

# Income Distribution

## ECON 473

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McGill University  
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### Course description and objectives

Income inequality has been a topic of long-standing interest to economists. Its importance to society is hard to overstate. Recent increases in income inequality in many developed countries, as well as policy changes, have heightened this interest.

The purpose of this course is to develop a theoretical understanding of the ideal distribution of income, consumption and wealth; to build on this to develop methods of measuring inequality, life-time and intergenerational mobility; to translate these tools into empirical analysis of various countries; to acquire tools for analyzing data; to analyze potential determinants of changes in income distribution and mobility; and to discuss the theory and empirics of redistributing income.

### Learning outcomes

You will learn how to use and understand others' use of measures of inequality; how inequality has evolved and how it differs across countries; what factors are the most likely drivers of inequality; and what the effects of potential policy responses might be.

You will practice how to work with microeconomic data using Python, to analyze inequality and to conduct regression analysis. This skill is useful for many other contexts. You will practice how to theoretically analyze economies with heterogeneity, both with a positive and a normative perspective. You will see how theory informs empirical analysis, and how empirical findings prompt progress in the formulation of theories.

### Administrative Issues

3 credits

2 lectures per week, Tue and Thu 2:35pm-3:55pm in LEA 110

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office hours: Thu 9-10am in Leacock 537 or by appointment.

**Prerequisites and tools:** *ECON 230 or ECON 250; ECON 227 or ECON 257 or equivalent; Calculus 1 and 2.*

The theoretical part of the course uses both differential and integral single-variable calculus in analyzing social welfare functions and inequality measures. The empirical part of the course requires the ability to run ordinary least squares regressions and to interpret their results. More advanced knowledge of econometrics is helpful but not required. The course will make use of some economic tools you may have already encountered in intermediate micro, related to insurance, taxation, labor supply and utility possibility frontiers; these will be reviewed in class. Although macro is not a prerequisite, you may also encounter some concepts that students who have taken intermediate macro would be familiar with.

Several problem sets will require the use of the statistical program Python. Python is a very versatile and extremely popular language that can be used for many purposes. Its importance in economics is growing. Knowledge of Python is not a prerequisite for this course. To get started with Python, consult the resources list below. I am recruiting a dedicated Python assistant for the class. We will both demonstrate how to do various things using Python in class.

**Course materials:** There is no textbook covering all class topics. Some of the material is covered in three books, which are on reserve in the library:

[W] Edward N. Wolff (2009), *Poverty and Income Distribution*, 2nd edition, Wiley Blackwell.

[C] Frank Cowell (2011), *Measuring Inequality*, 3rd edition, Oxford University Press (e-book available).

[P] Thomas Piketty (2014), *Capital in the 21st Century*, Harvard University Press (e-book available).

Large portions of the course will be based mostly on journal articles. I will post the articles on *mycourses* as we go along. I will also make class notes (slides) available. Warning: The list of articles in the course outline is incomplete.

Continuous class attendance is strongly encouraged. Any points raised in class can end up in the examinations.

Finally, I will occasionally post links to news articles on Twitter (@mposchke) or on *mycourses*. These are for your background information and not required reading, except for the ones that I may from time to time discuss in class.

***mycourses:*** I will use *mycourses* for posting relevant materials such as readings and problem sets and for making announcements. You should therefore regularly check the course's *mycourses* page.

**Evaluation:** The grade for the course will be based on three assignments, a group presentation, a final exam, and class participation.

The *final exam* will account for 50% of the grade and will take place in the end-of-term exam period. It will be a three-hour closed book exam covering the entire course. If you miss it due to medical reasons, the usual McGill procedures apply.

The *group presentation* will account for 10% of the grade. Presentations will last 20-30 minutes and will be scheduled throughout the course. I will make guidelines for a good presentation available in due time. Groups will consist of up to four students who will be tasked to prepare the presentation together and can decide on how to execute it. The papers to be presented are listed below. Since the first presentations will take place early, you need to select a topic for presentation by Jan 30. To do so, I will create a discussion topic for each topic on *mycourses*. To sign up for joining the group presenting that paper, post your name there. First come, first served.

Once all presentations have been assigned, I will publish preliminary target dates for presentations. I will assign each group a final date with at least one week's notice before the presentation. Each group needs to send me their presentation at least 30 minutes before class. All group members need to be present at the presentation. I expect the rest of the class to be engaged with presentations. Note that all chapters/papers presented are required reading not just for presenters, but for all students in the class.

