Vertical Integration and Vertical Restrictions

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Outline

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   - Integration to Assure Supply
   - Integration to Eliminate Externalities
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   - Integration to Increase Monopoly Profits
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Vertical Integration and Vertical Restrictions

- A firm that participates in more than one successive stage of the production or distribution of goods or services is vertically integrated
- A nonintegrated firm may write contracts with the firms with which it deals. Contractual restraints on nonprice terms are called vertical restrictions

Example 12.1 Outsourcing

- Whether a firm performs a task itself or relies on the market depends on relative costs.
- A firm may save money by having outsiders provide services that it originally performed, known as outsourcing.
- Many industries use outside firms for specific activities, such as payments.
- Outsourcing is particularly common in high-tech industries.
  - US high-tech firms are expected to outsource 1 in 10 jobs to low-cost emerging markets.
  - Worldwide, one-fifth of major firms are outsourcing their programming projects, often to India.
  - Governments also rely on outside firms, with 90% of government executives in 23 governments outsourcing various functions.
- Even colleges and universities use outside firms for services such as janitorial, accounting, and teaching.
- The motive for outsourcing is cost savings, as firms can often find cheaper labor in other countries. Outsourcing can also lead to controversy and criticism, with concerns about job losses, quality control, and ethical considerations.

Outline

Three Possible Costs

- Firms vertically integrate only if the benefits outweigh the costs
- Three possible costs of vertical integration:
  1. Cost of supplying its own factors of production or distributing its own product is higher for a firm that vertically integrates than for one that depends on competitive markets
  2. As a firm gets larger, the difficulty and cost of managing it increase – The advantage of dealing with a competitive market is that someone else supervises production
  3. The firm may face substantial legal fees to arrange to merge with another firm – e.g., lawyers may be used to defend the merger before the U.S. Federal Trade Commission or the U.S. Department of Justice

Example 12.2 Holdup

- - Central and Eastern European countries transitioning from communism to capitalism are facing serious transition problems.
- - The transition has caused disruptions in traditional exchange systems and led to contracting problems.
- - Contract terms are hard to enforce in these countries, leading to holdup problems and underinvestment in relationship-specific capital.
- - One example is delayed payments by food processors to farmers in Slovakia, which led to reduced investments in land, equipment, and seed.
- - Juhocukor a.s., a subsidiary of Eastern Sugar BV, addressed the holdup problem by establishing long-term contracts and trust with farmers.
- - The new management of Juhocukor a.s. established credibility by providing prompt payments and above-market prices, investing in its own plant, and increasing quality with premiums and penalties.
- - The program worked, as the amount of land under contract rose by 91%, yields per hectare increased by 140%, sugar content rose 119%, and total sugar production climbed 234% from 1992 to 1997. - Other firms attempted to imitate these programs with limited success.

Six Major Benefits[1]

- Six major benefits of vertical integration:
  1. Lower transaction costs: A firm may lower its transaction costs by vertically integrating
     - e.g., the transaction costs of buying from or selling to other companies are avoided.
  2. Assure supply: A firm may vertically integrate to assure itself a steady supply of a key input
     - Delivery problems may thus be reduced, because it is often easier to exchange information within a firm than between firms.
  3. Correct market failure: A firm may vertically integrate to correct market failures due to externalities by internalizing those externalities
     - e.g., by owning or controlling all its restaurants, McDonald's can ensure a uniform quality, which results in a positive reputation (externality). Wherever their travels bring them, consumers know that they can expect a certain minimum quality at any of this chain's restaurants
  4. Avoid government rules: A firm may be able to avoid government restrictions, regulations, and taxes by vertically integrating
     - e.g., price controls, regulations that restrict profit rates, and taxes on revenues or profits

Six Major Benefits[2]

- Six major benefits of vertical integration (cont'd):
  5. Gain market power: A firm may vertically integrate to better exploit or to create market power
     - e.g., a sole supplier of a vital input may vertically integrate forward, buying the manufacturing firms, so as to monopolize the final product market and thereby increase its monopoly profits
     - Similarly, a firm may try to buy its sole supplier to increase combined profits · By vertically integrating, a firm may create or increase its monopoly profits by being able to price discriminate, eliminate competition, or foreclose entry

  6. Eliminate market power: A victim of another firm's market power may vertically integrate to eliminate that power
     - e.g., around the turn of the century, dairy farmers contended that they faced a single processor that bought their milk at a low, monopsonistic price. To raise the price of milk, dairy farmers vertically integrated forward to form their own processors

Integration to Lower Transaction Costs[1]

- A firm performs productive activities itself rather than relying on other firms to reduce transaction costs
  - e.g., expenses associated with writing and enforcing contracts
- When transaction costs are high, a firm may engage in opportunistic behavior: taking advantage of another when allowed by circumstances
  - Each side may try to interpret the vague or missing terms of a contract to its advantage
- Opportunities for exploitation are greater when one firm is dependent on another
  - e.g., to respond to a sudden increase in demand, an automobile manufacturer needs more supplies.
  - If there is only one supplier of a critical part, that supplier can raise its prices, and the auto manufacturer has nowhere to turn in the short run
  - Even when such complications and dependencies can be foreseen, it may be difficult to structure a contract that completely removes the incentives for either firm to behave opportunistically toward the other

Integration to Lower Transaction Costs[2]

