Competitive Markets

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- But if $\bar{v} > c$ then efficiency implies that the good should be sold.
- Today we will explore the effects of competition among sellers.

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- A buyer who does not buy has utility zero.

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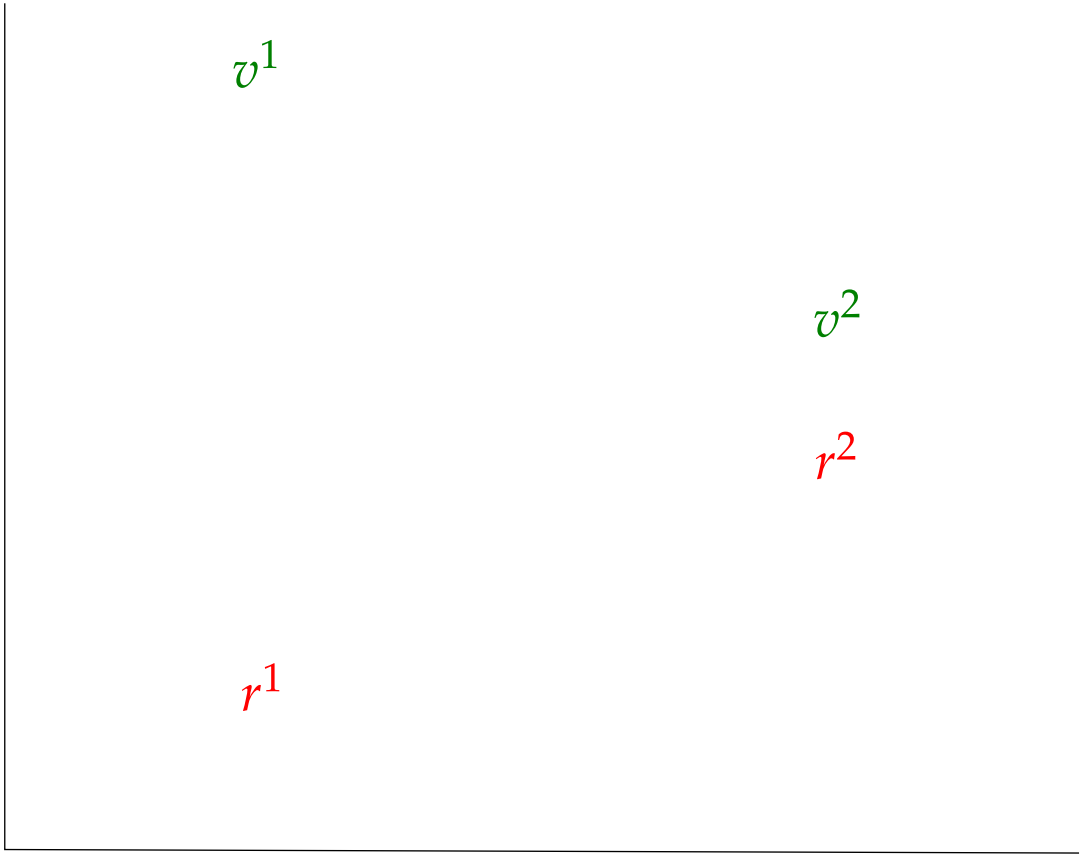
- All sellers will simultaneously run English auctions with their announced reserve prices.
- When the bidding ends in all auctions, the winners are declared and prices determined.

Think eBay.

Example with 2 sellers



We order the buyers' values (decreasing order) and the sellrs' *reserve prices* (increasing order.)

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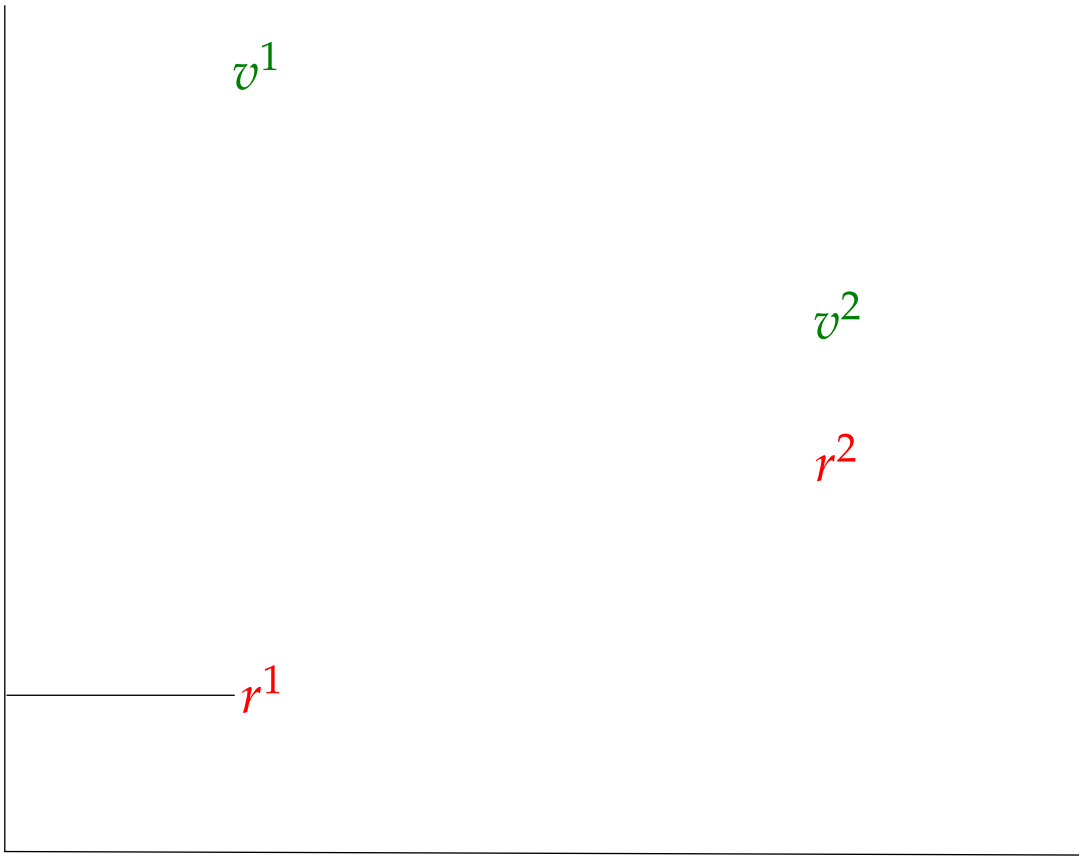

The bidding will begin at the auction with the lower starting bid.

