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Syllabus for Macro/Labor Short Course

Oslo, May 30th –June 2nd, 2023

This mini-course will cover a growing body of empirical research that draws new insights from big data into economic inequality and microeconomic risks. We will cover both technical tools and substantive economic findings in this area. In particular, we will discuss different types of inequality (in annual versus lifetime incomes; at the top versus elsewhere; between versus within: firms, regions, genders, etc.; inequality in wealth, health, and others), why each type of inequality matters, what we know about them, and how they have changed over time. Similarly, we will discuss different types of microeconomic risks (facing households, workers, or firms), how they vary across the population, the non-Gaussian nature of these risks, and how these risks vary over the business cycle and over longer horizons. We will discuss the new insights into these questions provided by research from big data.

Intended Audience: Researchers, economists, and policy practitioners.

Prerequisites: Participants should be comfortable with Master's level courses in macroeconomics and econometrics.

Tentative Schedule

A. Lecture 1. Introduction and Trends in Income Risk

- Introduction: The advent of big data in economics; Empirical myths created by older/smaller data sets; Overview of empirical approaches to big data.
- Disentangling ex ante heterogeneity and ex post risk.
- Long-run trends in idiosyncratic income risk: old vs. new evidence.
- Labor market trends on firms and workers and their connection to trends in income risk.

B. Lecture 2. Idiosyncratic Risks

Over the Life Cycle

- Are income shocks (close to) log normal?
- How do the properties of income shocks change over the lifecycle and by permanent income
- Does the nonnormality matter in practice? (Hint: yes)

Over the Business Cycle

- Workers and households: Business cycle variation in idiosyncratic income risk. What is the role of policy in insuring these risk fluctuations?
- Firms: Business cycle variation in idiosyncratic firm outcomes. Evidence for the US and other countries.

C. Lecture 3. Income inequality: Trends over time

- Key trends in cross-sectional income inequality: overall and for sub-populations
- What is the role of employers in rising income inequality?
- Methods for separating worker vs. firm fixed effects: Abowd-Kramarz-Margolis (AKM) method, Bomhomme-Lamadon-Manresa method. Measuring sorting: Borovickova and Shimer (2018) and others.
- Did CEO pay play a role in rising income inequality?
- The declining firm-size wage premium.

D. Lecture 4. Lifetime Incomes: New Facts and Trends over time

- Trends in median lifetime incomes for men and women since the late 1950s.
- Trends in lifetime income inequality: how do they compare to trends in cross-sectional inequality?
- How much inequality is there in lifetime incomes?
- Lifetime employment rates

E. Lecture 5. Wealth Inequality: Facts and Models

- Trends over time for the US and other countries.
- Wealth Inequality and the Pareto right tail
- Newer models of wealth inequality: the Power Law framework, models with rate of return heterogeneity, birth-death processes, etc.

Reading List

This is a fairly exhaustive reading list. I strongly recommend that you read the papers marked with “**” in the background reading section below before the course starts. We will cover papers marked with a “*” and some of the others time permitting. The rest are intended for further study should you choose to pursue research in one of these areas.

Background Reading

- **Guvenen (2011): “Macroeconomics with Heterogeneity: A User’s Guide,” Fatih Guvenen, Federal Reserve Bank of Richmond Economic Quarterly.

The following two are also excellent surveys that you may want to read before the course starts.

