

CONTESTS, THEORY AND APPLICATIONS

Kai A. Konrad

This course will analyse some aspects of a theory of contests and their applications in Economics. First the major types of single-stage contests are motivated or axiomatized and their properties are characterized under complete and incomplete information. Second, we analyse design problems in multistage contests. Third, strategic issues such as endogenous timing of moves and strategic delegation in contests are considered. Fourth, collective contests and the interaction between intra-group contest and between-groups contests are studied. Fifth, we review issues such as budget constraints, contribution caps, and iterated contests under such constraints. The following characterizes the topics and provides a readings list.

Unit 0: Outline and overview

- 0.1 Types of contests
 - Tullock-type contests
 - Tournaments
 - First-prize-all-pay auction
 - War of attrition
- 0.2 Areas of application and connections between fields
- 0.3 Overview

Unit 1: Single-stage contests

- 1.1 The Tullock-contest
 - Motivation 1: exponentially distributed noise
 - Motivation 2: axiomatization
 - Generalizations and comparative statics
 - Incomplete information
- 1.2 The simple no-noise case
 - Equilibrium and Comparative statics
 - A general linear model
 - Incomplete information

Literature¹:

Amann, Erwin, and Wolfgang Leininger, 1996, Asymmetric all-pay auctions with incomplete information: the two player case, *Games and Economic Behavior*, 14, 1-18.
*Baye, Michael R., Dan Kovenock and Casper deVries, 1996, The all-pay auction with complete information, *Economic Theory*, 8, 291-305.
Baye, Michael R., Dan Kovenock and Casper deVries, 1998, A general linear model of contests, mimeo.

¹ The papers covered with some more depth are noted with a *.

- Baye, Michael, and Heidrun Hoppe, 2001, Duality of rent-seeking and innovation games, mimeo.
- Clark, Derek J., and C. Riis, 1998, Contest success functions: an extension, *Economic Theory*, 11, 201-204.
- Ellingsen, Tore, 1991, Strategic buyers and the social cost of monopoly, *American Economic Review*, 81, 648-657.
- Fullerton, Richard L., and R. Preston McAfee, 1999, Auctioning entry into tournaments, *Journal of Political Economy*, 107, 573-605.
- Glazer, Amihai, and Refael Hassin, 2000, Sequential rent seeking, *Public Choice*, 102, 219-228.
- Hillman, A. and Riley, J., 1989, Politically contestable rents and transfers, *Economics and Politics*, 1989, 17-39.
- *Hillman, A. and D. Samet, 1987, Dissipation of contestable rents by small numbers of contenders, *Public Choice*, 54, 63-82.
- *Hirshleifer, Jack and John G. Riley, 1992, *The Analytics of Uncertainty and Information*, Cambridge University Press, chapter 10, 369-404.
- Lockard, Alan, and Gordon Tullock, 2001, *Efficient rent-seeking*, Chronicle of an intellectual Quagmire, Kluwer Academic Publishers.
- Nitzan, Shmuel, 1994, Modelling rent-seeking contests, *European Journal of Political Economy*, 10, 41-60.
- *Nti, Kofi, 1997, Comparative statics of contests and rent-seeking games, *International Economic Review*, 38, 43-59.
- *Skaperdas, Stergios, 1996, Contest success functions, *Economic Theory* 7, 283-290.
- Tullock, Gordon, 1980, Efficient rent seeking, in: J.M. Buchanan, R.D. Tollison and G. Tullock, *Toward a Theory of the Rent-seeking Society*, Texas A&M University Press.

Unit 2: Contest design

- 3.1 The structure of prizes
- 3.2 Structuring noisy multi-stage contests
- 3.3 Entry admittance

Literature:

- *Baye, Michael, R., Dan Kovenock and Casper deVries, 1993, Rigging the lobbying process: an application of the all-pay auction, *American Economic Review*, 83, 289-294.
- Clark, Derek J. and C. Riis, 1998, Competition over more than one prize, *American Economic Review*, 88, 276-289.
- Clark, Derek, and C. Riis, 1998, Influence and the discretionary allocation of several prizes, *European Journal of Political Economy*, 14, 605-626.
- Glazer, Amihai and R. Hassin, 1988, Optimal contests, *Economic Inquiry*, 26, 133-143.
- *Gradstein, Mark, and Kai A. Konrad, 1999, Orchestrating rent seeking contests, *Economic Journal*, 109, 536-545.
- *Lazear, Edward P., 1995, *Personnel Economics*, Chapter 3: Relative Compensation, MIT Press.
- *Moldovanu, Benny, and Aner Sela, 2001, The optimal allocation of prizes in contests, forthcoming in: *American Economic Review*.

