MANAGERIAL ECONOMICS

By
Department of Business Administration

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Managerial Economics & Theory

- Managerial economics applies microeconomic theory to business problems
  - How to use economic analysis to make decisions to achieve firm's goal of profit maximization
- Economic theory helps managers understand real-world business problems
  - Uses simplifying assumptions to turn complexity into relative simplicity

Assume Profit Maximization

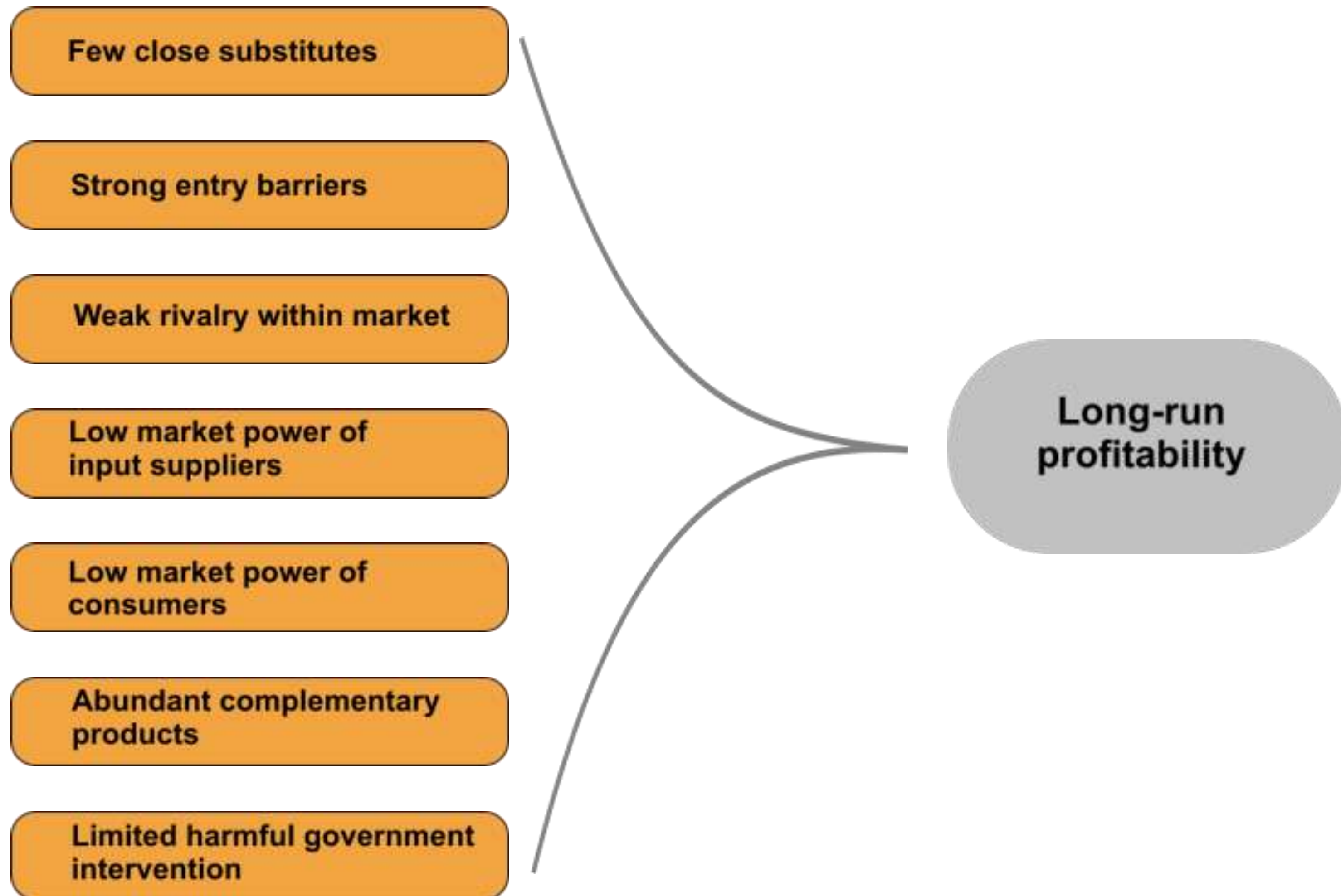
- What about?
  - Steakholders
  - Social concerns
  - Environmental concerns

- Do these concerns influence profits?

