**Economics of Money and Banking**

Some comments and problems on the first part of the course

1. (Comment on a correction) In the OLG exercise discussed in class, with

$$U(c\_{1t},c\_{2t+1})=logc\_{1t}+\frac{logc\_{2t+1}}{1+θ} $$

the optimal consumption choice by the represenative individual is $c\_{1t}=\frac{1+θ}{2+θ},\frac{M\_{t}}{p\_{t}}=1-c\_{1t}=\frac{1}{2+θ}$ and so $c\_{2t+1}=\frac{M\_{t}}{p\_{t}}\frac{p\_{t}}{p\_{t+1}}=\frac{1}{2+θ}\frac{p\_{t}}{p\_{t+1}}$. *By mistake* in class instead we wrote $c\_{2t+1}=\frac{M\_{t}}{p\_{t}}\frac{p\_{t}}{p\_{t+1}}=\frac{1+θ}{2+θ}\frac{p\_{t}}{p\_{t+1}}$.

Moreover, as we saw in the last class, $\frac{M\_{t}}{p\_{t}}=$ $\frac{1}{2+θ}=\frac{M\_{t+1}}{p\_{t+1}}$ which implies $L\left(1+g\_{t}\right)= L\left(1+g\_{t+1}\right)$

and therefore $\frac{\left(1+n\right)}{\left(1+g\_{t}\right)}=1$ hence $\left(1+g\_{t}\right)=\left(1+g\right)=\left(1+n\right)$ and $g=n. $This implies that individual nominal money demand and price level, in equilibrium, have to decrease at the same rate $g=n$.

1. (Problems)
2. Consider the model in (i) where all is the same except that

$$U(c\_{1t},c\_{2t+1})=c\_{1t}+\frac{logc\_{2t+1}}{1+θ} $$

Find the optimum level of consumption in the two periods as well as money and equilibrium price behaviour

1. Consider again the model in (i) except that now money supply grows at a constant rate $h$ at each $t$. So, at $t=0$, $H$ pieces of paper are given to the old generation in the economy, at $t=1$ an addtional number of pieces of paper $hH$ will be introduced in the economy and given to the old generation. For this reason, at $t=1$ there will now be $H\left(1+h\right)$ pieces of paper circulating in the economy. At $t=2$ there will be $H\left(1+h\right)h$ additional pieces of paper given to the old, so that the total quantity in the economy will be $H(1+h)^{2}$ and so on. Therefore, at time $t=T$ there will be $H(1+h)^{T}$ pieces of paper in the economy. Discuss optimal consumption, individual money demand and price behaviour at the monetary equilibrium.