Problem 2

a) Embed the code into a general equilibrium model. Assume that accidental bequests are taxed 100% and are not redistributed.

→ the file "geneq" implements this, the equilibrium rate of return is 0.8% after 54 iterations

b) Why can an OLG economy with idiosyncratic risk be dynamically inefficient?

→ it can be dynamically inefficient when the capital stock is too high (when the return rate is to low)

→ in this case, a social security system can be improving for efficiency

→ since there are in theory infinitely many periods and finitely many agents, if the consumption profile is increasing towards later periods, this goes at the burden of the "older" generations in the absence of a social security system

→ the file "geneq" can implement such a system by introducing a tax and benefit system "pay as you go" and/or by having the life-cycle structure (??)

c) Augment the code by a welfare analysis for the life-time utility of new borns by calculating the consumption equivalent variation

$$\Rightarrow \quad g_t = \left(\frac{V_t}{\overline{V}_t}\right)^{\frac{1}{1-\theta}} - 1$$

(VO computed in code geneq - ceqv.m)

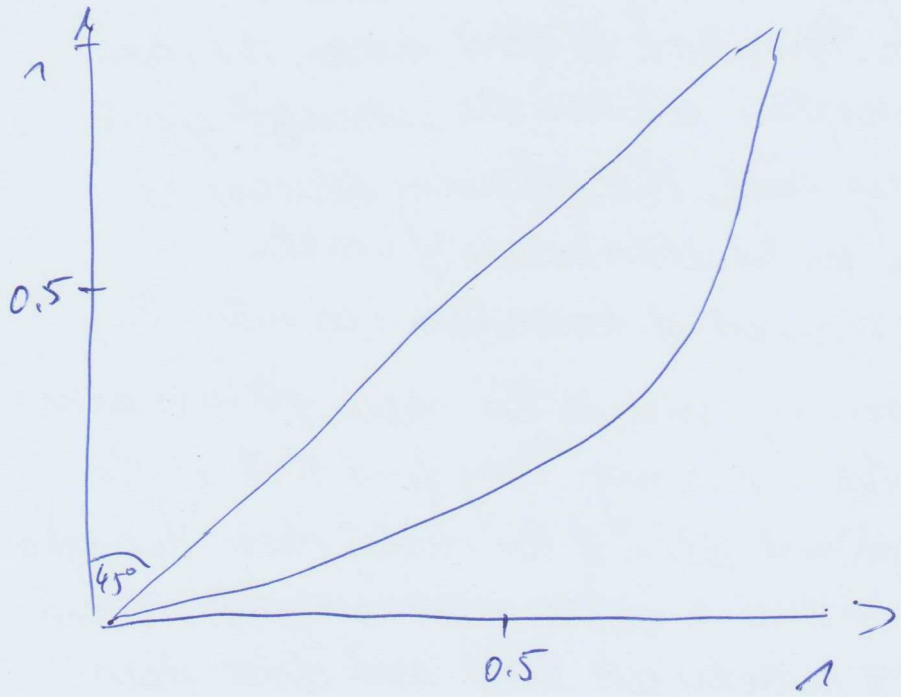
d) Compare pens = 0 vs pens = 0.6
(I compute this by running twice instead of the loop)

pens = 0: 28.1278 pens = 0.6: same → g_0 = damn

e) Compute the Gini-Index of wealth distribution

→ for the default calibration and $\rho_{ins} = 0.6$
I get a Gini coefficient of 0.4540 (assets)

→ the Lorenz curve looks like this



. comparing this to DeNardi (2004):

US data: Gini 0.~~78~~

Sweden: 0.73

⇒ our simulated economy is more equal than the US data or Swedish data permit

Part C: On the optimal Provision of Social Insurance

Ludwig & Krüger (2016)

The authors develop a life-cycle model which endogenizes the decision of young agents to attend college in order to investigate a problem of optimal taxation and college subsidy. They find that it is optimal for government to heavily subsidize college education and implement a progressive income tax code to finance the expenditure. Compared to other studies, the paper considers explicitly the interplay between the subsidy's effect of increasing college take-up and the following decrease of the college wage premium on the distribution of wealth. Moreover, they look at the period of transition (as in the PS) between the state of the economy prior to the new policies and the new steady state of the economy. They find that if the government sticks to the optimal policy of the steady state throughout the transition it could induce a severe recession as the taxes needed to finance the college subsidy are large and drive down consumption. If such transition dynamics are accounted for, however, the authors find that the progressivity degree should be 10%, the marginal tax rate on labor income should be 22.9% and the subsidy of college education 120%. This is associated with a 3% increase in annual consumption compared to the status quo. The model entails idiosyncratic income risk, skill-propagation across households, survival risk, borrowing constraints and optimal policy is conducted by maximizing a Utilitarian SWF as in Conesa et al. (2009). It is calibrated to match US data. In my opinion, the crucial aspect is the consideration of transitional dynamics for optimal policy which can change the outcome from boom to recession. It would be interesting to see how such a model performs in countries where college education is not as expensive as in the US, where college is often a person's first major financial decision.