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### Theoretical Industrial Organization

Course title – Intitulé du cours	<b>Theoretical Industrial Organization</b>
Level / Semester – Niveau /semestre	M2 ETE / 2nd Semester
School – Composante	Ecole d'Economie de Toulouse
Teacher – Enseignant responsable	Doh-Shin Jeon
Other teacher(s) – Autre(s) enseignant(s)	Patrick Rey
Other teacher(s) – Autre(s) enseignant(s)	Stéphane Caprice
Lecture Hours – Volume Horaire CM	30 hours
TA Hours – Volume horaire TD	
TP Hours – Volume horaire TP	
Course Language – Langue du cours	English
TA and/or TP Language – Langue des TD et/ou TP	

#### **Teaching staff contacts – Coordonnées de l'équipe pédagogique :**

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#### **Course Objectives – Objectifs du cours :**

Introduction to an advanced level of theoretical industrial organization. Patrick covers vertical relations, Doh-Shin covers two-sided markets, tying and economics of Intellectual Property, Stéphane covers competition among multiproduct firms and buyer power.

#### **Prerequisites – Pré requis :**

Basic game theory.

#### **Practical information about the sessions – Modalités pratiques de gestion du cours :**

Patrick teaches 3 weeks, Stéphane 2 weeks and Doh-Shin 5 weeks.

#### **Grading system – Modalités d'évaluation :**

Final exam.

## Plan and Bibliography/references – Plan et Bibliographie/références :

### **A. Textbooks**

- Motta, Massimo (2004), *Competition Policy: Theory and Practice*. Cambridge University Press.
- Tirole, Jean (1988), *The Theory of Industrial Organization*, MIT.

### **B. Outline and references**

#### **Part I. Vertical relations (Patrick Rey, 3 weeks)**

##### **1. Introduction: vertical restraints, vertical integration and antitrust issues**

##### **2. Vertical coordination**

###### *Double marginalization*

- Telser, Lester (1960), "Why Should Manufacturer Want Fair Trade," *Journal of Law and Economics*, 3: 86-105.
- Rey, Patrick, and Jean Tirole (1986), "The Logic of Vertical Restraints," *American Economic Review*, 76: 921-939.

###### *Nonprice dimensions*

- Mathewson, Frank, and Ralph Winter (1984), "An Economic Theory of Vertical Restraints," *RAND Journal of Economics*, 15: 27-38.
- Comanor, William, and H.E. Frech III (1985), "The Competitive Effects of Vertical Agreements," *American Economic Review*, 75: 539-546.
- Caillaud, Bernard, and Patrick Rey (1987), "A Note on Vertical Restraints with the Provision of Distribution Services," Working Paper INSEE and MIT.

###### *Downstream agents*

- Bernheim, B. Douglas, and Michael D. Whinston (1985), "Common Marketing Agency as a Device for Facilitating Collusion," *RAND Journal of Economics*, 16: 269-281.
- Bernheim, B. Douglas, and Michael D. Whinston (1986), "Common Agency," *Econometrica*, 54: 923-942.
- Bernheim, B. Douglas, and Michael D. Whinston (1998), "Exclusive Dealing," *Journal of Political Economy*, 106: 64-103.

###### *Upstream agents*

- Hart, Oliver, and Jean Tirole (1990), "Vertical Integration and Market Foreclosure," *Brookings Papers on Economic Activity: Microeconomics*, 205-285.
- O'Brien, Daniel P., and Greg Shaffer (1992), "Vertical Control with Bilateral Contracts," *RAND Journal of Economics*, 23(3): 299-308.
- McAfee, R. Preston, and Marius Schwartz (1994), "Opportunism in Multilateral Vertical Contracting: Nondiscrimination, Exclusivity, and Uniformity," *American Economic Review*, 84(1): 210-230.
- Rey, Patrick, and Thibaud Vergé (2005), "Bilateral Control with Vertical Contracts," *RAND Journal of Economics*, 35(4): 728-746.
- Marx, Leslie, and Greg Shaffer (2007), "Upfront Payments and Exclusion in Downstream Markets," *RAND Journal of Economics*, 38: 823-43.
- Rey, Patrick, Jeanine Miklós-Thal and Thibaud Vergé (2011), "Buyer Power and Intra-brand Coordination," *Journal of the European Economic Association*, 9(4): 721-741.

- Rey, Patrick, and Michael D. Whinston (2013), "Does Retailer Power Lead to Exclusion?," *RAND Journal of Economics*, 44(1): 75-81.

