



STANFORD UNIVERSITY

Labor Economics (ECON 247) **Winter 2017, Professor Nick Bloom**

INTRODUCTION

This course focuses on non-structural applied micro. It combines with Professor Pastaferri's Econ 246 (structural applied micro) and Professor Isaac Sorkin's 248 (topics in labor economics). You do not need to have taken this course previously – the labor courses 246, 247 and 248 are additive (not sequential).

In Econ 247 there will be a focus on three themes:

- *Workers and labor markets.* The class will look at earnings inequality, technical change and globalization. These topics are politically and economically important, and underscores a lot of modern labor economics
- *Firms and goods markets:* We will focus on the production side of the economy, covering a set of particularly good recent applied micro papers. This is personal research interest of mine and an area with a wealth of potential thesis ideas.
- *Non-market interactions: peer-effects, academia and unions:* Given the recent movement of research beyond standard maximizing models I will end on some more research frontier topics or non-market interactions. Again, I choose the paper as interesting recent applied micro papers, rather than trying to exhaustively survey the literature.

The course will study these topics by exploring one paper in each class in detail, typically a well-known and highly cited paper. In my view successful applied-micro papers need to do be strong in at least two of the three following areas:

1. Motivation: that is answer an important question – a good test of this is would a newspaper, say the New York Times, find the results interesting enough to write up;
2. Measurement: often using a new dataset, sometimes assembled by the author – this would be new data, rather than say the 1000th paper using Compustat or the CPS; and
3. Identification: showing clear causation, often with a natural or field experiment

For each class I have selected a main paper that is typically (but not always) well-motivated and either has good measurement and/or good identification. That is all the papers I select meet at least two of the three criteria (although very few – if any – meet all three criteria, despite this course covering many of the top applied micro papers in the last decade). I want us to study these papers in detail to provide ideas for your future research. I will then also cover a few other papers in the same topic.

CLASS ORGANIZATION

Regular class: Classes run from 11:30am-1:20pm MW, in room Econ218. They will be organized in two parts. In the first part one student will lead a 45 minute discussion of the main reading paper for the class. This student will be selected in advance, with all students typically getting to present once. This discussion should cover: (i) motivation for the paper; (ii) the data used in the paper; (iii) the empirical approach including the identification strategy; (iv) the results; and (v) potential extensions. The slides for this class presentation need to be e-mailed to me (nbloom@stanford.edu) 48 hours in advance of class so I can look at these and provide feedback. Since this student is presenting to the class it is important their slides and presentation are clear and well structured, and I find this usually involves starting the preparation a week in advance to allow some iteration.

During this class presentation I and other students will make comments and ask questions, with the aim being for this presentation to provide a forum to discuss the paper. So the presenter should know the paper extremely well to deal with these questions. To aid this discussion every other student in the class is also expected to read the main reading in advance, and prepare a three slide discussion of it. The first slide will discuss the good points of the paper. The second slide the bad points of the paper, and the third slide how you would extend the research. Each class I will randomly pick one (or more) people to present their three slide overview after the main presentation.

In the second part of the class I will overview some other papers in the related literature to give you a feeling for the broader literature and the context of the paper. This way I hope you will get to dive into one paper in detail, plus gain a broader exposure to typically two or three other papers in the literature.

Special sessions: I will also have three special sessions. One special session will be on presentation skills and tips and tricks, for which there is no prior reading. I also have one pair of special sessions on the basics of Stata, data cleaning and WRDS – you will have to download a CEO pay dataset and produce some basic results from this (graphs and regressions) which will we discuss in class. The third special session is on field experiments, based on our readings in class and also my own experience. These are a common part of any applied-micro Economist's tool kit but it is often challenging to evaluate their strengths and weaknesses in advance, so hopefully this class will cover some basics and practical issues.

