

Economics of Loyalty Rebates: Where Are We Now?

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Loyalty Rebates

- Encompass a broad array of business practices that are deployed in a wide range of market settings by “dominant” and “non-dominant” firms including in markets in which exclusionary effects are not possible or even likely
 - LRs must be analyzed in a market context in which they occur
 - Exclusion does not suffice as proof of harm to competition (Willig (2006))

Examples of Business Practices

- bundled discounts --- two or more goods
- all-units discounts --- the buyer's price reduced on every unit purchased when purchases exceed the target quantity
- market-share discounts --- depend on the buyer's purchases of rivals' products (exclusive dealing is a limiting case)

Where are We Now?

- Substantial current interest among industrial organization economists and antitrust scholars in such business strategies
- Plethora of illustrative (often dubious) examples
- Some formal, game-theoretic modeling but little empirical work
- And plenty of disagreement on proper antitrust tests linked to “Type I *versus* Type II” arguments

The Good, the Bad, the Ugly

- Practices can be good for consumers and be an intrinsic part of competition
- Practices can harm competition and consumers by seriously weakening ability of rivals to compete effectively
- Fact-intensive inquiry needed to distinguish the two in any given context (an open challenge for economists, antitrust authorities, judges, and juries)

The Salient Features

- The essential feature of LRs is that the purchaser's payment (on the margin) depends on the overall level of activity of the buyer with the seller (and possibly with other sellers)
- These links can be across (i) volume, (ii) time, or (iii) products
 - links may be engendered by some form of below-cost pricing
 - locally negative marginal prices along the outlay schedule
 - a bundled good with an implicit price below cost

Easily Illustrated

- Multi-product firm produces goods A and B at marginal costs \$12 and \$7, respectively.
- Price of A is \$14, price of bundle is \$20
- Although the bundle price is above cost for the multi-product firm, a B-only competitor would have to price at \$6 or lower (below cost) if it is to sell to consumers who would otherwise buy the bundle

Easily Critiqued

- One might conclude that bundled discount is exclusionary
 - it “excludes” an equally-efficient competitor from selling to consumers who would buy both goods
 - and thus ultimately harms consumers
- But one might also conclude that bundled discount increases consumer welfare --- because it lowers the price of A and B to consumers

Is There a Lesson?

- This standard example offers little in the way of lessons for public policy
- One cannot say whether the discount on A and B is good or bad for consumers without analyzing how the stand-alone prices would change if such 'below-cost' bundled discounts were prohibited
- For example, if competition ensures that the price of B is \$7 before and after the ban, and if the price of A would remain at \$14, then consumers would be worse off. But if it would drop to \$13, then consumers would be better off

On Further Review

- In fact, one can show in a fully-specified model that either scenario is possible
- The reason is that bundled discounts coupled with relatively high stand-alone prices act as a price-discrimination device. Without this ability to charge different prices to heterogeneous consumers, prices may be higher or lower
- Because all pertinent “market realities” (emphasized by Prof. Muris) are stripped away in the example, we are only left with a “theoretically possibility” of benefit or harm from the practice

Price Dissonance

- LRs can create market situations in which an efficient, rival seller would have to price below its cost of production to make sales to the buyer whereas the seller might still be earning overall positive profit because its discount/rebate is averaged out over a larger volume of sales
 - This is not so under a typical volume discount schedule $T(Q)$, with $T(Q)/Q \geq T'(Q) \geq MC$ (Fig 1A)
 - But there is such dissonance when the seller's outlay schedule "jumps down" if the buyer meets the minimum target (Fig 1B)

Illustrative Diagrams

(Homogeneous Products)

Figure 1A shows a non-linear outlay schedule where buyer selects Q^* units of output and pays $T(Q^*)$ with the marginal price $T'(Q^*) = MC_I$. A competitor with $MC_E \leq MC_I$ can gain sales against the schedule

In Figure 1B, marginal price “jumps” at Q^* from p^0 to MC_I . An entrant with $MC_E \leq MC_I$ cannot gain any sales unless it can profitably offer at least $(Q^* - Q_I)$ units of sales