- **Heathcote, Storesletten, Violante (2009): “Quantitative Macroeconomics with Heterogeneous Households,” *Annual Review of Economics*.
- **Krueger, Mitman, and Perri (2018): “Macroeconomics and Household Heterogeneity,” *Handbook of Macroeconomics*.
- Acemoglu, Daron, and David Autor (2011): “Skills, Tasks, and Technologies: Implications for Employment and Wages,” *Handbook of Labor Economics*, Volume 4B, Chapter 12.
- Bound, John, Charles Brown, and Nancy Mathiowetz. 2001. “Measurement Error in Survey Data.” In *Handbook of Econometrics*, edited by J. J. Heckman and E. E. Leamer. Amsterdam: Elsevier; 3,705–843.
- Browning, M., L. P. Hansen, and J. J. Heckman (1999): “Micro data and general equilibrium models,” in *Handbook of Macroeconomics*, ed. by J. B. Taylor, and M. Woodford.
- *Gabaix, Xavier, “Power Laws in Economics and Finance,” *Annual Review of Economics*, 2009, 1, 255–93.
- **Benhabib and Bisin, “Skewed Wealth Distributions: Theory and Empirics,” *Journal of Economic Literature*, December 2018, 56 (4), 1261–91.
- “Elements of Statistical Learnings: Data Mining, Inference, and Prediction,” by Trevor Hastie, Robert Tibshirani, Jerome Friedman, Springer Series in Statistics.
- “Fractals, Chaos, Power Laws: Minutes from an Infinite Paradise”, (Dover Books on Physics) 2009th Edition.
- “Scale: The Universal Laws of Growth, Innovation, Sustainability, and the Pace of Life in Organisms, Cities, Economies, and Companies”. First Edition Edition

I. Inequality

A. Pre-2000 Trends and Papers

L. Katz and K.M. Murphy (1992) “Changes in Relative Wages, 1963-87: Supply and Demand Factors,” *Quarterly Journal of Economics*, February, 35-78.

J. Bound and G. Johnson (1992) “Changes in the Structure of Wages in the 1980s: An Evaluation of Alternative Explanations.” *American Economic Review* 82 (June): 371-92.

C. Juhn, K.M. Murphy, and B. Pierce (1993) "Wage Inequality and the Rise in the Returns to Skill." *Journal of Political Economy* 101 (June): 410-42.

D. Card and T. Lemieux (2001), "Can Falling Supply Explain the Rising Return to College for Younger Men? A Cohort-Based Analysis," *Quarterly Journal of Economics* 116(May): 705-46.

Acemoglu, Daron (2002) "Technical Change, Inequality and the Labor Market." *Journal of Economic Literature*.

T. Lemieux (2006), "Post-Secondary Education and Increasing Wage Inequality," NBER WP No. 12077, March.

C. Goldin and L. Katz (2007), "The Race between Education and Technology: The Evolution of U.S. Educational Wage Differentials, 1890 to 2005," NBER WP No. 12984, March.

*D. Autor, L. Katz, and M. Kearney (2008): "Trends in U.S. Wage Inequality: Revising the Revisionists," *The Review of Economics and Statistics*

*Acemoglu, Daron, and David Autor (2011): "Skills, Tasks, and Technologies: Implications for Employment and Wages," *Handbook of Labor Economics*, Volume 4B, Chapter 12.

B. Newer Trends and Papers

1) Intergenerational Mobility

*Chetty, Raj, Nathaniel Hendren, Patrick Kline and Emmanuel Saez (2014) "Is the United States Still a Land of Opportunity? Recent Trends in Intergenerational Mobility" *AER P&P*, 104(5), 141-147.

*Chetty, Raj, Nathaniel Hendren, Patrick Kline and Emmanuel Saez (2014) "Where Is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States," *QJE*

*Chetty, Raj, David Grusky, Maximilian Hell, Nathaniel Hendren, Robert Manduca, Jimmy Narang The Fading American Dream: Trends in Absolute Income Mobility Since 1940 (with), *Science* 356 (6336): 398-406, 2017.

Simon Halphen, Wojciech Kopczuk, Claus Thustrup Kreiner (2015): "Stability and persistence of intergenerational wealth formation: Evidence from Danish wealth records of three generations," Working Paper.

Fagereng, Andreas, Luigi Guiso, Luigi Pistaferri, Davide Malacrino (2016): "Heterogeneity and Persistence in Returns to Wealth", Working Paper.

2) Health Inequality and Life Expectancy

**Chetty, Raj, Michael Stepner, Sarah Abraham, Shelby Lin, Benjamin Scuderi, Nicholas Turner, Augustin Bergeron and David Cutler (2016): "The Association Between Income and Life Expectancy in the United States, 2001-2014" *Journal of the American Medical Association*, 315(16): 1750-1766.

