

T/Th 1:00-2:30

Instructors:

Susan Athey

E52-252C, x3-6407

athey@mit.edu

Mathias Dewatripont  
in Brussels until 23-10  
mdewat@ulb.ac.be

TA:

### Reading List

^ = on reserve at Dewey Library

\* = required reading; in reading packet

\*\* = required reading; not in reading packet; will be handed out

#### General References

Athey, S., P. Milgrom, and J. Roberts (1998), *Robust Comparative Statics*, unpublished research monograph.

Bolton, P. and M. Dewatripont (1998), *Introduction to Contract Theory*, book manuscript.

Fudenberg, D. and J. Tirole (1991), *Game Theory*, Cambridge: MIT Press, Chapter 7.

^Hart, O. (1995), *Firms, Contracts and Financial Structure*, Oxford, England: Oxford University Press.

Hart, O. and B. Holmstrom (1987), "The Theory of Contracts," in *Advances in Economic Theory, Fifth World Congress*, edited by Truman Bewley. Cambridge: Cambridge University Press.

Holmstrom, B. and J. Tirole (1989), "The Theory of the Firm," in *Handbook of Industrial Organization*, R. Schmalensee and R. Willig (eds.), New York: Elsevier Publishing Co.

Laffont, J.-J. and J. Tirole (1993), *A Theory of Procurement and Incentives in Regulation*. Cambridge: MIT Press.

^Mas-Colell, A., M. Whinston, J. Green (1995), *Microeconomic Theory*. Chapters 13, 4, & 23.

^Milgrom, P. and J. Roberts (1992). *Economics, Organization and Management*. Englewood Cliffs, N.J.: Prentice-Hall.

Sappington, D. (1991), "Incentives in Principal-Agent Relationships," *Journal of Economic Perspectives*, 5: 45-66.

Prendergast, C. and L. Stole (1993), *Lectures on the Theory of Contracts and Organizations*, Unpublished manuscript.

^Salanie, B. (1997), *The Economics of Contracts: A Primer*. MIT Press.

Williamson, O. (1985), *The Economic Institutions of Capitalism*, New York: Free Press.

#### 1. Moral Hazard (Athey)

\*Grossman, S. and O. Hart (1983), "An Analysis of the Principal-Agent Problem," *Econometrica* 51: 7-45.

\*Hart and Holmstrom, (1987) Part I, "The Theory of Contracts," in *Advances in Economic Theory, Fifth World Congress*, edited by Truman Bewley. Cambridge: Cambridge University Press.

\*Holmstrom, B. and P. Milgrom (1991), "Multi-Task Principal Agent Analyses," *Journal of Law, Economics and Organization*, 7, Special Issue.

Innes, R. (1990), "Limited Liability and Incentive Contracting with Ex Ante Action Choices," *Journal of Economic Theory*, 52 (1): 45-67.

Jensen, M. and K.J. Murphy (1987), "Performance Pay and Top-Management Incentives," *Journal of Political Economy*, 98 (2), April 1990.

Jewitt, I. (1988), "Justifying the First-Order Approach to Principal-Agent Problems," *Econometrica*, 5: 1177-1190.

Jewitt, I. (1997), "Information and Principal-Agent Problems", mimeo, University of Bristol.

Mas-Colell, Whinston, & Green, Chapter 14.

Mirlees, J. (1976), "The Optimal Structure of Incentives and Authority within an Organization," *Bell Journal of Economics*, 7(1), Spring.

Prendergast and Stole, Chapter 1.

Rogerson, W. (1985), "The First Order Approach to Principal-Agent Problems," *Econometrica*, 53: 1357-1368.

## 2. Adverse Selection (Athey)

\*Akerlof, G. (1970), "The Market for Lemons: Quality and the Market Mechanism," *Quarterly Journal of Economics* 84: 488-500.

Baron, D. and R. Myerson (1982), "Regulating a Monopolist with Unknown Costs," *Econometrica*. July.

Demski, J. and D. Sappington (1984), "Optimal Incentive Contracts with Multiple Agents," *Journal of Economic Theory*, 33: 152-171.

Hart and Holmstrom, Part II.

Laffont, J-J and J. Tirole (1986), "Using Cost Observation to Regulate Firms," *Journal of Political Economy*, 94(3).

