Problem Set 1 (200 pts.)
Econ 350, Winter 2014
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Due January 13, 2014
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This course is about inequality and social mobility: their cross sectional, cross-country, life-cycle, and intergenerational dimensions.

It is important to know "the facts" and to understand their limitations. This first problem set asks students to become acquainted with the facts and how to interpret them.

Two useful documents are

Divided We Stand: Why Inequality Keeps Rising, OECD, December 2011

and

Some Facts and Open Issues in the Study of Inequality

(CBO, 2011)

The former is about inequality in all OECD countries and the latter is about the U.S. with some international focus. The sources of the "Facts" in the latter is from the entire reading list but mostly from Section 1. Acemoglu and Autor (2011) have lots of useful facts—don't worry about their models, which will be covered later in the course. On social mobility, read *Recent Developments in Intergenerational Mobility* by Black and Devereux (2011) on the reading list although its analysis is superficial.

Questions

1. (45 pts.) Summarize the main levels and trends in inequality in prices paid (wages received), hours worked, earnings, employment, labor force participation, and household income over time in the U.S. and compare it with trends and levels in the rest of the OECD. In analyzing household and individual incomes separately consider both gross and net income by source. In particular, assess

   a) The quantitative importance of each source.

   b) The role played by tax and transfer policies in shaping inequality and social mobility.

   c) The role of male employment and hours worked.

   d) The role of male wage rates.

   e) The role of **assortative** mating on household income.

   f) The role of female employment, hours worked, and wages.

   g) The role of education.

   What are the major sources of differences in inequality across countries at a point in time, and across time within and across countries? How solid is the evidence on globalization and on skill-biased technical change as explanations of tax and transfer policy as explanations?

2. (20 pts.) What is the evidence on the IGE across countries and over time for the U.S.? What are the determinants of the IGE? (Hint: See Black and Devereux, 2011, Corak (2013, JEP), and Setzler (2014b)).

3. (20 pts.) What are the trends in consumption and wealth inequality? (In U.S. and other countries)

4. (15 pts.) Compare the Gini coefficient, the variance of log income and the Theil and Atkinson inequality measures in terms of

   a) Satisfying the Dalton-Pigou principle of income transfer.

   b) Their dissaggregation properties into components (decomposability).

   c) Their sensitivity to movements in different portions of the income distribution.

   d) Their ability to capture population welfare.

   Hint: Read the chapter by Anand on the reading list and see the supplementary reading list (Measures of Inequality): `http://jenni.uchicago.edu/econ350/supplement/index.htm`

5. (35 pts.) What are the economic and philosophical arguments for and against redistribution and policies to reduce the IGE? (Hint: Read Sen (1979), Roemer (2012), and the handout on *Distributive Justice*). Distinguish efficiency arguments from value judgment arguments. What are effective methods for redistributing resources? What is a proper measure of equality and opportunity? How would you measure it?

   Specifically, read Amartya Sen's 1979 Tanner Lecture *Equality of What?*, the handout *Distributive Justice: A Brief Survey for Economists*, and the handout *Measures of Inequality*. Also read Roemer (2012), and the handout *Distributive Justice* by Setzler (2014a).

List the pros and two cons of using each of the following as metrics of human welfare: Utility, Income, Consumption, Rawls' primary goods, Sen's capabilities, Nussbaum's ten basic capabilities, National Income (e.g., GDP), National (or regional) Gini coefficient, and Democratic governance.

Your answer should consider: Which aspects of human welfare are well-represented by the metric, Which aspects of human welfare are poorly-represented by the metric, Feasibility of measurement, Problems that might arise if we try to optimize over the metric, as in the Distributive Justice handout, and Interpersonal comparibility.

6. (15 pts.) Answer the following questions:

   With simple arithmetic, Milton Friedman (1962) notes that government spending in the US was, already at that time, much higher than the spending required to bolster the income of each impoverished person above the poverty threshold. Inspired by this result, the following policy prescription has been proposed: Redistribute wealth from the rich to the poor until no person's income is below the poverty threshold. Comment briefly on the sense in which this proposal would achieve distributive justice in consideration of each of the following:

   a) If agents would choose this policy behind a thick (Rawlsian) veil of ignorance,

   b) If agents would choose this policy behind a thin (Harsanyian) veil of ignorance,

   c) The Compensation Principle (e.g., maximin),

d) The Rewards-to-Effort Principle (i.e., responsibility),

e) Respect for heterogeneity in tastes, abilities, genetics, bequests, etc.,

f) Feasibility, that is, dynamic general equilibrium with a government budget.

7. (50 pts.) Read the Becker-Tomes papers on the reading list (1979, 1986) and the paper by Black and Devereux (2011). Derive the IGE in these papers. How accurate is the Solon model (2004) as a representation of the Becker-Tomes models? Read also Cunha and Heckman (2007, AER) on the reading list and Heckman and Mosso (2013). How do these later models extend Becker-Tomes and Solon?

   a) Derive IGE for each model.

   b) In causality from mobility to inequality or from inequality to mobility?

   c) What policy interventions (if any) are justified by the models?

   d) If credit markets are imperfect, family influence affect child outcomes.

8. **First Steps of the Empirical Project on Structural Estimation**. (Credit will be assigned to Structural Estimation Project — 15 points of overall grade.) Solve Exercises 1.1, 1.2, and 1.3 in of the Empirical Project on Structural Estimation.

References

Acemoglu, D. and D. Autor (2011). Skills, tasks and technologies: Implications for employment and earnings. In O. Ashenfelter and D. Card (Eds.), *Handbook of Labor Economics*, Volume 4, Part B of *Handbooks in Economics*, Chapter 12, pp. 1043–1171. Amsterdam: Elsevier.

Black, S. E. and P. J. Devereux (2011). Recent developments in intergenerational mobility. In D. Card and O. Ashenfelter (Eds.), *Handbook of Labor Economics*, Volume 4, Part B, Chapter 16, pp. 1487–1541. Amsterdam and New York: Elsevier.

Corak, M. (2013). Income inequality, equality of opportunity, and intergenerational mobility. *The Journal of Economic Perspectives*, 79–102.

Cunha, F. and J. J. Heckman (2007). The technology of skill formation. *American Economic Review Papers and Proceedings 97*(2), 31–47.

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Sen, A. (1979). Equality of what? Presented at the Tanner Lectures on Human Values, Stanford University, May 22, 1979.

Setzler, B. (2014a). Distributive justice: A brief survey for economists.

Setzler, B. (2014b). Is the great gatsby curve robust? comment on corak (2013).