

Harvard University
Harvard Kennedy School
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API 119: Advanced Macroeconomics for the Open Economy II

Tu-Th, 1:15pm-2:30pm, Starr

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Overview

This is an advanced course on macroeconomics for students who have a good background in micro and macro theory, econometrics, and mathematical techniques for economic analysis. The course is designed to build on API-120, by covering additional topics and providing a conceptual framework and tools to deepen the students' ability to think about macroeconomic policy issues.

The first fifth of the course, with Prof. Frankel, will cover a few international finance topics beyond those in API-120: carry trade, risk, debt dynamics, and emerging market crises.

The latter parts, with Prof. Campante, are meant to develop a set of tools to think about macroeconomic policy issues, almost all of which require us to think *dynamically*. In other words, we want to be able to answer questions that involve choices between today and tomorrow, which permeate just about any issue involving growth, consumption, investment, fiscal or monetary policy, and so on – in short, any issue that is relevant when thinking about development from a macroeconomic perspective. The best way to master those tools is to see them in action, by using them to analyze policy-relevant topics in macroeconomics. For that reason, we will combine techniques and applications from start to finish: our motto is to be *rigorous*, so that we know that our thinking is solid and well-grounded, and *relevant*, for we want to have impact on policy changes in the real world.

Prerequisites

Exposure to macroeconomic theory at the level of API-120, as well as to multivariate calculus, is assumed. The course freely uses the techniques of dynamic optimization, mostly in continuous time, yet these will not be assumed, but rather presented in class as needed. (You will have seen a primer on them with Deb Hughes-Hallett as well.) As background reading you can check the math Appendix of R. Barro and X. Sala-i-Martin's *Economic Growth* (2nd ed., McGraw-Hill, 2004). You may also want to look at the somewhat more detailed treatment in the notes "Dynamic Optimization in Continuous Time Economic Models (A Guide for the Perplexed)" by M. Obstfeld, at <http://emlab.Berkeley.EDU/users/obstfeld/e202b/e202b.html>. For a more advanced, but very compact and complete treatment, see Chapter 7 in D. Acemoglu's *Introduction to Modern Economic Growth* (Princeton University Press, 2009).

This course is open to non-MPA/ID students by permission of the instructors only.

Readings

On Prof. Frankel's part, some readings are listed below.

On Prof. Campante's part, there is no single text that covers all the relevant material. D. Romer's (DR) *Advanced Macroeconomics* (4th ed., McGraw-Hill, 2011), which you have already encountered in API-120, is a book that has a nice coverage of recent research in macroeconomics, and will thus be our main source for background reading. In fact, given the large amount of material we expect you to read from this source we have not included Romer chapters in the package. In class we will be drawing mostly from this book, with some additional elements being provided by a number of articles, some of which are classics in the field while others summarize current debates and developments, or by other books such as D Acemoglu's (DA) *Introduction to Modern Economic Growth*.

The reading list is short, under the assumption that you will skim through most of the pieces. Still there are two types of readings, some which you are required to read (indicated by a *), while others are included as background material for what we do in class and which may be useful reference points to clarify lecture material.

Grading

Grading will be based on:

- a midterm (30%)
- problem sets (20%)
- a final (50%)

The midterm will take place on March 7 (in class), and will cover Part I (Prof. Frankel) and Parts II and III (Prof. Campante) of the course. The final will be on May 7 (Mon, 2pm-

5pm). The problem sets will follow the schedule below. (They are due by 10:10am and, as with other MPA-ID core courses, should be placed in the drop box on the Littauer 2nd floor.) Each student can drop one problem set from the final grade.

- PS 1 Handed out: Thu, Jan 25; Due: Thu, Feb 8
- PS 2 HO: Thu Feb 8; D: Thu, Feb 22
- PS 3 HO: Thu, Feb 22; D: Thu, March 1
- PS 4 HO: Thu, March 22; D: Thu, April 5
- PS 5 HO: Thu, April 5; D: Thu, April 19
- PS 6 HO: Thu: April 19; D: Thu, April 26

Note that, while studying and working on the problem sets in groups is encouraged, each student is responsible for writing up and submitting his/her own assignment. Separate copies of group-constructed assignments are not acceptable, and *any copying of another person's solutions will be deemed a violation of academic integrity*. More broadly, including material from others in the assignments without appropriate quotation marks and citations is regarded, as a matter of School and University policy, as a major violation of academic and professional standards, subject to serious sanctions including potentially expulsion from the University. Students must report in writing, with every problem set, the names of the colleagues with whom they have worked in that assignment.

