Colonel Blotto with Imperfect Targeting*

Deborah Fletcher\textsuperscript{a, **}, Steven Slutsky\textsuperscript{b}

\textsuperscript{a}Department of Economics, Miami University, 208 Laws Hall, Oxford, OH 45056
\textsuperscript{b}Department of Economics, University of Florida, Matherly Hall, Gainesville, FL 32611

December 2009

Abstract: Colonel Blotto games have been widely applied in a variety of contests where the players allocate resources across a number of battlefields and the winner in each battlefield is the one with more resources there. One drawback of this standard model is the assumption that players can perfectly target their efforts toward different battlefields. In many situations, players can only imperfectly target different battlefields, with an allocation affecting more than one battlefield. We develop an extension of Colonel Blotto that incorporates this type of interrelation. The equilibria here generally utilize mixed strategies that tend to be asymmetric across battlefields. That is, at least one player will have zero probability of dividing resources equally across battlefields, even if the characteristics of the battlefields are similar.

We use advertising data from the 2002 races for governor and US senate to test the application of the Blotto model to political contests. Although the Colonel Blotto model has been used extensively to model political campaigns, we find that candidates’ advertising allocations across markets are far too symmetric to fit the model.

JEL code: C72
Keywords: Colonel Blotto; mixed strategies

**Corresponding author.
Email addresses: fletchd@muohio.edu, steven.slutsky@cba.ufl.edu