Laffont, J-J and J. Tirole (1993), *A Theory of Procurement and Incentives in Regulation*, Chapter 2.

Lewis, T. and D. Sappington (1989), "Counterveiling Incentives in Agency Theory," *Journal of Economic Theory*, 29: 1-21.

Maskin, E. and J. Riley (1984), "Monopoly with Incomplete Information," *Rand Journal of Economics*, 15: 171-96.

Matthews, S. and J. Moore (1987), "Monopoly Provision of Quality and Warranties: An Exploration in the Theory of Multidimensional Screening," *Econometrica*, 52 : 441-468.

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

\*Mas-Colell, Whinston, & Green, Chapter 13.

Prendergast-Stole, Chapter 2.

Riordan, M. and D. Sappington (1989), "Second Sourcing," *Rand Journal of Economics*, 20 (1): 41-58.

Sappington, D. (1984), "Incentive Contracting with Asymmetric and Precontractual Knowledge," *Journal of Economic Theory*, 34: 52-70.

**3. Mechanism Design and Trading** (Athey)

\*d'Aspremont, C. and L. Gerard-Varet (1979), "Incentives and Incomplete Information," *Journal of Public Economics*, 11: 24-45.

Fudenberg, D. and J. Tirole (1991), Chapter 7.

Harris, M. and R. Townsend (1981), "Resource Allocation under Asymmetric Information," *Econometrica*, 49: 1477-99.

Holmstrom, B. and R. Myerson (1983), "Efficient and Durable Decision Rules with Incomplete Information," *Econometrica* 51: 1799-1819.

Laffont, J-J and E. Maskin (1980), "A Differentiable Approach in Dominant Strategy Mechanisms," *Econometrica*, 48:1507-1520.

Linhart, P.B. *et al* (1992), "Chapter 1: Introduction," in *Bargaining with Incomplete Information*, P. B. Linhart *et al*, eds., Academic Press.

\*Mas-Colell, Whinston, & Green, Chapter 23.

McAfee, R.P. (1993), "Mechanism Design by Competing Sellers," *Econometrica*, 61 (3), November.

McAfee, R.P. (1991), "Efficient Allocation with Continuous Quantities," *Journal of Economic Theory*, 53: 51-74.

McAfee, R.P. (1992), "Correlated Information and Mechanism Design," *Econometrica*, 60 (2): 395-421.

Myerson, R. (1985), "Bayesian Equilibrium and Incentive Compatibility: An Introduction." In *Social Goals and Social Organization*, edited by L. Hurwicz, D. Schmeidler, and H. Sonnenschein.

Myerson, R. (1981), "Optimal Coordination Mechanisms in a Generalized Principal-Agent Problem," *Journal of Mathematical Economics*.

\*Myerson, Roger and M. Satterthwaite (1983), "Efficient Mechanisms for Bilateral Trading," *Journal of Economic Theory*, 29: 265-281.

**4. Auctions** (Athey)

Athey, S., K. Bagwell, and C. Sanchirico (1998), "Collusion with Private Information," mimeo.

Bulow, J. and P. Klemperer (1996), "Auctions Versus Negotiations", 86(1):180-192.

\*Bulow, J. and J. Roberts, (1989), "The Simple Economics of Optimal Auctions," *Journal of Political Economy*, 97(5): 1060-1090.

Dasgupta, P. and Maskin, E. (1997), "Notes on Efficient Auctions", mimeo, Harvard Univ.

Engelbrecht-Wiggans, R. (1993), "Optimal Auctions Revisited," *Games and Economic Behavior* 5(2):227-239.

Engelbrecht-Wiggans, R., Milgrom, P. and R. Weber (1983), "Competitive Bidding and Proprietary Information", *Journal of Mathematical Economics* 11:161-169.

Harris, M. and A. Raviv (1981), "Allocation Mechanisms and the Design of Auctions," *Econometrica* 49(6): 1477-1499.

Krishna, K. (1993), "Auctions with Endogenous Valuations: The Persistence of Monopoly Revisited", *American Economic Review* 83(1): 147-160.

\*McAfee, R.P. and J. McMillan (1987), "Auctions and Bidding", *Journal of Economic Literature*, XXV, pp. 699-738.

McAfee, R.P. and J. McMillan (1992), "Bidding Rings", *American Economic Review*, 82 (3): 579-599.

