

Economics For Business



BunyapornPhoothong

1 Introduction to Economics

Economics is the study of the use of limited resources (Scarcity) and trying to find alternatives (Choice) to meet the unlimited human needs. Economics is therefore related, and linked to many disciplines, especially business operations. There will be several options. Whether it's an industrial business, agricultural business, and service business.

Entrepreneurs need to have knowledge of the business they are running. Applying the principles of economics to use in making business decisions. It will help business units to reach their goals efficiently. Including the efficient use of resources.

Definition and general characteristics of Economics.

The word economics comes from the Greek words *oikonomia*, which means household management, *oikos*, house, and *nomos*, custom or law. which together means household rules. Modern economic models branched out from the broad realm of political economy at the end of the 19th century.

Lord Leonel Robbins defines economics as “Economics is the science that studies human behavior in relation to the relationship between results and finite paths, which may be used in many ways” (cf. : Wanrak Mingmaneeakin ,2010, page 2)

American economist Paul A. Samuelson defined economics as “Economics is the study of people and societies choosing to make use of limited resources. (which may be used for various purposes) in the production of various products and distribute those goods for consumption no matter the present or the future between individuals and various groups of people in society” (Refer to Wanrak Mingmaneeakin, 2010, page 2).

Economics (Economics) is a field of study. which involves the allocation of scarce resources. And there are limited (Scarce resources) to use in various options. to satisfy human needs (Satisfy human wants) (Salvatore. 1997: 711) or the means

is social science which studies various alternatives, whether individuals, businesses, governments or society, for decision-making in resource allocation or referring to social science which involves the use of scarce resources to meet the unlimited economic needs of society to the maximum (McConnell and Brue. 2002: G-7))
Tangjaang, 2003, 9-10)

From the above definition of economics May give the meaning of economics that “Economics is a subject that deals with the use of limited resources. used to get the most benefit most efficient to meet the unlimited needs of human beings.”

Human Needs

Human needs refer to the goods, services, and conveniences of life that every person needs. This requirement will vary from person to person. Distance and place the human needs to be satisfied. There is often more than just the available goods and services.

Economic Resources

Economic resources refer to factors of production that cause the production of goods. and services such as land, labor, capital and entrepreneurship The land will include manure in the soil. Climate, forests, minerals and other natural resources. Labor includes both physical and mental human abilities. This will directly affect the production of goods and services.

It consists of paid workers and freelance workers. The funds will include tools. Factory machinery, inventions, transportation routes, irrigation, as well as various communication networks. economic entrepreneur In economic terms, money is not capital, because money cannot produce any kind of goods, money is only a medium to facilitate the exchange of goods and services. take a risk Make decisions and receive returns in the form of profits. or loss from activities.

Economic resources can be divided into 2 types:

1. Human resources Human beings are important resources to help drive work process to achieve the goals set

2. Non-human resources Which can be classified into 2 types:

2.1 Not human, but man made Refers to things that humans use their knowledge. the ability to produce to meet human needs called wealth

2.2 Not human, but nature provided including natural resources which is called free property

So that it can be said that everything is a resource. And it's limited compared to human needs.

Economic System

Economic system refers to a group of people together as a group of economic institutions (Economic Institution) that have similar practices to carry out economic activities (Economic Activity) to treat the needs of consumers. Similar practices will be the rules and policies that the economic units in society take as a guideline. We can classify the economic system into 3 systems:

1. Economic system of capitalism (Capitalism) or liberal economy economy or private economy (Private enterprise economy) is an economic system that is privately owned. inputs Freedom to carry out production and consumption There is no single person to plan and determine what to produce, how to produce, and for whom to produce. The price mechanism is all determined. This type of economic system is popularly known as the capitalist economic system.

2. Central Planning System or compulsory socialist system (Authoritarian socialism) is a centrally planned system, the government owns the means of production. and who determines what to produce, how to produce, and for whom. This fully planned economy is also known as a communist economy.

3. Mixed economy (Semi-Planned Economy) or Mixed Economy is a system in which the government and the private sector are collectively responsible for deciding what to produce, how, and how to share the output. In this system, the government only takes part in the planning of certain economic activities. Generally released to the private It operates by relying on the price mechanism as a guide.

Basic of Economic problems

From the problem that human beings have unlimited needs compared to the amount of resources they have. The above limits make every country has fundamental economic problems. Basic economic problems can be classified into 3 factors as follows: (Waralee Srisombat. 2012, page 16)

1. What to produce : What to produce means deciding whether to produce goods and What type of service, how much? This is because people in society There are various requirements, but the resources used in production are limited. Therefore, it is important to choose what to produce first.

2. How to produce : How to produce means after receiving the answer on what to produce But the next problem is how to produce it. use production techniques or how to use the factors of production to get the most productivity and cost the least.

3. Produce for whom: For whom to produce is after answering how to produce The next step is distribution. how to allocate those products thoroughly and there is an end to karma different allocations make social welfare different.

To solve these basic economic problems, each country will have different solutions according to the model of that country's economic system.

Solving basic for Economic problems

Countries in different economies have different approaches to fundamental economic problems as follows.

1. Capitalist economic system or liberal economic system It solves fundamental economic problems by letting the market work, that is, in a capitalist economy. Product price is determined by market demand and supply Whenever the demand for a particular commodity exceeds the supply of that commodity. The price of the product will be higher, or it can be said that when society has a lot of demand for any type of product, it will cause the product price to be high. When the price of a product is high, producers who want maximum profit will allocate their resources to produce. High-priced products are on the rise. When the supply of a commodity increases, the price decreases, and producers reduce production.

Leaving the economy open to market forces will help answer the question of what commodities should be produced. That is, produce a product that society needs, which is expressed through a higher price, which allows the producer to see the profit that will be made and turn to produce more of that product, as if it were. Responding to the needs of the community leads to the allocation of limited resources to produce products that the people need to maximize the satisfaction of the society. It is considered the most efficient resource allocation.

As for the problem of how to produce commodities, the capitalist economy is still free. Let the price mechanism work, that is, producers will choose the method of production that causes the lowest cost. That is, if any society has a large number of laborers, it will result in a low wage rate, so choose to use a production method that focuses on labor as main. But if there is a small number of workers The labor wage rate is high and they choose production methods by using machines rather than labor. To reduce production costs of manufacturers, while at the same time causing efficient use of resources.

2. Centrally planned economy or socialist system Since the government owns all the factors of production of the country, there is a central agency. For planning across the country, what products should be produced and how much? What type of production is produced and allocated those goods to which groups? Therefore, the government is who determines how to solve the three basic economic problems.

3. Mixed economy It is an economic system that combines between the capitalist economy and the system. The socialist economy therefore, in order to solve some of the fundamental problems, the government will let the far-flung people or the market system do its job. But some problems the government will control or produce by themselves, that is, using a mixed system to solve basic economic problems, such as products or services that have a very high cost that is difficult to find for private investment but is necessary for the people. For example, all public utilities will be invested by the government itself. Or in the case of some products that the government wants to control the quantity or quality. because it is dangerous for the public The government will take action by itself, such as the production of cigarettes, liquor, etc.

Economic activities and currents of economic activity

In a simple economy it consists of households and business units which we can Describe the relationship between households and business units in the marketplace of the system. economy as follows:

1. Factor markets are related between business units. and households as follows:

1.1 Households own the factors of production, consisting of labor , capital , land and entrepreneurs .These factors are offered to businesses to generate income for themselves.

1.2 Business units must pay wages, salaries, interest, and rent to households. These will be the production costs of the business unit. This becomes the income of the household, while the profit is the return of the business unit.

2. The product market is related between business units and households as follows:

2.1 The business unit collects inputs to produce the final goods and services and sell to households .

2.2 Households will buy goods for consumption, with household expenditures generating Revenues of business units are shown in Figure 1 . 1 (Waralee Srisombat , 2012, page 20)

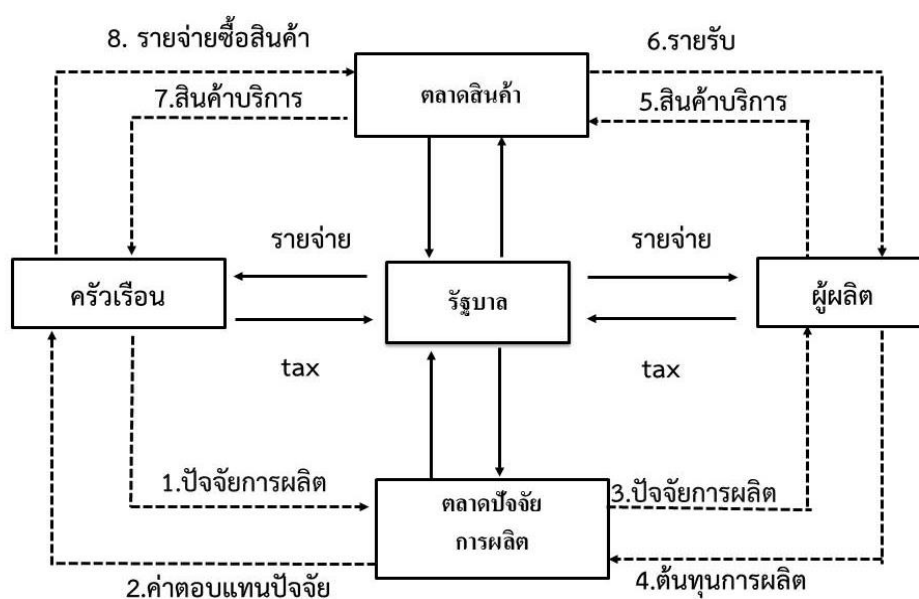


Figure 1.1 Turnover of economic activities

Figure 1.1 shows the turnover of economic activity starting from (1) the household unit transfers its inputs to the inputs market, (2) the inputs market thus pays the inputs in the form of compensation. of rent, wages, interest and profits. (3) The market of factors of production will deliver the factors of production to business units or producers. (4) Once the producers have received the factors of production, they must pay the costs to the market. inputs which is regarded as the cost of producing the product (5) Producers collect inputs. To produce goods and services and pass on to the product market. (6) Product market When receiving goods from the manufacturer and then paying to the manufacturer. which is considered as income or income from production (7) product market to sell products to consumers or household units. (8) Consumers or household units after receiving the goods must pay expenses to the marketplace. It's the cost of purchasing goods. And both household units, producers, input markets, and goods markets must pay taxes to the government. The government will use the tax received to pay for the administration of creating prosperity for the nation.

Economic analysis model

in economic analysis The answer to the study will depend on the form of analysis used. Models of analyzing problems in economics Can be separated into different types as follows (<https://www.baanjommyut.com> accessed on May 11, 2018)

1. Real Economics and The Economics that should be

The study of economics in realistic economics. And the economics that should be as follows (Narathip Chutiwong. 2005. Page 3)

1.1 Positive economics is the study of the behavior of economic units and the functioning of the economic system in reality. or the status quo as to what is happening without Use personal opinions (What it is). For example, a study that if the government helps low-income people to improve their quality of life by issuing state welfare cards Who will benefit Who will be the losers, the benefits, and what will be the impact? That's real economics. It is a study in the form of learning how that subject is.

1.2 Economics that should be (Normative Economics) is an analysis of the results of activities. that economy whether that is correct or not How should I

improve? By using personal opinions involved (What it ought to be). For example, studying whether the policy to help the low-income people should continue or not, etc. The study of economics should be a study in the form of learning whether that matter should be.

2. Segmental analysis and Comprehensive analysis

The study of economics in specific areas and comprehensive analysis. Details are as follows: (Narathip Chutiwong. 2548. page 5).

2.1 Partial Analysis is a specific analysis of the subject we are interested in by cutting off the relationship with other variables. It is an analysis based on the assumption that other things are constant. For example, study the effect on the demand for a commodity when the price of that commodity changes. by assigning other factors related whether it is income Prices of other goods, tastes or advertising costs are constant.

2.2 General Analysis is an analysis that brings all variables related to For example, in the study of the effect that occurs on the quantity of demand for goods when the price of goods changes. At the same time, other relevant factors also change with this comprehensive analysis. It's tricky. because there are many variables involved Therefore, it is necessary to rely on advanced mathematics to assist in analysis. However, this kind of analysis is an analysis. that corresponds to the real situation because of various factors are all related to each other Taking all relevant factors into account at the same time is correct with reality.

Definition and general characteristics of business economics

Business Economics is a subject that deals with the application of economic theories. to make decisions in solving business problems of various organizations both non-profit and for-profit organizations. To be able to allocate limited resources to use in various options. optimally and able to achieve the organization's goals with maximum efficiency. Business economics is linked economic concept Quantitative Methodology Framework To develop tools for decision making in business administration.

Business Economics is a subject that deals with the application of various economic concepts and models to solve business management problems in order to make business decisions in organizations. both non-profit and for-profit organizations. To be able to allocate limited resources to use in various options. appropriately and able to achieve the organization's goals with the highest efficiency.

Business economics is linked economic concept Quantitative Methodology Framework To be a decision-making tool in business administration. This is to make the best decision (Making the best decision). besides that A businessman needs to know the economic environment of the business he runs. or with high price volatility, for example, fresh milk at a price that is not very high by adding only about 1-2 percent of the profit. At the same time, the price of perishable products or the price that does not fluctuate much will be set at a relatively high price, such as cosmetics, set a price that is 50 percent higher than the cost.

Business economics describes such pricing behavior with respect to profit maximization targets. likewise Business economics can also describe the workings of government, e.g. Setting a quota for importing goods from abroad will help reduce the amount of imported goods It can increase domestic production more. and increase profitability from the monopoly of domestic producers.

Economists have given importance to applying economics to business administration in order to make decisions in solving business problems of various organizations. both non-profit and for-profit organizations To be able to allocate limited resources to use in various options. most appropriately and able to achieve the goals of the organization with the highest efficiency, so the names are different, such as Business Economics, Managerial Economics , which looks slightly different by business economics to apply economic theory to apply to business Managerial Economics Division to apply economic theory to apply management Business economics is the introduction of content from microeconomics to analyze economic activities in small units such as consumption behavior, production, production costs market structure, pricing, macroeconomics section will bring policies on trade, investment, interest rates and issuing various government regulations that affect production decisions. The determination of various policies to be accurate and

appropriate, therefore, business economics as a study of economics in conjunction with the study of business administration.

Spencer and Siegelman : Managerial Economics (1970) gave the meaning of business economics as “ Development and Integrations of principles and ideas from various fields of economic and business, with emphaeis on management decision making and policy formulation within the firm”(Amnuaypen Manusuk, 1996, page 1)

Business economics refers to subjects or sciences that require fundamentals. or theoretical concepts of economics This includes microeconomics. and macroeconomics Let's explain in business administration. for the allocation of limited resources for maximum benefit to the business (Sujinda Jeamsriphong , 2015 , page 6)

Therefore, business economics means applying knowledge of economics to apply in conjunction with business administration. The aim is to maximize the use of limited resources. To meet the needs of consumers to get the most satisfaction. and meet the needs of business operators by using the lowest cost most productive and the business gets the highest profit.

Economic theory related to business economics

In studying economic theory, the study content can be divided into 2 parts:

1. Micro economics

It is a study of the behavior of various economic units. In the economy, such as consumers, producers, owners of factors of production, etc., either as individuals or groups of people, whose behavior is to seek personal gain is the highest satisfaction. subject to certain limitations such as income, taste, market conditions, product prices, production factor prices, tax rates, government policies, etc. Therefore, the study in this section is a study of the theory related to the decision-making behavior of consumers, owners of production factors and any particular business unit.

2. Macro economics

It is the study of the gross behavior of a country or a system. the whole economy, such as national income, product price level, employment, the country's financial condition economic growth, etc. Therefore, the study in this section This is a study of collective behavior that causes impacts on the collective economy. For example, the theory of national income determination. National Product and Employment interest rate theory consumption theory investment theory and inflation theory, etc., a study of economic policy approaches to solve overall economic problems or to stimulate the overall economy.

Business economics is related to microeconomics and macroeconomics. This is because microeconomics deals with the study of organizational behavior in allocating limited resources to appropriate alternatives in order to achieve organizational goals with maximum efficiency and effectiveness. Many microeconomic theories can be applied to organizational decision-making. At the same time, macroeconomics reflects the overall economy. make the organization aware of the environment outside the organization both nationally and internationally When the economic situation changes or the government has different monetary, fiscal, and international trade policies, it will also affect the decisions of business organizations.

Relationship between business economics and other subjects

As mentioned earlier, business economics is a subject that applies economic theory to business decision-making. to achieve the organization's goals The effective business operation, besides economic theory, also requires knowledge from other fields such as production, accounting, business finance, marketing, and personnel management. Administration) etc.

1. Business Economics and Statistics Business Economics Statistics are used to help calculate business decisions. Because the information obtained by the business unit is not entirely correct. Therefore, statistical data, such as the use of probabilities, must be used in business forecasting.

2. Business Economics with mathematics because business economics have to study the relationship of various variables To use in planning correctly and appropriately, such as advertising relations with sales or relations of productivity. with factors of production.

3. Business economics and accounting, because in business The main goal is the pursuit of "profit". must be analyzed Break-even production volume Break-even selling price Determining the desired profit Finding the payback period.

4. Business economics and decision-making The business unit wants to make a decision. to choose the best Therefore, decision sciences are used as tools using mathematics, economics and econometrics to create and estimate models that aim to determine the most appropriate behavior (Sujinda Chiamsriphong, 2015, p. 11).

Definition of business and Business model

Various scholars have defined the meaning of business as follows.

Ricky W. Griffin and Ronald J. Ebert (Ricky W. Griffin & Ronald J. Ebert) defined the meaning of business as “Enterprise that produces products There is a sale of goods or services. with the expectation of profit” (e-learning/cd-1499/SOC18/topic4/linkfile/print5.htm : accessed on April 22, 2016).

Joseph T. Straub and Raymond F. Attnet (Joseph T. Straub and Raymond F. Attnet) defined the meaning of business as business means “Organizations operating in the production of goods and services with the expectation of profit” (e-learning/cd-1499/SOC18/topic4/linkfile/print5.htm : accessed on April 22, 2016).

Business refers to the activities of individuals or groups of people working together in the production process. distribution of products and services with the aim of obtaining a return or profit from that activity (Siriwut Buranapit, 2014, page 2).

Business means an organization that aims to profit from products that customers (Customers) want (Siriwut Buranapira, 2014, page 2).

From what many scholars have given the meaning of business It can be concluded that business means agency. Or an organization that aims to carry out various activities, both production and service. to meet the needs of consumers The aim is "profit".

In business Entrepreneurs have to decide on their own business model which type of business organization to operate. which the business organization operates Each model has a different way of doing its pros and cons.

Model of business

The form of business is classified as a non-corporate entity. and corporate entities (Must be registered under the law) and business organizations established under other specific laws as follows (Pitchayalak Pitchayakul and Warataya Chaengkrajang. 2014. Pages 18-21)

1. Sole Proprietorship

It is a business that is owned or invested by a single person. Controlling all operations by one person Examples of this type of business are retail stores, wholesale stores, beauty salons, farming, farming, stalls.

Characteristics of a Sole Proprietorship

- 1) There is only one owner of the business. less investment
- 2) Business owners are liable for all liabilities without limits. The creditor has the right to claim the owner's property. If the assets of the business are insufficient to pay debts
- 3) The business owner receives a return on investment, both profit and loss alone.
- 4) Operational control by a sole proprietor

Pros and Cons of a Sole Proprietorship

strength	weakness
<ul style="list-style-type: none"> - Easy and convenient to set up - Freedom to operate - earn profits alone - There are few legal regulations. 	<ul style="list-style-type: none"> - The owner of the business is solely responsible. - Business expansion is quite difficult because the capital is limited.

strength	weakness
	- The workload is quite heavy. You have to think for yourself alone.

2.Partnership

A limited partnership is a business in which 2 or more persons jointly invest and operate. with the purpose of sharing profits from operations This type of business is inherited from a sole proprietorship business.

Characteristics of partnership business

- 1) There are 2 or more shareholders who agree to enter into a joint operation contract.
- 2) There is a joint investment by bringing in cash. property or labor to invest according to the agreement.
- 3) having the same business together.
- 4) wish to share profits according to the agreement.

Types of partnership business

According to the Civil and Commercial Code Partnerships are divided into 2 types as follows:

- 1) Ordinary partnership is a partnership in which all partners are liable for all liabilities of the partnership without limitation. The ordinary partnership may or may not be registered.
- 2) Limited partnership is a partnership that must be registered as a juristic person under the law. "Limited Partnership" always precedes the name of the partnership.

Advantages and disadvantages of a partnership

strength	weakness
<ul style="list-style-type: none"> - Have more sources of funding than sole proprietorships. - Have a co-assistant in thinking and making decisions. - There is an average share of the risk burden. - Easy setup Because it is a combination of 2 or more people 	<ul style="list-style-type: none"> -Crowdfunding only from partners -Decisions may be delayed because of the disagreement of the partners

3. Limited Company

A limited company is a type of company established by dividing capital into shares with equal shares. Each shareholder's liability is limited to the amount that he or she has not fully paid for the value of the shares he holds.

Types of Limited Companies

1) A private limited company is a company established by dividing capital into shares, which each share has the same value. There are at least seven but less than one hundred shareholders. Each shareholder's liability is limited to the amount that he has not fully paid the value of the shares he holds. And the qualifications of shareholders are not material matters.

2) Public limited company means a type of company established with the intention of offering shares to the public. A shareholder's liability is limited to the amount of shares payable. And the said company has specified such intention in the memorandum of association.

Advantages and disadvantages of the company

strength	weakness
<ul style="list-style-type: none"> - Shareholders are responsible for the company's liabilities equal to the investment that they promised to invest in the share value. - Shareholders can sell or transfer shares to others. In the case of a shareholder's death Or the court ordered to leave the shareholder. The company can still continue to operate. - information can be read easily Because information must be disclosed to shareholders and outsiders. 	<ul style="list-style-type: none"> - Difficult setup process - High administrative expenses - Dissolution is difficult. Must be liquidated and managed in accordance with legal regulations. - Due to disclosure of information to shareholders and outsiders, confidentiality cannot be maintained.

4. Franchise

Franchise business may also be called Concession business is a business that arises from a relationship between two or more groups of people. which have different roles and responsibilities but will promote each other in the business system with the objective of distributing goods or services to consumers efficiently Therefore, from the nature of the franchise business, there are 2 parties involved in this type of business:

- 1) Franchisee or business owner is the concession provider.
- 2) Franchisee is a concessionaire

Types of Franchise Businesses

There are 3 types of franchise business or concession business. Phlu Phirun, 2010, pages 168-169).

1. Individual Franchise or Single Franchise (Individual Franchise or Single Franchise) is a business model in which manufacturers or distributors or the concessionaire grants the right to the concessionaire or dealer in the sale of goods or products only one product of the concession provider, with the location specified This licensing model is suitable for franchisees who are just starting out. There may be improvements to fix errors from making franchises.

2. Multi-Unit Franchise is a concession that grants rights to one person or a group of people. by designating more than one area for the rightful person, which the concessionaire Or the franchisee can select a concessionaire or franchisee. with enough capital.

3. Sub-franchise is a form of granting rights to individuals or groups of individuals, both individual (Individual Franchise) and multi-unit (Multi-Unit Franchise). something like this Suitable for areas that are far from the franchisee, making the franchisee unable to provide thorough service.

Advantages and disadvantages of a franchise business

strength	weakness
<ul style="list-style-type: none"> - High chance of success Because the franchisee has successfully developed the business. - Collaborative advertising and sales support. - The franchisor will provide assistance, training and transfer of expertise. Recommend and provide various services. 	<ul style="list-style-type: none"> - Lack of freedom in running a business The franchisor must operate the business only in accordance with the franchisor's predetermined model. - operating expenses Business in the form of a franchise, which some businesses must High capital investment required to acquire operating rights, such as having to pay an entry fee have

strength	weakness
	to invest in the decoration of the store, etc.

Business Goal

In running a business, the important goals or objectives can be summarized as follows:

1. To aim for profit which is regarded as the main goal of doing business Profit is a return to the business owners who have invested in the business. in production and services to meet the needs of consumers.

2. To aim to make the business survive Business owners, when investing in operations, expect the business to continue to operate continuously without interruption. or close the business But able to produce various products and services continuously.

3. To aim for growth by increasing or expanding the scope of operations There are new products being produced into the market, expanding branches, increasing investment in new businesses. The business's status and assets have increased.

4. To aim for social responsibility Entrepreneurial business operations must have social responsibilities, such as being responsible to shareholders, employees, customers, the environment, community sources.

In summary, in the operation of the business, it aims to sell goods and services to consumers. with profits at a satisfactory level and can make the business survive and have growth with regard to social responsibility.

Business Ethics

Ethics is means good, accepted by the general public It is a model of thinking and practice, which involves right and fair actions (Kulsiri Kowsuwan, Pitchayalak Pitchayakul, 2004, page 198).

Code of Ethics to maintain and promote honor Member's reputation and status may or may not be written in writing.

Business and Ethics

There are things to consider in doing business as follows.

1. Businesses are not only required by law. There must be ethics.
2. Businesses are responsible for the goods and services they sell to consumers.
3. Some unethical acts are not prohibited by law. If businessmen are unethical, they will seize the opportunity to take action.
4. Judging ethical values It is a part of business operations in general business organizations. There are no clearly set rules.

Ethical principles that businessmen should follow

In conducting business, businessmen should have the following ethics:

1. Responsibility of business people to society Including refraining from doing business that causes society to deteriorate Does not destroy natural resources and the environment Cooperate with the community to create society, including paying attention to job creation for people in society.
2. Responsibilities of businessmen to customers include selling products and services at fair prices. produce quality products and services pay attention to provide services to all customers equally Ignore any action that causes prices to rise for no reason.
3. Businessmen to employees Employees, i.e. giving appropriate wages pay attention to welfare and safety at work Develop knowledge, increase expertise be fair and equal opportunity Including giving advice and being a consultant to support the advancement of employees.
4. Responsibilities of Businessmen to Competitors including refraining from bullying blackmail intimidation or exclusion Either directly or indirectly, including cooperating in competition, such as providing information and knowledge in various fields.

5. Responsibilities of businessmen to government agencies Including doing business should be straightforward. Comply with legal requirements in doing business. Abstain from bribery of government officials Cooperate as a good citizen.

Summarize

Business Economics refers to the application of economics. in making decisions in solving business problems of various organizations To be able to allocate limited resources to use in various options. optimally and able to achieve the organization's goals with maximum efficiency.

The study of economic theory can be divided into two parts: Micro Economics and Macro Economics. microeconomics It will study the behavior of various economic units. In the economy, including consumers, producers, owners of factors of production, etc. The macro economics (Macro Economics) is the study of the country's gross behavior. or related to the entire economic system These include national income, employment, and the country's financial conditions. economic growth, etc.

Business economics is related to microeconomics and macroeconomics. This is because microeconomics studies the environment within an organization in how to appropriately allocate limited resources to achieve organizational goals with maximum efficiency and effectiveness.

In business entrepreneurs have to decide on their own business model which type of business organization to operate. which the business organization operates Each model has different operating methods, advantages and disadvantages. Normally, there are 4 popular types of entrepreneurs: 1. Sole Proprietorship 2. Partnership 3. Limited Company Business (Limited Company) and 4. Franchise business

In addition, a good businessman must have ethics. The ethical principles that businessmen should follow in business operations. The ethical principles that business people should follow in business operations are as follows:

1. Responsibility of business people to society
2. Responsibility of business people to customers
3. Responsibilities of business people to employees
4. Responsibilities of business people to partners competition and
5. Responsibilities of businessmen to government agencies.

Chapter 1 Exercises

Completely understand the following questions.

1. If the student is in the middle of a forest with abundant food Do students have to use economics in life? Yes or No? Explain why earnings.
2. Business Administration with the administration of the country How are they the same or different? Explain and justify
3. Business Economics What subject is it related to? And how it relates to microeconomics and macroeconomics.
4. What are the fundamental problems in the economy? Explain with examples.
5. What are the fundamental economic problems of a liberal economy?
6. Business Goals What is most important? Reason with clearly.
7. Students ask to explain the differences between sole proprietorships. with partnership business
8. Tell me the advantages and disadvantages of running a business in the form of a franchise.
9. What is business ethics and how should a businessman have business ethics? Explain and provide examples.
10. How important are "profits" and "ethics" in business operations? Explain with clarify.

Reference

- Narathip Chutiwong.(2005). Microeconomic Theory. Bangkok:
Chulalongkorn University Printing House.
- Pitchayalak Pitchayakul and Warataya Chaengkrajang.(2014).
Entrepreneurship. and basic business. Chiang Mai: Peace
Packprint Company
- Piriya Phonpiroon. (2010). Economics of the service sector. Bangkok:
Company se-education public company limited.
- Waralee Srisombat.(2012). Microeconomics. Bangkok: OS Printing.
- Wanrak Mingmanee Nakin (2010) .Introductory
Economics.Bangkok : Thammasat University Press.
- Siriwut Buranaphirakul.(2014).Entrepreneurship. and basic business.
Chiang Mai: Peace Packprint Company.
- Sangvorn Panyadilok, Walai Chavalittamrong and Supapta Piyakesin.
(1996). Business Economics. Bangkok: Chulalongkorn
University Book Center.
- Suchinda Jearnsriphong (2015). Business Economics. Phitsanulok :
Naresuan University Press.
- Amnuaypen Manusuk.(___) Business Economics. Bangkok:
Ramkhamhaeng University Press.
- Apirat Tangkrachang.(2003). Managerial Economics. Bangkok.
Duangsamai Company Limited.
- ____e-learning/cd-1499/SOC18/topic4/linkfile/print5.htm : Retrieved
April 22, 2016.

2 **Analysis of demand supply**

Equilibrium and Price Intervention

In a competitive economy, the price mechanism plays an important role. in pricing and trading volume. The buying behavior is demand. There are several determining factors. Such as product prices consumer income level Including the price level of products that are related and many more.

The selling behavior is supply. Will be determined from the price of goods sold, production costs, technology in production. and many more But the main factor for both supply and demand is the price of the commodity being traded at that time. This is called the price mechanism.

It is important to regulate the activities in a free economy and to be used as a tool for judging fundamental economic problems in order to reach a state of equilibrium.

Demand

Definition of demand

Demand refers to the amount of demand for a particular product or service that consumers are willing to buy. and can be purchased at any given time at various price levels set by the market (McConnell CR, Brue SL.2002: G6 cited in Pandit Nirand, 2005, page 9)

Demand is the amount of consumer demand for a product or service for a given product at various price levels with the willingness and ability to pay for it at a given time. Suphat Uiphaibulsawat, 2012, page 29)

From that meaning It can be seen that effective demand consists of 3 important parts (Chayan Tantiwasdakarn, 2010, pages 1-7):

1. Wants: Consumers must first have a desire for those goods or services. However, having only needs is not a demand. Because demand must be demand that can be bought and tradable. 2. Willingness to pay: Is that consumers are willing to sacrifice money or assets that they have in exchange for those goods or services to be used to satisfy their needs.

3. Purchasing power or Ability to pay : Considered to be an important element That is, no matter how much the person has the desire or desire for the product or service. Without the ability to buy or procure it, actual trading will not happen. That is, it is only potential demand, whose ability to buy is usually determined by the size of the property or income that a person has or earns. The relationship is in the same direction, that is, if there is a lot of income or assets. to buy will have high If there are few, then there will be low purchasing power.

Type of Demand

The study of demand types is a very useful aspect of business economics. Business organizations that are responsible for producing goods and services for sale to consumers need to study consumer behavior towards their goods and services. We can divide the demand into different types as follows.

1. Price Demand : It is the demand for goods or services that can be purchased at different price levels in the market.

2. Income Demand : It is the purchase demand that can be purchased at various income levels of that consumer.

3. Cross Demand or Demand for other commodities : It is the demand that can be purchased for one commodity against the price of another. For example, the demand for oil to the price of gas. or the demand of coffee to the price of sugar, etc.

Law of Demand

Law of Demand : under the assumption that other factors affecting demand are constant. (other-things being equal) The demand for a particular product will have relationship in the opposite direction with the price level of that kind of product. That is, when the price decreases, the quantity demanded increases. And when the price increases, the quantity demanded decreases. The general nature of the demand curve is that it goes down from left to right (normal goods).

$$P \uparrow \Rightarrow Q \downarrow$$

$$P \downarrow \Rightarrow Q \uparrow$$

Figure 2.1 Law of Demand

From Figure 2.1 shows the relationship of product prices. and the quantity of goods to be purchased will change in the opposite direction, ie The higher the price of the product, the lower the purchase quantity. And if the price of the product decreases, the quantity demanded will increase. This is under the assumption that other factors that determine demand remain constant.

Demand table and demand curve

Demand schedule is a numerical table showing the relationship between the amount of demand for a particular good or service at various price levels, divided into 2 types:

1. Individual Demand is refers to a numerical table showing demand for a particular person's goods or services at various price levels as in Table 2.1

Table 2.1 Demand

Price	Quantity of goods : A
1	10
2	7
3	4
4	1

From Table 2.1, the price level at 1 baht demands 10 units, and when the price rises to 2 baht, the demand decreases to 7 units. other This will follow the law of demand.

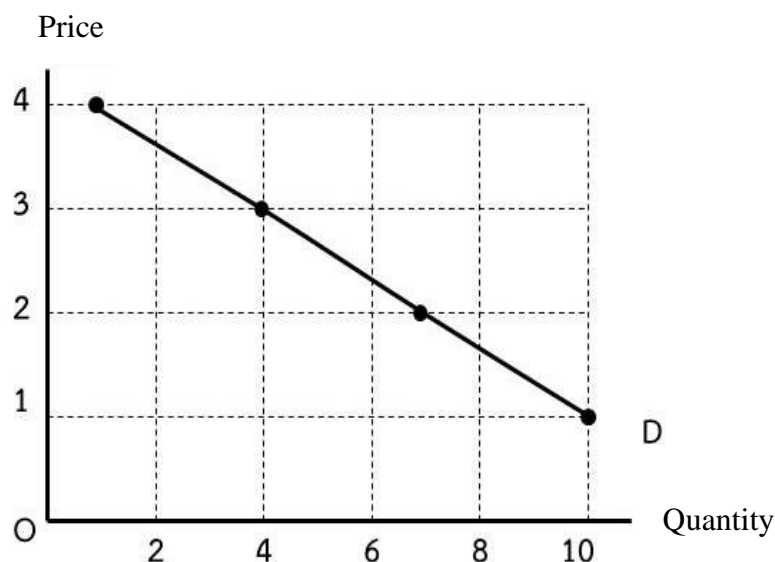


Figure 2.2 Characteristics of the individual demand curve

Figure 2.2 takes data from Table 2.1 to plot a line. The personal demand curve is drawn from left to right.

2. Market Demand : It is a demand curve that brings together individual demand. Market demand is obtained, which means total consumer demand. For example, for 5 baht, A wants to buy 10 units and B wants to buy 8 units, so the market demands 18 units.

Table 2.2 Market demand

Price	Quantity of goods : A	Quantity of goods : A	Total quantity of goods
1	10	8	18
2	7	6	13
3	4	4	8
4	1	2	3

From Table 2.2 shows the total demand table. Or market demand. At this market, there are two consumers, A and B, so everyone's buying needs are combined. is total demand or market demand. Therefore, at the price level of 1 baht, the demand for A is 10 units. And the demand for B is 8 units, so the market needs a total of 18 units, when the price rises to 2 baht, the total demand will decrease to 13 units.

It can be seen that the price of the product increases and the demand for it decreases. This will follow the law of demand as well as individual demand. And when used to write a graph, it will be as shown in figure 2.3.

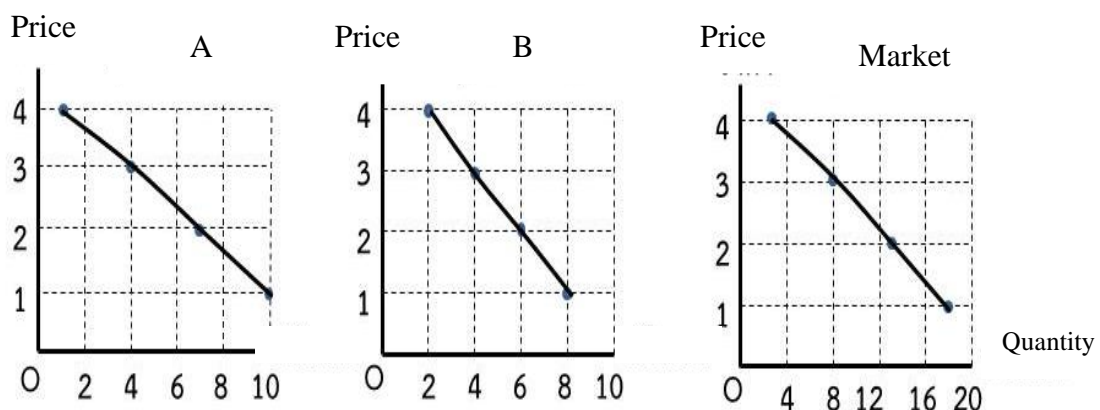


Figure 2.3 Individual Demand and Total Demand

Figure 2.3 takes data from table 2.2 to plot a line. The individual demand curve for A, the demand for B, and the total demand are obtained. And market demand which looks like a line leading down from left to right.

