The Revenue Destruction Effect

In the Cournot model, equilibrium industry output does not maximize industry profit. Industry profit is maximized at the monopoly quantity and price. By independently maximizing their own profits, firms produce more output than they would if they collusively maximized industry profits. This is characteristic of oligopolistic industries: The pursuit of individual self-interest does not maximize the profits of the group as a whole. This occurs under Cournot competition for the following reason. When one firm expands its output, it reduces the market price. This reduces revenues from all customers who would have purchased at the higher price. This is known as the revenue destruction effect. Unlike a monopolist, which would bear the full burden of the revenue destruction effect, firms here share the burden.

The revenue destruction effect also explains why the Cournot equilibrium price falls as the number of firms in the market increases. Each firm has, on average, a smaller share of the market and so bears a smaller share of the revenue destruction effect. The equilibrium price and profit per firm decline as the number of firms increases. PCM of a firm in a Cournot equilibrium is given by the formula PCM = H/n, where H denotes the Herfindahl and n is the price elasticity of market demand. Thus, the less concentrated the industry (the lower the industry's H), the smaller will be PCMs in equilibrium.

Bertrand Price Competition

A market in which each firm selects a price to maximize its own profits, given the price that it believes the other firm will select and stands ready to meet all the demand for its product at that price. Each firm also believes that its pricing practices will not affect the pricing of its rival; each firm views its rival's price as fixed. In Bertrand model it is more convenient to rewrite the demand function and have total output as the dependent variable.

Assumptions:

Like the Cournot, the Bertrand focuses on a static or simultaneous model of price competition limited to a single market period. There are two firms who chose their strategies simultaneously. Each produces identical goods at the same, constant marginal cost *c*. Each firm knows the structure of market demand.

competition.

Limit Pricing {book pg. 233}

Limit pricing refers to the practice whereby an incumbent firm charges a low price to discourage new firms from entering.

Two types of limit pricing:

Contestable limit pricing

- Incumbent has excess capacity and can set prices below entrant's marginal cost.
- Incumbent can meet market demand at the low price.

Strategic limit pricing

- Incumbent has limited capacity or rising marginal costs.
- Limit pricing may lead to a sacrifice of profits or inability to meet market demand.
- Low price can be an entry deterrent if entrant infers that post entry price will be low.

Potential problems with limit pricing:

- The analysis assumes that the market lasts only two periods, after which the incumbent and entrant effectively disappear. In the real world, the potential entrant may hang around indefinitely, forcing the incumbent to set the limit price indefinitely. Depending on costs and demand, the incumbent might be better off as a Cournot duopolist than as a perpetual monopoly limit-pricer.
- We may also question the assumption that by setting a limit price, the incumbent is able to influence the entrant's expectations about the nature of postentry competition.

Predatory Pricing

Predatory pricing occurs when a large incumbent sets a low price to drive smaller rivals from the market. The purpose of predatory pricing is twofold: to drive out current rivals and to make future rivals think twice about entry. predatory incumbent expects that whatever losses it incurs while driving competitors from the market can be made up later through future monopoly profits.

The Chain-Store Paradox

with the higher marginal cost.

Even when all firms can agree on the cooperative price, differences in costs, capacities, or product qualities may affect their incentives to abide by the agreement. For example, small firms within a given industry often have more incentive to defect from cooperative pricing than larger firms.

- One reason is that small firms gain more in new business relative to the loss due to the revenue destruction effect.
- Another reason, also related to the revenue destruction effect, is that large firms often have weak incentives to punish a smaller price cutter and will instead offer a price umbrella under which the smaller firm can sustain its lower price.
- Smaller firms have an additional incentive to lower price on products, including most consumer goods, for which buyers make repeat purchases.

Price Sensitivity of Buyers and the Sustainability of Cooperative Pricing

A final factor affecting the sustainability of cooperative pricing is the price sensitivity of buyers. When buyers are price sensitive, a firm that undercuts its rivals' prices by even a small amount may be able to achieve a significant boost in its volume. Under these circumstances, a firm may be tempted to cut price even if it expects that competitors will eventually match the price cut. This is because even a temporary price cut may result in a significant and profitable boost in market share.

