

Sustainable
Impact Analysis  SIA

COURSE BOOKLET

2021-2022



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CORE COURSES

Cost Benefit Analysis (3.5 credits, 18h lecture/16.5h tutorial)

Nicolas Astier

Semester: 1

Location: PSE – Campus Jourdan

The aim of this course is to provide students with the fundamental concepts and methods of cost-benefit analyses (CBA). The first part of the course derives the theoretical foundations of the main concepts behind cost-benefit analyses. It provides the necessary toolkit for understanding CBAs. The second part of the course focuses on empirical issues (e.g. methods for the valuation of non-market goods, quantitative methods for ex post evaluation). In order to familiarize with academic research and get a sense of how its results may be used in practice, students will be asked to prepare (by groups of 2 or 3) an oral presentation discussing a journal article.

Evaluation: written exam (first part, 50%) and oral presentation (second part, 50%)

References:

Boardman A., Greeberg, D. Vinning, A. and Weimar, D. Cost-Benefit analysis Concepts and Practice, Cambridge University Press

OCDE (2018), Cost-Benefit Analysis and the Environment : Further Developments and Policy Use, Éditions OCDE.

Otherwise, indicated at the end of the slides for each lecture.

Econometrics and Data Analysis (3 credits, 24h)

Angelo Secchi

Semester: 1

Location: PSE – Campus Jourdan

This course is an introduction to master level Econometrics. It covers linear regression with single and multiple regressors, non-linear effects and models for panel data. It also introduces non parametric techniques applied to density estimation and regression analysis. Applications and examples are developed using R, a language for statistical computing and graphics released under the GNU - General Public License developed by the Free Software Foundation.

Evaluation: final written exam (one for each part)

Reading to do before the start of the course: Stock, J. & Watson M., Introduction to Econometrics, first 3 chapters.

Industrial Organization & Regulation (3 credits, 24h)

Francis Bloch and guest lecturers

Semester: 1&2

Location: PSE – Campus Jourdan

The objective of the course is to provide an introduction to tools and methods to analyse the behaviour of firms on a market and the regulatory environment faced by firms. In addition, the student should be able to understand how these tools can prove useful to solve real world situations. The course covers Industrial organization, competition policy and regulation subjects, illustrated with concrete applications and case studies. In addition, exercises and problems will be given to help students understand the models analysed in the course.

Evaluation: 60% on the oral presentation of two case studies (one on antitrust and the other on regulation). These case studies can either be freely chosen by the students (with the approval of the instructor) or taken from a list proposed by the instructor.

40% on a final written take-home exam.

Pre-requisites: Students attending the course should have a good knowledge of microeconomics at the intermediate level, including the use of calculus to derive demand and production functions. We expect students to be proficient in the theory of the consumer and the theory of production. They do not need to know game theory or the theory of market equilibrium, as these will be covered during the courses.

References:

A useful reference in English is “Intermediate Microeconomics” by Hal Varian, 9th Edition (chapters 1-14 and 19-23). A useful reference in French is “Introduction à la Microéconomie” by Murat Yildizoglu (chapters 1-13). *Both books can be downloaded as pdf files.*

Risk and uncertainty and intertemporal choices (2 credits, 16h)

Catherine Bobtcheff

Semester: 1

Location: PSE – Campus Jourdan

The main objective of this class is to review the different tools allowing to deal with economic decisions in an uncertain and dynamic environment. The theory will be presented and several applications will be given (insurance, finance, investment decisions, role of asymmetric information...). An emphasis will be given on the value of information and on the timing of the investment decisions.

Outline of the class:

- I. Introduction
- II. Choice under uncertainty
- III. Demand and supply for insurance
- IV. Asymmetric information and information acquisition
- V. Intertemporal choices
- VI. Timing and flexibility of investment decisions

Evaluation: Final written exam (2h, without document). The make-up exam will be an oral.

The prerequisites are knowledge in:

- microeconomic theory (Varian, (2014), *Intermediate Microeconomics: A Modern Approach*, Ninth International Student Edition. WW Norton & Company, chapters 1 to 5
- probability theory (Schinazi, (2011), *Probability with statistical applications*, Springer Science & Business Media).

In the math class that you will attend this summer, the part on statistics and the part on static optimization should be mastered. In particular, you must be able to compute expected values for discrete and continuous random variables and solve a constrained optimization program (using Langrangien).

A preliminary bibliography is the following:

Dixit, Pindyck, 1994, *Investment under Uncertainty*, Princeton UP

Eeckhoudt, Gollier, Schlesinger, 2005, *Economic and Financial Decisions under Risk*, Princeton UP

Varian, (2014), *Intermediate Microeconomics: A Modern Approach*, Ninth International Student Edition. WW Norton & Company

Innovation & Intangible Asset Evaluation (2 credits, 16h)

Nathalie Sinclair Desgagné

Semester: 2

Location: PSE – Campus Jourdan

The course aims at providing students with an understanding of how intangible assets are included into economic decision-making and in particular, into economic impact assessments and cost benefit analyses. We will look at how, in practice, in the public and in the private sector, environmental and social impacts are quantified and sometimes monetized and what innovative tools have been produced to do so. The course will cover the variety of methods used to quantify and monetize these assets (stated-preference to revealed-preference). Once methods are covered, students will get to apply their knowledge and work on case studies.

Evaluation: Written exam and Oral presentation

Prerequisites: Cost Benefit Analysis and Econometrics and Data Analysis courses (both taught in S1)

Macroeconomics (2 credits, 18h)

Patrick Artus

Semester: 2

Location: PSE – Campus Jourdan

Part 1: Monetary policy: contemporary theory

Introduction: the traditional monetary policy models (Barro, Gordon, etc.)

Chapter 1: Transparency

Should central banks be transparent on their objectives and policies and on the future economic situation?

Chapter 2: Uncertainty

How should central banks behave in the event of uncertainty about monetary policy transmission mechanisms?

Chapter 3: Deflation

What triggers deflation? What monetary policy in the event of deflation?

Chapter 4: Asset prices

Should central banks react to changes in asset prices? Monetary policy and bubbles.

Chapter 5: Delegation of objectives and externalities

Can the fact that the central bank's objective differs from the social objective be justified by (domestic or external) externalities.

Chapter 6: Fiscal policy and monetary policy

What leadership? Fiscal dominance, fiscal policy ensuring monetary solvency.

Prerequisite: knowledge of macroeconomics at the bachelor's level (for example Blanchard, Cohen).

Part 2: The choice of exchange rate regime

Chapter 1: Intermediate exchange rate regimes are unstable

The different balance of payments crisis models.

Chapter 2: The choice of exchange rate regime when only monetary policy is taken into

account. Credibility; externality; currency war; symmetric and asymmetric shocks; the case of the euro zone: productive specialisation and currency areas.

Chapter 3: The choice of exchange rate regime when fiscal policy is taken into account. The conflicts between externalities (exchange rates, fiscal policies) and monetary coordination

Chapter 4: Impossible trinity, capital control. The return of capital controls to stabilise the international monetary system

Chapter 5: Are currency boards an efficient regime?

Chapter 6: Local currency debt - foreign currency debt (original sin). The choice between debt in local currency and in foreign currencies, and the consequences of the choice.

Prerequisite: knowledge of international economics e.g. a bachelor's degree (i.e. Krugman, Obstfeld).

Evaluation: Written final exam

Investment Decision (3 credits, 24h)

Clive Gallery, Isabelle Delarbre, Stéphanie Benhamou

Semester: 1

Location: PSE – Campus Jourdan

The course introduces the main tools used by corporations to run the appraisal and control process of their industrial investment projects. It focuses on cash flows from investment decisions, risk and uncertainty, and their impact on value creation on a global scale. The course is applied to a wide variety of industrial companies and also to companies from sectors such as social networks, bio-foods and medical care with real cases and examples.

Evaluation: To be confirmed

Organizational & Managerial Practices (2 credits, 16h)

Hélène Bovais

Semester: 2

Location: PSE – Campus Jourdan

The aim of this course is to provide the students with the sociological knowledge and toolbox necessary to navigate in organizations, gain the support of key stakeholders and achieve their projects. It helps understand and thus, influence organizational functioning, decision making and collective action. A mix of theoretical inputs, practical examples and games illustrates basic notions on human action in organizations, - whether individual or collective -, power, decision-making and control, as well as culture, cooperation and efficiency. The students are also taught a method of organizational diagnosis called Strategic Analysis of Organizations (or stakeholders' analysis) useful for problem solving and change management. This method is applied on case studies and if possible, on the capstone projects.

Evaluation: Homework and project based on the capstone.

Pre reading: Organizations and collective action: our contribution to organizational analysis, by Michel Crozier and Erhard Friedberg, 1995

References:

Dupuy F., 2018, Are we all lost in management? On Management Thinking Derailers, Diateino

Business for the 21st century: Towards Simplicity and Trust, by François Dupuy, Palgrave Macmillan, 2011, pp. 204

Actors and Systems. The Politics of Collective Action, by Michel Crozier and Erhard Friedberg, Chicago, The University of Chicago Press, 1980, (the French original published by Éditions Seuil in 1977), pp. VII + 333.

Power and Rules: The Organizational Dynamics of Collective Action, by Erhard Friedberg (Editor)

Project & Corporate Finance (2 credits, 16h)

Thomas Neumeister

Semester: 1

Location: ENPC

This course will introduce students to Project Finance, as developed by lenders to finance long term infrastructure projects. This financing technic will be introduced in the context of Public Private Partnerships (PPP).

Students will develop their understanding of Project Finance, and the differences with corporate finance and other financing alternatives. Students will increase their knowledge of key stakeholders in a project, of the key project risks, and of the required risk allocation among parties. This will also give them a knowledge of how project finance models are built, and of the key ratios that should be met.

Evaluation: Take home exam

Structured finance (2 credits, 16h)

TBD

Semester: 1

Location: PSE – Campus Jourdan

The objective of the class is to provide students with the tools to assess the value of the firm financial resources.

The first sessions will be focused on the three main financial asset categories:

- Debt
- Equity
- Options

The understanding of the rational used to value those assets will provide the building blocks that will be used to understand and value more complex instruments (convertible bonds, hybrid debt, etc.). The use of option theory will also provide us a useful tool to understand the financial structure of the firm.

Evaluation: exercises given at the end of each sessions. No final exam.

No particular prerequisites required. However, a basic knowledge of corporate finance will definitely help.

Useful readings:

On introduction to corporate Finance: "Principles of Corporate Finance ", Richard A. Brealey, Stewart C. Myers, Franklin Allen, McGraw-Hill Education

On options: "Options, Futures, and Other Derivatives", John C. Hull, Pearson

On options and corporate finance: "Options et finance d'entreprise", Thomas Bouvet, Henri Philippe, Economica (in French...)

FIELD COURSES

Digital transformation



Platform Economics (2.5 credits, 20h)

Jean Beuve

Semester: 2

Location: PSE – Campus Jourdan

The course aims to analyse the economic principles of platforms (two-sided and multi-sided markets). In the first part of the course, the basic concepts and principles of platform economics will be introduced and discussed. It will then consider the role of scale economies and network effects in determining the dynamics of platform competition and long-run industry structure. In the second part, value creation and ecosystem of platforms will be analysed both from theoretical and empirical perspectives, and also through examples of business models and competitive strategies of local and global companies. Finally, the course will derive implications for competition policy and regulation in two-sided markets with special focuses on the main challenges raised by platform economics (market dominance and merger control, role of data and privacy).

Expectations and Goals: After completing this class students should be able to: identify platforms / explain the functioning of a platform / identify network effects / evaluate direct and indirect network effects / analyse platform business models / evaluate platforms' behaviours / analyse platforms' competitive strategies

Evaluation: Oral presentations

Some references:

Armstrong, M. 2006. Competition in Two-Sided Markets. RAND Journal of Economics 37, 668-91.

Belleflamme, P. and Peitz, M. (2010). Industrial Organization. Markets and Strategies. Cambridge : Cambridge University Press. Chapter 22. Section 3.

Caillaud, B. and Jullien, B. 2003. Chicken & Egg: Competition among Intermediation Service Providers. Rand Journal of Economics 34, 309-328.

Evans, D.S. (2011). Platform Economics: Essays on Multi-Sided Businesses. Competition Policy International. Chapters 1 to 6.

Rochet, J.-Ch., and Tirole, J. 2002. Cooperation among Competitors: Some Economics of Payment Card Associations. Rand Journal of Economics 33, 549-570.



Data analytics (2 credits, 15h)

Marc-Arthur Diaye

Semester: 1

Location: PSE – Campus Jourdan

This course is an introduction to Data Analytics Methods and Technics. It starts with a scratch introduction to data analysis. It also covers data visualization and unsupervised learning models (PCA and Clustering). Applications and examples are developed using R and Dataviz software.

Evaluation: Oral presentation



Disruptive Business Models (4 credits, 15h)

Henri-Paul Rousseau

Semester: 1&2

Location: PSE – Campus Jourdan

The course aims at providing a solid understanding in disruptive business models and innovations; the

course also covers how firms react and are impacted by disruptive innovations by making a distinction between the challenges and opportunities for the incumbents and those of the disruptors. The goal is to familiarize students with selected theoretical and practical topics in disruptive innovations through the study of tools and methods used to detect and appraise disruptive changes and disruptive business model matter.

The course is divided into three parts. The first part will cover the key concepts, frameworks and analytical techniques associated with disruptive business models. The second part will review the main approaches to business model innovation and the last part will identify the main sources of disruption, the numerous business model patterns and the investment criteria used by venture capital and private equity funds as well as corporations to value and appraise disruptive business models.

Students will be asked to apply these concepts and tools by preparing and presenting a case study in front of a panel of professional investors.

The course will commence in a lecture format, followed by tutorial sessions with the professor; the role of the professor during the tutorial session process will evolve from being first a team partner, then a coach, a boss and finally a silent observer of each team's work. At the end of the course, students will be evaluated on three components: 1) the academic and business quality of their paper as appraised by both the professor and the panel of professional investors, 2) the duration of the professor's role as a silent observer (the more the better) and 3) the quality of the oral presentation. The objective is to simulate as much as possible a "real job working experience".

Main references:

Allan Afuah, « Business Model Innovation », second edition, Routledge, 2018

Osterwalder, Alexander and Yves Pigneur (2009). Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. OSF.

Gassmann, Oliver, Karolin Frankenberger and Michaela Csik (2014). The Business Model Navigator: 55 Models that Will Revolutionise Your Business. FT Publishing International.

Gassmann, Oliver, Karolin Frankenberger and Roman Sauer (2016). Exploring the Field of Business Model Innovation - New Theoretical Perspectives. Palgrave Macmillan, Cham. Springer International Publishing. https://doi.org/10.1007/978-3-319-41144-6_1

Energy and Ecological Transition



Economics of Climate Change (2 credits, 24h)

Franck Lecocq & H el ene Ollivier

Semester: 2

Location: PSE – Campus Jourdan

This is a field course focusing on the economics of climate change. This course explores the specific issues that arise with climate change and offers an in-depth presentation of how economists have contributed to the evaluation of damages, the design and evaluation of mitigation (and adaptation) policies, and the understanding of the international dimension.

Evaluation: Referee report (written, solo assignment)



Energy economics (2 credits, 15h)

Carine Staropoli & Florent Chiappini

Semester: 1

Location: PSE – Campus Jourdan

This course aims at giving students an overview of the New Energy Economics (dealing with liberalized and globalized energy markets) focusing on the issue of infrastructure. It examines public policies affecting energy markets (especially gas and electricity) and infrastructure (generation mix and security of supply). Adopting an IO perspective, it presents the supply chain value of the gas and electricity system, the competition, the regulation and the new business models of these industries, so as to better understand the context of investment decision. It studies the future challenges of energy sector based on the innovations that will deeply transform offer and supply conditions of energy and impact investment decision (smart grids, big data, storage batteries for electricity, CO2 capture and storage). CBA is often used in the energy sector but need to be adapted to the technical, regulatory, political specificities of the gas and electricity systems, notably when the projects are developed as demonstrators (typically for smart grid projects).

Evaluation: Project (paper of 7-10 pages + oral presentation)

Reference:

T-O L eautier "Imperfect Markets and Imperfect Regulation". The MIT Press. 2018



Natural Resources & development (2 credits, 20h)

Katheline Schubert & Fran ois Libois

Semester: 1

Location: PSE – Campus Jourdan

Sustainable development is a broad-ranging concept rather than a narrowly defined field of study. As a result, this course is broad in scope, providing an overview of the underlying principles, beliefs and issues and their interconnections. But this course also addresses specific issues in economic/environmental sustainability.

The first part of the course thus presents (i) the theory of natural non-renewable resources, with an emphasis on fossil fuels; the implication of their scarcity for the growth process: Are there physical limits to growth? What about intergenerational equity? Which economic policies can handle the fact that burning fossil fuels is polluting? (ii) the preservation of renewable natural resource stocks (fisheries, forests, water, biodiversity); (iii) the

sustainable development indicators, both on a theoretical point of view and on an empirical one.

The second part of this class will review the latest findings from climate change science, highlighting robust results and key uncertainties about the climate system, the impacts of climate change and the costs of action; provide an update on the current initiatives to address climate change (among others, existing schemes to manage greenhouse gas emissions and status of on-going post-Kyoto negotiations) and discuss how the economist toolbox (such as discounting, valuation of environmental resources or economic instruments to mitigate externalities) can provide insights on key decisions about the climate problem, such as (i) What should developing countries do, if any, with regard to climate change given their limited resources and the importance of other short-term challenges they are facing; (ii) Is there a rationale for early action in the presence of long-term uncertainties on climate change damages?; (iii) What kind of instrument should be introduced to induce mitigation: tax vs. permit? and (iv) Which lessons can be drawn from the implementation of a cap-and-trade scheme? As an illustrative example forest management will be studied in depth: how to make plantation decisions in the context of uncertainty about climatic conditions in the future? How to balance the management of forests between market- and non-market benefits on climate change? Who will likely be hit hardest by climate change and lack the resources to adapt?

Evaluation: Written exam



Water, sanitation and waste management economics (2 credits, 15h)

Mouez Fodha and Maria Salvetti

Semester: 2

Location: PSE – Campus Jourdan

The course introduces theory, principles and techniques of economics relevant to solid waste and to water resources decision-making. The focus is on fundamentals of theory and their application to a range of challenges in solid waste and water resources management. The first part of the course provides an overview of the municipal solid waste management situation covering key elements of the waste management system, with its economic, environmental, financial and institutional aspects. The course will present the governance aspects of the municipal solid waste management system. It also covers public policy issues and the opportunities for a circular and green economy. The content of the second part of the course introduces to the subject of water economics. The course will provide a set of analytic tools that will be useful for water issues or natural resource issues more broadly. In particular, students will learn about non market valuation methods, water rights, water use and pricing, groundwater management, urban water use, and water markets. This will also show how economics is used in policy and cost-benefit analysis, the roles of water marketing and water pricing.

Evaluation: Home exam

Healthcare in Ageing Societies



Health Economics – 2.5 credits, 21 hours

Lise Rochaix

Semester: 1

Location: Online & PSE – Campus Jourdan

Health economics is an applied field of economics that fosters the systematic and rigorous examination of the problems faced in promoting health for all. It draws on microeconomics (theories of consumer, producer and social choice) and econometrics, and studies the behavior of individuals, health care providers, public and private organizations, as well as governments in decision-making. It aims at informing the public and private sector on the most efficient, cost-effective and equitable course of action. It ranges from the analysis the determinants of individual behavior regarding health to the economic evaluation of new technologies, as well as the study of appropriate payment schemes, anti-trust policy, optimal public and private investment and strategic behavior.

This course aims at presenting the range of issues addressed in health economics, from efficiency to equity, from individual choices to public decision, from microeconomic decisions to global health. It analyses how the markets for health services differ from others, with an emphasis on market failures and the role of health policy. Key health economic concepts are presented, such as the demand for health and health care, insurance, optimal provider payments, or innovation. One of the strong underlying questions in this course is to examine the role of the market for the provision of health and health services and the ways in which public policy can influence these markets. Another is be the comparison between developed and developing countries' challenges. A third underlying question is to assess the potential of recent methodological developments in enhancing economists' understanding of individual behaviors and their determinants, based on recent developments in behavioral economics. The course will also include a short presentation of socio-economic calculus applied to healthcare.

Sessions will include formal lectures with interactions with students. For some of the sessions, post-doctoral or doctoral students as well as researchers at PSE will be invited to participate.

Evaluation: to be confirmed

Handbooks:

-Glied S. and P. Smith, 'Oxford Handbook of Health Economics', Paperback 2013.

-Jay Bhattacharya, Peter Tu, Timothy Hyde, Health Economics, 2013, Palgrave MacMillan

-Folland, Goodman and Stano, The Economics of Health and Health Care, 2017, Routledge

Advanced:

-Pauly M., McGuire Th. and P. Pita Barros, 'Handbook of Health Economics', North Holland, Dec. 2011.

-Elgar Companion to Health economics, A. Jones (ed.), Second edition, 2012.

-Jones A.M. (2012) Health Econometrics. In: Palgrave Macmillan (eds) The New Palgrave Dictionary of Economics. Palgrave Macmillan, London, ISBN : 978-1-349-95121-5

Other references:

Additional references will be given for each session, with on average two papers to read in advance per session: a seminal paper and a recent contribution – published or not.



Aging and health – 2 credits, 15 hours

Benoit Rapoport

Semester: 2

Location: PSE – Campus Jourdan

The course will provide a critical discussion of the main topics around the link between ageing and health. It will borrow from the most recent literature, both theoretical and empirical, in economics, demography, epidemiology... A first part will analyse ageing measures from an individual perspective. Life tables, healthy ageing, ageing and work, disability will be studied. The second part will be devoted to population ageing, aiming at examining the consequences of ageing at the more global level of the economy, in particular in terms of financing.

Evaluation: to be confirmed

References:

On health economics/IO:

Pauly, M V., Mcguire T G. and Barros, P P. (eds), Handbook of Health Economics, Volume 2, Elsevier, 2012.

On econometrics:

Angrist, J. D., & Pischke, J. S. (2008). Mostly harmless econometrics: An empiricist's companion. Princeton university press.



Regulation in healthcare – 2 credits, 15 hours

Daniel Herrera

Semester: 2

Location: PSE – Campus Jourdan

The course aims at providing a solid grounding in understanding regulation in Health Care markets. The goal is to familiarize students with selected theoretical and empirical topics in health care. Case studies will be analysed during the course. At the end of the course, students will be able to underpin the economic reasons under which regulation in health might be justified and their implications. Case studies will provide a practical understanding of how health care regulations play out in a real-world environment.

Evaluation: to be confirmed

References:

On health economics/IO:

Pauly, M V., Mcguire T G. and Barros, P P. (eds), Handbook of Health Economics, Volume 2, Elsevier, 2012.

On econometrics:

Angrist, J. D., & Pischke, J. S. (2008). Mostly harmless econometrics: An empiricist's companion. Princeton university press.

Smart cities

**Transport Economics - 2 credits, 18 hours**

Nicolas Coulombel

*Semester: 2**Location: PSE – Campus Jourdan*

This course aims to introduce students to transport economics, and to the use of cost-benefit analysis in the transport sector. The key notions of transport economics are first presented (e.g. travel demand, generalized cost of travel, value of time...). Then, students are taught how cost-benefit analysis puts all these notions to use. Several related issues are covered, such as the place of cost-benefit analysis in the design and evaluation of transport projects, governance.... The course addresses basic theoretical aspects as well as methodological aspects (travel demand modelling, emergence of big data in transport studies and in economic appraisal...). Several case studies are also discussed (Grand Paris Express, London's Crossrail...).

Evaluation: The course will be evaluated based on a class presentation (50% of the final mark), home assignments (25%) and attendance and involvement during classes (25%)

Pre-requisites:

Knowledge in microeconomics & IO

Mathematical analysis: analytical functions, convex optimization, Lagrangian

References:

Varian, (2014), *Intermediate Microeconomics: A Modern Approach*, Ninth International Student Edition. WW Norton & Company

**Urban Economics – 2.5 credits, 20 hours**

Camille Hemet, Laurent Gobillon

*Semester: 2**Location: PSE – Campus Jourdan*

This course provides an overview of urban economics and explains how to conduct local policy evaluation with the help of concrete examples drawn from the economic literature. The working of the city will be examined with stylized facts and lectures on agglomeration economies, urban mechanisms and equilibrium effects. Motivations for urban policies will then be developed and programs meant to foster development and help the poor will be discussed. An emphasis will be put on evaluation methods such as difference-in-differences and propensity score matching. Programs examined in more detail will include the implementation of enterprise zones, urban renovation tools, support for residential mobility, and transportation policies.

Evaluation: Home exam

References:

Microeconomics theory, Mas-Colell

Econometric analysis, Greene

Econometrics analysis of cross-section and panel data, Wooldridge