ECON 722 Advanced Topics in Macroeconomics

Department of Economics McGill University Fall 2024

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Course Overview

This course covers some papers at the research frontier of a few areas in Macroeconomics. We begin with some background material, partly a quick review of rst-year Ph.D. macro. We then cover papers on Economic Development, Macroeconomics and Inequality, and Firm-Level Heterogeneity.

The goal is to get students acquainted with some of the recent material on these topics. There is no attempt at providing a comprehensive overview of any of the topics. We will simply cover a few papers that I am interested in, and papers that in my view may lead to interesting research ideas. Other references may be added as the course progresses. We will only cover a few articles in detail, and we won't have the time to cover others at all - however, some students might be interested in writing a term paper based on those.

Strong MA students may take the course. They need to have a GPA of at least A-, and should meet me in order for me to assess whether the course is compatible with the student's objectives.

Course Learning Outcomes

Students will become acquainted to the research frontier in the topics covered. The substance of the articles will be emphasized, in addition to the methods. Students should be able to identify and pursue research questions in these areas.

More generally, this course aims at providing students with a transition from rst-year Ph.D. courses to being able to critically understand the current research and to develop their own research in an independent fashion.

Elements Evaluated: The project mimics the research process: understand and critically assess a paper/literature, propose and implement a meaningful modi cation, face openended questions. The project teaches and then evaluates whether the students are ready to engage in this process. The project also evaluates whether the students are able to make independent progress, with limited (advisor-like) supervision, and how well they are able to have discussions about research and incorporate feedback. This ensures that students are ready to contribute to the advancement of the eld. The nal grade will be based on the progress the students are able to make throughout the semester, their presentations, their ability to have meaningful discussions and incorporate feedback, and quality of the slides and the drafts (clarity, rigour, analytical skills, ability to synthesize and digest the results).

AI Policy

Students may use arti cial intelligence tools, including generative AI, in this course as learning aids or to help produce assignments. However, students are ultimately accountable for the work they submit. Please keep in mind that (i) AI tools often produce incorrect and imprecise answers, or using non-standard language, and that (ii) it's fundamental that the students practice developing their own reasoning.

Topics and Reading List

The main textbook for the background material is Azzimonti et al. (2024). The second part of the course will rely on journal articles.

I. Background

1. *Economic Growth:* Barro and Sala-i-Martin (2004), Acemoglu (2009, Chapters 2 and 8), Azzimonti et al. (2024, Chapters 9 and 12).

II. Economic Development

1. Facts

- (a) *Data:* Summers and Heston (1991), Feenstra et al. (2015), Maddison (1991, 1994), Gollin (2002).
- (b) *Accounting:* Klenow and Rodr guez-Clare (1997), Hall and Jones (1999), Caselli (2005), Hsieh and Klenow (2010), Acemoglu (2009, Chapter 3).

2. Theory

- (a) Technology: Hsieh and Klenow (2007).
- (b) Human Capital: Mankiw et al. (1992), Bils and Klenow (2000), Erosa et al. (2010), Manuelli and Seshadri (2014), Acemoglu (2009, Chapter 10), Lagakos et al. (2018a,b).
- (c) Misallocation:
 - i. *Generic:* Restuccia and Rogerson (2008), Hsieh and Klenow (2009, 2014), Hopenhayn (2014), Bils et al. (2021).
 - ii. *Financing Frictions:* Castro et al. (2004, 2009), Buera et al. (2011), Buera and Shin (2013, 2017), Midrigan and Xu (2010), Moll (2014), Castro and Sevc k (2024).
 - iii. Other Stories: Guner et al. (2008), Jones (2011), Edmond et al. (2023).
- II. Macroeconomics and Inequality
 - 1. Facts: Card and DiNardo (2002), Autor et al. (2008), Krueger et al. (2010), Guvenen et al. (2021)
 - 2. *Wage Inequality:* Katz and Murphy (1992), Card and Lemieux (2001), Krusell et al. (2000), Jeong et al. (2015), Heathcote et al. (2010), Guvenen and Kuruscu (2010).
 - 3. Role of Firms: Card et al. (2013), Song et al. (2018), Alvarez et al. (2018).
 - 4. *Educational Attainment*: Goldin and Katz (2008), Heckman et al. (1998), Hendricks and Schoellman (2014), Restuccia and Vandenbroucke (2013), Lochner and Monge-Naranjo (2011), Castro and Coen-Pirani (2016).
 - 5. Policy: Heathcote et al. (2014), Itskhoki and Moll (2019), Guvenen et al. (2023).