Short or long run profit maximization?

- This is a false choice
  - Maximize the value of the firm
  - The value of the firm is equal to the present value of the future stream of profits
- Emphasis on short or long term will depend on:
  - Time value of money (cost of funds)
  - Market structure
  - Uncertainty

Economic Forces that Promote Long-Run Profitability (Figure 1.1)



Maximizing the Value of a Firm

- Value of a firm
  - Price for which it can be sold
  - Equal to net present value of expected future profit
- Risk premium
  - Accounts for risk of not knowing future profits
  - The larger the risk, the higher the risk premium, & the lower the firm's value

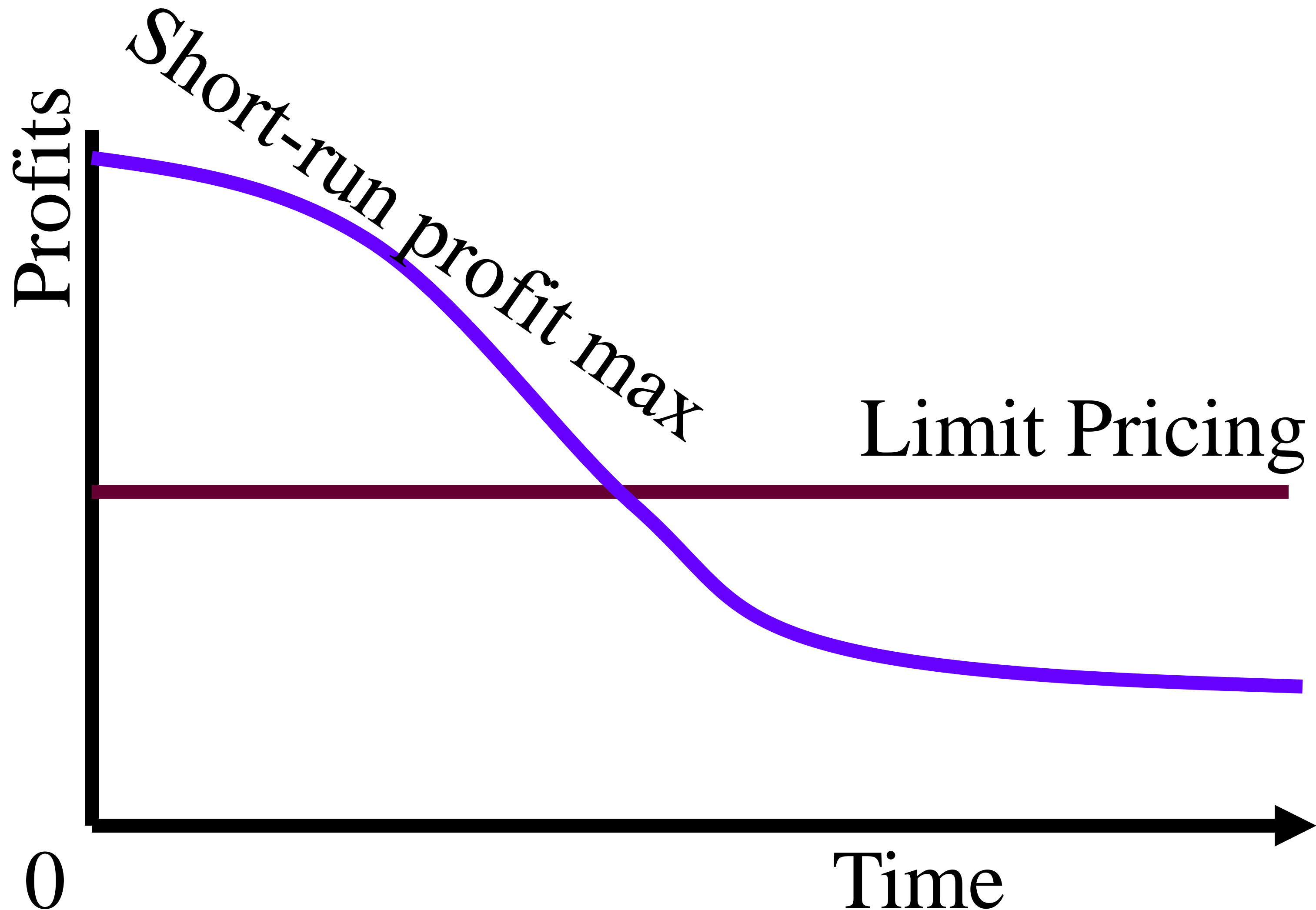
Maximizing the Value of a Firm

- Maximize firm's value by maximizing profit in each time period
  - Cost & revenue conditions must be independent across time periods

- Value of a firm =

$$\frac{\pi_1}{(1+r)} + \frac{\pi_2}{(1+r)^2} + \ldots + \frac{\pi_T}{(1+r)^T} = \sum_{t=1}^{T} \frac{\pi_T}{(1+r)^t}$$

Possible Profit Streams



Economic Profits

- Economic profits are not accounting profits
- Economic profits are equal to revenues minus economic costs
- All economic costs are measured in terms of opportunity costs
  - Choices represent foregone opportunities

Economic Cost of Resources

- Opportunity cost of using any resource is:
  - What firm owners must give up to use the resource
- Market-supplied resources
  - Owned by others & hired, rented, or leased
- Owner-supplied resources
  - Owned & used by the firm

Total Economic Cost

- Total Economic Cost
  - Sum of opportunity costs of both market-supplied resources & owner-supplied resources
- Explicit Costs
  - Monetary payments to owners of market-supplied resources
- Implicit Costs
  - Nonmonetary opportunity costs of using owner-supplied resources

Types of Implicit Costs

- Opportunity cost of cash provided by owners
  - Equity capital
- Opportunity cost of using land or capital owned by the firm
- Opportunity cost of owner’s time spent managing or working for the firm

Economic Cost of Using Resources
(Figure 1.2)

Explicit Costs
of
<u>Market-Supplied Resources</u>
The monetary payments to resource owners

+

Implicit Costs
of
