

THE UNIVERSITY OF FLORIDA

Professor D. Sappington
Economics 7113

Spring 2019
Course Syllabus

INFORMATION AND INCENTIVES

Course Description

This course is designed to introduce you to models of decision-making and strategic interaction in the presence of limited and asymmetric information. We will begin with a brief review of essential tools and concepts. Then we will proceed to analyze basic moral hazard, adverse selection, and signaling problems. If time permits, we will study some extensions of these basic problems.

Prerequisites

Economics 7115. A solid knowledge of microeconomic analysis is essential, as is facility with constrained optimization techniques.

Course Requirements

The primary course requirement is an examination which will be held during class hours on Wednesday, April 17th. The examination will count for 80% of your final grade. The remaining 20% of your grade will be determined by your performance on homework exercises.

Web Site

The website for this class can be found at <https://elearning.ufl.edu>.

Primary Readings for Course

Class lectures will be drawn primarily from selected articles on this syllabus. Key articles are on electronic reserve, which can be accessed through the class web site.

The following textbooks might be useful as supplemental reading, but are not required:

The Theory of Incentives: The Principal-Agent Model by J. Laffont and D. Martimort (Princeton University Press, 2002).

An Introduction to the Economics of Information by I. Macho-Stadler and D. Perez-Castrillo (Oxford University Press, Second Edition, 2001).

Additional Supplementary Text Books

1. *An Introduction to the Theory of Mechanism Design* by T. Borgers (Oxford University Press, 2015).
2. *Contract Theory* by P. Bolton and M. Dewatripont (MIT Press, 2005).
2. *A Theory of Incentives in Procurement and Regulation* by J. Laffont and J. Tirole (MIT Press, 1993).

The readings that follow include articles that will be discussed in class and other articles that merit study if you ultimately plan to conduct research in this field. The reading list is not comprehensive. Rather, it is intended to suggest a few articles that may help you to begin a more comprehensive and systematic study of the vast literature on contracting in the presence of asymmetric information.

Mathematical, Statistical, and Economic Preliminaries

- L. Anderson and C. Holt, "Understanding Bayes Rule," *Journal of Economic Perspectives*, 10(2), Spring 1996, 179-187.
- N. Barberis, "Thirty Years of Prospect Theory in Economics: A Review and Assessment," *Journal of Economic Literature*, 27(1), Winter 2013, 173-196.
- J. Hadar and W. Russell, "Rules for Ordering Uncertain Prospects," *American Economic Review*, 59(1), March 1969, 25-34.
- B. Koszegi and M. Rabin, "Reference-Dependent Risk Attitudes," *American Economic Review*, 97(4), September 2007, 1047-1073.
- T. O'Donoghue and J. Somerville, "Modeling Risk Aversion in Economics," *Journal of Economic Perspectives*, 32(2), Spring 2018, 91-114.
- J. Pratt, "Risk Aversion in the Small and the Large," *Econometrica*, 32(1), January 1964, 122-136.
- L. Samuelson, "Modeling Knowledge in Economic Analysis," *Journal of Economic Literature*, 42(2), June 2004, 367-403.
- H. Varian, *Microeconomic Analysis*. New York: Norton (2nd Edition), 1994, section on Expected Utility Theory.

Overviews and Surveys of the Incentive Literature

- Laffont and Martimort, Introduction and Chapter 1.
- P. Bolton and M. Dewatripont, *Contract Theory*. MIT Press, 2005, Chapter 1.
- O. Hart, "Incomplete Contracts and Control," *American Economic Review*, 107(7), July 2017, 1731-1752.
- B. Holmstrom, "Pay for Performance and Beyond," *American Economic Review*, 107(7), July 2017, 1753-1777.
- I. Macho-Stadler and D. Perez-Castrillo, *An Introduction to the Economics of Information*. Oxford University Press, 1997.
- R. Myerson, "Perspectives on Mechanism Design in Economic Theory," *American Economic Review*, 98(3), June 2008, 586-603.
- D. Mookherjee, "The 2007 Nobel Memorial Prize in Mechanism Design Theory," *Journal of Scandinavian Economics*, 110(2), June 2008, 237-260.
- C. Prendergast, "Agency Issues," *Journal of Political Economy*, 125(6), December 2017, 1878-1884.
- J. Stiglitz, "Information and the Change in the Paradigm in Economics," *American Economic Review*, 92(3), June 2002, 460-501.