Determinants of Demand

Factors that determine the demand for goods besides the price of goods There are other factors (Bundit Phangniran, 2005, page 54) as follows :

1. Consumer Income The relationship between revenue and purchase volume depends on the type of product. In the case of normal goods and luxury goods (superior goods), income and the volume of consumer purchases are correlated in the same direction. In inferior goods, income and volume of consumer purchases are inversely correlated.

2. Other product price levels The quantity offered for purchase is also determined by the price of other commodities. Because the goods traded in the market are interrelated, that is, some products can be used interchangeably (substitute goods) or some products must be used together. (complementary goods), therefore, the amount of the consumer to buy any kind of goods must consider the relative prices of other goods.

3. Consumer tastes: People's tastes generally vary according to age, occupation, traditions. education level and personal personality In addition, it changes with time and era. In addition, the popularity of each product can change quickly and slowly, depending on the product being considered.

4. Prediction of future events Foresight of future events is one of the factors that change the demand for goods. It depends on the predictions of each consumer.

5. Population size and structure Normally, if the population increases, the demand for almost all kinds of goods will increase. But it also depends on the characteristics of the population structure. The demographic structure causes the demand for some goods to increase and some to decrease.

6. Other factors The consumer's demand for the product still depends on many factors such as spending habits. Characteristics of state taxation interest rate, etc.

From the above demand determinants The relationship between the quantity of goods and services purchased and the determinants of demand can be shown as follows:

$$Q_x = P_x \text{ (Keep other factors are constant)}$$

$$Q_x = \text{Purchase quantity X}$$

$$P_x = \text{Price of product X}$$

Or if considering all relevant variables, it will be that :

$$Q_x = (P_x, P_y, I, T, \dots\dots\dots)$$

$$Q_x = \text{Purchase quantity X}$$

$$P_x = \text{Price of product X}$$

$$P_y = \text{Price of other products related}$$

$$I = \text{Income}$$

$$T = \text{Taste}$$

And other factors that each consumer may be the same or not the same

$$Q_x = f(P_x)$$

when other factors are held constant

$$Q_x = a - bP_x$$

Example 1 If $Q_x = 250 - 4P_x$ Find the demand to buy at the price of 40 baht.

Method	From	$Q_x = 250 - 4P_x$
	and the question set	$P_x = 40$
		$Q_x = 250 - 4(40)$
		$= 250 - 160$
		$= 90$

In summary, at the price of 40 baht, the purchase quantity is 90 units.

Change in Demand

The amount of demand for any kind of product One type of consumer always changes depending on the cause of the change. There are 2 types of changes in demand:

1. Changes within the demand curve (Move along the curve) is a change that determines that the purchase decision of consumers is based solely on the price of goods, with only one demand curve occurring. All changes move within the original demand curve. Also known as

The change in quantity purchased.

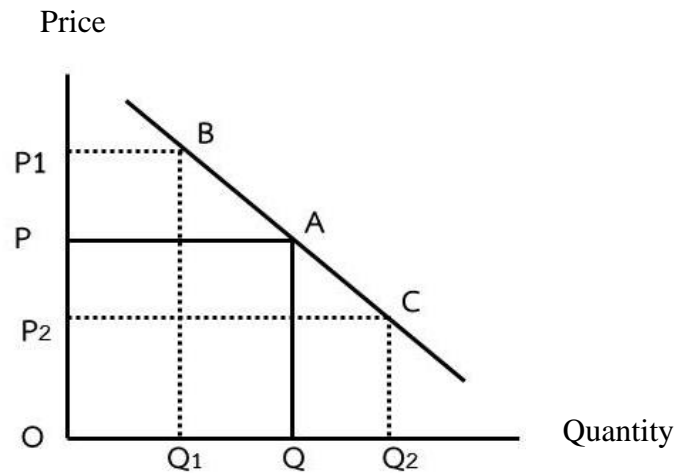


Figure 2.4 Changes within the demand curve

From Figure 2.4, originally the price of P baht, the demand for Q units, the demand was at point A on the D line, and when the product price rose to P1 baht, the demand was only Q1 units, the demand changed from A to B, but still on line D and when the price drops to P2 baht, the quantity demanded increases to Q2 units. Demand shifts to C, but remains on the original demand curve D.

It can be seen that if the consumer's purchasing decision is based on the price of the product alone The resulting change lies only on the demand curve. This is a change in the demand curve.

2. Changes outside the demand curve It is a change in which buyers' purchasing decisions are based not only on the price of goods but also on other factors such as income, taste, fashion, etc. There will be a whole new demand curve that may be to the right of the original line. If the amount of demand increases (Increase Demand) or may be to the left of the original line. If demand decreases

2.1 Increased Case Changes It is a change in demand that does not follow the law of demand. i.e. the price stays constant but the purchase quantity increases. This may be due to the increase in consumer income. or consumer tastes change or may be caused by higher product prices This will reduce demand or purchase demand, but consumers still

have the same demand for the product. or more than ever A shift in this way creates a new demand curve. and is on the right side of the originalline as in Figure 2.5.

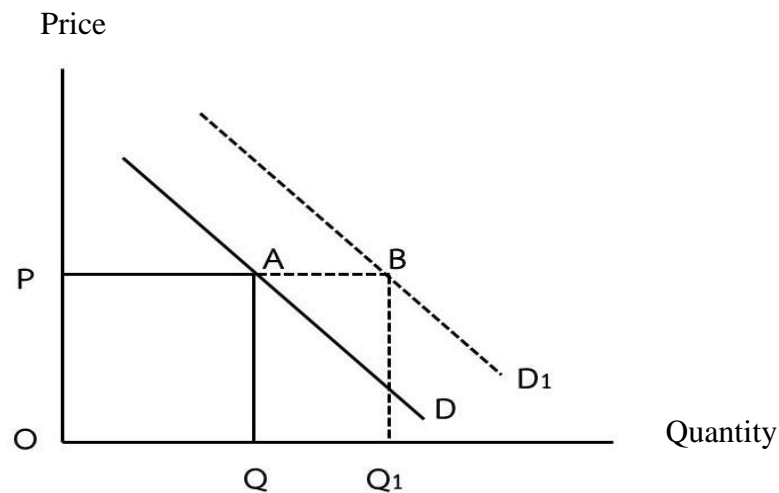


Figure 2.5 Changes outside the demand curve case increase

From Figure 2.5, originally the price of P baht, quantity demanded Q units of demand was at point A on line D, but later the quantity of purchases increased to Q1 units. Demand moved from point A to point B, which was on the new demand curve. D1, which is to the right of the original line.

2.2 Decrease case change It is a change in demand that does not follow the law of demand. i.e. the price remains constant but the purchase quantity decreases. This may be due to the fact that consumers have reduced income. or consumer tastes change Or it may be caused by the product price dropping. This will increase demand or purchase demand, but consumers still have the same demand for the product. or less This change in nature creates a new demand curve. and is on the left side of the original line as in Figure 2.6

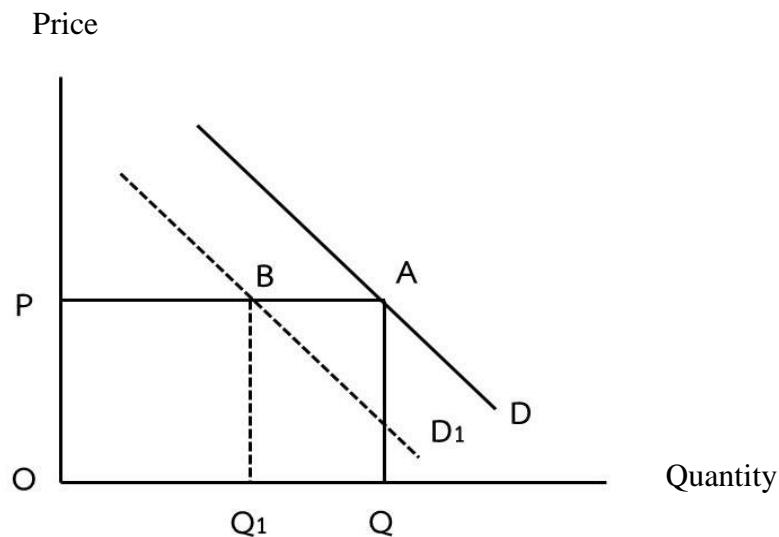


Figure 2.6 Changes outside the demand curve in case of decline

จากภาพ 2.6 เดิมราคา P บาท ปริมาณความต้องการซื้อ Q หน่วยอุปสงค์อยู่ที่จุด A บนเส้น D แต่ต่อมาปริมาณการซื้อลดลงเหลือ Q_1 หน่วย อุปสงค์เคลื่อนจากจุด A มาเป็นจุด B ซึ่งอยู่บนเส้นอุปสงค์เส้นใหม่คือเส้น D_1 ซึ่งอยู่ทางซ้ายของเส้นเดิม

Supply

Definition of supply

Supply means The quantity of goods offered by manufacturers at any given time The main factors that determine the quantity of supply are the market price and the cost of production, therefore, in the study of supply, there is only one type of supply: supply per price.

From the above information, the law of supply is obtained, that is, the price of a commodity and the quantity offered for sale change in the same direction. If the price is high, the offering will be huge. If the price drops, the offering will be less.

$$\begin{array}{ccc} P \uparrow & \Rightarrow & Q \uparrow \\ P \downarrow & \Rightarrow & Q \downarrow \end{array}$$

Figure 2.7 Law of Supply

From Figure 2.7 shows the relationship of product prices. and the amount of goods to be sold will change in the same direction, that is The higher the product price, the higher the sales volume. And if the price of the product decreases, the demand for sales will also decrease. This is under the assumption that other factors determine supply is constant.

Type of Supply

Supply can be classified into 2 types:

1. Individual Supply refers to the quantity of a particular product of each seller at various price levels of that product.
2. Market supply for any commodity (Market Supply) means the total supply for that commodity by each seller, characterized by a supply curve that is a line that runs up from left to right.

Table 2.3 Individual Supply and Market Supply

Price	Sales product A	Sales product B	Total sales
1	1	2	3
2	4	4	8
3	6	6	12
4	10	8	18

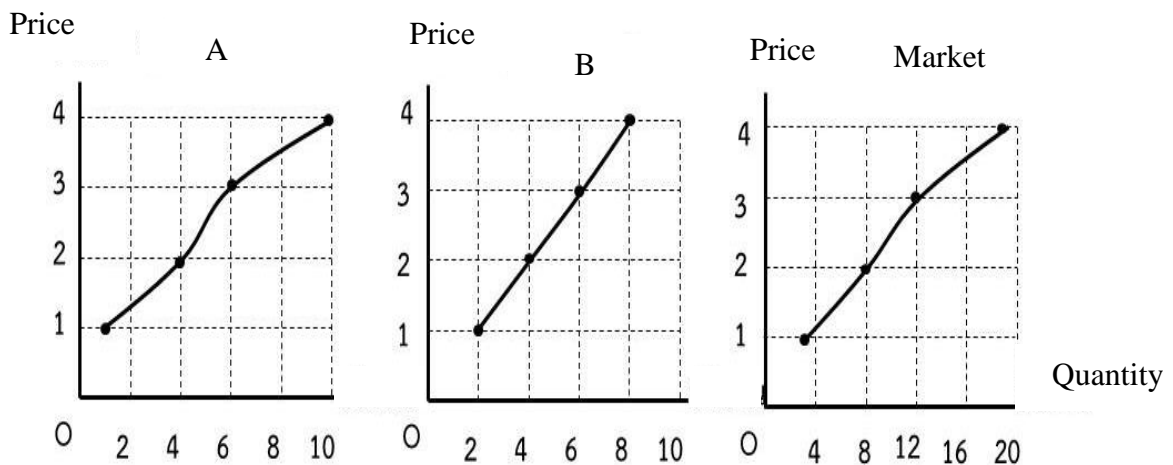


Figure 2. 8 Individual Supply and market supply

Figure 2.8 shows the individual supply characteristics of A, B, and the market, where A's supply represents A's selling demand. The selling price increases, the demand for sales increases, causing the demand curve to go up from left to right. But if there are many sellers in the market, the sales demand of each seller must be combined. is the market supply.

Supply Determinants

Factors that determine the supply of goods In addition to the price of goods, which is a direct factor, there are other factors such as

1. Cost of production In determining the quantity of production, the producer compares the revenue from the sale of goods to the cost of production. The cost of production affects the quantity of goods produced in the opposite direction.

2. Prices of other related products Changes in the price of one commodity may affect the quantity offered for another. Depending on the relationship of the product, for example, a product that is a raw material to produce a change will affect the production of a change as well.

3. Weather Weather conditions affect the volume of goods sold, especially agricultural products. Favorable weather conditions will result in an increase in the supply of goods.

4. Technology At present, technological advances play a huge role in production. The use of modern technology in production will increase production efficiency and productivity.

5. Government policy The sales volume of goods may be affected by changes in government policy, for example, if the trade tax is increased. Manufacturers may reduce production due to higher production costs.

Supply Function

The supply function refers to the relationship between the quantity sold and the factors that determine supply.

$$Q_x = f(P_x, C, T, \dots)$$

$$Q_x = \text{Sales Volume X}$$

$$P_x = \text{Price of X}$$

C = Cost of goods

T = Production Technology

When setting other factors constant, it can be that

$$Q_x = f(P_x)$$

$$Q_x = a + bP_x$$

Example 2 If the supply equation $Q_x = 50 + 5P_x$ and wanting to sell 200 units of products X, what price should be set ?

Method $Q_x = 50 + 5P_x$

If wanting to sell products X in the amount of 200 units

$$5P_x = Q_x - 50$$

$$= 200 - 50$$

$$= 150$$

$$P_x = 30$$

Therefore, the selling price must be set at 30 baht.

Change in Supply

here are two types of change in supply:

1. An intra-supply shift is a shift in which a seller's selling decision is based solely on the price of the commodity, with only one supply curve occurring.

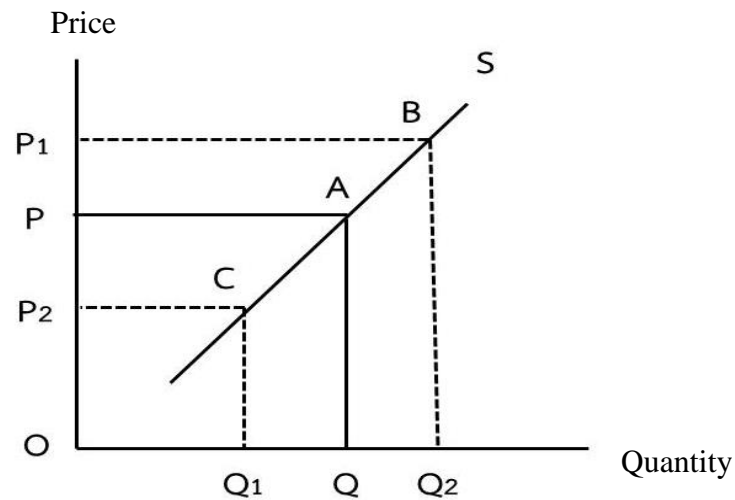


Figure 2.9 Changes within the supply curve

From Figure 2.9, originally the price of P baht, the demand for Q units, the supply was at point A on the S line, and when the commodity price rose to P1 baht, the demand increased to Q1 units, and when the commodity price dropped to P2, the quantity Demand is left over Q2, the supply unit changes from A to B, or A to C, but remains on the same S line. It can be seen that if the seller's decision to sell will consider the product price alone. The resulting change lies only on one supply curve. This is a shift within the supply curve.

2. Changes outside the supply curve are changes that require sellers to make sales decisions based not only on the price of the product but also on other factors such as the cost of producing the product. government policy, etc. There will be a new supply curve that may be to the left or right of the original line.

2.1 Increased Case Changes It is a change in supply that does not obey the law of supply. For example, the price is fixed but the sales volume is increasing. This may be due to the fact that producers have more products to sell, or a change in this way creates a new supply curve. and is on the right side of the original line as in Figure 2.10

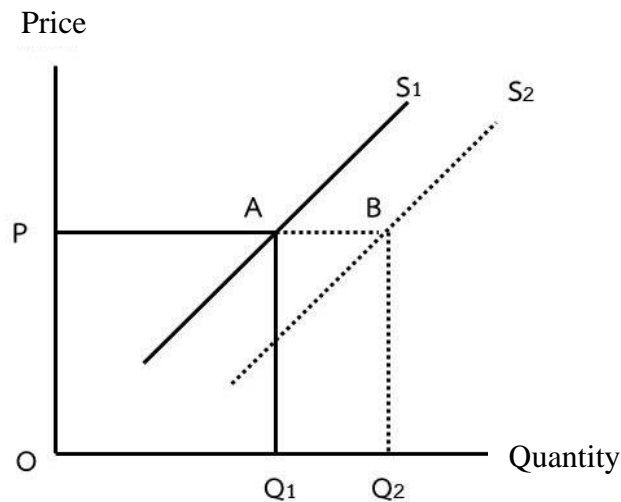


Figure 2.10 Changes outside the supply curve in case of increasing

From Figure 2.10, the original price of P baht, quantity demanded Q units, supply was at point A on the S line, but later the sales volume increased to Q1 units. Supply moved from point A to point B, which was on the new supply line, which is line S1, which is to the right of the original line.

2.2 Decrease case change It is a change in supply that does not obey the law of supply. For example, the price is fixed but the sales volume is reduced. This may be due to the fact that the manufacturer has a limited number of products. Therefore, the demand for sales decreased. This change in nature creates a new supply curve. and is on the right side of the original line as in Figure 2.11

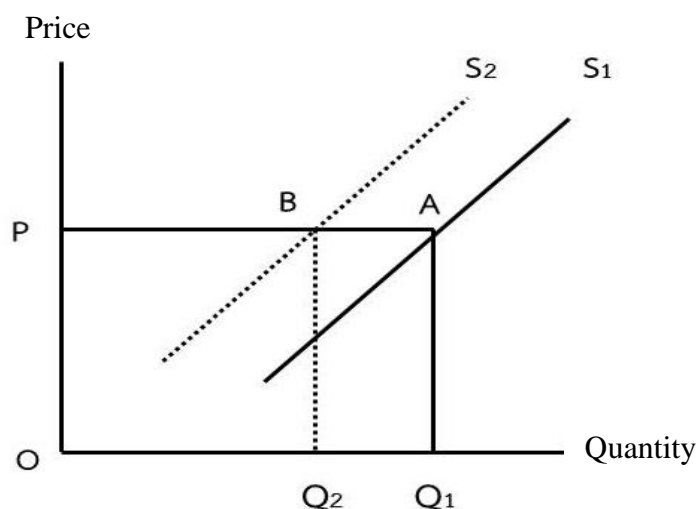


Figure 2.11 Changes outside the supply curve in case of decreasing

From Figure 2.11, the original price of P baht, quantity demanded Q units, supply was at point A on the S line, but later the sales volume increased to Q1 units. Supply moved from point A to point B, which was on the new supply line, which is line S1, which is to the left of the original line.

Equilibrium

Equilibrium refers to the price level at which the quantity of goods and services Consumers want to buy as many goods and services that producers want to sell. or a condition where demand equals supply .This is called the equilibrium point.

Equilibrium Price

Equilibrium price refers to the price level at which buyers are willing to buy. and sellers willing to sell Without the problem of oversupply (surplus) or excess supply (excess supply), it is considered a balance of supply and demand (Waralee Srisombat, 2012, page 44).

Equilibrium Quantity

Equilibrium quantity: It means the amount of demand equals the amount of supply. Occurs when the price level of goods adjusts to equilibrium.

Table 2.4 Equilibrium

Price	purchase volume	sales volume	Qs-Qd	status
25	8	28	20	Over supply
20	14	24	10	Over supply
15	20	20	0	Equilibrium
10	26	15	-11	shortage
5	30	12	-18	shortage

Table 2.4 shows the high price level (25 baht), the quantity bought 8 units, but the quantity sold was 28 units, resulting in an oversupply of 20 units, and at the low price level (5 baht), the quantity bought 30 units and the quantity sold 12 units. Product shortage problem. But at the equilibrium price level (15 baht), the buying quantity is 20 units and the selling quantity is 20 units, which is the price level where the buying quantity is equal to the selling quantity. This is called equilibrium and prevents oversupply. And there is no product shortage problem.

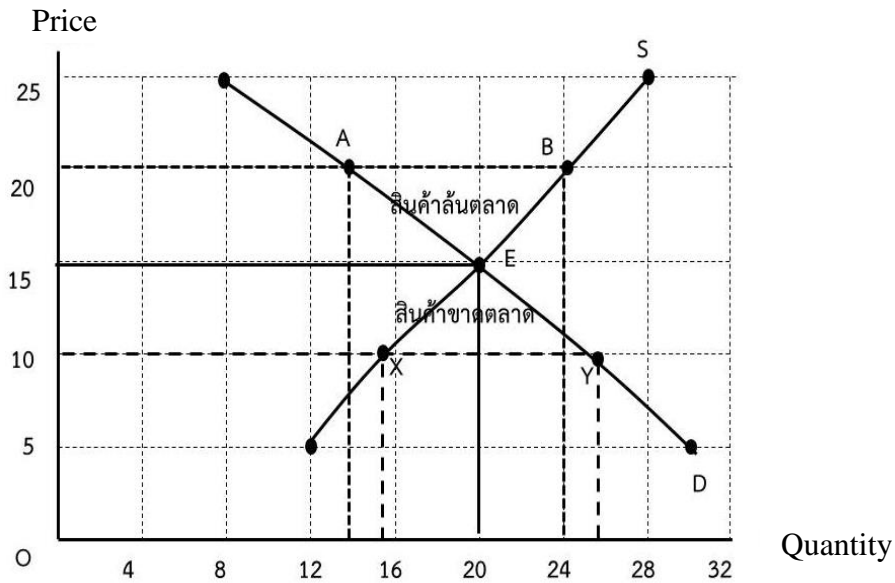


Figure 2.12 Equilibrium oversupply and shortage of products

Figure 2.12 is the construction of demand and supply curves according to Table 2.4. The equilibrium price level is 15 baht and the equilibrium quantity is 20 units. And if the product price level is higher than the equilibrium price, will cause the problem of oversupply of products as in Figure 2.12 if the product price 20 baht, which is higher than the equilibrium price, the quantity bought 14 units and the quantity sold 24 units, resulting in an oversupply of 10 units. If the product price is lower than the equilibrium price will cause product shortages. For example, if the product price is 10 baht, the quantity bought is 26 units and the quantity sold is 15 units, resulting in a shortage of 11 units.

Equilibrium Change

Equilibrium can change if demand changes. or supply changes or changes in both supply and demand. The details are as follows: (Jarin Thetwanich, 2007, page 72)

1. Demand changes while supply remains constant.

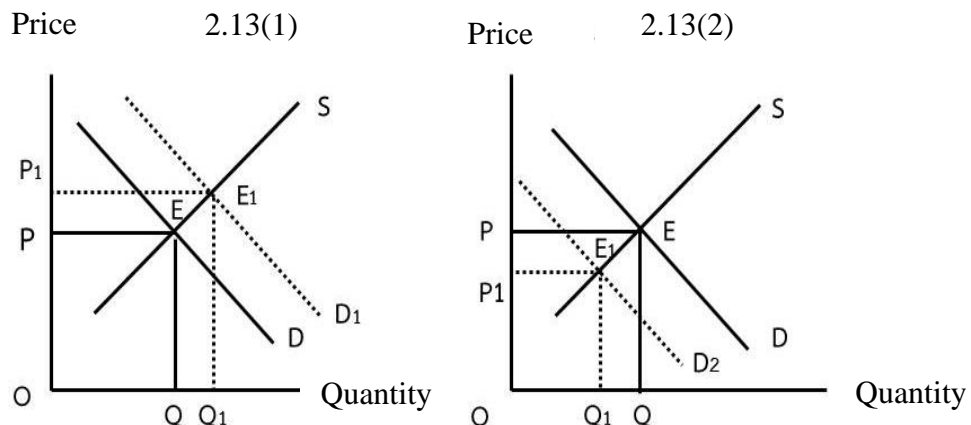


Figure 2.13 Change in equilibrium when demand changes and supply is constant

Figure 2.13 shows the change in equilibrium. in case of demand change The supply is constant, as in Figure 2.13 (1), the demand curve shifts to the right. which is an increasing demand The new equilibrium price level was raised from P to P_1 and the new equilibrium quantity was increased from Q to Q_1 . Chart 2.13 (2) the demand curve shifted to the left. which is a decrease in demand This causes the new equilibrium price level to decrease from P to P_1 and the new equilibrium quantity to decrease from Q to Q_1 .

2. Supply changes while demand remains constant.

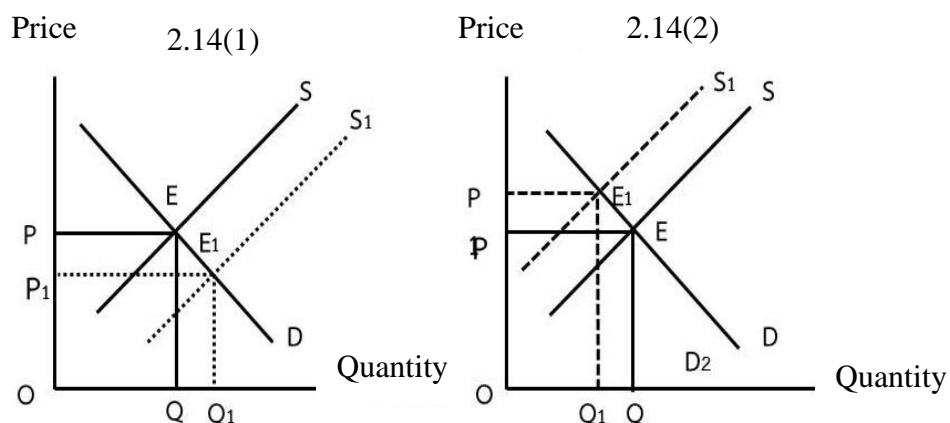


Figure 2.14 Change in equilibrium when supply changes and constant demand

Figure 2.14 shows the change in equilibrium. in case of supply changes The demand is constant, as in Figure 2.14 (1), the supply curve

shifts to the right, which is an increase in supply. This causes the new equilibrium price level to decrease from P to P_1 and the new equilibrium quantity increases from Q to Q_1 . Figure 2.14 (2) the supply curve shifts to the left, which is a drop in supply. This raises the new equilibrium price level from P to P_1 , and the new equilibrium quantity decreases from Q to Q_1 .

3. Supply and demand change

Classified as follows:

3.1 Demand and supply change in case of increasing Both supply and demand will shift to the right on both lines, which can change in 3 ways:

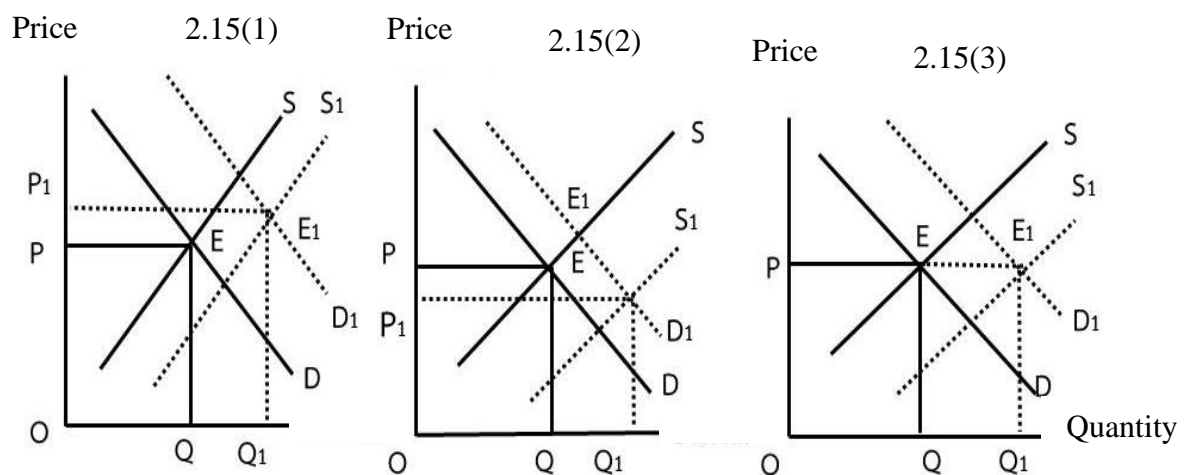


Figure 2.15 Change in equilibrium when demand and supply increase

Figure 2.15 shows a change in equilibrium in case of a change in demand and in case of an increase in supply. Supply and demand are shifted to the right, as in Figure 2.15(1), the demand curve is shifted more to the right than supply. Raises the new equilibrium price level from P to P_1 and the new equilibrium quantity increased from Q to Q_1 . Figure 2.15 (2) The demand curve shifts less to the right than supply. This causes the new equilibrium price level to decrease from P to P_1 and the new equilibrium quantity increases from Q to Q_1 . In Figure 2.15 (3), the

supply and demand curves are equally shifted to the right. The equilibrium price level remains unchanged. But the new equilibrium quantity increases from Q to Q_1 .

3.2 Demand and supply change in case of decrease Both supply and demand will shift to the left on both lines, which can change in 3 ways:

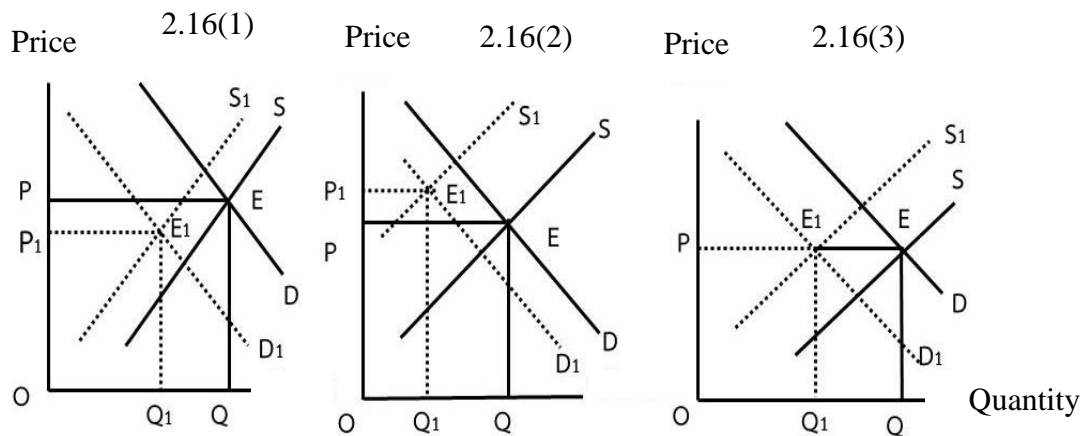


Figure 2.16 Change in equilibrium when demand and supply decrease

Figure 2.16 shows a change in equilibrium in case of a change in demand and in a case of a decrease in supply. Supply and demand are shifted to the left, as in Figure 2.16 (1), the demand curve is shifted to the left more than supply. This causes the new equilibrium price level to decrease from P to P_1 and the new equilibrium quantity to decrease from Q to Q_1 . As for Figure 2.16 (2), the demand curve is less shifted to the left than supply. This causes the new equilibrium price level to rise from P to P_1 and the new equilibrium quantity decreases from Q to Q_1 . And in Figure 2.16 (3), the supply and demand curves are equally shifted to the left. The equilibrium price level remains unchanged. But the new equilibrium quantity decreases from Q to Q_1 .

3.3 Supply and demand change in opposite directions with both demand shifting to the right and supply shifting to the left. Which can be changed in 3 formats as follows

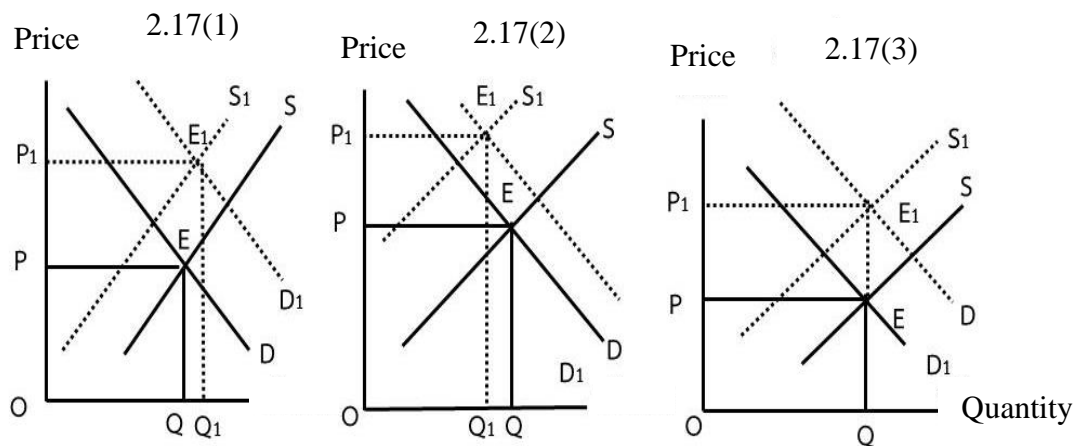


Figure 2.17 Change in equilibrium when demand increases and supply decreases

Figure 2.17 shows the change in equilibrium. In case of increasing demand and decreased supply Demand shifts to the right and supply shifts to the left. In Figure 2.17(1), the demand curve shifts more to the right than supply shifts to the left. This raises the new equilibrium price level from P to P_1 and the new equilibrium quantity increases from Q to Q_1 . As for Figure 2.17(2), the demand curve shifts to the right less than supply shifts to the left. This causes the new equilibrium price level to rise from P to P_1 and the new equilibrium quantity decreases from Q to Q_1 . And in Figure 2.17(3), the demand curve shifts to the right as supply shifts to the left. This causes the new equilibrium price level to rise from P to P_1 , but the new equilibrium quantity remains the same.

3.4 Supply and demand change in opposite directions with both demand shifting to the left and supply shifting to the right. Which can be changed in 3 formats as follows

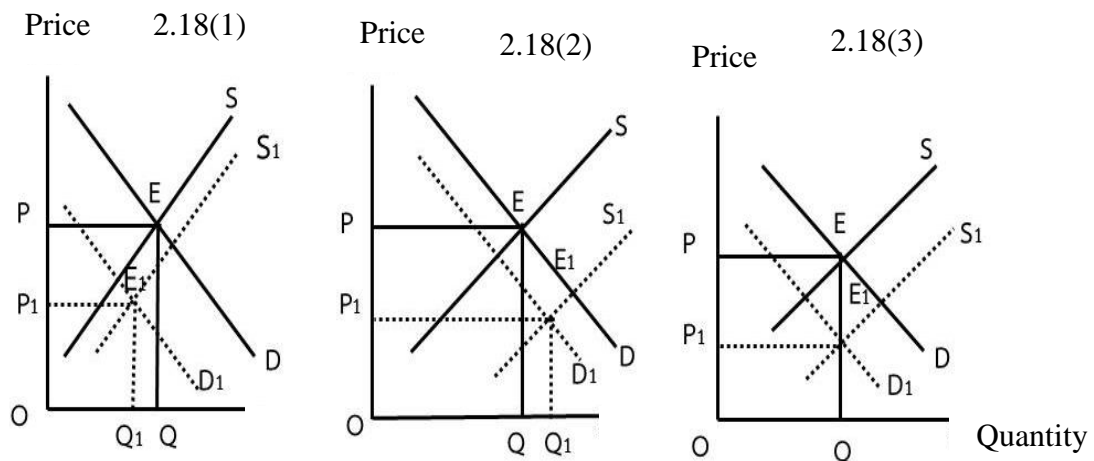


Figure 2.18 Change in equilibrium

when demand decreases and supply increases

Figure 2.18 shows the change in equilibrium. In case of decreased demand and supply increases Demand shifts to the left and supply shifts to the right. In Figure 2.18(1), the demand curve shifts to the left more than supply. A shift to the right causes the new equilibrium price level to decrease from P to P_1 and the new equilibrium quantity to decrease from Q to Q_1 . As for Figure 2.18(2), the demand curve shifts to the left less than supply shifts to the right. This causes the new equilibrium price level to decrease from P to P_1 , and the new equilibrium quantity increases from Q to Q_1 . And in Figure 2.18(3), the demand curve shifts to the left as supply shifts to the right. This causes the new equilibrium price level to decrease from P to P_1 , but the new equilibrium quantity remains the same.

Government market intervention

Usually in a liberal economy will let the product price change according to the price mechanism That is to say, when the price of a product is too high, the seller brings more products to the market. While buyers are unwilling to buy because they think the price of the product is too high. Finally, the product will be left Sellers therefore need to reduce the price to a reasonable price or equilibrium price. And if the price of the

product is too low, the seller does not want to sell. While buyers have a high demand for products, causing a shortage of products. As a result, the price moved higher until reaching equilibrium. Therefore, the government has to intervene in the market price in terms of setting prices that allow sellers to sell their products at reasonable prices. Do not trade excessively and allow buyers to buy products at a price that is not too high (Tawin Ninbai. 2560. page 81)

Here in, two types of government market interventions are considered.