Why do we do theory?

This is a recurrent question in a course like this one, which attempts to address very practical questions with relatively abstract models. An excellent (and very readable) justification of why we use these abstract models was written by Paul Krugman (<http://web.mit.edu/krugman/www/dishpan.html>). Our own Dani Rodrik also makes this point very clearly, be it as anecdote (http://rodrik.typepad.com/dani_rodriks_weblog/2007/09/why-we-use-math.html), or in book form (see *Economics Rules*). In a nutshell, models possess the quality of aiding clear analysis with explicit linkages between premises and conclusions. Metaphors and intuition more often than not lack the precision needed in intellectual debate for policy formulation.

And yet fiction is perhaps the best way to make this point, as illustrated by Argentinean writer Jorge Luis Borges in his one-paragraph short story entitled “On rigor in science”:

“... In that empire, the art of cartography reached such perfection that the map of one province alone covered up the whole of a city, and the map of the empire, the whole of a province. In time, those unconscionable maps did not satisfy, and the colleges of cartographers set up a map of the empire which had the size of the empire itself and coincided with it point by point. Less addicted to the study of cartography, succeeding generations understood that this widespread map was useless and not without impiety they abandoned it to the inclemency of the sun and of the winters. In the deserts of the west some mangled ruins of the map lasted on, inhabited by animals and beggars;

in the whole country there are no other relics of the disciplines of geography.' Suárez Miranda, *Viajes de varones prudentes*, Book IV, Chapter XLV, Urida, 1658."

A Universal History of Infamy, Penguin, London, 1975

In essence, models are like maps: a useful and indispensable source of simplification without which we cannot comprehend the world. But remember: *models are always "wrong,"* just as useful maps are gross distortions of the "real world." The crucial test is whether they are "wrong" in helpful ways, by helping us get from where we are to where we want to go: that is to say, by letting us identify the main forces behind any macroeconomic phenomenon we want to understand, and checking how solid our intuitions are or are not.

Course Contents

The first part of the course will cover additional topics, on the issue of risk in international financial markets, that could not fit API-120. The second part and third parts (up until the midterm) will introduce some of the main dynamic modeling tools used in macroeconomics: the neoclassical growth model and the overlapping generations model. They will be developed in the context of discussing two very important areas of the macroeconomic policy debate: growth (Part II), and intergenerational choices (e.g. social security/pensions) (Part III). The second half of the course will then use those dynamic tools to analyze other important areas: consumption and investment (Part IV), business cycles (Part V), and fiscal and monetary policy (Part VI). We will do all of this with a heavy emphasis on current policy debates and on what they imply for the future of macroeconomics.

Part I. Risk in International Financial Markets (Prof. Frankel)

Jan 23rd **The carry trade and the risk premium**

* *World Trade and Payments*, 10th ed., Chapter 28.1

Markus Brunnermeier, Stefan Nagel & Lasse Pedersen (2009), "Carry Trades and Currency Crashes," *NBER Macro.Annual 2008, vol.23*, Acemoglu, Rogoff & Woodford, eds. NBER WP 14473.

Craig Burnside, Martin Eichenbaum & Sergio Rebelo (2007), "The Returns to Currency Speculation in Emerging Markets," *Am Econ Rev.*, 97(2), pp. 333-338, May. NBER WP. 12489.

Charles Engel (1996), "The Forward Discount Anomaly and the Risk Premium: A Survey of Recent Evidence," *Journal of Empirical Finance*, June, pp. 123-191.

Lucio Sarno (2005), "Viewpoint: Towards a Solution to the Puzzles in Exchange Rate Economics: Where Do We Stand?" *Canadian J. of Ec.*, 38(3): 673-708. Warwick BS WP 05-11.

Jan 25th **Optimal portfolio diversification**

* *World Trade and Payments*, Chapter 28.2-28.3 & Supplement to Ch.28, pp. S55-S58.

Hanno Lustig & Adrien Verdelhan (2011), "The Cross-Section of Foreign Currency Risk Premia and Consumption Growth Risk: Reply." *American Econ.Rev.*, vol.101, no.7, pp. 3477-3500, Dec. NBER WP 13812.

"Fear and favour: Exchange-rate shifts have helped the global economy," *Economist*, Sept. 7, 2017.

