

Intitulé du cours

Course title – Intitulé du cours	Advanced Microeconomics
Level / Semester – Niveau /semestre	M1/S2
School – Composante	Ecole d'Economie de Toulouse
Teacher – Enseignant responsable	David MARTIMORT - Part 1
Other teacher(s) – Autre(s) enseignant(s)	Alexey SMOLIN – Part 2
Other teacher(s) – Autre(s) enseignant(s)	
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Other teacher(s) – Autre(s) enseignant(s)	
Lecture Hours – Volume Horaire CM	30h
TA Hours – Volume horaire TD	0
TP Hours – Volume horaire TP	0
Course Language – Langue du cours	English
TA and/or TP Language – Langue des TD et/ou TP	

PART 1

Teaching staff contact :

David MARTIMORT – david.martimort@tse-fr.eu

Course Objectives :

The objective of these lectures is to give you a first overview of the Modern Theory of the Firm. To better understand why firms do exist, what are their boundaries and what are their roles in the economy, it is useful to go beyond the exclusive analysis of the price mechanism as the sole mechanism to allocate resource in the economy. We will thus analyze models where the firm is bound by contracts with various stakeholders and those contracts are plagued with major frictions (asymmetric information, moral hazard, incompleteness, imperfect commitment.)

Prerequisites – Pré requis :

The objectives of these lectures is to give you a first overview of the Modern Theory of the Firm. On a case-by-case basis, I might use material from the following textbook and it is probably good to have knowledge of this material.

Practical information about the sessions:

Lecture 0: From the Neoclassical Firm to the Modern Theory of the Firm: A Brief History of Economic Thought.

- The neoclassical view of the firm.
- The price mechanism. Arrow-Debreu paradigm. Modigliani and Miller's irrelevance of the capital structure.
- The caveats :
 - X-inefficiency.
 - Team Theory.
 - Agency Problems.
 - Transaction Costs.

References.

Arrow, K. and G. Debreu (1954). Existence of an Equilibrium for a Competitive Economy, *Econometrica*, 32: 265-290.

Lecture 1: The Firm and its Customers

- Motivation for nonlinear pricing, examples, practical use, feasibility.
- Pricing under complete information.
 - First-degree price discrimination.
 - Third-degree price discrimination. Costs and benefits.
- Pricing under asymmetric information: Second-Degree price discrimination.
 - A simple example with two-part tariffs and two types of consumers.
 - Some words on the Revelation Principle.
 - The model with a continuum of types of consumers. Optimization. Conditions for price discounts.

References.

Laffont, J.J. and D. Martimort (2002), *The Theory of Incentives: The Principal-Agent Analysis*, Chapters 2, 3. Princeton University Press.

Maskin, E. and J. Riley (1984). Monopoly with Incomplete Information. *The RAND Journal of Economics*, 15: 171-196.

Mussa, M. and S. Rosen (1978). Monopoly and Product Quality. *Journal of Economic Theory*, 18: 301-317.

Myerson, R. (1982). Optimal Coordination Mechanisms in Generalized Principal-Agent Problems. *Journal of Mathematical Economics*, 10: 67-81.

Varian, H. (1985). Price Discrimination and Social Welfare. *The American Economic Review*, 75: 870-875.

Wilson, R. (1993). *Nonlinear Pricing*. Oxford University Press.

Lecture 2: The Firm and the Regulatory State

- Why do we regulate public utilities?
- The Old Regulatory Paradigm with complete information. Marginal cost pricing, Ramsey-Boiteux pricing.
- Incentive Regulation under asymmetric information.
 - The Rent-Efficiency trade-off.
 - Cost-reimbursement rules. Fixed-price versus cost-plus contracts.
 - A few words on the economic institutions of regulation.

References.

- Baron, D. (1989). Design of Regulatory Mechanisms and Institutions. In Handbook of Industrial Organization, Vol. 2, 1347-1447.
- Baron, D. and R. Myerson (1982). Regulating a Monopolist with Unknown Costs. *Econometrica*, 50: 911-930.
- Decker, C. (2014). *Modern Economic Regulation*. Cambridge University Press.
- Estache, A. and D. Martimort (1999). Politics, Transaction Costs, and the Design of Regulatory Institutions. In *Regulatory Policy in Latin America: Post-Privatization Realities*, L. Manzetti ed. (2000).
- Laffont, J.J. and D. Martimort (2002), *The Theory of Incentives: The Principal-Agent Analysis*, Chapters 2, 3. Princeton University Press.
- Laffont, J. J. and J. Tirole (1986). Using Cost Observation to Regulate Firms. *The Journal of Political Economy*, 94: 614-641.
- Laffont, J.J. and J. Tirole (1993), *A Theory of Incentives in Procurement and Regulation*. MIT Press.

Lecture 3: Managers and Shareholders: The Insurance versus Incentives Trade-Off

- How to design compensations for managers and why is it useful?
- The Insurance versus Incentives Trade-Off and the shape of optimal contracts.
- Career concerns on the labor market.

References.