1. Minimum pricing
2. Advanced pricing (Maximum price)

1. Minimum pricing

Minimum pricing Caused by the problem of the price of goods traded in the market according to the price mechanism is too low to the point that manufacturers encounter problems Must sell products that are not worth the cost of production The government had to intervene by setting prices higher than the prices traded according to the price mechanism.

So it can be said that Minimum pricing means Pricing to help manufacturers to sell products at a high price level according to the price mechanism. determined by the demand and supply of goods The set price will be the lowest trading price. will not be able to trade at a lower price.

This measure is often applied to agricultural products. because agricultural products It is a commodity that producers (farmers) have no bargaining power. The government therefore used minimum pricing policy or price assurance to help such.

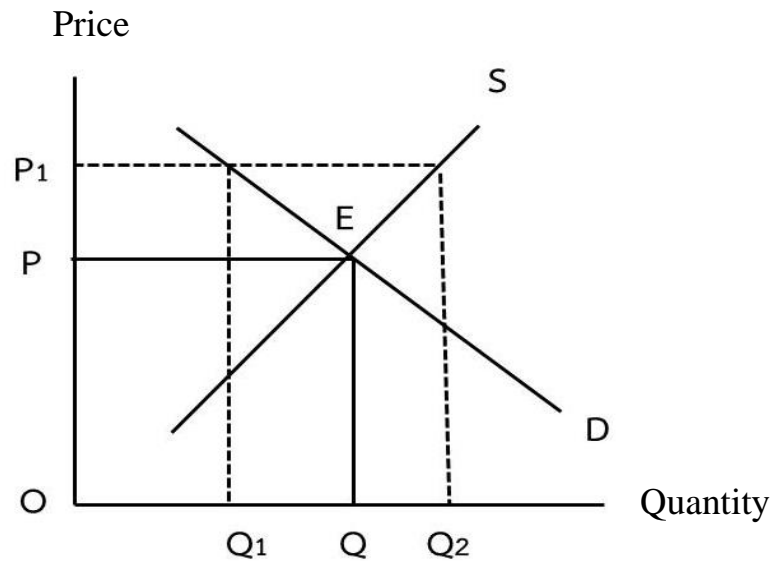


Figure 2.19 Minimum Pricing

From Figure 2.19 shows the equilibrium condition. The price level is P baht, the purchase quantity is Q units, which the price is quite low. make the seller suffer The government came in to set the minimum price. Or the price guarantee is set at P1 baht, so the buyer wants to buy only Q1 units, but the seller wants to sell Q2 units, causing the problem of oversupply in the market. Sellers who expect to earn more from sales May have reduced income. Therefore, in order for such a policy to be successful Therefore, the government must have other measures to solve such problems, including

1. Receiving surplus products From Figure 2.19, the government will require sellers to sell their products first. And the rest, the government will buy the number of Q2 units and buy them at a price of P1 baht.

2. Purchasing of all products From Figure 2.19, the government will buy all products in the amount of Q2 units at the price of P1 baht per unit. The government will buy the amount of Q2 units and buy them at the price of P1 baht. . In 2011, the government announced the purchase of rice from farmers at a price of 15,000 baht per ton.

3. Reduce production because in setting the minimum price It helps sellers (farmers) to sell their products at a higher price. But buyers will think that the price of the product is too high. and may not consume Causing the government to spend quite a lot of budget to solve such problems Therefore, the government may use methods to request manufacturers to reduce production in order to increase prices. The buyer will not feel that the price of the product is expensive. because it is the price that buyers are willing to buy.

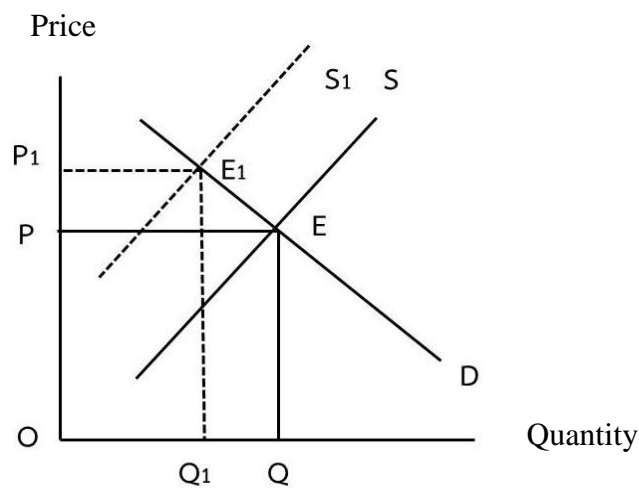


Figure 2.20 Production reduction

From Figure 2.20, the reduction of production from Q units to only Q_1 units caused the supply curve to shift to the left from the S line to the S_1 line, thus equilibrium was changed from E to E_1 , and therefore the price of goods moved higher from P baht to P_1 baht. That is, the product price level is higher. Sellers will have more total revenue from sales. without the government having to set a minimum price But the product price will increase according to the price mechanism.

2. Advanced pricing (Maximum price)

Excessive pricing is caused by the level of prices for goods traded on the market that are too high. make consumers suffer The government therefore came to help consumers. to consume goods at reduced prices by

pricing the advanced price where the price traded in the market after the advanced pricing Can't sell higher than the price set by the government

So it can be said that advanced pricing means Product pricing to help consumers consume products that are not too high. especially important and necessary products for living Therefore, the pricing of products is advanced. The government came in to determine that it would be lower than the price according to the price mechanism.

Caution is that the maximum price should not be set too low to the extent that the manufacturer is unable to produce, which will lead to a greater shortage of the product.

Problems with Advanced Pricing

1. Products are in short supply. Because sellers do not want to sell while buyers want to buy more, there is a stockpile. In other words, more demand than supply.
2. Black Market when the prices are very high. and may be higher than the normal price before the government intervenes.

Problem Solving

When there are above issues in order to achieve targeted advanced pricing. Therefore, the government must take the following measures.

1. Finding products to compensate It is a measure that the government must find ways to procure products to sell to the people. to meet the needs of consumers
2. Product rationing The government will use this measure when setting a high price and there is a problem of product shortage. And if the shortage of the market is a problem that arises a lot. until the

government is unable to supply goods to compensate the people. Therefore, the government must use the product rationing measure.

3. Use of legal measures By issuing laws to punish those who hoard goods or selling products at high price.

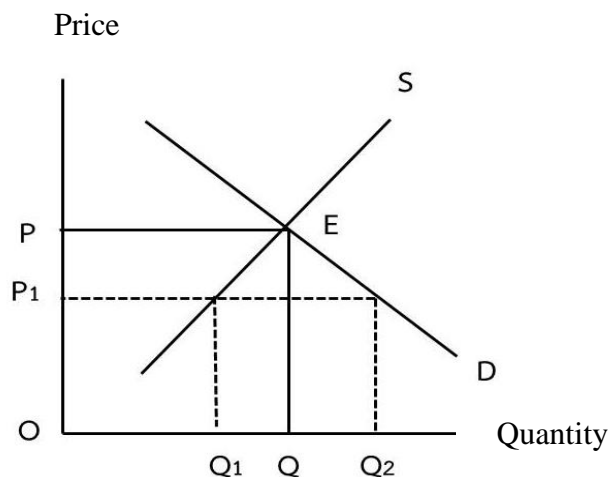


Figure 2.21 Advanced Pricing

From Figure 2.21, it shows the higher price setting from the original price caused by demand and supply at P baht and quantity Q units, but the said price is too high that buyers or troubled consumers. The government therefore intervened in the price by setting the price at P1 baht, causing the sales volume to be only Q1 units, but the buyers wanted to buy Q2 units, resulting in a shortage of Q1 Q2 units. And sellers stockpile Q1 Q units of goods, which sellers may sell at a higher price than the government set. Therefore, the government must have legal measures to prevent hoarding. However, setting a high price, the government must be careful not to set a high price so low that sellers cannot continue production or sales.

Summarize

In a competitive economy Price is determined by supply and demand, where demand refers to the amount of demand for a particular product or service that consumers are willing to buy. and can be purchased at any given moment According to the law of demand, the amount of demand for a particular commodity will be The opposite (inverse) relationship to the price level of that commodity.

Supply is the quantity of goods offered by producers at any given time. The main factors that determine supply are market prices and production costs. According to the law of supply, the supply of a particular commodity will be relationship in the same direction with the price level of that kind of product.

The most suitable point is volume point buy equal to sales volume That is the point where demand equals supply, known as equilibrium, where there will be no oversupply problem. and shortage of products The equilibrium can change if demand changes. or supply change Or changes in both demand and supply, which can be divided into characteristics: 1. Demand is constant. Supply changes 2. Supply remains constant Demand changes 3. Demand increases Supply increases 4. Demand decreases Supply decreases 5. Demand increases Supply decreases 6. Demand decreases Supply increases.

Sometimes the price level according to the price mechanism arising from supply and demand The price may be so low that the seller may run into a loss. Therefore, the government must intervene in the price mechanism by setting a minimum price. and if the price of the product is too high to the point that the buyer or the consumer suffers Therefore, the government has to intervene in the market mechanism by setting high prices.

Chapter 2 Exercises

Answer the following questions.

1. What does demand mean? and what are the components.
2. Define the demand equation $Q_x = 100 - 3P_x$. Find the quantity bought at the price level of 5, 10, 15 and 20 baht, respectively, and draw an accompanying graph.
3. Make everything stable If the price of Moccona coffee drops How will this affect the demand for Nescafe coffee? Explain the reasons and draw illustrations.
4. In the market for air conditioners There were many events that happened. Draw a graph showing the effects of the following events on the demand for air conditioners.
 - 4.1. Seasonal Changes from winter into summer while other factors remain constant.
 - 4.2. Consumer expectations that the government will charge electricity to air conditioner users at the rate progress because it is considered to destroy the environment
 - 4.3. The price of air conditioners has increased. while other factors remain constant
5. What does supply mean? And what are the determinants of supply? What are the 5 factors?
6. Using the equation of supply $Q_x = 120 + 5P_x$, find the sales volume at the price level of 5, 10, 15 and 20 baht, respectively, along with drawing a graph.
7. There are many events in the sugar market. Draw a graph showing the effects of the following events on the supply of sugar.

7.1. Sugarcane prices increase while other factors remain constant.

7.2 The price of sugar increases. while other factors remain constant.

8. find the equilibrium price and the equilibrium quantity from the equation of supply and demand given

$$Q_d = 100 - 2P$$

$$Q_s = 30 + 5P$$

9. From the avian influenza epidemic, many poultry died. How does the event affect the equilibrium of the market for the following products?

9.1 Chicken Market Equilibrium

9.2 Pork market equilibrium

10. The government will take minimum and maximum pricing measures. Explain and give examples.

Reference

- Jarin Thetwanich.(2007). Management Economics.
Bangkok: SE-EDUCATION Publishing House.
- Chayan Tantiwasdakarn.(2010). Advanced Economic
Theory. Bangkok : Sukhothai Thammathirat University
Press.
- Tawin Nilbhai.(2017). General Economics. Bangkok :
Ramkhamhaeng University Press.
- Pandit Phangnirun.(2005). Microeconomics. Bangkok :
Thammasarn Company Limited.
- Waralee Srisombat.(2012). Microeconomics. Bangkok : OS
Printing Publishing House.
- Suphat Ouipaiboonsawat (2012). Microeconomics. Bangkok
: Ramkhamhaeng University Press.

3 Elasticity of demand, supply and business applications

In the previous lesson, buying behavior was demand. And sales behavior is supply when there is a change in the price of goods and services. Inevitably, trading will change, but how much will change depends on the type of products and services. For example, it is a normal product and service that must be consumed regularly. or a luxury item Is it an agricultural product or an industrial product? Or when consumers' incomes change, their buying behavior changes according to the nature of the product as a normal product. or inferior products. Including when there is a change in the price of goods and services that are substituted or used together. inevitably results in a change in demand or demand for such goods and services, etc. in a competitive economy The price mechanism plays an important role. which will be studied in detail later.

Elasticity of Demand

Elasticity of demand Refers to the rate of change in the quantity of goods that buyers want to buy. at any moment change due to a change in one of the factors determining demand (Supat Uiphaibulsawat, 2012, page 57). There are three types of elasticity of demand:

1. Price Elasticity of Demand: E_p)

Means when the price of goods X changes by 1 percent, how much will affect the quantity of goods X changed? Flexibility can be obtained from (Wananee Chicharoen and Boontham Ratcharak, 2016, page 80)

$$E_p = \frac{\text{Percentage of change in quantity purchased}}{\text{Percentage of change in price}}$$

$$E_p = \frac{\% \Delta Q}{\% \Delta P} = \frac{\frac{\Delta Q}{Q} \times 100}{\frac{\Delta P}{P} \times 100}$$

$$E_p = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

There are two ways to find the price elasticity of demand:

1.1 Determination of point elasticity of demand is the calculation of elasticity at a particular point on the demand curve in the event that the price changes slightly but theoretically is considered to have caused the bid to change as well, such as Finding the elasticity at a single point A or point B or point C is shown in Figure 3.1.

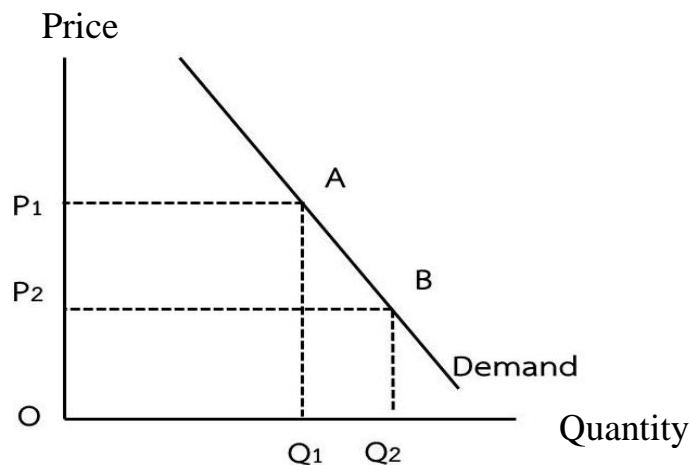


Figure 3.1 Point Elasticity of Demand

Example: Finding the elasticity of demand at point A

$$\text{From the formula } E_p = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

$$E_p = \frac{Q_1 - Q_2}{P_1 - P_2} \times \frac{P_1}{Q_1}$$

Or finding the elasticity of demand at point B

$$\text{From the formula } E_p = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

$$E_p = \frac{Q_1 - Q_2}{P_1 - P_2} \times \frac{P_2}{Q_2}$$

Example 1 Set $Q_X = 200 - 20 P_X$ if the price of goods X changes from 5 baht per piece to 6 baht per piece, the point elasticity of demand for goods X at the price level of 5 baht and 6 baht.

Method

$$P_{X1} = 5 \text{ Baht}$$
$$Q_{X1} = 200 - 20(5)$$
$$= 200 - 100 = 100 \text{ Pieces}$$
$$P_{X2} = 6 \text{ Baht}$$
$$Q_{X2} = 200 - 20(6)$$
$$= 200 - 120 = 80 \text{ Pieces}$$

Finding the price elasticity of demand at the price of 5 baht

$$E_p = \frac{Q_1 - Q_2}{P_1 - P_2} \times \frac{P_1}{Q_1}$$

$$E_p = \frac{100 - 80}{5 - 6} \times \frac{5}{100}$$

$$E_p = \frac{20}{-1} \times \frac{5}{100}$$

$$= -1$$

The calculated negative elasticity means that when the price of a commodity changes, the quantity demanded will change in the opposite direction. In the above example, the price elasticity of demand is -1 (negative sign), indicating that a 1 percent change in the price of good X will cause a 1 percent change in the quantity demanded for good X.

Finding the price elasticity of demand at the price of 6 baht

$$E_p = \frac{Q_1 - Q_2}{P_1 - P_2} \times \frac{P_1}{Q_1}$$

$$E_p = \frac{100 - 80}{5 - 6} \times \frac{6}{80}$$

$$E_p = \frac{20}{-1} \times \frac{6}{80}$$

$$= -1.5$$

The calculated elasticity has a value of -1.5, meaning that a 1% change in the price of good will result in a 1.5% change in the demand for good X.

1.2 The arc elasticity of demand is calculated to find the elasticity at a certain interval on the demand curve, such as AB on the demand curve in Figure 3.1. The formula used to calculate the arc elasticity :

$$E_p = \frac{Q_1 - Q_2}{P_1 - P_2} \times \frac{\frac{P_1 + P_2}{2}}{\frac{Q_1 + Q_2}{2}}$$

$$E_p = \frac{Q_1 - Q_2}{P_1 - P_2} \times \frac{P_1 + P_2}{2} \times \frac{2}{Q_1 + Q_2}$$

$$E_p = \frac{\Delta Q}{\Delta P} \times \frac{P_1 + P_2}{Q_1 + Q_2}$$

By definition E_p = Price elasticity of demand

P_1 = Price before change

P_2 = Price after change

Q_1 = The amount of demand for goods before the change

Q_2 = The amount of demand for goods after the change

ΔQ = Change in demand

ΔP = Price level change

Example 2 From example 1, find the price elasticity of demand X in the range at the price levels of 5 baht and 6 baht.

Method

From the formula
$$E_p = \frac{\Delta Q}{\Delta P} \times \frac{P_1 + P_2}{Q_1 + Q_2}$$

$$P_1 = 5$$

$$P_2 = 6$$

$$Q_1 = 100$$

$$Q_2 = 80$$

Substitute the values in the formula

$$E_p = \frac{100 - 80}{5 - 6} \times \frac{5 + 6}{100 + 80}$$

$$E_p = \frac{20}{-1} \times \frac{11}{180}$$

$$E_p = -1.22$$

Price elasticity of demand - 1.22 means that in the price range of 5 baht to 6 baht, when the price of commodity X changes by 1%, demand for commodity X will change in the opposite direction by 1.22%.

E_p is always negative, it follows the law of demand, i.e. the price and quantity of a commodity change in opposite directions. When comparing E_p values, only numbers representing E_p values are used, without the negative sign being compared. For example, oranges have $E_p = -2$, while shirts have $E_p = -0.8$, meaning that oranges are goods with elasticity of demand. Bargain more than a shirt, etc.

Types of price elasticity of demand can be classified as follows:

A. Perfectly Inelasticity ($E_p = 0$)

This means that when the price of a product changes, whether rising or falling The purchase volume will not change at all. Including goods whose demand cannot be changed, such as coffins The nature of the graph is a straight line parallel to the vertical axis. Therefore, in business If the goods produced are goods with no elasticity at all. Sellers can set relatively high selling prices.

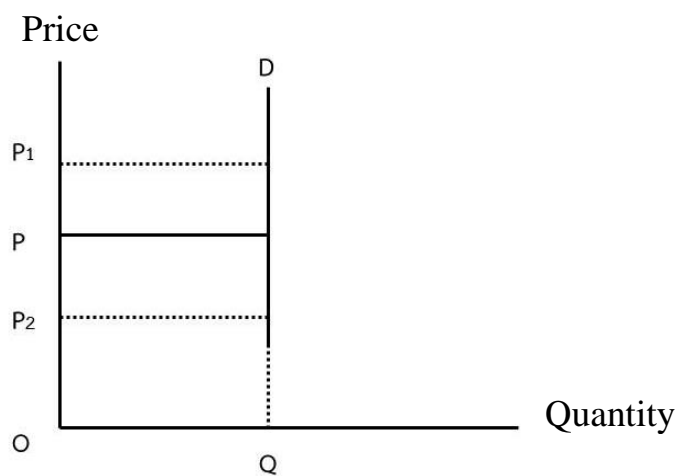


Figure 3.2 Elasticity of inelastic demand

From Figure 3.2, the price level of P baht, buyers want to buy Q units, and when the price rises to P1 baht or P2 baht, the quantity demanded remains the same, Q units.

B. Inelastic demand ($E_p < 1$) This means that when the price of a product changes 1%, but the amount of purchase will change less than 1%, including essential products for consumption such as rice, the nature of the gra will be very steep. Therefore, in business If the goods produced are goods with less elasticity in demand, Sellers can set relatively high selling prices, but may not be able to do so as in the first case.

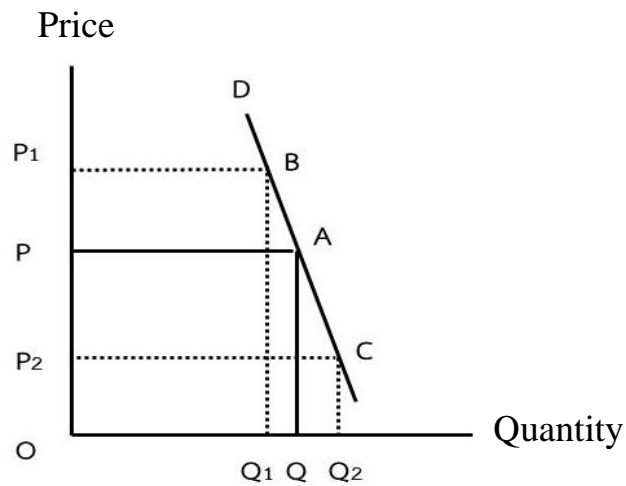


Figure 3.3 Inelastic demand

From Figure 3.3, the price level of P baht, buyers want to buy Q units, and when the price rises to P1 baht, the demand is Q1 units, and when the price drops to P2 baht, the demand increases to Q2 units. The change in price will be greater than the change in quantity bought.

C. Unitary demand ($E_p = 1$) Means that when the price of goods changes 1%, but the purchase quantity will change 1%, the nature of the graph is Rectangular Hyperbolar (all squares under this type of graph will have exactly the same area), including general products that consumers can control consumption.

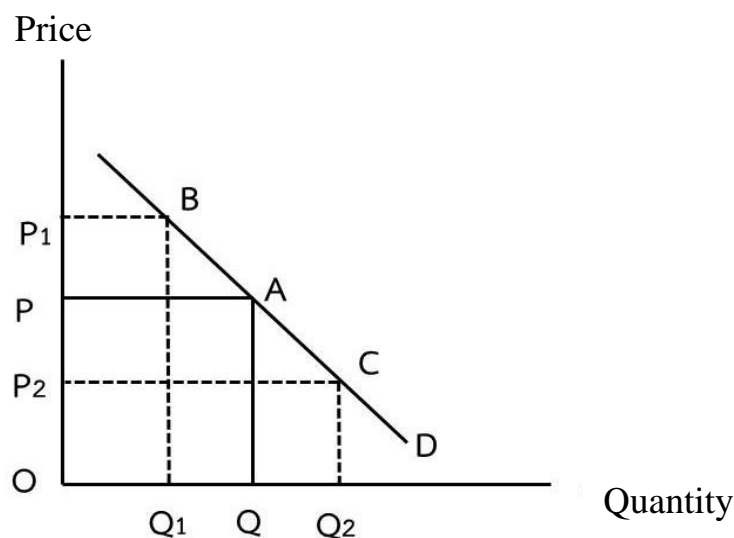


Figure 3. Unitary Elasticity of Demand

From Figure 3.4, the price level of P baht, buyers want to buy Q units, and when the price rises to P₁ baht, the demand is Q₁ units, and when the price drops to P₂ baht, the demand increases to Q₂ units. The change in price and quantity bought will change in equal proportions, where $\square OPAQ$, $\square OP_1BQ_1$ and $\square OP_2CQ_2$ have exactly the same area.

D. Elasticity demand ($E_p > 1$) It means that when the price of a commodity changes by 1%, but the quantity bought changes by more than 1%, the graph is very sloping. Including luxury goods such as perfume, cosmetics, etc.

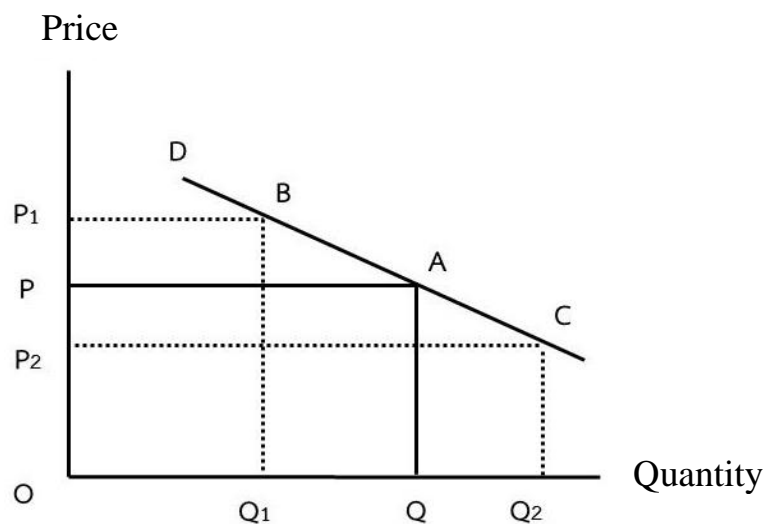


Figure 3.5 Elasticity demand

From Figure 3.5, the price level of P baht, buyers want to buy Q units, and when the price rises to P₁ baht, the demand is Q₁ units, and when the price drops to P₂ baht, the demand increases to Q₂ units. The change in price will be less than the change in quantity purchased. That means that when the price of a product changes a little. The amount of demand will change quite a lot. Therefore, in doing business, if we are the seller of this type of product. We should not set prices very high because consumers may decide not to consume.

E. Perfectly elasticity demand ($E_p = \infty$) This means that at a certain price level the quantity demanded will be large. But when the price of a

product changes, the quantity demanded does not occur at all. The nature of the graph is a straight line parallel to the horizontal axis, or perpendicular to the vertical axis

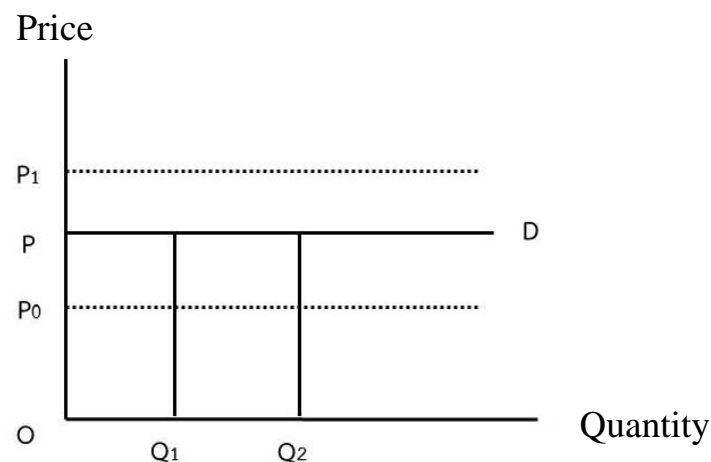


Figure 3.6 The elasticity of demand with absolute elasticity.

From Figure 3.6 price level P baht, buyers want to buy a lot both at levels Q1 units and Q2 units, but when the price rises to P1 baht or decreases to P0 baht, the amount of demand will not occur at all. This means that at the price of a certain commodity There will be a great amount of demand, but when the price of a product changes, whether rising or falling, the demand will not occur at all.

Price Elasticity of Demand and Total Revenue

From the total revenue (TR) can be calculated from the product price. Multiplied by the quantity of goods sold ($P \times Q$), so the change in price not only affects sales volume but also affects total revenue. Knowing the elasticity of demand for the price of a product enables sellers to implement the correct pricing policy. For example, if demand is very flexible, raising prices higher can lead to lower total revenues. because the percentage of the decrease in demand is greater than the percentage

increase in the price (Wanee Chicharoen and Boontham Ratcharak, 2016, page 100) as shown in the table.

Table 3.1 The relationship between price-to-demand and total revenue.

Price	$E_p > 1$	$E_p = 1$	$E_p < 1$
Increase price	TR Decrease	TR Constant	TR increase
Decrease price	TR increase	TR Constant	TR Decrease

Therefore, if the manufacturer knows the flexibility of the product being produced. It will make the producer aware of the sum of the revenue that the producer will receive from selling the product and if the producer wants to change the selling price of the product. How will it affect that manufacturer's sales revenue? The details are as follows: (Suchinda Jeamsripong, 2015, pages 105-106)

1. Price elasticity of demand is greater than 1, meaning there is little change in price. Will affect the change in a very large amount, that is, when adding or reduce product prices inevitably causes total revenue (TR) to decrease or increase

2. Demand has an elasticity of 1, meaning that a change in price affects the quantity purchased by the same rate, i.e. rising or falling prices do not affect total revenue (TR).

3. Price elasticity of demand is less than 1. This means that price changes have little effect on the quantity purchased, i.e. when prices rise, total revenue (TR) increases and if prices fall. Total revenue will also decrease.

2. Income elasticity of demand (Ey)

Means the percentage change in the quantity of goods that people want to buy at any given moment. When the consumer's income changes by one percent while keeping everything else constant, the income elasticity of demand formula can be written as follows (Wanee Chicharoen and Boontham. Ratcharak, 2016, page 107)

$$E_y = \frac{\text{Percentage of change in quantity purchased}}{\text{Percentage of Change in Income}}$$

2.1 Determination of the point elasticity of demand to income It calculates the elasticity of demand to income at a particular point.

$$E_y = \frac{\% \Delta Q}{\% \Delta Y}$$
$$E_y = \frac{\frac{\Delta Q}{Q} \times 100}{\frac{\Delta Y}{Y} \times 100}$$
$$E_y = \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$$

2.2 Determination of the range elasticity of demand to income It calculates the elasticity of demand against income. Interval or between 2 points

$$E_y = \frac{\Delta Q}{\Delta Y} \times \frac{\frac{Y_1 + Y_2}{2}}{\frac{Q_1 + Q_2}{2}}$$
$$E_y = \frac{\Delta Q}{\Delta Y} \times \frac{Y_1 + Y_2}{Q_1 + Q_2}$$
$$E_y = \text{Income elasticity of demand}$$

Y_1	=	income before change
Y_2	=	income after change
Q_1	=	The amount of demand for goods before income changes
Q_2	=	The amount of demand for products after income changes
ΔQ	=	change in quantity
ΔY	=	change in price

The result of the calculation of the income elasticity of demand may have a plus or minus sign depending on the type of commodity.

1. Positive (+) if it is a normal product When income increases, consumers will consume more of that product. And when income decreases, consumers will consume less of that product, that is. Changes in bid volume and earnings go in the same direction.

2. Negative (-) if it is an inferior product When income increases, consumers will consume less of that product. And when income decreases, consumers will consume more of that product, that is. The change in bid volume and earnings are in opposite directions.

The plus or minus signs above are only indicators of the relationship between Bid volume and revenue in any direction and what type of product is that? Is it a normal product or an inferior product in the eyes of consumers? Numeric values that do not take sign into account only. to tell how much the reaction between the rate of change in the amount offered to the rate of change in revenue . If the number is high, it indicates that the quantity offered for that commodity changes dramatically as income changes. or if it is low, it means that the quantity offered for that product does not change much as income changes. and if the elasticity is zero,

then the bid quantity It doesn't change at all, regardless of how much your income changes.

Example 3 A consumer's income increases from 300 baht per day to 400 baht, and therefore his consumption of goods X increases from 10 units to 15 units. Based on the above information, find the income elasticity of demand at the income level of 300 baht.

Method : From the formula

$$\begin{aligned} E_y &= \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q} \\ Q_1 &= 10 \\ Q_2 &= 15 \\ Y_1 &= 300 \\ Y_2 &= 400 \\ E_y &= \frac{10-15}{300-400} \times \frac{300}{10} \\ &= 1.5 \end{aligned}$$

A positive result of the calculation indicates that product X is normal.

Example 4 From example 3, find the elasticity of demand on the income range or at the income levels of 300 baht and 400 baht.

Method : From the formula

$$\begin{aligned} E_y &= \frac{\Delta Q}{\Delta Y} \times \frac{Y_1+Y_2}{Q_1+Q_2} \\ Q_1 &= 10 \\ Q_2 &= 15 \\ Y_1 &= 300 \\ Y_2 &= 400 \end{aligned}$$

$$E_y = \frac{10-15}{300-400} \times \frac{300+400}{10+15}$$

$$E_y = 1.4$$

A positive result of the calculation indicates that product X is normal.

3. cross elasticity of demand (Ec)

Means the percentage of change in the quantity of goods that people want to buy at any given moment. when the price of other related products changes By setting other factors constant, it can be written in the form of an equation as follows: Durongkaverroj, 2017, page 50)

$$E_c = \frac{\text{Percentage of change in the volume of goods purchased}}{\text{Percentage of price change of other related products}}$$

There are 2 formulas for calculating cross elasticity:

3.1 Point cross flexibility It is a calculation of the cross elasticity at a certain point on the demand curve, known as the elasticity of demand for commodity X to the price of commodity Y, can be calculated from the formula

$$E_c = \frac{\% \Delta Q_x}{\% \Delta P_y}$$

$$E_c = \frac{\frac{\Delta Q_x}{Q_x} \times 100}{\frac{\Delta P_y}{P_y} \times 100}$$

$$E_c = \frac{\Delta Q_x}{\Delta P_y} \times \frac{P_y}{Q_x}$$

$$E_c = \text{Cross Elasticity of Demand}$$

Q_x = The amount of demand for goods X before the change

- P_y = Product price Y before change
- ΔQ_x = Change in demand for product X
- ΔP_y = Change in the price level of the product Y

However, product X and product Y must be related products.

3.2 Interval cross flexibility It calculates the elasticity of demand for good X against the price of good Y at a certain point on the demand curve. The formula used to calculate :

$$E_c = \frac{\Delta Q_x}{\Delta P_y} \times \frac{P_{y1} + P_{y2}}{\frac{Q_{x1} + Q_{x2}}{2}}$$

$$E_c = \frac{\Delta Q_x}{\Delta P_y} \times \frac{P_{y1} + P_{y2}}{Q_{x1} + Q_{x2}}$$

E_c = The price elasticity of demand for commodity X versus the price of commodity Y

P_{y1} = Product price Y before change

P_{y2} = Product price Y after change

Q_{x1} = The amount of demand for goods X before the change

Q_{x2} = Demand for product X after change

ΔQ_x = The change in demand for goods X

ΔP_y = The amount of change in the price of goods Y

The price elasticity of demand for other commodities is characterized by There may be a plus or minus sign. Depending on the relationship nature of the two products that we are considering, they can be classified as follows.

product B decreased from 70 units to 40 units. Find cross elasticity. The dotted pattern of product A and product B, and also tells what type of product A and product B are?

Method from the formula

$$E_c = \frac{\Delta Q_B}{\Delta P_A} \times \frac{P_A}{Q_B}$$

from the problem

$$P_{A1} = 120$$

$$P_{A2} = 150$$

$$Q_{B1} = 70$$

$$Q_{B2} = 40$$

$$\begin{aligned} E_c &= \frac{70-40}{120-150} \times \frac{120}{70} \\ &= -1.71 \end{aligned}$$

The calculation result has a minus sign (-) indicating that the two types of products are used together.

Example 6 Using example 5, find the cross-interval elasticity of product A and product B.

Method from the formula

$$E_c = \frac{\Delta Q_B}{\Delta P_A} \times \frac{P_{A1}+P_{A2}}{Q_{B1}+Q_{B2}}$$

from the problem

$$P_{A1} = 120$$

$$P_{A2} = 150$$

$$Q_{B1} = 70$$

$$Q_{B2} = 40$$

Substitute the values in the formula

$$E_c = \frac{70-40}{120-150} \times \frac{120+150}{70+40}$$

$$E_c = \frac{30}{-30} \times \frac{270}{110}$$

$$= -2.45$$

Elasticity of Supply

Elasticity of Supply : Means the percentage change in the demand for goods sold per the percentage change in the product price. The calculated elasticity is marked with a positive sign because price and quantity demanded are in the same direction. To calculate the elasticity of supply, do the following:

$$E_s = \frac{\text{Percentage of change in sales volume}}{\text{Percentage of change in price}}$$

The calculation of elasticity of supply can be done in two ways.

1. Point elasticity of supply : Meaning is the calculation of the elasticity of supply at a point on the supply curve.

$$E_s = \frac{\% \Delta Q_s}{\% \Delta P}$$

$$E_s = \frac{\frac{\Delta Q_s}{Q_s} \times 100}{\frac{\Delta P}{P} \times 100}$$

$$E_s = \frac{\Delta Q_s}{\Delta P} \times \frac{P}{Q_s}$$

$$E_s = \text{Elasticity of Supply}$$

P = Price before change
 Q_s = Supply for goods sold before the change
 ΔQ_s = change in supply for sales
 ΔP = Price level change

Example 7 If the price of good X rises from 20 baht to 27 baht, the demand for it increases from 80 units to 150 units. Find the point elasticity of supply at the price of 20 baht and tell what type of commodity X it is?
 Method from the formula

$$E_s = \frac{\Delta Q_s}{\Delta P} \times \frac{P}{Q_s}$$

from the problem

$$P_1 = 20$$

$$P_2 = 27$$

$$Q_1 = 80$$

$$Q_2 = 150$$

Substitute the values in the formula

$$\begin{aligned}
 E_s &= \frac{80-150}{20-27} \times \frac{20}{80} \\
 &= 2.5
 \end{aligned}$$

In summary, product X has more flexibility than 1, i.e. industrial products. or products that are easy to make.