There will also be three *assignments*. The first assignment will be an individual assignment. It may consist in short essays and in exercises that involve working with theory and/or with data and will account for 15% of the grade. The second and third assignment will be group assignments that will involve working with data using Python. They will each account for 10% of the grade. For these two assignments, I will assign each group a data set and ask you to analyze it. I will give detailed instructions for each assignment in due time. The required coding skills will mostly be covered in the Python introduction sessions in the course. You will need to submit results in writing, and, for one of the two assignments, give a short (10 min) group presentation in class. No late assignments will be accepted. Tentative deadlines: Feb 11, Feb 25, Mar 27. I reserve discretion to modify these dates somewhat, depending on our speed.

I may also on occasion give you questions to ponder at home that will not be formally evaluated, but that will be discussed in the following class. Participation in these discussions and your class participation more generally account for the final 5% of the grade.

**Python resources** There are tons of online resources on data analysis with Python, or Python more generally. A web page with lots of useful resources for economists (going far beyond what you need in this course) is [quantecon.org](http://quantecon.org). A useful resource for those who want to learn more than what we'll cover is [datacamp.com](http://datacamp.com). I may post additional links on *mycourses* as we go along.

**University statements:** In case of absence at the final exam for medical reasons, please refer to the University Regulations Concerning Final Examinations. Note: According to Senate regulations, instructors are not permitted to make special arrangements for final exams. Please consult the Calendar, section 4.7.2.1, General University Information and Regulations at [www.mcgill.ca](http://www.mcgill.ca).

McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see <http://www.mcgill.ca/students/srr/honest/> for more information).

L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le site <http://www.mcgill.ca/students/srr/honest/>).

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.

Conformément à la Charte des droits de l'étudiant de l'Université McGill, chaque étudiant a le droit de soumettre en français ou en anglais tout travail écrit devant être noté.

Instructor generated course materials (e.g., handouts, notes, summaries, exam questions, etc.) are protected by law and may not be copied or distributed in any form or in any medium without explicit permission of the instructor. Note that infringements of copyright can be subject to follow up by the University under the Code of Student Conduct and Disciplinary Procedures.

End-of-course evaluations are one of the ways that McGill works towards maintaining and improving the quality of courses and the student's learning experience. You will be notified by e-mail when the evaluations are available. Please note that a minimum number of responses must be received for results to be available to students.

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

## Course outline

The course outline is subject to revisions, the order of topics may be changed, and topics may be dropped or added depending on the pace of the course. I have made the outline very detailed to give you a good impression of what to expect. Note: The list of references to articles is incomplete.

| class | topic/event   |
|-------|---|
| 1     | Introduction  |
|       | <i>Theory</i>   |
| 2     | The leaky bucket: a thought experiment (C 1)  |
| 3     | Social Welfare Functions (C 1)  |
| 4     | Utilitarianism (C 3)  |
| 5     | <i>Python introduction</i>  |
| 6     | Optimal redistribution: an example (Diamond and Saez 2011)  |
|       | <i>Measurement</i>  |
| 7     | Measurement 1 (C 2)   |
| 8     | Measurement 2 (C 2)   |
| 9     | <i>Basic data analysis with Python</i>  |
| 10    | The Atkinson index, some useful distributions (C 2)   |
|       | <i>Inequality: an overview</i>  |
| 11    | A snapshot (Díaz-Giménez, Glover and Ríos-Rull 2011, Piketty and Saez 2007)                           |
| 12    | Recent developments (Heathcote, Perri and Violante 2010)  |
|       | <i>Causes of wage inequality</i>  |
| 13    | The relative-demand/relative-supply framework<br>(Katz and Murphy 1992, Autor, Katz and Kearney 2008) |
| 14    | Skill-biased technical change and the college wage premium  |
| 15    | <i>Assignment 2</i>   |
| 16    | <i>Regression analysis with Python</i>  |
|       | – Reading week –  |
| 17    | Capital-skill complementarity (Krusell, Ohanian, Ríos-Rull and Violante 2000)                         |
| 18    | Labor market polarization (Autor and Dorn 2013)   |
| 19    | <i>Assignment 3</i>   |
| 20    | Polarization continued (?)  |
|       | <i>The top of the distribution</i>  |
| 21    | The top 1%, CEOs (W5, P10, Saez and Zucman (2016))  |
| 22    | Wealth inequality (de Nardi, Fella and Yang 2015)   |
| 23-26 | <i>Presentations</i>  |

## List of presentation topics

1. Brzozowski, Gervais, Klein and Suzuki (2010) on inequality in Canada
2. Hammar and Waldenström (2017) on global earnings inequality
3. Chetty, Hendren, Kline and Saez (2014) on intergenerational mobility
4. Chetty, Grusky, Hell, Hendren, Manduca and Narang (2016) on the “fading American Dream”
5. Case and Deaton (2017) on Mortality and Morbidity in the 21st Century
6. Buera and Kaboski (2012) on structural change and new jobs in services
7. Van Reenen (2018) on increasing differences between firms
8. Alvaredo, Atkinson, Piketty and Saez (2013), Kaplan and Rauh (2013) on the top 1%
9. Gabaix and Landier (2008) on CEOs and entrepreneurs
10. Saez and Zucman (2019) on progressive wealth taxes

