

PARTICIPATION AND BIDDING DECISIONS DURING THE ECONOMIC CRISIS: AN ANALYSIS OF THE ADOT PROCUREMENT AUCTIONS

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ABSTRACT

The highway construction industry has been affected by the 2008 economic crisis like other sectors in the economy. This study assesses the effect of the crisis on bidding decisions and profitability of the firms in First-Price auctions for the highways and routes construction and maintenance run by the Arizona Department of Transportation (ADOT).

In this market, the economic crisis has contributed to the increased level of competition. The reason comes from the fact that working for the government is safer than outside options during the crisis. The auction theory predicts that firms bid more aggressively in higher level of competition. It results in significant falls in markups and profits. Along with theory prediction, the hypothesis in this study is that profitability of the firms, measured by the Lerner index, goes down during the economic crisis. The effect of input price changes is also assessed to investigate how firms respond to the monthly price changes of fuel and bituminous material during the crisis.

To achieve the goal, a dynamic model of participation and bidding is fitted for the period 2006-2012. The choice of the dynamic model is upon the fact that there are some established regular firms in the market participated in many rounds in each year. Therefore, a repeated game of participation and bidding forms in which a regular firm's decision is affected by his activity status (participation and winning) in the previous rounds and also his expectation about the projects coming up in the future.

Solving for the dynamic model leads to the estimates of the projects' completion cost. Having the estimated costs in the hand, the Lerner index is computed. It is the percentage difference of the bids amount and the projects cost. As expected, the results show that the crisis has decreased the profitability of the firms by about 7%. It is also revealed that the effect comes from the increased level of the competition during the crisis and not input price changes.