2. Arc elasticity of supply Refers to the calculation of elasticity at a particular period on the supply curve. Formula used to calculate :

$$E_s = \frac{\Delta Q_s}{\Delta P} \times \frac{\frac{P_1+P_2}{2}}{\frac{Q_{s1}+Q_{s2}}{2}}$$

$$E_s = \frac{\Delta Q_s}{\Delta P} \times \frac{P_1+P_2}{Q_{s1}+Q_{s2}}$$

E_s = Elasticity of supply

P_1 = Price before change

P_2 = Price before change

Q_{s1} = Supply for goods sold before the change

Q_{s2} = Supply for goods sold after the change

ΔQ_s = Change in supply for sales

ΔP = Price level change

Example 8 From example 7, find the range elasticity of supply at the price levels of 20 baht and 27 baht.

Method from the formula

$$E_s = \frac{\Delta Q}{\Delta P} \times \frac{P_1+P_2}{Q_1+Q_2}$$

from the problem

$$P_1 = 20 \quad P_2 = 27$$

$$Q_1 = 80 \quad Q_2 = 150$$

$$E_s = \frac{80-150}{20-27} \times \frac{20+27}{80+150}$$

$$= \frac{-80}{-7} \times \frac{47}{330}$$

$$= 1.63$$

Type of Supply Elasticity

Calculated Elasticity of Supply will have a positive value Because the quantity offered for sale is related to the same direction as the price of that commodity according to the law of supply. Elasticity of supply can be divided into 5 categories:

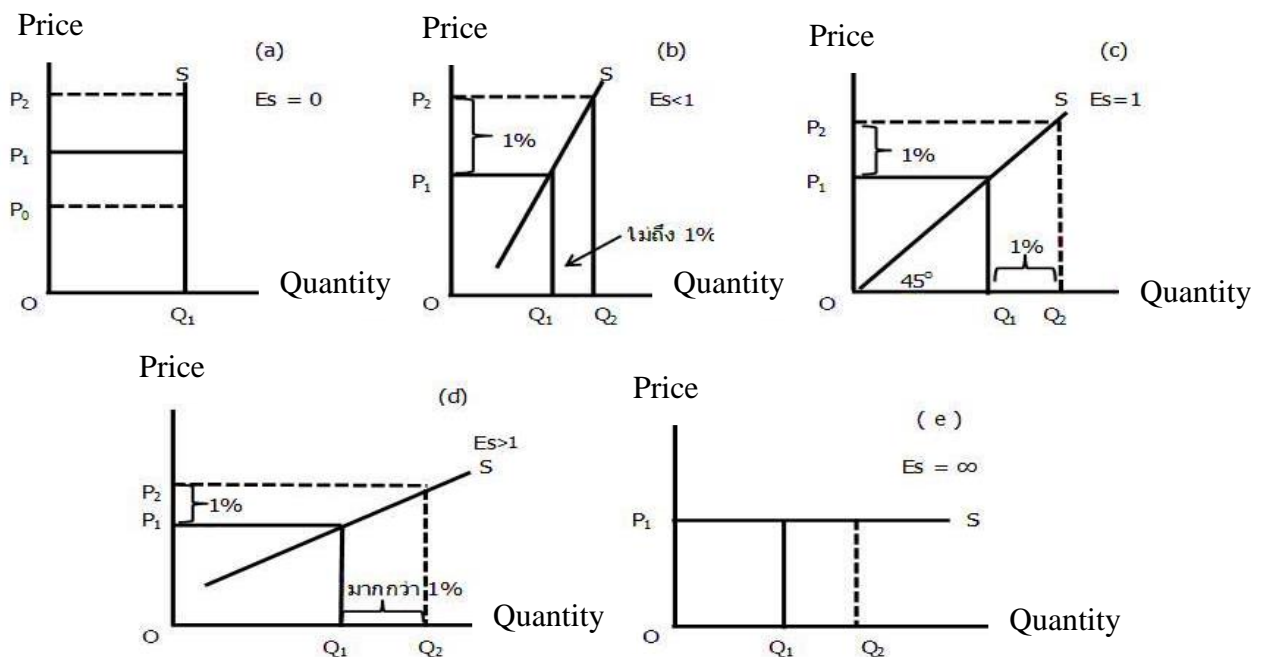


Figure 3.7 The 5 Types of Elasticity of Supply

From Figure 3.7, it can be explained as follows.

3.7 (a) What does Perfectly Inelastic Supply ($E_s = 0$) mean when the price of a commodity changes? The demand for sales remains the same. The nature of the graph is a straight line parallel to the vertical axis. or price axis like antiques.

3.7 (b) Inelastic Supply ; $0 < E_s < 1$) means that when the price of a commodity changes by 1% but the quantity sold does not change by less than 1%, the curve is very steep. including agricultural products or products that are difficult to produce.

3.7 (c) Unitary Elastic Supply ($E_s = 1$) means that when the price of a commodity changes by 1%, the quantity demanded by it changes by 1%. The graph is angled at 45 degrees to the origin.

3.7 (d) supply that is very flexible (Elastic Supply; $1 < E_s$) means that when the product price changes 1%, the sales volume changes by more than 1%, the nature of the graph is very sloping, including industrial products. or products that are easy to make.

3.7 (e) Perfectly Elastic Supply ; $E_s = \infty$ means that at a certain price level the quantity demanded is plentiful. But when the price of the product changes The demand for sales will not occur at all. The nature of the graph is a straight line parallel to the horizontal axis.

Example 9 If the price of good X rises from 20 baht to 27 baht, the demand for it increases from 80 units to 150 units. Find the elasticity of supply and tell what type of commodity X is?

Method from the formula

$$E_s = \frac{\Delta Q}{\Delta P} \times \frac{P_1 + P_2}{Q_1 + Q_2}$$

From the problem

$$P_1 = 20 \quad P_2 = 27$$

$$Q_1 = 80 \quad Q_2 = 150$$

$$\begin{aligned} E_s &= \frac{80-150}{20-27} \times \frac{20+27}{80+150} \\ &= \frac{-80}{-7} \times \frac{47}{330} \\ &= 1.63 \end{aligned}$$

In summary, product X has more flexibility than 1, i.e. industrial products. or products that are easy to make.

Application of the Elasticity of Demand and Supply for business use

1. Minimum Pricing or Price Support

According to the study in Chapter 2, minimum pricing measures In order to help the producers, the government or related parties should consider the supply which is the producer that the government has to assist because the government has to bear the burden of helping the producers.

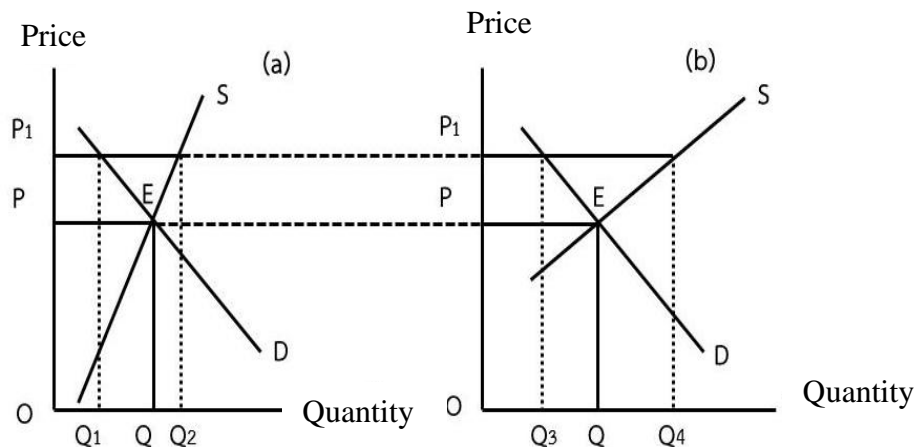


Figure 3.8 Minimum Price Determination by Supply Characteristics

Figure 3.8 (a) Supply has an elasticity of less than 1. Originally, the equilibrium price was at P baht, but the government saw that the price was too low. Producers suffered. The government therefore stepped in to support the price at P1 baht. The demand for sales of producers slightly increased from Q units to Q2 units. Figure 3.8 (b) Supply has an elasticity greater than 1. Originally, the equilibrium price was at P baht, but the government saw that the price was too low. Producers suffered. The government then stepped in to support the price at P1 baht. The demand for sales of manufacturers increased quite a lot from Q units to Q4 units.

Therefore, the use of such measures in order to prevent the problem of oversupply of products to the point that the government has to incur quite a lot of expenses in such measures. The government should opt for goods with an elasticity of supply less than 1 and goods with an elasticity of supply greater than 1. The government may take other measures such as subsidies.

2. Advanced pricing (Price Ceiling)

It is a method used by the government to control the prices of producers or sellers. to help consumers Not to be troubled by the product price being too high especially essential goods for consumption The pricing is lower than the market price. causing a severe shortage of goods and services Therefore, to set a high price, the government should adopt this measure based on demand with an elasticity of less than 1 in order to reduce shortages.

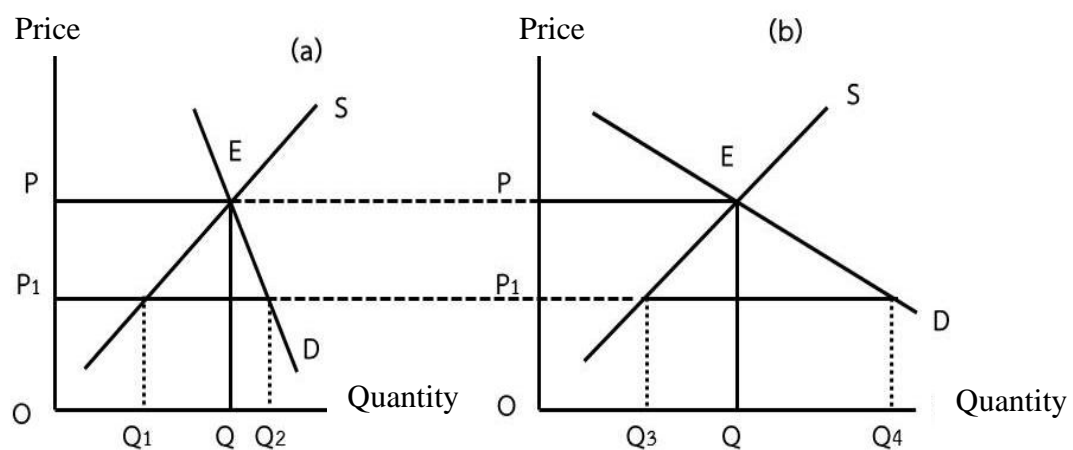


Figure 3.9 Demand-based advanced pricing

Figure 3.9 (a) Demand has an elasticity of less than 1. Originally, the equilibrium price was at P baht, but the government saw that the price was too high, and consumers suffered. The government therefore set the

price at P1 baht, the amount of consumer demand slightly increased from Q units to Q2 units.

Figure 3.9 (b) Demand has an elasticity greater than 1. Originally, the equilibrium price was at P baht, but the government saw that the price was too high, and consumers suffered. The government therefore set the price at P1 baht, the amount of consumer demand increased quite a lot from Q units to Q4 units, causing quite a shortage of goods.

Therefore, when the government uses advanced pricing measures to help consumers, the government should be used with products with elasticity less than 1

summarize

Elasticity of demand refers to the change in quantity purchased. When the factors that determine demand change can be classified into 3 types: 1. Price elasticity of demand It is a study of demand for products that change due to changes in the price of that product. The calculation result must always be negative (-) because the product price with the quantity of goods will change in the opposite direction and has 5 values, namely 0, less than 1, equal to 1, greater than 1, and infinite.

2. Income elasticity of demand It is a study of a type of demand demand that changes as a result of changes in income. The calculation result will have 2 marks, which are positive (+) in the case of normal products and negative (-) in the case of inferior products.

3. Price elasticity of demand for other related commodities It is a study of the demand for one type of product that changes due to the change in the price of another product that is related. The calculation results can be marked in 2 ways: positive (+) in the case of substituting products, and Minus (-) in case of a combination product

Elasticity of supply refers to the change in quantity sold when the factors that determine supply change. The calculation result must always be positive (+) because the product price with the quantity of goods will change in the same direction and has 5 values, namely 0, less than 1, equal to 1, greater than 1, and infinite.

Business application of the elasticity of demand is a tool for the government Used to solve the country's economic problems. And businessmen often use it as a guideline for business administration in various fields. such as advanced pricing to help consumers. Minimum pricing to help manufacturers.

Chapter 3 Exercises

Answer the following questions.

1. Price elasticity of demand equals 1 along the entire line, what will the curve look like?
2. What is the price elasticity of demand for income? Explain with examples.
3. Adjustment of higher product prices of essential products How will it affect the manufacturer's sales revenue?
4. If the price of commodity X increases from 10 baht to 14 baht, the quantity demanded decreases from 180 units to 150 units. Find the range price elasticity of demand and say that the product What type of product is X?
5. At the income level of 400 baht per day, the consumption of goods X in the amount of 5 units and if the consumer With income of 300 baht per day, consumption of product X will increase to 15 units. Find the elasticity of demand against income at the income level of 400 baht, with examples of accompanying products.
6. The price of pork has increased from 80 baht per kilogram to 110 baht, causing some consumers to turn to buy beef instead. As a result, the amount of beef consumption in the market increases from 150 kilograms to 180 kilograms. Find the cross-elasticity of pork and beef. And also tell us what kind of product pork and beef are?
7. The price of product A increased from 120 baht per unit to 150 baht, causing consumers to buy, causing consumers to buy A products decreased from 50 units to 30 units, and product B decreased from 70 units to 40 units. Find

7.1 Price elasticity of demand for commodity A?

7.2 The cross-elasticity of product A and product B, and also tells what kind of product A and product B are?

8. Answer the questions from the following table.

Price of X	Purchase quantity X	Purchase quantity Y	Purchase quantity Z
8	100	70	120
10	60	40	150

8.1 What type of product is Product X? along with an example

8.2 What is the relationship between product X and product Y?

8.3 What is the relationship between product X and product Z?

9. The price of commodity A is 500 baht per unit and the quantity sold is 150 units. If the price of commodity A is reduced to 400 baht per unit, the quantity is 100 units. Find what is the elasticity of supply?

10. Government price insertion by setting a minimum price. or how price stabilization should be performed on goods with price elasticity of demand appropriately, explained and justified.

Reference

Tawin Ninbai and others.(2017). General Economics. Bangkok:
Ramkhamhaeng University.

Wananee Chicharoen and Boontham Ratcharak.(2016).
Microeconomics. 1. Bangkok: Ramkhamhaeng University.

Suchinda Jeamsripong (2015). Business Economics. Phitsanulok :
Naresuan University Press.

Suphat Ouipaiboonsawat (2012). Microeconomics. Bangkok:
Ramkhamhaeng University.

4 Production and

Income from production

Production is an economic activity that is important in the production of goods and services to meet the needs of consumers. Efficient production requires minimum production costs. or using the same production cost but produced the largest quantity Efficient production can be achieved both in the short term and in the long term. It uses a mixture of production factors that make the cost of the producer the lowest. And the goal of production is the most revenue. In this lesson, we will talk about production. and income from production

Definition of production, productivity and factors of production.

Production

Production refers to the process of converting factors of production (input) into products (output).

Output

Output refers to the goods or services obtained from the production process.

Input

Inputs Refers to resources used to produce goods and services by inputs.

There are four components:

1. Land refers to all the resources attached to the soil. such as the location of factories, buildings, various locations used in production operations The return of the land is the rent.

2. Labor refers to the physical power of human beings used in the production activities. and human brain power used to invent production planning The return of labor is wages or salary

3. Capital referring to tools Machines used in production or funds used to purchase raw materials The return on capital is interest.

4. Entrepreneur refers to the person responsible for collecting the factors of production. to produce products and services The return of entrepreneurs is profit.

The relationship between inputs and outputs

Production is meaning “change in factors of production (inputs) to produce (outputs) is the conversion process may be the processing of raw materials, changing the place or time, which increases the value of the product or service.” therefore, production refers to activities related to the production of goods and services. (Suchinda Jeamsriphong,2558,page 179) starting from the collection of factors of production into the production process until it comes out as a product

Inputs on economics is critical to the production of goods and services and contributes greatly to the outcome of a business unit's performance. If the operator needs a large amount of output must bring factors of production into the production process in order to get the desired results. The relationship between factors of production and output expresses the relationship between the factors of production. and the amount of output arising from the factors used in that production which

can be written in the form of a relationship as follows

$$Q_A = f(X_1, X_2, X_3, \dots, X_n)$$

Production of goods A depends on the factor $X_1, X_2, X_3, \dots, X_n$

or write that

$$TP = f(X_1, X_2, X_3, \dots, X_n)$$

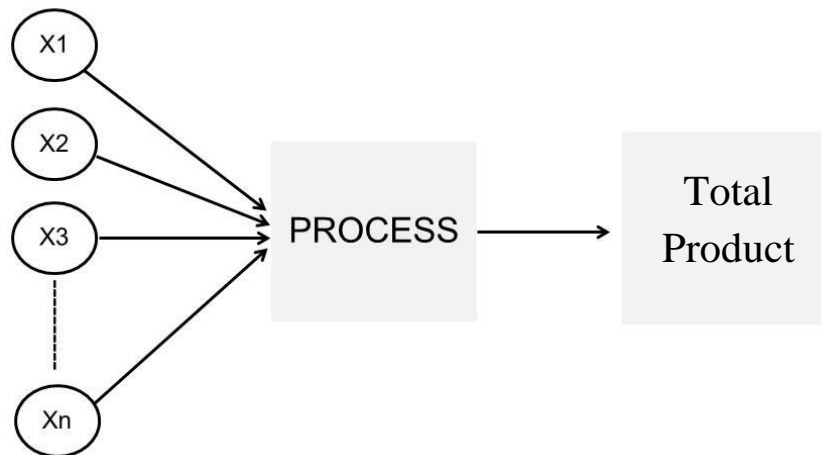


Figure 4.1 Production process

Starting from the factors of production, $X_1, X_2, X_3, \dots, X_n$ will go through the production process and will produce.

There are two types of factors of production:

1. Fixed factors is refers to factors of production that cannot change according to the amount of production regardless of how much or how little the output is produced. This fixed factor of production will remain the same, especially for a short period of time, such as land, factories, machinery, etc.

2. Variable factors is refers to factors that producers can change according to the amount of output. If there is a lot of output, it must put a lot of inputs into it. if there is no production at all This variable production

factor will not be put into the production process, such as raw materials used in production, etc.

Production period in economics

In economics, the production period is divided into 2 types:

1. Short term production (Short run)
2. Long term production (long run)

Short term production is refers to the period during which the production unit cannot change the level of utilization of certain production factors as required. Therefore, short-run production has fixed and variable factors. In short-term production, there are 3 types of tools to help analyze short-term production: (Woranee Chicharoen and Buntham Ratcharak,2559,page 264)

1. Total Product : TP is meaning , the total output obtained from production using a number of factors of production, both fixed factors. and variable factors In the first stage, the interaction of constant factors and the variable factor will be appropriate, the total output will increase at an increasing rate. But when the variable factor is added more and more, the total yield obtained increases at a decreasing rate. and if the variable factor is increased too much, the total yield will decrease.

$$TP = f(\text{Land}, \text{Labor})$$

$$\text{Land} = \text{Constant Factor}$$

$$\text{Labor} = \text{Variable Factor}$$

2. Average Product : AP is meaning, the total number of products is averaged per 1 unit of variable factor.

$$AP = \frac{TP}{Q}$$

Q is a variable factor.

3. Marginal Product : MP refers to the total output increased by one unit increase in the variable factor.

$$MP = \frac{\Delta TP}{\Delta Q}$$

Table 4.1 Relationship of factors of production and output

Land	Labor	Total Product	Average Product	Marginal Product
1	0	0	-	-
1	1	2	2	2
1	2	5	2.5	3
1	3	9	3	4
1	4	12	3	3
1	5	14	2.8	2
1	6	15	2.5	1
1	7	15	2.14	0
1	8	14	1.75	-1

Product

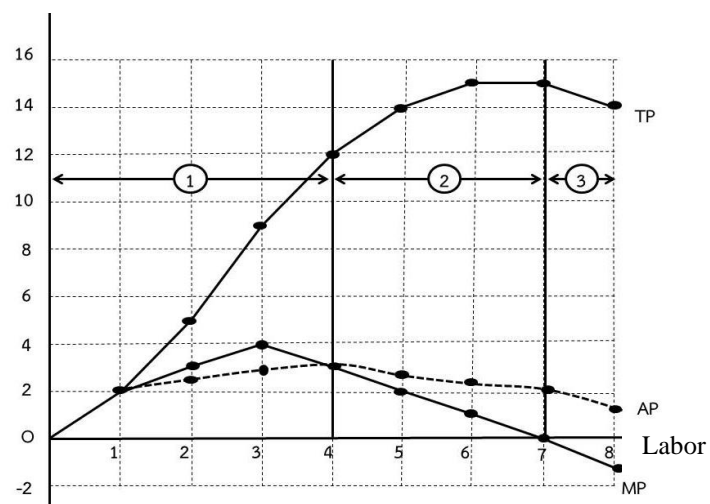


Figure 4.2 The relationship between production factors and outputs

When using the data from Table 4.1 to create a graph to show the relationship between total output, average output and marginal output, it can be seen that the level of production that produces the most output is at the level of using a variable factor of 7 units. Therefore, it is scheduled to produce the following 3 periods.

Stage 1 starts from the use of the variable factor 1 to the use of the variable factor 4. At this stage, when the variable factor is added to work with the constant factor. The total yield obtained increases at an increasing rate. The average productivity level is the highest. and the final yield will be greater than the average yield over the period at the end of the period. Final yield and average yield are exactly the same.

Step 2. Starting from the end of step 1, the average yield reaches its maximum and equals final yield to the point where final yield equals zero. and the total output was the highest. This is the stage where diminishing returns occur. However, this is the optimum stage in production.

Stage 3 starts from the point where the last unit of output is equal to zero onwards. Stage 3 is the period in which the number of all kinds of output decreases accordingly, so producers should not proceed with this stage.

Relationship between TP AP and MP

1. AP and MP are equal at the peak of AP.
2. When MP increases, AP also increases, with MP greater than AP, and when MP decreases, AP also decreases, with AP greater than MP.
3. When MP is zero(0), TP is maxed.

Long term production is refers to the period of production where the producer can change every factor of production according to the demand. Therefore, the long-term production process contains only variable factors. Because a constant factor immediately becomes a variable factor

when the amount or magnitude changes. Long-term production can be analyzed in four forms as follows.

There are two types of long-term production analysis tools:

1.1 Isoquant is meaning ,line showing the combination of two variable production factors together to produce a commodity producing the same quantity of output.

Table 4.2

Relationship of long-term use of production factors

Production Plan	X factor	Y factor	output
a	0	15	100
b	1	10	100
c	2	6	100
d	3	3	100
e	4	1	100
f	5	0	100

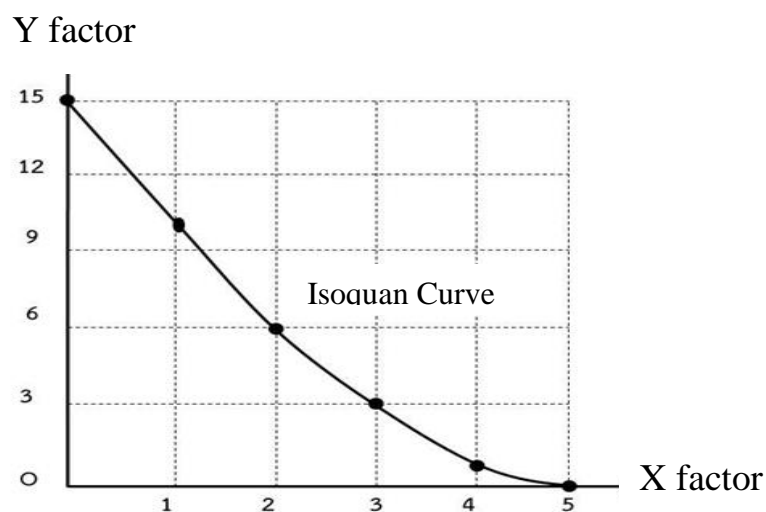


Figure 4.3 Characteristics of equal yield curves

Figure 4.3 is the use of data from Table 4.2 to create a graph to show the relationship of long-term production by using factor X and factor Y together to produce one product. by giving the same quantity of output It can be seen that the line of equal output will look like a line extending from left to right because in production that uses 2 types of factors of production, when one type of input is added, causing the use of another factor of production to decrease while the production volume remains the same.

Characteristics of Isoquan Curve

1. Fry down from left to right.
2. Equal yield lines do not intersect. But they are aligned with lines farther from the origin producing more yield than lines near the origin.

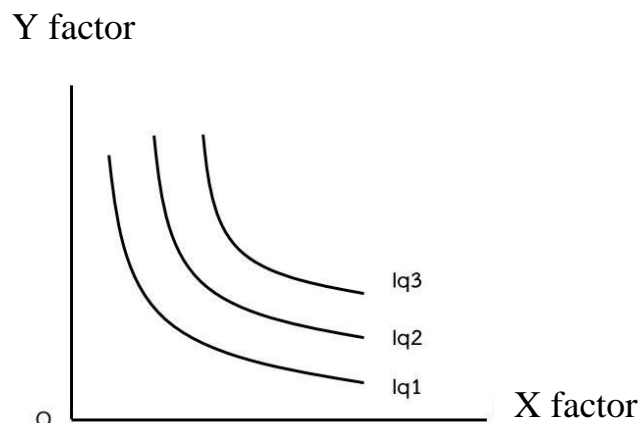


Figure 4.4 The levels of Isoquan Curve

From Figure 4.4, the lines of yield are equal, the line Iq3 furthest from the origin gives the greatest yield, and the Iq1 line closest to the origin gives the least yield.

3. The equal yield line may be a straight line. concave curve towards origin or a sharp line depending on the nature of the factors of production

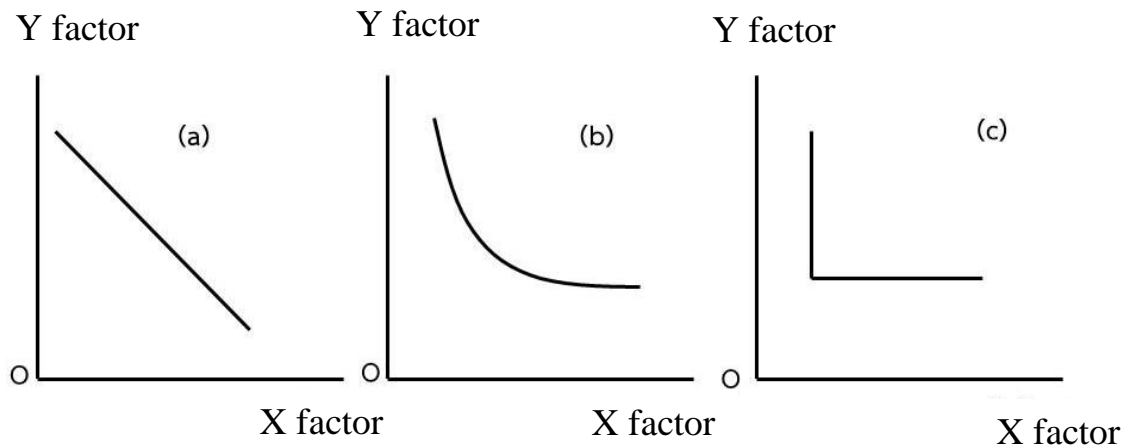


Figure 4.5 Characteristics of Isoquant Curve

Figure 4.5 (a) Straight equal product lines This means that the two factors of production are completely interchangeable. If the X factor is increased by 1 unit, the Y factor can be reduced by 1 unit (perfectly substituted).

Figure 4.5 (b) The concave curve to the origin of the equal production line indicates that two factors of production are imperfect substitute.

Figure 4.5 (c) The curved equal yield curve means that the two factors of production are not interchangeable, therefore increasing the X factor by any number of units. cannot reduce factor Y.

1.2 Isocost Curve It is a line showing the ratio of the combination of two factors of production to produce a good at the same cost.

Table 4.3 Use of Equal Cost Factors

Capital utilization plan	X Factor (200Bath)	Y Factor (100 Bath)	Amount
A	25	0	5,000
B	20	10	5,000
C	15	20	5,000
D	10	30	5,000
E	5	40	5,000
F	0	50	5,000

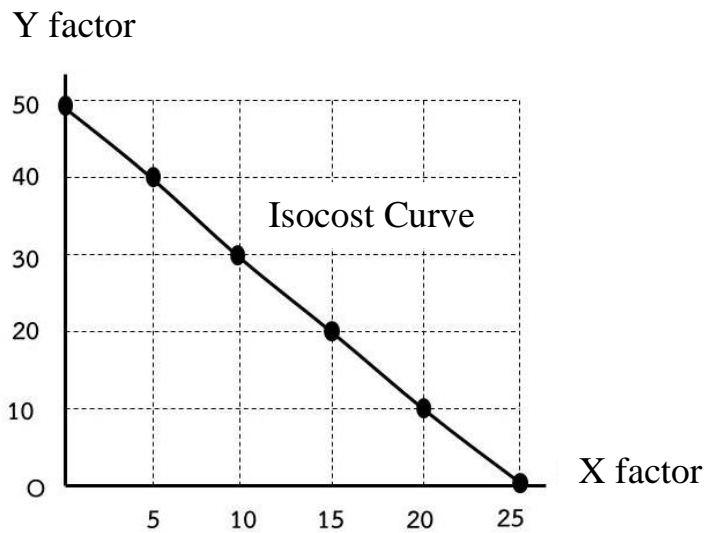


Figure 4.6 Isocost Curve

Figure 4.6 shows the relationship of a certain amount of capital in the use of two factors of production to produce one product. This is called the equal cost curve. The equal cost line is a straight line running down from left to right.

Characteristics of Isocost Curves

- 1) The Equal Cost Line is a straight line running down from left to right as shown in Figure 4.5.
- 2) If the cost of production increases, the equal cost curve moves up to the right of the original line as shown in Figure 4.7(a), but if the cost of

production decreases, the line moves to the left of original line As shown in Figure 4.7 (b).

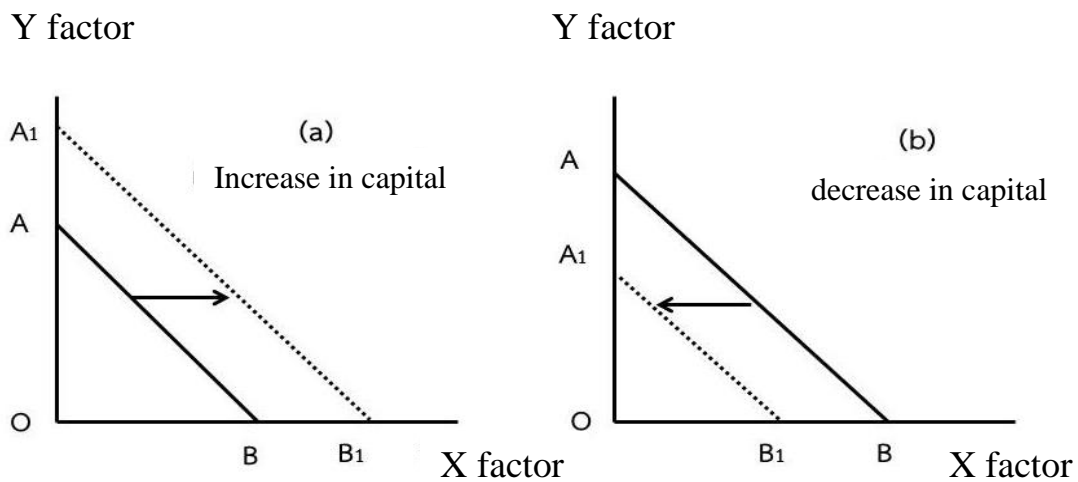


Figure 4.7 Changes in production capital

3) If the price of factors of production changes, the cost curve will change as shown in Figure 4.8.

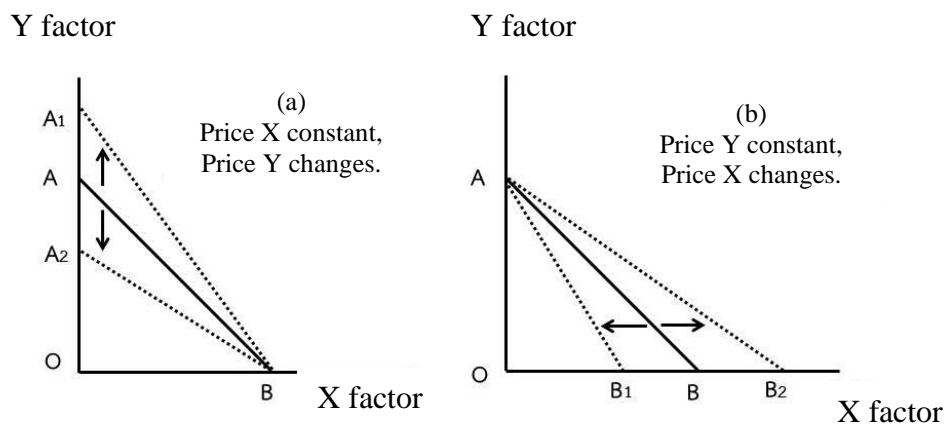


Figure 4.8 Changes in Factors of Production

Figure 4.8 (a) Line A_1B is a line showing the change in factor Y where factor Y is decreasing and price of factor X is constant, and line A_2B is a line showing the change in factor Y where factor Y. have a higher price where the price of factor X is constant.

Figure 4.8 (b) Line AB_1 is a line showing the change in factor X, where factor X has increased in price. where the price of factor Y is

constant and line AB2 is the line showing the change in factor. X, where factor X has decreased in price, where price of factor Y has remained constant.

Long-term production balance

Producers will choose the least cost combination of factors of production with 2 approaches:

1. Determining the amount of output that needs to be produced and finding ways to have the lowest production costs. (Minimize cost of production)

Finding the point where inputs are used in the optimal mixing ratio By specifying the desired number of products This means that the manufacturer must try to find a production method that will have the lowest production cost in order to achieve the specified amount of output.

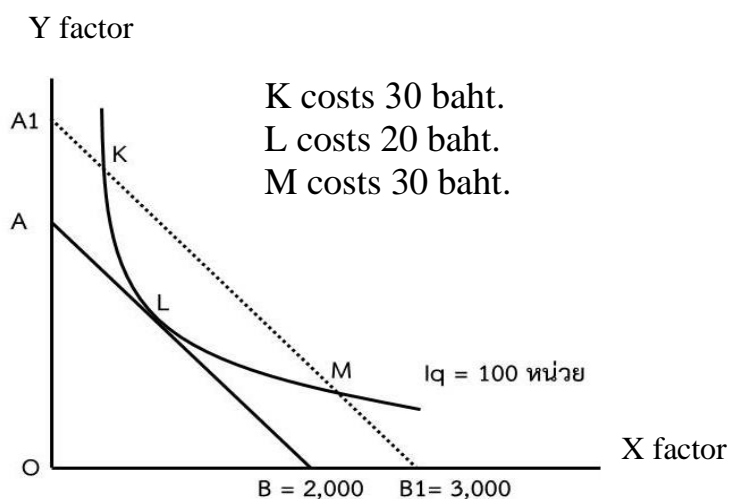


Figure 4.9 Production equilibrium in the case of determining the required production quantity

From Figure 4.9, the required production quantity is 100 units. Therefore, the manufacturer must find a production method that can produce the desired output with the least cost. The most suitable point is point L because it costs 20 baht per unit, while point K and point M will cost 30 baht per unit.

2. Determining the cost of production and finding ways to produce the maximum amount of output. (maximize output of production)

It is the opposite method to Method 1. That is, the manufacturer may set a budget or cost of production first. Then find a production method that can produce the largest amount of production according to existing cost.

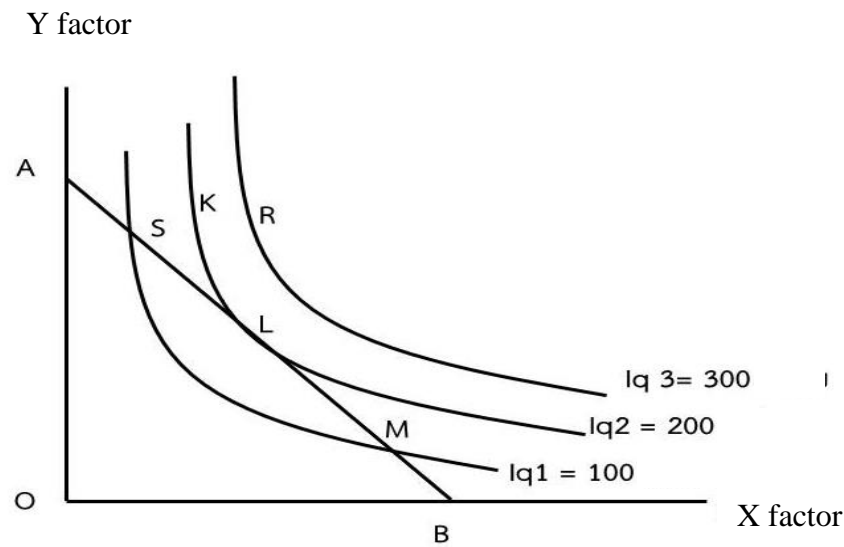


Figure 4.10 Production equilibrium in the case of determining the amount of capital

From Figure 4.10, the manufacturer determines the investment amount of 10,000 baht. Therefore, the manufacturer must find the production method that is most productive under the specified capital. The maximum output was 300 units, but the manufacturer was unable to produce due to insufficient funds. Therefore, the most suitable point is point L because it produces 200 units using 10,000 baht of capital. Point K and point M will also lose 10,000 baht of capital, but only produce 100 units, so this point is not suitable for production.

