ILADES–GEORGETOWN UNIVERSITY / UAH  
MASTER OF ARTS IN ECONOMICS/MAGISTER EN ECONOMÍA  
SYLLABI OF COURSES OFFERED IN FALL 2015 AND SPRING 2016

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I. Objectives

This course develops the basic Microeconomic theory that is a prerequisite for further study of microeconomics and for field courses. By the end of the course students should be able to understand the theory of demand and supply, partial and general equilibrium concepts, market failure and the efficiency properties of the equilibrium. Given that the course is highly abstract and mathematical; students are expected to have sufficient mathematical background presumably covered in any Math Economics undergraduate course.

II. Schedule

Classes: Tuesdays (D23) and Thursdays (D23) 1:30-3:00 pm
Recitations: Viernes (FEN meeting room), 10:00-11:20 am
Office hours: by appointment

III. Assessment

<table>
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<th>Assessment</th>
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<tr>
<td>Test 1 (25%)</td>
<td>Late September/early October</td>
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<td>Test 2 (25%)</td>
<td>Late October/early November</td>
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<td>Problems (15%)</td>
<td>4-5 over the semester</td>
</tr>
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<td>Exam (35%)</td>
<td>Late November/early December</td>
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IV. Textbooks

Required textbooks:
- Mas-Colell, A.; Whinston, M.; y J. Green, Microeconomic Theory, Oxford University Press, 1995. [MWG95]
- Varian, H. (1992), Microeconomic Analysis, W.W. Norton & Company [V92]

Other recommended references:
  “Student Guide” available in https://sites.google.com/a/stanford.edu/microfoundations1/
- Rubinstein, A., Lecture Notes in Microeconomic Theory, Updated 2011

Intermediate micro reference textbooks:
V. Course outline

1. Consumer Choice and Classical Demand Theory
   A. Choice, Preferences and Utility
   B. Utility Maximization Problem and Expenditure Minimization Problem
   C. Indirect Utility Function and Expenditure Function
   D. Duality.
   E. Welfare Evaluations of Economic Changes (Compensating and Equivalent Variations)
      References
      JR11, Chapter 1; Sections 2.1-2.2; MWG95, Sections 1A-B, 2A-E, 3A-E, 3G and 3I; V92, Chapters 7-10

2. Production
   A. Technology and Production Sets
   B. Profit Maximization and Cost Minimization
   C. Duality
      References
      JR11, Chapter 3; MWG95, Sections 5A-D and 5F; V92, Chapters 1-6

3. Partial Equilibrium in Competitive Markets
   A. Partial Equilibrium Competitive Analysis
   B. Welfare Theorems in a Partial Equilibrium Context
   C. Free Entry and Long Run Partial Competitive Equilibrium
      References
      JR11, Chapter 4; MWG95, Sections 10A, 10C-F; V92, Chapter 13

4. Externalities and Public Goods
   A. Bilateral Externalities
   B. Public Goods
      References
      MWG95, Sections 11A-C; V92, Chapters 23-24

5. General Equilibrium
   A. Pure Exchange Economy
   B. Welfare Properties of the Equilibrium
   C. Existence and Uniqueness of the Equilibrium
      References
      JR11, Section 5.1; MWG95, Sections 15A-B, 16A-F, 17A-C and 17F; V92, Chapters 17, 21-22
I. Objectives

This course presents an introduction to macroeconomic modeling, focusing on economic growth theory and its applications. In particular, it introduces a series of macroeconomic general equilibrium models, both deterministic and stochastic, which shed some light on the process of growth and the sources of differences in income among countries. The course objectives are: (1) to familiarize students with a set of questions that are central to macroeconomics, (2) to provide students with useful tools for macroeconomic dynamic analysis, (3) to provide students with one of the workhorses of modern macroeconomics, the neoclassical growth model, and (4) to familiarize students with the use of computers to numerically solve dynamic general equilibrium models.

II. Class Schedule and Course Webpage

**Class Schedule:** Classes are held on Tuesday and Thursday from 11:30 to 12:50 AM in classroom D23. Attendance is not mandatory.

**Office Hours:** By appointment.

**Course Webpage:** It is the obligation of the student to visit the course website (http://virtual.uahurtado.cl) frequently. Any communication related to the course will be posted on the website. The test scores will be communicated via email.

III. Course Requirements

The final grade for the course will be determined according to the following scheme:

- First Midterm: 30 points.
- Second Midterm: 30 points.
- Final Exam: 30 points.
- Assignments: 10 points.

The maximum possible score of the course is 100 points, which result from a simple addition of the points in each of the above-mentioned items.

IV. Bibliography

Different chapters of the following textbooks will be covered:
Additional material will be distributed for those topics not covered in the textbooks above.