Milgrom, P. (1979), "A Convergence Theorem for Competitive Bidding with Differential Information," *Econometrica* 47(3):679-688.

Milgrom, P. (1981), "Rational Expectations, Information Acquisition, and Competitive Bidding," *Econometrica* 49(4):921-943.

Milgrom, P. (1987), "Chapter 1: Auction Theory", in *Advances in Economic Theory: Fifth World Congress of the Econometric Society*, T. Bewley, ed., Econometric Society Monographs, Cambridge University Press.

\*Milgrom, P. and R. Weber (1982), "A Theory of Auctions and Competitive Bidding," *Econometrica* 50(5):1089-1122.

\*Myerson, R. (1981), "Optimal Auction Design," *Mathematics of Operations Research*, 6: 58-73.

\*Riley, J. and W. Samuelson (1981), "Optimal Auctions," *American Economic Review* 71(3):381-392.

## **5. Multiagent moral hazard and collusion (Dewatripont)**

\*\*Bolton, P. and M. Dewatripont (1998), "Introduction to Contract Theory," book manuscript, chapter 9: Multiagent Moral Hazard and Collusion.

### ***A. Moral hazard in teams, tournaments and hierarchies.***

Calvo, G. and S. Wellicz (1978), "Supervision, Loss of Control and the Optimal Size of the Firm," *Journal of Political Economy* 86, 943-52.

Demski, J. and D. Sappington (1984), "Optimal Incentive Contracts with Multiple Agents," *Journal of Economic Theory* 33, 152-171.

\*Green, J. and N. Stokey (1983), "A Comparison of Tournaments and Contracts", *Journal of Political Economy* 91, 349-64.

\*Holmstrom, B. (1982), "Moral Hazard in Teams," *Bell Journal of Economics*, 13: 324-340.

Lazear, E. and S. Rosen (1981), "Rank Order Tournaments as Optimal Labor Contracts," *Journal of Political Economy*.

\*Legros, P. and S. Matthews (1993), "Efficient and Nearly Efficient Partnerships," *Review of Economic Studies*, 1993, 60(3): 599-611.

Legros, P. and H. Matsushima (1991), "Efficiency in Partnerships," *Journal of Economic Theory*, 1991, 55(2), 296-322.

Nalebuff, B. and J. Stiglitz (1983), "Prizes and Incentives: Towards a General Theory of Compensation and Competition," *Bell Journal of Economics*.

Melumad, N., Mookherjee, D. and S. Reichelstein (1995), "Hierarchical Decentralization of Incentive Contracts," *Rand Journal of Economics* 26(4), 654-672.

\*Qian, Y. (1994), "Incentives and Loss of Control in an Optimal Hierarchy," *Review of Economic Studies* 61, 527-44.

### **B. Cooperation and collusion.**

Brusco, Sandro (1997), "Implementing Action Profiles when Agents Collude," *Journal of Economic Theory* 73, 395-424.

\*Holmstrom, B. and P. Milgrom (1990), "Regulating Trade Among Agents," *Journal of Institutional and Theoretical Economics*, 146(1).

\*Itoh, H. (1991), "Incentives to Help in Multi-Agent Situations," *Econometrica* vol. 59, p. 611-636.

Itoh, I. (1993), "Coalitions, Incentives and Risk-Sharing," *Journal of Economic Theory*, 60, 410-27.

\*Kofman, A. and J. Lawarree (1993), "Collusion in Hierarchical Agency," *Econometrica* 61, 629-56.

Laffont, J.-J. (1990), "Analysis of Hidden Gaming in a Three Level Hierarchy," *Journal of Law Economics and Organization*, 6(2).

Laffont, J.-J. and D. Martimort (1997), "The Firm as a Multi-Contract Organization", *Journal of Economics and Management Strategy*, 6(2): 201-234.

\*Laffont, J.-J. and D. Martimort (1998), "Collusion and Delegation," *Rand Journal of Economics* 29, 280-305.

\*Laffont, J.-J. and D. Martimort (1995), "Collusion under Asymmetric Information," *Econometrica* 65, 875-913.

Tirole, J. (1986), "Hierarchies and Bureaucracies," *Journal of Law, Economics and Organization* II(2):181-214.