2. the expansion path

Refers to a line showing the combination of inputs that cost the least, with the condition being

$$\frac{MP_x}{MP_y} = \frac{-P_x}{P_y}$$

Therefore, the production expansion line will be a line connecting the points where the most suitable use of production factors has changed from the original due to the expansion of the scale of production or the addition of every type of production factor into the production. manufacture

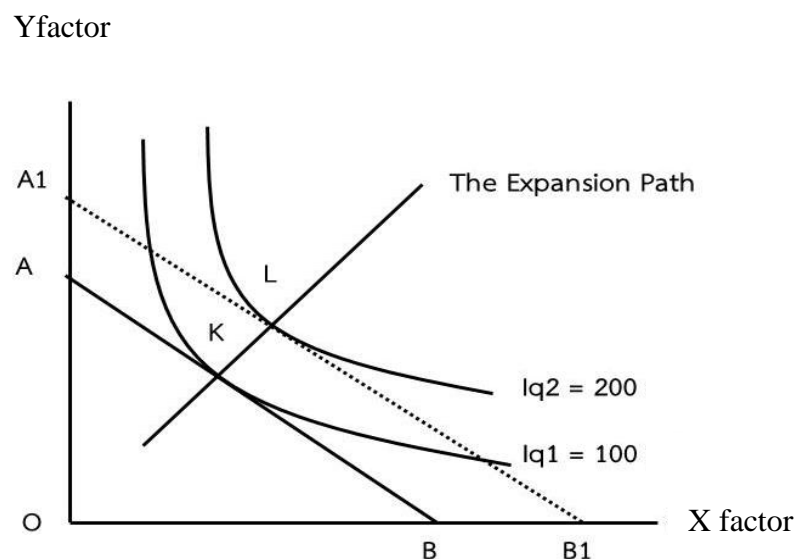


Figure 4.11 Expansion Path

Figure 4.11 The optimal point to produce 100 units of budget level AB is at point K and the optimal point to produce 200 units of budget level A1B1 is at point L. Connecting a line to the point, the optimal level of production is Get directions for expanding production (The Expansion Path)

3. law of return to scale It describes the change in total output. From expanding the production scale in the long term By increasing the factors of production (Supat Uiphaibulsawat, 2012, p. 134), considering the return on size, the effect of the change of all factors will be analyzed simultaneously. How will it affect the total output? Therefore, the analysis of return on scale is related to long-term production operations, which can be considered in 3 areas:

3.1 constant returns to scale: If the proportion of increase in all factors is equal to the increase in output, it is called constant returns to scale. For example, if all factors are multiplied at the same time, the output is doubled. that the return on size is fixed.

3.2 increasing returns to scale: If the increase in the output ratio is greater than the increase in all factors of production, it is called increasing returns to scale.

3.3 decreasing returns to scale: If the increase in output is less than the increase in all factors of production, it is called Decreasing returns to scale.

Elasticity of production: E_q

The flexibility of production is shown. When changing the number of variables by 1 percent, how much will the amount of output change? by measuring the change as a percentage or may say production flexibility It shows the movement of the change of output when the factors of production change. by measuring the change as a percentage

Therefore, the elasticity of production (E_q) is the percentage change in total output to the percentage change in variance.

$$E_q = \frac{\text{Percentage of change in total output}}{\text{Percentage of change in quantity of variable production inputs}}$$

$$E_q = \frac{\% \Delta Q}{\% \Delta L} = \frac{\frac{\Delta Q}{Q} \times 100}{\frac{\Delta L}{L} \times 100}$$

$$E_q = \frac{\Delta Q}{\Delta L} \times \frac{L}{Q}$$

Q is total product: TP

L is the amount of labor used is a variable factor.

Calculation results are as follows:

1. $E_q > 1$: It shows that the percentage change in output is greater than the percentage change in the variable factor.

2. $E_q = 0$: It shows the percentage change in the variable factor.

There was no change in the variable factor.

3. $E_q < 0$ (negative): It shows that when there is an increase in the variable factor, the quantity of output decreases.

Production revenue

Production revenue is the income that producers receive from selling their produce at a specified price which if the price of goods increases, the amount of goods sold decreases Production revenue will also decrease. and because the price of goods in each level is The manufacturer's revenue from the sale of that product, therefore, the unit price at the sales level is equal to the average revenue (AR) of the manufacturer at the sales level.

Type of Revenue

1. Total Revenue : TR There are meaning to the total revenue that the manufacturer receives from the sale of goods. Gross revenue is obtained from the price of goods. multiplied by the amount of goods sold.

$$\begin{aligned}
 P &= \text{Price} \\
 Q &= \text{Quantity} \\
 TR &= P \times Q
 \end{aligned}$$

Example 1 ABC Company sells erasable pens at 30 baht per pen, selling 1,000 pen per week. Therefore, Company ABC's total revenue will be as follows:

$$\begin{aligned}
 TR &= P \cdot Q \\
 TR &= 30 \times 1,000 \\
 TR &= 30,000 \text{ Bath}
 \end{aligned}$$

2. Average Revenues : AR There are meaning to the average total revenue per total number of products sold. with a formula for calculating

$$AR = \frac{TR}{Q}$$

Example 2 Company ABC sells erasable pens with a total income of 30,000 baht, selling 1,000 pens per week. So the average earnings will be as follows.

$$\begin{aligned}
 AR &= \frac{30,000}{1,000} \\
 AR &= 30 \text{ Bath}
 \end{aligned}$$

3. Marginal Revenue : MR There are meaning to total revenue that changes when selling 1 unit of changed goods

$$MR = \frac{\Delta TR}{\Delta Q} = \frac{dTR}{dQ}$$

Example 3 Company ABC sells 5 erasable pens with a total revenue of 150 baht and when selling 6 erasable pens has a total revenue of 180 baht, so the final revenue will be as follows:

$$MR = \frac{\Delta TR}{\Delta Q}$$

$$MR = \frac{120-150}{5-6} = \frac{-30}{-1}$$

$$MR = 30 \text{ Bath}$$

Relationship of Average Earnings final income In case the market determines the price

Market buyers and sellers are the ones who accept the price set by the market. Therefore, the offered price is the only price as shown in Table 4.4. The product price is always constant, which is 10 baht.

Table 4.4 Relationship of TR AR and MR in case the price is set by the market

Quantity	Price	TR	AR	MR
1	10	10	10	10
2	10	20	10	10
3	10	30	10	10
4	10	40	10	10
5	10	50	10	10
6	10	60	10	10

TR,AR,MR

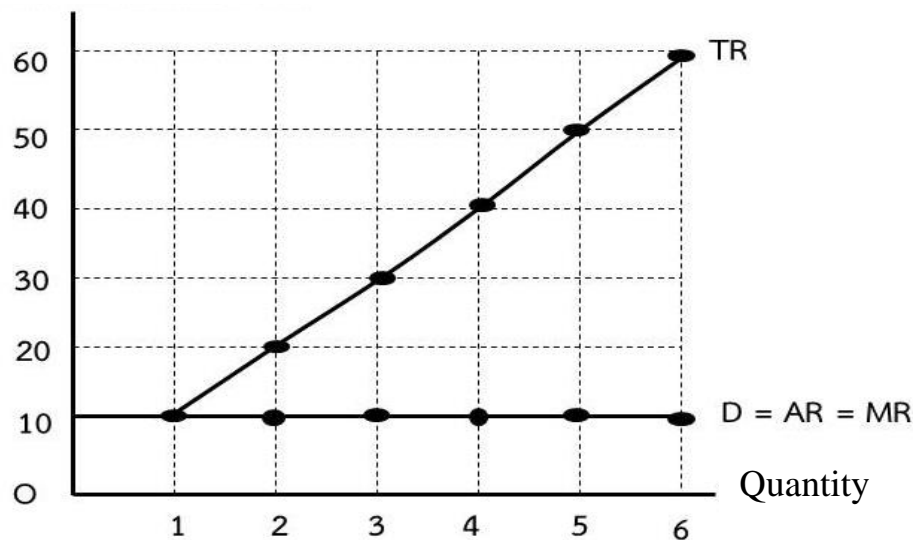


Figure 4.12 Relationship of TR, AR and MR in case the price is set by the market

From Figure 4.12, the data in Table 4.4 is graphed to find the relationship between total revenue (TR), average revenue (AR), and terminal revenue (MR). The average revenue line is obtained. final income and the demand curve is the same and is a straight line parallel to the horizontal axis As for the overall support line, it looks like a straight line leading up from left to right.

Relationship of Average Earnings final income In the event that the manufacturer determines the price

In some markets, sellers are the ones who can set the prices they want. Therefore, the price offered affects the purchasing decision of consumers. And affect the seller's total income according to Table 4.5, with high product prices, less sales volume. As for the price of the product that is reduced, the demand for the product will increase.

Table 4.5

The relationship of TR AR and MR when the price is set by the producer

Quantity	Price	TR	AR	MR
1	180	180	180	180
2	160	320	160	140
3	140	420	140	100
4	120	480	120	60
5	100	500	100	20
6	80	480	80	-20

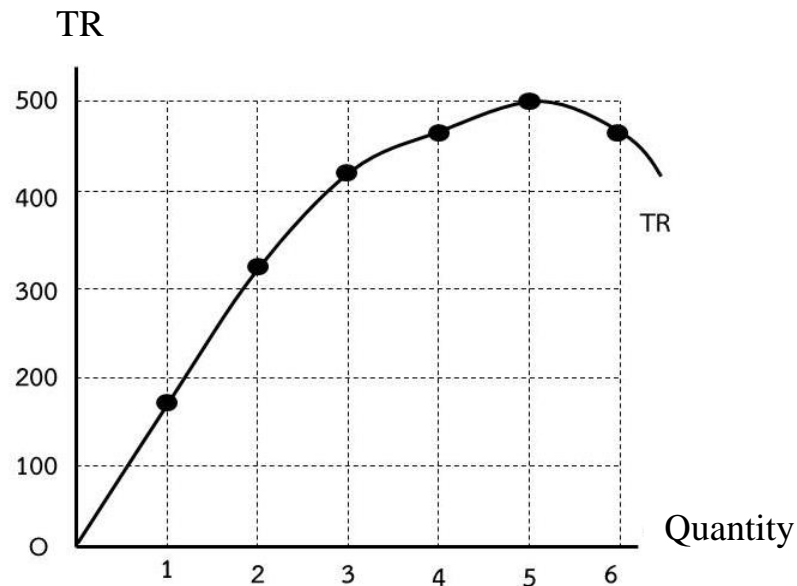


Figure 4.13 Characteristics of Total Income Line In the event that the manufacturer determines the price

From Figure 4.13, the data in Table 4.5 is plotted to find the nature of total revenue (TR), which looks like a bell curve.

AR,MR

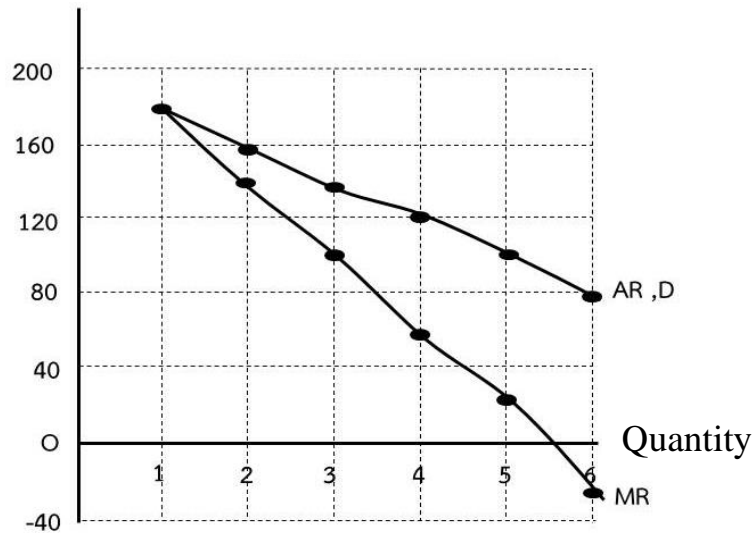


Figure 4.14 The relationship between Average Revenue and Marginal Revenue

From Figure 4.14, the data in Table 4.5 is plotted to find the characteristics of Average Revenue (AR) and Marginal Revenue (MR), which will look like a line extending from left to right. by average income line and the demand curve will be the same and the final income line has a slope of half the average income.

summarize

Efficient production will carry out production. It uses a mixture of production factors that make the cost of the producer the lowest. most productive. There are 2 types of factors of production in economics: (1) Fixed factors mean factors of production that cannot change according to the amount of output, whether the output is produced or not. and (2) variable factors referring to factors that producers can change according to the amount of output.

production period In economics, the production period is divided into 2 types: (1) short-term production It is a time when the production unit cannot change the level of utilization of certain factors of production. Therefore, short-term production has fixed and variable factors, and (2) long-term production is the period of production in which the producer can change all factors of production according to his needs. but only variable factors

Production revenue: It is income received from production. And sell goods and services by revenue from production classified into total revenue, average revenue and final unit revenue.

Questions at the end of chapter 4

Answer the following questions.

1. Answer the questions from the following table.

Labor	1	2	3	4	5	6
Total Revenue	17	26	34	40	40	38

1.1 MP: In increasing the workforce from 3 to 4 people

1.2 AP from hiring 2 workers

1.3 MP is equal to zero (0) from how many workers are employed

2. Why is there only one variable in long-term production?

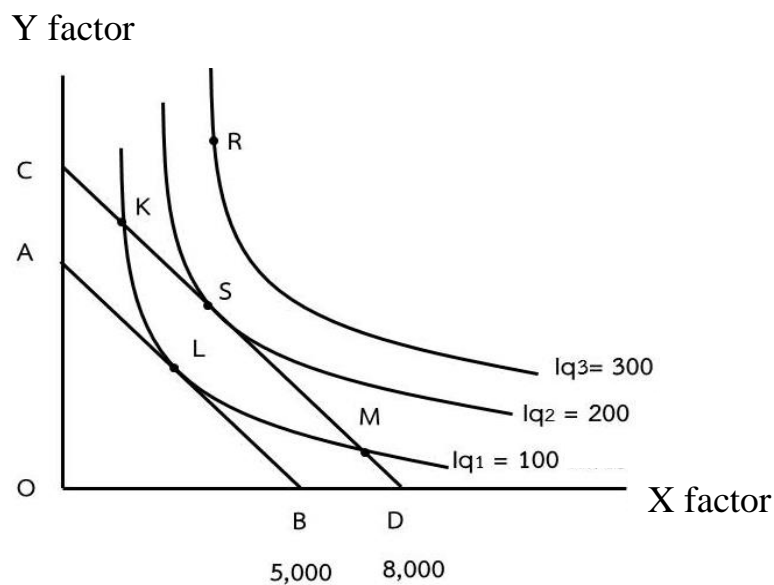
3. What is the main consideration of production time in economics?

4. In short-run production, at what stage is the optimal production?

5. In long-term production Where is the optimum production?

6. Explain the differences in economic costs. accounting costs

7. Answer questions from pictures



- 7.1 Cost per unit of production at point L
 - 7.2 Cost per unit of production at point K
 - 7.3 Which points use the same amount of investment?
 - 7.4 Which points have the same productivity?
 - 7.5 At what point is it impossible to produce?
8. What does the Expansion Path mean?
9. Choosing a production method Minimize Cost of Production and Maximize Output of Production is beneficial to manufacturers. Let students express their opinions. and give reasons
10. If revenue equation $TR = 2Q + Q^2$ if the quantity offered is 100 units
- 10.1 What is Marginal revenue (MR)?
 - 10.2 What is the averageRevenue (AR)?

Reference

- Wananee Chicharoen and Buntham Ratcharak. (2016).
Microeconomics. Bangkok : Ramkhamhaeng
University Press.
- Suchinda Chiamsriphong (2015). Business Economics.
Phitsanulok : Naresuan University Press.
- Suphat Ouipaiboonsawat (2012). Microeconomics.
Bangkok: Ramkhamhaeng University.

5 Cost and Profit analysis and Break-even point

Cost is very important to business. Because the goal of production is the pursuit of maximum profit. Therefore, businesses must try to minimize costs. by studying the costs used in production and produce as many products as possible In addition, the sales volume must be studied to break even. or a break-even selling price in order to know how much suitable production must be and what should be the appropriate selling price? and the business must Analyze the desired profit in order to produce the appropriate profit as needed.

Definition of cost of production

Cost of production refers to the cost paid by the manufacturer to obtain the required quantity of goods or services. Or the cost that increases the value of the product or service. Generally, the cost paid by the producer tends to focus on monetary costs such as labor wages. Expenses for procurement of raw materials, rent, interest, taxes, etc.

Type of cost

Types of costs can be classified as follows.

1. Costs divided according to the nature of payment can be divided. 2 types are

1.1 Actual cost means actual expenses that can be recorded in the account, such as labor cost, material cost, advertising cost, etc.

1.2 Non-actual cost refers to the cost that is not paid out in real money but is an opportunity cost that occurs when using available resources. The cost of using one of the available options and losing the opportunity to exploit other alternatives is known as the “opportunity cost” such as self-wage. or the rent of their own buildings These are considered costs of production because the owner of the factors of production loses the opportunity to receive returns (Pich Jongwatanakul, 2015 , page 3-30).

2. Accounting costs and economic costs

2.1 Accounting costs (accounting cost) means various expenses. which the business has paid out and recorded in the account of the business which is the same thing as the actual cost

2.2 Economics cost means all kinds of expenses necessary for production. whether or not the payout has been made Economic costs include actual and non-actual costs. Therefore, economic costs are higher than accounting costs.

3. Final unit cost and sunk cost

3.1 The final unit cost (marginal cost) means the cost that changes after the manufacturer decides to change production, such as changing the number of labor.

3.2 Sunk cost means costs that have already been decided. already spent Even if manufacturers change production methods or change new management But this expense cannot be changed. For example, the factory rent with the lease period. (Phut Suthichaimethee, 2012 , page. 62)

4. Private costs and social costs

4.1 Private cost (private cost) refers to the cost that a business unit spends on production. Also known as internal cost .

4.2 Social cost (social cost) refers to the cost that business units try to reduce internal production costs. such as releasing waste water into rivers and canals causing negative effects on society as a whole Also known as external cost .

5. Fixed Cost and Variable Cost

5.1 Fixed costs (fixed cost) means fixed costs are expenses or expenditures that do not depend on the quantity of output, that is, whether the production is large, small, or not produced at all. It will cost a certain amount. For example, in a restaurant business in a shopping center, the space of the shopping center must be rented, so the fixed cost is space rental.

5.2 Variable cost means cost that is an expense or expense that depends on The quantity of output, that is, if it is produced in large quantities, it will cost a lot. If it is produced in small quantities, it will cost less and will not pay at all if there is no production. Examples of variable costs include costs that are labor, materials, transportation, water, electricity, etc.

6. Cost divided by period

6.1 Short -run costs are production in the period that consists of fixed factors and variable factors . Short-run costs therefore consist of fixed costs and variable costs. The fixed cost does not change with the amount of output. As for variable costs, they change according to the amount of production.

6.2 Long-term costs (long-run cost) is the cost that manufacturers can change all kinds of factors of production as needed, so in the long run, all factors of production will be variable factors. Long-term production costs consist solely of variable costs.

Economic analysis of Cost production

Production cost analysis is an important factor in making investment decisions. In order to study whether it is worth the investment or not, the business unit should invest or not, which can be classified into 2 types:

1. Short-run cost analysis (the short – run cost analysis)

Short-term production costs use 2 types of factors of production, which are fixed factors and variable factors , so there are 2 types of short-term production costs: fixed costs (fixed cost) and variable costs (variable cost). can be as follows

1.1 Total fixed cost (total fixed cost: TFC) This type of cost will always be fixed regardless of whether the amount of production is more or less. Even if there is no production at all, there will be fixed costs. This type of cost, such as rent, etc.

1.2 Total variable cost (total variable cost: TVC) This cost will change according to the number of products produced. If produced a lot, it will cost a lot of this kind. And if it's not produced, it's not wasted. This type of cost, such as labor wages, etc.

1.3 Total cost (total cost: TC) is the total cost incurred from the use of various types of production factors. in the production of a certain amount of goods and services The total cost can be represented as follows.

$$\text{Total Cost} = \text{Fixed Cost} + \text{Variable Cost}$$

$$\text{or } TC = TFC + TVC$$

1.4 Average fixed cost (average fixed cost: AFC) means all average fixed costs per 1 unit of output.

$$\text{Average Fixed Cost} = \frac{\text{Total Fixed Cost}}{\text{Quantity}}$$

$$\text{or AFC} = \frac{\text{TFC}}{Q}$$

1.5 Average variable cost (average variable cost: AVC) means all average variable costs per unit of production .

$$\text{Average Variable Cost} = \frac{\text{Total variable cost}}{\text{Quantity}}$$

$$\text{or AVC} = \frac{\text{TVC}}{Q}$$

1.6 Average total cost (average total cost : ATC) Means average total cost per production quantity 1 unit

$$\text{Average Total Cost} = \frac{\text{Total cost}}{\text{Quantity}}$$

$$\text{or AC} = \frac{\text{TC}}{Q}$$

$$\text{or AC} = \text{AFC} + \text{AVC}$$

1.7 The final unit cost (marginal cost: MC) is the change in total cost when the amount of output changes 1 unit.

$$\text{Final unit cost} = \frac{\text{change in total cost}}{\text{change in output quantity}}$$

$$\text{or MC} = \frac{\Delta \text{TC}}{\Delta Q}$$

$$\text{or MC} = \frac{d\text{TC}}{dQ}$$

Table 5.1 production costs in the short run

total output	fixed cost	variable cost	total cost	average fixed cost	average variable cost	average total cost	incremental cost
0	100	0	100	-	-	-	-
1	100	100	200	100	100	200	100
2	100	180	280	50	90	140	80
3	100	260	360	33.33	86.67	120	80
4	100	300	400	25	75	100	40
5	100	350	450	20	70	90	50
6	100	500	600	16.67	83.33	100	100
7	100	650	750	14.29	92.86	107.14	150
8	100	820	920	12.5	102.5	115	170

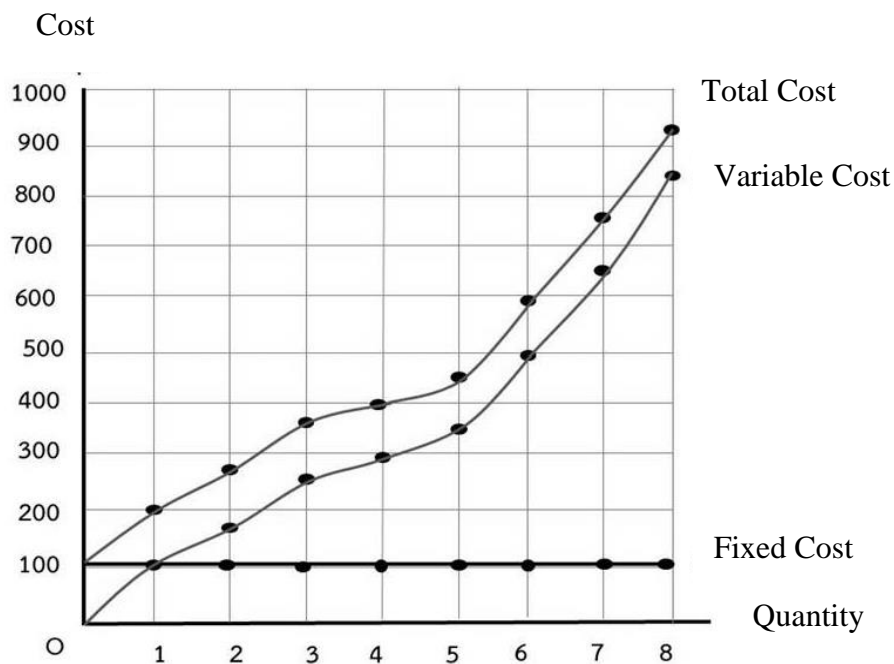


Figure 5.1 The relationship between fixed costs, variable costs and total costs.

From Table 5.1, it can be used to create a graph to show the relationship of fixed costs, average costs and total costs as shown in Figure 5.1 . The fixed cost line is a straight line parallel to the horizontal

axis. Because the production will be more or less, will lose the same fixed cost. such as factory rent, etc. The variable cost curve will be a line leading up from left to right and must always start at the origin Because if there is no production Variable costs are never wasted. and the total cost curve It will be a line leading up from left to right. like a variable cost curve But the total cost curve must start at the same point as the fixed cost curve begins. This is because if a business unit does not produce any production, it still has some fixed costs.

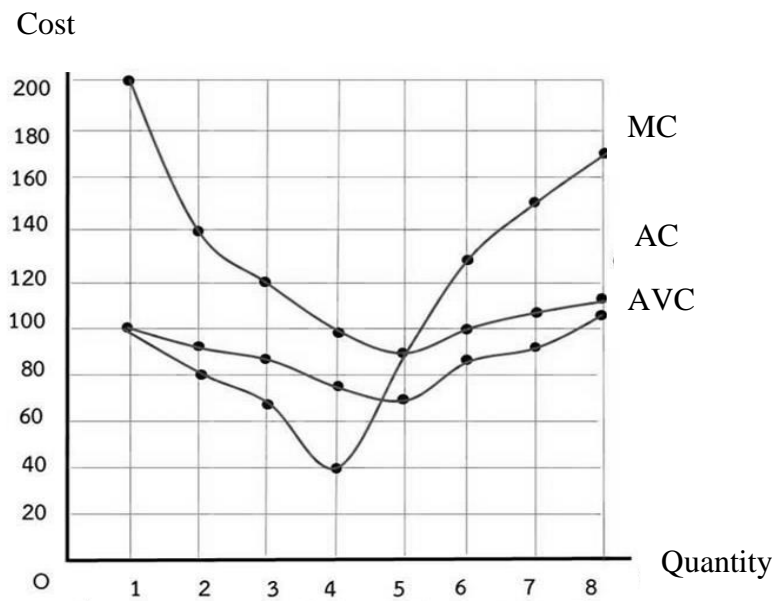


Figure 5.2 The relationship between average variable costs average total cost and final unit cost

from table 5.4 Can be used to create a graph to show the relationship between the average total cost. average variable cost and additional costs This is an important factor that helps in decision making for production as shown in Figure 5.2. In summary, the relationship between average variable costs (AVC) and incremental costs (MC) is as follows:

1. As long as MC is less than AVC , AVC will decrease as manufacturers expand production.
2. As long as MC is greater than AVC , AVC will increase as manufacturers expand production.

3. MC is equal to AVC at the point where AVC is lowest.

2 . Long-run cost analysis (the long – run cost analysis)

long term production Refers to production at the manufacturer. Or a business unit can change every factor of production to have the desired amount. Business units face higher costs. such as the cost of improvements When a business unit wants to increase output long term production There is one important concept. “Law of Return to Scale” which can be divided into 3 phases (Wanrak Mingmaneeakin. 2010 .page 69) is

1. Production period that yields constant returns (constant returns to scale) means that the unit of production receives an increase in output in the same proportion as Increasing the amount of production factors The production during this period will have a fixed average unit cost.

2 . The production period with increasing returns (increasing returns to scale) means that the production unit receives more output than an increase in the amount of production inputs The production during this period will have a lower average cost per unit. Also known as economies of scale.

3 . The production period with reduced returns (decreasing returns scale) means that the production unit receives an increase in output. in the proportion that is lower than the increase in the amount of production inputs The production during this period will increase the average cost per unit, known as the diseconomies of scale .

As you know, short-term production Or long term in economics does not mainly consider time, but adheres to the conditions of the factors of production. The short term production consists of fixed factors only. Therefore, in the short term, the problem is the problem caused by the diminishing productivity. But in the long run, manufacturers should consider expanding the scale of production that causes savings.

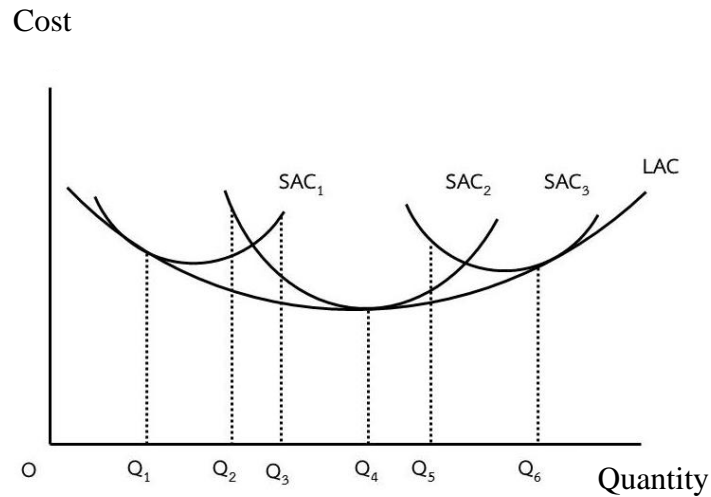


Figure 5.3 The short-term average cost curve and the long-term average cost curve.

Figure 5.3 shows the relationship of the average total cost curve in the long run, which decreases initially and increases later. It is similar to U-shaped (U-shaped). It is caused by the production unit receiving the yield according to the yield per size characteristics in various ways, i.e. during LAC decreases: yield per size increases. from internal savings such as skilled labor Tasks are divided, periods where LAC is lowest and may remain constant: effect-to-size remains constant, and periods where LAC increases: effect-to-size decreases. from internal negligence, such as inadequate management Personnel wages increase due to too much division of labor, etc.

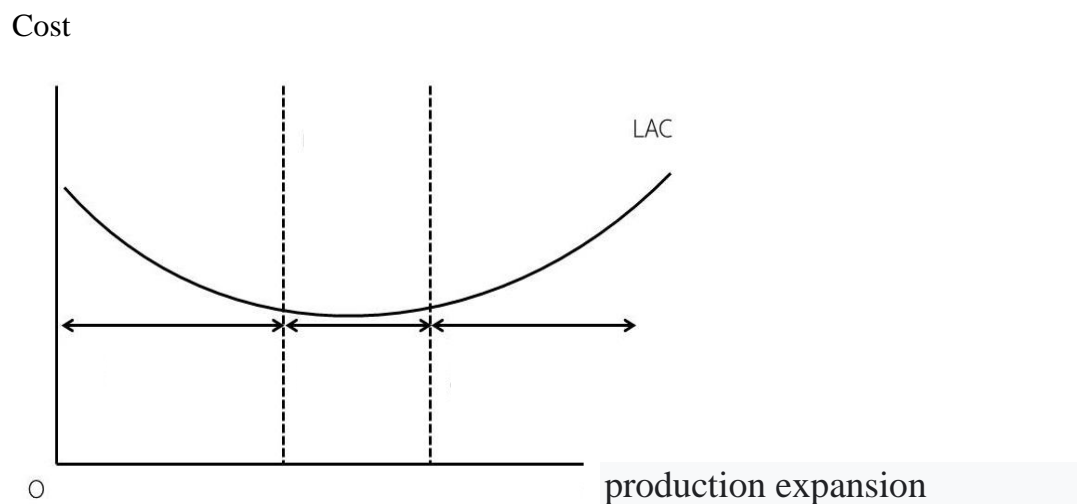


Figure 5.4 The relationship between long-term average cost and effect on size

Figure 5.4 shows the economies of scale. When manufacturers expand production in business units As a result of Figure 5.3 , the reduction in unit cost of production has increased in the first phase of the production increase, which is the first phase when the production is increased later, resulting in stable output. that and when the production is increased further, it will cause the output to decrease and the production unit will have to incur additional costs. The long-term average unit cost curve is reduced due to economies of scale.

economical and non-economical on production scale

(economies of scale and diseconomies of scale)

1. Economies of scale mean cost per unit. (Average cost) decreased from the business expansion of production scale. That is, when the business expands production, the cost per unit decreases. In such case, it is good for the business. which consists of

1.1 Labor savings There was a division of labor. have a specific skill make production efficiency higher

1.2 Technical savings occur when the business unit is large. and has the ability to bring high-performance machines to use

1.3 Management savings It results from the distribution of fixed costs, such as manager salaries. Venue rental Insurance premiums, etc. If the business unit can expand production more Fixed cost per unit will be reduced.

1.4 Marketing savings

Purchase of raw materials: buying in bulk will receive a discount reduce costs

Sale of products: Reduced transportation costs, decreased advertising costs, is a large business unit. despite the high cost of selling But it will be able to make more sales. The average cost will be reduced.

1.5 Financial savings due to large business to be trusted in the business circle Earn credit for purchases and able to borrow money easily low interest rate

2. Diseconomies of scale means cost per unit (Average cost) increased from the business expansion of production scale. That is, when the business expands production, the cost per unit increases. In such cases, it is a detrimental effect on the entity. which consists of

2.1 Difficulty in administration problems of inadequate care coordination problems labor management problems

2.2 Lack of production factors

economic profit

Economic profit is the difference between revenue and total cost calculated in economics, which can be classified into 3 types (Wanrak Mingmaneenakin, 2010 , pages 73-74) , namely

1. Economic profit is equal to zero, indicating that the production is only normal profit (normal profit) is a compensation that the operator receives equal to the cost. This normal profit will occur. Not attracting new entrepreneurs to come in

2. Economic profit is greater than zero. Indicates that there is an abnormal profit (abnormal profit, excess profit). This profit is considered economic profit . This will attract new manufacturers to join in production.

3. Economic profits are negative. indicates that the production unit is at a loss But the loss may continue if the product can still be sold at a higher price. Variable cost per unit

Determining maximum profit (maximize profit)

Maximum profit is defined as the difference between total revenue (TR). with total cost (TC) where the maximum profit is at the point

where the total revenue with the total cost farthest apart or the slope value of total revenue equal to the total cost slope value or in other words, the point Incremental Income (MR) Equal to marginal cost (MC) as shown in Table 5.2

Table 5.2 maximum profit conditions

Q	P	TR	TC	MR	MC	profit
1	95	95	75	95	75	20
2	90	180	80	85	5	100
3	85	255	90	75	10	165
4	80	320	107	65	17	213
5	75	375	127	55	20	248
6	70	420	152	45	25	268
7	65	455	187	35	35	268
8	60	480	225	25	38	255
9	55	495	277	15	48	218
10	50	500	350	5	73	150

From Table 5.2, total revenue is derived from the price of goods multiplied by the quantity of goods sold. and when deducted from the total cost will be profitable From the table, the highest profit is 268 baht from the offering price of 70 baht, selling for 6 total revenue 420 baht and offered for sale at a price of 65 baht, sold for 7 units, total revenue of 455 baht. In considering the case where the highest profit is the same, which price level to choose to sell must be considered at the total revenue. Therefore, the total income of 455 baht is better than the total income of 420 baht and at such condition level, the value of MR is equal

to the value of MC So it can be concluded that To produce the highest profit is to produce at the point where $MR = MC$.

Break-even analysis (break – even analysis)

The break-even point means The point or level of income from the sale of goods or services. That is equal to the cost that the business has paid out. or the point or level of income at which the business “ breaks ” , with the portion beyond that point or level of income being the profit that the business will make.

Manufacturers should have knowledge of the break-even point in business operations because it will help in making decisions for business operations, such as deciding to produce products. Decisions in management, etc. However, in considering the business operation, not just looking at the break-even point alone. In economics, producers have to consider the opportunity cost. Depreciation of assets as well as the macroeconomic environment for decision-making

In summary, the break-even point is an evaluation of the relationship between costs and selling prices to assess whether What should be the minimum sales value for the company to cover all costs and after this point the company will start making a profit?

Break-even analysis can be done in 2 ways:

1 . Break-even point analysis with graphs

Break-even point analysis by graph is the point where total revenue (TR) equals total cost (TC).

Example 1 : Meechok Co., Ltd. produces and sells products. The information about costs and sales is as follows: Selling price 20 baht per unit, variable cost 15 baht per unit. with the results according to the table

Table 5.3 Revenue, cost and profit from sales

sales volume	revenue	cost vary	fixed cost	total cost	net profit
100	2 000	1,500	1,500	3 000	- 1 000
200	4,000	3,000	1,500	4,500	- 500
300	6,000	4,500	1,500	6,000	0
400	8,000	6,000	1,500	7,500	500
500	10,000	7,500	1,500	9,000	1,000
600	12,000	9,000	1,500	10,500	1,500

from table 5. 3 It can be seen that the break-even sales volume is the sales volume of 300 units . With revenue of 6,000 baht and total cost of 6,000 baht, that is , if the business sells less than 300 units , the business will suffer a loss . But if selling more than 300 units, the business will be profitable. And if the above information is graphed as shown in Figure 5.5 , it can be seen that the break-even point is point A , which is the point where the total revenue line intersects the total cost line. If the business sells less than point A , the business will face a loss. But if selling more than point A , the business is profitable.

