Topics in Empirical and Structural Econometrics: Project

Paul Diegert

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1 Instructions

Choose a paper to work on that is a good match for your research interests. I have provided a selected bibliography, broadly in structural labor economics, but please feel free to propose other papers closer to your research interests if you prefer. Papers should be primarily empirical and involve the specification and estimation of a structural model. We have focused in the class on single-agent dynamic models and labor market sorting models. Most of the papers in the bibliography fit in these frameworks. You may choose a paper with a model that goes beyond these frameworks (e.g., dynamic games, spatial equilibrium, etc.) if you are comfortable working with these classes of models. Note that in this case, the identification results we have studied may not apply directly to your setting, and a goal of the project may be exploring if and how the identification results could be extended to the setting you are interested in.

The project consists of three parts: (1) writing a summary of the paper focused on the mechanics of the model in the paper, (2) presenting the paper in class, and (3) writing a proposal for a project to extend the paper.

Part 1: Summary of the paper

1. Write a brief summary of the paper. What are the main questions the authors are trying to answer? What is the main contribution? What do they do?
2. Write the simplest version of the model in the paper that captures the main mechanisms that the paper is interested in. What are the theoretical predictions of the model? Does it have empirically testable implications?
3. Discuss the role of unobserved heterogeneity in the model. Does the baseline model allow for unobserved heterogeneity? Is there a clear strategy to differentiate between structural mechanisms (e.g., forward-looking behavior) from unobserved heterogeneity (e.g., heterogeneous preferences)? Can the model be nested in any of the frameworks we have studied?

Suggestions on simplifying models:

- Can the number of periods in the model be reduced? (e.g., rather than a full life-cycle model, could you start with a two period model for (young / old)?)
- What is the minimal set of variables that can capture the essential mechanisms of the model?
- Is there a low dimensional, fully discrete version of the model that captures the mechanism of the model? (e.g., can you simplify to high/low income?)

Part 2: Presentation

Students will each give a presentation of the paper. Presentations should focus on points 2-3 of the summary: explaining the minimal version of model in the paper, and the identification challenges associated with the model.

Part 3: Paper Proposal

Using the exposition of the model in the paper developed in parts 1-2 as a starting point, write a proposal to build on the contributions of the paper. Proposals may focus on extending or improving the model. Are there assumptions that can be relaxed using the tools developed in the course? Are there additional elements that would make the model more credible? (e.g., is the form of unobserved heterogeneity in the model too restrictive? Could it be relaxed?) Proposals may also focus on generalizing the model in a paper to isolate an identification or empirical challenge presented in the paper which would apply to a wider class of problems (e.g., could the approach to labor market matching problem be applied to another class of two-sided matching problems?) Proposals may also focus on an empirical exercise that builds on the contribution of the paper to address an empirical question (e.g., could the model be used or extended to address a counterfactual that wasn't initially considered in the paper?) There is broad leeway on the topic of the proposal; if in doubt, please consult me.

2 Timeline and Grading

Presentations will be on February 7 and February 14. In preparing the presentation, you should write a draft of the paper summary, and submit a final draft by February 28. I will be available to meet with students individually during March to discuss the direction for you project proposal. Proposals should be submitted by May 9. Grading will be based 70% on the proposal and 30% on the summary and presentation. Grading of proposals is based on it's potential to lead to publishable research.

3 Bibliography

Note that most of the papers in this bibliography are attempting to jointly model several endogenous choices and/or outcomes, so categorization into "topics" is somewhat arbitrary.

3.1 Schooling, Human capital, and Occupational Choice

- Michael Keane and Kenneth Wolpin. 1997. "The Career Decisions of Young Men." *Journal of Political Economy* 105 (3): 472–522
- Zvi Eckstein and Kenneth Wolpin. 1999. "Why Youths Drop out of High School: The Impact of Preferences, Opportunities, and Abilities." *Econometrica* 67, no. 6 (November): 1295–1339
- Susumu Imai and Michael Keane. 2004. "Intertemporal Labor Supply and Human Capital Accumulation." *International Economic Review* 45 (2): 601–41
- Paul Sullivan. 2010. "A Dynamic Analysis of Educational Attainment, Occupational Choices, and Job Search." *International Economic Review* 51, no. 1 (February): 289–317
- Michael Keane. 2015. "Effects of permanent and transitory tax changes in a life-cycle labor supply model with human capital." *International Economic Review* 56 (2): 485–503