- Vertical integration transforms the monitoring problem from monitoring between firms to monitoring employees within the firm
- There are four types of transactions costs that are likely to be substantial enough to make vertical integration desirable:
  1. Specialized Assets
  2. Uncertainty that makes monitoring difficult
  3. Transactions Involving Information
  4. Extensive Coordination

Specialized Assets[1]

- A specialized asset is tailor-made for one or a few specific buyers
- Three mains three main forms of specialized asset:
  - Specific physical capital
  - Specific human capital
  - Site-specific capital
- Specific physical capital: includes buildings and machines that can be used for only one or a few buyers
  - e.g., suppose that specific dies (molds used to make parts) are needed on a machine press to produce a particular part for one buyer. If the supplier that owns the machine press also owns the dies, there is a chance for opportunistic behavior. If the buyer owns the dies and has other firms bid to provide the machine-press services, no opportunistic problems arise
  - Partial or quasi-vertical integration (the firm owns the specific physical asset and not the entire supplying firm) is required to avoid opportunistic behavior in this example

Specialized Assets[2]

- Specific human capital: workers specially trained in how the firm operates to produce a particular product
  - If it uses outside contractors as opposed to its own employees, opportunistic behavior is possible
    - ★ e.g., a contractor who knows that a firm is facing a deadline may demand more money
- Site-specific capital: Successive stages of a production process must be located adjacent to each other
  - If a manufacturing firm stops demanding the input of a supplying firm, that supplying firm must relocate, which can be extremely costly. Such opportunistic behavior can be avoided by integrating

Uncertainty

- If an outside firm cannot monitor quality controls on construction, it may vertically integrate where quality is crucial
  - e.g., If a buyer cannot determine how long a durable machine will last. The best way to predict quality (life expectancy) may be to observe the method by which the machine is constructed

Transactions Involving Information

- It may be difficult to structure a contract that gives the supplying firm the appropriate incentives to develop the information
  - e.g., if one firm pays another firm a fixed fee to obtain information on newly developing markets, the hired firm does not have an incentive to work hard at the margin to uncover all the information, and the buyer has no way of determining whether the supplier did a good job

Extensive Coordination

- facilitate extensive coordination, as in industries with networks such as airlines and railroads.
- Developing feeder traffic for through-routes in railroads requires extensive coordination, and railroads may merge to deal with these coordination problems.
- Technological conditions alone do not explain vertical integration
- it can also arise when production processes at different stages are closely interrelated.
  - For example, a steel mill may produce its own pig iron instead of shipping it from a separate firm, as pig iron production and steel production are closely interrelated and there is potential for opportunistic behavior if two separate firms are involved.
  - Therefore, vertical integration can facilitate coordination and minimize opportunistic behavior in interrelated production processes.

Integration to Assure Supply

- Timely delivery of an item is of concern to businesspeople, yet standard models of market behavior ignore this topic
  - Assurance of supply is important in markets where price is not the sole device used to allocate goods
  - Nonprice allocation occurs in a wide range of common situations
    - ★ e.g., a bakery frequently runs out of bread by the end of the day and yet does not raise its price
- Toyota and Dell Computers stress the use of just-in-time deliveries of inputs to minimize inventory costs while ensuring timely delivery
- A firm has an incentive to produce its own supplies to meet its predictable level of demand and to rely on other firms for supplies to meet its less stable demand

Integration to Eliminate Externalities

- If all Radio Shack stores carry the same products, maintain certain standards of service, and provide advice on the use of their products, a regular customer who moves from one city to another knows what to expect from a Radio Shack in the new city
  - That is, there is a positive reputation externality
  - It is in the chain's best interest to maintain high uniform standards
  - A bad store can harm the business of all distributors and lower the profit of the firm Tandy, that supplies the products sold by these distributors
  - Thus, Tandy has an incentive to integrate forward into distribution (own Radio Shack stores) to control this externality

Integration to Avoid Government Intervention[1]

- Firms may vertically integrate to evade or avoid government price controls, taxes, and regulations
- A vertically integrated firm can avoid price controls by selling to itself
  - e.g., the federal government has controlled prices on steel products on several occasions since World War II: It set a maximum price that could be charged for steel.
  - Under binding price controls, a firm that buys steel is unable to purchase all the steel that it wants at the controlled price because producers choose to ration steel rather than supply as much as is demanded at the controlled price.
  - A firm that badly needs more steel for its production process may find that it pays to purchase the company that supplies it with steel.
  - Because transactions within a company are unaffected by price controls, a buyer who really wants steel can get it by purchasing a steel company and producing all the steel it needs. Purchasing a steel company is thus a simple way to avoid price controls

Integration to Avoid Government Intervention[2]

- Taxes encourage vertical integration
  - Depending on where firms are located, they may be subject to different taxes
  - A vertically integrated firm may be able to shift profits from one location to another simply by changing the transfer price at which it sells its internally produced materials from one division to another
- Government regulations create incentives for a firm to vertically integrate when the profits of only one division of a firm are regulated
  - e.g., the profits that local telephone companies earn on local services are regulated, but their profits on other services, such as selling telephones in competition with other suppliers, are not regulated

Integration to Increase Monopoly Profits

- A firm may be able to increase its monopoly profits in two ways by vertically integrating
  1. A firm that is a monopoly supplier of a key input in a production process used by a competitive industry may be able to vertically integrate forward, monopolize the production industry, and increase its profits
  2. A vertically integrated monopoly supplier may be able to price discriminate

Vertical Integration to Monopolize Another Industry[1]