\*Tirole, J. (1993), "Collusion and the Theory of Organizations," in J.-J. Laffont (ed.), *Advances in economic Theory, Sixth World Congress of the Econometric Society*, Cambridge: Cambridge University Press.

## **6. Dynamic moral hazard and adverse selection (Dewatripont)**

### **A. Dynamic moral hazard: explicit incentive schemes**

Bolton, P. and C. Harris (1997), "The continuous-time principal-agent problem: first-best risk-sharing contracts and their decentralization," mimeo, Princeton.

Bolton, P. and C. Harris (1998), "The continuous-time principal-agent problem: frequent monitoring contracts," mimeo, Princeton.

\*Chiappori, P.A., I. Macho, P. Rey and B. Salanie (1994), "Repeated Moral Hazard: The Role of Memory, Commitment and the Access to Credit Markets," *European Economic Review* 38(8), 1527-53.

Fudenberg, D., Holmstrom, B. and P. Milgrom (1990), "Short Term Contracts and Long Term Agency Relationships," *Journal of Economic Theory*, 51(1).

Fudenberg, D., and J. Tirole (1990). "Moral Hazard and Renegotiation in Agency Contracts," *Econometrica* 58(6).

Hellwig, M. and K. Schmidt (1998), "Discrete-time approximations of the Holmstrom-Milgrom Brownian-motion model of intertemporal incentive provision," mimeo, Mannheim.

\*Holmstrom, B. and P. Milgrom (1987), "Aggregation and Linearity in the Provision of Intertemporal Incentives," *Econometrica*, 55(2) p 303-328.

Ma, A. (1991), "Adverse Selection in Dynamic Moral Hazard," *Quarterly Journal of Economics* 106, 255-76.

Ma, A. (1994), "Renegotiation and Optimality in Agency Contracts," *Review of Economic Studies* 61, 109-30.

Malcomson, J. and F. Spinnewyn (1988), "The Multi-Period Principal-Agent Problem," *Review of Economic Studies*, July: 391-408.

\*Matthews, S. (1995), "Renegotiation of Sales Contracts," *Econometrica* 63, 567-89.

Radner, R. (1981), "Monitoring Cooperative Agreements in a Repeated Principal-Agent Relationship," *Econometrica*, 49: 1127-48, September.

Rey, P. and B. Salanie (1990), "Long Term, Short Term and Renegotiation: On the Value of Commitment in Contracting," *Econometrica* 58, 597-619.

Rogerson, W. (1985), "Repeated Moral Hazard," *Econometrica*, 53: 69-76.

Rubinstein, A. and M. Yaari (1983), "Repeated Insurance Contracts and Moral hazard", *Journal of Economic Theory* 30, 74-97.

### **B. Dynamic Moral Hazard: Career Concerns**

\*Dewatripont, M., I. Jewitt and J. Tirole (1997), "Information Structures and Career Concerns", ECARE mimeo.

\*Dewatripont, M., I. Jewitt and J. Tirole (1997), "Missions and Accountability of Government Agencies", ECARE mimeo.

Gibbons, R. (1997), "Incentives and Careers in Organizations," in *Advances in Economic Theory and Econometrics*, D.M. Kreps and K.F. Wallis eds., 7<sup>th</sup> World Congress, vol II, chap. 1, p. 1-37.

\*Gibbons, R. and K.-J. Murphy (1992), "Optimal Incentive Contracts in the Presence of Career Concerns: Theory and Evidence," *Journal of Political Economy*, 100(3), 468-505.

\*Holmstrom, B. (1982) "Managerial Incentive Problems: A Dynamic Perspective," in *Essays in Economics and Management in Honor of Lars Wahlbeck*.

Holmstrom, B. and J. Ricart-i-Costa (1986), "Managerial Incentives and Capital Management," *Quarterly Journal of Economics* 101: 835-860.

\*Meyer, M. and J. Vickers (1997), "Performance Comparisons and Dynamic Incentives," *Journal of Political Economy* 105(3) 547-581.

Meyer, M. and J. Zwiebel (1996), "Learning and Self-Reinforcing Behavior in Organizations," Working Paper, Nuffield College, Oxford.

Prendergast, C. (1992), "Career Development and Specific Human Capital Acquisition," *Quarterly Journal of Economics* 108: 523-534.

### **C. Dynamic Adverse Selection.**

Bolton, P. (1990), "Renegotiation and the Dynamics of Contract Design," *European Economic Review*, 34: 303-310.