### 3. Rivalry among vertical structures

#### *Strategic delegation*

- Bonanno, Giacomo and John Vickers (1988), "Vertical Separation," *Journal of Industrial Economics*, 36: 257-265.
- Rey, Patrick, and Joseph E. Stiglitz (1995), "The Role of Exclusive Territories in Producers' Competition," *RAND Journal of Economics*, 26: 431-451.
- Caillaud, Bernard, Bruno Jullien and Pierre Picard (1995), "Competing Vertical Structures: Precommitment and Renegotiation," *Econometrica*, 63: 621-646.
- Caillaud, Bernard, and Patrick Rey (1995), "Strategic Aspects of Vertical Delegation," *European Economic Review*, 39: 421-431.
- Slade, Margaret E. (1998), "Beer and the Tie: Did Divestiture of Brewer-owned Public Houses Lead to Higher Prices?," *The Economic Journal*, 108: 565-602.

#### *Facilitating practices*

- Jullien, Bruno, and Patrick Rey (2007), "Resale Price Maintenance and Collusion," *RAND Journal of Economics*, 38(4): 983-1001.

#### *Interlocking relationships*

- Rey, Patrick, and Thibaud Vergé (2010), "Resale Price Maintenance and Interlocking Relationships," *Journal of Industrial Economics*, 58(4): 928-961.
- Collard-Wexler, Allan, Gautam Gowrisankaran and Robin Lee (2018), "'Nash-in-Nash' Bargaining: A Microfoundation for Applied Work," *Journal of Political Economy*, forthcoming.
- Crawford, Gregory, Robin Lee, Michael D. Whinston and Ali Yurukoglu (2018), "The Welfare Effects of Vertical Integration in Multichannel Television Markets," *Econometrica*, 86(3): 891-954.
- Ho, Kate, and Robin S. Lee (2016), "Equilibrium Provider Networks: Bargaining and Exclusion in Health Care Markets," *American Economic Review*, forthcoming.
- Ho, Kate, and Robin S. Lee (2017), "Insurer Competition in Health Care Markets," *Econometrica*, 85(2): 379-417.
- Ghili, Soheil (2016), "Network Formation and Bargaining in Vertical Markets: The Case of Narrow Networks in Health Insurance," mimeo.
- Rey, Patrick, and Volker Nocke (2018), "Exclusive Dealing and Vertical Integration in Interlocking Relationships," *Journal of Economic Theory*, forthcoming.
- Rey, Patrick, and Thibaud Vergé (2016), "Secret contracting in multilateral relations," TSE Working Paper, n. 16-744.

### 4. Exclusionary practices

#### *Naked exclusion*

- Aghion, Philippe and Patrick Bolton (1987), "Contracts as a Barrier to Entry," *American Economic Review*, 77: 388-401.
- Rasmusen, Eric B., J. Mark Ramseyer and John S. Wiley (1991), "Naked Exclusion," *American Economic Review*, 81: 1137-1145.
- Segal, Ilya, and Michael D. Whinston (2000), "Naked Exclusion: Comment," *American Economic Review*, 90(1): 296-309.
- Fumagalli, Chiara, and Massimo Motta (2006), "Exclusive dealing and entry, when buyers compete," *American Economic Review*, 96(3): 785-795.

- Julian Wright (2005), "Exclusive Dealing and Entry, when Buyers Compete: Comment," *American Economic Review*, 99(3): 1070-81.
- Simpson, John, and Abraham L. Wickelgren (2007), "Naked Exclusion, Efficient Breach, and Downstream Competition," *American Economic Review*, 97: 1305-1320.
- Wright, Julian (2008), "Naked exclusion and the anticompetitive accommodation of entry," *Economics Letters*, 98(1): 107-112.
- Abito, Jose Miguel, and Julian Wright (2008), "Exclusive Dealing with Imperfect Downstream Competition," *International Journal of Industrial Organization*, 26: 227-246.
- Rey, Patrick, and William S. Comanor (2000), "Vertical Restraints and the Market Power of Large Distributors," *Review of Industrial Organization*, 17(2): 135-153.