Consumers purchase Q units of a competitively produced good at price p

- The competitive industry produces that good using a production function that depends on inputs of energy E and labor L:

$$Q = f(E; L)$$

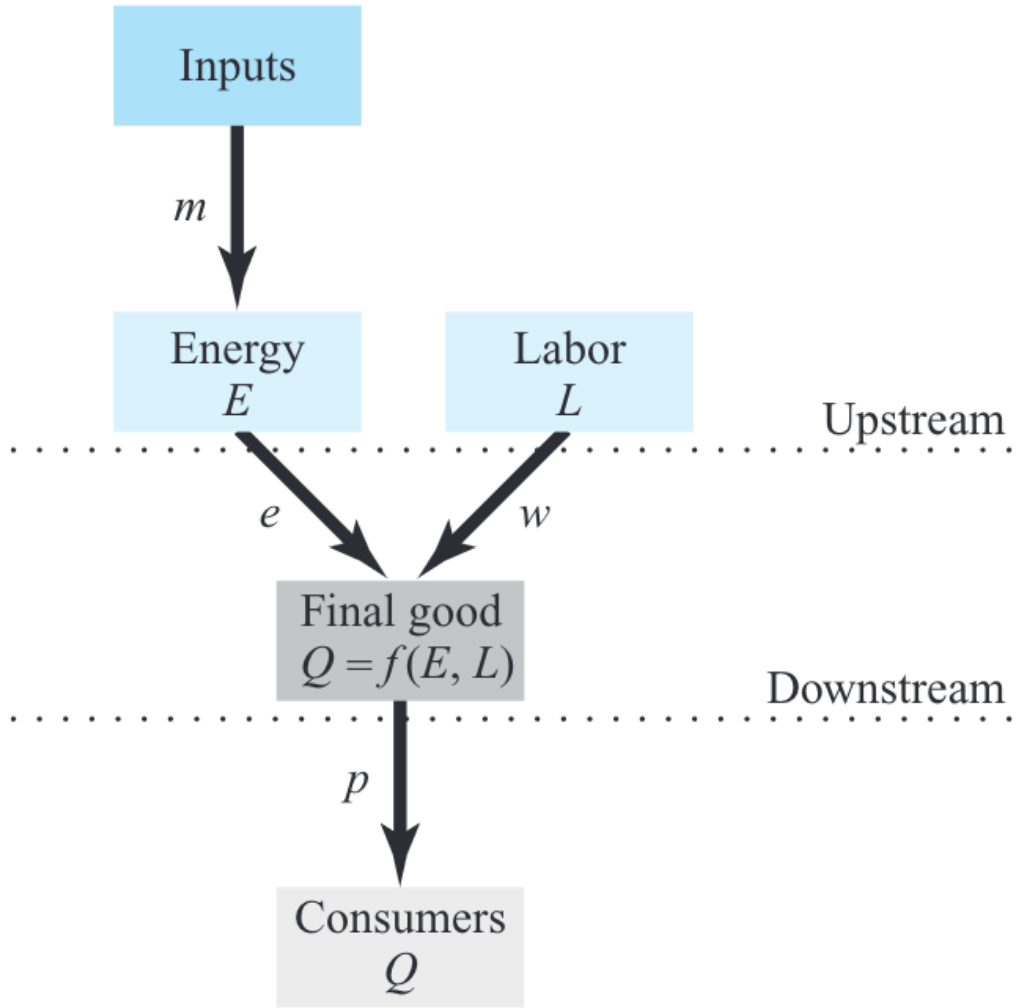
- Inputs are sold to competitive firms at prices e and w
- Upstream and downstream firms:
  - The firms that supply the inputs in the production process are called upstream firms
  - The firms that produce the good are called downstream firms

Vertical Integration to Monopolize Another Industry[2]

- Five assumptions about the market:
  1. *Constant returns to scale*: if both inputs are doubled, output doubles
  2. *The inputs are produced at constant marginal cost*
  3. *Monopoly upstream*: This is the only upstream firm that supplies energy, and it does not fear that entry by other firms will eliminate its monopoly
  4. *Competition downstream*: The downstream industry is competitive
  5. *Costs of vertically integrating*: Certain costs are associated with vertically integrating, such as negotiation and legal fees.Unless there are benefits from vertically integrating, the firm does not integrate

[Illustration] Vertical Organization of an Industry

FIGURE 12.1 Vertical Organization of an Industry



Vertical Integration to Monopolize Another Industry[3]