IV. Firm-level heterogeneity

- 1. *Basics:* Hopenhayn (1992), Hopenhayn and Rogerson (1993), Clementi and Palazzo (2016).
- 2. Worker inequality: Gouin-Bonenfant (2022), Bilal et al. (2022), Berger et al. (2022a), Berger et al. (2022b), Castro and Clementi (2022).
- 3. *Job ladder:* Burdett and Mortensen (1998), Postel-Vinay and Robin (2002), Bagger et al. (2014), Haltiwanger et al. (2018), Moscarini and Postel-Vinay (2018), Engbom (2022), Donovan et al. (2023), Baksy et al. (2024).

McGill Policy Statements

• Language of Submission: In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.

En francais: Conformement a la Charte des droits de l'etudiant de l'Universite McGill, chaque etudiant a le droit de soumettre en francais ou en anglais tout travail ecrit devant être note (sauf dans le cas des cours dont l'un des objets est la ma⁻trise d'une langue).

• Academic Integrity: McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic o ences under the Code of Student Conduct and Disciplinary Procedures. See McGill's guide to academic honesty for more information.

En francais: L'universite McGill attache une haute importance a l'honêtete academique. Il incombe par consequent a tous les etudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions academiques, ainsi que les consequences que peu• This syllabus has been prepared in accordance to McGill's Policy Assessment of Student Learning (PASL).

References

- D. Acemoglu. *Introduction to Modern Ecoonomic Growth*. Princeton University Press, New Jersey, January 2009.
- J. Alvarez, F. Benguria, N. Engbom, and C. Moser. Firms and the Decline in Earnings Inequality in Brazil. *American Economic Journal: Macroeconomics*, 10(1):149{189, January 2018. URL https://ideas.repec.org/a/aea/aejmac/v10y2018i1p149-89.html.

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M. Bils and P. J. Klenow. Does schooling cause growth?

- R. Castro and G. L. Clementi. The dynamics of rm-level pay: Theory and evidence from Portugal. Technical report, McGill University, Aug. 2022.
- R. Castro and D. Coen-Pirani. Explaining the Evolution of Educational Attainment in the United States. *American Economic Journal: Macroeconomics*, 8(3):77{112, July 2016. URL https://ideas.repec.org/a/aea/aejmac/v8y2016i 3p77-112.html.
- R. Castro and P. Sevc k. Occupational choice, human capital and nancial constraints. *Canadian Journal of Economics*, 57(3):674{703, 2024. doi: https://doi.org/10.1111/caje. 12721. URL https://onlinelibrary.wiley.com/doi/abs/10.1111/caje.12721.
- R. Castro, G. L. Clementi, and G. MacDonald. Investor protection, optimal incentives, and economic growth. *Quarterly Journal of Economics*, 119(3):1131{1175, August 2004. URL http://ideas.repec.org/a/tpr/gjecon/v119y2004i3p1131-1175.html.
- R. Castro, G. L. Clementi, and G. MacDonald. Legal institutions, sectoral heterogeneity, and economic development. *Review of Economic Studies*, 76(2):529{561, April 2009. URL http://www.fas.umontreal.ca/sceco/castroru/papers/sectors.pdf.
- G. L. Clementi and B. Palazzo. Entry, Exit, Firm Dynamics, and Aggregate Fluctuations. *American Economic Journal: Macroeconomics*, 8(3):1{41, July 2016. URL https://ideas.repec.org/a/aea/aej mac/v8y2016i 3p1-41.html.
- K. Donovan, W. J. Lu, and T. Schoellman. Labor Market Dynamics and Development. *The Quarterly Journal of Economics*, 138(4):2287{2325, 2023. URL https://ideas.repec.org/a/oup/qj econ/v138y2023i 4p2287-2325..html.
- C. Edmond, V. Midrigan, and D. Y. Xu. How Costly Are Markups? *Journal of Political Economy*, 131(7):1619{1675, 2023. doi: 10.1086/722986. URL https://ideas.repec.org/a/ucp/j pol ec/doi 10.1086-722986.html.
- N. Engbom. Labor Market Fluidity and Human Capital Accumulation. CEPR Discussion Papers 16961, C.E.P.R. Discussion Papers, Jan. 2022. URL https://ideas.repec.org/ p/cpr/ceprdp/16961.html.
- A. Erosa, T. Koreshkova, and D. Restuccia. How important is human capital? a quantitative theory assessment of world income inequality. *Review of Economic Studies*, 77(4):1421{1449, October 2010. URL http://ideas.repec.org/a/bla/restud/ v77y2010i 4p1421-1449.html.

