```
%% Section 5: Defining x,xp,y,yp
% Define the vector of states, x and xp
x  = [k_cu  c_ba1  a_cu  d_cu];
xp = [k_cup c_ba1p a_cup d_cup];
% Define the vector of controls, y and yp
y =  [c_cu  iv_cu  y_cu  la_cu  n_cu  rk_cu  w_cu ];
yp = [c_cup iv_cup y_cup la_cup n_cup rk_cup w_cup];

% For the log-approximation
f   = subs(f, [x,y,xp,yp], exp([x,y,xp,yp]));

% Phi: the expected value for the exogenous shocks, else use Phi =
[]
Phi = [RHOA*log(a_cu);RHOD*log(d_cu)];
% For the log-approximation
Phi = subs(Phi, [x,y,xp,yp], exp([x,y,xp,yp]));
```