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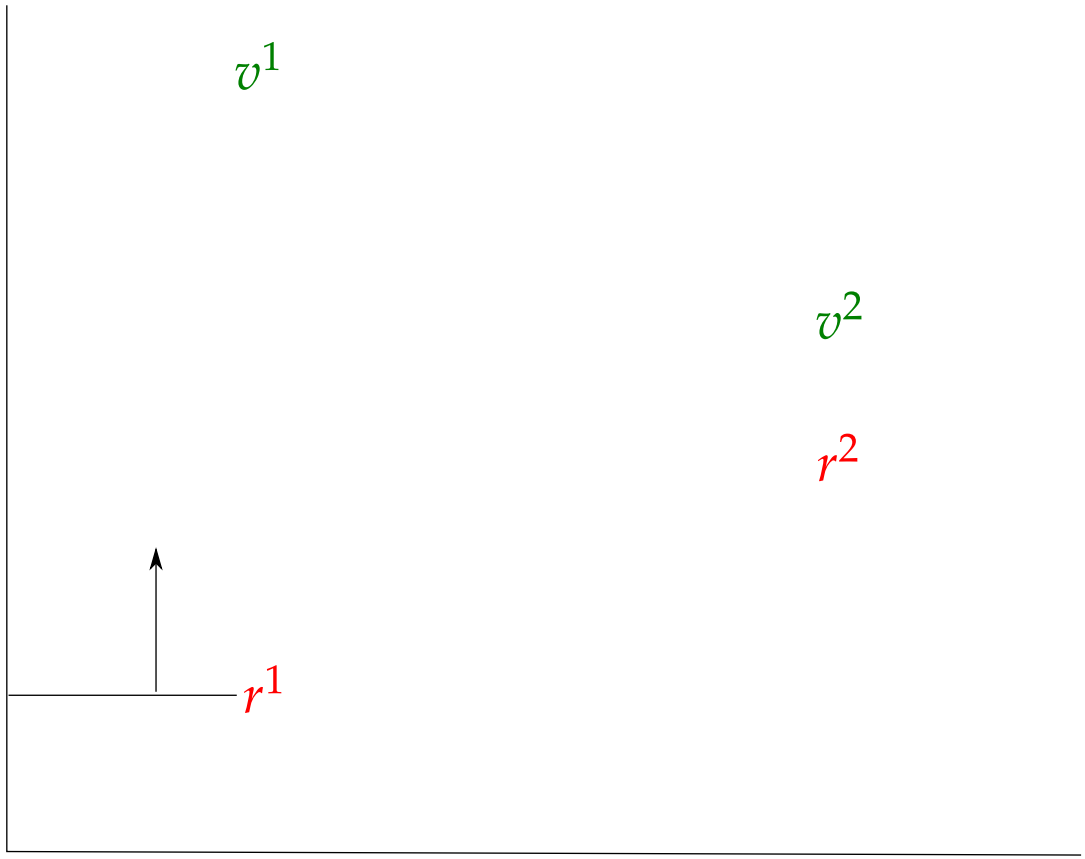

At this price, both bidders are willing to buy so they bid up the price.

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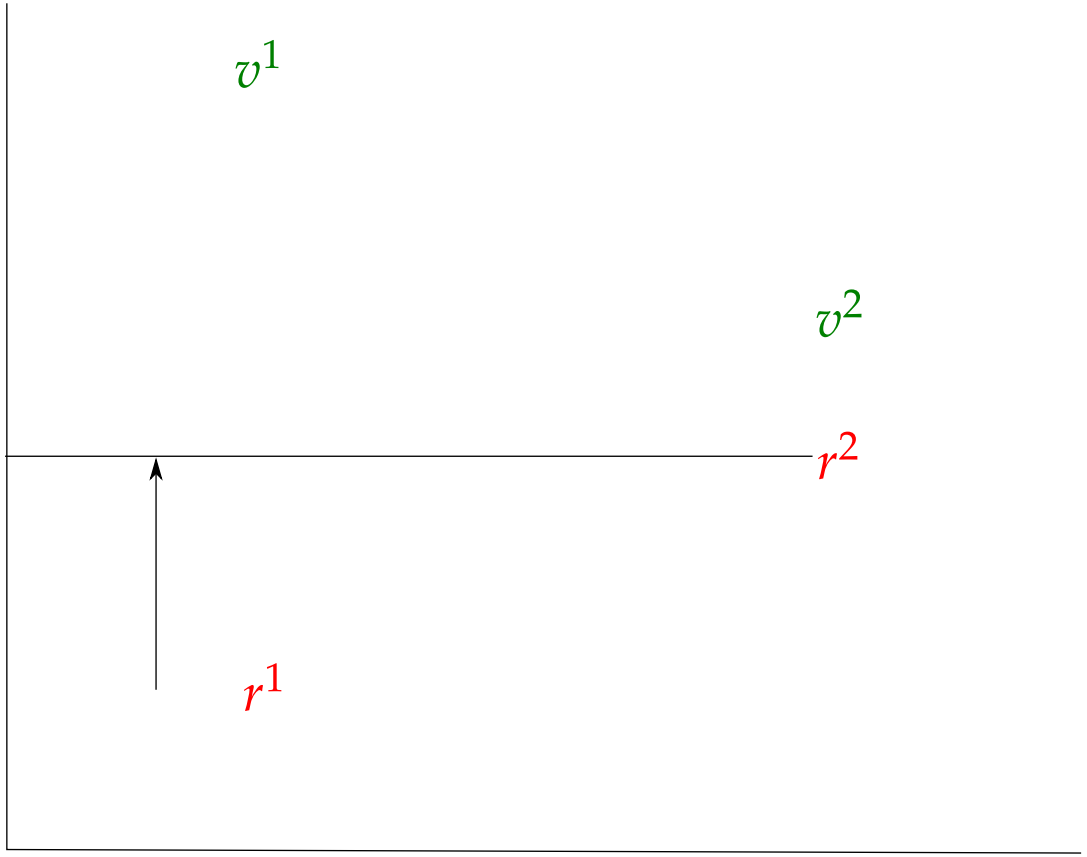

This competition continues driving up the price until it reaches r_2, the reserve price in the other auction.