<u>Owner-Supplied Resources</u>
The returns forgone by not taking the owners' resources to market

=

<u>Total Economic Cost</u>
The total opportunity costs of both kinds of resources

Economic Profit vs. Accounting Profit

Economic profit = Total revenue – Total economic cost

= Total revenue – Explicit costs – Implicit costs

Accounting profit ? = Total revenue – Explicit costs

- Accounting profit does not subtract implicit costs from total revenue
- Firm owners must cover all costs of all resources used by the firm
  - Objective is to maximize economic profit

In 2007 Terry Brady, the legendary athlete from Indiana, decided to leave his job as head football coach at Mattoon High School to open Brady Advantage, his own sporting goods store, in Terre Haute. By locating Brady Advantage halfway between St. Louis and Indianapolis, Brady hoped to attract customers from both large metropolitan markets. A partial income statement for Brady Advantage follows:

	2007
Revenues	
Revenue from sales of goods and services	$210,000
Operating costs and expenses	
Costs of products and services sold	$82,000
Selling expenses	$6,000
Administrative expenses	$12,000
Total Operating Costs & Expenses	$100,000
Income from operations	$110,000
Interest expense (bank loan)	$14,000
Non-recurring expenses to start business	$8,000
Income taxes	$16,000
Net income	$72,000

Terry Brady's coaching job at Mattoon High paid $45,000 of annual salary and benefits. To get the sporting goods store opened, Brady used $50,000 of his personal savings, which was earning a guaranteed 12 percent annual rate of return. Brady opened his store in a building that he owned in Terre Haute. Prior to opening his store, the building was rented for $24,000 per year.

a. In 2007, Brady Advantage incurs $_______________ of total explicit costs for using market-supplied resources.

b. In 2007, the opportunity cost of Brady's equity capital is $______________.

c. The total implicit cost of using owner-supplied resources in 2007 is $____________.

d. The total opportunity cost of resources used by Brady Advantage in 2007 is $_______________. The total economic cost in 2007 is $_______________.

e. The accounting profit for Brady Advantage in 2007 is $_______________.

