

## Purification

- Two firms with cost  $c$  simultaneously set prices
- Two groups of consumers both with unit demand and valuation  $v$ 
  - Measure 1 loyal (visit one store)
  - Measure  $\lambda$  shoppers (visit both stores, buy where cheaper)
- Only equilibrium is in mixed strategies:

$$f(p) = \frac{1 - \lambda v}{\lambda} \frac{1}{2} \frac{1}{p^2}$$

This example is by Dmitri Lubensky, Indiana U. BEPP, January 2014, modified perhaps by Eric Rasmusen.

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$$f(p) = \frac{1 - \lambda v}{\lambda} \frac{1}{2p^2}$$

- Alternative Bayesian game: cost is uniformly distributed on  $[c - \alpha, c + \alpha]$  and privately observed
  - For any  $\alpha > 0$  obtain pure strategy equilibrium  $p^*(c)$ , get price distribution  $h(p)$
  - Result:  $\lim_{\alpha \rightarrow 0} h(p) = f(p)$