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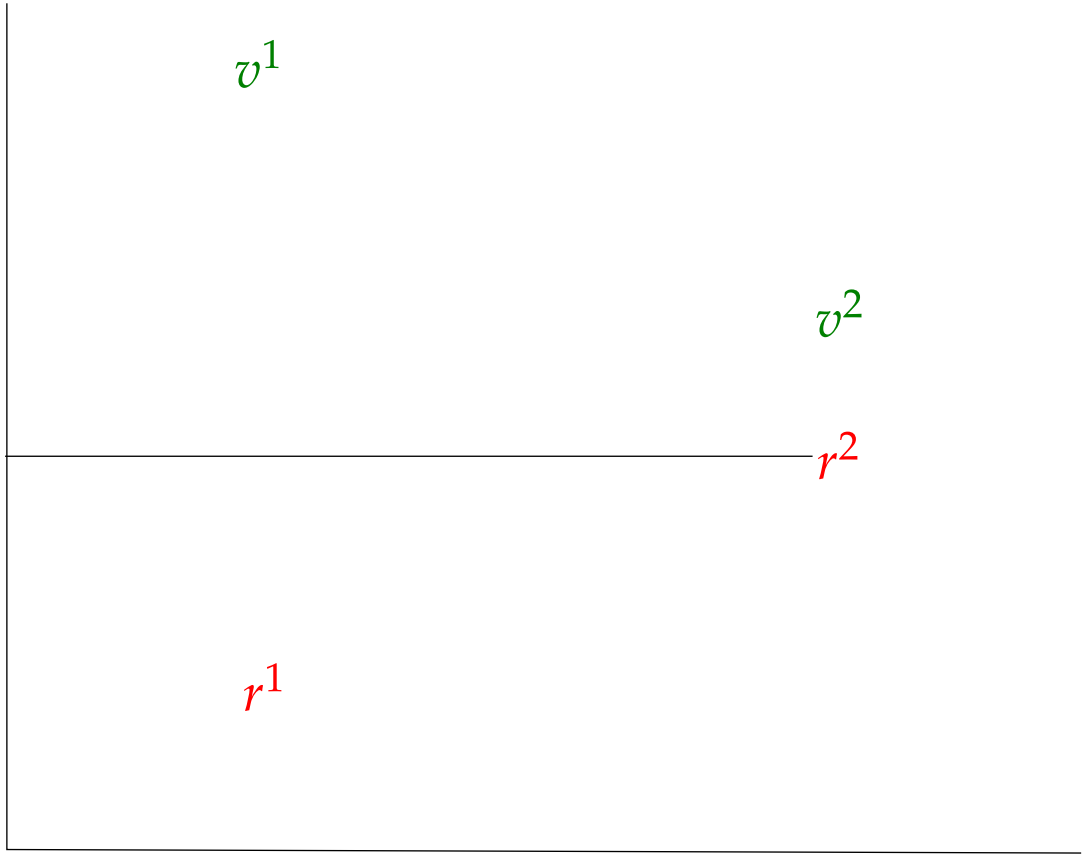

At this point, bidding becomes active on both auctions. Notice how this encourages the second sellr to choose a higher reserve.

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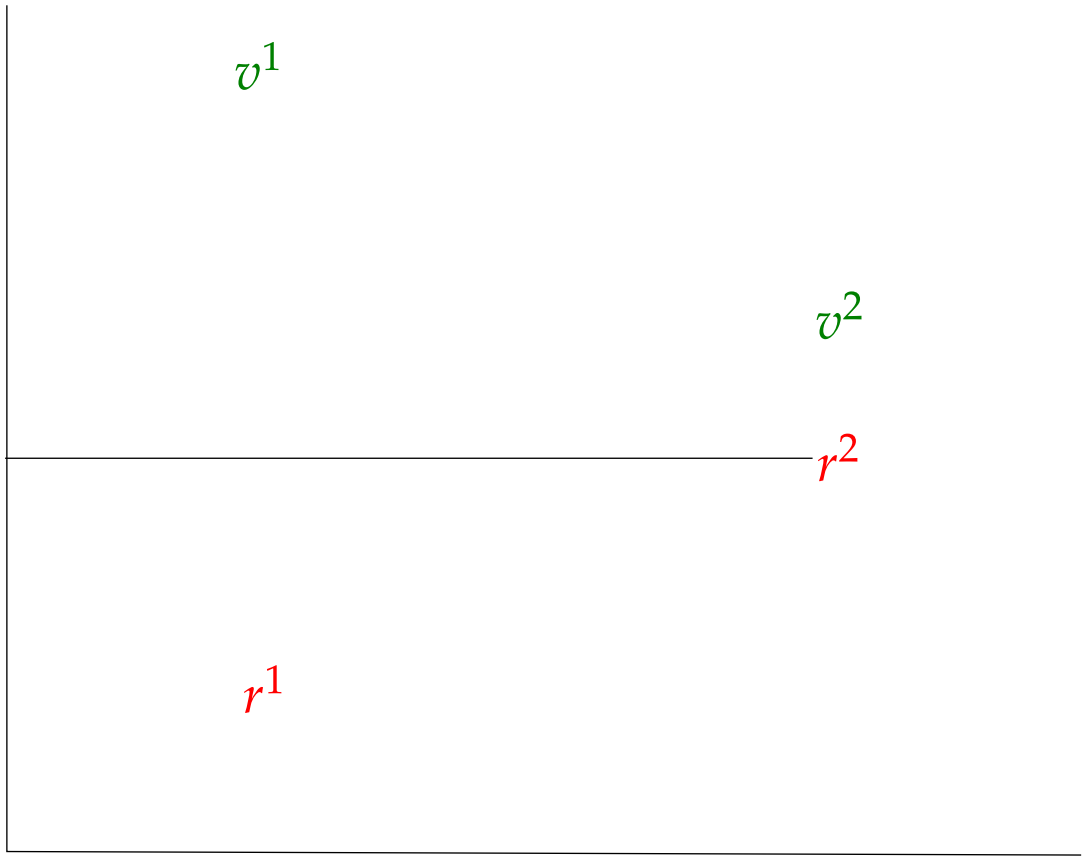
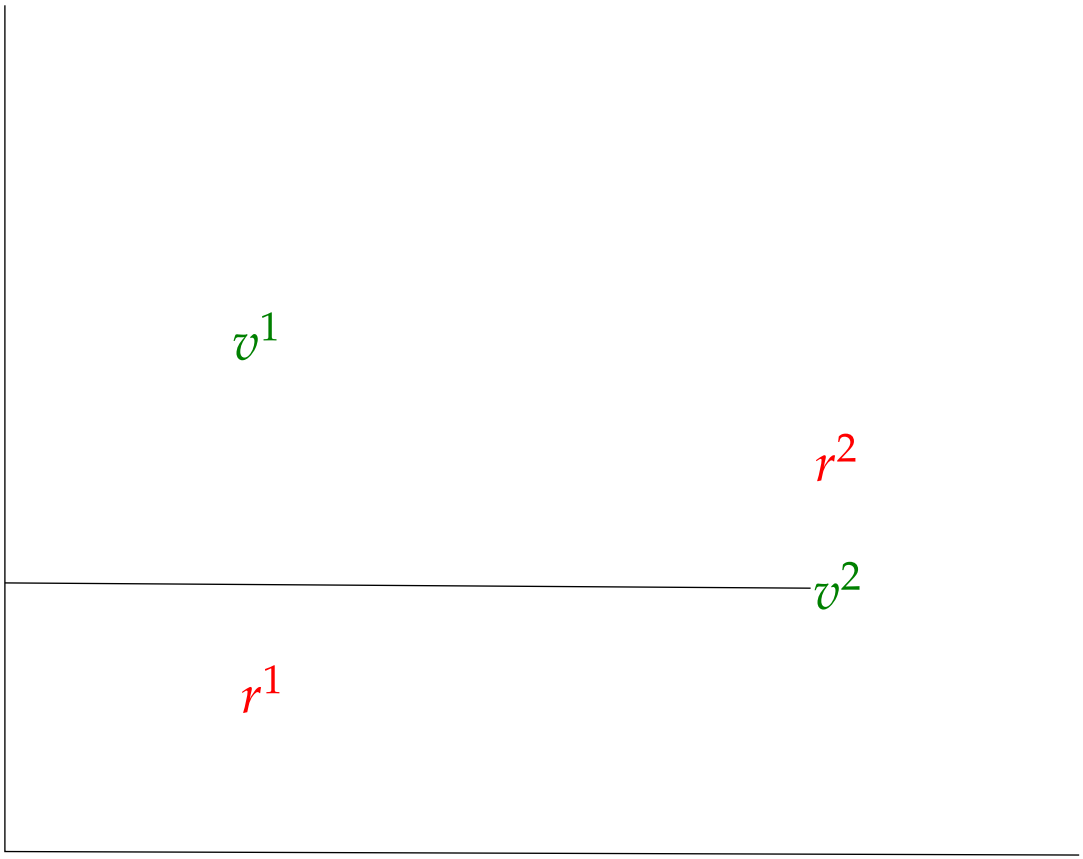