**Health inequality: <https://healthinequality.org> (Chetty et al)

3) Income Inequality (Overall, CEO pay, Top 1%, etc)

*E. Saez and T. Piketty (2003), "Income Inequality in the United States: 1913-1998," *Quarterly Journal of Economics*, (and web updates on Saez home page).

Kopczuk Woicheck, Emmanuel Saez, and Jae Song, "Earnings Inequality and Mobility in the United States: Evidence From Social Security Data Since 1937," *The QJE*, 125(1), February 2010.

Piketty, Thomas and Emmanuel Saez (2006), "The Evolution of Top Incomes: A Historical and International Perspective," *American Economic Review* 96 (May), 200-205.

Larrimore, Jeff, Richard Burkhauser, Gerald Auten, Philip Armour (2017): "Recent Trends in U.S. Top Income Shares in Tax Record Data Using More Comprehensive Measures of Income Including Accrued Capital Gains," NBER WP 23007.

Auten Gerald and David Splinter (2017): "Income Inequality in the United States: Using Tax Data to Measure Long-term Trends," November 12, 2017 (http://davidsplinter.com/AutenSplinter-Tax_Data_and_Inequality.pdf)

*Song, Jae, David Price, Fatih Guvenen, Nicholas Bloom, Till von Wachter (2015): "Firming Up Inequality," Working paper.

Guvenen, Fatih, and Greg Kaplan (2017): "Top Income Inequality in the 21st Century: Some Cautionary Notes," *FRB Minneapolis Quarterly Review*.

*Burkhauser, Richard V., Nicolas Hérault, Stephen P. Jenkins, Roger Wilkins (2017): "Survey Under-Coverage of Top Incomes and Estimation of Inequality: What is the Role of the UK's SPI Adjustment?" NBER Working Paper No. 23539.

Bakija, Jon, Adam Cole, Bradley T. Heim (2012): "Jobs and Income Growth of Top Earners and the Causes of Changing Income Inequality: Evidence from U.S. Tax Return Data," Working paper.

*Guvenen, Kaplan, and Song (2018): "Lifetime Incomes in the United States Over Six Decades," Working Paper.

4) Wealth Inequality:

*Saez, Emmanuel, Gabriel Zucman (2016): "Wealth Inequality in the United States since 1913: Evidence from Capitalized Income Data," *Quarterly Journal of Economics*.

Piketty, Thomas, Emmanuel Saez, Gabriel Zucman (2018): "Distributional National Accounts: Methods and Estimates for the United States," *Quarterly Journal of Economics*.

*Kopczuk, Woicheck (2015): "What Do We Know About the Evolution of Top Wealth Shares in the United States?," *Journal of Economic Perspectives*, 2015, 29(1), 47-66 (and NBER WP 20734).

*Bricker, Jesse, Alice Henriques, Jacob Krimmel, John Sabelhaus (2016): “Measuring income and wealth at the top using administrative and survey data,” *Brookings Papers on Economic Activity*.

Kopczuk, Woiczech (2016): “Measuring Income and Wealth at the Top Using Administrative and Survey Data: Comment”, *Brookings Papers on Economic Activity*, Spring 2016, 321-27.

*Fagereng, Andreas, Luigi Guiso, Luigi Pistaferri, Davide Malacrino (2016): “Heterogeneity in Returns to Wealth and the Measurement of Wealth Inequality”, *American Economic Review* P&P.

*Matthew Smith, Danny Yagan, Owen Zidar, Eric Zwick (2018): “Capitalists in the Twenty-First Century, Working Paper.

D) Where Do Firms/Employers Fit in Wage Trends?

Linking Workers and Employers

*Abowd, John, Francis Kramarz, and David Margolis, “High Wage Workers and High Wage Firms,” *Econometrica*, 1999, 67 (2), 251–333.

* Abowd, John, Robert H. Creedy, and Francis Kramarz, “Computing Person and Firm Effects Using Linked Longitudinal Employer-Employee Data,” *Longitudinal Employer- Household Dynamics*,” Technical Papers 2002-06, Center for Economic Studies, U.S. Census Bureau. 2002.