V. Software

Assignments and practical modules require the use of numerical analysis software. There are several in the market: Matlab, Octave, Julia, Python (with Numpy and Scipy), Scilab, R, etc. The students are free to choose their preferred software. However, the use of Matlab is highly suggested since, although it is not free and open access (like the others in the list), it is the most widely used software in macroeconomics. Therefore, there is a vast collection of codes on the web that be used as example references. Octave is the free alternative to Matlab and the coding language is very similar.

VI. Course Outline

1. An Introduction to Economic Growth

This introduction presents and discusses the most important stylized facts concerning economic growth and shows the great disparities in terms of per capita income among countries. It also briefly discusses the distribution of income among countries and why it has become so uneven in the last 30 years or so.

- [A] Chapter 1, [BA] Introduction.

2. The Solow-Swan Model

The Solow-Swan model is the starting point of the modern theory of economic growth and is one of the foundations of the workhorse model of modern macroeconomic theory. This chapter
characterizes the model, its steady state and golden rule of capital accumulation. Transitional dynamics of the model are also discussed, emphasizing the concepts of stability and speed of transition to the steady state. Difference equation methods are discussed as a mathematical tool. Finally, the relationship between the data and the model and the growth accounting methodology is briefly discussed.


3. The Neoclassical Growth Model

The neoclassical growth model is the workhorse model of modern macroeconomics and differs from the Solow-Swan model in that it explicitly incorporates optimizing consumer behavior. This type of model requires additional mathematical tools, so in this chapter the basics of dynamic optimization (optimal control and dynamic programming) are introduced. The neoclassical growth model will be presented from both the Social Planner and the Decentralized Markets approach. This allows for the introduction of an application of the welfare theorems in a dynamic context and with an infinite planning horizon. As in the case of the Solow-Swan, the steady state, the transition dynamics and methods to solve the model numerically will also be presented.


4. Endogenous Growth Models

In this chapter various models of sustained growth, as variants of the neoclassical growth model, will be introduced. These models are known as endogenous growth models. The first generation endogenous growth model is presented in the first part. The AK model with technology, human capital model and the model that incorporates the government belong to this group. In a second part, the second-generation endogenous models, based on knowledge and endogenous technological shocks, are discussed. In this case, the process of research and development and technological changes are incorporated into the models.

5. The Stochastic Growth Model

This chapter introduces the stochastic growth models. First, the optimal growth model under uncertainty (the Brock-Mirman model) is discussed. This is followed by the review of the canonical model of real business cycle as an application. As in the case of the neoclassical growth model, additional mathematical tools will be required; thus, the foundations of dynamic optimization in a context of uncertainty will be discussed (stochastic optimal control and dynamic programming). Finally, numerical solution methods for this class of models will be presented (with emphasis on perturbation methods).


6. **Heterogeneous Agents Growth Model**

*If time permits*, an introduction to neoclassical growth models in which the assumption of the representative agent is lifted will be presented. In particular, the optimal allocations in a model with idiosyncratic risk (but without aggregate risk) will be discussed. Additionally, a brief discussion of the numerical solution methods in this context will be presented.

- [HM] Chapter 7.
I. Objective

This is an intermediate level course in Applied Econometrics. Topics include specification, estimation, and inference in the context of linear models (ordinary least squares, instrumental variables, and generalized method of moments) and non-linear models (binary dependent variable models). This course will also cover basic asymptotic distribution theory necessary for the analysis of linear and nonlinear models. Inference techniques used in the linear regression framework such as t and F tests will be extended to include Wald, Lagrange multiplier and likelihood ratio tests.

II. Schedule

Classes: Tuesday and Thursdays: 10:00 -11:20 AM
Office Hours: by appointment

III. Course Requirements/Grading

Assignments (30%), two midterm exams (20% each), and a final exam (30%).

IV. Textbooks

- Hansen, B. (2014), Econometrics. [H]
- Cameron, A. C. and P. K. Trivedi (2009), Microeconometrics using Stata. Stata Press. (Useful for the empirical exercises in the assignments.)

V. Course Outline

1. Introduction

   Research questions.
   Causal relationships and the experimental ideal.
   Data structures.
Review of statistics.

References
SW, Chapter 1, 2 and 3.
W, Chapter 1.

2. Conditional expectations and the linear regression model

Conditional expectations.
Linear regression model.

References
AP, Chapter 3.1.1, 3.1.2.
W, Chapter 2.

3. Basic asymptotic theory

Asymptotic properties of the estimators.
Convergence in probability and consistency.
Convergence in distribution and the asymptotic distribution. Asymptotic efficiency.
Small sample properties of the estimators.