#### *Vertical integration and foreclosure*

- Ordover, Janusz, Garth Saloner and Steven C. Salop (1990), "Equilibrium Market Foreclosure," *American Economic Review*, 80: 127-142.
- Hart, Oliver, and Jean Tirole (1990), "Vertical Integration and Market Foreclosure," *Brookings Papers on Economic Activity: Microeconomics*, 205-285.
- Rey, Patrick, and Volker Nocke (2018), "Exclusive Dealing and Vertical Integration in Interlocking Relationships", *Journal of Economic Theory*, forthcoming.
- Bolton, Patrick and Michael Whinston (1993), "Incomplete Contracts, Vertical Integration, and Supply Assurance," *Review of Economic Studies*, 60: 121-148.
- Chipty, Tasneen (2001), "Vertical Integration, Market Foreclosure, and Consumer Welfare in the Cable Television Industry," *American Economic Review*, 91(3): 428-453.
- Allain, Marie-Laure, Claire Chambolle and Patrick Rey (2016), "Vertical Integration as a Source of Hold-up," *The Review of Economic Studies*, 83(1): 1-25.

## **Part II: Multi-Product firms and buyer power (Stephane Caprice, 2 weeks)**

### **1. Competitive bundling**

- Belleflamme, P., and M. Peitz, *Industrial organization, markets and strategies*, Cambridge; Chapter 11, Bundling, in particular, Competitive bundling, 272-278.
- Chen, Y., 2007, Equilibrium Product Bundling, *The Journal of Business*, 70(1), 85-103.
- Hurkens, S., Jeon, D.-S., and Menicucci, D., 2019, Dominance and Competitive Bundling, *American Economic Journal: Microeconomics*, 11 (3): 1-33
- Matutes, Carmen, and Pierre Regibeau (1992), "Compatibility and bundling of complementary goods in duopoly," *Journal of Industrial Economics*, XL(1): 37-54.

### **2. Shopping costs**

- Chen, Z., and Rey, P., 2012, Loss Leading as Exploitative Device, *The American Economic Review*, 102(7), 3462-3482.

### **3. An introduction to buyer power**

- Chen, Z., 2003, Dominant retailers and the countervailing-power hypothesis, *Rand Journal of Economics*, 34, 612-625.

### **4. Buyer power, a focus on retail alliances**

- Inderst, Roman, and Greg Shaffer (2007), "Retail mergers, buyer power and product variety," *Economic Journal*, 117(516): 45-67.
- Caprice, Stéphane, and Patrick Rey (2015), "Buyer power from joint listing decision," *Economic Journal*, 125: 1677-1704.

## Part III: Two-sided markets, Tying and IP (Doh-Shin Jeon, 5 weeks)

### 1. Network competition two-sided markets

#### *Network competition*

- Katz, Michael, and Carl Shapiro (1985), "Network Externalities, Competition and Compatibility," *American Economic Review*.
- Farrell, Joseph, and Garth Saloner (1985), "Standardization, Compatibility and Innovation," *Rand Journal of Economics*, 16: 70-83.
- Farrell, Joseph, and Michael Katz (2000), "Innovation, Rent Extraction, and Integration in Systems Markets," *Journal of Industrial Economics*, 48(4): 413-432.
- Crémer, Jacques, Patrick Rey and Jean Tirole. (2000) "Connectivity in the Commercial Network" *Journal of Industrial Economics*, 48(4): 433-72

#### *Economics of platforms and two-sided markets*

- Armstrong, Mark (2006), "Competition in Two-Sided Markets," *Rand Journal of Economics*, 37(3): 668-691.
- Caillaud, Bernard, and Bruno Jullien (2001), "Competing Cybermediaries," *European Economic Review (Papers & Proceedings)*, 45: 797-808.
- Caillaud, Bernard, and Bruno Jullien (2003), "Chicken and Egg: Competition among Intermediation Service Providers," *Rand Journal of Economics*,
- Rochet, Jean-Charles and Jean Tirole (2002). "Cooperation among Competitors: Some Economics of Payment Card Associations", *RAND Journal of Economics*, 33: 549-570.
- Rochet, Jean-Charles, and Jean Tirole (2003), "Platform Competition in Two-Sided Markets," *Journal of the European Economic Association* 1: 990–1029.
- Rochet, Jean-Charles, and Jean Tirole. (2006), "Two-sided Markets: A Progress Report," *Rand Journal of Economics*, 37: 645-667.
  
- Rochet, Jean-Charles and Jean Tirole (2011). "Must-Take Cards: Merchant Discounts and Avoided Costs", *Journal of the European Economic Association*, 9(3): 462-495.
- Jean Tirole (2011). "Payment Card Regulation and the Use of Economic Analysis in Antitrust" *Competition Policy International*, 7(1): 137-158.
- Weyl, Glen (2010), "A price theory of two-sided markets," *American Economic Review*,

#### *Other reading*

- Andre Boik and Kenneth Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry", *Journal of Law and Economics*.
- Benjamin Edelman and Julian Wright (2015). "Price Coherence and Excessive Intermediation", *Quarterly Journal of Economics*, 130: 1283-1328.