Figure 1A

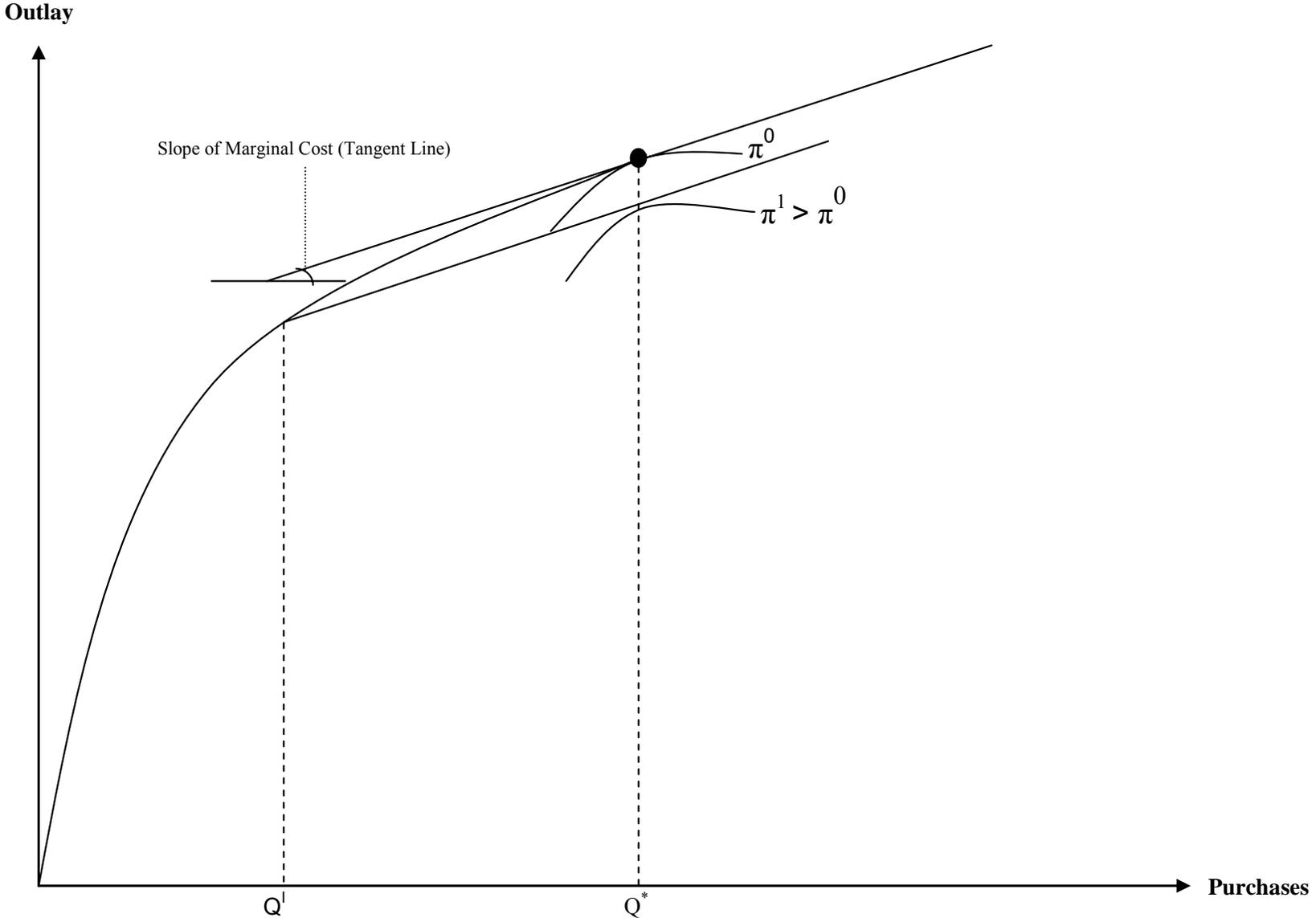