NBER Trips: There should also be a class day trip to the NBER labor economics meeting at the San Francisco Federal Reserve Bank on February 24th. This is a full day event which requires leaving early in the morning and getting back early evening. The NBER Labor group is run by David Card and he has kindly allowed a group of Stanford PhD students to attend, so I will be asking in advance who would like to attend. There will also be an NBER Digitization meeting (at SIEPR) which is generally very good run by Shane Greenstein (as part of the Productivity, Innovation and Entrepreneurship program I co-direct with Josh Lerner at the NBER), which will be on March 3rd. Attending meetings like these is helpful for getting a broader feeling for labor economics and seeing a set of the latest applied micro papers.

Term papers: Every student taking the course for credit should write a term-paper. This should sketch out a research idea to the stage of about 10 pages of text, plus about 2 or 3 tables plus a graph or two. This is not supposed to be a fully written up paper as the amount of work would be too much, but is the first cut of a research idea. To do this you should have some data and have at least run some regressions in Stata. So the paper should at a minimum have a research question (what are you trying to answer), data and an identification strategy, alongside some primitive results. These papers should be completely (or at least mainly) empirical – a predominantly theory paper would not be suitable.

To develop this I want every student to form ideally into teams of 3. One week in advance of handing in your first draft to me please hand in your draft to the other 2 students in your group and have them provide feedback to you. Hence, you should all get feedback from two other students and provide feedback to two other students. The reason for this is to make sure the first draft submitted to me is in good shape – that is has completed sections, properly drafted English, finished tables etc, as my value added on feedback will be much greater if I have a good first draft. So when you provide feedback on each other's papers you should focus on both content and presentation – these drafts should be in readable format with a proper structure (front page with an abstract, introduction, data section, results, conclusion and bibliography, and tables and figures should be properly labelled following QJE applied micro papers – so label all axes, note sources and content etc).

Keep iterating on these papers until they are in proper shape before submitting them as I will also focus on presentation as much as content - these things matter and I have seen many papers rejected from top applied journals for sloppy presentation and details. That is tables with headings like “alpha” (rather than “elasticity of supply”), missing sources, no details on standard-errors (clustering, and if so how), sample selection, years etc. This signals very poor quality underlying research work, and is also a key criteria for an applied micro job-market student (all top departments expect to see basic labelling, notes etc). A major reason is all modern applied-micro papers involve extensive data processing, and if you as a researcher appear careless in writing up your paper many readers will infer you have likely also been careless in your data work so you would not trust the results.

At the end of the quarter you will hand in the final version of the paper, and depending on the quality of the paper we may set up another time for feedback (basically I will concentrate feedback on papers which have the potential to develop into proper full length papers).

PhD group presentation lunch: On Wednesdays from 1:30 to 2:30 I meet with my PhD students (both primary and secondary) and one of them presents a piece of research in progress. There is a free lunch provided, and it takes place in the economics department. If you are interested in coming – to see in progress applied micro and applied macro research (I have a mix of labor and macro students) – you are welcome to attend. Just come ask me after class or during the break and I can add you to the Google calendar so you can see the schedule of presentations.

TOPICS BY CLASS DATE:

Section A): Workers and labor markets

Monday 9th January Skill Biased Technical Change:

Main reading:

- No main reading – first class of the course

Other readings:

- “Computing inequality: have computers changed the labor market” David Autor, Lawrence Katz and Alan Krueger (1998, QJE)
- “Technical change, inequality and the labor market”, Daron Acemoglu, (2002), *Journal of Economic Literature*, 7-72.
- “The race between education and technology: the evolution of US educational wage differential”, Claudia Goldin and Lawrence Katz, NBER working paper 12984.
- “Trends in US wage inequality: revising the revisionists” David Autor, Lawrence Katz and Melissa Kearney, 2008, *Review of Economics and Statistics*, 300-323.
- “The great compression: the wage structure in the United States at Mid-Century”, Claudia Goldin and Robert Margo, (1992), *Quarterly Journal of Economics*, 1-34.
- “Technology and changes in skill structure: evidence from seven OECD countries”, Stephen Machin and John Van Reenen, (1998), *Quarterly Journal of Economics*, 1215-1244.

