

# Economics 7340 - Growth and Development II

Prof. Vollrath

University of Houston, Spring 2025

February 11, 2025

## Class Structure

This class is for upper level graduate students. Class is in Bates 1, T/TH from 11:30-1pm. The overall topic of growth and development covers a big range of topics. As a rough guide to what we will cover and what kinds of students and fields might find this appropriate.

- Sources of growth in the modern developed world. Useful for general context of growth, and of particular use to anyone doing macro is learning how important measurement and accounting is at that level (i.e. knowing some of the problems with national accounts).
- The distribution of output. The split of output into wages, payments to capital, and economic profits. Useful across fields, I believe, as this is a topic that is relevant at any income level. Informs labor economics as this is the context through which significant movements in wages take place and depends in part on big structural changes that occur with growth. Informs development in thinking about how and if there are aggregate impacts to particular shocks or policies.
- Structural change. Economies evolve in terms of what they produce and where they produce it. Understanding that there are regular patterns to this helps frame questions involving development as it points towards where those economies might go as interventions or policies produce growth.

I have several goals in the class. One is to point you towards interesting questions and topics that I think are at or close to the leading edge of these fields. This will give you an entry point to think harder about them or to at least understand how to situate your own work within the world of economics. A second point is to get you comfortable with some core methods and theories that are applicable across fields. That includes theory work that you could use in a big macro calibration model or in a simpler version to motivate an empirical paper. That also includes data/code work that gets you used to translating the models into workable code. A final point might be to think about how to express or present what you know; writing, tables, figures. How or why do we find things convincing?

The course grade is going to be based on several small projects that we work on both in-class and out of class. The plan is for three, all equally weighted, with the main emphasis of grading being on the quality of code and write-up, as opposed to being “right” (for the most part I don’t know the answers we’ll be looking for).

## Modern economic growth

The course is going to start with several weeks of work on fundamental facts about modern economies and how they grow. This will skew more towards currently rich countries rather than developing ones, to start. We're going to establish facts about growth rates but mainly about the decomposition of that into payments to labor, capital, and profits. This gives us a way of talking about the distribution of output at a high level and look at patterns in those shares over time, which have moved in demonstrable ways that indicates something changing in the economy.

The papers we look at will be about figuring out what that something was and what it means for wages, capital payments, profits, and the overall growth rate. These are generally readable summaries and for some we are just using the motivating sections to build some sense of what is going on.

- S. Basu (2019). “Are Price-Cost Markups Rising in the United States? A Discussion of the Evidence”. *Journal of Economic Perspectives* 33.3, pp. 3–22
- U. Akcigit and S. T. Ates (2021). “Ten Facts on Declining Business Dynamism and Lessons from Endogenous Growth Theory”. *American Economic Journal: Macroeconomics* 13.1, pp. 257–298
- C. Syverson (2019). “Macroeconomics and Market Power: Context, Implications, and Open Questions”. *Journal of Economic Perspectives* 33.3, pp. 23–43
- L. Karabarbounis and B. Neiman (2018). “Accounting for Factorless Income”. *NBER Macroeconomics Annual* 33.1, pp. 167–228
- L. Karabarbounis (2024). “Perspectives on the Labor Share”. *Journal of Economic Perspectives* 38.2, pp. 107–136
- M. Rognlie (2015). “Deciphering the Fall and Rise in the Net Capital Share: Accumulation or Scarcity?”. *Brookings Papers on Economic Activity* 46.1 (Spring, pp. 1–69

There's no particular project associated with this area.

## Accounting for shares and elasticities

The point here is to now understand how to measure and account for things like factor elasticities and factor shares of costs and output. This involves non-trivial skills in understanding how input-output tables work and the issues with measuring factor income in national accounts in aggregate and at the industry (or firm) level.

As a point of reference we'll work through the procedures in my recent paper

- D. Vollrath (2024). “The Elasticity of Aggregate Output with Respect to Capital and Labor”. *American Economic Journal: Macroeconomics* 16.4, pp. 470–504

This is focused on calculating elasticities for the US, but it will walk us through all sorts of the data and measurement issues involved in all these questions. The tools here will be incredibly valuable. The following citations are to papers that we'll rely on for data or theory that drives the paper.