- J. Heathcote, K. Storesletten, and G. L. Violante. The Macroeconomic Implications of Rising Wage Inequality in the United States. *Journal of Political Economy*, 118(4):681{722, 08 2010. URL http://ideas.repec.org/a/ucp/jpolec/v118y2010i4p681-722.html.
- J. Heathcote, K. Storesletten, and G. L. Violante. Optimal Tax Progressivity: An Analytical Framework. NBER Working Papers 19899, National Bureau of Economic Research, Inc, Feb. 2014. URL http://ideas.repec.org/p/nbr/nberwo/19899.html.
- J. Heckman, L. Lochner, and C. Taber. Explaining rising wage inequality: Explanations with a dynamic general equilibrium model of labor earnings with heterogeneous agents. *Review of Economic Dynamics*, 1(1):1{58, January 1998. URL http://ideas.repec.org/a/red/issued/v1y1998i1p1-58.html.
- L. Hendricks and T. Schoellman. Student abilities during the expansion of US education. *Journal of Monetary Economics*, 63(0):19 { 36, 2014. ISSN 0304-3932. doi: http://dx.doi. org/10.1016/j.jmoneco.2014.01.008. URL http://www.sciencedirect.com/science/ article/pii/S0304393214000208.
- H. Hopenhayn and R. Rogerson. Job turnover and policy evaluation: A general equilibrium analysis. *Journal of Political Economy*, 101(5):915{38, October 1993. URL http://ideas.repec.org/a/ucp/j pol ec/v101y1993i 5p915-38. html.
- H. A. Hopenhayn. Entry, exit and rm dynamics in long run equilibrium. *Econometrica*, 60: 1127{50, 1992. URL https://ideas.repec.org/a/ecm/emetrp/v60y1992i5p1127-50. html.
- H. A. Hopenhayn. Firms, Misallocation, and Aggregate Productivity: A Review. Annual Review of Economics, 6(1):735{770, August 2014. URL https://ideas.repec.org/a/ anr/reveco/v6y2014p735-770.html.
- C.-T. Hsieh and P. J. Klenow. Relative prices and relative prosperity. American Economic Review, 97(3):562{585, June 2007. URL http://ideas.repec.org/a/aea/aecrev/ v97y2007i 3p562-585.html.
- C.-T. Hsieh and P. J. Klenow. Misallocation and manufacturing TFP in China and India. *The Quarterly Journal of Economics*, 124(4):1403{1448, November 2009. URL http: //i deas. repec. org/a/tpr/qj econ/v124y2009i 4p1403-1448. html .
- C.-T. Hsieh and P. J. Klenow. Development accounting. *American Economic Journal: Macroeconomics*, 2(1):207{23, January 2010. URL http://ideas.repec.org/a/aea/ aej mac/v2y2010i 1p207-23. html.

- C.-T. Hsieh and P. J. Klenow. The Life Cycle of Plants in India and Mexico. *The Quarterly Journal of Economics*, 129(3):1035{1084, 2014. URL https://ideas.repec.org/a/oup/qj econ/v129y2014i 3p1035-1084.html.
- O. Itskhoki and B. Moll. Optimal Development Policies With Financial Frictions. *Econometrica*, 87(1):139{173, January 2019. doi: 10.3982/ECTA13761. URL https://ideas.repec.org/a/wly/emetrp/v87y2019i1p139-173.html.
- H. Jeong, Y. Kim, and I. Manovskii. The Price of Experience. *American Economic Review*, 105(2):784{815, February 2015. URL https://ideas.repec.org/a/aea/aecrev/v105y2015i 2p784-815.html.
- C. I. Jones. Intermediate Goods and Weak Links in the Theory of Economic Development. *American Economic Journal: Macroeconomics*, 3(2):1{28, April 2011. URL https:// i deas.repec.org/a/aea/aej mac/v3y2011i 2p1-28. html.
- L. F. Katz and K. M. Murphy. Changes in relative wages, 1963-1987: Supply and demand factors. *Quarterly Journal of Economics*, 107(1):35{78, Feb. 1992. URL https://ideas.repec.org/a/oup/qj econ/v107y1992i1p35-78..html.
- P. J. Klenow and A. Rodr guez-Clare. The neoclassical revival in growth economics: Has it gone too far? In *NBER Macroeconomics Annual 1997*, volume 12, pages 73{103. MIT Press, Cambridge, MA, 1997. URL http://klenow.com/NBERMA.pdf.
- D. Krueger, F. Perri, L. Pistaferri, and G. L. Violante. Cross Sectional Facts for Macroeconomists. *Review of Economic Dynamics*, 13(1):1{14, January 2010. URL https: //i deas.repec.org/a/red/i ssued/10-0. html.
- P. Krusell, L. Ohanian, J.-V. R os-Rull, and G. L. Violante. Capital-skill complementarity and inequality: a macroeconomic analysis. *Econometrica*, 68(5):1029{1053, September 2000. URL http://ideas.repec.org/a/ecm/emetrp/v68y2000i 5p1029-1054.html.
- D. Lagakos, B. Moll, T. Porzio, N. Qian, and T. Schoellman. Life-Cycle Human Capital Accumulation across Countries: Lessons from US Immigrants. *Journal of Human Cap-2ital*