References
HN, Chapter 5.
W, Chapter 3.

4. Linear regression model: Ordinary Least Squares (OLS) estimation

OLS estimator.
Asymptotic properties of OLS.
Homoscedasticity assumption.
Estimation of the variance-covariance matrix.
Ommited variables bias.

References
AP, Chapter 3.1.3, 3.2.2.
SW, Chapter 6.
W, Chapter 4.1, 4.2 (except 4.2.4) and 4.3.1.

5. Linear regression model: Ordinary Least Squares (OLS) inference

OLS inference.
Wald test.
Consistency.
Relationship with F-test and t-test.

References
SW, Chapter 7.
W, Chapter 3.5, 4.2.3.
6. **Additional topics**

   Functional form.
   Ommited variables bias. OLS solution: Proxy variable.
   Measurement error.
   Generalized least squares (GLS) and Feasible GLS (FGLS). Testing for Heteroskedasticity.
   Internal and external validity.

   *References*
   AP, Chapter 3.2.3.
   SW, Chapter 8, 9.
   W, Chapter 4.3.2,4.4.

7. **Instrumental variables (IV) and Two-state least squares (2SLS)**

   IV and 2SLS estimators.
   Asymptotic properties of IV and 2SLS.
   Homoscedasticity.
   Estimation of the variance-covariance matrix.
   Endogeneity and Overidentification tests.
   Weak instruments.

   *References*
   AP, Chapter 5.
   SW, Chapter 12.
   W, Chapter 5.

8. **Binary dependent variable**

   Linear probability model.
   Probit and Logit.
   Estimation: Non-lineal least squares (NLS) and Maximum likelihood (ML) estimators.
   Marginal effects.
   Goodness of fit.
   Inference. Likelihood ratio test.

   *References*
   SW, Chapter 11.
   W, Chapter 15.

9. **Estimation of system of equations (time permitting)**

   System OLS (SOLS).
   Feasible Generalized Least Squares (FGLS).
   System IV (SIV).
   GMM for multiple equations.

   *References*
   HY, Chapter 4.
   W, Chapter 7, 8, 9.
I. Objective
The objective of the course is to expose students to the uses of mathematics in economics. We will approach mathematics as a way of demonstrating relationships and formalizing concepts.

II. Assessment
Midterms: Second week of September and third week of November.
Final exam: TBA
Homework: Approximately five problem sets will be distributed in class every three weeks or so, depending on lecture progress.
Grading: A student’s overall grade will be calculated as follows:

Overall = 0.4 midterm average + 0.3 final + 0.3 homework average

III. Readings
There is no mandatory book for this course. Students with different backgrounds will be able to choose a book with the most suitable level of exposition. The following is a list of some books in alphabetic order:


IV. Tentative Outline


I. Course Objectives

The course requires a basic understanding of probability theory, real analysis and mathematical modelling in social science. The lectures are organized in 6 sections, each having its own references. Students with different backgrounds can choose the textbook reference with the most suitable level of exposition. Additionally, selected original papers are provided (for those students who wish to go into a topic in more depth) and applied papers are discussed in class to sensitize students to the broad range of the applicability of game theory. The lectures are complemented by exercise classes and at the end of sections 2, 3, 4 and 5 students are required to solve a problem set (in groups up to 3 students).

II. Assessment

The course assessment is composed of 4 problem sets (30%), a midterm exam (30%) and the final exam (40%).

III. Readings

Selection of standard textbooks (from undergraduate to graduate level):


IV. Outline

1 Introduction and Decision-Theoretic Foundations

• Topics: Basic concept from decision theory: lotteries, expected utility, risk aversion, equivalent representations; history of game theory, assumptions of rationality and intelligence.
2 Static Games with Complete Information

- **Topics:** Games in strategic form, Nash equilibrium concept (Nash, 1951), dominated strategies, mixed strategies, focal points, zero-sum games, applications.

- **References:** Gibbons, Chapter 1; Fudenberg and Tirole, Chapter 1; Myerson, sections 2.3, 2.5, 3.1-3.5, 3.8, 3.12, 3.13;

  (Original article where Nash presents his equilibrium concept and the proof of existence based on Brouwer’s fixed point theorem)

  **Selected applied paper:**

3 Sequential Games of Complete Information

- **Topics:** Games in extensive-form, backward induction, sequential equilibrium, subgame perfect Nash equilibrium (Selten, 1975), applications equilibrium refinements: trembling-hand perfect equilibria concept, proper equilibrium concept (Myerson, 1978), trust and reciprocity.

