797N – Macro 3
Fall 2015

Problem set 4

1. Assume - as in Shafir et al. (1997) - that effort depends on both the real wage and the rate of growth of nominal wages. Specifically, let

$$e(\frac{w}{p}, \frac{w}{w_{-1}}) = f(\frac{w}{p}) + a\frac{w}{w_{-1}}; \qquad f' > 0, f'' < 0, a > 0$$

and let the production function of the representative firm be given by

$$Y = F(eL) = (eL)^b; 0 < b < 1$$

   (a) Derive the first order conditions for profit maximisation.

   (b) Consider a steady state with $\frac{w}{p}$ constant and $\frac{p}{p_{-1}} = \frac{w}{w_{-1}} = n$. Find the effects of a change in n on $\frac{w}{p}, e$ and L.

   (c) Relate the specification in this problem to the analysis in Shafir et al (show that it is a special case of the Shafir et al specification and identify the restrictions that it imposes on their specification).