

Macroeconomics for Developing Economies

Centro de Investigación y Docencia Económicas (CIDE)
Master's Program (ME)

Meeting times	Tuesdays and Wednesdays, 13:00 – 14:30
Duration	15 teaching weeks (30 sessions)
Instructor	Vasudeva Ramaswamy
Office / hours	By appointment
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Language	English (readings, slides, and assessments in English)

1. Course description

This course focuses on the theoretical foundations of development macroeconomics, with an emphasis on growth models and the main drivers of development. We begin by quantifying why income levels differ dramatically across the world (development accounting) and then study the canonical growth frameworks that help frame the discussion of development. Next, we focus on the *why* – we try to explain why these differences in income have arisen. We start by looking at the role of technology, focusing on the role of human capital, innovation, and on a nation's distance to the technological frontier. Next, we look at how an economy's "openness" relates to its development. Here, we study trade and its role in the diffusion of technology, and open-economy macroeconomics of emerging markets, where exchange-rate regimes, capital flows, and sudden stops play an important part in how a developing economy evolves. Finally, we examine the mechanisms that are particularly relevant to developing economies: coordination failures and poverty traps, the misallocation of resources across heterogeneous firms, informality, and the role of institutions, industrial policy, and structural transformation.

Throughout, we consider both theory and the empirical evidence from around the world, with particular attention to Mexico and Latin America. Students will work directly with cross-country data to help connect class discussions to the world of development, and to evaluate the models that they study.

2. Prerequisites

Graduate microeconomics and macroeconomics; calculus, linear algebra, and dynamic optimization. No programming background is required. Students can use any statistical environment (R, Python, Stata, or MATLAB — student's choice) for the data exercises; the early labs can be done in a spreadsheet.

3. Learning outcomes

By the end of the course, students will be able to:

1. Decompose cross-country income and growth differences into factor-accumulation and productivity (TFP) components.
2. Derive and analyze the standard growth models (Solow, Ramsey, human-capital, R&D-based, Schumpeterian), and use them to evaluate the evidence for convergence.

3. Explain key development mechanisms: technology diffusion, “distance to frontier”, directed technical change, openness and trade.
4. Understand open-economy trade-offs: exchange-rate regimes, the policy trilemma, capital-flow reversals and crises in emerging markets, macroeconomic volatility.
5. Formalize development as a coordination problem (big-push, multiple equilibria, poverty traps) and evaluate policy implications.
6. Analyze resource misallocation across heterogeneous firms and its sources (financial frictions, informality, policy distortions).
7. Critically assess the roles of institutions, industrial policy, and structural transformation in development, and apply growth-diagnostics reasoning to a country case.

4. Texts

Required

Key	Author(s)	Title	Publisher	Year
Acemoglu	Acemoglu, D.	Introduction to Modern Economic Growth	Princeton UP	2009
A&H	Aghion, P. & Howitt, P.	The Economics of Growth	MIT Press	2009
A&M	Agénor, P.-R. & Montiel, P.	Development Macroeconomics (4th ed.)	Princeton UP	2015
Ros	Ros, J.	Rethinking Economic Development, Growth, and Institutions	Oxford UP	2016

Recommended

Key	Author(s)	Title	Publisher	Year
Ray	Ray, D.	Development Economics	Princeton UP	1998
Montiel	Montiel, P. J.	Macroeconomics in Emerging Markets	Cambridge UP	2011
B&SiM	Barro & Sala-i-Martin	Economic Growth (2nd ed.)	MIT Press	2004
Jones	Jones, C. I.	Introduction to Economic Growth (3rd ed.)	Norton	2013

5. Data, software, and lab sessions

Students will use the Penn World Tables (PWT 11.0), the World Development Indicators, and the IMF's International Financial Statistics in the accounting, convergence, and crisis exercises. The focus is on learning how to use cross-country datasets and apply them to development-related analyses, with some hands-on experience in solving simple models numerically.