- **References:** Gibbons, Chapter 2.1, 2.2; Fudenberg and Tirole, Sections 3.5, 3.6, 8.3, 8.4 and Chapter 11; Myerson, Sections 2.1, 2.2, 2.4, 2.6, Chapters 4 and 5;

  (The concept of a subgame perfect equilibrium.);

  (The concept of proper equilibrium.)

  **Selected applied paper** (reference for class room investment game):
4 Repeated Games of Complete Information I (Supergames)

- **Topics:** Cooperation and threats in infinitely repeated games (with special focus on the ‘grim trigger strategy’ and the folk-theorem (Friedman, 1971) as well as the ‘stick and carrot strategy’ as subgame perfect equilibrium (Abreu, 1988)); learning and evolutionary stability, applications.

- **References:** Gibbons, Chapter 2.3, 2.4; Fudenberg and Tirole, Chapter 5; Binmore, Chapter 9; Myerson, Chapter 7 and section 3.7;

(The ‘grim trigger strategy’ of permanent punishment and the proof of the Folk-theorem.)

(The ‘stick and carrot’ strategy as a simple subgame perfect equilibria.)


**Selected applied papers:**


5 Static Games of Incomplete Information

- **Topics:** Games in bayesian form (Harsanyi, 1967), the bayesian Nash equilibrium and applications.

- **References:** Gibbons, Chapter 3; Binmore, Chapter 10,11.; Fudenberg and Tirole, Chapter 6; Myerson, Sections 2.8, 2.9, 3.9, 3.10;


**Selected applied paper:**

6 Dynamic Games of Incomplete Information

- **Topics:** Perfect bayesian Nash equilibrium, Blackwell approachability, signaling games (Spence, 1973), multi-stage games.

- **References:** Gibbons, Chapter 4; Fudenberg and Tirole, section 8.2, 8.3.4 and 11.2; Myerson, section 7.9;

I. Course Objectives

The course offers an introduction on advanced business cycle analysis. The focus is on dynamic stochastic general equilibrium models (DSGE) and its empirical implementation from the beginning of the course (calibration, simulations, and econometrics).

The following topics will be addressed: Micro-founded approach to analyze key determinants of the business cycle such as household’s consumption, labor supply, investment, money, credit, and pricing decisions. Moreover I will look at the design of monetary, fiscal and optimal policy in both closed and open economies.

The analytical approaches will be evaluated in depth with assignment implemented with Matlab® and Dynare®.

Thus, the course is organized around two objectives for the students:(i) to acquire a sufficient theoretical knowledge to simulate and estimate macroeconomic models, and (ii) to implement some of these methods through Matlab® and Dynare® programming.

II. Administrative Information

Class Time:
Room Number:

TA: Gabriel Ruiz and Sebastián Olate
Office Hours: I will hold office hours in my office on Tuesdays between 4:00 p.m. and 5:00 p.m. and by appointment: cgarcia@uahurtado.cl
Office: Erasmo Escala 1835 of. 206
Phone: +56 (2) 2889 7368

III. Grading

The course is designed for students in the Master’s program with a basic knowledge of macroeconomics and a basic working knowledge in quantitative methods.

A midterm (30%) and a final exam (40%), five assignments (15%), and a paper presentation (15%) at the end of the semester (see list at the end of this document).

IV. The textbooks for the course.


V. Syllabus and Readings

1. Solutions, approximation and econometrics Methods.

   [M] 1, 2.
   Dynamic Programing:
   [LT] 2, 3, 4
   [M] 5, 6, 7.
   Econometrics:
   Maximum Likelihood for DSGE
   [DD] 8.
   Bayesian econometrics for DSGE

   [http://economics.sas.upenn.edu/~jesusfv/comparison.pdf](http://economics.sas.upenn.edu/~jesusfv/comparison.pdf)


2. Complete Markets and RBC models.

   [W] 2, 3, 4, 16
   [JG] 2


[JC] 2

(http://www.faculty.econ.nwu.edu/faculty/eichenbaum/research/paperaugust262003.pdf)


(http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.156.6377&rep=rep1&type=pdf)

(http://individual.utoronto.ca/zheli/C9.pdf)


[WD] 8

7. Sticky Prices.

[JC] 3.

(http://www.kellogg.northwestern.edu/faculty/rebelo/htm/reference.pdf)


(http://www.nber.org/papers/w16364)
8. Monetary Policy.