- D. Koh, R. Santaeulàlia-Llopis, and Y. Zheng (2020). “Labor Share Decline and Intellectual Property Products Capital”. *Econometrica* 88.6, pp. 2609–2628
- S. Barkai (2020). “Declining Labor and Capital Shares”. *The Journal of Finance* 75.5, pp. 2421–2463
- J. De Loecker, J. Eeckhout, and G. Unger (2020). “The Rise of Market Power and the Macroeconomic Implications [“Econometric Tools for Analyzing Market Outcomes”]”. *The Quarterly Journal of Economics* 135.2, pp. 561–644
- D. R. Baqaee and E. Farhi (2020). “Productivity and Misallocation in General Equilibrium”. *The Quarterly Journal of Economics* 135.1, pp. 105–163
- D. Baqaee and E. Farhi (Mar. 2019a). *A Short Note on Aggregating Productivity*. NBER Working Papers 25688. National Bureau of Economic Research, Inc
- J. G. Fernald (2014b). *A Quarterly, Utilization-adjusted Series on Total Factor Productivity*. Tech. rep. 2012-19. Federal Reserve Bank of San Francisco

In class we’ll work through the paper, which will include me sharing the data and code and you getting that up and running.

The first project you’ll work on - which will include class time - is adapting that code and using it to create estimates of those elasticities for a different country. I’ll share some data sources but you can also hunt down data for a particular country if you have interest (although the requirements are tough so you might not be able to do much). I’ll hand out information on what I expect on this, but you’ll need to show me both the code (I have to understand it) and a write-up of the results.

This section of class will run through Thursday, February 13th.

## Structural Change

One of the central features of economic growth and development is the shift of economic activity out of agriculture, into manufacturing, and then ultimately into services. Those industries tend to have different productivity levels and growth rates, but at the same time we continue to see balanced growth in the aggregate. How do we explain and reconcile these facts? This requires some work to understand models that make clear what effects are driving these changes (and hence could allow us to forecast further ones). We’ll see that these structural changes drive employment shifts between industries. This is where we get into more economic development in the sense of seeing the patterns that arise as countries transition from poor to rich.

Some specific papers we’ll talk about:

- B. Herrendorf, R. Rogerson, and Á. Valentinyi (2014). “Growth and Structural Transformation”. *Handbook of Economic Growth*. Vol. 2. Handbook of Economic Growth. Elsevier. Chap. 6, pp. 855–941
- D. Comin, D. Lashkari, and M. Mestieri (2021). “Structural Change With Long-Run Income and Price Effects”. *Econometrica* 89.1, pp. 311–374

- F. Alvarez-Cuadrado and M. Poschke (2011). “Structural Change Out of Agriculture: Labor Push versus Labor Pull”. *American Economic Journal: Macroeconomics* 3, pp. 127–158
- T. Boppart (2014). “Structural Change and the Kaldor Facts in a Growth Model With Relative Price Effects and Non Gorman Preferences”. *Econometrica* 82, pp. 2167–2196
- S. Alder, T. Boppart, and A. Müller (2022). “A Theory of Structural Change That Can Fit the Data”. *American Economic Journal: Macroeconomics* 14.2, pp. 160–206
- D. Lagakos and M. Waugh (2013). “Selection, Agriculture, and Cross-Country Productivity Differences”. *American Economic Review* 103.2, pp. 948–80

There will be some work in-class doing basic accounting for structural change using cross-country data I provide. We’ll be using it to see if there are patterns with respect to income or time.

There is no separate project for this section, we’ll see what we need to from working through this in class. The dates for this material will be

- Tuesday, February 18th
- Thursday, February 20th (NO CLASS - work on your first project!)
- Tuesday, February 25th
- Thursday, February 27th
- Tuesday, March 4th
- Thursday, March 6th (NO CLASS - work on your first project!)

## Topics

There are a few sub-topics we could go with, and I’m open to doing some or all, depending on time and interest. The order and attention given will be negotiated by us as a class. In each case the papers listed are just a primer and we’ll likely update that depending on interest.

The third project will come from one of these sub-sections, and my intention is that this is up to you. We will each have to talk about what you are doing to fulfil that requirement. This isn’t a full paper, but some kind of replication that extends the original work in a way (new country, alternative assumption, something). Code and write-up matter.

Dates for these areas will all be after Spring Break (starting on March 18th) and we’ll sort out the order based on class preferences.

As part of the second project, I’ll set up two individual meetings with all of you. The first will be to discuss an idea and get you started. The second will be to review your progress and make final suggestions. Those first meetings will be the week of March 24th. The second meetings should be the week of April 15th.

## Spatial growth

Normal models of economic growth do not deal with *where* activity happens, even though there are clear trends in urbanization as economies develop and clear patterns across urban areas in size and productivity. Spatial models allow us to think of both congestion effects (crowding) and agglomeration effects (positive feedback or spillovers).