Basic Moral Hazard Problems

Laffont and Martimort, Chapter 4 and Section 5.1.

- S. Grossman and O. Hart, “An Analysis of the Principal-Agent Problem,” *Econometrica*, 51(1), January 1983, 7-46.
- B. Holmstrom, “Moral Hazard and Observability,” *Bell Journal of Economics*, 10(1), Spring 1979, 74-91.
- P. Milgrom, “Good News and Bad News: Representation Theorems and Applications,” *Bell Journal of Economics*, 12(2), Autumn 1981, 380-391.
- O. Kadan and J. Swinkels, “On the Moral Hazard Problem without the First-Order Approach,” *Journal of Economic Theory*, 148(6), November 2013, 2313-2343

The First-Order Approach

Laffont and Martimort, Section 5.1.3.

- A. Abraham, S. Koehne, N. Pavoni, “On the First-order Approach in Principal-Agent Models with Hidden Borrowing and Lending,” *Journal of Economic Theory*, 146(4), July 2011, 1331-1361.
- J. Conlon, “Two New Conditions Supporting the First-Order Approach to Multisignal Principal-Agent Problems,” *Econometrica*, 77(1), January 2009, 249–278.
- I. Jewitt, “Justifying the First-Order Approach to Principal-Agent Problems,” *Econometrica*, 56(5), September 1988, 1177-1190.
- R. Kirkegaard, “A Unifying Approach to Incentive Compatibility in Moral Hazard Problems,” *Theoretical Economics*, 12(1), January 2017, 25-51.
- W. Rogerson, “The First-Order Approach to Principal-Agent Problems,” *Econometrica*, 53(6), November 1985, 1357-1368.

Moral Hazard and Limited Liability

- R. Innes, “Limited Liability and Incentive Contracting with *Ex Ante* Action Choices,” *Journal of Economic Theory*, 52(1), October 1990, 45-67.
- I. Jewitt, O. Kadan, and J. Swinkels, “Moral Hazard with Bounded Payments,” *Journal of Economic Theory*, 143(1), November 2008, 59-82.
- S. Ollier and L. Thomas, “Ex Post Participation Constraint in a Principal-Agent Model with Adverse Selection and Moral Hazard,” *Journal of Economic Theory*, 148(6), November 2013, 2383-2403.
- J. Pobleto and D. Spulber, “The Form of Incentive Contracts: Agency with Moral Hazard, Risk Neutrality and Limited Liability,” *Rand Journal of Economics*, 43(2), Summer 2012, 215-234.

Discrete Adverse Selection Problems

Laffont and Martimort, Sections 2.1 – 2.8, 3.1, 3.5.

D. Sappington, “Limited Liability Contracts Between Principal and Agent,” *Journal of Economic Theory*, 29(1), February 1983, 1-21.

The Revelation Principle

Laffont and Martimort, Section 2.9.

F. Forges and F. Koessler, “Communication Equilibria with Partially Verifiable Types,” *Journal of Mathematical Economics*, 41(7), November 2005, 793-811.

H. Harris and R. Townsend, “Allocation Mechanisms, Asymmetric Information, and the Revelation Principle,” in G. Feiwel (ed.), *Issues in Contemporary Microeconomics and Welfare*. London: MacMillan, 1985, pp. 379-394.

R. Strausz, “Deterministic Mechanisms and the Revelation Principle,” *Economics Letters*, 79(3), June 2003, 333-337.

Basic Continuous Adverse Selection Problems

Laffont and Martimort, Appendices 3.1 - 3.3.

A. Araujo and H. Moreira, “Adverse Selection Problems without the Spence-Mirrlees Condition,” *Journal of Economic Theory*, 145(3), May 2010, 1113-1141.

D. Baron and R. Myerson, “Regulating a Monopolist with Unknown Costs,” *Econometrica*, 50(4), July 1982, 911-930.

G. Carroll, “When are Local Incentive Constraints Sufficient?” *Econometrica*, 80(2), March 2012, 661–686.

R. Guesnerie and J. Laffont, “A Complete Solution to a Class of Principal-Agent Problems with an Application to the Control of a Self-Managed Firm,” *Journal of Public Economics*, 25(3), December 1984, 329-369.

J. Laffont and J. Tirole, “Using Cost Observation to Regulate Firms,” *Journal of Political Economy*, 94(3), June 1986, 614-641.

