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# A Subsidized Vickrey Auction for Cost Sharing\*

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## Abstract

It is well-known that there is no cost-sharing mechanism that is budget balanced, efficient, and dominant strategy incentive compatible (DSIC). The Vickrey auction is DSIC and efficient, but raises surplus revenue. In an environment where players have constant marginal values, we introduce a subsidized Vickrey auction (SVA) that uses surplus revenue to offset some of the production costs. By compromising efficiency, our SVA improves the players' payoffs over the Vickrey auction. We show that the SVA is DSIC, budget balanced, and value effective (awarding quantity only to the player who values it most), and it Pareto dominates any other mechanism with these three properties. We demonstrate that there is no welfare ranking between the SVA and the non-value effective serial cost-sharing mechanism.

**JEL Classification Numbers:** C72 (Noncooperative Games), D44 (Auctions), H42 (Publicly Provided Private Goods)

**Keywords:** Cost sharing, dominant strategy implementation, Vickrey auction

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