One bidder switches from the first auction to the second, bids r_2 there, and the bidding ends because there is no further competition.

Example with 2 sellers



If instead the values are lower, then the bidding will stop when the low-bidder drops out, before reaching the higher reserve price.

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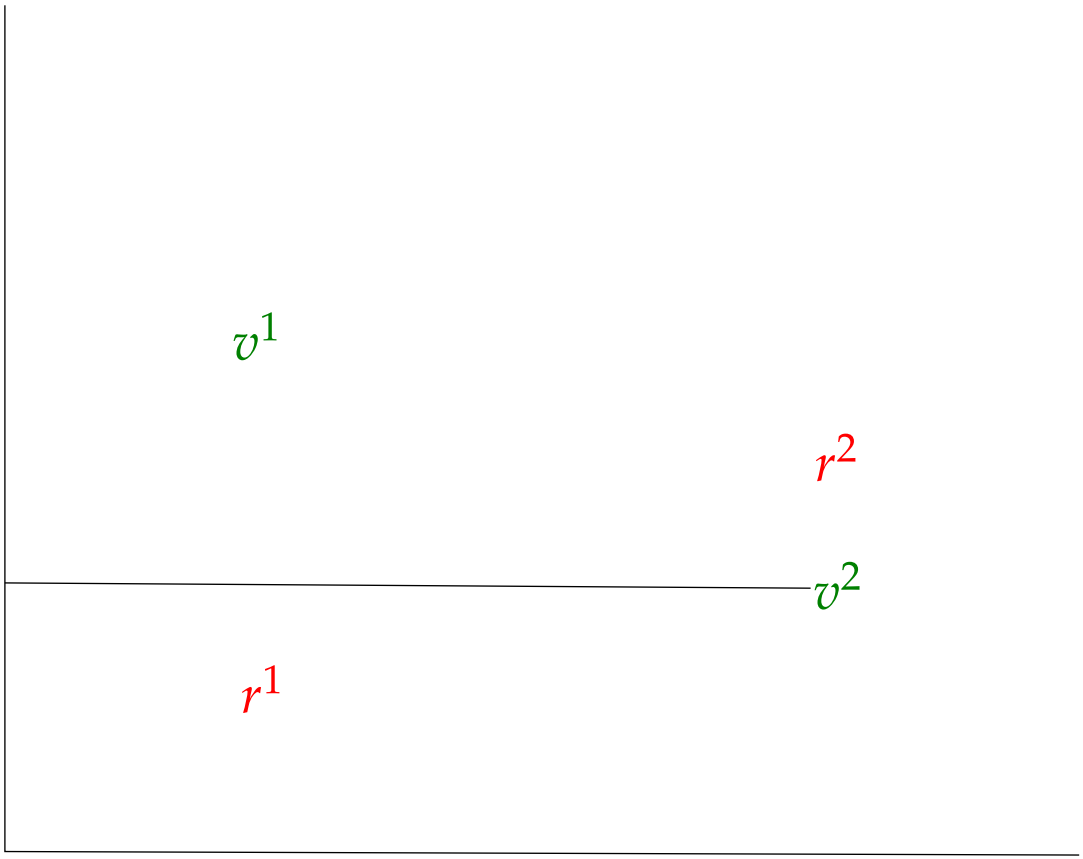
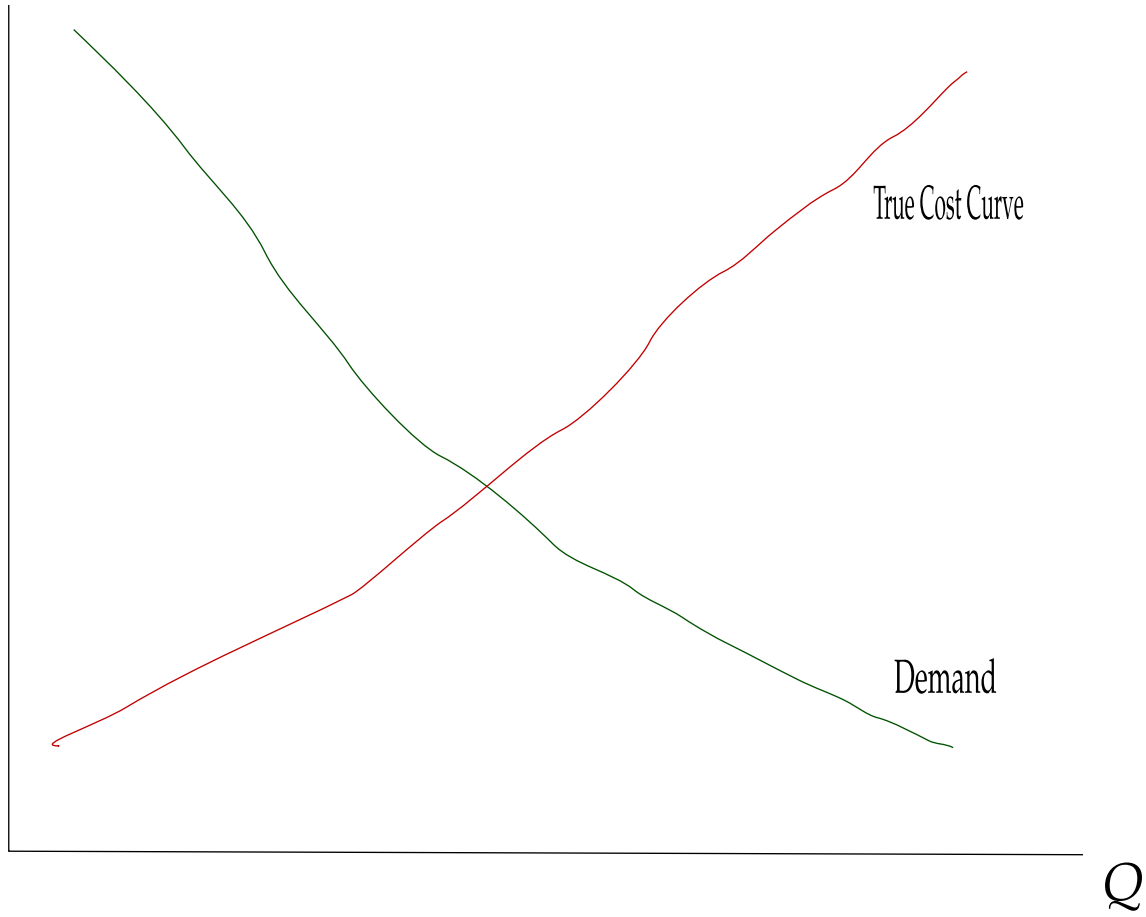