T. Lewis and D. Sappington, “Regulating a Monopolist with Unknown Demand,” *American Economic Review*, 78(5), December 1988, 986-998.

Countervailing Incentives

Laffont and Martimort, Section 3.3.

B. Jullien, “Participation Constraints in Adverse Selection Models,” *Journal of Economic Theory*, 93(1), July 2000, 1-47.

- T. Lewis and D. Sappington, "Countervailing Incentives in Agency Problems," *Journal of Economic Theory*, 49(2), December 1989, 294-313.
- G. Maggi and A. Rodriguez-Clare, "On Countervailing Incentives," *Journal of Economic Theory*, 66(1), June 1995, 238-263.
- J. Rochet and L. Stole, "Nonlinear Pricing with Random Participation," *Review of Economic Studies*, 69(1), January 2002, 277-311.

Adverse Selection and Moral Hazard

- J. Escobar and C. Pulgar, "Motivating with Simple Contracts," *International Journal of Industrial Organization*, 54, September 2017, 192-214.
- R. Gary-Bobo and A. Trannoy, "Optimal Student Loans and Graduate Tax under Moral Hazard and Adverse Selection," *Rand Journal of Economics*, 46(3), Fall 2015, 546-576.
- S. Ollier and L. Thomas, "Ex Post Participation Constraint in a Principal-Agent Model with Adverse Selection and Moral Hazard," *Journal of Economic Theory*, 148(6), November 2013, 2383-2403.

Multidimensional Adverse Selection

Laffont and Martimort, Section 3.2.

- M. Armstrong and J. Rochet, "Multi-Dimensional Screening: A User's Guide," *European Economic Review*, 43(4-6), April 1999, 959-979.
- J. Asker and E. Cantillon, "Procurement When Price and Quality Matter," *Rand Journal of Economics*, 41(1), Spring 2010, 1-34.
- A. Manelli and D. Vincent, "Multidimensional Mechanism Design: Revenue Maximization and the Multiple-Good Monopoly," *Journal of Economic Theory*, 137(1), November 2007, 153-185.
- J. Rochet and P. Choné, "Ironing, Sweeping, and Multidimensional Screening," *Econometrica*, 66(4), July 1998, 783-826.

Multiple Tasks

Laffont and Martimort, Section 5.2.

- P. Casas-Arce and S. Hejeebu, "Job Design in the Presence of Career Concerns," *Journal of Economics and Management Strategy*, 21(4), Winter 2012, 1083-1109.
- F. Ederer, R. Holden, and M. Meyer, "Gaming and Strategic Opacity in Incentive Provision," *Rand Journal of Economics* (forthcoming).
- B. Holmstrom and P. Milgrom, "Aggregation and Linearity in the Provision of Intertemporal Incentives," *Econometrica*, 55(2), March 1987, 303-328.
- B. Holmstrom and P. Milgrom, "Multi-Task Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design," *Journal of Law, Economics, and Organization*, 7, Special Issue, 1991, 24-52.

Auditing, Monitoring and Incentives

Laffont and Martimort, Section 3.6.

- D. Baron and D. Besanko, "Regulation, Asymmetric Information and Auditing," *Rand Journal of Economics*, 15(4), Winter 1984, 447-470.
- E. Ben-Porath, E. Dekel, and B. Lipman, "Optimal Allocation with Costly Verification," *American Economic Review*, 104(12), December 2014, 3779-3813.
- R. Dye, "Optimal Monitoring Policies in Agencies," *Rand Journal of Economics*, 17(3), Autumn 1986, 339-350.
- R. Gary-Bobo and Y. Spiegel, "Optimal State-Contingent Regulation under Limited Liability," *Rand Journal of Economics*, 37(2), Summer 2006, 431-448.
- H. Gerlach, "Self-Reporting, Investigation, and Evidentiary Standards," *Journal of Law and Economic*, 56(4), November 2013, 1061-1090.
- T. Piskorski and M. Westerfield, "Optimal Dynamic Contracts with Moral Hazard and Costly Monitoring," *Journal of Economic Theory*, 166, November 2016, 242-281.
- M. Pollrich, "Mediated Audits," *Rand Journal of Economics*, 48(1), Spring 2017, 44-68.

