Problem Set II
Econ 350, Spring 2022
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Due May 11, 2022

1. In a competitive model with heterogeneous workers and single-worker firms with productivity differences, suppose workers have scalar skill s, but workers differ in the amount of it that they possess. Derive the equilibrium pricing equation. Use the Cobb-Douglas-Pareto example of "Notes on Differential Rents and the Distribution of Earnings" by Sattinger (1979).

   (a) Explain (derive) how the shape of the earnings function depends on the distribution of firm and worker endowments. When is it linear?

   (b) Can profit and wage functions both be convex and increasing? Explain.

   (c) How does this model explain rising wages for workers employed in more productive firms? How do superstar firms and workers emerge?

   (d) Does this model explain the evidence cited in Van Reenen (2018)?

   (e) When are prices (wages) identical across firms? Is nonlinearity in prices (wages) evidence of monopoly or monopsony power?

2. Define systemic discrimination and discuss how to test for its presence. Is it a testable hypothesis? Show why or why not.

3. Using the NLSY data posted for Problem Set I, determine the appropriate characterization of the panel error process for male earnings over the

period 1980–2015.

(a) Specifically replicate the analysis of Hryshko (2012) to determine the appropriate panel characterization (RIP vs HIP) of the error process. For what purposes does it matter? (Discuss in terms of agent welfare.)

(b) What is permanent income?

(c) How much of the variance in log earnings is due to unanticipated shocks? How do these shocks affect welfare?

(d) Discuss how to test for agent information sets. For which economic questions does this matter?

4. Using the data employed in problem 3, compare mobility tables by decile of individual and family earnings for persons of both genders as well as for blacks and hispanics.

(a) How does mobility vary by work experience? by education?

(b) How important are changes in hourly wages and changes in hours worked in explaining transitions? (Document by demographic group.)

5. Using the NLSY data, please define and estimate the following labor supply parameters for males:

(a) The Slutsky substitution effect

(b) The Hicks income-constant substitution effects

(c) The Frisch constant labor supply elasticity

Hint: see Keane (2011).

6. Using the analysis of Altonji and Pierret (2001), analyze the extent of statistical discrimination against blacks using the NLSY panel you extracted.

7. Discuss the evidence on monopsony and monopoly in the labor market (see, e.g., the DOJ report posted on the class website).

References

Altonji, J. G. and C. R. Pierret (2001, February). Employer learning and statistical discrimination. *Quarterly Journal of Economics 116*(1), 313–350.

Hryshko, D. (2012). Labor income profiles are not heterogeneous: Evidence from income growth rates. *Quantitative Economics 3*(2), 177–209.

Keane, M. P. (2011). Labor supply and taxes: A survey. *Journal of Economic Literature 49*(4), 961–1075.

Sattinger, M. (1979). Differential rents and the distribution of earnings. *Oxford Economic Papers 31*(1), 60–71.

Van Reenen, J. (2018, September). Increasing differences between firms: Market power and the macro-economy. Discussion paper 1576, Centre for Economic Performance.