(http://benoitmojon.com/pdf/Christiano%20%20Eichenbaum%20Evans%2005%20JPE.pdf)


(http://www.kellogg.northwestern.edu/faculty/rebelo/htm/multiplier.pdf)

(http://www.crei.cat/people/gali/glv07jeea.pdf)


(http://fen.uahurtado.cl/wp-content/uploads/2010/07/I-284-Garc%C3%ADa-Mejia.pdf)

(http://www.nber.org/papers/w11417.pdf)

12. Optimal Policy

[MW] 14
[JG] 6
[CV] 10, 11.
Christiano, L., 2009, apuntes “Ramsey-optimal policy”
(http://faculty.wcas.northwestern.edu/~lchrist/d16/d1609/syllabus.htm)

(http://www.nber.org/papers/w11806.pdf)


13. Unemployment

[W] 10

(http://www.nber.org/papers/w15871.pdf)

(http://www.nbp.pl/publikacje/materialy_i_studia/106_en.pdf)

(http://repec.org/sed2005/up.20249.1107510841.pdf)

(http://www.tau.ac.il/~yashiv/shimer.pdf)


[W] 12, 15.

(http://www.econ.nyu.edu/user/gertterm/BGGHandbook.pdf)

(http://www.frbsf.org/economic-research/files/gertler_kiyotaki.pdf)

(http://www.carnegie-rochester.rochester.edu/april10-pdfs/Gertler%20Karadi.pdf)

(http://www-bcf.usc.edu/~quadrini/papers/CSpap.pdf)

(http://www-users.york.ac.uk/~psm509/ULB2012/KiyotakiMooreJPE1997.pdf)

14. Open Economy.

[W] 13
[JG] 7
[CV] 6, 7, 8, 9.


I. Objective

This course is a graduate level introduction to microeconometrics. The course includes a review of core methods (including ML estimation), linear panel data models, limited dependent variable models, and some topics in program evaluation.

II. Schedule

Classes: Tuesdays and Thursdays. 16:30 -17:50 pm (Room K52/K58)
Office Hours: Tuesday and Thursdays, 15.00-16.00 pm.

III. Evaluation

A midterm exam (30%); three assignments (5% each); a paper replication and presentation (15%); final exam (40%).

IV. Textbooks/References

There is no a unique textbook for this course. Most of the material covered in this course is covered in the following books:


Students are also expected to consult the following readings.


V. Course Outline

1. Core Methods. A short review
   a. Review – OLS and IV as momento estimators.
   b. GMM
   c. Maximum Likelihood.

   References
   W, 4, 5, 13, 14
   C-T, Chapters 4,5,6.

2. Panel data models
   a. Unobserved effects linear panel data models. The basics: OLS, random effects, fixed effects, and first differencing.
   b. Aditonal topics
      i. GMM approach.
      ii. Instrumental variables methods in RE and FE models.
      iii. Hausman and Taylor approach.

   References
   AP, Chapter 5
   W, Chapters 10; 11
3. **Non-linear models**
   a. Binary data models (Logit-Probit).
   c. Censored data models: Tobit.

*References*

W, Chapters 15, 17, 19.

C-T, Chapters 14 y 16.

4. **Estimation average treatment effects**
      i. Regression methods.
      ii. Methods based on the propensity score.
   c. Instrumental variable estimation for ATE and LATE.
   d. Regression discontinuity designs.
   e. Basic Topics on Random Control Trials: design and analysis.

*Referencias*

W, Chapter 21

AP, Chapter 6

(*) Papers listed in bibliography
I. Objective

Economists at central banks, private firms, government and academic institutions, face on a daily basis the need to analyze the causal relationships between the main economic and financial variables to contrast different theories, make predictions, and assess the impact of policies. This course presents the economic motivation, statistical background and practical use of the main models used to analyze the behavior of time series.

II. Bibliography


III. Outline

1. Stationary Univariate Models
   1.1 Basic concepts
   1.2 MA models (*Hmt*: Ch. 3)
   1.3 AR models (*Hmt*: Ch. 3)
   1.4 ARMA models (*Hmt*: Ch. 3)
   1.5 Forecasting (*Hmt*: Ch. 4)
   1.6 Maximum likelihood estimation (*Hmt*: Ch. 5)
   1.7 Application: Forecasting macroeconomic Variables

2. Stationary Multivariate Models
   2.1 Introduction to vector autoregressions (VAR) models (*Ltk*: Ch. 2.1)
   2.2 Forecasting (*Ltk*: Ch. 2.2)
   2.3 Granger causality (*Ltk*: Ch. 2.3)
   2.4 Impulse response function (*Ltk*: Ch. 2.3)
   2.5 Variance decomposition (*Ltk*: Ch. 2.3)
2.6 Maximum Likelihood Estimation (*Ltk:* Ch. 3.1 – 3.4)
2.7 Application: The effects of monetary policy shocks