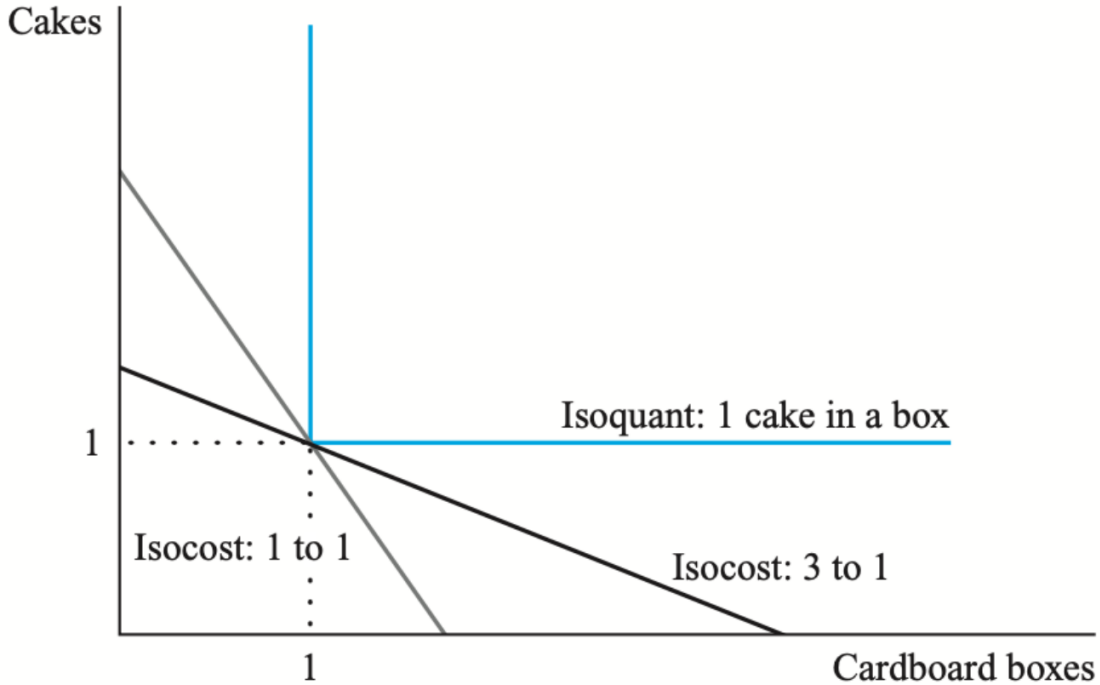
- The upstream monopoly to vertically integrate or not depends on whether the industry has a fixedproportions production or a variable-proportions production function:
  - In a fixed-proportions production function, the inputs are always used in the same proportions, so the proportions used are independent of relative factor prices
  - In a variable-proportions production function, one factor can be substituted for another to some degree, so the ratio of factors used is sensitive to relative factor prices
- Given the four assumptions, there are two key results:
  1. If the downstream production process uses fixed proportions
     - ⋆ The upstream monopoly does not have an incentive to vertically integrate. It makes the same profit whether it integrates or not
  2. If the downstream production process uses variable proportions
     - ⋆ The monopoly has an incentive to vertically integrate. It integrates if its increase in profits exceeds the cost of integration

Fixed-Proportions Production Function[1]

- In a fixed-proportions production process it is impossible to substitute one input for another
  - Producing firms buy card-board boxes from one input market and cakes from another input market
  - The production industry takes one box and one cake and produces a "cake in a box," which it sells
  - If the cost of a cake doubles while the cost of a box remains unchanged, the production firm still uses the same proportions of cakes and boxes (one of each), because it cannot substitute boxes for cakes

Fixed-Proportions Production Function[2]

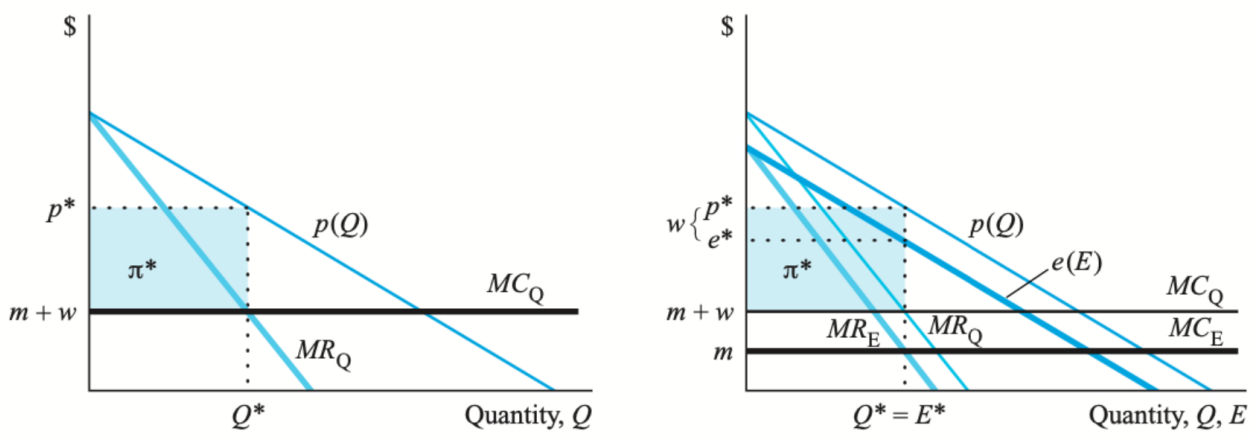
FIGURE 12.2 Fixed-Proportions Isoquant and Isocost Curves



Fixed-Proportions Production Function[3]

- The cost-minimizing combination of inputs: both isocost curves hit the isoquant at the point (1, 1)
  - The integrated monopoly's cost of producing a unit of Q is $m + w$. That is, it takes 1 unit of E, which costs the firm m to make, and 1 unit of L, which can be hired at a cost of w

FIGURE 12.3 Fixed-Proportions Production Function



Fixed-Proportions Production Function[4]