Incentive Schemes with Multiple Agents

- M. Rauh, "The O-Ring Theory of the Firm," *Journal of Economics and Management Strategy*, 27(1), Spring 2018, 82-101.
- J. Deb, J. Li, and A. Mukherjee, "Relational Contracts with Subjective Peer Evaluations," *RAND Journal of Economics*, 47(1), Spring 2016, 3-28.
- K. Daido and T. Murooka, "Team Incentives and Reference-Dependent Preferences," *Journal of Economics and Management Strategy*, 25(4), Winter 2016, 958-989.
- B. Holmstrom, "Moral Hazard in Teams," *Bell Journal of Economics*, 13(2), Autumn 1982, 324-340.
- M. Halac, N. Kartik, and Q. Liu, "Contests for Experimentation," *Journal of Political Economy*, 125(5), October 2017, 1523-1569.
- C. Kellner, "Tournaments as a Response to Ambiguity Aversion in Incentive Contracts," *Journal of Economic Theory*, 159A, September 2015, 627-655.
- E. Rasmusen, "Moral Hazard in Risk-Averse Teams," *Rand Journal of Economics*, 18(3), Autumn 1987, 428-435.
- Y. Shan, "Optimal Contracts for Research Agents," *Rand Journal of Economics*, 48(1), Spring 2017, 94-124.
- T. Tsoulouhas, "Do Tournaments Solve the Adverse Selection Problem?" *Journal of Economics and Management Strategy*, 26(3), Fall 2017, 675-690.

Double Moral Hazard

- B. Bental, B. Deffains, and D. Demougin, "Credibility and Monitoring: Outsourcing as a Commitment Device," *Journal of Economics and Management Strategy*, 21(1), Spring 2012, 31-52.
- D. O'Brien, "All-Unit Discounts and Double Moral Hazard," *Journal of Economic Theory*, 170, July 2017, 1-28.
- C. Prendergast, "The Economics of Wild Goose Chases," *Rand Journal of Economics*, 46(1), Spring 2015, 146-164.

Auctions

- J. Bulow and P. Klemperer, "Why Do Sellers (Usually) Prefer Auctions?" *American Economic Review*, 99(4), September 2009, 1544-1575.
- G. Cisternas and N. Figueroa, "Sequential Procurement Auctions and their Effect on Investment Decisions," *Rand Journal of Economics*, 46(4), Winter 2015, 824-843.
- R. Gomes, "Optimal Auction Design in Two-Sided Markets," *Rand Journal of Economics*, 45(2), Summer 2014, 422-448.
- J. Levin and A. Skrzypacz, "Properties of the Combinatorial Clock Auction," *American Economic Review*, 106(9), September 2016, 2528-2551.
- M. Pai and R. Vohra, "Optimal Auctions with Financially Constrained Buyers," *Journal of Economic Theory*, 150(2), March 2014, 383-425.
- P. Klemperer, "What Really Matters in Auction Design," *Journal of Economic Perspectives*, 16(1), Winter 2002, 169-189.
- J. Riley and W. Samuelson, "Optimal Auctions," *American Economic Review*, 71(3), June 1981, 381-392.

Signaling

- M. Baye and D. Sappington, "Revealing Transactions Data to Third Parties: Implications of Privacy Regimes for Welfare in Online Markets," University of Florida working paper, December 2018.
- I. Cho and D. Kreps, "Signaling Games and Stable Equilibria," *Quarterly Journal of Economics*, 102(2), May 1987, 179-222.
- N. Feltovich, R. Harbaugh, and T. To, "Too Cool for School? Signaling and Countersignaling," *Rand Journal of Economics*, 33(4), Winter 2002, 630-649.
- S. Heinsalu, "Dynamic Noisy Signaling," *American Economic Journal: Microeconomics*, 10(2), May 2018, 225-249.
- F. Lee and Y. Fong, "Signaling by an Informed Service Provider," *Journal of Economics and Management Strategy*, 26(4), Winter 2017, 955-968.
- Y. In and J. Wright, "Signaling Private Choices," *Review of Economic Studies*, 85(1), January 2018, 558-580.

I. Macho-Stadler and D. Perez-Castrillo, *An Introduction to the Economics of Information*. Oxford University Press, 2001 (Second Edition), chapter 5.

