Screening Frontiers*

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Abstract

A principal screens an agent with an arbitrary set of allocations X . The agent's preferences over allocations are comonotonic. A subset of allocations X ‹ Ď X is a surplus-elasticity frontier if (i) any other allocation has a demand curve that is pointwise lower and less elastic than some allocation in X ‹ and (ii) the allocations in X ‹ can be ordered in terms of their demand curves such that a higher demand curve is more inelastic. We show that any surplus-elasticity frontier is an optimal menu. Moreover, if the incremental demand curves along the frontier are also ordered by their elasticities, then the frontier is optimal even among stochastic mechanisms. The result is agnostic to type distributions and redistributive welfare weights—the same frontier remains optimal for a broad class of objectives. As applications, we show how these results immediately yield new insights into optimal bundling, optimal taxation, sequential screening, selling information, and regulating a data-rich monopolist.

Keywords: Multidimensional screening, bundling, taxation, costly screening, sequential screening, selling information, monopoly regulation, redistributive allocation.