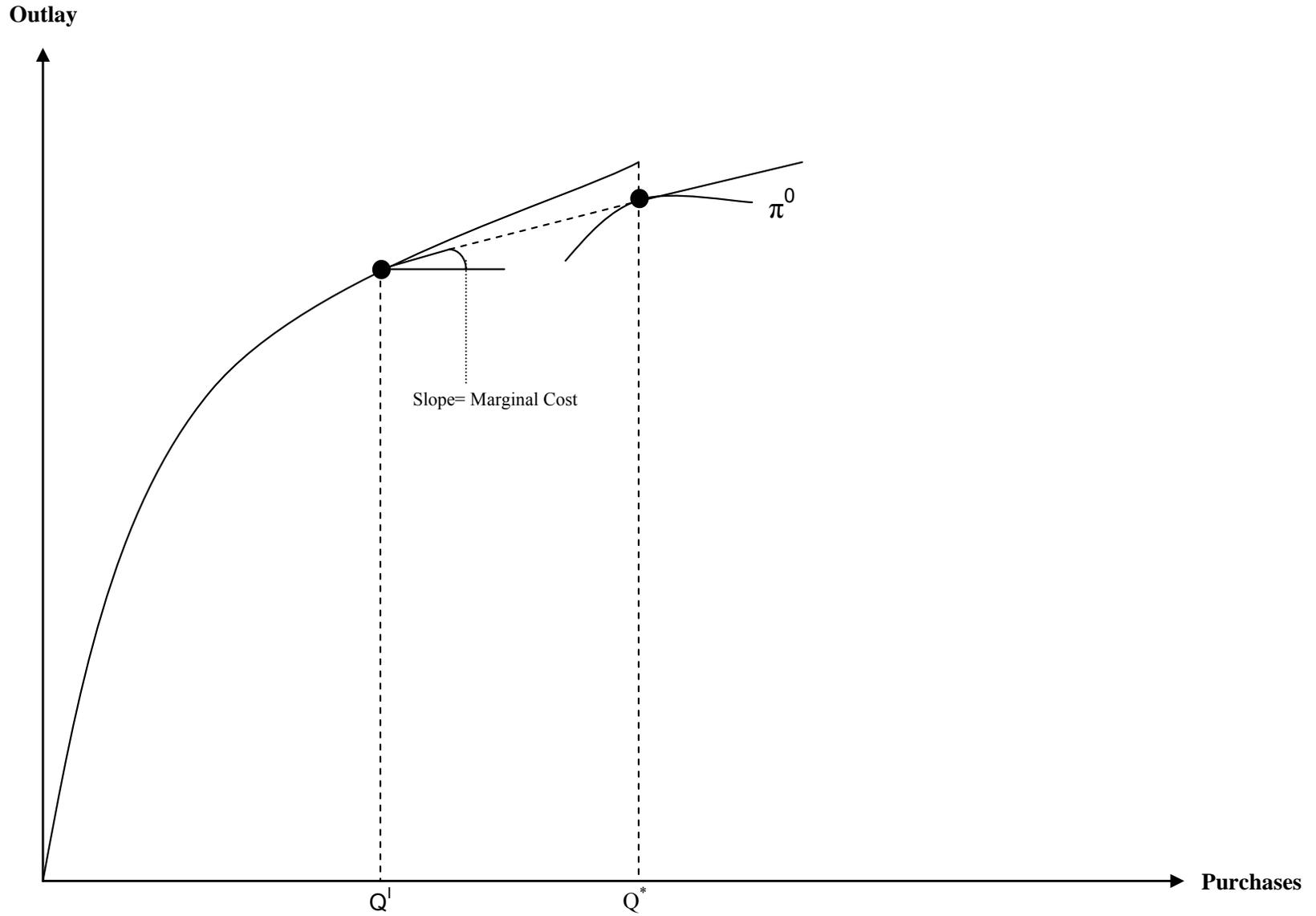