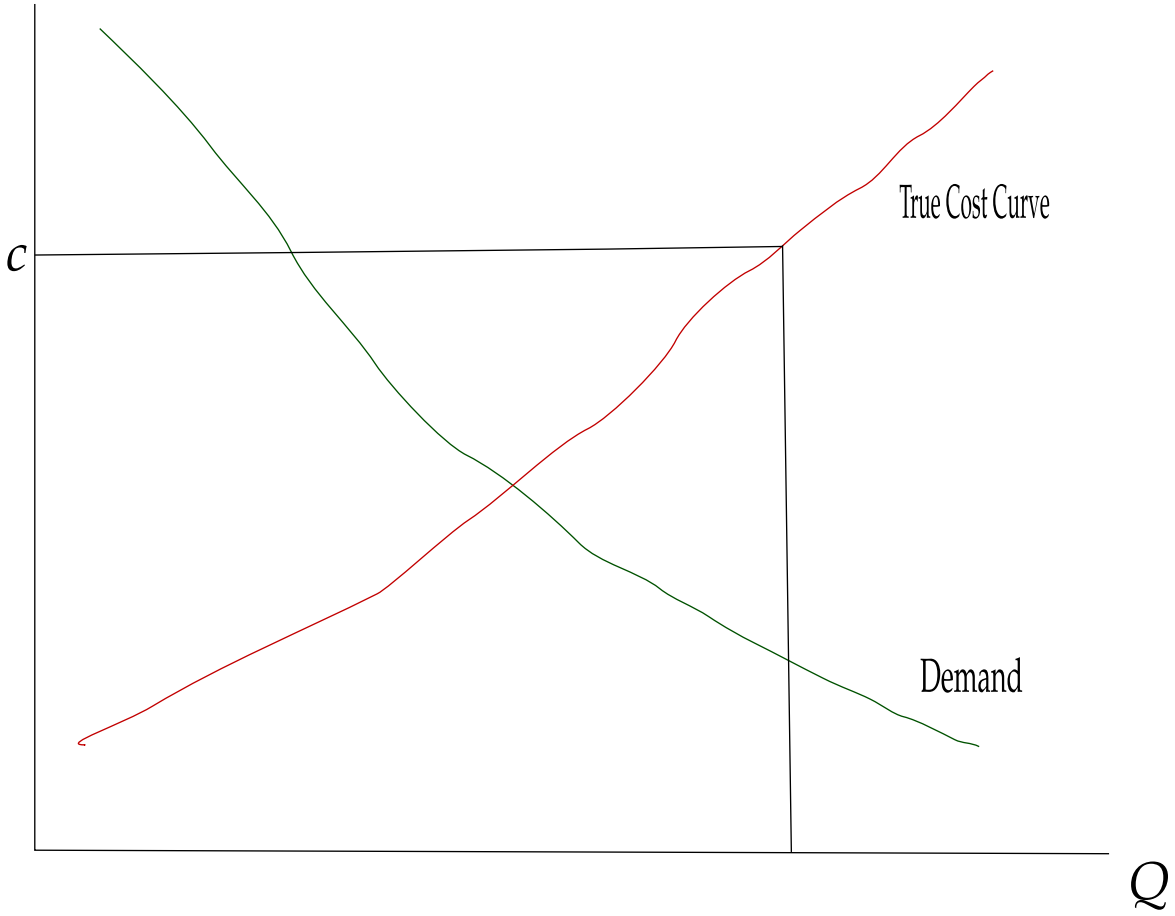
Notice how this encourages the second seller to choose a lower reserve.