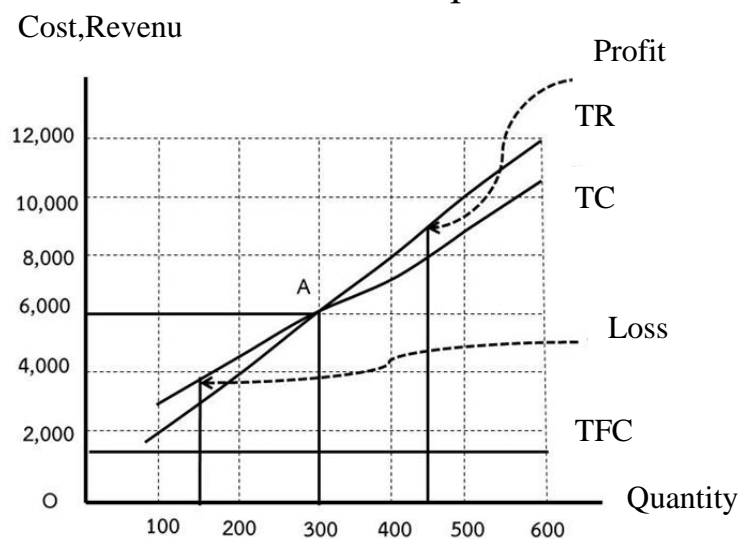


Figure 5.5 Analysis of the break-even point with graphs

2 . Analysis of the break-even point by calculation There are two types of answers that can be found:

2.1 How much must be sold to break even?

2.2 How much do you need to set the selling price to break even?

Using equations (The equation approach) is the application of the basic equations of cost calculation, that is,

$$\text{Sales} = \text{Total Variable Costs} + \text{Fixed Costs} + \text{Net Profit}$$

or $\text{TR} (P \times Q) = \text{TVC} + \text{FC} + \text{NI}$

Therefore, the break-even point is $PQ = \text{TVC} + \text{TFC} + 0.$

$$PQ = (V*Q) + \text{TFC}$$

$$PQ - VQ = \text{TFC}$$

$$Q(PV) = \text{TFC}$$

$$Q = \frac{\text{TFC}}{P-V}$$

Summary of break-even sales volume $= \frac{\text{TFC}}{P-AVC}$

Example 2 : A product selling price per unit (P) = 15 baht, variable cost per unit (VC) 10 baht, and fixed cost (FC). 10 , 000 baht, find the break-even sales volume

method

The break-even sales volume formula $= \frac{\text{TFC}}{P-AVC}$

$$\text{Break-even sales volume} = \frac{10,000}{15-10}$$

$$= 2\,000 \text{ units}$$

Example 3 A manufacturing plant Produces 2 , 000 pieces per lot and wants to sell them all. What sales price must be set to break even? if fixed cost 25 , 000 baht and variable cost per unit 50 baht

How to do it from the recipe

$$\begin{aligned}
 Q &= \frac{TFC}{P-V} \\
 Q &= 2,000 \quad \text{pieces} \\
 FC &= 25,000 \quad \text{baht} \\
 V &= 50 \quad \text{baht} \\
 2,000 &= \frac{25,000}{P-50} \\
 2,000 P - 100,000 &= 25,000 \\
 2,000 P &= 125,000 \\
 P &= \frac{125,000}{2,000} \\
 &= 62.50 \quad \text{baht}
 \end{aligned}$$

Therefore, the break-even selling price is 62.50 baht, and if selling more than the price of 62.50 baht, the business will have a profit.

Reducing the level of production to break even

Analysis of past break-even points It represents the amount of production that generates total revenue equal to total costs. if beyond this point business will be profitable Therefore, if the business wants to have more profit, the business must reduce costs. or increase revenue which are as follows:

1. Reducing fixed costs Sometimes the amount of output produced is too high. may cause the product to be left Therefore, manufacturers may reduce their production. by reducing the constant

Example 4 From example 3 , production volume 2 000 pieces _ fixed cost 25 , 000 baht, variable cost per unit 50 baht, and selling price 62.50 baht. If the business reduces the production to only 1 , 500 pieces, how much should the fixed cost be?

How to do it from the formula

$$Q = \frac{TFC}{P-V}$$

Therefore TFC = Q(PV)

$$= 1,500 (62.50 - 50)$$

$$= 93,750 - 75,000$$

$$= 18,750$$

That is to reduce the cost by 6 , 250 baht or reduce the cost. 25% , *which* in practice is quite difficult to do in the short term This option is therefore not suitable.

2. variable cost reduction It is another option that the manufacturer reduces the amount of production. It tries to keep the average cost per unit as low as possible.

Example 5 From Example 4 , the quantity of production 2 000 pieces _ fixed cost 25 , 000 baht, variable cost per unit 50 baht, and selling price 62.50 baht. If the business reduces the production to only 1 , 500 pieces, how much variable cost should there be?

How to do it from the formula

$$Q = \frac{TFC}{P-V}$$

So $Q(PV) = TFC$

$$P.V. = \frac{TFC}{Q}$$

$$V = P - \frac{TFC}{Q}$$

$$\begin{aligned}
 V &= 62.50 - \frac{25,000}{1,500} \\
 V &= 62.50 - 16.67 \\
 &= 45.83
 \end{aligned}$$

That is, the company had to reduce the variable cost from 50 baht per unit to 45.83 per unit. baht

3. Increasing the selling price to increase profits by reducing production and increase the selling price

Example 6 From Example 4 , the quantity of production 2 000 pieces _ fixed cost 25 , 000 baht, variable cost per unit 50 baht, and selling price 62.50 baht. If the business reduces the production to only 1 , 500 pieces, how much should the selling price be set?

How to do it from the formula

$$\begin{aligned}
 Q &= \frac{TFC}{P-V} \\
 \text{So } Q(PV) &= FC \\
 P.V. &= \frac{TFC}{Q} \\
 P &= \frac{TFC}{Q} + V \\
 P &= \frac{25,000}{1,500} + 50 \\
 &= 16.67 + 50 \\
 &= 66.67 \text{ baht}
 \end{aligned}$$

That is, the company must increase the selling price from 62.50. baht is 66.67 baht or increase the selling price by 4.17 baht or increase the selling price 6.67 %

Profit planning from break-even analysis

Profit planning is the planning of a certain amount of production that allows the business to obtain the desired profit. That is, the business has breakeven sales volume. Or a break-even selling price and still have a profit, which can be divided into 2 types:

1. Ignore tax implications (Profit before tax, EBT = Earning Before Tax) where the executives have to plan the desired profit. regardless of the tax implications.

$$\begin{aligned}
 \text{Sales (TR)} &= \text{Variable Costs} + \text{Fixed Costs} + \text{Profit} \\
 \text{Before Tax} & \\
 PQ &= VC + TFC + NI \\
 PQ &= VQ + TFC + EBT \\
 PQ - VQ &= TFC + EBT \\
 Q(PV) &= TFC + EBT \\
 Q &= \frac{TFC + EBT}{P - V}
 \end{aligned}$$

Example 7 Selling goods at a price of 250 baht per unit, variable costs of 150 baht, fixed costs of 100,000 baht, if a profit before tax of 20,000 baht is required, how much must be sold?

$$\begin{aligned}
 \text{method } Q &= \frac{TFC + EBT}{P - V} \\
 Q &= \frac{100,000 + 20,000}{250 - 150} \\
 &= \frac{120,000}{100} \\
 &= 1,200 \text{ units}
 \end{aligned}$$

2. Take into account the tax effects (profit after tax EFT= Earning After Tax) where the management has planned the desired profit. after tax finished

$$\text{Sales} = \text{Variable Costs} + \text{Fixed Costs} + \text{Net Profit After Taxes}$$

$$PQ = VC + TFC + \frac{NI}{1-T}$$

$$PQ = VQ + TFC + \frac{NI}{1-T}$$

$$PQ - VQ = TFC + \frac{NI}{1-T}$$

$$Q = \frac{TFC + \frac{NI}{1-T}}{P - V}$$

Example 8 Selling goods at a price of 250 baht per unit, variable costs of 150 baht per unit, fixed costs of 100,000 baht, the business requires a profit after tax of 20,000 baht. If the income tax rate is 20%, how many products must be sold?

method From the formula $Q = \frac{TFC + \frac{NI}{1-T}}{P - V}$

$$Q = \frac{100,000 + \frac{20,000}{1-0.20}}{250 - 150}$$

$$Q = \frac{100,000 + 25,000}{100}$$

$$= 1,250 \quad \text{units}$$

Margin of safety

excess for safety Refers to the difference between estimated sales and sales at the break-even point. which helps the management in analyzing revenue projections that are higher than the break-even point that if the income received is reduced due to any event, if the business has a surplus for high safety The risk of loss is reduced. The formula for calculating the margin of safety is: (Wannee Techoyothin , Somchai Supattarakul , Monwipha Phadungsit , 2015 , page 61)

$$\text{Safety Surplus (MS)} = \text{Estimated Revenue} - \text{Break-Even Revenue}$$

$$\begin{aligned}
 &= P \cdot Q_s - P \cdot Q_b \\
 &= P(Q_s - Q_b) \\
 \text{by } P &= \text{selling price} \\
 Q_s &= \text{Estimated sales volume} \\
 Q_b &= \text{breakeven sales volume}
 \end{aligned}$$

$$\text{Safety Surplus Ratio} = \frac{\text{excess for safety}}{\text{income estimates}}$$

Example 9 From Example 4 Fixed Costs 25,000 baht, variable cost per unit 50 baht, selling price 62.50 baht, and the break-even sales volume is 2,000 pieces. If from the management's forecast, there will be sales of 2,500 pieces. Find the profit margin for safety.

How to do it from the formula

$$\begin{aligned}
 MS &= P(Q_s - Q_b) \\
 P &= 62.50 \\
 Q_s &= 2500 \\
 Q_b &= 2000 \\
 MS &= 62.50(2500 - 2000) \\
 &= 62.50 \times 500
 \end{aligned}$$

Therefore, safety surplus = 31,250 baht

$$\begin{aligned}
 \text{Safety Surplus Ratio} &= \frac{\text{excess for safety}}{\text{Income estimates}} \\
 &= \frac{31,250}{156,250} \\
 &= 0.2 \\
 \text{or safety surplus rate} &= 20\%
 \end{aligned}$$

summarize

cost of production It is the cost paid by the manufacturer to obtain the required quantity of goods or services. Production costs can be classified as follows.

- (1) Cost divided by nature of payment
- (2) Accounting costs and economic costs
- (3) Ultimate unit cost and sunk cost
 - (4) private costs and social costs
- (5) Fixed costs and variable costs.
- (6) cost divided by time

In addition to studying the cost, the entrepreneur must also study the break-even point. which entrepreneurs have to analyze both the selling price that breaks and breakeven sales volume Because if after the break-even point, the entrepreneur will have a profit, there are 3 types of economic profits (profit):

- (1) Profit equal to zero or normal profit
- (2) profit greater than zero or extra profit
- (3) Negative profit or loss

For profits, profit planning can be based on break-even analysis. By dividing the desired profit before tax and after tax. In addition, entrepreneurs must analyze the safety surplus. Because in business operations, there may be problems or unexpected events that will reduce the profit of the operator. Therefore, the excess for safety is very valuable, it means the chance of loss is reduced.

Questions at the end of chapter 5

1. Accounting costs and economic costs How are they the same or different?
2. What is the opportunity cost? And in running a business, should the opportunity cost be taken into account or not? Why? Explain.
3. In the production of chilli paste in a household industry The fixed cost per year is 200 , 000 baht and the average variable cost per unit is as follows: $AVC = 3 + 0.002 Q$ if the business produces chili paste 40 , 000 bottles

Find 3.1 Average variable cost per unit

3.2 Average total cost per unit

4 . Ekachai Tourism Company The cost equation is as follows: $TC = (300 + 5 Q) + (500 + 3Q^2)$

Find 4.1 Fixed costs of 300 tourists .

4.2 Variable costs of 300 tourists

4.3 What are the incremental costs?

4.4 If there are 1 , 000 tourists , what is the average cost per person?

5 . Set the total cost equation $TC = 150 , 000 + 2Q$ and the demand equation

$$P = 1\,000 - Q$$

5.1 Average cost per unit (AC)

5.2 If $Q = 200$, what is the manufacturer's profit?

5.3 If the business wants maximum profit, how much must be produced?

6. Set $Q = 100 - P$ total cost $TC = 1 , 000 + 2Q$

6.1 If $P = 20$, find the purchase quantity

6.2 If $Q = 20$, how much profit does the producer get?

6.3 What are the fixed costs?

6.4 If the business wants maximum profit, how much must be produced?

7. Excellent company produces Grade A leather bags with fixed operating costs 225,000 baht and has a variable cost of production per unit of 2,600 baht if the company sets the selling price of bags at 4,950 baht per bag.

7.1 How many bags will this company break even when it sells?

7.2 If the business wants a profit before tax of 20,000 baht, how many bags does the company have to sell?

8. A factory producing shoes exported abroad has a fixed cost of 300,000 baht and a variable cost per unit of 130 baht. If a business wants to sell shoes at a price of 650 baht per pair, find

8.1 Break-Even Sales Volume

8.2 If the business wants a profit after tax of 50,000 baht, how much does the business have to set the selling price? Set a tax rate of 20 percent.

9. From item 8, if the business has new technology coming in Can reduce the variable cost to only 100 baht. Find the break-even sales volume.

10. What does safety surplus mean? and how it is important in doing business

Reference

- Pitch Chongwatanakul .(2015). Business Economics and Business Finance . Nonthaburi : Sukhothai Thammathirat University Press.
- Prut Suthichaimethee (2012). Management Economics and Business Strategy . Bangkok : SE-ed Book Publishing Co., Ltd.
- Wanee Techoyothin and others. (2015). Cost management . Bangkok : Physics Center Publishing.
- Day Rak Mingmanee Nakin (2010). General Economics . Bangkok : Thammasat University Press.

6 Market structure- Pricing in practice and Price Discrimination

The market in an economy is very important. Because the market acts as a link between producers and consumers. This will help make the product from the source to the consumer. It also helps consumers to have goods and services to treat their needs thoroughly. In this chapter, we will study and understand the market in economics. The market in economics can be classified into 2 types which are perfectly competitive markets. and an imperfectly competitive market Each market has different goals. In addition, the practical pricing of the same product. But the pricing is different. by extracting consumer surplus as will be studied in detail later

Meaning of market

The market as a general term refers to A place where buyers and sellers meet to exchange and trade products. The market in economics means that buyers and sellers can contact and agree to buy, sell, or exchange goods or services. And the seller will have a chance to meet or not. So economically The market therefore has or may not have a trading place.

Therefore, the market has two meanings: narrow meaning a place where buyers and sellers meet to agree to exchange or buy goods or services between each other and causing a change in ownership rights in that product or service as well broad meaning Groups of people or organizations that have needs and wants (Needs and Wants) in the

product are willing and have the ability to exchange. and has the power to make purchase decisions. in order to obtain their satisfaction

Types of markets in economics

1. Perfect competitive market
2. Imperfect competitive market

Can be divided into 3 types:

- 2.1 A market with a real monopoly (pure monopoly)
- 2.2 Market with few sellers (oligopoly)
- 2.3 Semi-monopolistic competition

1 . Perfect competitive market

A market for one type of goods or services with the following characteristics (Narathip Chutiwong. 2005. Page 265)

1. There are many buyers and production units, so the purchase and sale of each Individuals will be just a subset of the market. Compared to total exchange turnover increasing or decreasing the level of productivity of each entrepreneur will not affect the market price of the product to change and the increase or decrease in the demand for each consumer's products There will be no influence on the price of products with production units or small sellers. So many that none of them can influence the market volume and price. Each seller therefore receives the price. (price taker) That is, the product must be sold at the specified market price only.

2. Each manufacturer's goods or services are exactly the same. (homogeneous product) can therefore be completely substituted, that is, each seller will not have an advantage over other sellers. Therefore, if any seller sells a product at a price higher than the market price Consumers will never buy from that seller. And individual sellers don't have to lower prices to entice consumers to buy their products. Because

the price set by the market is the price that all consumers recognize and accept.

3. Free entry and exit of each manufacturer's market. (freedom of entry or exit) without obstacles or hindrances

4. moving inputs be free When the owner of the factor of production sees where the return is higher to migrate factors of production quickly and easily with relatively low cost. The price of goods in each locality tends to be the same.

5. Buyers and sellers have complete knowledge of information (perfect knowledge) in terms of price, quantity, quality, trading source, etc.

in the real world No product or service of any kind has a market structure that meets all five of these qualities . The market is as close to a perfectly competitive market as possible.

Table 6 . 1 Relationship between D. MR , AR ,TR in perfectly competitive market

Quantity (Q)	Price (P)	TR	AR	MR
1	10	10	10	10
2	10	20	10	10
3	10	30	10	10
4	10	40	10	10
5	10	50	10	10
6	10	60	10	10

From Table 6 . 1 it can be seen that the demand curve average income line and the last line of income will be the same line and a straight line parallel to the horizontal axis as shown in Figure 5.1 .

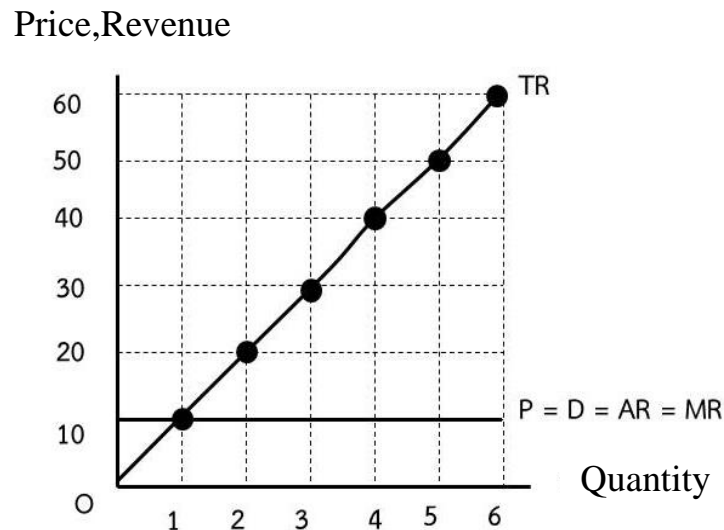


Figure 6.1 Demand curve, average revenue and terminal revenue in a perfectly competitive market.

Determining prices and production volumes of business units in perfectly competitive markets

The price of a product in a perfectly competitive market will always be the same price at The price is set by the market. If any seller sets the price of the product more than the specified price, the product cannot be sold. Because buyers will turn to buy from other sellers (Jarin Thetwanich. 2007 , page 323) . to market this type of product as A one-price market , where the price is generated by a large number of buyers and sellers. so Both buyers and sellers are the parties to accept the price (price taker). For example, if supply and demand in the market set the price at 5 baht. Each entity in a perfectly competitive market must sell at the same \$ 5 price. Because no seller can influence the price setting. The market demand curve is a line that runs down from left to right. The same applies to the general demand curve. But the demand curve of each

seller is parallel to the horizontal axis. on The price is set by the market as shown in Figure 6.2.

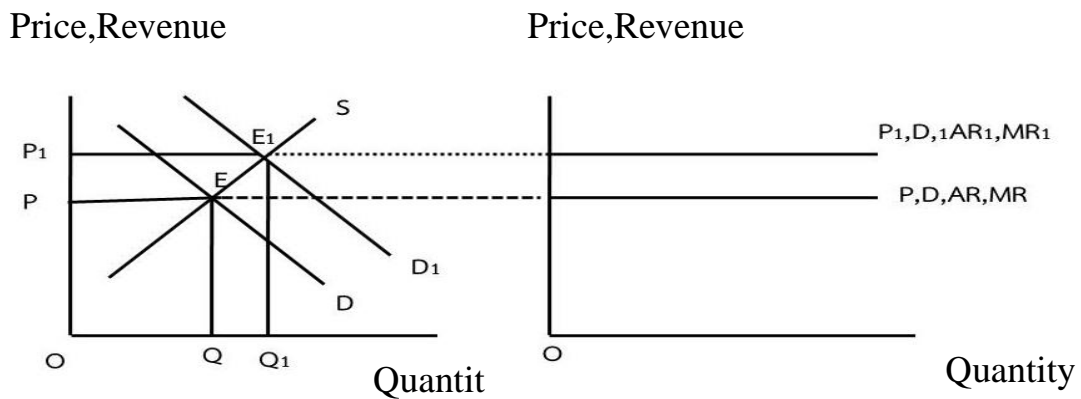


Figure 6.2 Market demand and business unit demand

From Figure 6. 2 , the price set by the market is the price of P baht, which is caused by the demand and supply of the market , thus making the price level of the business unit in the market completely competitive, must be set at P baht as well. The demand of each seller is the line. D is a line parallel to the horizontal axis. And if the market demand changes, the price level will change to P₁ baht and the demand curve of the business unit will shift to D₁

perfect competitive market equilibrium

Producer Equilibrium mean The condition in which the producer has the highest profit (or the lowest loss) , which is the condition that will keep the producer in equilibrium as previously studied. is Manufacturers have to set prices and production quantities. on Level at Final Revenue (MR) is equal to Final Unit Cost (MC). The analysis of producer equilibrium in a perfectly competitive market is divided into two studies :

1. The case of equilibrium in the short term
2. The case for long-term equilibrium

1 . The case of equilibrium in the short term It is an equilibrium that only occurs in a short period of time. Because in this market there will be many sellers. Therefore, when producers earn profits beyond normal causing other manufacturers to join in production

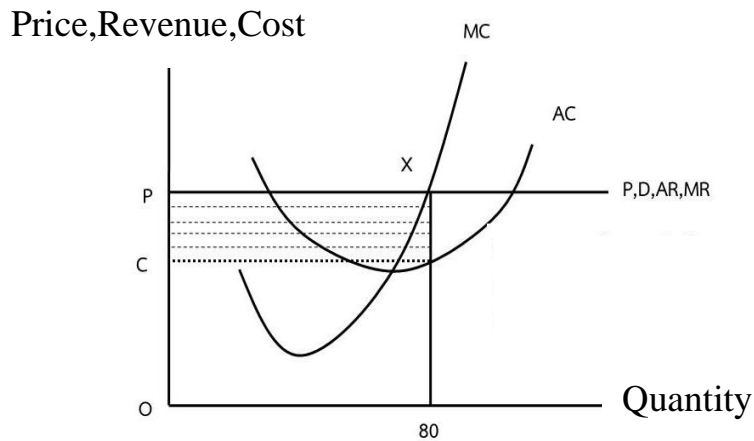


Figure 6.3 The short-term equilibrium of a perfectly competitive market

From Figure 6 . 3 , the optimum point of production is the point X , which is the point where $MR = MC$, at which point the unit produces the highest profit. The production quantity is Q units, the selling price is P baht, and the production quantity Q units will intersect with the average cost curve (AC) , resulting in the unit cost of C baht.

In short, that's not true equilibrium. The equilibrium in production is $MR=MC$, where $AR>AC$.

2. The long-term equilibrium case In the long run in a perfectly competitive market Each business unit will receive only normal profit _ only always

Price, Revenue, Cost

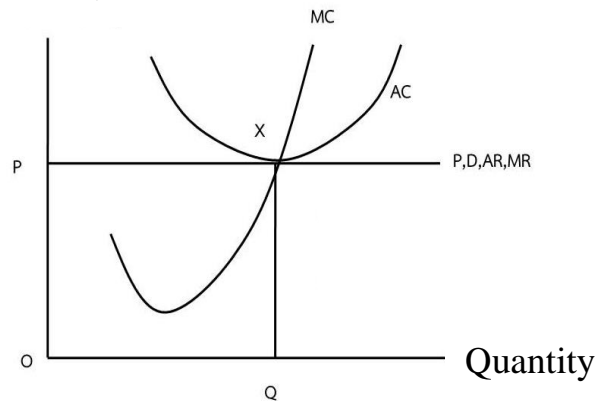


Figure 6.4 Long-term equilibrium in a perfectly competitive market

From Figure 6.4, the perfectly competitive market will not discourage new producers. Therefore, from the fact that in the short term, the producers have profits beyond normal. This is an incentive for other manufacturers to enter the market. As a result, business units have higher average costs. This may be due to research, production model development etc. Therefore, the producers are left with only normal profits. And if average costs exceed average revenues, producers will exit the market due to losses.

In conclusion, the long-term production equilibrium is the real equilibrium. The equilibrium in production is $MR=MC$ where $AR=AC$ and the producer has a normal profit.

Example 1 If sugar is a commodity in perfectly competitive market And the market price of sugar is 50 baht/ kg and the fixed cost of sugar production is 100. Baht The variable cost is equal to the total output (in kilograms) squared. Analyze.

- 1 . Highest Profitable Production Volume
- 2 . What kind of profit does the manufacturer receive?
- 3 . All profits earned by producers

How to do it 1. Find the quantity that this egg producer produces in order to maximize profits.

The total cost is $TC = \text{fixed cost} + \text{variable cost}$.

$$TC = 100 + Q^2$$

$$\begin{aligned} MC &= \frac{dc}{dq} \\ &= 100 + Q^2 \\ &= 2Q \end{aligned}$$

The price of sugar is $P = 50$ baht/ kg.

But in a perfectly competitive market, $P = AR = MR$

From the condition that the producer will get the highest profit,

$$MC = MR$$

$$\text{or } 2Q = 50$$

$$Q = 25$$

Therefore, 25 amounts of sugar must be produced. kilograms, so the producer will get the highest profit.

2. Find out what kind of profit the producer receives.

Determining what kind of profit is average cost (AC) and average revenue (AR).

$$AC = \frac{TC}{Q}$$

$$AC = \frac{725}{25} = 29$$

$$\text{Summary } [AC = 29] < [AR = 50]$$

The producer gets an extra profit of 21 baht per unit when he produces and sells 25 kilograms of sugar .

3. All profits earned by producers

$$\begin{aligned}\text{From the formula} \quad \text{Profit} &= \text{Total Revenue} - \text{Total Cost} \\ &= (P \times Q) - TC \\ &= (50 \times 25) - [100 + (25 \times 25)] \\ &= 1250 - 725 \\ &= 525 \text{ baht}\end{aligned}$$

Example 2 From Example 1, if the price of sugar decreases to 30 baht/kg due to excessive production, by cost of sugar production still the same, find

1. Production for maximum profit How much does the manufacturer have to produce?
2. How much profit or loss will the manufacturer receive?

How to do it **1. Production for maximum profit How much does the manufacturer have to produce?**

If the sugar price drops to 30 baht, then $P = AR = MR = 30$

Total Cost (TC) = Fixed Cost + Variable Cost

$$\begin{aligned}TC &= 100 + Q^2 \\ MC &= \frac{dc}{dq} \\ &= 100 + Q^2 \\ &= 2Q\end{aligned}$$

From the condition that the producer will get the highest profit.

$$\begin{aligned}MC &= MR \\ \text{So} \quad 2Q &= 30 \\ Q &= 15\end{aligned}$$

Summary of production for maximum profit must be produced in the amount of 15 kg

2. How much profit or loss will the manufacturer receive?

Profit will take into consideration average cost (AC) and average revenue (AR).

$$\begin{aligned} \text{from } AC &= \frac{TC}{Q} \\ &= \frac{725}{15} = 48.33 \end{aligned}$$

$$[AC= 48.33] > [AR = 30]$$

In summary, the producer loss was 18.33 baht per unit.

The result of the execution of perfectly competitive markets

From a completely competitive market to one that gives full freedom to the private sector in carrying out economic activities. By allowing the private sector to operate freely in economic activities like this has both advantages. and negative effects on the national economy which can be classified as follows

Benefits of a Perfectly Competitive Market

1. Perfectly Competitive Market It will give full freedom of competition to the private sector. causing efficient resource allocation

2. Competition meets the needs of consumers. And protect the interests of consumers from exploitation of producers.

3. Competition forces industries to constantly improve their productivity.

4. The competition promotes the production of new products, the introduction of new raw materials in production. and the development of new techniques

disadvantages of competition

1. From the competitive advantage that creates new products If new products more than necessary It is another waste of production resources.

2 . As a result of repeated production each other, but different in brand or appearance Some manufacturers may not be interested in increasing sales by improving quality.

3. Some manufacturing competition hinders adoption of the right technology because manufacturers are too small.

4 . Because each manufacturer has to compete with each other on performance and price. If any manufacturer possesses superior production technology than competitors would be a competitive advantage

2. Monopoly market The characteristics of the market are as follows.

1. There is only one manufacturer or seller. There is a single manufacturer and seller business unit. In this market, the government will play a monopoly role in which the state will produce and sell the products themselves. Or, the state may allow one business unit to sell products by preventing other business units from producing and selling competing products.

2. There are no other products that can be substituted nearby. The characteristics of products and services in this market are unique. there will be no competitor

3. The monopolist has the power to set prices and sales volumes. As a business unit produces unique products Therefore, the power to set prices rests with the business unit (price maker).

4. Able to discourage competitors Business units will prevent other manufacturers from entering the market. which may be in the form of granting concessions, etc.

The reason for the monopoly (Waralee Srisombat. 2012 .page 183)
have said that the cause of the monopoly

1. The government issued a law to monopolize the production solely. To benefit the economy and society as a whole, such as electricity and water supply, in order to control the production quantity and price, not to cause damage to the public.

2. Ownership of Factors of Production or solely important raw materials

3. Production requires large production scale and very high investment to be efficient. As a result, in one locality or in one country there can be only one large business of this type. and no small businesses can compete

4. Get a copyright or patent from an invention cannot be copied by others

Table 6 . 2 Relationship between D, MR , AR ,TR in case of monopoly market

Quantity (Q)	Price (P)	TR	AR	MR
1	180	180	180	180
2	160	320	160	140
3	140	420	140	100
4	120	480	120	60
5	100	500	100	20
6	80	480	80	-20

Price

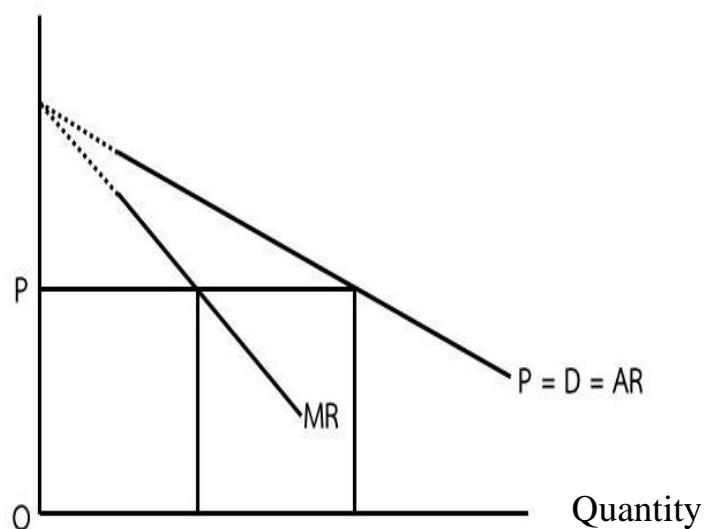


Figure 6.5 Demand curves , average revenues, and final revenues. in a monopoly
Equilibrium of business units in a monopoly market

The equilibrium of producers or business units in a monopoly market. is the condition in which producers get the highest profit The key condition that will keep producers in equilibrium is Manufacturers

have to set prices and production quantities. on Level at Final Unit Revenue (MR) = Final Unit Cost (MC)

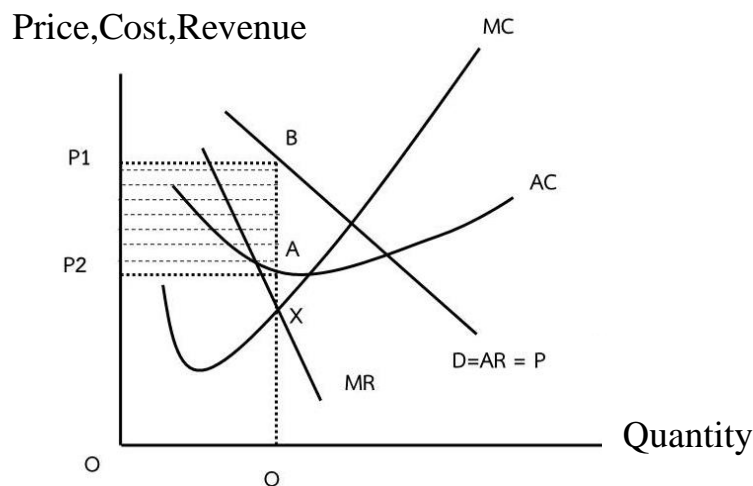


Figure 6.6 monopoly market equilibrium

From Figure 6.6 The production volume is right. on The level where $MR=MC$ is to produce at point X where the optimum production quantity is OQ at This level of OQ production Average Revenue (AR) is BQ and Average Cost (AC) is AQ . So Profit per unit = AB or $P_1 - P_2$ Total profit = $AB \times AP_2 = P_1 - P_2 \times AP_2 = \text{Rectangle } P_1 P_2 AB$

It can be concluded that The equilibrium of the monopolistic market is $MR=MC$, where $AR > AC$ and the producers are over-profitable.

Example 3 Because smoking is harmful to public health The government therefore does not allow any private person to come in and produce but has produced it alone. Suppose that the demand for cigarettes can be expressed by the following equation $Q = 400 - P$ and the government's total cost of producing cigarettes can be expressed as $TC = 1,500 + Q^2$ Find

1. How many packs of cigarettes does the government have to produce and sell? and set the price of each envelope for how many baht to get the highest profit

2. What is the profit (loss) received?

3. If fixed costs increase to 10,000 baht, what is the profit of producing cigarettes? (or how much loss)

How to do it **1. How many packs of cigarettes does the government have to produce and sell? and set the price of each envelope for how many baht to get the highest profit**

$$\text{From the problem given} \quad Q = 400 - P$$

$$\text{So} \quad P = 400 - Q$$

$$\text{Total Revenue (TR)} = P \times Q$$

$$\begin{aligned} \text{So} \quad \text{TR} &= (400 - Q)Q \\ &= 400Q - Q^2 \end{aligned}$$

$$\text{MR} = 400 - 2Q$$

$$\text{and the question set} \quad \text{TC} = 1,500 + Q^2$$

$$\text{MC} = 2Q$$

$$\text{Maximum profit condition} \quad \text{MR} = \text{MC}$$

$$400 - 2Q = 2Q$$

$$4Q = 400$$

$$Q = \frac{400}{4} = 100$$

Therefore, the production for maximum profit must be produced in the amount of 100 envelopes .

$$\text{and from} \quad P = 400 - Q$$

$$\text{when} \quad Q = 100$$

$$P = 400 - 100$$

$$= 300 \text{ baht}$$

Therefore, the selling price is 300 baht per pack.

2. What is the profit (loss) received?

$$\begin{aligned} \text{TR} &= 400 Q - Q^2 \\ &= (400 \times 100) - (100 \times 100) \\ &= 40,000 - 10,000 \\ &= 30,000 \quad \text{baht} \end{aligned}$$

$$\begin{aligned} \text{TC} &= 1,500 + Q^2 \\ &= 1,500 + (100 \times 100) \\ &= 1,500 + 10,000 \\ &= 11,500 \end{aligned}$$

$$\begin{aligned} \text{Profit} &= \text{TR} - \text{TC} \\ &= 30,000 - 11,500 \\ &= 18,500 \end{aligned}$$

Therefore, the business has a profit of 18,500 baht.

3. If fixed costs increase to 10,000 baht, what is the profit of producing cigarettes? (or how much loss)

If fixed costs, change to 10,000 baht.

$$\begin{aligned} \text{So TC} &= 10,000 + Q^2 \\ \text{TC} &= 10,000 + (100 \times 100) \\ &= 10,000 + 10,000 \\ &= 20,000 \end{aligned}$$

So the business is still profitable.

$$\begin{aligned} &= 30,000 - 20,000 \\ &= 10,000 \quad \text{baht} \end{aligned}$$

The result of market execution, Monopoly

from a monopoly market Single manufacturer or seller Therefore, conducting economic activities alone may affect the country's economy as follows: (Waralee Srisombat .

Benefits of Monopoly Market

1 . Some enterprises rely on large-scale production to lower production costs. For example, hydroelectric power generation . Therefore, allowing only one producer to produce can allow manufacturers to carry out production

2 . Due to competition by producing the same product repeatedly or almost the same create wastage in the use of production resources Therefore, if it is the sole production, it will reduce the use of production resources. cause the cost of production to decrease

3. No selling expenses (selling expenses) because being the only manufacturer, there is no need to advertise for sales promotion. In addition to public relations to promote the image from time to time.

Consequences of Monopoly

1 . Monopolies lead to inefficient allocation of production resources. Monopolists often make small production Too much until there is a shortage, causing the price of the product to be higher than it should be.

