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Motivation

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## DESIGN of E-Commerce Platform's Presentation is Crucial

E-commerce platforms like Taobao and CTrip enable buyers to choose from multiple sellers. However, buyer searches on these platforms are sequential, time-consuming, and rarely exhaustive. Therefore, the way platforms present sellers significantly impacts market dynamics and outcomes.

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in submission

## Price Stability and Improved Buyer Surplus with (Moderated) Seller Prominence

Presentation Labs | AI Summary

This paper examines a market involving a buyer, multiple sellers, and a platform. Sellers set prices, the platform designs mechanisms to present them to the buyer. Buyers face inspection costs for each sellers, making the platform's presentation design non-trivial.

The paper evaluates a scheme of presentation, wherein one seller is made prominent with drastically reduced inspection cost. This scheme coupled with appropriate mechanisms can stabilize prices at equilibria and sometimes improve consumer surplus.

### People also ask

Consumer Information and the Limits to Competition. Armstrong and Zhou (2022) *American Economic Review*.

Position Ranking and Auctions for Online Marketplaces. Chu et al. (2020) *Management Science*.

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Model Setup: Buyer's Search Behavior and Seller's Equilibrium Pricing

www.main\_paper.com > section 2, 3 > ~ theorem 1, theorem 2

## N Sellers, 1 buyer who has i.i.d. random value for each seller, not known in advance.

The buyer may pay each an inspection cost to learn every seller's value. Namely, at any time, the buyer may inspect the value of a seller of her choice (and incur a cost), or to buy from one of the inspected sellers and quit, or to quit without purchase.

How does a buyer make purchase decisions? · The buyer does optimal sequential search inspired by the Pandora's Box Problem.

Sellers do what? · Sellers set their price to compete against one another and maximize revenue.

WHY markets need presentation mechanism? · For i.i.d. sellers with inspection cost, there's no symmetric sellers' pricing equilibrium.

### Allocate Prominence

#### M Mechanisms that Prioritize One Seller

The platform sets one seller's inspection cost zero, meanwhile setting all others' at  $c > 0$ . This is akin to Amazon's "Buy Box" policy.

www.main\_paper.com > section 4 > "Buy Box" mechanism

#### How mechanisms select prominent seller(s)?

- L Lowest-Price Seller | no equilibrium exists
- D Seller at target price | all equilibria hold
- T Seller below target price | some equilibria hold

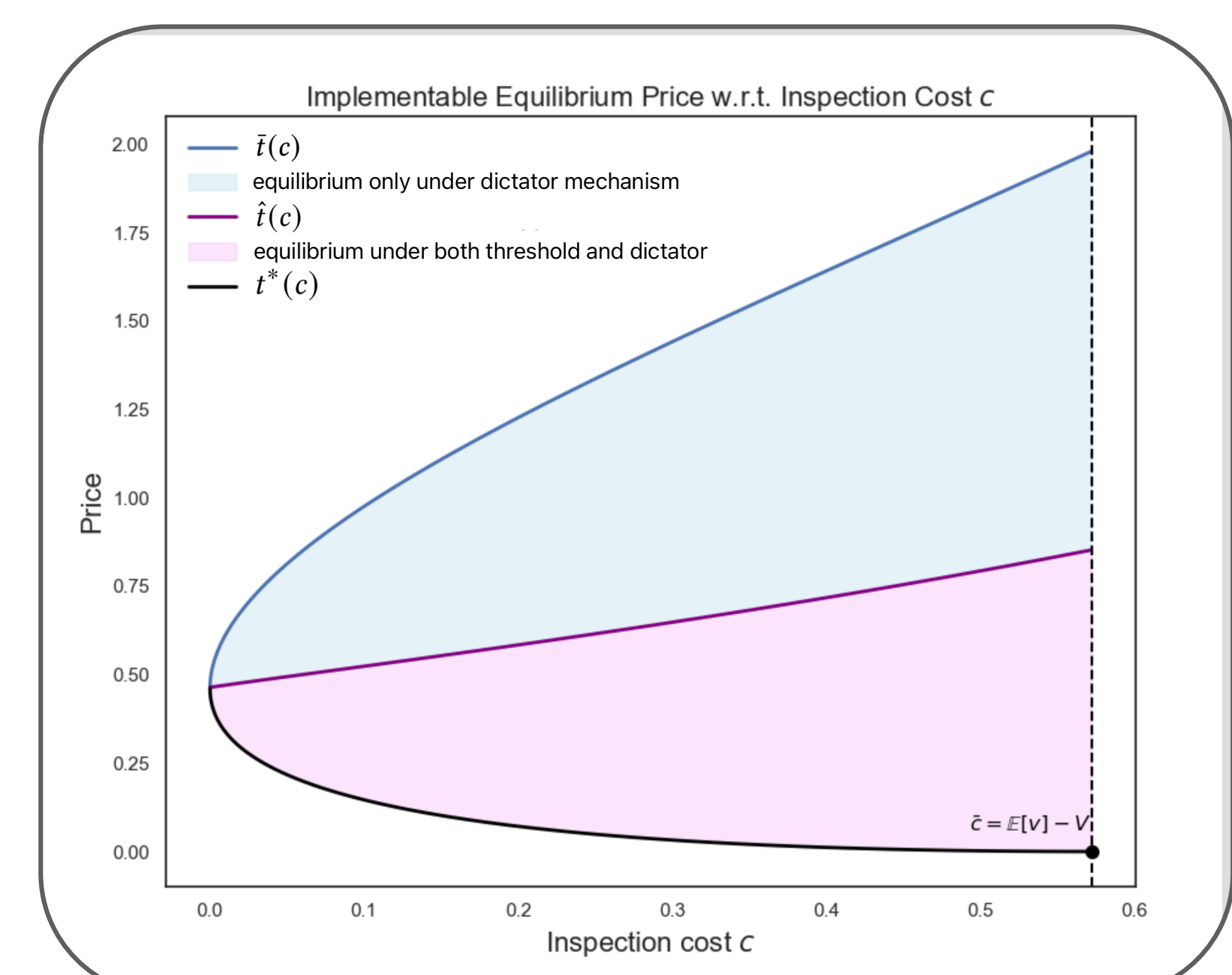
#### a. Amazon's Price Fluctuation: when no equilibrium exists

Amazon's "Buy Box" assigns priority to one seller, who then often gets >90% of total sales.

Pricing on Amazon has long been known to involve software that helps to update prices dynamically; at least part of the drive for the incessant price changes is to compete for the Buy Box.

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### Images



Equilibrium Price Range | y-price, x-inspection cost

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Result | Consumer Surplus at Equilibrium

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## HIGHER Search Costs may Increase Consumer Surplus

Well-designed presentation mechanism push sellers to compete for prominence, the consumer surplus may sometimes increase with higher inspection cost, because the disutility of search being offset by the price decrease due to heightened competition.