- L. Ljungqvist and T. J. Sargent. *Recursive Macroeconomic Theory.* MIT Press, Cambridge, MA, fourth edition, 2018.
- L. J. Lochner and A. Monge-Naranjo. The Nature of Credit Constraints and Human Capital. *American Economic Review*, 101(6):2487{2529, October 2011. URL http://ideas.repec.org/a/aea/aecrev/v101y2011i6p2487-2529.html.
- A. Maddison. *Dynamics Forces in Capitalistic Development: a Long-Run Comparative View.* Oxford University Press, New York, NY, 1991.
- A. Maddison. Explaining the economic performance of nations: 1820-1989. In W. J. Baumol,
 R. R. Nelson, and E. N. Wolf, editors, *Convergence and Productivity: Cross-National Studies and Historical Evidence*. Oxford University Press, New York, NY, 1994.
- N. G. Mankiw, D. Romer, and D. N. Weil. A contribution to the empirics of economic growth. *Quarterly Journal of Economics*, 107(2):407{437, May 1992. URL http://ideas.repec. org/a/tpr/qj econ/v107y1992i 2p407-37. html.
- R. E. Manuelli and A. Seshadri. Human Capital and the Wealth of Nations. American Economic Review, 104(9):2736{62, September 2014. URL http://ideas.repec.org/a/ aea/aecrev/v104y2014i 9p2736-62. html.
- V. Midrigan and D. Y. Xu. Finance and misallocation: Evidence from plant-level data. NBER Working Papers 15647, National Bureau of Economic Research, Inc, Jan. 2010. URL http://ideas.repec.org/p/nbr/nberwo/15647.html.
- B. Moll. Productivity Losses from Financial Frictions: Can Self-Financing Undo Capital Misallocation? American Economic Review, 104(10):3186{3221, October 2014. URL http://ideas.repec.org/a/aea/aecrev/v104y2014i 10p3186-3221.html.
- G. Moscarini and F. Postel-Vinay. The Cyclical Job Ladder. Annual Review of Economics, 10(1):165{188, August 2018. doi: 10.1146/annurev-economics. URL https://ideas. repec.org/a/anr/reveco/v10y2018p165-188.html.
- F. Postel-Vinay and J.-M. Robin. Equilibrium Wage Dispersion with Worker and Employer Heterogeneity. *Econometrica*, 70(6):2295{2350, November 2002. URL https://ideas. repec.org/a/ecm/emetrp/v70y2002i6p2295-2350.html.
- D. Restuccia and R. Rogerson. Policy distortions and aggregate productivity with heterogeneous plants. *Review of Economic Dynamics*, 11(4):707{720, October 2008. URL http://ideas.repec.org/a/red/issued/07-48.html.

- D. Restuccia and G. Vandenbroucke. The evolution of education: A macroeconomic analysis. *International Economic Review*, 54:915{936, 08 2013. URL http://ideas.repec.org/a/wly/iecrev/v54y2013ip915-936.html.
- J. Song, D. J. Price, F. Guvenen, N. Bloom, and T. von Wachter. Firming Up Inequality. *The Quarterly Journal of Economics*, 134(1):1{50, 10 2018. ISSN 0033-5533. doi: 10. 1093/qje/qjy025. URL https://doi.org/10.1093/qje/qjy025.
- R. Summers and A. Heston. The Penn World Table (Mark 5): An expanded set of international comparisons, 1950-1988. *Quarterly Journal of Economics*, 106(2):327{368, May 1991. URL http://ideas.repec.org/a/tpr/qjecon/v106y1991i2p327-68.html.