



STANFORD UNIVERSITY

Labor Economics (ECON 247) **Winter 2020, Professor Nick Bloom**

INTRODUCTION

This course focuses on non-structural applied micro. It combines with Professor Pastaferrri'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 underscore 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, gender 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 100th paper using Compustat or the CPS; and
3. Identification: showing clear causation, often with a natural or field experiment

For the typical 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 Econ139. They will be organized in two parts.

In the first part we will discuss the main paper – one student will be pre-selected to discuss the paper for 15 minutes. This discussion could cover topics including: (A) A brief overview, and/or (B) issues including : (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. You should think of this as modelled after an NBER style discussion – you will have 15 minutes (timed) without interruption to cover the paper and should assume everyone in the room has read the paper (so a summary would be helpful for the first slide or two, but probably no more). The slides for these class presentations 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.

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. These should be loaded up in advance to a class Dropbox folder I will create so I can check them and quickly load up presenters. I will randomly pick two people to present in 5-minutes their three slide overview after the main presentation. So these should be short, concise and snappy.

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 two special sessions. One special session will be on the basics of 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 second special session will be around replication – this has become a huge issue in economics (indeed the AEA journals now will not publish papers until all results are fully replicated).

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 - and I can't properly review a full paper - but the first cut of a research idea. To do this you should have some data and have at least run some regressions in Stata/R (or any other package you are comfortable with). 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. These are important as most students go on to use this as either their JMP (so you can use ideas developed in other classes), or if not as part of their job-market portfolio.

To develop this I want every student to form ideally into reading pairs (groups of two students). One week in advance of handing in your first draft to me please hand in your draft to your partner

student and have them provide feedback to you. Hence, you should all get feedback from another students and provide feedback to another student in advance. 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 poorly executed 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 (e.g. seeing careless errors in your paper will make readers think you probably also have careless errors in your data do-files, R-files etc).

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 job-market type papers). Most of these papers end up on job-market candidates webpages (which I see as I have been running Stanford placement for the last few years) so it is important to produce a final version that is polished enough to place online.

PhD group presentation lunch: On Fridays from 12:00 to 1:00 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 (usually in the bubble room, otherwise normally downstairs in the SIEPR A or B rooms if the bubble room is busy). 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. If you attend regularly you can also present your research.

TOPICS BY CLASS DATE:

Section A): Workers and labor markets

Monday 6th 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 8th 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.

Monday 13th 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.
- “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.
- “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*.

Also at this stage apply for a Wharton Research Data Service (WRDS) account – if you do not already have this you will need it for the Stata exercise next week. As a Stanford student you are eligible to have one – you go to their website and apply and it should be granted within 48 hours (let me know if not thanks).

Wednesday 15th 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:

- “Orchestrating impartiality: the impact of “Blind” auditions on female musicians”, Claudia Goldin and Cecilia Rouse, (2000), *American Economic Review*, 715-741.
- “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.
- “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>

Monday 20th January No Class: MLK Day

Wednesday 22nd January No Class

I am away for the class (in Japan for the Klein Lecture). I would use this break to make a start on your term papers. There are also the replication exercises and Compustat exercise you could work on if you are feeling enthusiastic.

Monday 27th January Competition, Firms and Inequality

Main reading:

- “The Fall of the Labor Share and the Rise of Superstar Firms”, David Autor, David Dorn, Larry Katz, Christina Paterson and John Van Reenen, revise and resubmit Quarterly Journal of Economics <https://economics.mit.edu/files/12979>

Other readings:

- “Firming up inequality”, Jae Song, David Price, Fatih Guvenen, Nicholas Bloom and Till Von Wachter, (2019) *Quarterly Journal of Economics*
- “Inequality and the disappearing large firm wage premium” (2019) Nicholas Bloom, Fatih Guvenen, Ben Smith and Till Von Wachter, AEA P&P https://people.stanford.edu/nbloom/sites/default/files/aeapp_2018v2.pdf
- “Increasing differences between firms: market power and the Macro Economy” (2018) John Van Reenen Jackson Hole paper <https://www.kansascityfed.org/~/-/media/files/publicat/sympos/2018/papersandhandouts/jh%20john%20van%20reenen%20version%202020.pdf?la=en>

Wednesday 29th January Stata Applied Micro Exercise

In advance of class make sure you have access to Wharton Research Data Service (WRDS). For the exercise you should first obtain: (A) Execucomp data from 1990 onwards (from WRDS), (B) the monthly US price deflator (try FRED), (C) monthly S&P 500 returns (try WRDS or Yahoo Finance) and (D) Compustat accounting data (WRDS).

Use this to show in graph and/or regression form:

- 1) CEO real pay has been rising since 1990
- 2) The share of CEO pay from equities (stock grants and options) has been rising since 1990
- 3) Equity pay is more sensitive to stock returns than salary or bonus pay
- 4) CEO pay is rising in firm size
- 5) One other interesting fact which you decide

In class I will randomly pick people to present and we will have a class discussion about the best way to do this. I will also show you (and share) my Stata code (I know some of you may use different programs, but Stata is still the default empirical program in economics and is, for now, used by the majority of applied-micro folks.¹). Having run this session a few times now the main value added will be in the different approaches for cleaning data, dealing with outliers, choosing samples, functional form, controls, weighting etc. In short, there is always tremendous variation in how I and students tackle the same question using the same data, and good to discuss this.

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).