2. Consumers are not protected from monopolist exploitation. Because consumers cannot buy the same products from other manufacturers.

3. The monopolist is not affected by poor quality production. as the sole manufacturer

4. Monopolists may take advantage of owners of factors of production. such as laborers by taking advantage of workers by paying unfair wages

3 . Market with few sellers (oligopoly market) The characteristics of the market are as follows.

1. There are few business units and sellers. Each will be a big one.

2 . Each seller in the marketplace is related and dependent on each other. As a result, a business unit's product pricing may be able to set a higher price than its competitors.

3. Characteristics of products or services in the market may be the same or different and can be used interchangeably.

4. Entering the market of new business units will be difficult to enter. But getting out of the market for an unsuccessful business unit is easy.

Because of the few sellers It is a market that lies between a perfectly competitive market and a monopoly market. but more towards a monopoly market Behavior in this market is quite diverse.

Analyzing the price and quantity of the oligopoly market is more difficult than the monopolistic market. Because the position of the demand curve cannot be exact. depending on the interaction action of other manufacturers in the market therefore An oligopoly market has a curved demand curve called kinked demand.

demand curve or Average Earnings Line (AR)

The demand curve in the oligopoly market looks like a twisted demand curve. by cutting corners on market price at that time

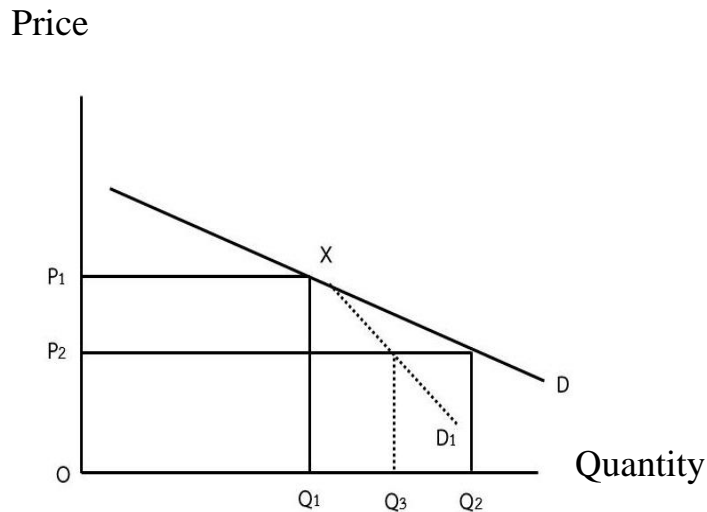


Figure 6.7 The demand curve in the oligopoly market

From Figure 6.7 at the price level P_1 Purchase Q_1 The operator reduced the price to P_2 baht with the hope that buyers will buy products at Q_2 But in an oligopoly market, the price drop of one seller inevitably affects the other sellers. That is, other sellers will also lower their prices, thus bringing the expected purchase volume to sellers at Q_2 . There will be only Q_3 left.

Why is the demand curve bent?

in the range above the market price The demand curve is somewhat sloping. This indicates that demand during this period is very price resilient. Because if any manufacturer raises the selling price higher than the market price Competitors will not raise prices accordingly. As a result, the sales volume (manufacturer's price increase) is greatly reduced. The total revenue of the producer will decrease. Therefore, producers in this type of market will not dare to increase the price higher than the market price.

In the range below that market price The demand curve looks quite steep. This indicates that demand during this period has little price resilience. Because if any manufacturer lowers the selling price below the market price Competitors will lower prices accordingly. As a result, the sales volume (of manufacturers who had reduced prices before

others) slightly increased. That manufacturer's total revenue will decrease. Therefore, manufacturers in this type of market will not dare to lower the price below the market price.

Equilibrium in the oligopoly market

Conditions to keep business units in the oligopoly market in equilibrium is to be produced on The level at which terminal cost (MC) equals terminal revenue (MR) . And since the business unit sets prices no different from the market price at that time, the MC must always equal MR where MR is interrupted . which will make the price (see from AR) It was at the market price at that time. Although enterprises that produce in this market are more likely to be profitable than normal. But it is possible to have only normal profits or loss. According to Figure 6.8

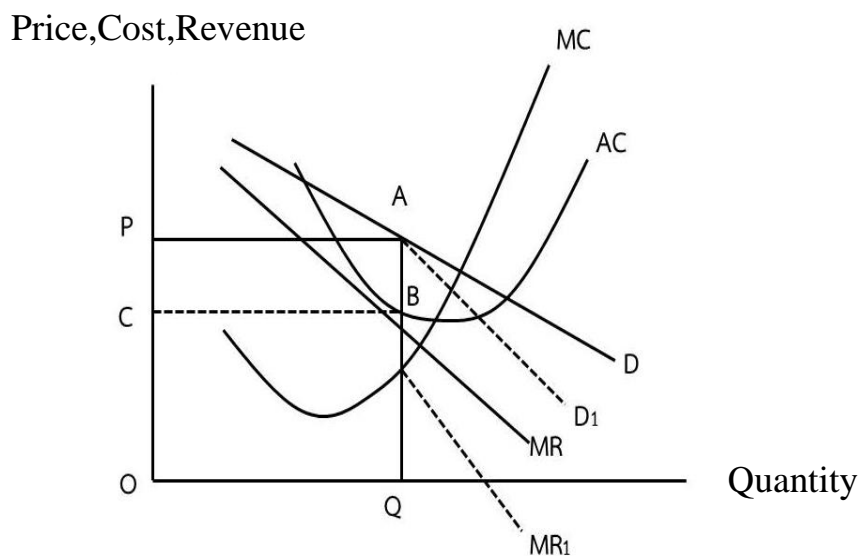


Figure 6.8 Equilibrium in the oligopoly market

Market pricing behavior

due to the small number of sellers Price competition will have a negative impact on every seller. As a result , business units in markets where there are few sellers do not like to compete on price. And the

following methods are often used to determine the market price. which every business unit in the market will use as a basis for making decisions

1. Cooperation of the oligopoly market (cartel) if the business units in the oligopoly market are similar in size. Market price determination is often done by collusion or monopoly. both openly and undisclosed In addition to agreeing on the price It is also necessary to agree on a production limit. to keep the price at a high level

2. If some business units in the market are larger or clearly have a market share greater than others Market pricing is usually a leader-based pricing model. The small seller assumes that the big producer is the price leader. If the big one sets the price, how? Retailers will set prices accordingly.

4 . Monopolistic competition market

It is a market where both competition and monopoly exist. Characteristics that show competition include: Having a large number of producers and easily entering and exiting the market As for the characteristics that show some existing monopolies, it is Each manufacturer's products are different, so some consumers have a preference for a specific manufacturer's products. This gives the manufacturer the power to set the price of the product to a certain extent. such as beauty salons, restaurants, or various products that consumers use daily The characteristics of the market are as follows.

1. There are many sellers. Each is just a subset of the market.
2. Products are different. But they are interchangeable, so each seller must try to differentiate their products from other manufacturers. However, there may be differences in the feelings of consumers.
3. There are no obstacles to prevent entry into the competition.
4. Buyers and sellers are well versed in market conditions.

5. Some sellers are able to make consumers especially satisfied with their products. such as with advert This creates a temporary level of monopoly.

From these characteristics, each manufacturer in the market has a monopoly on their products. The more you can make their products different from those of other manufacturers. The monopoly power will increase accordingly, but the products of other manufacturers can be used interchangeably. so If the product price is too high than that of other manufacturers, you will suffer from losing customers to other manufacturers. This makes each manufacturer's demand curve quite flexible.

Producer equilibrium in a semi-competitive, semi-monopoly market in the short term

The short-term equilibrium of individual producers in a semi-monopoly competitive market is the same as in other markets. That is, at the level of production where final unit cost is equal to final unit revenue ($MC = MR$), the producer demand curve runs from left to right because commodities are interchangeable. The final income curve is below the demand curve, which is the same as the average income curve. But production units may suffer losses. If the product price is below the average variable cost (AC), the unit will continue to produce if the price is higher than the average variable cost (AVC). The yield level with $MC=MR$ is the loss minimization. Producers may receive only normal profit (normal profit), where producers produce at The point where $MC = MR$ in this market is popular advertising and promotion to increase consumer demand because if successful. Demand will increase without reducing the price of the product, so the profit will increase as shown in Figure 6.9.

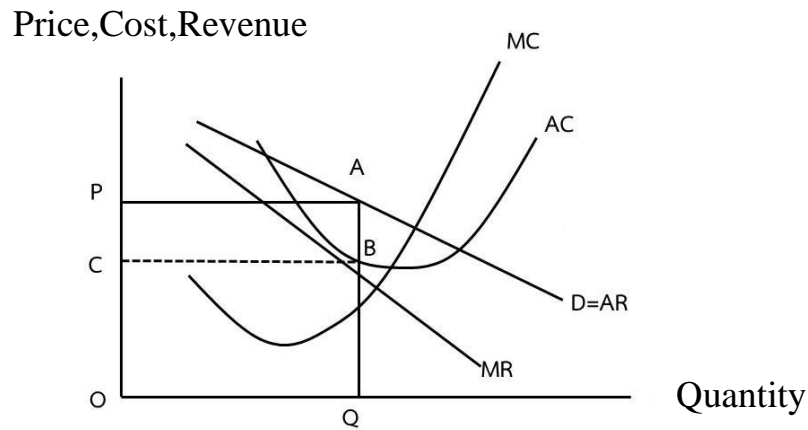


Figure 6.9 Short-term equilibrium in a semi-competitive, semi-monopoly market

Equilibrium in a semi-competitive, semi-monopoly market in the long run

In the long run, market-produced units tend to receive only normal profits, i.e. The equilibrium price is equal to the average cost because new producers are free to enter and compete freely as long as the unit produces excess profit. As each unit of product produced in the market is different, the demand curve of each unit of production gradually decreases. It finally touches the average cost curve before the bottom, so the price is equal to the average cost. Therefore, production units receive only normal profits. This can be seen from Figure 6.10.

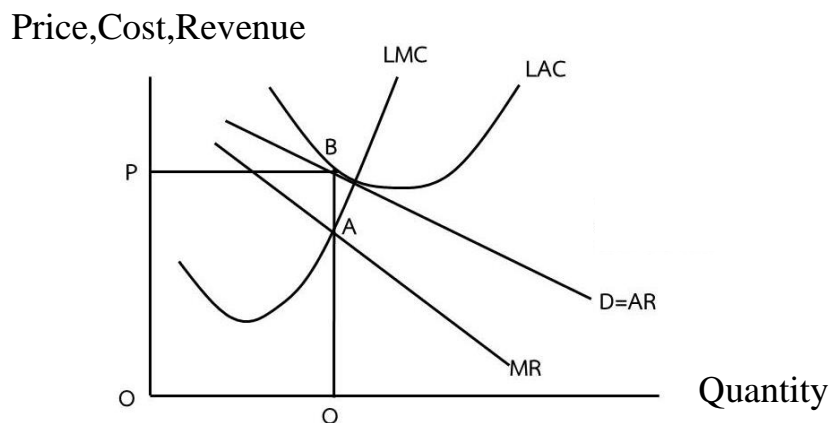


Figure 6.10 Long-term equilibrium in a semi-competitive, semi-monopoly market

Price Discrimination

Price Discrimination means selling the same product by setting different prices. The different product prices do not come from different costs. But from the needs of different consumers, or the flexibility of different demands (Graduate Phangnirun, 2005 , page 226) .

Reasons for Price Discrimination

1. The seller has the power to set the price. If the seller does not have the power to set the price This type of price discrimination will not occur. due to price discrimination make more profit

2. Able to divide the market That is, those who have already purchased the product cannot resell it in another market at a higher price. such as hospital treatment among ordinary patients with special patients Electricity billed from the house with business units

3. Elasticity of demand in different markets like a sweater In general stores, there is quite a lot of flexibility. The selling price is therefore a normal price. But the sweaters offered in cold-weather destinations are less flexible. The selling price therefore has a high price. So if the demand for sweaters is the same in all situations. Price discrimination will not occur.

The key condition for successful price discrimination

1. There must be a separation of price markets from each other and prevent the introduction of goods from sources with low prices to sell in markets with high prices.

2. A fragmented market must have the flexibility of demand for different prices. Separating markets or preventing profiteering from price differences may be possible because consumers are completely unable to find out about each other.

Types of Price Discrimination

Price segregation can be divided into 3 forms as follows: (Narathip Chutiwong. 2558. Page 336)

1. First degree price discrimination

It is the nature of complete separation of selling prices, that is, the seller knows what the needs of consumers are. and will try to charge the highest price possible Therefore, the consumer will buy the product at the highest price he can afford. That is, sellers can collect all consumer surplus as shown in Figure 6.11.

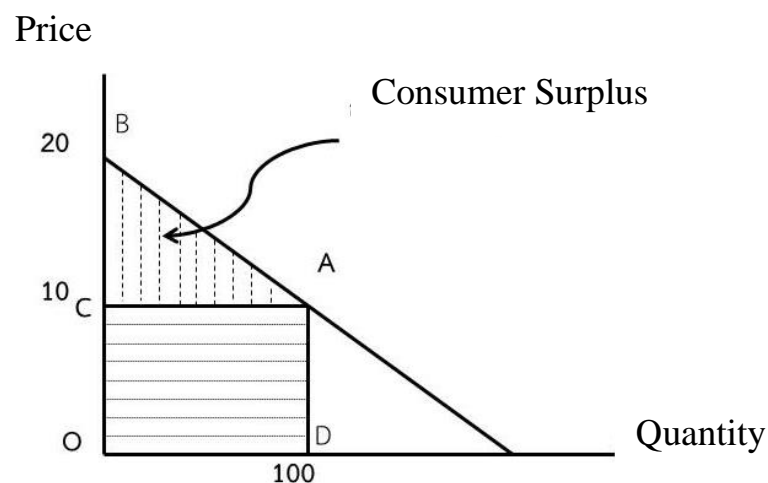


Figure 6.11 Selling Price Discrimination No. 1

From Figure 6.11 , the calculation of selling price split No. 1, purchase volume 100 units. If the seller sets the selling price at 10 baht , the seller will earn 1 , 000 baht . Since consumers are willing to pay the highest price of 20 baht , the seller will sell the first unit of goods for 20 baht and gradually decreases to the 100th unit for 10 baht. equal to 1,500 baht, which will have an additional income of 500 baht. The first separation of the selling price is the consumer surplus (consumer surplus) that the producer receives from the consumer.

2. Second degree price discrimination

It sets a selling price at one price for a certain quantity and sets a lower selling price for another quantity of the next. In this way, business units are able to extract consumer surpluses. own only some parts, not all as in the first case as shown in Figure 6.12.

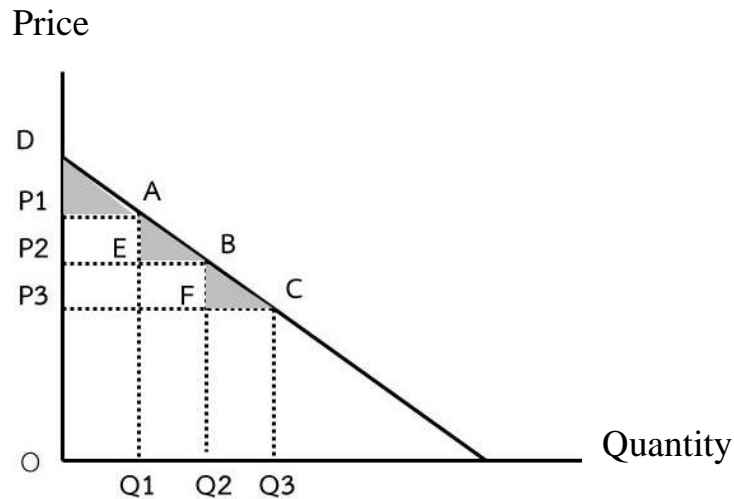


Figure 6.12 Selling Price Discrimination No. 2

From Figure 6.12 , it determines the product price at different levels of sales volume, Q_1 , Q_2 . and Q_3 which causes the pricing to be divided into 3 levels: P_1 , P_2 and P_3 Respectively, consumers will have a total income equal to $ODCQ_3$ area. It draws the consumer surplus that is 3 small triangles along the shaded area. Demonstrates that the seller can transfer the consumer's surplus to their own than in the case of setting a single price for example If the price is set at P_3 will only receive income from the area P_3CQ_3O Selling Price Discrimination No. 2

Secondary price segregation is easier than first segregation, but this second price segregation often occurs for businesses that can benefit from economies of scale . and sell more of the manufactured products at a reduced price As shown in Table 6.3.

Table 6.3 An example of a 2nd price split

Copy fee	travel	shirt purchase
- Photocopies of 1-10 sheets cost 1 baht per sheet.	- Tourists in the amount of 1-10 people, the tour price is 20,000 baht per person.	- Buy 1 shirt, price 300 baht each
- Photocopies of 11-50 sheets, price per sheet . 50 baht	- Tourists in the amount of 11-50 people, the tour price is 18,000 baht per person.	- Buy 3 shirts, price 200 baht each
- Photocopy more than 50 sheets Price per sheet . 35 baht	- More than 50 tourists , the tour price is 18,000 baht per person.	- Buy 12 shirts for 150 baht each

3. The third degree price discrimination is the separation of prices between different markets. or different consumer groups Which may differ in many characteristics such as age, income, location at the time of purchase or others, the seller therefore sets different prices and has an increased profit from selling at different prices. The seller will sell the product at a higher price in a market with low-to-demand elasticity. And will set the price of the product is lower than the market, there is a lot of price flexibility of demand. As shown in Figure 6.13.

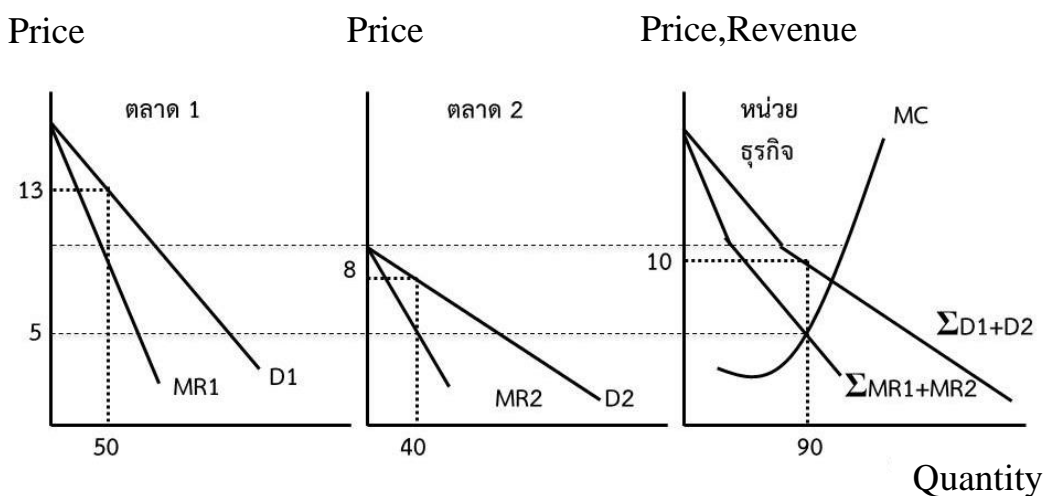


Figure 6.13 3rd selling price split

From Figure 6.13 , manufacturers produce 90 units of product and sell them in two separate markets. and want maximum profit (Most profitable production terms are $MR = MC$) and draw a line to the left to find line MR_1 . and MR_2 where $MR = MR_1 + MR_2$ So $Q = Q_1 + Q_2$ ($90 = 50 + 40$), and the price sold in market 1 (13 baht) is higher than in market 2 (8 baht), i.e. in a less flexible market. Product prices are higher than in a very flexible market. The third selling price split that is often seen is the sale of goods to the nationals. and foreigners (tourists) at unequal prices

income calculation and profit from figure 6.13

In the event that the manufacturer sells products in a business unit There will be an income of 900 baht (selling price 10 baht, selling quantity 90 units). Cost 450 baht (cost 5 baht, sales volume 90 units), profit in the amount of 450 baht.

If the manufacturer sells products in market 1 , there will be revenue of 650 baht (selling price 13 baht, quantity 50 units), cost 250 baht (cost 5 baht, quantity 50 units), profit 400 baht.

If the manufacturer sells products in the second market, there will be revenue of 320 baht (selling price 8 baht, quantity sold 40 units), cost 200 baht (cost 5 baht, quantity sold 40 units), profit of 120 baht.

It can be seen that selling in market 1 and market 2 will earn a total profit of 520 baht, which is more than what a manufacturer would sell in a single market.

Table 6.4 Example of Sales Price Discrimination No. 3

men's haircut	Airline service fee Bangkok - Chiang Mai	Khon show tickets
60 baht each	- Business Class 2 , 000 baht	- Students in uniform 100 baht
- Adult service fee is 100 baht per person.	- Economic Class 1 , 500 baht	- General public 300 baht

Example 4 A chair manufacturing company in Thailand produces products for domestic sales. There are 2 sources of sales and the selling price is not equal. Because he saw that the company would have more profits, the demand equation is as follows:

Demand Equation 1 is $P = 400 - 5 Q$

The second market demand equation is $P = 500 - 10 Q$.

And the company's cost equation is the same for both domestic production. and foreign countries is $TC = 10,000 + 20 Q$

Find 1.1 Selling price and selling volume in Market 1.

1.2 Selling price and sales volume in market 1

1.3 All profits that the company receives from splitting the selling price.

method From the market demand equation 1 is $P = 400 - 5 Q$

$$\text{Therefore } P_1 = 400 - 5Q_1$$

$$TR_1 = (400 - 5Q_1) Q_1$$

$$= 400 Q_1 - 5 Q_1^2$$

$$MR = 400 - 10 Q_1$$

From the market demand equation 2 , $P = 500 - 10 Q$

$$\begin{aligned}\text{Therefore } P_2 &= 500 - 10 Q_2 \\ \text{TR}_2 &= (500 - 10 Q_2) Q_2 \\ \text{TR}_2 &= 500 Q_2 - 10 Q_2^2 \\ \text{MR} &= 500 - 20 Q_2 \\ \text{From TC} &= 10,000 + 20 Q \\ \text{So MC} &= 20\end{aligned}$$

Selling price and selling volume in market 1

$$\begin{aligned}400 - 10 Q_1 &= 20 \\ 10 Q_1 &= 380 \\ Q_1 &= 38\end{aligned}$$

Volume sold in the market in market 1 = 38 units

$$\begin{aligned}\text{From } P_1 &= 400 - 5 Q_1 \\ &= 400 - 5 (38) \\ &= 400 - 190 \\ &= 210\end{aligned}$$

Selling price in the market In market 1 = 210 baht

Selling price and sales volume in the second market

$$\begin{aligned}500 - 20 Q_2 &= 20 \\ 20 Q_2 &= 480 \\ Q_2 &= 24\end{aligned}$$

Sales volume in market 2 = 24 units

$$\begin{aligned}\text{From } P_2 &= 500 - 10 Q_2 \\ P_2 &= 500 - 10 (24)\end{aligned}$$

$$= 260$$

$$\text{Selling price in market 2} = 260 \text{ baht}$$

The total profit that the company receives from the split of the selling price.

$$\begin{aligned} \text{Profit } (\pi) &= (\text{TR}_1 + \text{TR}_2) - \text{TC} \\ &= (7,980 + 6,240) - 11,240 \\ &= 2,980 \text{ baht} \end{aligned}$$

summarize

Market has two meanings. Market in a narrow sense means a place where buyers and sellers meet to agree to exchange or buy goods or services between each other and causing a change in ownership rights in that product or service as well and the market in a broader sense A group of individuals or organizations that have needs and desires in the product, are willing, and have the ability to exchange. and has the power to make purchase decisions. in order to obtain their satisfaction The market that appears today can be classified into 4 types:

1. Perfectly Competitive Market The production equilibrium with the highest profit is at the last unit of revenue equal to the last unit of cost ($MR = MC$) and the producer has a normal profit.
2. Monopoly market in which the equilibrium of production with the highest profit is based on the last unit of revenue equals the last unit of cost ($MR = MC$) and the producer has a normal profit.
3. The oligopoly market The production equilibrium with the highest profit is at the last unit of revenue equal to the last unit of cost ($MR = MC$) and the producer has a normal profit.
4. Semi-competitive, semi-monopoly market The production equilibrium with the highest profit is at the last unit of revenue equal to the last unit of cost ($MR = MC$) and the producer has a normal profit.

Price discrimination (Price Discrimination) refers to the sale of the same product. by setting different prices The different product prices do not come from different costs. But from the needs of different consumers. or different elasticity of demand Price splitting can be divided into 3 types:

1. The 1st order of price segregation is the nature of complete sale price segregation. consumer surplus that the producer receives from the consumer itself
2. The second split of selling prices is one selling price for one quantity and a lower selling price for the next quantity. In this way, business units are able to extract only part of the consumer surplus. not all
3. The 3rd price separation is the price separation between different markets. or different consumer groups Which may differ in many characteristics such as age, income, location at the time of purchase or others, the seller therefore sets different prices and has an increased profit from selling at different prices. The seller will sell the product at a higher price in a market with low-to-demand elasticity. And will set the price of the product is lower than the market, there is a lot of price flexibility of demand.

Questions at the end of chapter 6

1. What does market economics mean? and classify how many types
2. Why is the market completely competitive? Producers will only have normal profits.
3. Price war What kind of market will happen? And the result of the price war will affect the price of the product?
- 4 . Why in the oligopoly market Each manufacturer will join together. or set the price according to the leader
- 5 . Why in the monopoly market? Therefore, the producer has a higher profit than usual.
6. What is Kinked Demand , what type of market does it occur in and how does Kinked Demand affect each producer?
- 7 . How many market competition What does a semi-monopoly look like? And what is the equilibrium in this type of market?
8. A shoe manufacturing company sells shoes in a perfectly competitive market at a price of 400 baht per pair, while the cost of production has the equation $TC = 5Q^2 + 10Q + 78$ find
 - 8.1 How many pairs of shoes should a company produce in order to maximize profits?
 - 8.2 How much profit does the producer get?
9. What is Price Discrimination? Why do manufacturers have to sell their products by price discrimination? and how many types of price segregation are there?
10. Prepared foods sold in department stores It will be sold at a discount when the mall closes. Classified as any type of price split Explain and give reasons

Reference

- Jarin Thetvanich.(2007). Managerial Economics.Bangkok:
SE-EDUCATION PUBLIC COMPANY LIMITED.
- Narathip Chutiwong.(2005). Microeconomic Theory.
Bangkok : Chulalongkorn University Printing House.
- Narathip Chutiwong.(2015). Managerial Economics.
Bangkok : Chulalongkorn University Printing House.
- Bundit Phangnirun.(2005) . Microeconomics .Bangkok :
Thammasarn Company Limited.
- Waralee Srisombat. (2012). Microeconomics . Bangkok :
O.S. Printing House Publishing House.

Reference

- Jarin Thetvanich. (2007). Managerial Economics. Bangkok:
SE-EDUCATION Public Company Limited.
- Chao Rojanasang.(2002).Management Economics . Bangkok :
Sukhothai Thammathirat Open University.
- Narathip Chutiwong.(2015). Managerial Economics. Bangkok:
Chulalongkorn University.
- Rapeepan Piriyakul .(2007). Computer Simulation . Bangkok:
Ramkhamhaeng University Press.
- Suchinda Jeamsriphong (2015). Business Economics.
Phitsanulok : Naresuan University Press.
- Sutima Chamnanwet.(2012). Quantitative Analysis .Bangkok :
Wittayapat Company Limited.
- _____ <https://www.gotoknow.org/posts/34519> Accessed on July
5 , 2017.

7 Business Investment Decisions and Investment Budget Analysis

In business administration Management must make decisions. By choosing one of the many options for the best benefit. And making decisions related to the future will be quite difficult because of the events that will happen in the future. It's uncertain. Which no one knows whether it will be in line with the choice that has been decided or not. Therefore, to consider which project to invest in would be the best. optimal inevitably affects the success of the project In addition, the investment worthiness must be analyzed. by analyzing the payback period Net Present Value and Internal Rate of Return on Investment

Meaning of Decision

Decision means that any person or a group of people Make a choice of actions or actions to achieve the desired goal. Or to solve problems that arise (Narongsak Thanaviboonchai, 2002 , page 397).

Peerapong Darathai (1999, page 23) said that decision means thoughts and actions that lead to a decision to choose one way from many alternatives to solve problems that arise.

Therefore, it can be concluded that decision (decision) means choosing one action from the available alternatives. in order to get the results as they wish to happen systematically

State of decision

1. Issues to be decided

1.1 Personal decision (individual decision) is a decision related to personal matters. The result of the decision will happen to oneself, one's family, with the decision being made by oneself. or family to help make decisions such as deciding to choose an educational institution buy housing

1.2 Business decisions (business decision) is a decision related to business matters. For example, the decision to increase production, decrease production, decide to choose to expand the factory, etc. The result of the decision will happen to oneself , family, agency, personnel in the business organization. Such decisions should have information that has been recorded, experienced, or have advice because it involves quite a lot of investment.

1.3 Social decision (social decision) is a decision similar to a business decision. Only the outcome of the decision will affect society.

2. Decision Maker

2.1 individual decision making

2.2 Decisions are often made in groups. (group decision making)

3. Conditions to be faced in making decisions

3.1 Internal factors involved (internal factor) are factors related to the organization. The organization must consider their own abilities. For example, is the amount of investment sufficient to expand the production line, increase the knowledge and ability of personnel in the organization, etc.

3.2 External factors (external factors) are factors that the organization cannot control. Therefore, executives must be visionary. aware of events such as economic conditions such as inflation and

deflation problems, executives must adjust production How to sell to make the organization survive or government policies that issue various measures to solve the country's economic problems

Type of decision

In business operations, business units often have multiple options. Any choice you make will have consequences. Therefore, those involved in making choices or making decisions Those options must be studied carefully. By deciding which way to choose is as follows (Sujinda Jeamsriphong, 2015, page 380).

1 . Decisions under certainty Refers to a choice in which the decision-maker knows for sure the consequences of each choice. It is a decision where management knows what events will happen in the future. This may be because the decision maker has complete information about the decision. making it possible to make the right decision (Narongsak Thanawiboonchai , 2002, page 400) For example, consumers decide to buy products to keep during heavy rains because they believe that flooding will occur. to find consumer goods quite difficult to consume and as expected by consumers That is, decision-makers choose the most effective option.

Example 1 : A sportswear store knows that it sells between 50 and 100 sportswear each day , and the likelihood that it will sell 50 . have 15 % per day chance to sell 60 sets Couples have 25% per day chance to sell 70 sets . There is 30% per day, the chance to sell 80 sets, 15% per day, the chance to sell 90 sets, 10% per day, and the chance to sell 100 sets , 5 % per day. 1 sports suit has a profit of 50 baht, able to create a table of results. Reward can be as follows:

Table 8.1 Decisions under certainty

Volume	profit earned	chance of occurrence	expected profit
50	2,500	.15	375
60	3,000	.25	750
70	3,500	.30	1,050
80	4,000	.15	600
90	4,500	.10	450
100	5,000	.05	250
The maximum profit that the merchant receives			3,475

2. Decision under risk A situation is a decision made under circumstances where the decision-maker is unaware of the outcome. But how will the outcome be expected in the future? Making it enough to be able to know the chance or estimate the probability that will occur (probability or expected value) based on predictions. which may be historical data or from past experiences to assist in analyzing probabilities in decision-making, that is, decision-makers do not know what events will happen in the future But can some guess what the likelihood of the occurrence of various events is how much? The decision under risk is divided into 3 methods as follows.

2.1 Using the expected value criteria (expected value-EV)

Decision using expected value The steps can be summarized as follows:

- 1) Create an initial decision-making table (The table contains alternatives , events, and outcomes.)
- 2) Determine the probabilities of all events, such that the sum of the probabilities of all events together is equal to 1 .

3) Calculate the expected value of each alternative. based on the probability

4) Choose the option that gives the best expected value.

Example 2 An orchid exporter Exporting orchids to foreign countries which is likely to be in demand in the market The management wants to send more orchids. There are 3 options to increase exports: a. Expand orchid farms b. Hire other gardens to produce and c. Order from abroad to sell. The above three options provide different returns (profits), depending on the global economic conditions. In which the world economy in the future has the opportunity to occur in 3 characteristics: a good economy , a stable economy, and a recession. which shows the profit in each option for each event as follows: (Unit: million baht)

Event	choice		
	expand the orchid garden	Hiring other gardens to produce	order from abroad
good economy	300	200	150
the economy is stable	100	150	180
recession	10	20	50

From the economic analysis of the planning staff, it was found that the chances that the economy would be good: stable: recession were 0.2 : 0.5 : 0.3 , respectively. Based on the above information, choose the best option by using the EV method.

How to do it: Create a table with assigning probabilities to each event.

Event	probability	choice		
		expand the orchid garden	Hiring other gardens to produce	order from abroad
good economy	0.2	300	200	150
the economy is stable	0.5	100	150	180
recession	0.3	10	20	50

Calculate the expected value of each option. (This is to find the average return for each option to see which option gives the most average. (The mean here is a weighted average. using probabilities instead of weights) by multiplying the probability of each event by multiplying the probability of each event.

Expected value of orchid garden expansion

$$\begin{aligned}
 &= (0.2 \times 300) + (0.5 \times 100) + (0.3 \times 10) . \\
 &= 60 + 50 + 3 \\
 &= 113
 \end{aligned}$$

Expected cost of hiring other farms to produce

$$\begin{aligned}
 &= (0.2 \times 200) + (0.5 \times 150) + (0.3 \times 20) \\
 &= 40 + 75 + 6 \\
 &= 121
 \end{aligned}$$

Expected value of overseas orders

$$\begin{aligned}
 &= (0.2 \times 150) + (1.5 \times 180) + (0.3 \times 50) \\
 &= 30 + 90 + 15 \\
 &= 135
 \end{aligned}$$

From the calculation of the expected value of different options, it can be seen that the expected value of ordering from overseas is the highest, so choose the choice of ordering from abroad.

Using the expected value criterion, the best value is selected. Therefore, if it is a matter of profit or the best production volume, it must be the most. On the other hand, if it's a matter of cost. The best value must be the lowest value as in Example 3.

Example 3 From the store's cost table A. Mechanic is about buying raw materials, which has 3 options: buy from factory A, buy from factory B, and buy from factory C, and events that may occur about raw materials are Rising prices of raw materials, lower prices of raw materials and raw materials at fixed prices and from the data table below Choose the best option.

method

event	sense probably	choice		
		Factory A	Factory B	Factory C
Rising prices of raw materials	0.3	70	80	90
cheaper raw materials	0.2	60	40	50
fixed price raw materials	0.5	70	30	60

Calculate the expected value for each option and select it. best choice
 The "best choice" in regards to cost is the lowest cost.

event	sense	choice					
	probably	Factory A		Factory B		Factory C	
Rising prices of raw materials	0.3	0.3 ×70	= 21	0.3×80	= 24	0.3× 90	= 27
cheaper raw materials	0.2	0.2 × 60	= 12	0.2 × 40	= 8	0.2 ×50	= 10
fixed price raw materials	0.5	0.5 × 70	= 35	0.5 × 30	= 15	0 . 5 ×60	= 30
			68		47		67

Factory Expected Value A = 68
 Factory Expected Value B = 47
 Factory Expected Value C = 67

Therefore, the best choice is to choose to buy raw materials from Factory B , which will cost the lowest.

2.2 The use of the expected opportunity lost (EOL) criterion refers to a situation in which The decision maker made the wrong decision. will cause a value called the opportunity cost (Opportunity Loss), which the opportunity cost is the difference between the return that should be received from the right decision and the return that is actually received, so the opportunity cost should The minimum is to

make the least mistaken decision. Therefore, the principle of finding the opportunity cost is as follows.

- 1) Create a table showing the opportunity cost for each event.
- 2) Calculate the expected opportunity cost.
- 3) Choose the option with the lowest opportunity cost.

How to find the best value case value is the greatest value

Used in the case of maximizing values such as maximum output. most profitable There are the following principles.

- 1 . It is obtained from the maximum value in each event minus the value of the possible outcome in each event of the alternatives.
- 2 . Calculate the expected opportunity cost (EOL) done by multiplying the probability value by the expected opportunity cost.
3. Choose the option with the least expected opportunity cost.

Based on the information in Example 2 , use the EOL method to make decisions. choose the best choice

event	probability	choice					
		expand the orchid garden		Hiring other gardens to produce		order from abroad	
good economy	0.2	30	0	200	100	150	150
the economy is stable	0.5	10	80	150	30	180	0
recession	0.3	10	40	20	30	50	0

EOL of orchid garden expansion

$$\begin{aligned} &= (0.2 \times 0) + (0.5 \times 80) + (0.3 \times 40) \\ &= 0 + 40 + 12 \\ &= 52 \end{aligned}$$

EOL of other farm production

$$\begin{aligned} &= (0.2 \times 100) + (0.5 \times 30) + (0.3 \times 30) \\ &= 20 + 15 + 9 \\ &= 44 \end{aligned}$$

$$\begin{aligned} \text{EOL of foreign orders} &= (0.2 \times 150) + (0.5 \times 0) + (0.3 \times 0) \\ &= 30 + 0 + 0 \\ &= 30 \end{aligned}$$

In summary, choosing to order from abroad will have the least opportunity cost.