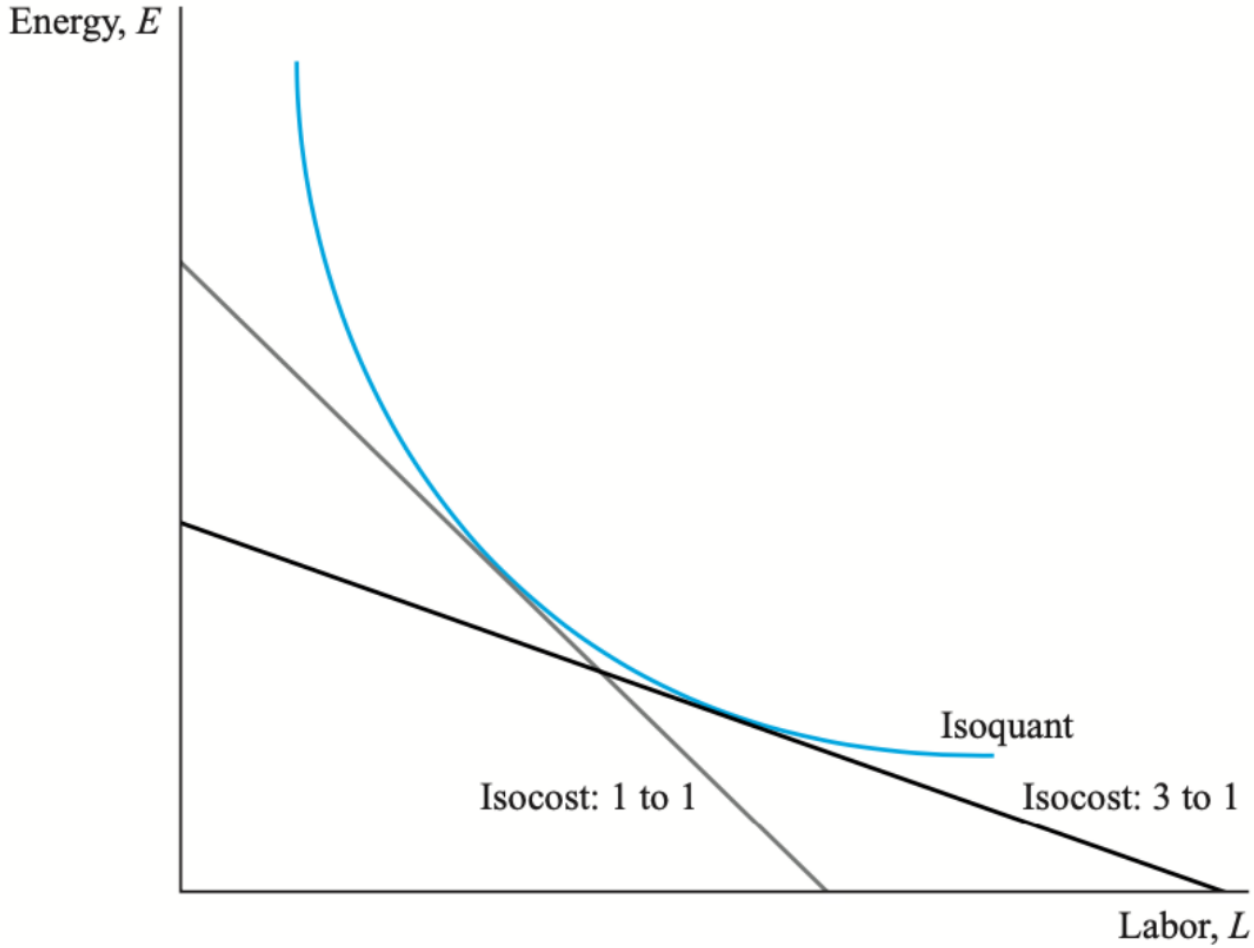
- Figure 12.3a shows this per-unit, or marginal, cost: $MC_Q = m + w = MR_Q$
  - Inverse demand curve $p(Q)$ shows the price that consumers are willing to pay to buy Q units of the product
  - The integrated monopoly maximizes its profits by producing Q^* units of output so that $MC_Q = m + w = MR_Q$
  - It uses $E^* = L^*(= Q^*)$ units of inputs. It charges p^* and makes a profit of $\pi^* = [p^* - (m + w)]Q^*$
- The demand curve facing the upstream monopoly can be derived from the demand curve facing the competitive downstream industry
  - The monopoly views its demand curve as the highest price it can charge the downstream firms for a given quantity of E
- The price a competitive downstream firm receives for a unit of its output is p
  - To produce that unit of output, it must spend w for a unit of labor
  - The most it will pay for a unit of E is $e = p - w$
  - Therefore, the demand curve facing the input monopoly equals the demand curve facing the competitive industry minus w

Fixed-Proportions Production Function[5]

- The energy monopoly sets its output at E^* so that $MR_E = MC_E = m$
  - Thus the energy monopoly maximizes its profit :
    $[e(E) - m]E = [(p(E) - w) - m]E$
  - The energy monopoly's profit is the same:
    $\pi^* = (e^* - m)E^* = [(p^* - w) - m]E^* = [p^* - (m + w)]Q^*$
  - As the upstream firm earns the same profit whether it integrates or not, if there is any cost to integration, it chooses not to integrate
    - ★ The energy monopoly can perfectly control the final price consumers pay without vertically integrating
    - ★ Not only can it raise the price, but also it captures all the resulting profits
    - ★ It can control the downstream price perfectly because downstream firms cannot substitute away from the input produced by the monopoly

Variable-Proportions Production Function[1]

FIGURE 12.4 Variable-Proportions Isoquant and Isocost Curves



Variable-Proportions Production Function[2]

- Figure 12.4 shows the isoquant of a variable-proportions production function
  - Unlike the fixed-proportions production function, it is a smooth curve, showing that the products are (imperfect) substitute
  - As the relative costs of the inputs change, as shown by a shift in the slope of the isocost line, the firm substitutes more of the now less expensive input for the more expensive input
  - If the upstream energy monopoly increases its price to the competitive downstream industry, firms in that industry substitute more labor for the monopoly's product

