```
function [f,x,xp,y,yp,symparams,Phi] = RBCmodel(unitFree)

%% Section 1: Declaring coefficients and variables
%Define the structureal parameters
syms DELTA BETTA B ETAl ETAc THETA ALFA RHOA RHOD
symparams=[DELTA,BETTA,B,ETAl,ETAc,THETA,ALFA,RHOA,RHOD];

%Define the state variables in this period (_cu) and the next
period
%(_cup). Variables lagged by one period appear as "_ba1"
syms k_cu  c_ba1  a_cu  d_cu
syms k_cup c_ba1p a_cup d_cup

%Define the control variables in this period (_cu) and the next
period (_cup)
syms c_cu  iv_cu  y_cu  la_cu  n_cu  rk_cu  w_cu
syms c_cup iv_cup y_cup la_cup n_cup rk_cup w_cup
```