Jan 30th **Country risk and debt dynamics**

* *World Trade and Payments*, Supplement to Ch.24, pp. S47-S48.

Reinhart, Carmen, Vincent Reinhart, and Kenneth Rogoff (2012), "Debt Overhangs, Past and Present," NBER WP 18015, April. Summary in NBER Digest, August 2012.

"Brazil warned of 'explosive' build-up of public debt," *Financial Times*, May 24, 2016.

Yannis Stournaras, "Greece needs a new deal with its partners," *Financial Times*, June 14, 2016.

Klaus Regling "Solidarity with Greece will render its debt sustainable," *Fin.Times*, Sep. 19, 2017.

"The eurozone recovery achieves critical mass," *Financial Times*, Sept. 20, 2017.

Feb 1st and Feb 6th **Crises in Emerging Markets**

* *World Trade and Payments*, 2007, Ch. 24.1-24.2, 24.4-24.9

* Kaminsky, Graciela, Carmen Reinhart and Carlos Vegh (2003), "The Unholy Trinity of Financial Contagion," *Journal of Economic Perspectives*, 17, no. 4, Fall, 99-118.

* Ostry, J., et al., 2010, "Capital Inflows: The Role of Controls," *IMF Staff Position Note* 10/04.

* Frankel, J., and G.Saravelos (2012), "Are Leading Indicators Useful for Assessing Country Vulnerability? Evidence from the 2008-09 Global Financial Crisis," *J.Int.Ec.* 87, 216-31. Summary, VoxEU.

"Financial indulgence," *The Economist*, April 5, 2014, p.69.

"Economic epidemiology," *The Economist*, June 16, 2012.

"Emerging-market debt: A run for your money," *The Economist*, Aug.28, 2010, p.66.

"Asia's Great Moderation," *The Economist*, Nov. 10, 2012.

"Hot and Sour: What Asia learned from its financial crisis 20 years ago," *The Economist*, July 1, 2017.

Part II. Growth and the Neoclassical Growth Model

Feb 8th, 13th, and 15th **Introduction and neoclassical growth (Ramsey) model**

* DR. Chapter 2. Part A

Blanchard, O. and S. Fischer (1989), *Lectures on Macroeconomics*, MIT Press, Chapter 2, Subsections 1-3.

Feb 20th **Endogenous growth models I: Escaping diminishing returns**

* DR Chapter 3.

* Lucas, R. (1990) “Why doesn’t Capital Flow from Rich to Poor Countries?” *American Economic Review*, Vol. 80, No. 2, May.

* Kraay, A. and D McKenzie. (2014) “Do Poverty Traps Exist? Assessing the Evidence”, *Journal of Economic Perspectives*, Summer.

* Romer, Paul (2015) “Human Capital and Knowledge” (<http://paulromer.net/human-capital-and-knowledge>).

DA Chapter 11.

Feb 22nd **Endogenous growth models II: Technological change**

* DR Chapter 3.

* Aghion, P. and P. Howitt (2006) “Appropriate Growth Policy: A Unifying Framework,” *Journal of the European Economic Association*, April-May.

Kremer, M. (1993) “Population Growth and Technological Change One Million BC to 1990”, *Quarterly Journal of Economics*, August.

Garcia-Macia, D., C.T. Hsieh, and P. Klenow (2016) “How Destructive Is Innovation?” NBER WP 22953.

Part III. Overlapping Generations Models

Feb 27th **The basic setup**

* DR Chapter 2. Part B.

Diamond, P. (1965) "National Debt in a Neoclassical Growth Model", *American Economic Review*, Vol. 55, 5, December, pp. 1126-1150.

March 1st **Application: Social security and transitions**

Feldstein, M. (1996) "The Missing Piece in Policy Analysis: Social Security Reform," The Richard T. Ely Lecture, in *American Economic Review*, Vol. 86, No. 2, May, pp 1-14.

Feldstein, M (1997) "Transition to a Fully Funded Pension System: Five Economic Issues" NBER Working Paper, No. 6149.

End of Topics covered in Midterm
Midterm date: March 6th (in class)

Part IV. Consumption and Investment

March 8th and 20th **Consumption**

* DR Chapter 8.

March 22nd **Investment**

* DR Chapter 9.

Part V. Business Cycles

March 27th **Real Business Cycles**

* DR Chapter 5.

* Prescott, E. (1986) "Theory Ahead of Business Cycle Measurement", *Federal Reserve Bank of Minneapolis FED Quarterly*.