Large Market



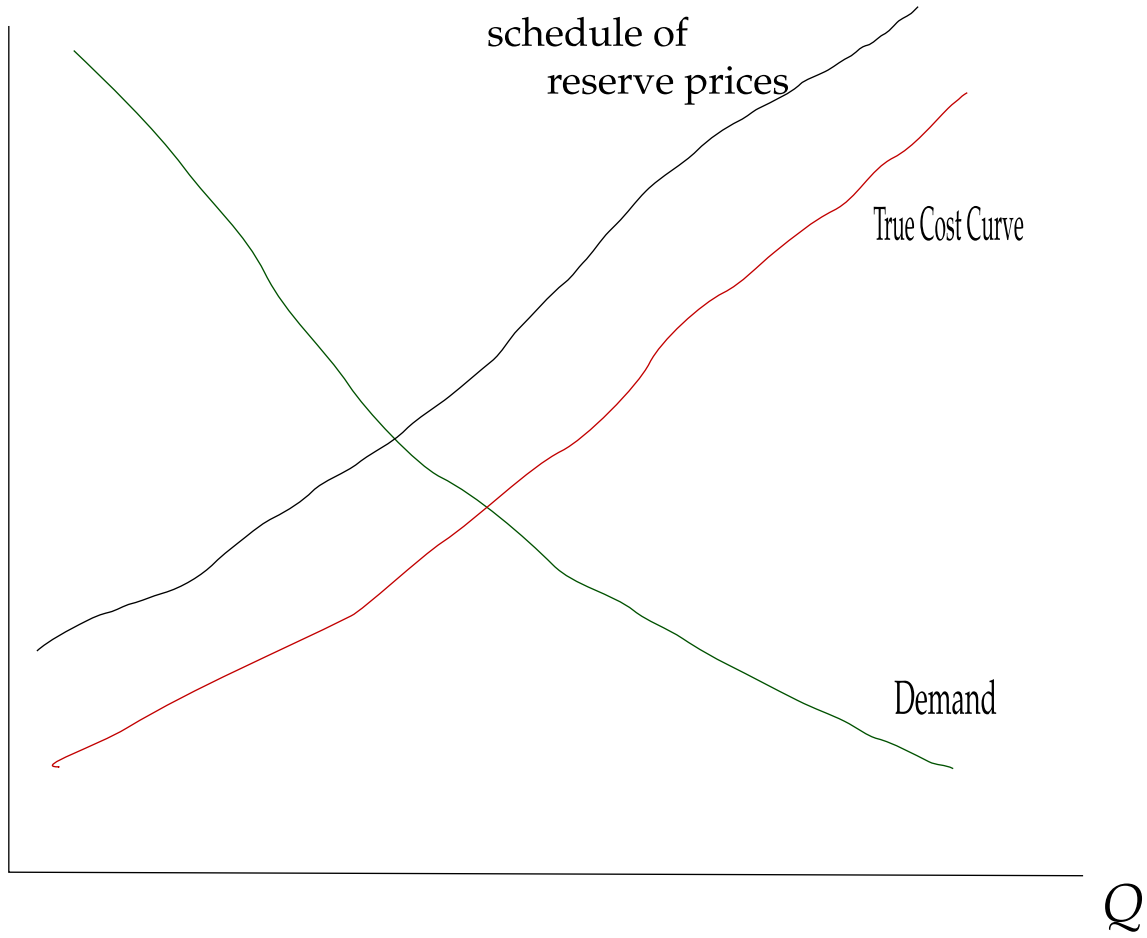
Now suppose there are many buyers and sellers.

Large Market



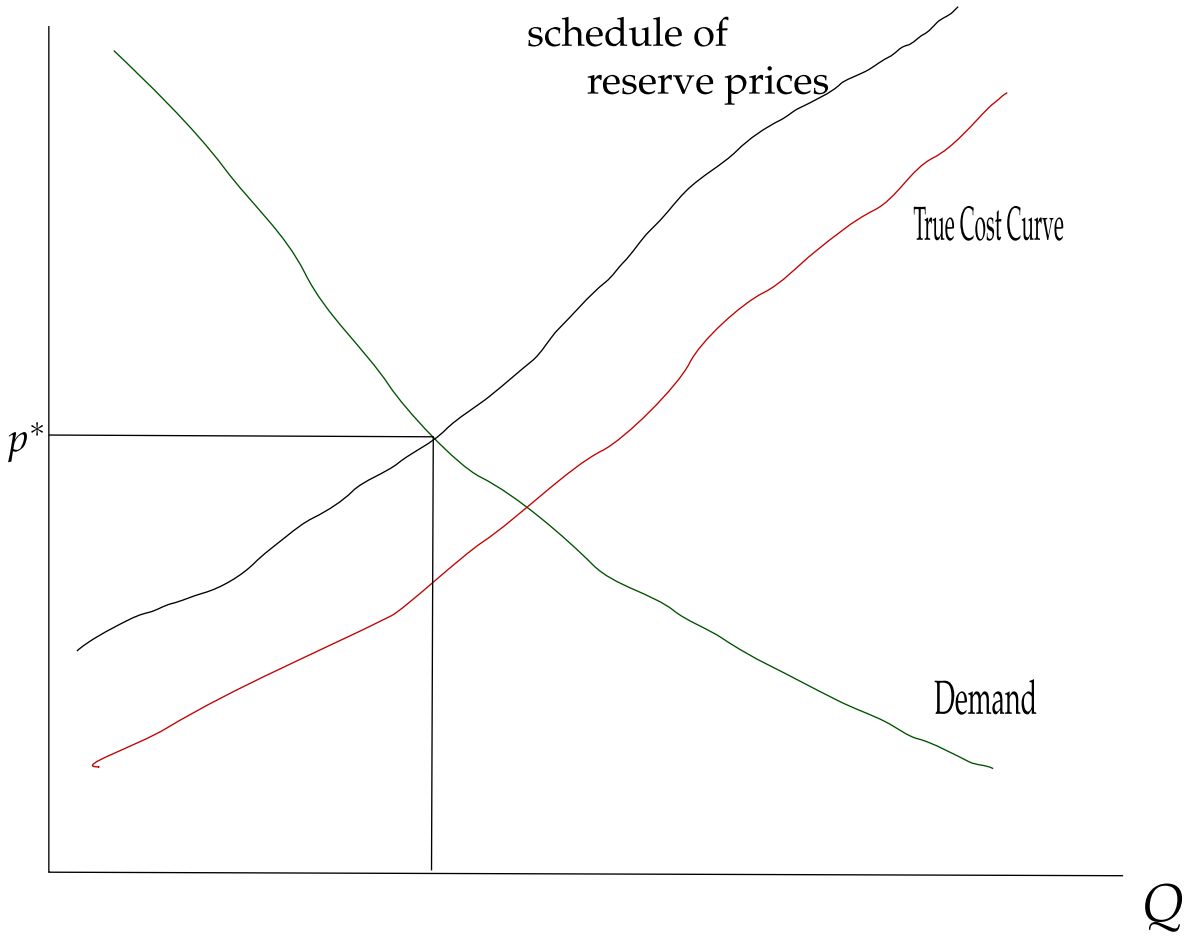
The downward sloping curve is the true schedule of costs. It indicates how many sellers have costs below every possible c.