Figure 1B



What is the Margin?

- Diagrams show that in the presence of LR, the rival may have to capture a non-trivial volume of sales in order to be profitable
- This is not an obstacle to effective competition if the rival can readily win the requisite volume of sales
 - e.g., hospitals often convert “full house” its purchases of medical supplies from one vendor to another
- When the buyer’s demand is readily contestable, the more likely it is that LR is designed to generate efficiency gains

Competitive Horizon

- Even if the rival cannot profitably convert the necessary increment in the short-term, it is not necessarily impeded from competing
- E.g., if the rival can finance its first-period losses with profitable sales to the buyer in subsequent periods, *ceteris paribus*, the lower is the hurdle created by the LR
- In fact, *ceteris paribus*, the closer is the hypothetical exclusionary profit to the monopoly level, the easier it will be for the rival to gain sales against the LR, provided it can retain sales to the customer for a sufficiently long run *and* commit to a low price

Exclusionary LRs

- But LRs can lead to exclusion when, for example,
 - rivals cannot profitably convert the necessary increment in the short-term
 - rivals cannot finance first-period losses with profitable sales to the buyer in subsequent periods
 - rivals cannot commit to low future prices over a sufficiently long run
- These conditions can arise in realistic market settings

Ordoover and Shaffer (2006)

- Two sellers and one buyer and two periods
- In each period, the buyer wants at most 2 units of the good and prefers one each from each seller
- The `incumbent' can supply both units per period. The `entrant' can supply at most one unit per period
- In period two, the buyer becomes locked-in to the seller or the sellers from whom it purchased in period one

Ordoover and Shaffer (2006)

- There are no restrictions on the feasible set of contracts that can be offered
- Key assumption is that the entrant faces a financing constraint (i.e., cap on how much it can borrow against its potential period-two lock-in gains in period one)
- *and* the entrant cannot commit to its second period price in period one

Ordoover and Shaffer (2006)

- Then exclusion is possible even though it is efficient for the buyer to purchase one unit from each seller in each period (the sellers' goods are differentiated and the entrant is cost efficient)
- LRs arise in these equilibria even though the incumbent has no pro-competitive incentive for using them – a monopolist would rely on a simple discount (to induce the buyer to purchase two units)

What must be true in equilibrium

- In all exclusionary equilibria, T_I^{**} is such that

$$T_I^{**}(2) - T_I^{**}(1) \leq c - (V_{IE} - V_{II} - \theta)$$

- The incumbent's offer must match the entrant's best offer *and* also compensate the buyer for purchasing the "wrong" unit -- the buyer values the entrant's first unit by more than the incumbent's second unit
- Hence, the incumbent's marginal price for the second unit must be below cost if it is to exclude the entrant. And exclusion may potentially require a negative marginal price

Preliminary Conclusions

- In the model, exclusion does not arise (even when the entrant is financially constrained) if only 2PTs or other simple discounts (e.g., where the seller's marginal units are all priced at or above the seller's marginal cost) are allowed
- If (locally) negative marginal prices are allowed then exclusion is possible, if the entrant's financing constraint is binding

Efficient LRs

- LRs can also serve pro-efficiency objectives--- e.g., they can induce non-contractible demand enhancing services
- For example, the seller can structure the rebate so that the buyer is unlikely to qualify unless the desired services have been performed
- This is modeled in Kolay, Shaffer and Ordover (2004) which illustrates a non-exclusionary use of LRs that can also conduce to higher overall economic welfare

Kolay, Shaffer, and Ordover (2004)

- One seller, one buyer
- Demand is not known at the time of contracting. Demand is either high or low
- Timing of the game:
 - Seller specifies the contract
 - Uncertainty is resolved
 - Buyer chooses how much to purchase
- Typical self-selection results obtain

Standard Self-selection Results

- The buyer will earn zero surplus in the low demand state and positive surplus in the high demand state (because of information rent)
- The seller will distort downward the quantity chosen by a low-demand buyer, but not the quantity chosen by a high-demand buyer
- The information rent of a high-demand buyer depends on how much it could earn by choosing the contract meant for the low-demand buyer

Kolay, Shaffer, Ordover (2004)

- The seller earns higher profit with a menu of all-units discounts than with a menu of two-part tariffs. See Figures 2a and 2b
- All-units discounts imply negative marginal pricing on some units of the outlay schedule
- The effects of banning all-units discounts is ambiguous for consumer welfare

