sigma1=0.25;
sigma2=0.25;

model;

a=xia*a(-1)+ea;
v=xiv*v(-1)+ev;
ne=phi*a+nbar;
ye=psi*a+ybar;
wpe=chi*a+omegabar;
re=rho+theta*psi*(a-a(-1));
y=y(+1)-(1/theta)*(i-pi(+1)-rho);
yhat=y-ye;
pi=beta*pi(+1)+kapa*yhat;
i=rho+itapi*pi+itay*yhat+v;
r=i-pi(+1);
ihat=i-rho;
rhat=r-re;
n=(y-a)/(1-alpha);
nhat=n-ne;
wp=theta*y+lamda*n;
wphat=wp-wpe;

end;

initval;

y=ybar;
```

```
n=nbar;
wp=omegabar;
pi=0.0;
i=rho;
r=rho;
ye=ybar;
ne=nbar;
wpe=omegabar;
re=rho;
a=0;
v=0;
yhat=0.0;
ea=0;
ev=0;

end;

steady;

endval;

y=ybar;
n=nbar;
wp=omegabar;
pi=0;
i=rho;
r=rho;
ye=ybar;
ne=nbar;
wpe=omegabar;
re=rho;
a=0;
v=0;
yhat=0;
ea=0;
ev=0;

end;

steady;

shocks;

var ev;
periods 0:1;
values 1;

end;

check;

steady;

simul(periods=20);
```

```
% Plotting Output Inflation Interest Rates Employment Real Wages

subplot(3,2,1); plot(yhat(1:20,1)); title('Output');
subplot(3,2,2); plot(pi(1:20,1)); title('Inflation');
subplot(3,2,3); plot(ihat(1:20,1)); title('Nominal Interest Rate');
subplot(3,2,4); plot(rhat(1:20,1)); title('Real Interest Rate');
subplot(3,2,5); plot(nhat(1:20,1)); title('Employment');
subplot(3,2,6); plot(wphat(1:20,1)); title('Real Wage');
```