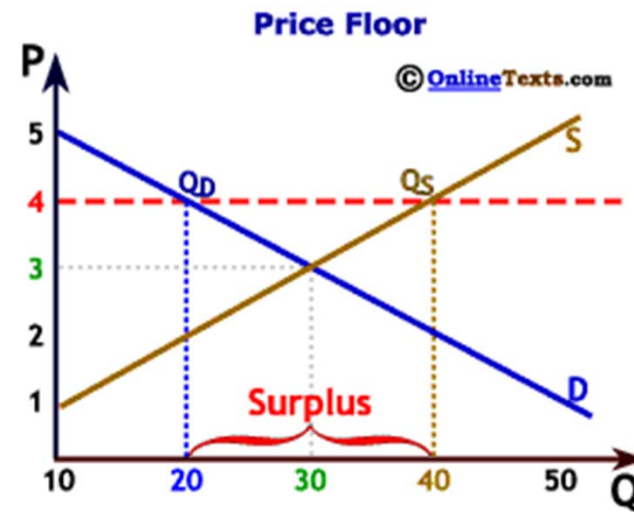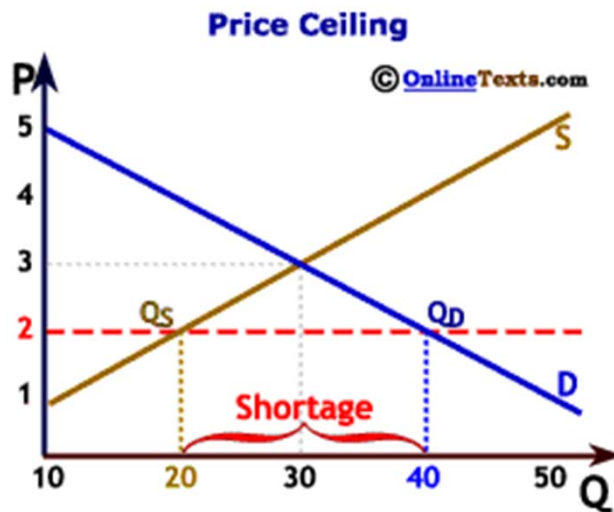# Pricing and Costing For Final Products

# Contents

What is efficient price?

Price Floor

Price Ceiling

# Efficient Price – costs and demand

**Costs** alone are not sufficient

Correct prices may not be sustainable due to
changing nature of **demand**

# Price floor and Price ceiling

Sufficient to regulate the firms

Price floor to prevent predation

Price ceiling to protect consumers

Price ceilings are preferred to profit ceiling

# Price floor and Price ceiling

Profit ceilings are difficult due to

1. The dynamics of competitive market

   Impossible to calculate the correct rate of return (profit)

2. The average long-run economic profits (including a return to capital) are zero in the competitive market

3. Innovative firms will receive a return above normal incentive

# Price ceilings and floors based on cost

1. Marginal cost (1ˢᵗ best) is a legitimate floor, but does not cover fixed cost: one additional unit of a product

   MC can be applied to a firm whether the firm produces only one product or multiple products

2. Stand-Alone cost is the total cost (not one unit) incurred by an efficient entrant to the industry that decides to produce only specified set of commodities

   $SAC_{yz} = TC(0,y,z)$

   SAC is relevant for price ceiling

## Price ceilings and floors based on cost

3. $IC_x = TC(x,y,z) - TC(0,y,z)$: total output (not one unit) of relevant product, i.e., product specific total cost

$AIC_x = [TC(x,y,z) - TC(0,y,z)]/x$

AIC covers product specific fixed cost and is a legitimate floor

AIC is average of the MCs of all units supplied

# Price ceilings and floors based on cost

Example

- Product A, B
- Cost of common infrastructure facility: CC=F

- Product specific cost of A, B: $C_A$, $C_B$

- Total production cost: $TC=F+C_A+C_B$

- Total production cost without producing A: $SAC_B=F+C_B$

# Price ceilings and floors based on cost

- $LRIC_A = TC - SAC_B = C_A$

Long-run is the period of time such that all costs, including those costs that are fixed in the short run, can be treated as variable cost

## Correct Pricing Floor
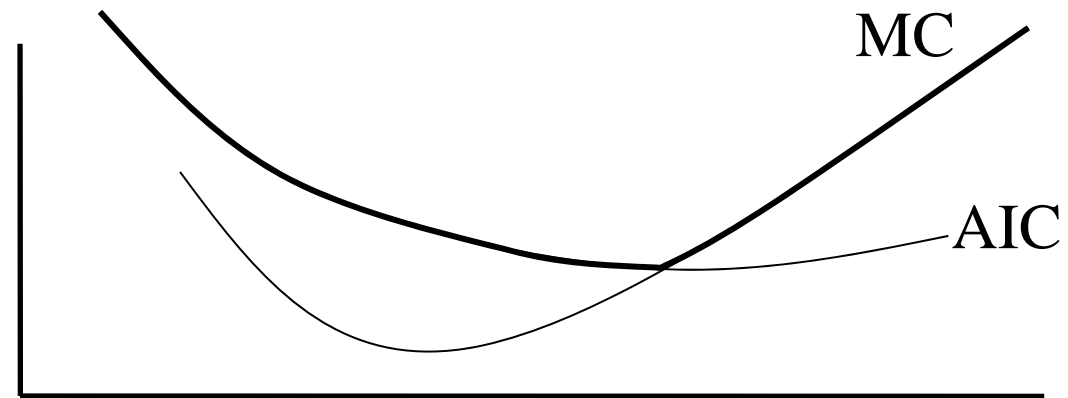
Single product case: Max (MC, AIC)

   When AIC is decreasing

      MC will not cover fixed cost of production

      AIC, average of the MC of all units, will

   When AIC is increasing

      MC > AIC

MC

AIC

## Correct Pricing Floor

Multi-product Case

Most products are produced with some common cost elements

A combined incremental cost and revenue floor

$$R(x) + R(y) \geq C(x,y) + AIC_x + AIC_y$$

$C(x,y)$: common fixed cost

<span style="color:red">Fixed cost of each product is included in the AIC</span>

# Price Ceiling

Contestability is the guide for determining the upper limit of prices

Ceiling Price $\leq$ SAC$_x$ of single product

SAC can be calculated indirectly with the IC

$$IC_x = TC(x, y, z) - TC(0, y, z)$$
$$= TC(x, y, z) - SAC_{yz}$$

For two complementary subsets S1 and S2, i.e., S = S1 + S2

$$SAC_{S1} = TC(S) - IC_{S2}$$
$$IC_{S2} = TC(S) - SAC_{S1}$$

## Price Ceiling

**One Test or Two for floors and ceilings?**

If a regulated firm passes the combinatorial price-floor tests and earns no more than competitive profits, then the price-ceiling tests must be automatically be passed

# Price Ceiling

## Price-cap

> A version of price ceiling first implemented in Britain
>
> Initiated by determination of the SAC
>
> Prices are allowed to change periodically
>> by no more than the Consumers Price Index (CPI)
>> less the rate of productivity growth

## Price-cap may not be as efficient as Ramsey pricing

## But it is simple, and adjustable to the continuous changes in the market

# Summary

Price Floor and ceiling for regulation

Price Floor

  Single product case: Max (MC, AIC)

  Multi-product Case:

$$R(x) + R(y) \geq C(x,y) + AIC_x + AIC_y$$

Price Ceiling

  $SAC$ ($SAC_{S1} = TC(S) - IC_{S2}$)

  $SAC + \Delta CPI - X$