Figure 2a: Menu of two-part tariffs

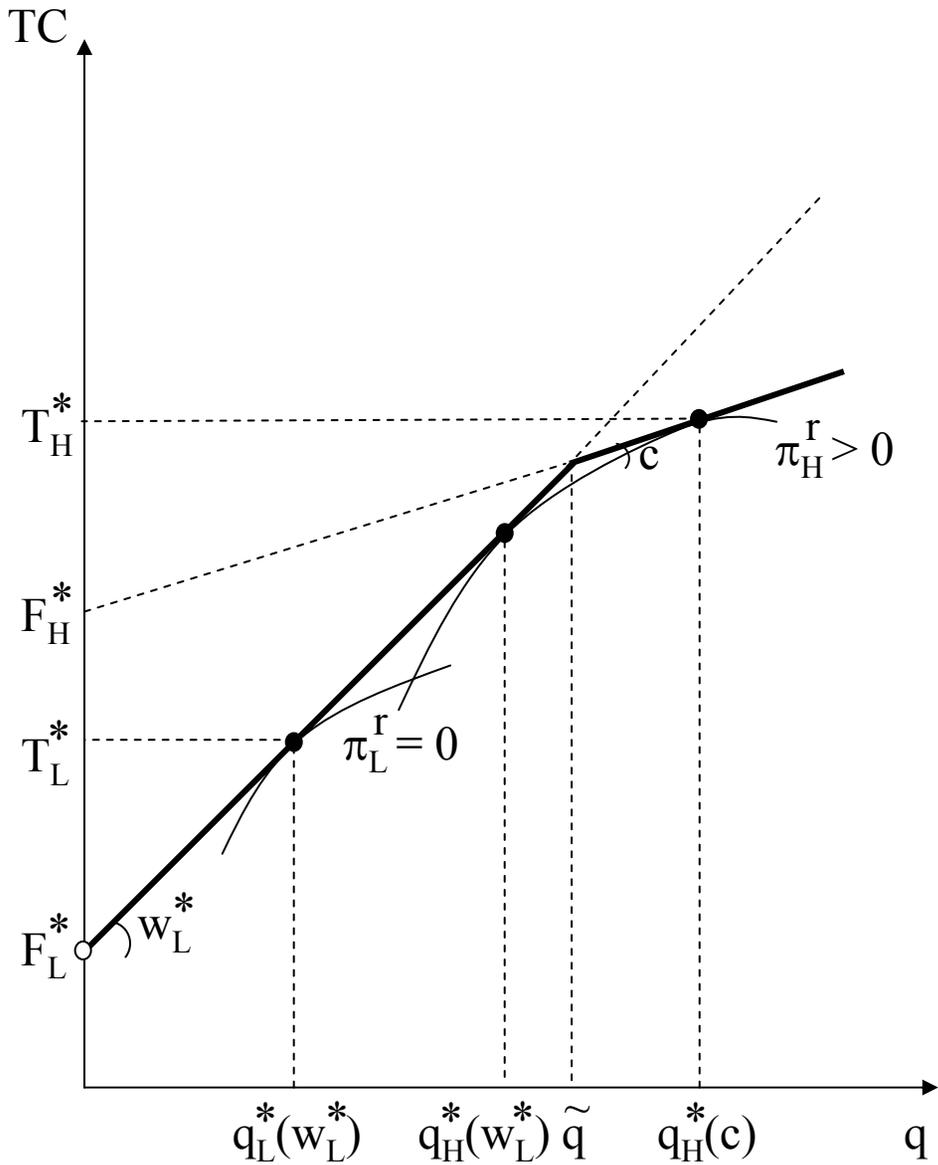
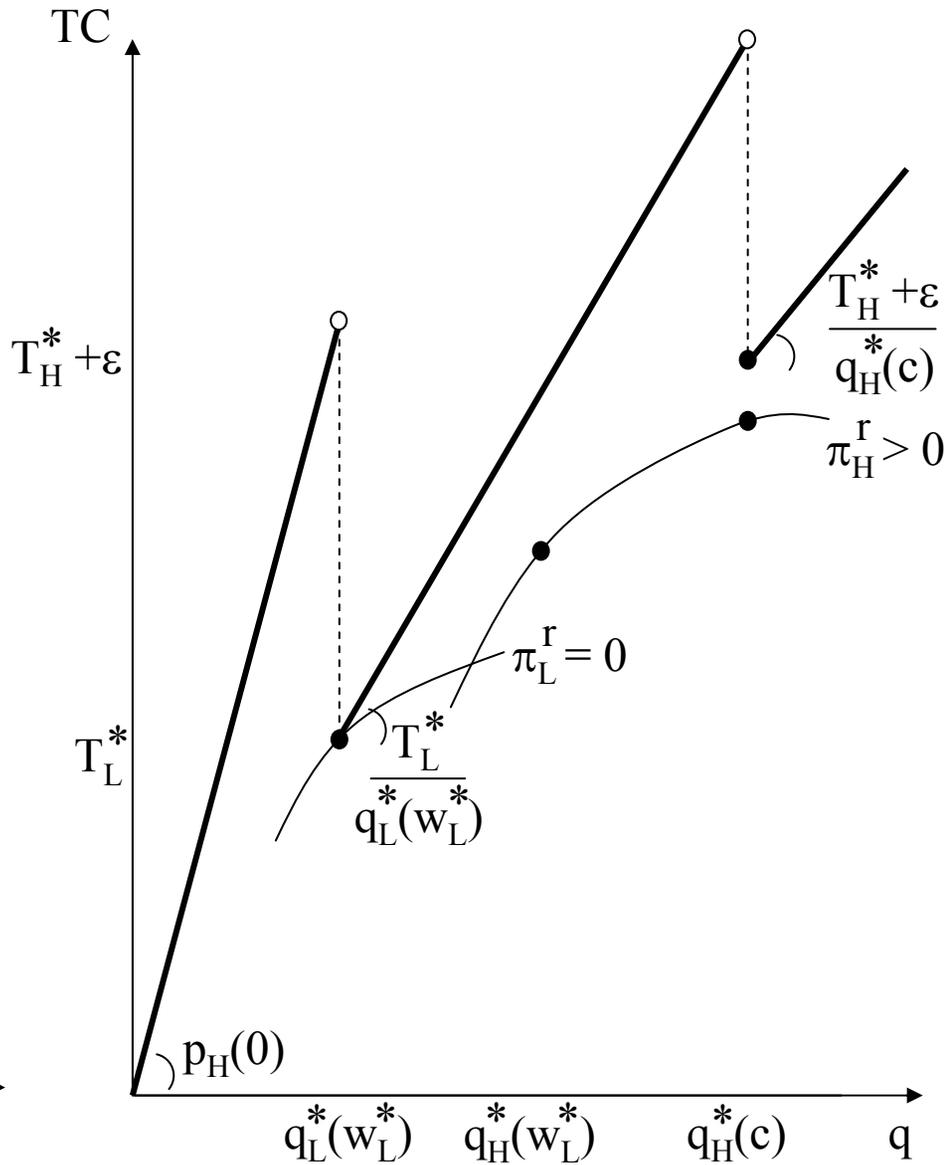


