EXPANDING ADVERSARIAL RISK ANALYSIS TO SIMULTANEOUS DECISION IN DYNAMIC GAME

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Abstract

We expand adversarial risk analysis beyond simultaneous play to simultaneous decision in dynamic game. We introduce the general model of simultaneous decision in dynamic game, on which we make the international tariff rates model based. Besides, we give the concrete algorithm related to the international tariff model and figures for the numerical example.

Keywords and phrases: adversarial risk analysis, game theory, dynamic game, international tariff model.

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References

- [1] D. Rios Insua, J. Rios and D. Banks, Adversarial risk analysis, J. Amer. Statist. Assoc. 104(486) (2009), 841-854.
- [2] R. McAfee and J. McMillan, Auctions and bidding, J. Economic Literature 25 (1996), 699-738.
- [3] R. McAfee and J. McMillan, Competition and game theory, J. Market. Res. 33 (1996), 263-267.
- [4] M. Rothkopf, Decision analysis: the right tool for auctions, Decision Analysis 4 (2007), 167-172.
- [5] C. Velu and S. Iyer, The rationality of irrationality for managers: returns based biliefs and the traveler's delimma, Cambridge Working Papers in Economics, 0826, Faculty of Economics, University of Cambridge, 2008.
- [6] A. Heyes, Implementing environmental regulation: enforcement and compliance, J. Regulatory Econom. 17 (2000), 107-129.
- [7] D. Von Winterfeldt and T. M. O'Sullivan, Should we protect commercial airplane against surface-to-air missile attacks by terrorists? Decision Analysis 3 (2006), 63-75.
- [8] G. Brown, M. Carely, J. Salmeron and K. Wood, Defending critical infrastructure, Interfaces 36 (2006), 530-544.

- [9] G. A. Akerlof, The market for "lemons": Quality uncertainty and the market mechanism, The Quarterly J. Econom. 84(3) (1970), 488-500.
- [10] G. A. Akerlof, Behavioral macroeconomics and macroeconomic behavior, The Amer. Ceonomic Review 92(3) (2002), 411-433.
- [11] G. A. Akerlof and W. T. Dickens, The economic consequences of cognitive dissonance, The Amer. Ceonomic Review 72(3) (1982), 307-319.
- [12] E. W. Bond, A direct test of the "lemons" model: The marker for the used pickup trucks, Amer. Ceonomic Rev. 72(4) (1982), 836-840.
- [13] W. Leontief, The pure theory of the guaranteed annual wage contract, J. Political Economy 57(1) (1946), 76-79.
- [14] M. Spence, Job market signaling, Quart. J. Econom. 87(3) (1973), 355-374.
- [15] E. Lazear and S. Rosen, Rank-order tournaments as optimum labor contracts, J. Political Economy 89 (1981), 841-864.
- [16] F. E. Kydland and E. C. Prescott, Rules rather than discretion: the inconsistency of optimal plans, J. Political Econ. 85(3) (1977), 473-492.