Wednesday 11th January Polarization and income inequality:

Main reading

- “The skill content of recent technological change: an empirical exploration”, David Autor, Frank Levy and Richard Murnane, (2003), *Quarterly Journal of Economics*, 1279-1333.

Other readings:

- “The polarization of the US labor market” David Autor, Lawrence Katz and Melissa Kearney (2006), *American Economic Review Papers and Proceedings*
- “Income inequality in the United States, 1913-1998”, Thomas Piketty and Emmanuel Saez, (2003), *Quarterly Journal of Economics*, 1-39.
- “Lousy and lovely jobs: the rising polarization of work in Britain”, Maarten Goos and Alan Manning, (2008), *Review of Economics and Statistics*, 118-133.
- “Where is the land of opportunity? The geography of intergenerational mobility in the United States”, Raj Chetty, Nathan Hendren, Patrick Kline and Emmanuel Saez (2014), *Quarterly Journal of Economics*.

Monday 16th January No Class: MLK Day

Wednesday 18th January Discrimination

Main reading

- “Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination”, Marianne Bertrand and Sendhil Mullainathan, (2004), *American Economic Review*, 991-1013.

Other readings:

- “The nature and extent of discrimination in the marketplace: evidence from the field”, John List, 2004, *Quarterly Journal of Economics*, 49-89.
- “Testing theories of discrimination: evidence from the Weakest Link”, Steven Levitt, (2004), *Journal of Law and Economics*, 431-452.
- “Orchestrating impartiality: the impact of “Blind” auditions on female musicians”, Claudia Goldin and Cecilia Rouse, (2000), *American Economic Review*, 715-741.
- “The visible hand: race and online market outcomes”, Jennifer Doleac and Luke Stein, Stanford mimeo <http://www.stanford.edu/~lstein/research/doleac-stein-visiblehand.pdf>

Also apply for a WRDS account from Stanford Jackson library – if you do not already have this you will need it for the Stata exercise next week.

Monday 23rd January Trade and Labor Markets

Main reading:

- “The China Syndrome: Local Labor Market Effects of Import Competition in the United States”, David Autor, David Dorn & Gordon Hanson, *American Economic Review* 2013, 2121-68.

Other readings:

- “Information technology, workplace organization and the demand for skilled labor”, Tim Bresnahan, Erik Brynjolfsson, and Lorin Hitt, (2002) *Quarterly Journal of Economics*, 339-376.
- “Computing productivity: Firm level evidence”, Erik Brynjolfsson and Lorin Hitt, (2003), *Review of Economics and Statistics*, 793-808.
- “How Does Information Technology Really Affect Productivity? Plant-Level Comparisons of Product Innovation, Process Improvement and Worker Skills”, Ann Bartel, Casey Ichniowski and Kathryn Shaw, (2007), *Quarterly Journal of Economics*, 1721-1758.
- “Skills, tasks and technologies”, (2010), Daron Acemoglu and David Autor, in O. Ashenfelter and D. Card Handbook of Labor Economics, volume 4, North Holland.
- “Trade induced technical change: the impact of Chinese imports on innovation, diffusion and productivity”, Nicholas Bloom, Mirko Draca and John Van Reenen, *Review of Economic Studies* (2016)
- “Trade adjustment: worker level evidence”, David Autor, David Dorn, Gordon Hanson and Jae Song, (2014), *Quarterly Journal of Economics*.

Stata applied micro exercise: In advance of class each student should download the Execucomp data from 1990 onwards from Wharton Research Data Service (WRDS) and combine this with a

price deflator (I will provide this) and S&P 500 returns (I will also provide this). Use this to show in graph and/or regression form:

- CEO real pay has been rising since 1990
- The share of CEO pay from equities (stock grants and options) has been rising since 1990
- Equity pay is more sensitive to stock returns than salary or bonus pay

In class I will randomly pick one person to present for each part, and we will have a class discussion about the best way to do this. I will also show you (and share) my code. The class will be run in Stata – I know some of you may use different programs, but: (A) the main learnings are over data processing (rather than the specifics of coding different packages; (B) Stata is still the default empirical program in economics and is used by the majority of applied-micro folks.¹