- G. Michaels, F. Rauch, and S. J. Redding (2012). “Urbanization and Structural Transformation”. *The Quarterly Journal of Economics* 127.2, pp. 535–586
- R. Jedwab and D. Vollrath (2015). “Urbanization without growth in historical perspective”. *Explorations in Economic History* 58.C, pp. 1–21
- D. Gollin, R. Jedwab, and D. Vollrath (2016). “Urbanization with and without industrialization”. *Journal of Economic Growth* 21.1, pp. 35–70
- R. Jedwab and D. Vollrath (2019). “The Urban Mortality Transition and Poor Country Urbanization”. *American Economic Journal: Macroeconomics* 11.1, pp. 223–75
- K. Desmet and E. Rossi-Hansberg (2014). “Spatial Development”. *American Economic Review* 104.4, pp. 1211–1243
- K. Desmet, D. K. Nagy, and E. Rossi-Hansberg (2018). “The Geography of Development”. *Journal of Political Economy* 126.3, pp. 903–983. eprint: <https://doi.org/10.1086/697084>
- S. J. Redding and E. Rossi-Hansberg (2017). “Quantitative Spatial Economics”. *Annual Review of Economics* 9.1, pp. 21–58. eprint: <https://doi.org/10.1146/annurev-economics-063016-103713>

## Economic profits

This digs a little further into market power and its relationship to growth. There is data to look at on markups, and then theory to work out why the effect of markups is not always intuitive.

- J. De Loecker, J. Eeckhout, and G. Unger (2020). “The Rise of Market Power and the Macroeconomic Implications [“Econometric Tools for Analyzing Market Outcomes”]”. *The Quarterly Journal of Economics* 135.2, pp. 561–644
- E. Anderson, S. Rebelo, and A. Wong (2018). *Markups Across Space and Time*. Working Paper 24434. National Bureau of Economic Research
- D. R. Baqaee and E. Farhi (2019c). “The Macroeconomic Impact of Microeconomic Shocks: Beyond Hulten’s Theorem”. *Econometrica* 87.4, pp. 1155–1203
- D. R. Baqaee and E. Farhi (2020). “Productivity and Misallocation in General Equilibrium”. *The Quarterly Journal of Economics* 135.1, pp. 105–163

I think the project in this section would be to run with the data work from the elasticity paper and look at the evolution of profits under different scenarios.

## Misallocation

A significant line of literature posits that an important factor in why some countries are poor is the presence of mis-allocations of workers (or capital or other factors) between different industries and/or firms. These are generally agnostic of what those frictions might come from, but try to establish that they have meaningful aggregate implications.

- D. Restuccia and R. Rogerson (2008). “Policy Distortions and Aggregate Productivity with Heterogeneous Plants”. *Review of Economic Dynamics* 11.4, pp. 707–720
- C.-T. Hsieh and P. J. Klenow (2009). “Misallocation and Manufacturing TFP in China and India”. *Quarterly Journal of Economics* 124.4, pp. 1403–1448
- C. I. Jones (2011b). “Misallocation, Economic Growth, and Input-Output Economics”. *NBER Working Papers* 16742
- T. Adamopoulos and D. Restuccia (2014). “The Size Distribution of Farms and International Productivity Differences”. *American Economic Review* 104.6, pp. 1667–97
- D. Vollrath (2013b). “Measuring Aggregate Agricultural Labor Effort in Dual Economies”. *Eurasian Economic Review* 3.1, pp. 39–58
- D. Vollrath (2009a). “How important are dual economy effects for aggregate productivity?” *Journal of Development Economics* 88.2, pp. 325–334

## Premature de-industrialization

Many developing economies appear to be working through structural transformation in a different way than in the past, and that has been characterized as “premature deindustrialization”, but it isn’t obvious what precisely that means or if this necessarily is bad.

- D. Rodrik (2016). “Premature deindustrialization”. *Journal of Economic Growth* 21.1, pp. 1–33
- D. Rodrik (2013). “Unconditional Convergence in Manufacturing”. *Quarterly Journal of Economics* 128.1, pp. 165–204
- D. Lagakos and M. Waugh (2013). “Selection, Agriculture, and Cross-Country Productivity Differences”. *American Economic Review* 103.2, pp. 948–80
- I. Fujiwara and K. Matsuyama (2024). “A Technology-Gap Model of ‘Premature’ Deindustrialization”. *American Economic Review* 114.11, pp. 3714–3745