Coarse updating: Bertrand competition

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October 27, 2014

Abstract

In this paper we propose a theory of Bertrand competition where firms form beliefs by considering only a subset of the available variables. This theory of coarse updating leads to equilibria where firms set prices according to constant mark-up strategies, which is consistent with the empirical evidence found in survey data. Moreover it leads to higher prices than the standard theory, which is in line with experimental evidence. In general more sophisticated firms who consider all variables have incentives to deviate from coarse equilibria. However we show that when costs are sufficiently correlated, equilibria under coarse updating correspond to ϵ-equilibria under Bayesian updating. Hence in this case even more sophisticated firms have little incentive to deviate from coarse equilibria. Finally in the case of procurement auctions this theory of coarse updating leads to a particularly simple estimation procedure where costs can be recovered from pricing data using fewer observations than standard methods.

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