Section B): Firms and production

Monday 3rd February Firm randomized control trials

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:

- “Does management matter: evidence from India” Nicholas Bloom, Benn Eifert, Aprajit Mahajan, David McKenzie and John Roberts, (2013), *Quarterly Journal of Economics* <http://www.stanford.edu/~nbloom/DMM.pdf>
- “Do management interventions last? Evidence from India” Nicholas Bloom, Aprajit Mahajan, David McKenzie and John Roberts, forthcoming *AEJ Applied* (2020).
- “Identifying and spurring high-growth entrepreneurship: experimental evidence from a business plan competition” (2017), David McKenzie, *American Economic Review*

Wednesday 5th February: “Field” Experiments



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 10th 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 (that is, please do not submit long (>10 page) papers). This should be AEA 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 short 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 thanks.

Wednesday 12th February: Text to Data

Main reading:

- “Firm level Political Risk”, by Tarek Hasan, Stephan Hollander, Laurence van Lent and Ahmed Tahoun, *Quarterly Journal of Economics*, August 2019

Second half, I will discuss two examples of text-to-data projects I have been involved in – measuring economic policy uncertainty (<http://www.policyuncertainty.com/> and www.worlduncertaintyindex.com) – and some of the general trends in this. Readings include:

- “Measuring economic policy uncertainty”, by Scott Baker, Nick Bloom and Steve Davis, *Quarterly Journal of Economics*, 2016
- “What drives media slant? Evidence from US Daily Newspapers”, Matthew Gentzkow and Jesse Shapiro, (2010), *Econometrica*, 35-71

Monday 17th February No Class: Presidents Day

Wednesday 19th February: Census Data: Finance, Plants and Productivity

Main reading

- “Private Equity, Jobs and Productivity”, (2014) Steve Davis, John Haltiwanger, Kyle Handley, Ron Jarmin, Josh Lerner and Javier Miranda, *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/fhkeriw_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, (2011), *Journal of Economic Literature*.

- “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 24th February Management and productivity

Main reading:

- “What drives differences in management practices” Nicholas Bloom, Erik Brynjolfsson, Lucia Foster, Ron Jarmin, Megha Patnaik, Itay Saporta-Ekstein and John Van Reenen (2019), *American Economic Review*

Other readings: management and bosses

- “Measuring and explaining management practices across firms and countries”, Nicholas Bloom and John Van Reenen (2007), *Quarterly Journal of Economics*, 1351-1408.
- “Inside the family firm: the role of families in succession decisions and performance”, Morten Bennis, 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.
- Giorcelli, Michela (2018) “The long-term effects of management and technology transfer: Evidence from the US Productivity Program”, *American Economic Review* 1-33.

Wednesday 26th February Replication Exercises

These are increasingly important in social science and any paper in a top-5 economics journal (and many other journals) needs a full working replication packages. For the class prepare 5 or 6 slides as follows:

- 1) Use 2 or 3 slides to present the main results of the paper – a very quick summary as background for the replication exercise. Make this interesting for the class (e.g. try and pick an applied micro paper in a top-5 journal that the class would be interesting in getting a quick summary of the results for everyone).
- 2) Use 2 or 3 slides on your replication of the key results – maybe the main one or two tables. Focus on:
 - a. Could you replicate these – was it feasible (did the files work, did it download etc, were there instructions etc), was it easy?
 - b. How robust were the results – tweak the controls, sampling rule, use weights etc..
 - c. Present one slide on suggestions for best practice in replication files

I’ll call on probably three to five people randomly to present in class, and flow over a couple more into the next class (so I reckon there is about a 50% chance of anyone being called...).

Monday 2nd March: Sardines (and 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 we will continue with the remaining replication exercises.

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

Wednesday 4th March: Double Bill: Burning Glass + Peer effects

First half reading – for a Quentin Tarantino non-linear style theme we will reconnect back to the start of the quarter and the routine/non-routine work literature. I included this paper as it is both interesting and uses great Burning Glass data (helpful for you to know about this):

- “Do Recessions Accelerate Routine-Based Technological Change? Evidence from Vacancy Postings”, Brad Hershey and Lisa Kahn (2018), *American Economic Review*, 1737-1772

Second half reading – a classic peer-effects paper.

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

Monday 9th March: Double Bill: Gender and Income + Academics and Science

First half – gender is a surging topic in economics (building on an old literature in economics and sociology). This is a great (and highly cited) paper in the field.

- “Gender identify and relative income within households”, (2015), *Quarterly Journal of Economics*, 571-614.

Second half – a clever (but macabre) paper, showing the returns to painful data collection:

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

Wednesday 11th March Food+Drink+Unions and Labor Relations

Most importantly as the last class of the term **bring in something to eat or drink that is somewhat unusual** (either you made or picked up from the shop). We can have a mini-party (as much of a party as you can get in economics classes I guess). Before the discontinuous break the session will focus on a classic discontinuity paper, and JM process afterwards.

Main reading – a (or maybe the) classic RDD paper:

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

Second half – free slot with a choice to: (A) add a published paper, (B) discuss an external job-market candidates’ paper, or (C) have a Stanford JMC present their work. To discuss in early February. One option for a paper I would like to cover is:

- “Why did the Democrats lose the South? Bringing new data to an old debate”, *American Economic Review* (2018), Ilyana Kuziemko and Ebonya Washington

TERM PAPER: Monday March 16th: 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).