There are five lab sessions in this class (timing below is preliminary):

- **Lab 1 (Week 2)** — Development accounting in PWT 11.0.
- **Lab 2 (Week 4)** — Solving the Solow and Ramsey models numerically; absolute vs. conditional convergence regressions.
- **Lab 3 (Week 7)** — Technology adoption lags (specifics TBD).
- **Lab 4 (Week 11)** — Open economy crises: event study of Mexico 1994–95 using IFS and WDI data (specifics TBD)
- **Lab 5 (Week 13)** — Misallocation: TFPR dispersion and the gains from reallocation, computed on a firm-level sample.

6. Assessment

Component	Weight	Timing
Problem sets (5)	25%	Due Weeks 3, 5, 7, 11, and end of 13
Midterm exam (closed book)	20%	Week 8
Final exam (closed book)	30%	Exam period
Final project (proposal + paper + presentation)	25%	Proposal Wk 6 Presentation Wk 15 Paper finals week

7. Final project

A short research paper ($\approx 12\text{--}15$ pages) that is either (a) a theoretical extension of a model studied in the course, or (b) an empirical analysis applying course tools to a country or policy question — ideally a developing economy the student knows well. Milestones:

- Week 6 — Proposal (1–2 pp.): question, relevant model/data, identification or solution strategy.
- Week 15 — Presentation (15 min + Q&A).
- Finals week — Paper.

Suggested topics will be circulated (e.g., development accounting for a specific country; estimating the misallocation gap for a national manufacturing census; a calibrated poverty-trap or big-push exercise; the growth cost of a documented sudden stop; a growth-diagnostics exercise for a country the student knows well; an institutions-and-growth case study).

8. Weekly schedule

Part I — Facts, accounting, and the neoclassical core

Week 1 — Introduction: the facts of development

The wealth and poverty of nations; growth miracles and disasters; the stylized facts of growth; traditions within “development macroeconomics”.

Reading: Acemoglu Ch. 1; Jones & Romer (2010), “The New Kaldor Facts,” *AEJ: Macro*.

Week 2 — Development accounting and cross-country empirics

Growth vs. levels accounting; production factors vs. TFP; understanding the productivity residual; what the residual can and cannot be asked to explain.

Reading: Acemoglu §3.1 and §3.5–3.6; A&H Ch. 5; Hall & Jones (1999), QJE; [rec.] Caselli (2005), “Accounting for Cross-Country Income Differences,” *Handbook of Economic Growth*.

Week 3 — Neoclassical growth I: Solow and convergence

The Solow model; the augmented (human-capital) Solow model; absolute vs. conditional convergence; growth regressions and their drawbacks; the convergence debate.

Reading: Acemoglu Ch. 2 and §3.2–3.4; Mankiw, Romer & Weil (1992), QJE.

Week 4 — Neoclassical growth II: optimal growth and dynamics

The Ramsey–Cass–Koopmans model; transitional dynamics; the speed of convergence; conditional-convergence evidence. Lab 2: Model solving and convergence regressions.

Reading: Acemoglu Ch. 8; Barro & Sala-i-Martin, *convergence chapters (supplementary)*.

Part II — Endogenous growth and technology**Week 5 — Endogenous growth I: externalities, AK, and human capital**

Externalities and increasing returns; the AK model; Lucas human-capital accumulation; drawbacks of neoclassical models.

Reading: A&H Ch. 1–2; Acemoglu Ch. 10–11; Lucas (1988), JME; Romer (1986), JPE.

Week 6 — Endogenous growth II: innovation-based growth

Expanding varieties and the Romer (1990) model; Schumpeterian growth; creative destruction; scale effects; semi-endogenous growth.

Reading: A&H Ch. 3–4; Romer (1990), JPE; Aghion & Howitt (1992), *Econometrica*; Jones (1995), JPE (*scale-effects critique*).

Week 7 — Technology diffusion, the frontier, and directed technical change

Cross-border technology diffusion; barriers to adoption and adoption lags; “appropriate institutions” and “distance-to-frontier”; directed technical change. Lab 3: TBD.