A. Mas-Colell, M. Whinston, and J. Green, *Microeconomic Theory*. Oxford University Press, 1995, pp. 450-460, 467-472.

F. Munoz-Garcia and A. Espinola-Arredondo, "The Intuitive and Divinity Criterion: Interpretation and Step-by-Step Examples," *Journal of Industrial Organization Education*, 5(1), 2010, Article 7. DOI: 10.2202/1935-5041.1024

J. Riley, "Silver Signals: Twenty-Five Years of Signaling and Screening," *Journal of Economic Literature*, 39(2), June 2001, 432-478.

Collusion

R. Burguet, "Procurement Design with Corruption," *American Economic Journal: Microeconomics*, 9(2), May 2017, 315-41.

G. Celik, "Mechanism Design with Collusive Supervision," *Journal of Economic Theory*, 144(1), January 2009, 69-95.

Y. Hiriart, D. Martimort, and J. Pouyet, "The Public Management of Risk: Separating *Ex Ante* and *Ex Post* Monitors," *Journal of Public Economics*, 94(11-12), December 2010, 1008-1019.

F. Khalil and J. Lawarree, "Incentives for Corruptible Auditors in the Absence of Commitment," *Journal of Industrial Economics*, 54(2), June 2006, 269-291.

Delegation

M. Agastya, P. Bag, and I. Chakraborty, "Communication and Authority with a Partially Informed Expert," *Rand Journal of Economics*, 45(1), Spring 2014, 176-197.

H. Bester and D. Krahmer, "Delegation and Incentives," *Rand Journal of Economics*, 39(3), Autumn 2008, 664-673.

F. Koessler and D. Martimort, "Optimal Delegation with Multi-Dimensional Decisions," *Journal of Economic Theory*, 147(5), September 2012, 1850-1881.

S. Grenadier, A. Malenko, and N. Malenko, "Timing Decisions in Organizations: Communication and Authority in a Dynamic Environment," *American Economic Review*, 106(9), September 2016, 2552-2581.

A. Kolotilin, H. Li, and W. Li, "Optimal Limited Authority for Principal," *Journal of Economic Theory*, 148(6), November 2013, 2344-2382.

Experts and Intermediaries

- S. Bhattacharya and A. Mukherjee, "Strategic Information Revelation when Experts Compete to Influence," *Rand Journal of Economics*, 44(3), Fall 2013, 522-544.
- G. Biglaiser and F. Li, "Middlemen: The Good, the Bad, and the Ugly," *Rand Journal of Economics*, 49(1), Spring 2018, 3-22.
- U. Dulleck and R. Kerschbamer, "On Doctors, Mechanics, and Computer Specialists: The Economics of Credence Goods," *Journal of Economic Literature*, 44(1), March 2006, 5-42.
- R. Inderst and M. Ottaviani, "Competition through Commissions and Kickbacks," *American Economic Review*, 102(2), April 2012, 780-809.

Information Disclosure

- R. Dye, "Optimal Disclosure Decisions when there are Penalties for Nondisclosure," *Rand Journal of Economics*, 48(3), Fall 2017, 704-732.
- J. Hörner and A. Skrzypacz, "Selling Information," *Journal of Political Economy*, 124(6), December 2016, 1515-1562.
- J. Tirole, "From Bottom of the Barrel to Cream of the Crop: Sequential Screening with Positive Selection," *Econometrica*, 84(4), July 2016, 1291-1343.

Contracting with Subjective Valuations

- J. Chan and B. Zheng, "Rewarding Improvements: Optimal Dynamic Contracts with Subjective Evaluation," *Rand Journal of Economics*, 42(4), Winter 2011, 758-775.
- B. MacLeod, "Optimal Contracting with Subjective Evaluation," *American Economic Review*, 93(1), March 2003, 216-240.
- J. Zbojnik, "Subjective Evaluations with Performance Feedback," *Rand Journal of Economics*, 45(2), Summer 2014, 341-369.

Contracting with Communication Costs

- M. Dewatripont and J. Tirole, "Modes of Communication," *Journal of Political Economy*, 113(6), December 2005, 1217-1238.
- N. Kartik, "Strategic Communication with Lying Costs," *Review of Economic Studies*, 76(4), October 2009, 1359-1395.
- D. Mookherjee and M. Tsumagari, "Mechanism Design with Communication Constraints," *Journal of Political Economy*, 122(5), October 2014, 1094-1129.