3. Nonstationary Models
   3.1 Processes with stochastic trends (*Eds:* Ch. 4)
   3.2 Unit root tests (*Eds:* Ch. 4)
   3.3 Cointegration tests (*Eds:* Ch. 6)
   3.4 Error correction model (*Eds:* Ch. 6)
   3.5 Conditional heteroscedastic models (*Eds:* Ch. 3)
   3.6 Maximum likelihood estimation (*Eds:* Ch. 3)
   3.7 Application: Forecasting volatility in stock markets

4. State Space Models
   3.1 Introduction (*Ltk:* Ch. 18.1)
   3.2 State space representation (*K&N:* Ch. 3)
   3.3 The Kalman filter (*K&N:* Ch. 3)
   3.4 Maximum likelihood estimation (*K&N:* Ch. 3)
   3.5 Application: Construction of coincident indexes of economic activity

5. Markov-switching Models
   4.1 Introduction (*Hmt:* Ch. 22.1 – 22.3)
   4.2 Regime changes in time series (*K&N:* Ch. 4)
   4.3 The Hamilton filter (*K&N:* Ch. 4)
   4.4 Maximum likelihood estimation (*K&N:* Ch. 4)
   4.5 Application: Identifying business cycles turning points

6. State Space Models with Markov-switching
   6.1 Introduction (*K&N:* Cap. 5)
   6.2 Combination between Kalman and Hamilton filter (*K&N:* Cap. 5)
   6.3 Maximum Likelihood Estimation (*K&N:* Ch. 5)
   6.4 Application: Real-time nowcasting nominal GDP under structural breaks
I. Objectives
In this class we will try to study different topics on Development Microeconomics. The idea is to go over the most relevant theoretical and empirical literature on rural economies, health, human capital, migration and poverty in development countries. Our main goal will be that the students acquire familiarity in the research methods of this area in order to prepare for future research work.

II. Logistics

Lectures: Tuesdays-Thursdays 11:30-12:50.
Office hours: by appointment

III. Class Evaluation

The final grade of the class will be determined from problem sets (50%) and a take home final exam (50%). Problem sets will be handed out every other Thursday. Students can work in groups of up to four people for the problem sets.

IV. Readings

General:


Readings on Empirical Methodology:


V. Outline

1. Introduction
Ray, Chapters 1 and 2

2. Inequality
Ray, Chapters 6 and 7

3. Poverty
Ray, Chapters 8 and 13
4. **Family, Fertility and Population Growth**

Ray, Chapter 9.
Bardhan and Udry, Chapter 3.


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**6. Education**

**Private and Social Returns of Education**


Education Quality


Education Policy


7. Land

Ray, Chapter 12

8. Labor and Migration

Ray, Chapter 13

9. Credit Markets

Ray, Chapter 14
Banerjee, Abhijit and Esther Duflo (2012), "Do Firms Want to Borrow More? Testing Credit Constraints Using a Directed Lending Program," mimeo, MIT

10. Technology


I. Objective

This course covers the modern theory of industrial organization (IO) and empirical tools applied to industrial organization issues. The theoretical part of the course emphasizes the strategic behavior of economic agents with market power, the practice in different industries and the application of these issues to competition policy (antitrust). The empirical part of the course covers the estimation of static models of supply and demand and its applications to antitrust issues like the identification of conduct, simulation of the effects of mergers, valuation of new goods, etc.

It is expected that at the end of this course the student must be able to model different situations of imperfect competition, analyze specific cases of anticompetitive practices, in particular with emphasis in applications to competition policy issues.

II. Schedule

Classes: Monday and Friday: 18:00 - 19:20
Office Hours: by appointment

III. Course Requirements/Grading

- Part I: 3 assignments (50%)
- Part II: 3 assignments (50%)

IV. Textbooks

V. Course Outline

(*) denotes required reading.

PART I: Theoretical I.O. and Competition Policy

1. Monopoly
   A. Pricing Strategies (linear, multi-products, multi-periods, discriminatory pricing)
   B. Market Power (definitions, welfare and market concentration)

References

(*) M04, ch. 2 and 3.

2. Models of Oligopolistic Competition
   A. Basic Models (Cournot, Bertrand, Edgeworth, Stigler, Saloner)
   B. Models of Exogenous Product Differentiation (Hotelling, Salop, Chamberlin-Robinson)
   C. Models of Endogenous Product Differentiation (Switching Costs)

References


3. Industry Concentration
   A. Market definition and Market Structure
   B. Collusion
   C. Horizontal Mergers

References

(*) M04, chapter 4.