Abowd, John M., Kevin L. McKinney, and Nellie Zhao, “Earnings Inequality Trends in the United States: Nationally Representative Estimates from Longitudinally Linked Employer-Employee Data,” Working Paper, Cornell University 2016.

Akerlof, George and Janet Yellen, “The fair wage-effort hypothesis and unemployment,” *Quarterly Journal of Economics*, 1990, 105 (2), 255–283.

Andrews, M. J., L. Gill, T. Schank, and R. Upward, “High wage workers and low wage firms: negative assortative matching or limited mobility bias?,” *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 2008, 171 (3), 673–697.

Autor, David, David Dorn, and Gordon H. Hanson, “The China Syndrome: Local Labor Market Effects of Import Competition in the United States,” *American Economic Review*, 2013, 103 (6), 2121–2168.

Bonhomme, Stephan, Thibaut Lamadon and Elena Manresa (2018): *A Distributional Framework for Matched Employer Employee Data*, Working paper.

Firms and Rising Wage Inequality

Davis, Steve J. and John Haltiwanger, “Wage Dispersion Between and Within U.S. Manufacturing Plants, 1963-1986,” *Brookings Papers on Economic Activity: Microeconomics*, 1991, pp. 115–200.

Barth, Erling, Alex Bryson, James C. Davis, and Richard Freeman, "It's Where You Work: Increases in Earnings Dispersion across Establishments and Individuals in the U.S.," NBER Working Papers 20447, National Bureau of Economic Research, Inc September 2014.

*Card, David, Jorg Heining, and Patrick Kline, "Workplace Heterogeneity and the Rise of West German Wage Inequality," *The Quarterly Journal of Economics*, 2013, 128 (3), 967–1015.

*Song, Jae, David Price, Fatih Guvenen, Nicholas Bloom, Till von Wachter (2015): "Firming Up Inequality," Working paper.

Alvarez, Jorge, Niklas Engbom, and Christian Moser, "Firms and the Decline of Earnings Inequality in Brazil," *AEJ: Macro*.

Hakanson, Christina, Erik Lindqvist, and Jonas Vlachos, "Firms and Skills: The Evolution of Worker Sorting," Working Paper 2015:9, IFAU - Institute for Labour Market Policy Evaluation 2015.

Faggio, Giulia, Kjell G. Salvanes, and John Van Reenen, "The evolution of inequality in productivity and wages: panel data evidence," Working Paper 13351, National Bureau of Economic Research 2007.

Cobb, Adam, Ken-Hou Lin, and Paige Gabriel, "Growing apart: the declining firm-size wage effect and its inequality consequences," Technical Report, Wharton School at University of Pennsylvania 2016.

Dickens, William T. and Lawrence F. Katz, "Interindustry Wage Differences and Industry Characteristics," in Kevin Lang and Jonathan Leonard, eds., *Unemployment and the Structure of Labor Markets*, Blackwell, 1987, pp. 48–89.

Goux, Dominique and Eric Maurin, "Persistence of Interindustry Wage Differentials: A Reexamination Using Matched Worker-Firm Panel Data," *Journal of Labor Economics*, 1999, 17 (3), 492–533.

Weil, David, *The Fissured Workplace*, Cambridge, MA: Harvard University Press, 2014.

II. Income Fluctuations/Risk

A. Traditional Approach: Parametric Modeling, 2nd Moment

Lillard, Lee A. and Robert Willis (1978): "Dynamic Aspects of Earning Mobility," *Econometrica*, Vol. 46, p. 985-1012.

Lillard, Lee A., and Yoram A. Weiss (1979): "Components of Variation in Panel Earnings Data: American Scientists, 1960-70," *Econometrica*, Vol. 47, pp. 437-454.

MaCurdy, Thomas (1982): "The Use of Time-Series Processes to Model the Error Structure of Earnings in a Longitudinal Data Analysis," *Journal of Econometrics*, Vol. 18, pp. 83-114.