Section B): Firms and production

Wednesday 25th January Finance, Plants and Productivity

Main reading

- “Private Equity, Jobs and Productivity”, Steve Davis, John Haltiwanger, Kyle Handley, Ron Jarmin, Josh Lerner and Javier Miranda, forthcoming *American Economic Review*

Other readings:

- “Misallocation and Manufacturing TFP in China and India”, Chiang-Tai Hsieh and Pete Klenow, (2009), *Quarterly Journal of Economics*, 1403-1448.
- “Aggregate productivity growth: lessons from microeconomic evidence”, Lucia Foster, John Haltiwanger, and C.J. Krizan, (2000), Maryland mimeo
http://econweb.umd.edu/~haltiwan/fhkcriw_062300.PDF
- “Reallocation, firm turnover, and efficiency: selection on productivity or profitability”, Lucia Foster, John Haltiwanger and Chad Syverson (2008), *American Economic Review*.
- “Market Structure and Productivity: A Concrete Example,” Chad Syverson, (2004), *Journal of Political Economy*, 1181–1222.
- “What determines productivity”, Chad Syverson, (2010), NBER working paper 15712.
- “The employment effects of credit market disruptions: firm-level evidence from the 2008-9 financial crisis”, Gabriel Chodorow-Reich, (2014), *Quarterly Journal of Economics*.

Monday 30th January Finance and firm-experiments

Main reading

- “Returns to capital in microenterprises: evidence from a field experiment”, Suresh De Mel, David McKenzie and Christopher Woodruff, (2008), *Quarterly Journal of Economics*, 1329-1372.

Other readings:

¹ Other packages I have seen used include Matlab (good if you want to code estimators up from scratch or run complex models – so more common in Macro - but less user friendly), SAS (great for massive dataset manipulation), Gauss (good for rapid matrix coding and runs DPD) and R (free, so very popular with grad students).

- “Does management matter: evidence from India” Nicholas Bloom, Benn Eifert, Aprajit Mahajan, David McKenzie and John Roberts, (2012), *Quarterly Journal of Economics* <http://www.stanford.edu/~nbloom/DMM.pdf>

Stata applied micro exercise: In advance of class each student should download the Compustat data from 1990 and combine this with Execucomp to show:

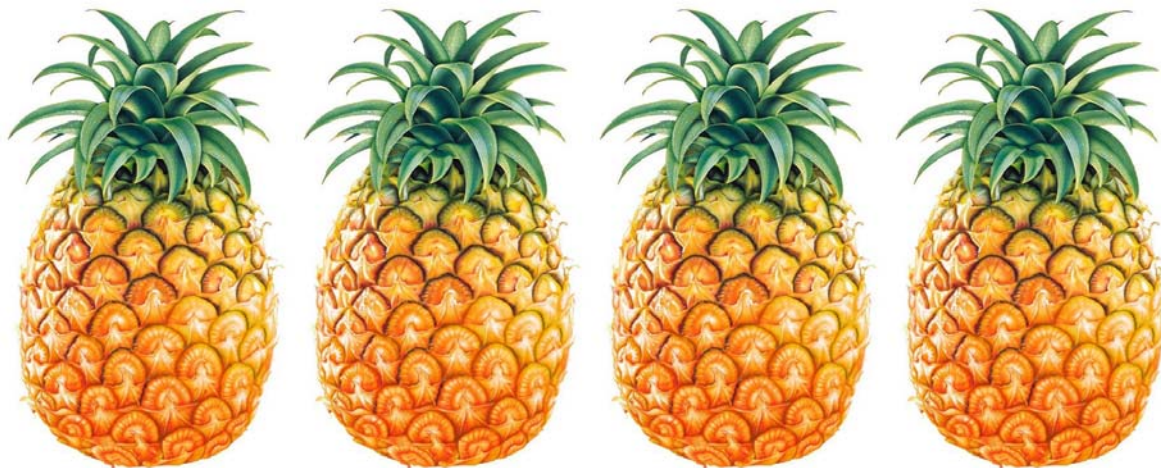
- CEO pay is rising in firm size
- One other interesting fact which you decide

In class I will randomly pick one person to present for the first part and several for the second.