Motivating Information Acquisition

- R. Argenziano, S. Severinov, and F. Squintani, "Strategic Information Acquisition and Transmission," *American Economic Journal: Microeconomics*, 8(3), August 2016, 119-155.
- D. Bergemann and J. Välimäki, "Information in Mechanism Design," in *Proceedings of the 9th World Congress of the Econometric Society* (R. Blundell, W. Newey, and T. Persson, Eds.), 2006, Cambridge University Press, New York, 186-221.
- D. Szalay, "Contracts with Endogenous Information," *Games and Economic Behavior*, 65(2), March 2009, 586-625.
- A. Su, "Information Acquisition and the Equilibrium Incentive Problem," *Journal of Economics and Management Strategy*, 26(1), Spring 2017, 231-256.

Cheap Talk

- Sobel, Joel, "Giving and Receiving Advice," in Daron Acemoglu, Manuel Arellano, and Eddie Dekel (eds.), *Advances in Economics and Econometrics, Tenth World Congress, Volume I, Economic Theory*. New York: Cambridge University Press, 2013, pp. 305-341.

Contracting with Bounded Rationality

- J. Glazer and A. Rubinstein, "A Model of Persuasion with Boundedly Rational Agents," *Journal of Political Economy*, 120(6), December 2012, 1057-1082.
- M. Rabin, "Incorporating Limited Rationality into Economics," *Journal of Economic Literature*, 51(2), June 2013, 528-43.

Behavioral Economics and Contracting

- B. Koszegi, "Behavioral Contract Theory," *Journal of Economic Literature*, 52(4), December 2014, 1075-1118.
- B. Koszegi and M. Rabin, "A Model of Reference-Dependent Preferences," *Quarterly Journal of Economics* 121(4), November 2006, 1133-1166.
- S. Levitt, J. List, S. Neckermann, and S. Sadoff, "The Behavioralist Goes to School: Leveraging Behavioral Economics to Improve Educational Performance," *American Economic Journal: Economic Policy*, 8(4), November 2016, 183-219.

Social Preferences

- S. Bowles and S. Polania-Reyes, "Economic Incentives and Social Preferences: Substitutes or Complements?" *Journal of Economic Literature*, 50(2), June 2012, 368-425.
- E. Fehr, A. Klein, and K. Schmidt, "Fairness and Contract Design," *Econometrica*, 75(1), January 2007, 121-154.
- U. Gneezy, S. Meier, and P. Rey-Biel, "When and Why Incentives (Don't) Work to Modify Behavior," *Journal of Economic Perspectives*, 25(4), Fall 2011, 191-210.

Simple Contracts

- A. Bos, D. Pal, and D. Sappington, "On the Performance of Linear Contracts," *Journal of Economics and Management Strategy*, 20(1), Spring 2011, pp. 159-193.
- L. Chu and D. Sappington, "Simple Cost-Sharing Contracts," *American Economic Review*, 97(1), March 2007 419-428.
- J. Escobar and C. Pulgar, "Motivating with Simple Contracts," *International Journal of Industrial Organization*, Volume 54, September 2017, 192-214.
- F. Herweg, D. Müller, and P. Weinschenk, "Binary Payment Schemes: Moral Hazard and Loss Aversion," *American Economic Review*, 100(5), December 2010, 2451-2477.
- W. Rogerson, "Simple Menus of Contracts in Cost-Based Procurement and Regulation," *American Economic Review*, 93(3), June 2003, 919-926.

Informed Principals

Laffont and Martimort, Section 9.1.

- E. Maskin and J. Tirole, "The Principal-Agent Relationship with an Informed Principal: The Case of Private Values," *Econometrica*, 58(2), March 1990, 379-410.
- E. Maskin and J. Tirole, "The Principal-Agent Relationship with an Informed Principal, II: Common Values," *Econometrica*, 60(1), January 1992, 1-42.
- S. Severinov, "An Efficient Solution to the Informed Principal Problem," *Journal of Economic Theory*, 141(1), July 2008, 114-133.
- C. Wagner, T. Mylovanov, and T. Tröger, "Informed-Principal Problem with Moral Hazard, Risk Neutrality, and No Limited Liability," *Journal of Economic Theory*, 159A, September 2015, 280-289.

Multiple Principals

- D. Martimort and L. Stole, "The Revelation and Delegation Principles in Common Agency Games," *Econometrica*, 70(4), July 2002, 1659-1674.
- D. Martimort and L. Stole, "Market Participation in Delegated and Intrinsic Common-Agency Games," *Rand Journal of Economics*, 40(1), Spring 2009, 78-102.