Reading: A&H Ch. 7–8; Comin & Hobijn (2010), “An Exploration of Technology Diffusion,” AER; Acemoglu, Aghion & Zilibotti (2006), “Distance to Frontier,” JEEA; [rec.] Acemoglu Ch. 18.

Week 8 — Midterm exam and review

Coverage: Weeks 1–7. Review session Tuesday, exam Wednesday.

Part III — Openness: goods, capital, and the exchange rate**Week 9 — Trade, openness, and technical change**

Trade and growth; the empirical openness–growth relationship; export-led growth.

Reading: A&H Ch. 15; Grossman & Helpman (1991), *Innovation and Growth in the Global Economy* (overview chapters); Ros (external constraints — structuralist counterpoint); [opt.] Acemoglu Ch. 19; Eaton–Kortum intuition for trade and technology.

Week 10 — Open-economy macro in EMs I: regimes, the trilemma, and the real exchange rate

Small open developing economies: dependent-economy structure; equilibrium real exchange rates; exchange-rate regimes; the policy trilemma; credibility vs. flexibility; contractionary devaluation.

Reading: A&M Ch. 8 and Ch. 9; [rec.] Montiel Ch. on equilibrium real exchange rates; Obstfeld, Shambaugh & Taylor (2005), *REStat* (trilemma evidence).

Week 11 — Open-economy macro in EMs II: capital flows, sudden stops, and crises

Benefits and costs of financial integration; push vs. pull factors; managing capital inflows; currency-crisis generations; sudden stops; focus on the Mexican crisis of 1994–95. Lab 4: crisis event study (TBD).

Reading: A&M Ch. 13 and Ch. 14; Calvo, Izquierdo & Mejía (2004), NBER WP (sudden stops); [rec.] Rey (2013), “Dilemma not Trilemma”; A&M Ch. 15–16 for banking and sovereign-debt crises.

Part IV — Coordination, misallocation, and the firm**Week 12 — Development as a coordination problem**

Big push, multiple equilibria, and poverty traps; complementarities; the role of expectations; role of policy.

Reading: Ray (coordination failures and poverty traps); Murphy, Shleifer & Vishny (1989), “Industrialization and the Big Push,” *JPE*.

Week 13 — Misallocation, firm heterogeneity, and informality

Resource misallocation across heterogeneous firms; measuring the gap; exploring reasons: credit constraints, firm-size distributions, informality; agricultural productivity gaps. Lab 5: TBD.

Reading: Hsieh & Klenow (2009), *QJE*; Restuccia & Rogerson (2008), *RED*; La Porta & Shleifer (2014), “Informality and Development,” *JEP*.

Part V — Institutions, the state, and current challenges**Week 14 — Institutions, industrial policy, and structural transformation**

Institutions as the “fundamental cause”; the role of the state in development; the case for and against industrial policy; growth diagnostics as a way of ordering constraints; structural transformation and sectoral reallocation.

Reading: Acemoglu, Johnson & Robinson (2001), “The Colonial Origins of Comparative Development,” *AER*; Rodrik, “Industrial Policy for the Twenty-First Century”; Hausmann, Rodrik & Velasco (2005), “Growth Diagnostics”.

Week 15 — Current challenges, synthesis, and final presentations

Distribution and equity; developing economy macroeconomic volatility; middle-income growth traps; sustainability and growth. Student project presentations.

Reading: A&M Ch. 17 §7–8 (volatility and growth; middle-income growth traps); [rec.] A&H Ch. 14 (reducing volatility and risk); selected papers TBD.

9. Course policies

- **Collaboration.** Discussing problem sets in groups is encouraged; the write-up you submit must be your own, and you should name your collaborators on the first page.
- **Late work.** Problem sets lose 10% per day late. Exceptions require advance notice.
- **Grading.** Final marks follow the CIDE ME scale. [Insert the scale and the minimum passing mark here.]

- **Generative AI.** You may use AI tools for coding assistance, debugging, and language editing, and you must say so briefly in a note at the end of any submission where you did. You may not use them to produce the substantive analysis or the derivations.
- **Accessibility.** Students needing accommodations should contact me in the first two weeks so arrangements can be made without time pressure.