Wednesday 1st February: No Class: Individual meetings on the Term Paper

I will schedule individual meetings before, during and after class to discuss your term papers. In advance submit a short summary of up to 2 pages on the project, or a short-draft of up to 10 pages. Please do not submit long (>10 page) papers.

Monday 6th February: Pineapples, Learning about technology



Main reading:

- “Learning about a new technology: pineapple in Ghana”, Timothy Conley and Christopher Udry, (2010), *American Economic Review*, 35-69

Other readings:

- “Does working from home work? Evidence from a Chinese Experiment”, Nicholas Bloom, James Liang, John Roberts & Jenny Ying (2015) *Quarterly Journal of Economics*
- “Hybrid corn: an exploration in the economics of technical change”, Zvi Griliches, (1957), *Econometrica*, 501-522.
- “Nudging farmers to use fertilizer: theory and experimental evidence”, Ester Duflo, Michael Kremer and John Robinson, (2011), forthcoming *American Economic Review*
- “Selection and comparative advantage in technology adoption”, Tavneet Suri, (2011), forthcoming *Econometrica*

Wednesday 8th February No Class (term paper break)

Monday 13th February Management, bosses and productivity

Main reading:

- “Measuring and explaining management practices across firms and countries”, Nicholas Bloom and John Van Reenen (2007), *Quarterly Journal of Economics*, 1351-1408.

Other readings: management and bosses

- “Inside the family firm: the role of families in succession decisions and performance”, Morten Bennedsen, Kasper Nielsen, Francisco Perez-Gonzalez and Daniel Wolfenzon (2007), *Quarterly Journal of Economics*, 647-691.
- “Managing with style: the effect of managers of firm policies”, Marianne Bertrand and Antoinette Schoar, (2003), *Quarterly Journal of Economics*, 1169–1208.
- “Inherited Control and Firm Performance,” Francisco Perez-Gonzalez, (2006), *American Economic Review*, 1559–1588.
- “Corporate ownership around the world”, Rafael La Porta, Florencio Lopez-de-Silanes and Andrei Shleifer, (1999), *Journal of Finance*, 471–517.

Wednesday 15th February Sardine Celebration: Information



Main reading:

- “The digital divide: information (technology), market performance, and welfare in the South Indian Fisheries Sector”, Robert Jensen, (2007), *Quarterly Journal of Economics*, 879-924.

Second half: presentations tips and tricks

Monday 20th February No Class: Presidents Day

TERM PAPER: E-mail me your draft term paper by end Tuesday 21st February:

Hand in first draft of any empirical term paper. This must be AER P&P style length – 10 pages of text and maybe 3 tables and 1 or 2 figures (not a full length paper). If you have a draft of a paper for another class/project either reduce this down to the limit or start another term paper (so please don't submit 30 page papers). Only students taking the class for credit (not auditing students). I will set-up individual times to meet to discuss this.

Wednesday 22nd February Strawberries: Incentives and performance pay



Main reading:

- “Social preferences and the response to incentives: evidence from personnel data”, Oriana Bandiera, Iwan Barankay and Imran Rasul, (2005), *Quarterly Journal of Economics*, 917-962.

Other readings:

- “Incentives for managers and inequality among workers: evidence from a firm-level experiment”, Oriana Bandiera, Iwan Barankay and Imran Rasul, (2007), *Quarterly Journal of Economics*, 729-773.
- “Performance pay and wage inequality”, Thomas Lemieux, Bentley MacLeod and Daniel Parent, (2009), *Quarterly Journal of Economics*, 1-49.
- “Performance Pay and Productivity,” Edward Lazear, (2000), *American Economic Review*, 1346–1361.

Monday 27th February Education and management

Main reading:

- “Injecting charter school best practices into traditional public schools: evidence from field experiments”, Roland Fryer, (2014), *Quarterly Journal of Economics*, 1355-1407.

