Econ 131

Monica Singhal
UC Davis

Assignment 4
Due at the beginning of Class on May 10, 2017

Students are encouraged to work on assignments in small groups of no more than four students. Assignments *must be written up separately* and *must* include the names of the other group members. Assignments should be handed in at the beginning of class on the due date. Late assignments will not be accepted under any circumstances.

1. Optimal Redistribution

a) Consider a two person economy and the formula derived in class, that at the optimal level of redistribution, MUpoor / MUrich = 1 + (MDWL/MR). Assume throughout this question that the marginal utility of income is declining. Suppose that a tax produces no deadweight loss and the poor and rich individual have the same utility function. What will optimal redistribution look like in this case and why (with reference to the formula)?

b) Now consider again the case in which the tax produces no deadweight loss but suppose that the rich and poor individuals have different utility functions. In particular, suppose that the utility function of the rich individual is $U(Y) = 2*\ln(Y)$ and the utility function of the poor individual is $U(Y) = \ln(Y)$, where ln is the natural log. What will optimal redistribution look like in this case? (Hint: this utility function is easy to work with because the derivative of $\ln(x)$ is $1/x$. So if $U(Y) = \ln(Y)$, then $MU(Y) = 1/Y$.)

c) Explain intuitively why your results from (a) and (b) differ in the direction they do (2-3 sentences).

d) Now let's suppose again that the two individuals have the same utility function but now taxes do produce deadweight loss. What does this imply for the levels of after tax and transfer income of the two individuals at the optimal level of redistribution? Explain with reference to the formula.

2. Economic Mobility

a) Consider the transition matrix from the CBO report discussed in class:

Table 1: More than 50 percent of taxpayers in the bottom quintile moved to a higher quintile within ten years

Income Mobility Relative to the Total Tax Filing Population, 1996 to 2005

1996 Income Quintile	2005 Income Quintile								
	Lowest	Second	Middle	Fourth	Highest	Total	Top 10%	Top 5%	Top 1%
Lowest	42.4	28.6	13.9	9.9	5.3	100.0	2.3	1.3	0.2
Second	17.0	33.3	26.7	15.1	7.9	100.0	3.0	1.2	0.1
Middle	7.1	17.5	33.3	29.6	12.5	100.0	4.2	1.4	0.3
Fourth	4.1	7.3	18.3	40.2	30.2	100.0	8.6	2.7	0.3
Highest	2.6	3.2	7.1	17.8	69.4	100.0	43.4	22.5	4.4
Top 10%	2.6	2.2	4.9	11.8	78.6	100.0	61.1	37.6	8.3
Top 5%	2.6	1.8	3.9	8.6	83.1	100.0	71.6	54.4	15.2
Top 1%	3.2	1.3	2.2	4.9	88.4	100.0	82.7	75.0	42.6
All Income Groups	13.2	16.8	19.6	23.3	27.1	100.0	13.4	6.4	1.2

Notes: The rows sum to 100 percent across the five quintiles in the first five columns. The table uses the tax returns of primary and secondary non-dependent taxpayers who were age 25 or over in 1996 and filed for both 1996 and 2005. Income breaks for the quintiles and top percentiles are based on the full cross-sections of tax returns for each year, where the taxpayer is age 25 and over. Income is cash income in 2005 dollars as defined in the Technical Appendix.

Source: Tabulations by the U.S. Department of the Treasury, Office of Tax Analysis, using data from IRS Statistics of Income, Individual Income Tax Files for tax years 1996 and 2005.

Based on this matrix, what is the probability that an individual who starts in the lowest income quintile in 1996 moves to a *higher* income quintile by 2005?

b) What is the probability that someone who starts in the top 1% in 1996 ends up in the top 1% in 2006? What would we expect it to be if incomes for all individuals were completely uncorrelated from year to year?

c) One of the arguments in the Mankiw reading is that we cannot necessarily interpret low rates of intergenerational mobility as evidence of inequality of opportunity. Briefly summarize his argument (1-2 sentences).

d) The Chetty et al. work documents a high degree of geographic variation in rates of intergenerational mobility. Does this descriptive evidence *on its own* provide evidence against the Mankiw point? Explain (1-2 sentences).

3. Equity-Efficiency Tradeoffs in Practice

a) Senator Jones makes the following statement: "People have blamed U.S. tax and transfer policies for the fact that inequality is higher in the U.S. than in other countries. But pre-tax income inequality is also higher in the U.S. Since this can't be explained by tax and transfer policies, we know that there must be other factors that explain why the U.S. is more unequal than other countries." How would you respond to this statement?

b) You have been contacted by a reporter writing a piece on French President Hollande's 75% top marginal tax rate. The tax was enacted in 2012, lowered in 2013, and finally repealed in 2014 after failing to raise much revenue.[1] "Some economists seem to think this is a crazy policy but others seem to be arguing that the top rate could be higher than 75%. Can you help me make sense of what the important issues and tradeoffs are? Why didn't such a high tax raise much revenue?"

Based on what we've done in class *and the readings*, please provide a short summary of the relevant economic tradeoffs involved in such a policy, with a focus on efficiency, distribution (particularly as it relates to the top 1%), and revenue (300-400 words).

[1] http://www.theguardian.com/world/2014/dec/31/france-drops-75percent-supertax