Figure 2b: Menu of all-units discounts



Kolay, Shaffer and Ordover (2004)

- The basic insight is that LRs permit more efficient price discrimination than simple 2-part tariffs because of the non-differentiability of the outlay schedule at the self-selection point chosen by the high-demand buyer
- Although price discrimination is not always welfare-enhancing, there are no public policy reasons to discourage the use of LRs for such purposes

Leaving Chicago (yet again)

- The Chicago school presumption that as a matter of theory unilateral business arrangements between consensual buyers and sellers are likely to be efficiency-enhancing does not hold up
- Loyalty rebates can induce demand-enhancing services and facilitate better extraction of the monopoly rent that is potentially available to the seller
- But the same practices can also be used to protect this rent from dissipation or to enhance the size of the rent by lessening or removing the competitive constraint

Towards Public Policy

- Two step approach (Willig (2006), Ordoover and Willig (1999))
 - Has the challenged rebate policy harmed competition (or is there a dangerous probability that it will)?
 - If it has, is the practice nonetheless part of competition and thus “makes economic sense” or does it make sense only because of the adverse effects on present and future competition in the relevant markets?
- Prohibited conduct must be easily understood by market participants and readily avoidable
- Conduct tests must rely on information that is reasonably accessible, esp. to the defendant
 - Compare EU test for exclusionary rebates

Appendix

- T_I^{**} is the incumbent's equilibrium contract,
- $T_I^{**}(2)$ is the buyer's cost of purchasing 2 units
- $T_I^{**}(1)$ is the buyer's cost of purchasing 1 unit,
- c is the marginal cost of production,
- $V_{IE} - V_{II}$ is the difference in the value the buyer receives from consuming one unit from each seller rather than two units from the same seller,
- Θ summarizes the severity of the entrant's financing constraint. It represents the amount the entrant can borrow and is weakly negative

References

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