Large Market



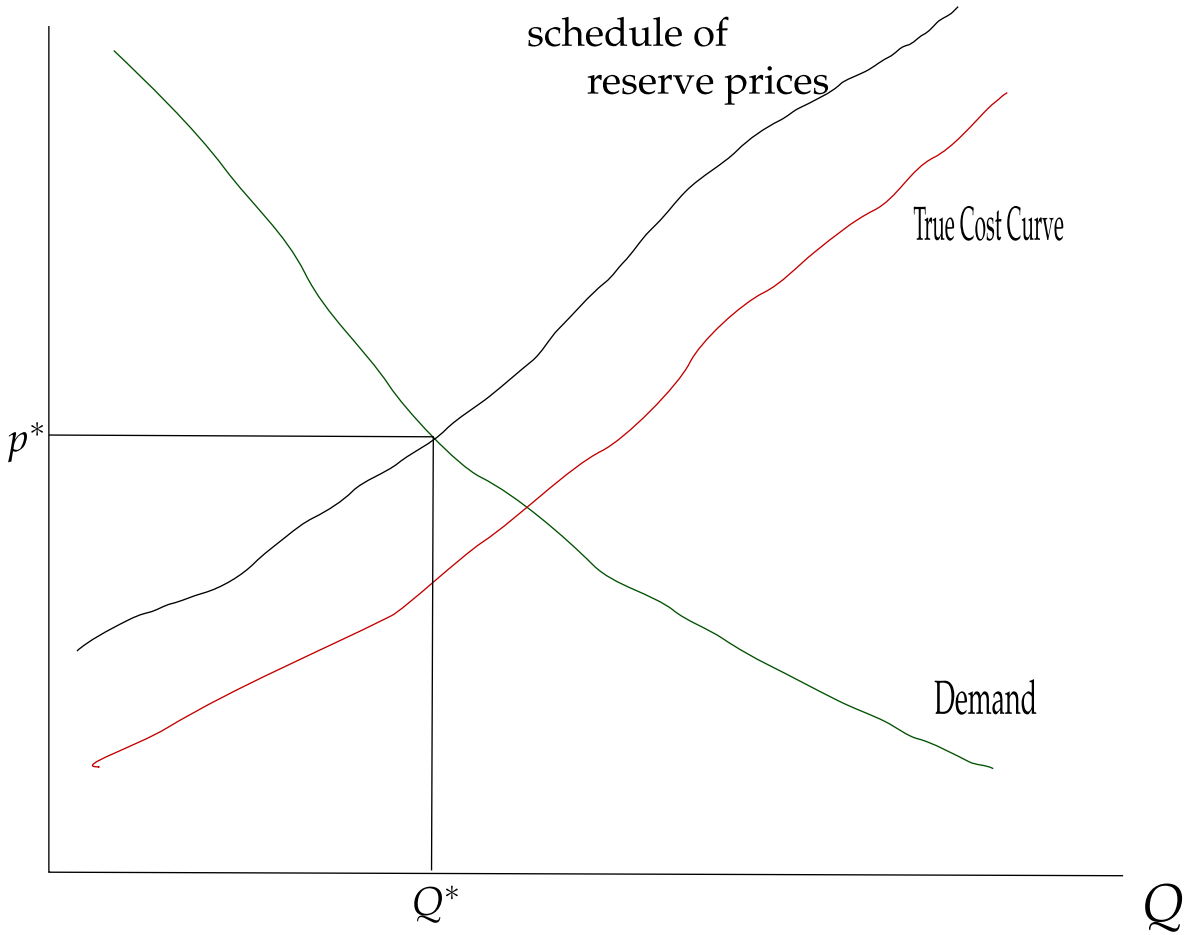
Every seller will set a reserve price no higher than her cost. The schedule of reserve prices will therefore be above the cost curve.

Large Market



The auction will drive bidding up to price p^* where the market clears.

Large Market



At this point, Q^* buyers remain in the bidding and Q^* sellers have their reserve prices met.