Variable-Proportions Production Function[3]

- Consider an extreme case where the two inputs are perfect substitutes in the production process. For example, downstream food processing firms view palm oil and coconut oil as perfect substitutes, so the isoquant is a straight line with a slope of -1
  - If a monopoly in palm oil increases its price above that of coconut oil, all the downstream firms switch to coconut oil
  - Thus, an upstream monopoly cannot raise the price of palm oil above that of coconut oil
- If downstream firms have some ability to substitute between inputs (variable-proportions production process), the upstream monopoly does not have complete control over the downstream industry

Price Discrimination

- A monopolistic supplier may vertically integrate so that it can successfully price discriminate
  - An essential element for successful price discrimination is the ability to prevent resale of the product by those who pay a low price to those who pay a high price
  - e.g., aluminum ingot is used in many products. suppose that aluminum ingot is used to produce only aluminum wire and aircraft. There are good alternatives for aluminum wire in electric cables, such as copper, but there are no good alternatives to aluminum in airplanes. As a result, the elasticity of demand for aluminum ingot by wire manufacturers is much higher than it is for airplane manufacturers. It is profitable to charge a higher price for aluminum ingot to airplane manufacturers than aluminum wire producers

Integration to Eliminate Market Power

- Just as a firm can increase its monopoly profit by vertically integrating, another firm can reduce or eliminate monopoly power by vertically integrating
- e.g., only one firm sells an input that is essential for your production process
  - If that firm is charging you a high, monopoly price, you should determine whether it is cost effective for you to vertically integrate backward and produce that product yourself

The Life Cycle of a Firm[1]

- If the demand for a product is small, so that the collective output of all the firms in the industry is small, each firm must undertake all the activities associated with producing the final output itself
- When the industry is small, it does not pay for a firm to specialize in one activity even if there are increasing returns to scale
  - A specialized firm may have large setup (fixed) costs
  - If the specialized firm produces large quantities of output, the average setup or fixed cost per unit is small
  - In a small industry, however, the setup costs per unit are large
    - If specialized firms are to earn a profit, the sum of the specialized firms' prices must be higher than the cost of a firm that produces everything for itself

The Life Cycle of a Firm[2]

- When the industry is small, it does not pay for a firm to specialize in one activity even if there are increasing returns to scale (cont'd)
  - As the industry expands, it may become profitable for a firm to specialize, because the per-unit transaction costs fall
    - ⋆ That is, as the industry grows, firms vertically disintegrate
  - When the industry was small, each firm produced all successive steps of the production process, so that all firms were vertically integrate
  - In the larger industry, each firm does not handle every stage of production itself but rather buys services or products from specialized firms
- As an industry matures further, new products often develop and reduce much of the demand for the original product, so that the industry shrinks in size
  - As a result, firms again vertically integrate

Outline

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2. Vertical Restrictions
   - Vertical Restrictions Used to Solve Problems in Distribution
   - The Effects of Vertical Restrictions

Vertical Restrictions[1]

- A manufacturer that contracts with a distributor to sell its product may place vertical restrictions on the distributor's actions beyond requiring it to pay the wholesale price for the product
  - These vertical restrictions are determined through contractual negotiations between the manufacturer and the distributor
  - The manufacturer places these restrictions so as to approximate the outcome that would occur if the firms vertically integrated
    - ⋆ e.g., requires the distributor sell a minimum number of units, the distributors not locate near each other, that distributors not sell competing products, and the distributors charge no lower than a particular price
- Why are restrictions used instead of vertical integration?
  - Manufacturers often rely on independent firms to distribute their products rather than doing their own distribution, because the costs of monitoring employees at distribution outlets exceed the costs of using independent firms
  - e.g., the distribution outlets may be far apart, making it costly for managers to travel to them and spend time becoming familiar enough with local market conditions

Vertical Restrictions[2]

- Principal-agent relationship: The principal hires the agent to perform an action in a manner that the principal cannot fully control
  - Manufacturer (principal) contracts with distributors (agents) to sell its product
- Free riding occurs when one firm benefits from the actions of another without paying for it
  - Free riding is an externality
  - Where free riding is possible, each distributor prefers to rely on the efforts of others and does not do its share
  - e.g., distributors may advertise less than they contracted to do, in order to save money and free ride on the manufacturer's reputation