Abowd, John, and David Card (1989): "On the Covariance Structure of Earnings and Hours Changes," *Econometrica*, Vol. 57, pp.411-445.

Baker, Michael (1997): “Growth-rate Heterogeneity and the Covariance Structure of Life-Cycle Earnings,” *Journal of Labor Economics*, Vol. 15, pp. 338-375.

Haider Steve J. (2001): “Earnings Instability and Earnings Inequality of Males in the United States: 1967-1991,” *Journal of Labor Economics*, Vol. 19, pp. 799-836.

F. Guvenen (2007): “Learning Your Earning: Are Labor Income Shocks Really Very Persistent?” *American Economic Review*, Vol. 97, No. 3, pp. 687-712.

Guvenen, F. (2009): “An Empirical Investigation of Income Processes,” *Review of Economic Dynamics*.

B. Newer Approach: Less Parametric Modeling, Higher-Order Moments

Geweke, J. and Keane, M. (2000). An empirical analysis of earnings dynamics among men in the PSID: 1968-1989. *Journal of Econometrics*, 96, 293–356.

Browning, Martin, Mette Ejrnaes, and Javier Alvarez: “Modelling Income Processes with Lots of Heterogeneity,” *Review of Economic Studies*, 2010.

*Guvenen, Fatih, Fatih Karahan, Serdar Ozkan and Jae Song (2021): “What Do Data on Millions of US Workers Reveal About Lifecycle Earnings Risk?” *Econometrica*, forthcoming.

*Arellano, M., Blundell, R. and Bonhomme, S. (2017). Earnings and consumption dynamics: a nonlinear panel data framework. *Econometrica*, 85 (3), 693–734.

Halvorsen, E., Holter, H. A., Ozkan, S. and Storesletten, K. (2018). Dissecting idiosyncratic income risk, Working Paper.

Bonhomme, Stephane, Jean-Marc Robin (2009): “Assessing the Equalizing Force of Mobility Using Short Panels: France, 1990-2000,” *Review of Economic Studies*, 76(1), 63-92.

Kaplan, Moll, and Violante (2018): “Monetary Policy According to HANK”, *AER* (their modeling of income dynamics).

C. Long-Run Trends in Income Risk

i. Analyses from Survey Data (short list)

*Gottschalk, Peter and Robert Moffitt (1994). “The Growth of Earnings Instability in the U.S. Labour Market.” *Brookings Papers of Economic Activity*.

*Moffitt, Robert and Peter Gottschalk (2012). “Trends in the Transitory Variance of Male Earnings in the U.S., 1970-2004,” *Journal of Human Resources*.

Solon, Gary, and D. Shin (2011): "Trends in men's earnings volatility: What does the Panel Study of Income Dynamics show? *JPubE*.

Monti, Holly, and Graton Gathright (2013): "Measuring Earnings Instability Using Survey and Administrative Data," Census Bureau Working paper.

Dynan, Karen, Douglas Elmendorf, Daniel Sichel (2012): "The Evolution of Household Income Volatility," *B.E. Journal of Economic Analysis & Policy*.

ii. Newer Analyses from Admin Data

Congressional Budget Office (2007): "Trends in Earnings Variability Over the Past 20 Years," Report.

*Sabelhaus, John, and Jae Song (2010). "The Great Moderation in Micro Labor Earnings," *Journal of Monetary Economics*, vol. 57, no. 4, pp. 391-403.

*Bloom, Nicholas, Fatih Guvenen, Luigi Pistaferri, Sergio Salgado, Jae Song, and John Sabelhaus (2017): "GMM: The Great Micro Moderation," No public draft yet. Slides only.

D. Short-Run (Business-Cycle) Dynamics

i. "Purely" Idiosyncratic Risk (individual earnings and firm shocks)

*Storesletten, Kjetil, Chris Telmer and Amir Yaron (2004): "Idiosyncratic Labor-Market Risk," *Journal of Political Economy*, vol. 112 (3), pp. 695-717.