*O'Keefe, Mary, W. Kip Viscusi, and Richard Zeckhauser, 1984, Economic contests: comparative reward schemes, *Journal of Labor Economics*, 2(1), 27-56.

Unit 3: Strategic issues: Timing, delegation

- 3.1 Timing in noisy contests
- 3.2 Delegation

Literature:

- *Baik, Kyung H., and Jason F. Shogren, 1992, Strategic behavior in contests, *American Economic Review*, 82, 359-362.
- *Baye, Michael R., and Onshong Shin, 1999, Strategic behavior in contests: comment, *American Economic Review*, 89, 691-693.
- *Dixit, Avinash, 1987, Strategic behavior in contests, *American Economic Review*, 77, 891-898.
- *Konrad, Kai A., 2000, Trade contests, *Journal of International Economics*, 51(2), pp. 317-334.
- Leininger, Wolfgang, 1993, More efficient rent-seeking - A Münchhausen solution, *Public Choice* 75, 43-62.
- *Wärneryd, Karl, 2000, In defense of lawyers: moral hazard as an aid to cooperation, *Games and Economic Behavior*, 33, 145-158.

Unit 4: Collective goods problems in contests

- 4.1 Sabotage
(Lazear 1989, Konrad 2000)
- 4.2 Two-purpose contributions
(Davis and Reilly 1999, Nitzan 1991, Katz, Nitzan and Rosenberg 1990, Nitzan 1991, Lee 1995)
- 4.3 Two-stage collective rent seeking
(Wärneryd 1998, Inderst, Müller and Wärneryd 1999)

Literature:

- Baye Michael, Dan Kovenock and Casper de Vries, 1999, The incidence of over dissipation in rent-seeking contests, *Public Choice* 1999, 439-454.
- *Davis, D.D. and R.J. Reilly, 1999, Rent-seeking with non-identical sharing rules: An equilibrium rescued, *Public Choice* 1999 (100), 31-38.
- *Inderst, Roman, Holger Müller, and Karl Wärneryd, 1999, Inside and outside ownership, a political theory of the firm, mimeo.
- *Katz, E., Shmuel Nitzan, and J. Rosenberg, 1990, Rent-seeking for pure public goods, *Public Choice*, 65, 49-60.
- *Konrad, Kai A., 2000, Sabotage in rent-seeking contests, *Journal of Law, Economics and Organization*, 16(1), 155-165.
- Lazear, Edward P., 1989, Pay equality and industrial politics, *Journal of Political Economy*, 97, 561-580.

Lee, Sanghack, 1995, Endogenous sharing rules in collective-group rent-seeking, *Public Choice*, 85, 33-44.

*Nitzan, Shmuel, 1991, Collective rent dissipation, *Economic Journal*, 101, 1522-1534.

Nitzan, Shmuel, 1991, Rent-seeking with non-identical sharing rules, *Public Choice*, 1991 (71), 43-50, .

*Wärneryd, Karl, 1998, Distributional conflict and jurisdictional organization, *Journal of Public Economics*, 69, 435-450.

Unit 5: Constraints

5.1 Rent-seeking with caps, budget constraints, and taxes

5.2 General equilibrium of production and conflict

5.3 Iterative conflict

Literature:

*Che, Yeon-Koo, and Ian L. Gale, 1998, Caps on political lobbying, *American Economic Review*, 88, 643-651.

*Che, Yeon-Koo, and Ian L. Gale, 1997, Rent dissipation when rent seekers are budget constrained, *Public Choice*, 92, 109-126.

*Garfinkel, Michelle R., and Stergios Skaperdas, 2000, Conflict without misperceptions or incomplete information: how the future matters, *Journal of Conflict Resolution*, 44(6).

Gavious, Arieh, Benny Moldovanu, and Aner Sela, 2000, Bid costs and endogenous bid caps, mimeo.

*Glazer, Amihai, and Kai A. Konrad, 1999, Taxation of rent seeking activities, *Journal of Public Economics*, 72(1), 61-72.

*Skaperdas, Stergios, 1992, Cooperation, conflict, and power in the absence of property rights, *American Economic Review*, 82, 720-739.