

Algorithmic Pricing and Consumer Welfare Under Limited Attention

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Layout demonstration — sample record, not a published paper.

Abstract

How does limited attention change the welfare effects of rapid price updates? A two-period sketch writes surplus as value minus price minus attention cost, and separates the readings that a completed study would test with data.

Keywords: algorithmic pricing; consumer welfare; limited attention; competition policy

1 Research question

Automated pricing systems can revise an offer between the moment a consumer opens a page and the moment the purchase is made, while the consumer inspects only a small subset of the offers that exist. The record format should make that bridge between mechanism design and computation easy to scan, which is why the abstract leads with the question rather than the method.

Two literatures sit on either side of that sentence. One asks how a boundedly attentive consumer should search; the other asks how an automated seller should respond. The interesting case is where the two answers are computed at the same time, and that is the case this record is shaped for.

2 Attention as a cost

For an illustrative consumer i , written surplus is

$$W_i = v_i - p_i - a_i \quad (1)$$

where v is value, p the price paid and a the cost of the attention spent comparing offers. The symbol set is deliberately small so that the specimen stays a typographic example rather than a model proposal.

Writing attention as a term in the same expression as price is the whole argument of the section. It forces a reader to decide whether a is a transfer, in which case it belongs in the welfare calculus but not in the resource constraint, or a real cost, in which case it belongs in both.

3 A two-period sketch

In period one the algorithm sets a list price; in period two it may revise that price before the consumer acts. If the consumer samples m of M offers, the attention cost rises with m while the expected price paid falls. Whether the market

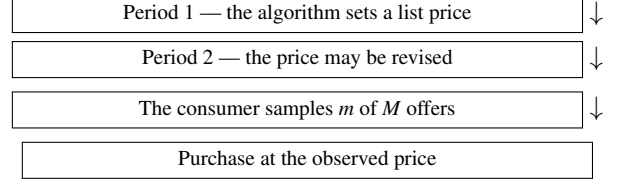


Figure 1: A two-period sketch of automated pricing under limited attention.

outcome improves therefore depends on how the revision rule is bounded.

A bound on the revision rule is the natural policy lever, and it is also the natural modelling choice: a rule that may move the price once has different welfare properties from one that may move it continuously, even when both end at the same expected price.

4 Welfare and competition implications

Two readings of equation (1) are possible. If attention costs are treated as a transfer, automated pricing looks close to efficient; if they are treated as a real resource, rapid revisions can reduce welfare even when prices fall.

A completed study would separate the two readings with data on search behaviour and with the audit trail of the pricing rule. The specimen only fixes which symbols would carry that argument.

The distinction matters because the two readings point in opposite directions for enforcement. If attention is a transfer, a rapid revision is close to a price change and existing competition law already reaches it. If attention is a resource, the harm occurs even when no consumer pays a higher price.

5 A policy reading

Suppose the revision rule is capped so that the price visible when the consumer begins to search is the price paid. The attention cost a falls to the cost of comparing the initial offers, and equation (1) becomes a statement about price alone. The cap therefore converts one problem into another rather than removing it.

The specimen stops here. Naming the trade-off is the contribution of a short paper; measuring it would take the dataset and the estimator that the next section defers.

6 From specimen to study

The finished version would add a dataset, an estimator, robustness checks and a code repository. This record exists to show how those parts are announced: title, authors, publication fields, abstract and full text, in that order.

References

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