Other readings:

- “Information and employee evaluation: evidence from a randomized intervention in public school” Jonah Rockoff, Douglas Staiger, Thomas Kane and Eric Taylor, (2012) *American Economic Review*.
- “The rubber room”, New Yorker, 2009
<http://www.newyorker.com/magazine/2009/08/31/the-rubber-room>

Second-half of class: replication exercises. These are increasingly important in economics and any paper in a top-journal (and many other journals) need replication packages. As an example of how these work replicate two randomly picked tables from my Ctrip QJE paper using the on-line replication package here <http://www.stanford.edu/~nbloom/WFH.zip>

For the class prepare 5 slides as follows:

- 1) Pick a paper and see if you can replicate it using the online replication files. Present one slide of example results, and another slide discussing how easy this was.

- 2) See if you can destroy any of the results – tweak the controls, sampling rule, use weights etc. Present two slides (one containing results) summarizing this.
- 3) Finally, present a slide on suggestions for best practice in replication files

I'll call on probably three people randomly to present in class.

Wednesday 1st March No Class- Term Paper Meetings

Section C): Non-market interactions: peer-effects, academia and unions

Monday 6th March Peer effects

Main reading:

- “Peers at work”, Alexandre Mas and Enrico Moretti, (2008), *American Economic Review*, 112-145.

Other readings:

- “Identification of Endogenous Social Effects: The Reflection Problem.” Charles Manski, (1993), *Review of Economic Studies*, 531–42.
- “Social connections and incentives in the workplace: evidence from personnel data”, Oriana Bandiera, Iwan Barankay and Imran Rasul, (2009), *Econometrica*, 1047-1094.
- “Identifying technology spillovers from product market rivalry” Nick Bloom, Mark Schankerman and John Van Reenen, (2013), *Econometrica*

Wednesday 8th March: Academics and Science

This session will focus on a fantastically clever natural experiment paper looking at the impact of research productivity of the death of star scientists.

Main reading:

- “Superstar extinction”, Pierre Azoulay, Joshua Graff Zivin and Jialan Wang, (2010), *Quarterly Journal of Economics*, 549-589.

Other readings:

- Job market presentation and feedback (1/2). I will get a recent JM candidate from Stanford to present a shortened version of their paper and give JM tips and feedback.

Monday 13th March Unions and Labor Relations

This session will focus on a classic discontinuity paper

Main reading:

- “Economic impacts of new unionization on private sector employment 1984-2001”, John DiNardo and David Lee, (2004), *Quarterly Journal of Economics*, 1383-1441

Other readings:

- Job market presentation and feedback (2/2). I will get another recent JM candidate from Stanford to present a shortened version of their paper and give JM tips and feedback.

Wednesday 15th March Intergenerational inequality (and similar papers)

Read the introductions of these two papers first. They appear incredibly similar, but in fact were both important papers providing linked but distinct evidence on the same topic. We will discuss this topic, but also more generally use this as an example to discuss what to do if you discover that another researcher is apparently working on the same paper as you (for a start Don't Panic!). This is something that happens to most of us at least once in our career.

Main readings:

- Sacerdote, Bruce (2007), "How large are the effects from changes in family environment? A study of Korean American adoptees", *Quarterly Journal of Economics* 122(1): 119-157
- Bjorklund, Anders, Mikael Lindahl, and Erik Plug (2006). "The origins of intergenerational associations: Lessons from Swedish adoption data", *Quarterly Journal of Economics* 121(3): 999-1028

Other readings:

- Haider, Steven and Gary Solon (2006) "Life-cycle variation in the association between current and lifetime earnings," *American Economic Review* 96(4): 1308-1320.
- "Recent developments in Intergenerational Mobility", Sandra Black and Paul Devereux, NBER WP 15889 and *Handbook of Labor Economics* Volume 4.

TERM PAPER: Monday 20th: Give in your final term paper

Aim for a short AER P&P style length – about 10 pages of text and maybe 3 tables and 1 or 2 figures (not a full length paper). Only students taking the class for credit (not auditing students).