Dynamic Agency Models with Full Commitment

Laffont and Martimort, Chapter 8.

- M. Arve and D. Martimort, "Dynamic Procurement under Uncertainty: Optimal Design and Implications for Incomplete Contracts," *American Economic Review*, 106(11), November 2016, 3238-74.

- D. Baron and D. Besanko, "Regulation and Information in a Continuing Relationship," *Information Economics and Policy*, 1(3), 1984, 267-302.
- R. Krishna, G. Lopomo, and C. Taylor, "Stairway to Heaven or Highway to Hell: Liquidity, Sweat Equity, and the Uncertain Path to Ownership," *RAND Journal of Economics*, 44(1), Spring 2013, 104-127.
- J. Zhu, "Myopic Agency," *Review of Economic Studies*, 85(2), April 2018, 1352-1388.

Dynamic Agency Models with Limited Commitment

Laffont and Martimort, Section 9.3.

- P. Aghion and M. Jackson, "Inducing Leaders to Take Risky Decisions: Dismissal, Tenure, and Term Limits," *American Economic Journal: Microeconomics*, 8(3), August 2016, 1-38.
- D. Bergemann and J. Välimäki, "Dynamic Mechanism Design: An Introduction," Cowles Foundation Discussion Paper No. 3002, August 2017.
- J. Horner and L. Samuelson, "Incentives for Experimenting Agents," *Rand Journal of Economics*, 44(4), Winter 2013, 632-663.
- F. Khalil, "Auditing Without Commitment," *Rand Journal of Economics*, 28(4), Winter 1997, 629-640.
- R. Fiocco and R. Strausz, "Consumer Standards as a Strategic Device to Mitigate Ratchet Effects in Dynamic Regulation," *Journal of Economics and Management Strategy*, 24(3), Fall 2015, 550-569.
- Y. Sannikov, "Contracts: The Theory of Dynamic Principal-Agent Relationships and the Continuous-Time Approach," in D. Acemoglu, M. Arellano, and E. Dekel (eds.), *Advances in Economics and Econometrics, Tenth World Congress, Volume I, Economic Theory*. New York: Cambridge University Press, 2013, pp. 89-124.
- D. Shin and R. Strausz, "Delegation and Dynamic Incentives," *Rand Journal of Economics*, 45(3), Fall 2014, 495-520.
- R. Strausz, "Interim Information in Long-Term Contracts," *Journal of Economics and Management Strategy*, 15(4), Winter 2006, 1041-1067.

Renegotiation and Incomplete Contracts

- N. Baranchuk, P. Dybvig, and J. Yang, "Renegotiation-proof Contracting, Disclosure, and Incentives for Efficient Investment," *Journal of Economic Theory*, 145(5), September 2010, 1805-1836.
- P. Aghion and R. Holden, "Incomplete Contracts and the Theory of the Firm: What Have We Learned over the Past 25 Years?" *Journal of Economic Literature*, 25(2), Spring 2011, 181-197.
- P. Bolton and A. Faure-Grimaud, "Satisficing Contracts," *Review of Economic Studies*, 77(3), July 2010, 937-971.
- B. D. Bernheim and M. Whinston, "Incomplete Contracts and Strategic Ambiguity," *American Economic Review*, 88(4), September 1998, 902-932.

J. Laffont and J. Tirole, *A Theory of Incentives in Procurement and Regulation*. MIT Press, 1993, Chapter 10.

Z. Neeman and G. Pavlov, "Ex post Renegotiation-Proof Mechanism Design," *Journal of Economic Theory*, 148(2), March 2013, 473-501.

J. Tirole, "Cognition and Incomplete Contracts," *American Economic Review*, 99(1), March 2009, 265-294.

Relational Contracts

J. Malcomson, "Relational Incentive Contracts," in R. Gibbons and J. Roberts (eds.), *The Handbook of Organizational Economics*. Princeton: Princeton University Press, 2013, pp. 1014-65.

W. B. MacLeod, "Reputations, Relationships, and Contract Enforcement," *Journal of Economic Literature*, 45(3), September 2007, 595-628.

J. Li and N. Matouschek, "Managing Conflicts in Relational Contracts," *American Economic Review*, 103(6), December 2013, 2328-2351.

Asymmetric Information and Competition

A. Bisin and P. Gottardi, "Efficient Competitive Equilibria with Adverse Selection," *Journal of Political Economy*, 114(3), June 2006, 485-516.

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