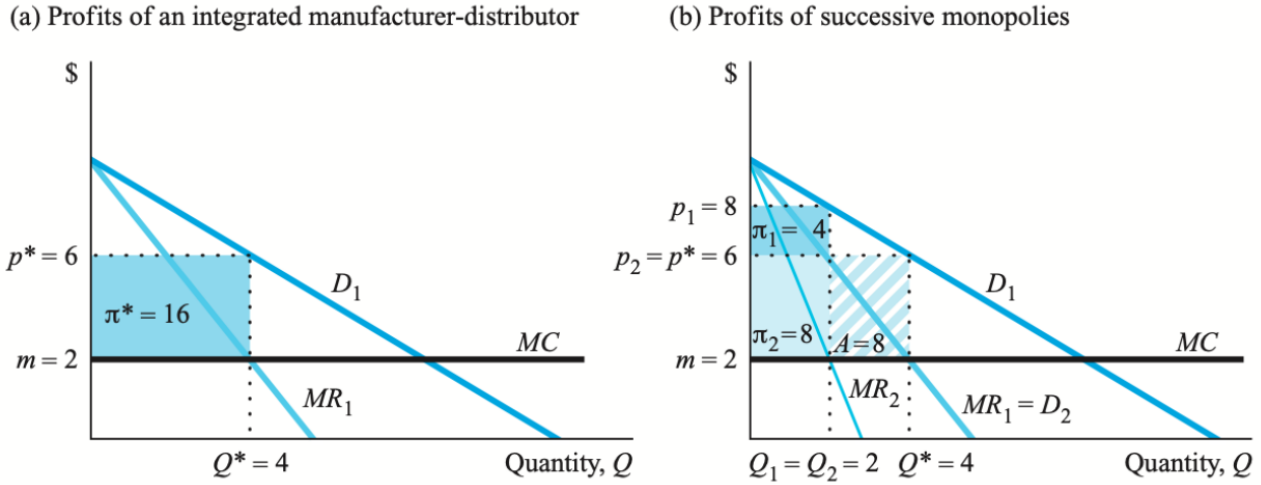
Vertical Restrictions Used to Solve Problems in Distribution

- Four problems commonly arise when distribution is costly and a manufacturer retains a distributor to retail its products:
  1. A double monopoly markup by successive monopolies in manufacturing and distribution
  2. Some distributors may free ride on other distributors
  3. Some manufacturers may free ride on other manufacturers
  4. A lack of coordination among distributors that leads to externalities

Double Monopoly Markup[1]

- If the manufacturer and the distributor are both monopolies, each adds a monopoly markup, so consumers face two markups instead of one
  - It provides an incentive for firms either to vertically integrate or to use vertical restrictions to promote efficiency and thereby increase joint profits

FIGURE 12.5 Monopolies in Both Manufacturing and Distributing



Double Monopoly Markup[2]

- Suppose the upstream manufacturer uses a monopolistic, downstream firm to distribute its product. As each firm adds a monopoly markup, there is a double monopoly markup
  - The distributor faces the same downward-sloping demand curve D_1 and marginal revenue curve MR_1
  - The manufacturer charges the distributor a whole-sale price p_2 per unit
  - It maximizes its profits by selling Q_1 units, such that its $p_2 = MR_1(Q_1)$
  - Because distribution costs are assumed to equal 0 and demands are linear $p_2 = p^*$
  - The number of units of the manufactured good the distributor demands depends on the manufacturer's wholesale price p_2 and is determined by the intersection of the MR_1 curve with the horizontal line at p_2
  - The manufacturer maximizes its profits by choosing its output level Q_2 so that its $m = MR_2$
  - The manufacturer charges $p_2 > m$; the distributor charges $p_1 > p_2$

Double Monopoly Markup[3]

- As the marginal revenue is less than price $p^* = p_2 < p_1$, consumers facing the double markup buy less output. As a result, they are worse off
- Consumers pay a third more ($8 instead of $6) due to the successive monopoly markup than they would pay if the firms were integrated. They buy half as many units: $Q_1 = Q_2 = 2$ instead of $Q^* = 4$
- The firms' collective profits are also lower. The profits of the integrated firm are $\pi^* = 16$. With the successive monopolies, the retailer's profits π_1 are 4 and the manufacturer's profits π_2 are 8
- The total profits of the successive monopolies are 25 percent lower than those for the integrated firm

Reduce Double Markups[1]

- Both consumers and firms are worse off with successive monopolies
  - These losses provide a strong incentive to integrate.
  - It is not always practical to do so.
    - ⋆ e.g., If the manufacturer is Japanese and the distributor is French, it may be too costly for the Japanese firm to vertically integrate into distribution
  - One alternative is to use vertical restrictions

Reduce Double Markups[2]

- Three vertical restrictions that manufacturers can use to induce a monopoly distributor to behave more competitively:

1. Manufacturer may be able to impose contractually a maximum retail price that the distributor can charge
   - It prevents a distributor from raising its price much above the wholesale price
   - As a result, the distributor sells more units
2. Uses quantity forcing if it imposes a sales quota on a distributor
   - i.e., The distributor must sell a minimum number of units
   - With this restriction, a manufacturer does not have to restrict a distributor's price
3. Adopt a more complicated pricing scheme
   - A manufacturer can use a two-part pricing scheme
     - ⋆ e.g., the manufacturer sells the franchise rights, or rights to sell the product (often together with a brand name) to the distributor, for a franchise fee

Free Riding Among Distributors

- In a typical distribution arrangement, several independent firms distribute one manufacturer's product. Each distributor benefits from the promotional activities of other distributors without having to pay for them
  - Free riding arises because distributors are not compensated separately for sales efforts
- Free riding occurs when
  - a distributor's sales staff must be well trained in order to sell a product
  - the reputation of the product influences the overall demand for the product

Reduce Free Riding

- Manufacturers can use a variety of vertical restrictions to deal with the free-riding problem:
  - Exclusive territory: Only a single distributor may sell a product within a region: The distributor obtains monopoly rights to customers who buy within its territory
    - ⋆ e.g., A distributor of Cadillacs may have a clause in its contract with General Motors (GM) that prevents GM from opening any other Cadillac dealership within a radius of several miles of it
  - Limit the number of distributors: price competition is limited, and more of the gain from sales efforts accrues to the distributor that makes the effort
  - Resale price maintenance agreement: a manufacturer sets a minimum price that retailers may charge
    - ⋆ Such agreements create an incentive for retailers to compete for customers in other dimensions, such as sales effort
  - The manufacturer advertises on behalf of its distributors:
    - ⋆ A manufacturer that advertises and stimulates demand for its product can charge each distributor for that service through higher wholesale prices.
  - The manufacturer to monitor each dealer's sales effort and compensate each accordingly