4. **Anticompetitive Practices**
A. Entry (Barriers, Strategic Precommitment and Limit Pricing)
B. Exclusionary Practices (Predation, Rebates)
C. Essential Facilities (Margin Squeeze, Sabotage)

**References**
(*) *M04*, chapter 7.

**PART II: NEW Empirical I.O.**

5. **Review of Econometrics and traditional approach in empirical IO**
A. Traditional empirical methods for IO: Structure-Conduct-Performance
B. Estimation of supply and demand under perfect competition
C. Review of Econometrics and Generalized Method of Moments (GMM)

**References**
(*) *DG09*, chapters 2, 6 and 9.
6. Estimation of supply and demand: Homogeneous goods
   A. Cournot model
   B. Identification of conduct
   C. Applications (Collusion and price wars, and measurement of market power).

References
(*) DG09, chapters 2 and 6.

7. Estimation of supply and demand: Differentiated Products I
   A. Multilevel budgeting and AIDS model.
   B. Application: Estimation of the demand for beer.
   C. Measurement of welfare effects.

References
(*) DG09, Chapters 2 and 6.
8. Estimation of supply and demand: Differentiated Products II
   A. Simple models: Vertical model and Logit model.
   B. Simultaneity problem: Introduction of unobserved characteristics.
   C. More realistic substitution patterns: Nested Logit model and Random Coefficients model.
   D. BLP model.
   E. Pricing equation.
   F. Applications (Estimation of markups, market power, and simulation of mergers).

References
(*) DG09, chapter 9.
I. Objectives

The student must understand the key factors in the regulation of network industries, the pros and cons of their alternative regulatory mechanisms, and the role of the information on these processes. At the end of this course, the student must be able to work on the setting tariffs on utilities in practice, or be involved on the design of (de)regulatory processes in different network industries. The student must also know in detail the main characteristics of concession programs for infrastructure.

II. Schedule

Sessions: Friday: 10:00 - 12:50
Room: E55
Office Hours: ask for e-mail to each professor

III. Course Requirements / Grading

One exam (30%), two assignments (50%), and one presentation (20%).

- Exam: Tuesday October 15\textsuperscript{th} (topics 1, 2, 3)
- Assignment 1: October 19\textsuperscript{th} (topic 4)
- Assignment 2: November 16\textsuperscript{th} (topic 5)
- Presentation: week of exams (topic 6)

IV. Textbooks / References

There is no specific textbook for this course but we strongly recommend:


Check the mandatory (*) and additional readings for each topic.
V. Course Outline

1. Institutional Economics

References
(*) [LT93] Introduction

2. Tariff Setting under Complete Information
A. Marginal and Average Cost Pricing, Non-Linear Pricing
B. Ramsey Prices, Peak Load Tariffs
C. Efficient Rationing

References
(*) [LT93] pp. 19-35

3. The New Regulatory Economics: Tariff Setting under Asymmetric Information
A. Models with Unknown Costs
B. Hybrid Models

References
(*) [LT93] chapters 1 and 2 (optional, chapters 9 and 10)
(*) [AS07] sections 2.3 a 2.7 & 3.
4. Competition in Network Industries
   A. The Vertical Nature of a Network Industry
   B. Access Charges in One-Way Access
   C. Network Unbundling
   D. Non Pricing Discriminatory Practices: Sabotage

References
(*) [AS07] section 5.


5. Private Public Partnerships - PPP’s
   A. Introduction (Yardstick Competition, Biddings)
   B. Concessions in Infrastructure
   C. Privatizations of Utilities
   D. Renegotiation in PPP programs

References

6. Regulatory Pricing in Practice
A. Rate of Return and Price Caps
B. The Efficient Firm Model

References
(*) [LT93] pp. 35-70.
I. Objective

This is a course designed as a graduate level introduction to International Economics and some relevant topics or applications on Open Economy Monetary Economics. The course strengthens the intuition and modelling techniques related to current account, the effects of the monetary policy, the exchange rate determination, optimal exchange rate regimes and balance-of-payments crises, among others.

II. Schedule

Classes: Tuesday and Thursday from 10:00 to 11:20, room D15.
Office hours: by appointment.

III. Evaluation

One midterm 35% (09/08/2015), assignments (10% - average), presentation (25%) and a final exam (30%).

IV. Bibliography


V. Course Outline

1) The basic intertemporal model for a small open economy.
   a) Capital mobility, price distortions and non-traded goods.
      • (*Vegh, Carlos A. Open Economy Macroeconomics in Developing Countries. Ch. 1, 2, 3, 4.
2) Introducing money in the basic model.

- (*) Vegh, Carlos A. Open Economy Macroeconomics in Developing Countries. Ch. 5.

a) Money demand and supply. Time inconsistency


3) Credibility and reputation


4) The monetary approach to the Balance of Payments

(*) Vegh, Carlos A. Open Economy Macroeconomics in Developing Countries. Ch. 6.

5) Exchange rate regimes

(*) Vegh, Carlos A. Open Economy Macroeconomics in Developing Countries. Ch. 11.