*Guvenen, Fatih, Serdar Ozkan and Jae Song (2014): "The Nature of Countercyclical Income Risk," *Journal of Political Economy*.

*Busch, Chris, David Domeij, Fatih Guvenen, Rocio Madera (2018): "Asymmetric Business Cycle Risk and Government Policy," Working Paper.

Hoffmann, Eran, Davide Malacrino (2017): "Employment Time and the Cyclical Growth of Earnings," Working Paper.

*Salgado, Sergio, Fatih Guvenen, Nicholas Bloom (2018): "Skewed Business Cycles," Working paper.

Karl Harmenberg (2018): "*The Labor-Market Origins of Cyclical Income Risk*", Working Paper.

ii. Systematic Risk

Guvenen, Fatih, Sam Schulhofer-Wohl, Jae Song, and Moto Yogo (2017): “Worker Betas: Five Facts about Systematic Earnings Risk,” AER P&P, May 2017.

E. Cross-Country Comparison: The Global Income Dynamics (GID) Project

This is an ongoing project that aims to build a open-access cross-country harmonized database of rich micro statistics on inequality and income risks. There are currently 13 countries in the project. Here is 5 working papers. 8 more papers will be added on US, Mexico, Brazil, Argentina, UK, Italy, Germany, and Denmark before summer.

Arellano, Bonhomme, De Vera, Hospido, Wei (2021): “Income Risk Inequality: Evidence from Spanish Administrative Records,” University of Chicago working paper.

Bowlus, Gouin-Bonenfant, Liu, Lochner, Park (2021): “Four Decades of Canadian Earnings Inequality and Dynamics Across Workers and Firms,” University of Western Ontario working paper.

Halvorsen, Ozkan, Salgado (2021): “Earnings Dynamics and Its Intergenerational Transmission: Evidence from Norway,” Wharton School working paper.

Friedrich, Laun, and Meghir (2021): “Income Dynamics in Sweden 1985-2016,” Yale University working paper.

Kramarz, Nimier-David, and Delemotte (2021): “Inequality and Earnings Dynamics in France: National Policies and Local Consequences” Working paper CREST-ENSAE

i. Models Incorporating Higher-Order Moments

Constantinides, G. M. and Ghosh, A. (2016). Asset pricing with countercyclical household consumption risk. *Journal of Finance*.

*Bloom, Nicholas, Max Floetotto, Nir Jaimovich, Itay Saporta-Eksten, Stephen J. Terry (2018): “Really Uncertain Business Cycles,” *Econometrica*.

*Salgado, Sergio, Fatih Guvenen, Nicholas Bloom (2019): “Skewed Business Cycles,” NBER Working paper.

Alisdair McKay and Ricardo Reis (2018): “Optimal Automatic Stabilizers,” Working Paper.

Virgiliu Midrigan (2011): “Menu Costs, Multiple Product Firms, and Aggregate Fluctuations,” *Econometrica*.

Golosov, M., Troshkin, M. and Tsyvinski, A. (2016). Redistribution and social insurance. *American Economic Review*, 106 (2), 359–386.

*Kaplan, Moll, and Violante (2018): “Monetary Policy According to HANK”, *AER* (their modeling of income dynamics).

Joachim Hubmer: “The Job Ladder and Its Implications for Earnings Risk,” *Review of Economic Dynamics*, 2018, 29: 172-194.

Harmenberg and Sievertsen (2018): “Labor Market Origins of Cyclical Income Fluctuations”, Working Paper.

Ilut, Kehrig, and Shneider (2018): “Slow to Hire, Quick to Fire: Employment Dynamics with Asymmetric Responses to News,” *Journal of Political Economy*, vol. 126, no. 5, pp. 2011-2071, October 2018.

Kehrig, Matthias (2017): “The Cyclical Nature of the Productivity Distribution,” Working Paper.

Catherine, Sylvain (2018): “Countercyclical Income Risk and Portfolio Choices over the Life-Cycle”, Working Paper.

Schmidt, Lawrence (2018): “Climbing and Falling Off the Ladder: Asset Pricing Implications of Labor Market Event Risk,” Working paper.