- Allen, F. and D. Gale (2000). *Comparing Financial Systems*. MIT Press.
- Fama, E. (1980). Agency Problems and the Theory of the Firm. *The Journal of Political Economy*, 88: 288-307.
- Grossman, S. and O. Hart (1983). An Analysis of the Principal-Agent Problem. *Econometrica*, 51: 7-46.
- Hart, O. and B. Holmström (1987). The Theory of Contracts. In *Advances in Economic Theory: Fifth World Congress*, 155.
- Holmström, B. (1979). Moral Hazard and Observability. *The Bell Journal of Economics*, 74-91.
- Holmström, B. (1999). Managerial Incentive Problems: A Dynamic Perspective. *The Review of Economic Studies*, 66: 169-182.
- Jensen, M. and W. Meckling, (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3: 305-360.
- Jewitt, I. (1988). Justifying the First-Order Approach to Principal-Agent Problems. *Econometrica*; 56: 1177-1190.
- Laffont, J.J. and D. Martimort (2002), *The Theory of Incentives: The Principal-Agent Analysis*, chapters

Lecture 4: Corporate Governance: The Firm and its Financiers:

- The optimality of debt contracts.
 - Non-verifiable income. The costly-state verification model.
 - Verifiable income. The moral-hazard model.
- What determines outside financing capacity? Credit rationing and moral hazard.
- Investors as active monitors.

References.

- Gale, D. and M. Hellwig (1985). Incentive-Compatible Debt Contracts: The One-Period Problem. *The Review of Economic Studies*, 52: 647-663.
- Innes, R. (1990). Limited Liability and Incentive Contracting with Ex Ante Action Choices. *Journal of Economic Theory*, 52: 45-67.
- Laffont, J.J. and D. Martimort (2002), *The Theory of Incentives: The Principal-Agent Analysis*, Chapter 3. Princeton University Press.
- Tirole, J. (2006), *The Theory of Corporate Finance*. Princeton University Press.
- Townsend, R. (1979). Optimal Contracts and Competitive Markets with Costly State Verification. *Journal of Economic Theory*, 21: 265-293

Lecture 5: The Boundaries of the Firm

- Contract incompleteness as an explanation for ownership structures. Motivation and examples.
- The Property Rights Approach on the firm's boundaries.
 - Asset specificity and the hold-up problem.
 - The costs and benefits of vertical/lateral integration.
- The Selective Intervention Approach on the firm's boundaries.
 - Hold-up and contracts.
 - The privatization debate revisited. The irrelevance of ownership structures with complete contracts.
 - The trade-off between ex ante and ex post incentives.

References.

- Coase, R. (1995). The Nature of the Firm. In *Essential Readings in Economics* (37-54). Palgrave, London.
- Grossman, S. and O. Hart. (1986). The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration. *The Journal of Political Economy*, 94: 691-719.
- Hart, O. (1995). *Firms, Contracts, and Financial Structure*. Clarendon Press.
- Laffont, J.J. and D. Martimort (2002), *The Theory of Incentives: The Principal-Agent Analysis*, Chapter 7. Princeton University Press.
- Riordan, M. and O. Williamson (1990). What is Vertical Integration? In Masahiko Aoki, Bo Gustafsson and Oliver E. Williamson (eds.), *The Firm as a Nexus of Treaties*, 94-111. Sage Publications.
- Sappington, D. and J. Stiglitz (1987). Privatization, Information, and Incentives. *Journal of Policy Analysis and Management*, 6: 567-585.
- Tirole, J. (1986). Procurement and Renegotiation. *The Journal of Political Economy*, 94: 235-259.
- Whinston, M. (2003). On the transaction cost determinants of vertical integration. *Journal of Law*,

Economics, and organization, 19(1), 1-23.
Williamson, O. (1975). Markets and Hierarchies: Analysis and Antitrust Implications. The Free Press.
Williamson, O. (1985). The Economic Institutions of Capitalism. The Free Press.

Grading system:

There will be a problem set to be done by the end of the class. There will be a final exam with questions from both parts of the course.

PART 2

1. Instructors:

Alex Smolin, alexey.v.smolin@gmail.com;

Office hours: By appointment.

2. Course description:

This course is to introduce some topics in game theory and its applications, especially about a class of games with incomplete information, and its applications. The target students are those who are in M1 and want to do research in economic theory and its applications.

3. Objective:

The goal is to make students familiar with some topics in games with incomplete information so that they can independently digest/evaluate academic papers in those or relevant topics.

4. Prerequisites:

Although there is no formal prerequisite, we would assume some basic mathematical knowledge (algebra, analysis, probability, etc). Also, basic knowledge of game/contract/mechanism design theory would be helpful.

5. Evaluation:

Based on a few problem sets and a final exam. At most 30% of the grade is by the problem sets, and the rest is by the final exam. Also, too many late arrivals and non-attendance may affect the grade.

6. References:

Fudenberg and Tirole (1991), Game Theory, MIT Press.

Tadelis (2013), Game Theory: An Introduction, Princeton University Press.

Myerson (1991), Game Theory: Analysis of Conflict, Harvard University Press.

7. Course outline:

- (1) (Static) games of incomplete information, Bayesian equilibrium.
- (2) Applications: Adverse selection in trading, Auctions, Information aggregation in markets, Global games