Brady's Explicit Costs

Total operating costs and expenses	$ 100,000
Interest expense	14,000
Non-recurring expenses	8,000
Income taxes	16,000
Total Explicit Costs	$138,000

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Opportunity Cost of Brady's Capital

Personal Savings	$	50,000
Annual rate of return		12%
Opportunity cost of equity capital	$	6,000

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Implicit Cost of Brady's Owner Supplied Resources

Opportunity cost of equity capital	$	6,000
Opportunity cost of own salary		45,000
Opportunity cost of building		24,000
Total opportunity cost of own resources	$	75,000

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Total Opportunity Cost of All Resources

Opportunity cost of owners resources	$75,000
Opportunity cost of explicit expenses	138,000
Total opportunity cost	$213,000

Brady's Total Accounting Profit

Total revenue	$	210,000
Total explicit cost		138,000
Net income	$	72,000

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Brady's Economic Profit

Total revenue	$	210,000
Total economic cost		213,000
Economic profit	$	(3,000)

Economic profit is the difference between total revenue and total economic cost:

Economic profit = Total revenue – Total economic cost

= Total revenue – Explicit costs – Implicit costs

Based on his profit in 2007, did Terry Brady increase his wealth by quitting his job at Mattoon High and opening Brady Advantage?

3. Over the next three years, a firm is expected to earn economic profit of $700,000 in the first year, $800,000 in the second year, and $500,000 in the third year. After the end of the third year, the firm goes out of business.

   a. If the risk-adjusted discount rate is 16 percent for each of the next three years, the value of the firm is $_______________. The firm can be sold today for a price of $_______________.

   b. If the risk-adjusted discount rate is 10 percent for each of the next three years, the value of the firm is $_______________. The firm can be sold today for a price of $_______________.

Present Value and the Discount Rate

	Economic Profit		
Discount rate	0%	16%	10%
Year			
1	$700,000	$ 603,448	$ 636,364
2	$800,000	$ 594,530	$ 661,157
3	$500,000	$ 320,329	$ 375,657
Total	$2,000,000	$1,518,307	$1,673,178

Present value is negatively related to the discount rate.

Some Common Mistakes Managers Make

- Never increase output simply to reduce average costs
- Pursuit of market share usually reduces profit
- Focusing on profit margin won’t maximize total profit
- Maximizing total revenue reduces profit
- Cost-plus pricing formulas don’t produce profit-maximizing prices

Separation of Ownership & Control

- Principal-agent problem
  - Conflict that arises when goals of management (agent) do not match goals of owner (principal)
    - Ex. Mortgage brokers
- Moral Hazard
  - When either party to an agreement has incentive not to abide by all its provisions & one party cannot cost effectively monitor the agreement
    - Ex. Preexisting conditions

Corporate Control Mechanisms

- Require managers to hold stipulated amount of firm's equity
- Increase percentage of outsiders serving on board of directors
- Finance corporate investments with debt instead of equity

Price-Takers vs. Price-Setters

- Price-taking firm
  - Cannot set price of its product
  - Price is determined strictly by market forces of demand & supply
- Price-setting firm
  - Can set price of its product
  - Has a degree of *market power*, which is ability to raise price without losing all sales

What is a Market?

- A *market* is any arrangement through which buyers & sellers exchange goods & services
- Markets reduce *transaction costs*
  - Costs of making a transaction other than the price of the good or service

Market Structures

- Market characteristics that determine the economic environment in which a firm operates
  - Number & size of firms in market
  - Degree of product differentiation
  - Likelihood of new firms entering market

Perfect Competition

- Large number of relatively small firms
- Undifferentiated product
- No barriers to entry

Monopoly

- Single firm
- Produces product with no close substitutes
- Protected by a barrier to entry

Monopolistic Competition

- Large number of relatively small firms
- Differentiated products
- No barriers to entry

Oligopoly

- Few firms produce all or most of market output
- Profits are interdependent
  - Actions by any one firm will affect sales & profits of the other firms

Globalization of Markets

- Economic integration of markets located in nations around the world
  - Provides opportunity to sell more goods & services to foreign buyers
  - Presents threat of increased competition from foreign producers