### 2. Tying

#### *Monopoly*

- Bakos, Yannis, and Eric Brynjolfsson. (1999), "Bundling Information Goods: Pricing, Profits and Efficiency," *Management Science*, 45(12): 1613-1630.
- McAfee, R.P, McMillan, J., Whinston, M. (1989), "Multiproduct Monopoly, Commodity Bundling, and Correlation of Values," *Quarterly Journal of Economics*, 104: 371-384.

#### *Leverage theory of tying with application to Microsoft case*

- Carlton, Dennis W., and Michael Waldman (2002), "The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries," *Rand Journal of Economics*, Summer, pp. 194-220.
- Choi, Jay Pil, and Chris Stefanadis (2001), "Tying, Investment, and the Dynamic Leverage Theory," *RAND Journal of Economics*, 32(1): 52-71.
- Nalebuff, Barry (2004), "Bundling as an Entry Barrier," *Quarterly Journal of Economics*, 119(1): 159-188.
- Whinston, Michael D. (1990), "Tying, Foreclosure and Exclusion," *American Economic Review*, 80(4): 837-859.

#### *Other applications*

- Jeon, Doh-Shin, and Domenico Menicucci (2006), "Bundling Electronic Journals and Competition among Publishers," *Journal of the European Economic Association*, 4(5): 1038-83.
- Jeon, Doh-Shin, and Domenico Menicucci (2012), "Bundling and Competition for Slots," *American Economic Review*, 102: 1957-1985.

#### *Tying in two-sided markets*

- Choi, Jay Pil (2010), "Tying in Two-Sided Markets with Multi-Homing," *Journal of Industrial Economics*, 58 (3): 607-626.
- Choi, Jay Pil, and Doh-Shin Jeon (forthcoming), "A Leverage Theory of Tying in Two-sided Markets with non-negative price constraints," *American Economic Journal: Microeconomics*.

### **3. Economics of Intellectual Property**

#### *Introduction*

- Andrei Hagiu (2011), "Intellectual Property Intermediaries," Harvard Business School, Case study.
- Andrei Hagiu, David Yoffie and Alison Berkley Wagonfeld (2011), "Intellectual Ventures", Harvard Business School, Case study.
- Michael A. Heller and Rebecca S. Eisenberg (1998) "Can Patents Deter Innovation? The Anticommons in Biomedical Research," *Science*, 280: 698-701.
- Herbert Hovenkamp (2008), "Patent Deception in Standard Setting: the Case for Antitrust Policy," mimeo.

#### *Weak patents*

- Farrell, Joseph, and Carl Shapiro, (2008), "How strong are weak patents?," *American Economic Review*, 98: 1347-69
- Carl Shapiro (2010), "Injunctions, Hold-Up, and Patent Royalties," *American Law and Economics Review*, 12: 509-557

#### *Patent Pool*

- Choi, Jay Pil. (2010), "Patent Pools and Cross Licensing in the Shadow of Patent Litigation," *International Economic Review*, 441-460.
- Choi, Jay Pil, and Heiko Gerlach (2015), "Patent Pools, Litigation and Innovation," *The RAND Journal of Economics*, 46(3): 499-523.
- Lerner, Josh, and Jean Tirole (2004), "Efficient Patent Pools," *American Economic Review*, 691-711.

#### *Patent Trolls*

- Choi, Jay Pil, and Heiko Gerlach (2016), "A Model of Patent Trolls," mimeo.

- Lemus, Jorge, and Emil Temnyalov (2017), "Patent Privateering, litigation and R&D Incentives," *the RAND Journal of Economics*, 48 (4), 1004-1026

*Cross-Licensing*

- Jeon, Doh-Shin and Yassine Lefouili (2018), "Cross-Licensing and Competition," *the RAND Journal of Economics*, 49(3), 656-671

*Sequential Innovation*

- Green, Jerry, and Suzanne Scotchmer (1995), "On the Division of Profit in Sequential Innovation," *RAND Journal of Economics*, 26: 20-33.
- Bessen, James, and Eric Maskin (2009), "Sequential Innovation, patents and imitation," *RAND Journal of Economics*, 40: 611-635.