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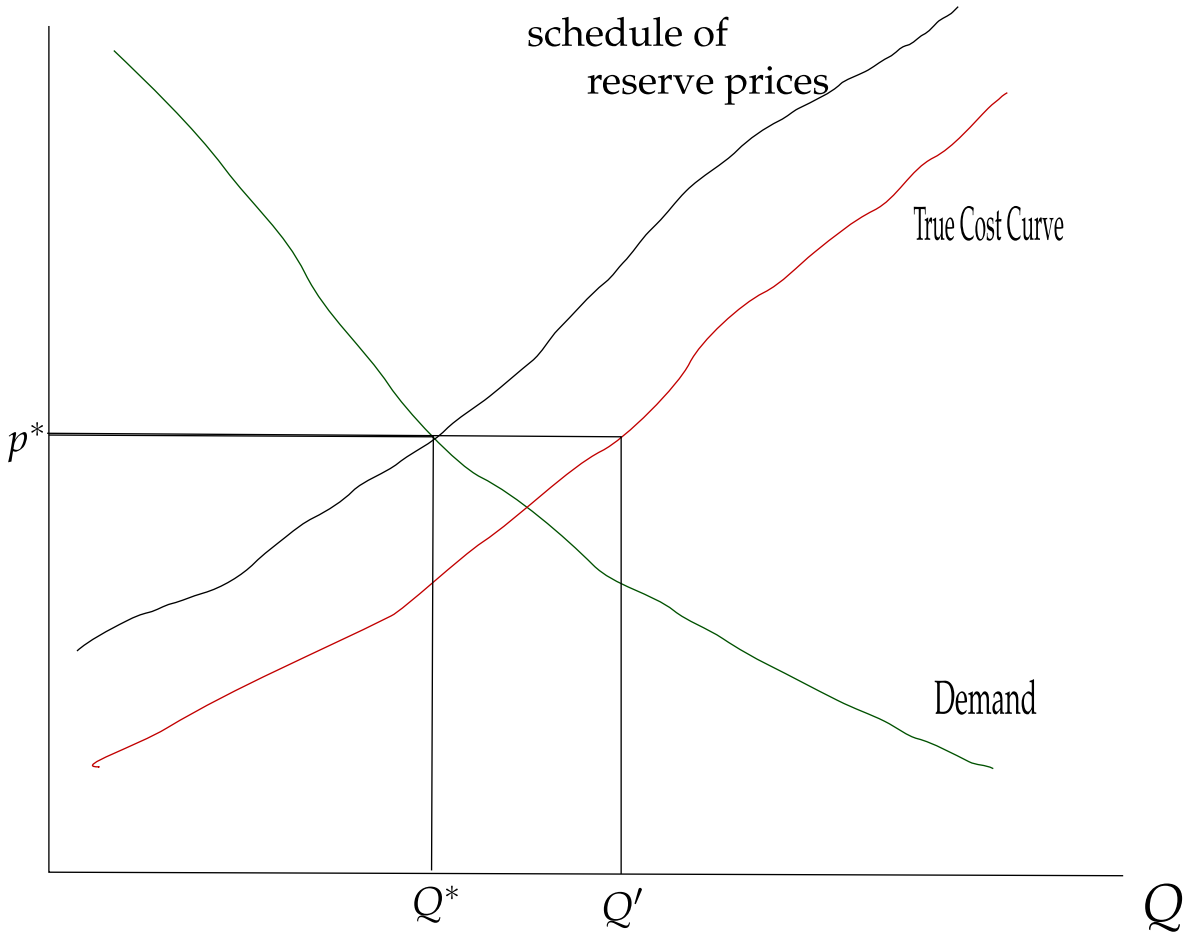
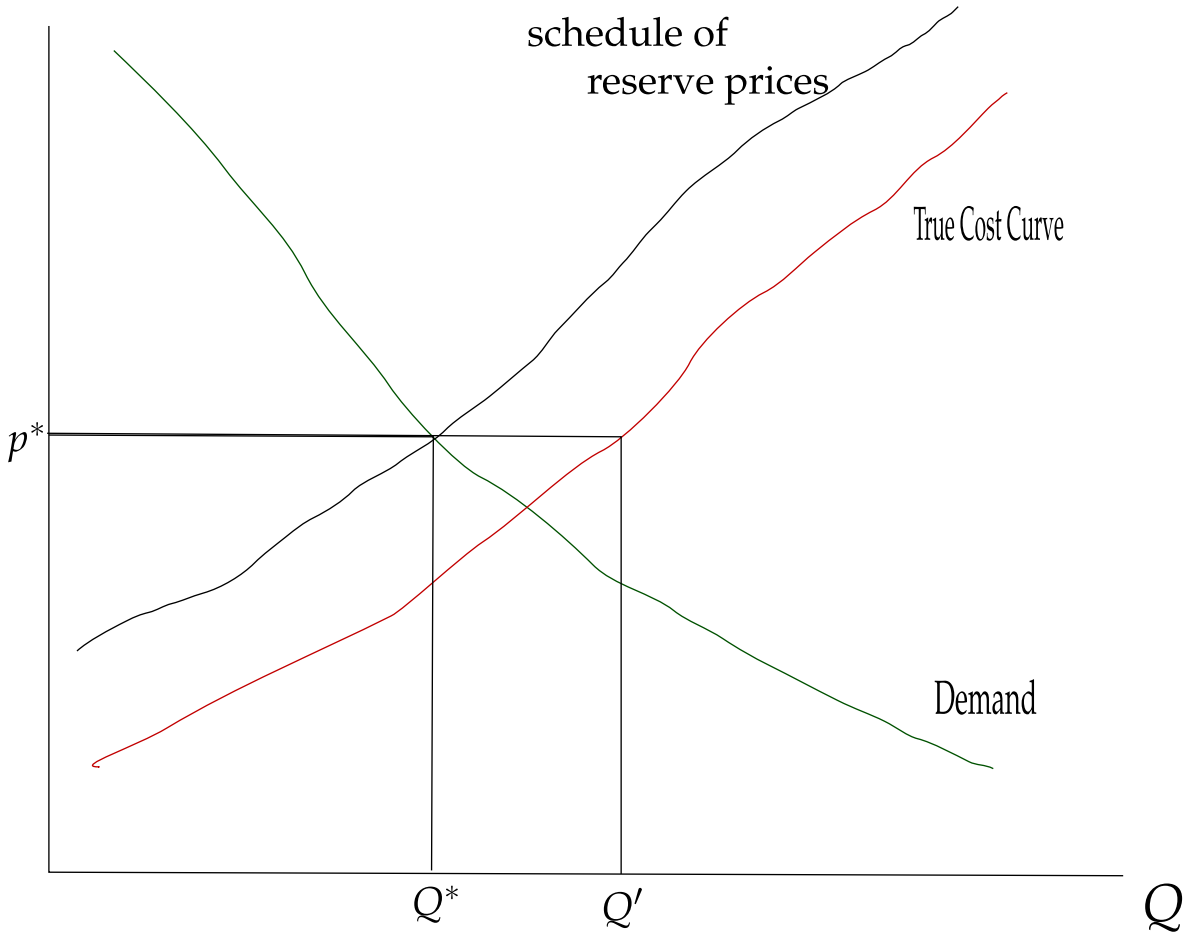


But at this price there are Q' sellers with costs below p^*.

Large Market



So there are $Q' - Q^*$ sellers who would make a profit by setting a lower reserve price. No seller would improve profits by increasing her reserve price.

Dominant Strategy

In a large market it is a dominant strategy for a seller to set her reserve price equal to her true cost, i.e. $r = c$. Because by setting $r > c$,

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  - A reserve price of r results in no sale and zero profit.
  - A reserve price of c would result in a sale and profit $p^* - c$.

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