## References

- Alvaredo, F., Atkinson, A. B., Piketty, T. and Saez, E. (2013), ‘The top 1 percent in international and historical perspective’, *Journal of Economic Perspectives* **27**(3).
- Autor, D. H. and Dorn, D. (2013), ‘The growth of low-skill service jobs and the polarization of the US labor market’, *American Economic Review* **103**(5), 1553–1597.
- Autor, D. H., Katz, L. F. and Kearney, M. S. (2008), ‘Trends in US wage inequality: Revising the revisionists’, *The Review of Economics and Statistics* **90**(2), 300–323.
- Brzozowski, M., Gervais, M., Klein, P. and Suzuki, M. (2010), ‘Consumption, income, and wealth inequality in Canada’, *Review of Economic Dynamics* **13**(1), 52 – 75. Special issue: Cross-Sectional Facts for Macroeconomists.
- Buera, F. J. and Kaboski, J. (2012), ‘The rise of the service economy’, *The American Economic Review* **102**(6), 2540–2569.
- Case, A. and Deaton, A. (2017), ‘Mortality and morbidity in the 21st century’, *Brookings Papers on Economic Activity, Spring 2017* .  
**URL:** <https://www.brookings.edu/past-bpea-editions/>
- Chetty, R., Grusky, D., Hell, M., Hendren, N., Manduca, R. and Narang, J. (2016), ‘The fading American dream: Trends in absolute income mobility since 1940’, *NBER Working Paper* **22910**.

- Chetty, R., Hendren, N., Kline, P. and Saez, E. (2014), ‘Where is the land of opportunity? the geography of intergenerational mobility in the united states’, *The Quarterly Journal of Economics* **129**(4), 1553–1623.
- de Nardi, M., Fella, G. and Yang, F. (2015), ‘Piketty’s book and macro models of wealth inequality’, *NBER Working Paper* **21730**.
- Diamond, P. and Saez, E. (2011), ‘The case for a progressive tax: from basic research to policy recommendations’, *The Journal of Economic Perspectives* **25**(4), 165–190.
- Díaz-Giménez, J., Glover, A. and Ríos-Rull, J.-V. (2011), ‘Facts on the distributions of earnings, income, and wealth in the united states: 2007 update’, *Federal Reserve Bank of Minneapolis Quarterly Review* **34**(1), 2–31.
- Gabaix, X. and Landier, A. (2008), ‘Why Has CEO Pay Increased So Much?’, *Quarterly Journal of Economics* **123**(1), 49–100.
- Hammar, O. and Waldenström, D. (2017), ‘Global earnings inequality, 1970–2015 ’, *mimeo*, *PSE* .
- Heathcote, J., Perri, F. and Violante, G. L. (2010), ‘Unequal we stand: An empirical analysis of economic inequality in the united states, 1967–2006’, *Review of Economic Dynamics* **13**, 15–51.
- Kaplan, S. N. and Rauh, J. (2013), ‘It’s the market: The broad-based rise in the return to top talent’, *Journal of Economic Perspectives* **27**(3).
- Katz, L. F. and Murphy, K. M. (1992), ‘Changes in relative wages, 1963-1987: Supply and demand factors’, *Quarterly Journal of Economics* **107**(1), 35–78.
- Krusell, P., Ohanian, L. E., Ríos-Rull, J.-V. and Violante, G. L. (2000), ‘Capital-skill complementarity and inequality: A macroeconomic analysis’, *Econometrica* **68**(5), 1029–1053.
- Piketty, T. and Saez, E. (2007), ‘How progressive is the us federal tax system? a historical and international perspective’, *The Journal of Economic Perspectives* **21**(1), 3–24.
- Saez, E. and Zucman, G. (2016), ‘Wealth inequality in the united states since 1913: Evidence from capitalized income tax data’, *The Quarterly Journal of Economics* **131**(2), 519–578.
- Saez, E. and Zucman, G. (2019), ‘Progressive Wealth Taxation’, *Brookings Papers on Economic Activity* .
- Van Reenen, J. (2018), Increasing difference between firms: Market power and the macro economy, *in* ‘Proceedings of the 2018 The Federal Reserve Bank of Kansas City Economic Policy Symposium: Changing Market Structures and Implications for Monetary Policy’, Federal Reserve Bank of Kansas City, Jackson Hole, WY.