I. Objectives

The course has two parts. The first part is mainly about search and matching models in the labor market. These models can explain the existence of unemployment and wage dispersion in labor markets with search frictions. They are also useful for the analysis of labor market policies like unemployment insurance, the effect of hiring and firing costs, etc.

The second part of the course is about topics related to Economics of the Family and Economics of Crime, two important fields in labor economics. We will cover different theories and recent empirical applications.

II. Schedule

Classes: Monday, Wednesday 1:30-2:50 pm.
Office hours: By appointment

III. Course Requirements/Grading

Four problem sets

IV. Course Outline

FIRST PART
* denotes required reading.

1. Marriage and Divorce

A. Stylized facts and theory


B. Marriage dynamics and fertility


C. Divorce


**Wolfers, Justin (2006), "Did Unilateral Divorce Raise Divorce Rates? A Reconciliation and New Results." American Economic Review, 96, 5.**

2. Economics of Crime

A. The economic model of crime


B. Police and deterrence effects


C. Prison and incapacitation


D. Crime and demography


E. Socioeconomic determinants of crime


SECOND PART

General References


1. Introduction and unemployment duration data

Alvarez and Shimer (2015) Decomposing Duration Dependence in a Stopping Time Model, mimeo, University of Chicago


Juhn, Chinhui, Kevin Murphy and Robert H. Topel, (1991) "Why Has the Natural Rate of Unemployment Increased over Time?" Brookings Papers on Economic Activity, 0(2) pp.75- 126

Meyer (1990), Unemployment Insurance and Unemployment Spells, Econometrica.


2. Dynamic Programming and Optimal Search


*Rogerson, Shimer and Wright (2005), pp 5-15.

3. Random Search and Wage Posting Models


4. Diamond-Mortensen-Pissarides Models


*Albrecht, Navarro, and Vroman (2009), The Effects of Labor Market Policies in an Economy with an Informal Sector, Economic Journal

5. Directed Search Models


6. Business Cycles and Unemployment


Carrillo-Tudela and Visschers (2013) “Unemployment and Endogenous Reallocation during the business cycle”, mimeo


Shimer (2012), Reassessing the Ins and Outs of Unemployment, Review of Economic Dynamics.


7. Related models
A. Efficiency wages


B. Policy applications


I. Objective

The goal of this class is to understand the link between the economy, the environment and the role of the government. The specific topics we will cover are externalities, public goods, regulation of the environment through taxes, pollution permit systems and command and control policies, both under certainty and under uncertainty. In the second part of the course we will go over cost-benefit analysis and study different methods to measure the benefits. In the last part of the course we will cover some topics on renewable and non-renewable natural resources.

II. Logistics

Class Time: Tuesday and Thursday 11:30 to 12:50.

Class Location:

Office hours: by appointment.

III. Class Evaluation

- Midterm 1 40% October 1st.
- Class Participation 10%
- Problem Sets (4) 25% TBA
- Paper Presentation 25% TBA

1- You can work in groups for the problem sets but each of you must submit your own homework. You are not allowed to copy the problem set of someone else, even if you worked with that person. Moreover, I encourage you to take the homework seriously, since it serves as a study guide for the course.

2- All problem sets are due in the beginning of the class and I will not accept them late. So, please do not even bother asking for extensions.

3- Each student is required to choose a paper marked with (**) from part 4 of the program and present it in class. Presentations are 30-40 minutes. The professor will assign the date depending on the paper. Students have to choose the paper during the first two weeks of classes.

IV. Textbooks


The main book for this class is Kolstad (2010). However, I will cover each topic with different sources. You can find the references in the outline of the course. The references marked with an asterisk (*) are required reading.
V. Course Outline

1. Introduction. ¿What is environmental economics?

References:
- KO Ch 1 and 2.

2. The markets and the Environment
   a) Efficiency.
   b) Externalities.
   c) Public Goods.
   d) Property Rights.

References:
- KO capítulo 4 y 5.

3. Regulation of the environment.
   a) Command and Control.
   b) Taxes and subsidies.
   c) Tradable pollution permits.
   d) Pollution permits allocation.
   e) Prices vs Quantities.
   f) Risk.
   g) Market power.

References:
- KO Ch 11, 12, 13, 14 y 15.
   a) Cost-benefit analysis.
   b) Valuation.
      - Revealed preferences.
      - Travel Cost Method.
      - Contingent valuation.

References:
- Ko Chapters 6, 7, 8, 9 y 10.

Hedonic Price Indices

Health and mortality

**Defensive Expenditures**


**Travel Cost Method**

Contingent Valuation

5. Natural Resources: renewable and non-renewable.
References: