Course Economic Regulation

Academic Year: 2017/2018

Instructor(s): Aníbal Santos

Course Description:

Introduction to the economics of network industries (electricity, natural gas, telecommunications and water supply). Main Economic Regulatory models (without and with incentives) of companies subject to regulation. Incentives to OPEX and CAPEX. Pricing theory for network industries and applications to real cases. Privatization, unbundling and liberalization of network industries.

Course Content:

I. MARKET FAILURES AND TECHNOLOGICAL FAILURES: NETWORK INDUSTRIES (PUBLIC UTILITIES)
   I.1. Economic Regulation: An Introduction
   I.3. Principles of Economic Regulation
      I.3.1. The Fundamental Economic Goal of Regulation
      I.3.2. The Competitive Ideal
      I.3.3. Factors that Preclude a Competitive Outcome: Technological Failure
         I.3.3.1. Introduction
         I.3.3.2. Technological Definition of Natural Monopoly
      I.3.4. The Regulator’s Pricing Challenge
      I.3.5. Objectives of Regulation and Specific Controls
   I.4. Privatization, Liberalization and Economic Regulation: The Case of Public Utilities

II. REGULATION OF PRIVATE MONOPOLIES IN NETWORK INDUSTRIES (Electricity, Natural Gas, Telecoms and water supply)
II.1. Private Monopolies and Economic Regulation.
II.2. Rate of Return Regulation
   II.2.1. Regulated Company vs Non Regulated Company
   II.2.2. The Averch-Johnson Model
   II.2.3. Impact of Economic Regulation on Global Welfare: Optimal Rate of Return
   II.2.4. Graduated Rate of Return
II.3. Price-Cap Regulation
   II.3.2. Rate of Return vs Price-Caps
   II.3.3. Information Problems and Yardstick Competition
II.4. Incentive Regulation and Efficiency
II.5. Finance and Regulation
   II.5.1. Cost of Capital and Capital Structure
   II.5.2. Regulatory Risk and the Cost of Capital

III. NETWORK INDUSTRIES ECONOMICS (PRICING IN ENERGY, TELECOMS AND WATER SUPPLY COMPANIES)
III.1. Price Regulation by a Fully Informed Regulator
III.2. Linear Tariffs
   III.2.1. Marginal Cost Pricing – Incremental Cost Pricing
   III.2.2. Ramsey – Boiteux Pricing
   III.2.3. Fully Distributed Cost Pricing
   III.2.4. Distributional Issues and Ramsey – Boiteux Pricing
   III.2.5. Peak–Load Pricing:
       III.2.5.1. Introduction
       III.2.5.2. Single Technology
       III.2.5.3. Peak–Load Pricing: Boiteux-Steiner Model and Extensions
       III.2.5.4. Peak–Load Pricing and Technology
           III.2.5.4.1. Fixed-coefficient production technologies
           III.2.5.4.2. Diverse Technology
III.3. Nonlinear Tariffs
III.3.1. Introduction

III.3.2. Motivations, Practical Outcomes and Basic Concepts

III.3.3. Two-Part Tariffs: Concepts and Models (Schmalensee and Oi)
   III.3.3.1. Introduction
   III.3.3.2. Two-Part Tariffs: Basic Model
      III.3.3.2.1. The Rational for two part tariffs
      III.3.3.2.2. Two-part Tariffs (Schmalensee)
      III.3.3.2.3. Two-part Tariffs (Oi)

III.3.4. Uniform Pricing vs Nonlinear Pricing
   III.3.4.1. Introduction with Examples
   III.3.4.2. A General Formulation

IV. ECONOMICS OF PRIVATIZATION: AN INTRODUCTION

IV.1. Privatization and Market

IV.2. Arguments on Privatization

IV.3. Positive Theory of Privatization
   IV.3.1. Introduction
   IV.3.2. Efficiency and Privatization
   IV.3.3. Partial Privatization
   IV.3.4. Privatization and Pricing

IV.4. Privatizing Network Utilities
   IV.4.1. Privatization, Restructuring and Regulation
   IV.4.2. Privatization and Liberalization
   IV.4.3. Determinants of Successful Utility Privatization
   IV.4.4. Lessons Learned

V. LIBERALIZATION, UNBUNDLING AND ECONOMIC REGULATION OF NETWORK INDUSTRIES: COMPLEMENTARY TOPICS

V.1. Introduction
   V.1.1. Main Economic Characteristics of Network Utilities
   V.1.2. Network Utilities and Ownership: Competition and Liberalization
   V.1.3. Introducing Competition in Network Utilities

V.2. Access Pricing Rules
V.2.1. Vertically Related Markets
V.2.2. Complementarities and Interconnecting policy
V.2.3. Access Pricing: One Way Access
  V.2.3.1. Introduction
  V.2.3.2. ECPR (Efficiency Component Pricing for Access)
  V.2.3.3. EAP (Efficient Access Pricing: A General Model and Relationship to the ECPR)
  V.2.3.4. Application: Second-Degree Price Discrimination in the Retail Segment

V.3. Externalities and Ramsey-Boiteux Pricing
The Budget-Constrained Public Enterprise

Course Objectives:

To give a deep training, based on elementary microeconomics, to work with network companies (electricity, natural gas, telecoms and water supply) and official agencies (regulators and others). To fill the gap between theoretical training and company’s needs.

Grading:

Final Grade = Average (simple) of Exams

Bibliography:

I. MARKET FAILURES AND TECHNOLOGICAL FAILURES: NETWORK INDUSTRIES (PUBLIC UTILITIES)


II. REGULATION OF PRIVATE MONOPOLIES IN NETWORK INDUSTRIES
(Electricity, Natural Gas, Telecoms and water supply)


BAUMOL, W. and A. KLEVORICK, "Input Choices and Rate of Return Regulation: An overview of the discussion", Bell Journal of Economics, Autumn 1970


CURIEN, N. and M. GENSOLLEN, "Economie des Télécommunications" Economica, 1992


KLEVORICK, A., "The Optimal Fair Rate of Return", Bell Journal of Economics, Spring 1971


PHILLIPS, C.F. "The Regulation of Public Utilities", Public Utilities Reports, 1993


SANTOS, A. "Models of Privatization and Market Structure", in ECONOMIA, Jan 1989


III. NETWORK INDUSTRIES ECONOMICS (PRICING IN ENERGY TELECOMS AND WATER SUPPLY COMPANIES)


REES, R., “Public Enterprise Economics”, Weidenfeld and Nicolson, 1976


IV. ECONOMICS OF PRIVATIZATION: AN INTRODUCTION

AMARAL, L. MIRA and ANÍBAL SANTOS, “Privatização e Reestruturação dos Sectores Industrial e Energético”, Estudos DGI, Lisboa, 1995 (in portuguese)


SANTOS, A., “Empresas Públicas, o Comportamento dos Gestores e a Decisão de Privatizar”, Anuário do Economista 1996 (in portuguese)


V. LIBERALIZATION, UNBUNDLING AND ECONOMIC REGULATION OF NETWORK INDUSTRIES: COMPLEMENTARY TOPICS


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