Free Riding by Manufacturers

- Competing manufacturers can free ride off the efforts of each other
  - Two competing manufacturers use the same distributor to sell their product.
    - ⋆ one manufacturer conducts a massive advertising campaign to entice consumers to go to the distributor to buy its product.
    - ⋆ The second manufacturer benefits from the increased customer flow
  - The free-riding manufacturer does not advertise can sell at a lower price
    - ⋆ Free riding among manufacturers occurs when
      - One manufacturer trains its distributors to repair or sell its product
      - One manufacturer provides a list of potential customers to a distributor
- One common solution is exclusive dealing: manufacturers forbid their distributors to sell the products of competing manufacturers

Lack of Coordination Among Distributors

- A manufacturer that relies on independent distributors that compete with each other usually wants to coordinate or restrict the ways in which they compete
- e.g., Distributors often compete with each other on location
  - By controlling competition among all dealers, a manufacturer can profitably coordinate their pricing, sales efforts, and locations and achieve higher profits

Summary

- Table 12.1 summarizes the main problems arising in distribution, and the possible solutions for a manufacturer

TABLE 12.1 **Problems That Arise in Distribution and Manufacturers' Responses**

Problems in Distribution	Manufacturers' Responses
Double monopoly markup	Encourage competition among distributors Sell at marginal cost and charge a franchise fee Establish sales quotas or maximum prices
Free riding among dealers	Establish exclusive territories or restrict the number of dealers Establish minimum price (resale price maintenance) Take over the marketing effort Monitor and subsidize or pay for dealers' sales effort
Free riding among manufacturers	Impose exclusive dealing on dealers
Lack of coordination among dealers leading to externalities	Use a combination of the policies above

The Effects of Vertical Restrictions

- Manufacturers use various combinations of vertical restrictions to reduce the problems of double monopoly markup, free riding, and competitive interactions. These restrictions typically
  1. Limits the amount of competition that can occur in a market
  2. Encourages additional efforts to sell the product
- A restriction on competition
  - is something that an economist abhors, as it may increase market power
  - is something that an economist applauds, an increase in sales efforts
  - Its a trade-off between restrictions and additional sales effort

Desirable Effects of Vertical Restrictions

- It is often in a manufacturer's selfish interest to use vertical restrictions that help consumers
  - A monopolistic manufacturer tries to distribute the product as efficiently as possible, just as it tries to produce the good at the lowest cost
  - Vertical restrictions that allow a firm to promote its product more effectively and that lead to more output sold at a lower price help both firms and consumers
- E.g., competition among different brands is heightened if competing firms can effectively promote their products
- Vertical restrictions also may make entry easier, which leads to lower prices. Without vertical restrictions, new products that rely heavily on sales efforts have difficulty breaking into a market

Ambiguous Effects

- Two groups of buyers: those who know how to use a good (experienced users) and those who do not (beginners)
  - With no training provided, experienced users buy the good at \$10 and beginners do not purchase it
  - With vertical restrictions that allow beginners to receive instruction, both groups buy the good for \$11
  - The experienced users are worse off with the vertical restrictions because they spend more per unit but do not benefit from the availability of training
  - The beginners are better off because if they purchased the good, it must be worth at least \$11 to all of them, and some may receive consumer surplus

Ambiguous Effects

- Vertical restrictions can be used to price discriminate
  - e.g., consumers in California have an inelastic demand for some product, and consumers in Illinois have an elastic demand.
    - ★ By granting exclusive territories to the independent distributors in exchange for no resale agreements, the manufacturer can charge a low wholesale price in Illinois and a high price in California
    - ★ Such an Imperfect price discrimination has ambiguous welfare effects and can increase or decrease welfare

Undesirable Vertical Restrictions

- Can lead to either distributors' or manufacturers' cartels
  - e.g., Suppose that a particular group of dealers alone can distribute a product. They may force the manufacturer to grant exclusive territories, leading to local monopolies and restricted competition among dealers
- Can also help to perpetuate a cartel of manufacturers
  - e.g., Suppose that a group of manufacturers all agree to charge the same price at retail and enforce this agreement with vertical restrictions on dealers, it is easier for them to detect if any manufacturer cheats on the agreement by lowering price
- May raise the barrier to entry
  - Exclusive dealing is one way for manufacturers to tie up distribution
    - Under such agreements, both parties to the contract agree to rely only on each other, not on other firms
    - Such strategic behavior can successfully raise the cost of entry only if the channels of distribution are limited

Banning Vertical Restrictions

- Even where vertical restrictions are undesirable, in some cases little is accomplished by banning them
  - If vertical restrictions are outlawed, a manufacturer has an incentive to vertically integrate and handle its own distribution, so that it can impose the desirable restrictions
  - It would be counterproductive to enact a law preventing contracts between independent firms when a firm could easily avoid such prohibitions by vertically integrating and distributing the product itself

For Further Reading I

- Carlton, Dennis W., and Jeffrey M. Perloff. Modern Industrial Organization. Fourth edition. Harlow, Essex, England: Pearson, 2015. Print.
- Belleflamme, Paul., and Martin. Peitz. Industrial Organization : Markets and Strategies. Cambridge, UK ;: Cambridge University Press, 2010. Print.