- Petra E Todd and Weilong Zhang. 2020. "A dynamic model of personality, schooling, and occupational choice." *Quantitative Economics* 11 (1): 231–275
- Christopher Taber and Rune Vejlin. 2020. "Estimation of a roy/search/compensating differential model of the labor market." *Econometrica* 88 (3): 1031–1069
- Fedor Iskhakov and Michael Keane. 2021. "Effects of taxes and safety net pensions on life-cycle labor supply, savings and human capital: The case of Australia." *Journal of Econometrics* 223 (2): 401–432
- Jared Ashworth, V Joseph Hotz, Arnaud Maurel, and Tyler Ransom. 2021. "Changes across cohorts in wage returns to schooling and early work experiences." *Journal of labor economics* 39 (4): 931–964
- Peter Arcidiacono, Esteban Aucejo, Arnaud Maurel, and Tyler Ransom. 2016. *College attrition and the dynamics of information revelation.* Technical report. National Bureau of Economic Research
- P. Arcidiacono. 2004. "Ability Sorting and the Returns to College Major." *Journal of Econometrics* 121 (1-2): 343–375
- Robert Gary-Bobo, Marion Goussé, and Jean-Marc Robin. 2016. "Grade Retention and Unobserved Heterogeneity." *Quantitative Economics* 7 (3): 781–820
- Arpita Patnaik, Joanna Venator, Matthew Wiswall, and Basit Zafar. 2022. "The role of heterogeneous risk preferences, discount rates, and earnings expectations in college major choice." *Journal of Econometrics* 231 (1): 98–122
- S. Yamaguchi. 2012. "Tasks and Heterogeneous Human Capital." *Journal of Labor Economics* 30 (1): 1–53

3.2 Equilibrium wage determination models

- James J Heckman, Lance Lochner, and Christopher R Taber. 1998. *Tax policy and human capital formation*
- D. Lee and K. Wolpin. 2006. "Intersectoral Labor Mobility and the Growth of the Service Sector." *Econometrica* 74
- Donghoon Lee and Kenneth Wolpin. 2010. "Accounting for Wage and Employment Changes in the US from 1968–2000: A Dynamic Model of Labor Market Equilibrium." *Journal of Econometrics* 156, no. 1 (May): 68–85
- Matthew Johnson and Michael Keane. 2013. "A dynamic equilibrium model of the US wage structure, 1968–1996." *Journal of Labor Economics* 31 (1): 1–49

3.3 Joint models of labor market and family decisions

- Zvi Eckstein and Kenneth I Wolpin. 1989. "Dynamic labour force participation of married women and endogenous work experience." *The Review of Economic Studies* 56 (3): 375–390
- Wilbert Van der Klaauw. 1996. "Female Labour Supply and Marital Status Decisions: A Life-Cycle Model." *Review of Economic Studies* 63 (2): 199–235

- Marco Francesconi. 2002. "A Joint Dynamic Model of Fertility and Work of Married Women." *Journal of Labor Economics* 20 (2): 336–380
- Michelle Sheran. 2007. "The Career and Family Choices of Women: A Dynamic Analysis of Labor Force Participation, Schooling, Marriage, and Fertility Decisions." *Review of Economic Dynamics* 10 (3): 367–399
- Michael Keane and Kenneth Wolpin. 2010. "The role of labor and marriage markets, preference heterogeneity, and the welfare system in the life cycle decisions of black, hispanic, and white women." *International Economic Review* 51 (3): 851–892
- Zvi Eckstein and Osnat Lifshitz. 2011. "Dynamic female labor supply." *Econometrica* 79 (6): 1675–1726
- Richard Blundell, Monica Costa Dias, Costas Meghir, and Jonathan Shaw. 2016. "Female labor supply, human capital, and welfare reform." *Econometrica* 84 (5): 1705–1753
- Marion Goussé, Nicolas Jacquemet, and Jean-Marc Robin. 2017. "Marriage, labor supply, and home production." *Econometrica* 85 (6): 1873–1919
- Jerome Adda, Christian Dustmann, and Katrien Stevens. 2017. "The Career Costs of Children." *Journal of Political Economy* 125 (2): 293–337
- Andrew Beauchamp, Geoffrey Sanzenbacher, Shannon Seitz, and Meghan M Skira. 2018. "Single moms and deadbeat dads: The role of earnings, marriage market conditions, and preference heterogeneity." *International Economic Review* 59 (1): 191–232
- Zvi Eckstein, Michael Keane, and Osnat Lifshitz. 2019. "Career and family decisions: Cohorts born 1935–1975." *Econometrica* 87 (1): 217–253
- Matthew Wiswall and Basit Zafar. 2021. "Human capital investments and expectations about career and family." *Journal of Political Economy* 129 (5): 1361–1424