\*Cremer, J. (1995), "Arm's Length Relationships", *Quarterly Journal of Economics*, CX (2).

Dewatripont, M. (1989), "Renegotiation and Information Revelation over Time: The Case of Optimal Labor Contracts," *Quarterly Journal of Economics*, 104: 589-619.

\*Dewatripont, M. and Maskin, E. (1990), "Contract Renegotiation in Models of Asymmetric Information," *European Economic Review*, 34: 311-321.

Dewatripont, M. and Maskin, E. (1995), "Contractual Contingencies and Renegotiation," *Rand Journal of Economics* 26, 704-19.

\*Dewatripont, M. and Maskin, E. (1995), "Credit and Efficiency in Centralized and Decentralized Economies," *Review of Economic Studies* 62, 541-55.

Freixas, X., R. Guesnerie and J. Tirole (1985), "Planning Under Incomplete Information and the Ratchet Effect," *Review of Economic Studies*, 52 (169): 173-191.

Hart, O. and J. Tirole (1988), "Contract Renegotiation and Coasian Dynamics," *Review of Economic Studies*, 55: 509-540.

Laffont, J.-J. and J. Tirole (1988), "The Dynamics of Incentive Contracts," *Econometrica*, 56: 1153-1175.

Laffont, J.-J. and J. Tirole (1990), "Adverse Selection and Renegotiation in Procurement," *Review of Economic Studies*, 57: 597-625.

\*Laffont, J.-J. and J. Tirole (1988), "Comparative Statics of the Optimal Dynamic Incentive Contract," *European Economic Review* 31, 901-26.

Rey, P. and B. Salanie (1996), "On the Value of Commitment with Asymmetric Information", *Econometrica* 64, 1395-1414.

Townsend, R. (1982), "Optimal Multiperiod Contracts and the Gain from Enduring Relationships under Private Information," *Journal of Political Economy* 90, 1166-86.

## **7. Complete versus incomplete contracts (Dewatripont)**

### **A. Foundations**

Grossman, S. and O. Hart (1986), "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration," *Journal of Political Economy*, August.

\*Hart, O. (1995), *Firms, Contracts, and Financial Structure*, Chapters 2-4.

\* Hart, O. and J. Moore (1988), "Incomplete Contracts and Renegotiation," *Econometrica*, 56, 755-785.

- Hart, O. and J. Moore (1990), "Property Rights and the Nature of the Firm," *Journal of Political Economy*, 98 (6): 1119-1158.
- \*Hart, O. and J. Moore (1998), "Foundations of Incomplete contracts", mimeo, forthcoming *Review of Economic Studies*.
- Maskin, E. (1977), "Nash Equilibrium and Welfare Optimality", mimeo, forthcoming *Review of Economic Studies*.
- \*Maskin, E. and J. Tirole (1998), "Unforeseen Contingencies and Incomplete Contracts," mimeo, forthcoming *Review of Economic Studies*.
- Maskin, E. and J. Tirole (1998), "Two Remarks on the Property-Rights Literature", mimeo, forthcoming *Review of Economic Studies*.
- Maskin, E. and J. Moore (1998), "Implementation and Renegotiation", mimeo, forthcoming *Review of Economic Studies*.
- \*Moore, J. (1992), "Implementation in Environments with Complete Information," in *Advances in Economic Theory: Sixth World Congress*, J.J. Laffont, ed., Cambridge University Press, p.182-282.
- Moore, J. and R. Repullo (1988) "Subgame Perfect Implementation," *Econometrica*, 56: 1191-1220.
- \*Segal, I. (1994), "A Theory of Incomplete Contracts," Mimeo, forthcoming *Review of Economic Studies*.
- \*Tirole, J. (1998), "Incomplete Contracts: Where Do We Stand?" Walras-Bowley lecture delivered at the North American summer meetings of the Econometric Society, Quebec City, 1994.