MARKET STRUCTURE CONDITIONS AFFECTING THE SUSTAINABILITY OF COOPERATIVE PRICING

Market Structure Condition	*How Does It Affect Cooperative Pricing*	*Reasons*
High market concentration	Facilitates	• Coordinating on the cooperative equilibrium is easier with few firms • Increases the benefit-cost ratio from adhering to cooperative pricing
Firm asymmetries	Harms	• Disagreement over cooperative price • Coordinating on cooperative price is more difficult • Possible incentive of large firms to extend price umbrella to small firms increases small firms' incentives to cut price • Small firms may prefer to deviate from monopoly prices even if larger firms match
High buyer concentration	Harms	• Reduces probability that a defector will be discovered
Lumpy orders	Harms	• Decreases the frequency of interaction between competitors, increasing the lag between defection and retaliation
Secret price terms	Harms	• Increases detection lags because prices of competitors are more difficult to monitor • Increases the probability of misreads
Volatility of demand and cost conditions	Harms	• Increases the lag between defection and retaliation (or makes even precluding retaliation) by increasing uncertainty about whether defections have occurred and about identity of defectors
Price-sensitive buyers	Harms	• Increases the temptation to cut price, even if competitors are expected to match

Condition for sustainable cooperative pricing

$$\frac{\frac{1}{N}[\Pi_M - \Pi_0]}{\Pi_0 - \frac{1}{N}\Pi_M} \geq i$$

N = Number of firms, **Pie$_m$**= Monopoly profit for the industry, **i** = Discount rate
Pie$_0$ = Prevailing profit for the industry

group to which each consumer belongs (in which country he or she lives, whether or not he or she is a student, and so forth) based on some observable external characteristic.

There are many examples, however, in which the seller knows that the population of potential consumers is divided into groups, but cannot identify which group each consumer belongs to. For example, airlines know that people fly for business or for leisure, and that the willingness to pay is higher among business travelers. However, it would be difficult to identify business travelers directly, especially if the fare they are charged is higher than the fare paid by leisure travelers.

Even if direct identification of each consumer's group is impossible, the seller can still attempt to indirectly sort consumers by group. The idea is to offer different "deals" (e.g., different combinations of price and quality) such that consumers self-select according to the group they belong to. Because these fares imply a number of restrictions-for example, a Saturday night stay in the place of destination-business travelers are unlikely to purchase such fares. Airlines are thus able to sort out low-valuation leisure travelers (and most academics), who will change their schedule to take advantage of the discount fares.

Versioning

By offering a number of "packages" of price and quality level, the seller is able to sort consumers according to their willingness to pay. E.g. paperback books, business and first classes in aircraft, "gold" credit cards, and so forth.
One extreme form of versioning occurs when firms reduce the quality of some of their existing products in order to price-discriminate, that is, firms produce damaged goods. For example, Pex and Apex airfares are normal economy fares with additional restrictions, such as the requirement of a Saturday night stay. Another example is provided by student versions of software packages. The cost difference can hardly justify the observed price difference. Price differences can be justified only by price discrimination.

Bundling

Pure bundling - buyers must purchase the bundle or nothing (movie distributors frequently force theaters to acquire "bad" movies if they want to show "good" movies from the same distributor).
Mixed bundling - buyers are offered the choice between purchasing the bundle or one of the separate parts (photocopier and after-sales service bundle or buy separately).

Durable-goods pricing

Nondurable goods, like groceries or bus rides, are defined by a demand flow: In each period, consumers need to purchase a certain amount. By contrast, the decision to buy a durable good is one in which timing is of the essence. By setting different prices now and in the future, a monopolist may be able to sell both to high-valuation buyers at a high price and to low-valuation buyers at a low price. Because even high-valuation buyers prefer to pay low prices, the outcome of the high-price-today- and-low-price-tomorrow strategy may turn out to be that most buyers prefer to wait for the future low price.

There are a number of ways in which the seller can avoid the durable-goods "curse." One is to commit to not lower price in the future. Alternatively, a no-sale, lease-only policy effectively turns a durable good into a nondurable one.