McCandless, G. (2008) *The ABCs of RBCs*. Harvard University Press, Chapter 6.

March 29th **Keynesian theories of fluctuations and the DSGE approach**

* DR Chapters 6 and 7.

April 3rd **The Great Recession: whither Macroeconomics?**

* DR Epilogue.

* Caballero, R. (2010) “Macroeconomics after the Crisis: Time to Deal with the Pretense-of-Knowledge Syndrome” *Journal of Economic Perspectives*, Vol. 24, No. 4.

* Ohanian, L. (2010) “The Economic Crisis from a Neoclassical Perspective” *Journal of Economic Perspectives*, Vol. 24, No. 4.

* Woodford, M. (2010) “Financial Intermediation and Macroeconomic Analysis” *Journal of Economic Perspectives*, Vol. 24, No. 4.

* Blanchard, O. & L. Summers (2017) “Rethinking Stabilization Policy. Back to the Future” (up to and including Section 2.2) Peterson Institute for International Economics. (<https://piie.com/system/files/documents/blanchard-summers20171012paper.pdf>)

Brunnermeier, M. and Y. Sannikov (2014) “A Macroeconomic Model with a Financial Sector” *American Economic Review* Vol. 104, No. 2.

Gabaix, X. (2016) “A Behavioral New Keynesian Model.” NBER WP 22954.

Christiano, L., M. Eichenbaum & M. Trabandt (2017) “On DSGE Models” (http://faculty.wcas.northwestern.edu/~lchrist/research/JEP_2017/DSGE_final.pdf)

Korinek, A. “Thoughts on DSGE Macroeconomics: Matching the Moment, But Missing the Point?” In: Guzman, M. (ed.), *Towards a Just Society: Joseph Stiglitz and 21st Century Economics*. (<http://www.korinek.com/download/DSGEMacroEssay.pdf>)

April 5th **Unemployment**

* DR Chapter 10

Summers, L. (1988) “Relative Wages, Efficiency Wages, and Keynesian Unemployment” *The American Economic Review*, Vol. 78, No. 2.

Pissarides, C. (1988) “The Search Equilibrium Approach to Fluctuations in Employment” *The American Economic Review*, Vol. 78, No. 2.

Part VI. Fiscal and Monetary Policy

April 10th and 12th **Public debt dynamics and the effectiveness of fiscal policy**

* DR Chapter 12.1-12.3

* Alesina, A. (2010) “Fiscal Adjustments: Lessons from Recent History”

(http://www.economics.harvard.edu/faculty/alesina/files/Fiscal%2BAdjustments_lessons.pdf)

Christiano, L., M. Eichenbaum and S. Rebelo (2011) "When is the Government Spending Multiplier Large?" *Journal of Political Economy*, Vol. 119, No.1.

April 17th **The long-run determinants of fiscal policy**

* DR Chapter 12.4-12.10

Barro, R. (1979) "On the determination of Public Debt", *Journal of Political Economy*, Vol. 87.

Alesina, A. and A. Passalacqua (2016) "The Political Economy of Government Debt." *Handbook of Macroeconomics* ch. 33.

April 19th **Monetary policy: an introduction**

* DR Chapter 11.1-11.2-11.9

April 24th and April 26th **Monetary policy: a discussion**

* DR Chapter 11.3-11.7.

* Blanchard, O. & L. Summers (2017) "Rethinking Stabilization Policy. Back to the Future" (Section 2.3 onwards) Peterson Institute for International Economics.
(<https://piie.com/system/files/documents/blanchard-summers20171012paper.pdf>)

* Woodford, M. (2012), "Methods of Policy Accommodation at the Interest-Rate Lower Bound" (<http://www.columbia.edu/~mw2230/JHole2012final.pdf>)

Sumner, S. (2011), "Re-Targeting the Fed", *National Affairs*
(<http://www.nationalaffairs.com/publications/detail/re-targeting-the-fed>)

Baldwin, R. and C. Teulings (2014), *Secular Stagnation: Facts, Causes, and Cures*, VoxEU e-book
(<http://www.voxeu.org/article/secular-stagnation-facts-causes-and-cures-new-vox-ebook>)

Rognlie, M. (2015), "What Lower Bound? Monetary Policy with Negative Interest Rates"
(<http://economics.mit.edu/files/11174>).

"Controlling Interest," *The Economist*, Sep 21, 2013.

Final Exam date: May 7th, 2-5pm