### **B. Holdup**

- \*Aghion, P., M. Dewatripont, and P. Rey (1994), "Renegotiation Design with Unverifiable Information," *Econometrica* 62:257-82.
- \*Che and Hausch (1997), "Cooperative Investments and the Value of Contracting: Coase vs Williamson," mimeo, University of Wisconsin.
- Chung, T.-Y. (1991), "Incomplete Contracts, Specific Investments, and Risk-Sharing," *Review of Economic Studies*, 58(5):1031-42.
- \*Edlin, A. and S. Reichelstein (1996), "Hold-ups, Standard Breach Remedies and Optimal Investment," *American Economic Review*, 86(3):478-501.
- \*Hermalin, B. and M. Katz (1991), "Moral Hazard and Verifiability," *Econometrica*, 59: 1735-1754.
- MacLeod, B. and J. Malcomson (1993), "Investment, Hold-Up, and the Form of Market Contracts," *American Economic Review* 83(4):811-37.
- Malcomson, J.M. (1997), "Contracts, Hold-Up, and Labor Markets," *Journal of Economic Literature*, 35:1916-57.
- \*Nöldeke, G. and K. Schmidt (1995), "Option Contracts and Renegotiation: A Solution to the Hold-Up Problem," *Rand Journal of Economics*, 26(2):163-79.

Nöldeke, G. and K. Schmidt (1997), "Sequential Investments and Options to Own," DP 1645, CEPR.

### **C. Ownership, authority and corporate governance**

\*Aghion, P. and P. Bolton (1992), "An Incomplete Contracts Approach to Financial Contracting," *Review of Economics Studies*, vol. 59, pp. 473-494.

Aghion, P. and P. Bolton (1997), "Incomplete Social Contracts," mimeo.

\*Aghion, P. and J. Tirole (1997), "Formal and Real Authority in Organizations," *Journal of Political Economy* vol. 105, p. 1-29.

Berglof, E. and E.-L. von Thadden (1994), "Short-Term vs. Long-Term Interests: Capital Structure with Multiple Investors," *Quarterly Journal of Economics*, CIX (4), November.

Bolton, P. and D. Scharfstein (1990), "A Theory of Predation Based on Agency Problems in Financial Contracting," *American Economic Review* 80, 94-106.

Bolton, P. and D. Scharfstein (1996), "Optimal Debt Structure and the Number of Creditors," *Journal of Political Economy* 104(1).

\*Dewatripont, M. and J. Tirole (1994), "A Theory of Debt and Equity: Diversity of Securities and Manager Shareholder Congruence," *Quarterly Journal of Economics*, CIX (4), November, p. 1027-1054.

\*Dewatripont, M. and J. Tirole (1995), "Advocates," Mimeo, forthcoming, *Journal of Political Economy*.

Hälonen, M. (1997), "A Theory of Joint Ownership," DP 97/437, University of Bristol.

Hansmann, H. (1996), *The Ownership of Enterprise*, Belknap, Harvard.

Harris, M. and A. Raviv (1993), "Financial Contracting Theory," in J.-J. Laffont (ed.), *Advances in Economic Theory*, Sixth World Congress of the Econometric Society, Cambridge: Cambridge University Press.

Hart, O. (1995), *Firms, Contracts and Financial Structure*, Chapters 5-6.

\*Hart, O. and J. Moore (1989), "Default and Renegotiation: A Dynamic Model of Debt," Working Paper, Department of Economics, Harvard University.

Hart, O. and J. Moore (1994), "A Theory of Debt Based on the Inalienability of Human Capital," *Quarterly Journal of Economics*, CIX (4), November.

Hart, O. and J. Moore (1997), "Cooperatives vs. Outside Ownership," mimeo, Harvard.

Kremer, M. (1997), "Why are Worker Cooperatives So Rare?", mimeo, MIT.

Milgrom, P. (1988), "Employment Contracts, Influence Activities and Efficient Organization Design," *Journal of Political Economy*, 96(1):42-60.

Milgrom, P. and J. Roberts (1988), "An Economic Approach to Influence Activities in Organizations," *American Journal of Sociology*, 94.

Rajan, R. and L. Zingales (1996), "Power in a Theory of the Firm," draft, Graduate School of Business, Chicago.

Rotemberg, J. (1994), "Power in Profit-Maximizing Organizations," *Journal of Management and Strategy*, 2.

Stole, L. and J. Zwiebel (1996a), "Organizational Design and Technology Choice Under Intrafirm Bargaining," *American Economic Review* 86: 195-222.

Stole, L. and J. Zwiebel (1996b), "Intrafirm Bargaining under Nonbinding Contracts," *Review of Economic Studies* 63: 375-410.