3.4 Family decisions background and child outcomes

- Kenneth Wolpin. 1984. "An estimable dynamic stochastic model of fertility and child mortality." *Journal of Political economy* 92 (5): 852–874
- Raquel Bernal. 2008. "The effect of maternal employment and child care on children's cognitive development." *International Economic Review* 49 (4): 1173–1209
- Mario Fiorini and Michael Keane. 2014. "How the allocation of children's time affects cognitive and noncognitive development." *Journal of Labor Economics* 32 (4): 787–836
- Melissa Tartari. 2015. "Divorce and the Cognitive Achievement of Children." *International Economic Review* 56 (2): 597–645
- D. Del Boca, C. Flinn, and M. Wiswall. 2014. "Household Choices and Child Development." *Rev. Econ. Stud.* 81 (1): 137–185
- Shannon Seitz. 2009. "Accounting for racial differences in marriage and employment." *Journal of Labor Economics* 27 (3): 385–437
- Petra Todd and Kenneth Wolpin. 2007. "The Production of Cognitive Achievement in Children: Home, School, and Racial Test Score Gaps." *Journal of Human Capital* 1 (1): 91–136

- Francesco Agostinelli and Matthew Wiswall. 2016. *Estimating the technology of children's skill formation.* Technical report. National Bureau of Economic Research

3.5 Discrimination, wage gaps, etc.

- Luca Flabbi. 2010. "Gender Discrimination Estimation in a Search Model with Matching and Bargaining." *International Economic Review* 51 (3): 745–783
- Ahu Gemici and Matthew Wiswall. 2014. "Evolution of gender differences in post-secondary human capital investments: College majors." *International Economic Review* 55 (1): 23–56
- Ernesto Reuben, Matthew Wiswall, and Basit Zafar. 2017. "Preferences and biases in educational choices and labour market expectations: Shrinking the black box of gender." *The Economic Journal* 127 (604): 2153–2186
- Christopher J Flinn, Petra E Todd, and Weilong Zhang. 2018. "Personality traits, intrahousehold allocation and the gender wage gap." *European Economic Review* 109:191–220
- Richard Blundell, Monica Costa-Dias, David Goll, and Costas Meghir. 2021. "Wages, experience, and training of women over the life cycle." *Journal of Labor Economics* 39 (S1): S275–S315

3.6 Job search, unemployment, wage distribution

- Christian Bontemps, Jean-Marc Robin, and Gerard Van Den Berg. 2000. "Equilibrium Search with Continuous Productivity Dispersion: Theory and Nonparametric Estimation." *International Economic Review* 41 (2): 305–358
- Fabian Postel-Vinay and Jean-Marc Robin. 2002. "Equilibrium Wage Dispersion with Worker and Employer Heterogeneity." *Econometrica* 70 (6): 2295–2350
- F. Postel-Vinay and H. Turon. 2010. "On-the-Job Search, Productivity Shocks, and the Individual Earnings Process." *International Economic Review* 51 (3): 599–629
- Jean-Marc Robin. 2011. "On the Dynamics of Unemployment and Wage Distributions." *Econometrica* 79 (5): 1327–1355
- J. Bagger, F. Fontaine, F. Postel-Vinay, and J.-M. Robin. 2014. "Tenure, Experience, Human Capital, and Wages: A Tractable Equilibrium Search Model of Wage Dynamics." *American Economic Review* 104 (6): 1551–1596
- J. Lise, C. Meghir, and J.-M. Robin. 2016. "Matching, Sorting and Wages." *Review of Economic Dynamics* 19:63–87
- Christopher Flinn, Ahu Gemici, and Steven Laufer. 2017. "Search, Matching and Training." *Review of Economic Dynamics* 25

3.7 Sorting and Matching in the labor market

- Jesper Bagger and Rasmus Lentz. 2019. "An empirical model of wage dispersion with sorting." *The Review of Economic Studies* 86 (1): 153–190
- Jeremy Lise and Fabien Postel-Vinay. 2020. "Multidimensional skills, sorting, and human capital accumulation." *American Economic Review* 110 (8): 2328–2376

- Ilse Lindenlaub and Fabien Postel-Vinay. 2023. "Multidimensional sorting under random search." *Journal of political Economy* 131 (12): 3497–3539
- Rasmus Lentz, Suphanit Piyapromdee, and Jean-Marc Robin. 2023. "The Anatomy of Sorting: Evidence From Danish Data." *Econometrica* 91 (6): 2409–2455