Best value is least value case method.

Used in the case of finding the smallest value, such as the lowest cost, has the following principles.

- 1 . will be obtained by taking the results of each event to subtract the minimum value of the event
2. Calculate the expected opportunity cost (EOL) can be done by multiplying the probability value with the expected opportunity cost.
3. Choose the option with the least expected opportunity cost.

Based on the information in Example 3 , use the EOL method to make decisions. choose the best choice

event	sense probably	choice					
		Factory A		Factory B		Factory C	
Rising prices of raw materials	0.3	70	0	80	10	90	20
cheaper raw materials	0.2	60	20	40	0	50	10
fixed price raw materials	0.5	70	40	30	0	60	30

$$\begin{aligned}
 \text{EOL of Plant A} &= (0.3 \times 0) + (0.2 \times 20) + (0.5 \times 40) \\
 &= 0 + 4 + 20 \\
 &= 24
 \end{aligned}$$

$$\begin{aligned}
 \text{EOL of plant B} &= (0.3 \times 10) + (0.2 \times 0) + (0.5 \times 0) \\
 &= 3 + 0 + 0 \\
 &= 3
 \end{aligned}$$

$$\begin{aligned}
 \text{EOL of Plant C} &= (0.3 \times 20) + (0.2 \times 10) + (0.5 \times 30) \\
 &= 6 + 2 + 15 \\
 &= 23
 \end{aligned}$$

In conclusion, choose to buy raw materials from factory B because it has the least opportunity cost.

2.3 Expected values in case have complete news (expected payoff with perfect information - EPPI) Refers to decisions that decision makers have studied information that is accurate and reliable,

then bring that information to participate in decision making to reduce the chance of error or reduce the risk. As a result, decision-makers will gain the greatest benefit. or achieve maximum efficiency from selecting that alternative The decision maker receives profitable returns under a certainty called Hope Profit Under Certainty Or if it's a matter of cost, the decision maker will have the lowest cost which is good for the business. The calculation of the expected value in the case of complete news can be considered as follows.

How to find the best value case value is the greatest value

1. In each event Which choice is the most extreme choice?
2. Select that option and multiply the probability values.
3. Bring every event and sum it out. The resulting sum is the expected value in the case of There is complete news or EPPI.

From Example 2 , find the EPPI value.

event	sense probably	choice		
		expand the orchid garden	Hiring other gardens to produce	order from abroad
good economy	0.2	300*	200	150
the economy is stable	0.5	100	150	180*
recession	0.3	10	20	50*

The * (asterisk) indicates the best (most) choice in the event.

$$\begin{aligned} \text{EPPI (Max)} &= (0.2 \times 300) + (0.5 \times 180) + (0.3 \times 50) \\ &= 60 + 90 + 15 \\ &= 165 \end{aligned}$$

The answer of EPPI value is 165 million baht, that is, if there is complete news, the maximum return that will be received is 165 million baht. Consider from Example 2. Choose an overseas ordering option with an expected return (EV) of 135. million baht (in this case, there is no complete news But if there is complete information, the expected value will increase from 135 million baht. to 165 million baht, an increase of 30 million baht, which is equal to the opportunity cost (EOL) of 30 million baht.

$$\text{EPP I (Max)} = \text{EV (Max)} + \text{EOL}$$

Best value is least value case method.

1. In each event Which is the least alternative?
2. Select that option and multiply the probability values.
3. Bring every event and sum it out. The resulting sum is the expected value in the case of There is complete news or EPPI.

from example 3 Find the EPPI value.

event	sense probably	choice		
		Factory A	Factory B	Factory C
Rising prices of raw materials	0.3	70*	80	90
cheaper raw materials	0.2	60	40*	50
fixed price raw materials	0.5	70	30*	60

The * (asterisk) indicates the best choice. (minimum) in that event

$$\begin{aligned}
 \text{EPPI (Min)} &= (0.3 \times 70) + (0.2 \times 40) + (0.5 \times 30) \\
 &= 21 + 8 + 15 \\
 &= 44
 \end{aligned}$$

The answer of EPPI value is 44 million baht, that is, if there is complete information, the lowest return (cost) that can be obtained is 44 million baht, considering from Example 3. Choose an alternative to buy raw materials from factory B with an expected cost (EV) of 47 million baht (in this case, there is no complete news. But if there is complete information, the expected value will be reduced from 47 million baht to only 44 million baht or a decrease of 3 million baht

$$\text{EPPI (Min)} = \text{EV (Min)} - \text{EOL}$$

3. Making decisions under uncertainty Means a choice that the decision maker does not know the outcome. or even predicting, not knowing what the outcome will be. Uncertainty is knowing nothing

about future events. There is no information or probabilities about the occurrence of such events, nor can we make predictions about the future. Most of them will happen to new business people. The decision-making method under this situation is as follows.

3.1 MaxiMax Criterion It is a decision that the decision-maker is quite optimistic (Optimism), for example, often thinks that the investment should yield good returns. The principle is to choose best results first in each alternative (consider each option by looking at every situation) and choose the best of the best again. (This way, the decision-makers choose only the best way.)

3.2 MaxiMin Criterion It is a decision that decision makers are quite pessimistic (Pessimism), for example, that the chances of profit are minimal. not dare to invest The key to decision-making is to find the lowest outcome among all alternatives. and select the largest value. (This way, the person who decides to choose the worst first and then select the highest value among the worst alternatives)

3.3 Minimax Regret Criterion The decision maker must consider the opportunity cost (Opportunity Loss or Opportunity Cost) from the difference between the actual return and the return that should be received when making the right decision. The method is The best opportunity cost of each option must be calculated. Considering each option, the best decision is the one with the lowest opportunity cost. This method of decision making is based on the opportunity cost principle. That is, the opportunity cost table must be created first. Then select the highest opportunity cost for each option and then select the one with the least opportunity cost .

event	choice		
	expand the orchid garden	Hiring other gardens to produce	order from abroad
good economy	300	200	150
the economy is stable	100	150	180
recession	10	20	50

Example 4 Based on the information in Example 2 , decide using the Maximax Maximin and Minimax regret methods.

Methods for determining values using the Maximax method

- find the best value in each event
- Choose the best value from the best value in each alternative

event	choice		
	expand the orchid garden	Hiring other gardens to produce	order from abroad
good economy	300	200	150
the economy is stable	100	150	180
recession	10	20	50
best value for each event	300	200	180
best choice	300		

In summary, using the maximax principle must choose to expand the orchid garden.

Determination by Maximin Method

- find the worst (least) value for each event
- Choose the best value from the worst value in each alternative.

event	choice		
	expand the orchid garden	Hiring other gardens to produce	order from abroad
good economy	300	200	150
the economy is stable	100	150	180
recession	10	20	50
Worst value for each event	10	20	50
best choice			50

Summarize the use of the Maximin principle . Must choose to order from abroad.

Determination by the Minimax regret method. First, an opportunity cost table must be created. Creating an opportunity cost table must consider one event at a time. Give the best value for each option with an opportunity cost of 0.

In the case of results set the best value and then subtracted with an alternative value of that event.

event	choice					
	expand the orchid garden		Hiring other gardens to produce		order from abroad	
good economy	300	0	200	100	150	150
the economy is stable	100	80	150	30	180	0
recession	10	40	20	30	50	0
best value for each event	80		100		150	
worst choice	80					

Summarize the use of the Minimax regret principle must choose to expand the orchid garden

But if it is a case of costs or expenses, the principle is that the best value is the lowest value. can be displayed as follows:

Example 5 Based on the data in Example 3 , decide using the Maximax method. Maximin and Minimax regret

event	choice		
	Factory A	Factory B	Factory C
Rising prices of raw materials	70	80	90
cheaper raw materials	60	40	50
fixed price raw materials	70	30	60

How to do it Determination using the MaxiMax method

- find the best value (minimum) in each event
- Choose the best value from the best value in each alternative

event	choice		
	Factory A	Factory B	Factory C
Rising prices of raw materials	70	80	90
cheaper raw materials	60	40	50
fixed price raw materials	70	30	60
best value for each event	60	30	50
best choice		30	

Summarize the use of the Maximax principle , must purchase raw materials from Factory B.

Determination by MaxiMin Method

- find the worst (very) value for each event
- Choose the best (lowest) value from the worst value for each option.

event	choice		
	Factory A	Factory B	Factory C
Rising prices of raw materials	70	80	90
cheaper raw materials	60	40	50
fixed price raw materials	70	30	60
Worst value for each event	70	80	90
best choice	70		

Summarize the use of the Maximin Principle . Must purchase raw materials from Factory A.

Determination by the Minimax regret method. First, an opportunity cost table must be created. Creating an opportunity cost table must consider one event at a time. give the best value (Lowest) Each option has an opportunity cost of 0.

event	choice					
	Factory A		Factory B		Factory C	
Rising prices of raw materials	70	0	80	10	90	20
cheaper raw materials	60	20	40	0	50	10
fixed price raw materials	70	40	30	0	60	30
best value for each event	0		0		10	
worst choice					10	

Summary when choosing the Minimax regret principle will choose to buy raw materials from factory C

Analyze the investment budget

There are many tools used to analyze investment budgets. which executives can choose to use as appropriate In this case, 3 details will be mentioned: (Sujinda Jeamsriphong, 2015 , pages 416-421) .

1. Payback period
2. Net present value (net present value or NPV)
3. Internal rate of return (IRR)

1. Payback period (payback period : PB)

Payback period is the period during which the project will be able to generate net cash inflows equal to net cash outflows (Vannee). Techoyothin, Somchai Supattarakul, Monwipha Phadungsit, 2015 , page 317) That is, operating income is equal to the total investment value. Any project with a shorter investment period has higher demand. Because the money returned can be invested in other businesses. There are two commonly used payback periods .

1.1 Simplified payback period

1.2 Payback period based on present value

1.1 Simple payback period (simple payback period) , which is a simple way of thinking. The payback period can be calculated from

$$\text{Payback period} = \frac{\text{investment value}}{\text{Annual cumulative net return}}$$

Example 6 Invest in a project with a 6- year contract with an investment of 1,200,000 baht, giving annual cash flow of 400,000 baht. Is this business worth investing?

How to do it

$$\begin{aligned} \text{Payback period} &= \frac{\text{investment value}}{\text{Annual cumulative net returnบแทนสุทธิสะสมรายปี}} \\ &= \frac{1,200,000}{400,000} \\ &= 3 \text{ years} \end{aligned}$$

Therefore, this project should be invested. because there is still time left in the project for another 3 years

Example 7 There are 2 projects with the same investment. And there is a result in the table. Find the payback period for both projects and projects should invest more.

year	Project A	Project B
0	- 1000	- 1000
1	500	100
2	400	300
3	300	400
4	100	600

How to do Project A

$$\begin{aligned}
 \text{payback period} &= \text{Time before payback} + \frac{\text{remaining cash flow}}{\text{cash flow for the year}} \\
 &= 2 + \frac{100}{300} = 2.33 \text{ years} \\
 &= 2 \text{ years } 4 \text{ months}
 \end{aligned}$$

Project B

$$\begin{aligned}
 &= 3 + \frac{200}{600} = 3.33 \text{ years} \\
 &= 3 \text{ years } 4 \text{ months}
 \end{aligned}$$

1.2 Payback Period in Present Value This method values future cash flows as their present value. And then find the payback period.

$$\text{P.V.} = \frac{\text{FV}}{(1+i)^n}$$

$$\text{PV} = \text{Present Value (present value)}$$

is the present value of money in the future under a predetermined time period and rate of return. Present Value is based on the concept that money is now worth more than money in the future.

FV = Future Value

i = rate of return

n = duration

Example 8 From Example 7 , if the interest rate is set at 10 % Project A or B that is worth investing

Method: Substitute numerical values in the formula.

year	Project A	current money value
0	- 1000	- 1000
1	500	454.55
2	400	330.58
3	300	225.39
4	100	68.30

year	Project B	current money value
0	- 1000	- 1000
1	100	90.91
2	300	247.93
3	400	300.52
4	600	409.81

$$\begin{aligned}
\text{Project A has payback period} &= 2 + \frac{214.87}{225.39} \\
&= 2 \text{ years } 11 \text{ months} \\
\text{Project B has payback period} &= 3 + \frac{360.64}{409.81} \\
&= 3 \text{ years } 11 \text{ months}
\end{aligned}$$

In summary, the project that should be invested is Project A.

2. Net present value (net present value or NPV) is the net present value of the project. This is the net present value of cash inflows and cash outflows that occur over the life of the project after deducting expenses. The calculation formula is as follows:

$$\begin{aligned}
\text{N.P.V.} &= \sum_{t=1}^n \left(\frac{B_t - C_t}{(1+i)^n} \right) \\
\text{NPV} &= \text{PV-Co}
\end{aligned}$$

Decision criteria for investing in projects are as follows:

If the NPV obtained is greater than 0 or positive, the investment is worthwhile because the return received from the project is greater than the cost of the project incurred.

If the value of the NPV is less than 0 or negative, the investment is not worth it because the return received from the project is less than the cost of the project incurred.

If the value of the NPV is 0 , the decision to accept or reject the project is up to you. Because the return received from the project is equal to the cost of the project incurred.

Example 9 from Example 8 Analyze whether project A or B is suitable for investment.

Method: Substitute numerical values in the formula.

year	Project A	current money value
0	- 1000	- 1000
1	500	454.55
2	400	330.58
3	300	225.39
4	100	68.30
NPV value		78.82

year	Project B	current money value
0	- 1000	- 1000
1	100	90.91
2	300	247.93
3	400	300.52
4	600	409.81
NPV value		49.17

From the above information, the NPV value for both projects is greater than 1 , indicating that both investments provide returns or profits, but Project A gives more returns than Project B. Therefore, investment in Project A should be chosen and if looking at the return

period It can be seen that Project A has a shorter payback period than Project B.

3 .Internal rate of return on investment (internal rate of return or IRR) is the discount rate that makes the present value of the return equal to the present value of the charge Capital Capability Rates make returns worth the cost. When considering the present value The discount rate that causes NPV = 0 with the following calculations:

$$IRR = \sum_{t=1}^n \frac{(B_t - C_t)}{(1+r)^t} = 0$$

where

IRR = Internal rate of return of the project

B_t = income/benefit from the project in year t

C_t = cost or capital investment of the project in year t

r = discount rate that causes NPV = 0

n = project life (project life)

t = Year of the project i.e. year 1 to n

By finding the value of IRR that is convenient to find from the Microsoft Excel program.

Example 10 From Example 9 , find the value of internal rate of return (IRR).

method

year	Project A	Project B
0	- 1000	- 1000
1	500	100
2	400	300
3	300	400
4	100	600
IRR value	14.49 %	11.79 %

Therefore, it is better to invest in Project A than Project B because The internal rate of return of project A is higher than that of project B.

summarize

in business Entrepreneurs must decide what is best. from many options to make their business successful

Making a decision (decision) means choosing one action from the available alternatives. in order to achieve the expected results to occur systematically By decision, can be classified 3 type is

1 . **Decision** under certainty Refers to a choice in which the decision-maker knows for sure the consequences of each choice. It is a decision that management knows what events will happen in the future. making it possible to make the right decision

2. Decisions under risk (risk) refers to a choice in which the decision maker does not know the outcome for sure. But the decision-makers are able to know what the outcome will be. Based on the prediction, it can be divided into 3 methods: using the expected value criterion Using the opportunity cost and expected value criteria in cases where have complete news

3. Decision under uncertainty It contains the principles of the MaxiMax Criterion . It is a decision by choice. Best thing first in each choice. And then choose the best of the best again. People who use this method are classified as optimistic. The principle of MaxiMin Criterion is the decision-making principle, which is to choose the least effective of each option and then select the best option. People who use this method tend to be pessimistic and less risk-averse. And the principle of Minimax Regret Criterion . This decision making method is based on the principle of opportunity cost. That is, the opportunity cost table must be created first. Then select the highest opportunity cost for each option and then select the one with the lowest opportunity cost.

The other side is to find the value of the investment whether it is suitable for investment or not. Considering the payback period Any project with a short payback period would be desirable by investors. It then considers the net present value. The optimum value for investment is a positive value. or greater than zero and analysis Internal rate of return on investment This is to find the discount rate or interest rate that brings the net present value of the project to zero.

Questions at the end of chapter 8

1. What does decision mean? How important is it in running a business?
2. Cost Decisions Using Expected Value Basis What is the best value? Why?
3. If you are an optimistic businessman enterprising What criteria do you usually decide on?
4. At the fruit festival, one seller has to consider how many watermelons to sell at the fair per day in order to be the most appropriate. If ordered and cannot be sold, must be discarded and cannot be sold again on the next day. And when ordering, it must be ordered as a car, each car costs 10 baht per child and sells at a price of 20 baht per child . be the best (But guessing that the demand for watermelons from customers who come to the event should be at 500, 1,000 per day , 1,500 and 2,000 balls) from the above information Make a decision table.
5. Consideration of buying fruit from various orchards to sell at the Agricultural Fair with forecasts about profits expected to be received as follows: (Unit : 1,000 baht)

event	choice		
	Garden A	garden B	garden C
less sales	12	15	14
moderate sales	38	40	38
can sell a lot	87	80	75

If the shopkeeper knows the probability of an event More or less sales are as follows:

Low sales : Medium sales : High sales = 0.3 : 0.5 : 0.2

find 5 . 1 Making decisions using EVs

5 . 2 Decision-making using EOL

5.3 How much should I pay for complete information?

6. Company ABC wants to invest in trading, but the funds are insufficient, so they need to raise funds. There are 2 options: borrow money from banks or sell company shares to those who are interested in co-investing. company executives Investment forecast can be as follows.

- If the company borrows money from the bank will receive a return of 2,000,000 baht per year if the economy of

1,200,000 baht per year if the country's economy is depressed.

- If selling company shares He will get a return of 9,000,000 baht per year if the country's economy is good. and will be rewarded 250,000 baht if the country's economy is depressed Determine whether a company should take a loan from a bank or sell its stock for investment using the following methods.

6.1 Making decisions using Maximax

6.2 Decision-making Maximin

6.3 decision using Minimax regret

7. Charoen Dee Co., Ltd. produces and sells lubricants. There are 3 types of combination devices to choose from, AB and C , and the resulting results are according to the table below.

event	choice		
	Device A	Device B	Device C
fixed price raw materials	30,000	50,000	75,000
Rising prices of raw materials	80,000	90,000	108,000

7.1 If from experience Knowing that the probability that the raw material price is constant is 0.7 , show the decision by using the expected value (EV).

7.2 Decision-making using the opportunity cost (EOL) criteria

7.3 Decision-making using the news-rich expectation value (EPPI)

7.4 Decision-making by Maximax Criteria

7.5 Decision-Making Using Maximin Criteria

8. In the production of a particular product, investment in machinery is 20 , 000 baht , variable cost per unit is 4 baht, selling price per unit is 10 baht, and the estimation of the demand for purchase. and the probabilities of demand for different levels are as follows:

demand for purchase	probability
4 , 000	0.4
5 000 _	0.5
6 000 _	0.1

8.1 Create a profit table

8.2 Making decisions using EVs

8.3 Decision-making using EOL

8.4 How much should I pay for complete information?

9. A chicken seller is planning to boil chicken for sale during Chinese New Year, but can't decide how many boiled chickens he wants to prepare this year. From past experiences, it was found that there were customers who bought boiled chicken at the following restaurants:

volume of boiled chicken (one)	60	80	100
probability	0.4	0.4	0.2

The cost of boiling chicken is 80 baht per piece and sold at a price of 170 baht per piece.

9.1 Create a profit table

9.2 Making decisions using EVs

9.3 Decision-making using EOL

9.4 In case complete information is required

10. In investing in a shop at Chatuchak, a 10-year lease contract requires an initial investment of 300,000 baht and an interest rate of 8 %, with an expected net cash flow from operations of 66,000 baht per year.

10.1 Payback period

10.2 Net Present Value (NPV)

10.3 Internal rate of return (IRR)

Reference

- Narongsak Thanawiboonchai .(2002). Managerial Economics .Bangkok : Sukhothai Thammathirat Open University Press.
- Peerapong Darathai.(1999). Relationship between decision-making characteristics of administrators and effectiveness of general education private schools in the educational area 12. Chonburi : Burapha University Thesis.
- Wanee Techoyothin , Somchai Supattarakul , Monwipha Phadungsit. (2015). Cost Management . Bangkok : Physics Center Publishing.
- Suchinda Jamsriphong (2015). Business Economics. Phitsanulok : Naresuan University Press.

8 Problems affecting business operations and policies to solve problems

Macroeconomics is a broad story of the economy . which is the story of the overall economy of the country Each country that uses an open economy is a collaboration between the public and private sectors. have trading contact international goods and services The government sector aims to increase the national income for the people. so that people can spend more, eat well, live well, the economy is expanding However, the government must prevent inflation caused by economic expansion by using monetary policy. fiscal policy and international trade policies, as well as planning economic development in line with global changes. As for the private sector, it must be adjusted in line with various policies implemented by the government.

Problems affecting business operations

macroeconomic problems It is a problem that affects the overall picture of the country. because when it happened It will not happen to any person, person or organization. one agency But it will happen to the whole of the country. But who will be affected to what extent? depending on the adaptation of the person or that agency The macroeconomic problems are as follows.

1. Inflation

Inflation refers to a condition in which the general price level of goods increases steadily. continually If inflation increases but only slightly as usual, it will create incentives for entrepreneurs. But if it increases and fluctuates, it will create uncertainty and cause problems to the economy. especially the livelihood of the people and economic instability which is an obstacle to economic development

The term price level refers to the price index. The price index can be classified into 4 types:

1. Consumer Price Index (consumer price index or CPI) It is a price index that measures the change in the price level of consumer goods and services. There are two types of consumer index numbers:

1.1 Core consumer price index (core consumer price index) is an index that excludes certain groups of fresh food and energy in the calculation. Since the prices of these two groups of products change quickly, there are approximately 300 inventories.

1.2 The headline consumer price index (cpi) is an index that includes all items of goods and services.

2. Producer price index (producer price index or ppi) It is a price index that measures the change in the price of goods that manufacturers produce and sell at the place of production in a particular year. Comparison with the price of the same product type and amount in the base year divided into 2 types as follows

2.1 Divided by production activities consists of agriculture category Mining Product Category Industrial Product Category

2.2 Divided by production process will be finished goods semi-finished products raw materials

3. Wholesale price index (WPI) It is a price index used to measure the change in the wholesale price of goods at wholesale stores and dealers. in any year compared with the prices of the same type and amount in the base year. The products and services used to calculate the wholesale price index are agricultural products

4. Gross Domestic Product Price Index (GDP or GNP Deflator)
Gross Domestic Product Price Index (GDP Deflator) is a price index that shows the change in the price of all goods that are constituents of GDP. Unlike the Consumer Price Index, which is an inflation indicator that shows changes in prices for consumer goods only, GDP Deflator is a variable used to adjust GDP from market prices to base year prices. and food products and industrial products

Of the four price indices, they are the ones that are best used to measure inflation. is the consumer price index. It will cover the goods and services necessary for the livelihood of the people. Therefore, changes in the prices of such goods and services will directly affect people's cost of living.

Type of inflation

Inflation can be divided into 3 types:

1. Mild inflation The price level increases no more than 5 percent. Inflation is an incentive to expand production and investment of merchants. Investors are inflation that is good effect on the economy of the nation because it encourages economic growth higher national income

2. moderate inflation The price level increases about 6 - 20 percent . The higher price level causes the cost of production to increase. Even though people have more income but the income is not enough to spend People face the problem of rising cost of living. forcing the government to use monetary policy Finance to solve problems

3. Hyperinflation (hyper inflation) The price level increased by more than 2 % 0 as inflation occurred rapidly. It usually occurs during an economic crisis, a war, and is classified as a high inflation. negative effect on the economy

cause of inflation

The causes of inflation are as follows (Ratana Saikanit. 1996, page 184).

1. Demand Inflation Demand inflation is a type of inflation caused by an increase in demand that exceeds supply. This may be due to monetary policies that cause the money supply in the economy to exceed the available goods and services. causing the price of goods and services to rise or when the government uses fiscal policy such as buying more goods and services Reduce taxes levied on citizens Thus, the cause of demand inflation may be caused by an increase in the money supply. cost increase advantage of the balance of payments As a result, aggregate demand shifted to the right of the original line.

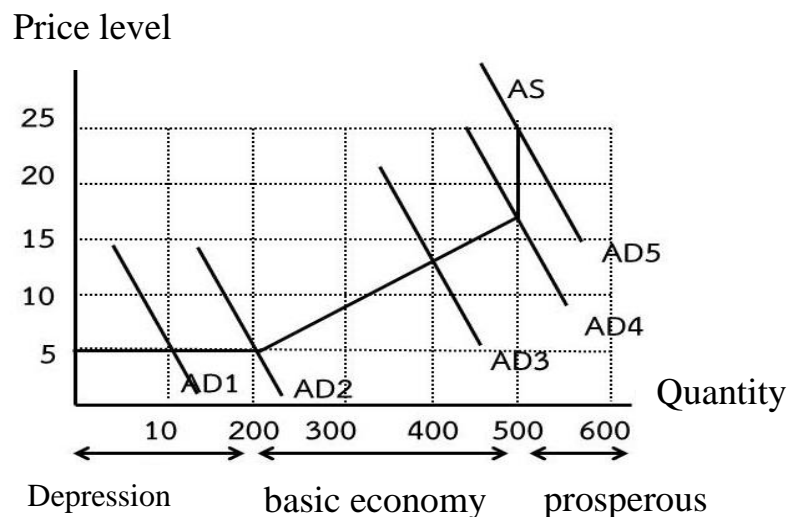


Chart 9.1 Demand inflation

Figure 9.1 shows demand-driven inflation during the economic recovery. aggregate demand and the aggregate supply will increase. and when the economy is fully prosperous With full employment, demand

will increase. while supply is fully expanding Thus, demand-driven inflation occurs.

2. Inflation caused by supply (supply inflation) is characterized by inflation caused by rising production costs. Until resulting in higher product prices The major costs are labor costs, oil prices, etc. In addition, increasing the profits of entrepreneurs is a major cause of inflation. As will be discussed further on the supply side reasons as follows: an increase in production costs. a decrease in the amount of goods and services Increasing the profits of entrepreneurs

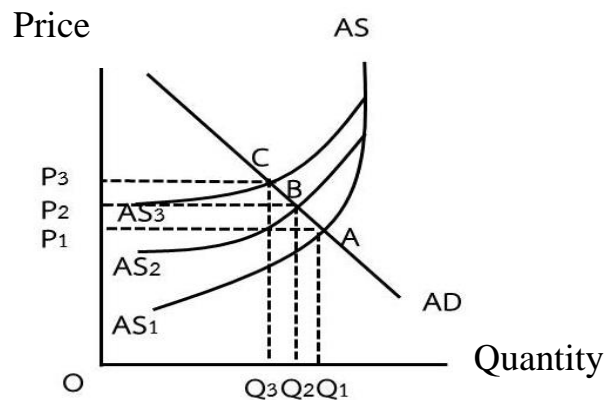


Figure 9.2 Inflation caused by supply

Figure 9.2 From the graph , AS intersects with AD at point A , which is considered the full employment level. But if there is a request for an increase in wages or the price of raw materials increases will reduce the supply Product prices will increase.

3. Inflation resulting from combined demand and supply (mixed inflation) is a type of inflation that is caused by both the supply and demand side at the same time. Because in reality sometimes it is not possible to clearly distinguish the cause of inflation as a cause of demand or supply. The cause of the demand side may be caused by higher demand for goods and services. As a result, the price of goods and services increases. And at the same time there is a demand for higher wages. resulting in higher cost of goods and services and the price of

goods and services increases accordingly This is a supply-side cause. Thus, this type of inflation is a mixed type of inflation.

2. Unemployment problem (unemployment)

Unemployment refers to a condition in which a person is ready, capable and willing to work. but not working In other words, the labor market is unable to accommodate qualified individuals. ready to work

type of unemployment

Unemployment can be classified as follows.

1. Unemployment caused by economic fluctuations (cyclical unemployment) is unemployment caused by economic fluctuations. such as economic recession The demand for aggregate is less than the aggregate supply. of the country at that time

2. Temporary unemployment (frictional unemployment) is being unemployed for a while, such as those who have just graduated. looking for a job or someone who already has a job But I don't like the job I'm doing. therefore resigned to find a new job which is only temporary unemployment

3. Unemployment caused by economic structure this type of unemployment Unemployment is caused by the adjustment of the economic structure. such as technology changes change in state policy

4. Other types of unemployment such as seasonal unemployment unemployment in a way that works below the level hidden unemployment

3. Problems of economic growth (economic growth)

Economic growth is a measure of the level of economic growth. By calculating that, over a period of time, gross domestic product : At what rate has the country's average real GDP per capita increased on average per year? (Kim Chaisansuk. 2014. page 203)

Impact of economic growth

1. The beneficial or positive impact of economic growth can be classified as follows

1.1 It is to raise the level of living Because the economy is growing, it means That society has produced more consumption Livelihood has a better quality of life.

1.2 The government can bring income Or the benefits arising from economic growth to allocate to create prosperity for the nation

1.3 The increase in income changes the consumption patterns of people in society. Increasing income has led to greater demand for facilities. such as basic utilities place to relax

2. Impact on loss or the negative side of economic growth can be classified as follows

2.1 Cause personal costs and higher social costs due to economic growth will cause new innovations making some production methods or some machines become obsolete And having to leave the production process, these things are inevitably a loss. or negative impact In addition to some manufacturers or some business units that have the knowledge and ability to adapt to keep up with the changes that occur

2.2 Cause opportunity cost due to economic activities use of limited resources production decisions or consume any Causing to sacrifice in production and consumption, one more thing This is called the opportunity cost.

the role of government in problem solving

The central role of the government is to help the people of the country to live well. By using various tools that will result in the growth of the domestic economy according to the target In considering the

implementation of the state in the macro sector (Somjin Santhawarak , 2015, pp. 8-10)

1. The role of expansion or contraction in the economy

The government will work to stabilize the economy by balancing national income. That is, if the economy is stagnant, deflation occurs. The government must make the economy grow. But if inflation The amount of money circulating in the economy is large. The government must take various measures to cause the economy to contract by The components of birth as national income are as follows : (Somchin Santhawarak, 2015 , page 8-9)

$$Y = C + I + G + (X - M)$$

where Y = national income

C = Private consumption expenditure

I = Private investment expenditure

G = expenditures for the purchase of government goods and services

(X - M) = net foreign expenditure or net exports

, it is equilibrium in the economy, where Y is the country's gross domestic product or aggregate supply . supply) , while $C + I + G + (X - M)$ is aggregate demand . demand) of the country. The details of aggregate demand are as follows:

1.1 Consumption (consumption: C)

Many factors determine consumption such as income, price, spending habits. interest rate But the most important factor is income. And the income level is called the consumption function, with the assumption that other factors determine constant consumption, can be classified into 2 types:

1.1.1 Autonomous consumption (C_a) is consumption that does not depend on income. That is, no matter how low the income consumers have, or no income at all, consumers still have to consume

1.1.2 induced consumption (C_i) consumption based on income. That is, if consumers have a lot of income, they will consume a lot, and if there is little income, decrease in consumption

$$C = C_a + C_i$$

The value of C_i depends on the value of the propensity to consume. When there is an increase in net income by 1 unit or the marginal propensity to consume ($MPC : b$) means the total consumption expenditure increases when income increases by 1 unit and less with tax. If it is an economic system with a government, then

$$C = C_a + b(YT)$$

government intervention in consumption. Including the government setting policies that promote consumption, such as providing subsidies to low-income people. Promotion of consumption by receiving tax deductions, etc., which such policies cause people to have more consumption, which in addition to encouraging people to have more consumption. It also helps to support investment in the country as well.

1.2 Investment (investment : I)

Investment refers to the expenditure that a business intends or plans to purchase capital goods, including changes in inventory over a specific period of time. In investment economics, only the expenditures that cause an increase in capital goods are taken into account. Investment is divided into 2 types.

1.2.1 Autonomous investment (I_a) focuses on investments that do not change according to the level of national income. But it's an investment based on predefined business goals.

1.2.2 induced investment (I_i) investment changes in the same way as the level of national income, that is, if the national income increases, investment will increase. But if national income decreases, investment will decrease.

$$I = I_a + I_i$$

$$I = I_a + iY$$

Government intervention in investment Including the government establishing a business development fund that encourages investors to access capital. with a low interest rate and providing advice to investors

1.3 Government expenditure (government expenditure: G)

It is an independent expenditure that does not depend on national income. It is an expense that depends on the government's spending plan. when the government spends more It will stimulate investment and the manufacturing sector will expand resulting in more employment. and increase national income For example, the government invests in basic infrastructure activities. to create prosperity for the nation And it also creates jobs and generates income.

by $G \uparrow \rightarrow I \uparrow \rightarrow \text{production} \uparrow \rightarrow \text{employment} \uparrow \rightarrow \text{national income} \uparrow$

But if the economy is expanding, there will be inflation problems. The government must try to reduce government spending.

by $G \downarrow \rightarrow I \downarrow \rightarrow \text{production} \downarrow \rightarrow \text{employment} \downarrow \rightarrow \text{national income} \downarrow$

1.4 Export (export: X)

It is an independent variable independent of national income. Since the products are exported to foreign countries, therefore, the factors that determine the income from exports include

- The demand that foreigners have for the country's products.
- price of exported goods

- International currency exchange rates

Government intervention through state assistance Direct and indirect support to the private sector to increase the amount of exports to foreign countries or reduce the amount of imported goods from abroad to help domestic investors such as reduction or exemption of import duties on raw materials, machinery, lending at lower interest rates than normal interest rates in the market, etc.

1.5 Import (import : M)

Importing goods from abroad is similar to consumption. Only consumption is the consumption of domestic products. But importing is the consumption of goods from abroad, so the expenditure on imports in a certain period will be higher or lower depending on the following factors

- national income
- tastes of people in the country
- Foreign exchange rates

The import equation is $M = M_a + mY$.

where $M_a =$ independent import that does not depend on income

$m =$ propensity to Import when earnings increase by 1 unit or marginal propensity to import (MPM)

If other factors are fixed The factor that has the greatest influence on import expenditures is national income which has a relationship in the same direction

From the above data, when analyzed, it can be seen that the factors that have the greatest influence on national income are consumption,

investment and imports, while government expenditure and exports are independent factors independent of national income.

Therefore, the government will use government spending. And tax measures (tax:T) are tools to make the economy expand or contract by using fiscal policy. Including controlling the amount of money in the economy in an appropriate amount will be supervised by the central bank. using monetary policy As for import changes (M), the government will use international trade policies.

2. Fiscal macroeconomic policy

Tools used by the government to solve economic problems By using fiscal policy (fiscal policy), which is the policy of spending money. (G) Earning money by collecting taxes (T) and accumulating public debt to adjust aggregate spending . expenditure: AE)

Reasons why the government must intervene in economic activities

Normally, in countries that adopt liberal or semi-liberal economic policies, the government does not intervene in economic activities. But sometimes the government needs to intervene in economic activities for the following reasons (Boonkong Turn to fade right. 2001. Page 191)

1. The government needs to create public goods is a public service that is provided for the benefit of the people in the necessities of life such as electricity, water supply, bus operation, telephone Such activities if the government does not take action. It will be difficult for any private sector to come and operate. Because some facilities are still infrastructures. (infrastructure) enabling the economy to expand (economic growth)

2. The government needs to come in for the redistribution of income. and create fairness including maintaining economic stability not cause deflation or inflation at an appropriate rate

3. Free market system that uses the price mechanism as a decision maker for production including the pursuit of maximum profit As a result, some businesses lack social responsibility. such as releasing waste into rivers and canals have a negative impact on society So the government needs to take care of it.

In summary, although a free economic system or semi-liberal that the private sector conducts economic activities Governments still have to perform regulatory functions, such as acting on the fair distribution of income. Duty to allocate natural resources and duty to maintain economic stability

An important tool of fiscal policy is government revenue government spending which is undertaken by the government in order to have an effect in the field that will help in maintaining stability and progress in the country's economic development The details are as follows.

1. Government revenue (public receipt) means government revenue. including loans and treasury

To carry out revenue-generating government activities, the government must specify revenue-generating plans. and a loan plan in case the income is insufficient for spending Government revenues are divided into two categories:

1.1 Earned income This is the income that the government receives from various activities in order to obtain expenses for the administration of the country. can be divided as follows:

1.1.1 Tax revenue including personal income tax corporate income tax, customs tax, excise tax, etc. Tax revenues will affect the AE, that is, if there is an increase in taxation. It will increase the government's tax revenue, but will reduce the AE because the tax paid by the private

sector decreases the private sector's income. decrease in purchasing power For example, the government collects more taxes from households, causing consumption to decrease. or collecting more taxes from business units will reduce investment

1.1.2 Revenue from commercial government It is the income of state enterprises delivered to the government. such as income from the Government Lottery Office, etc.

1.1.3 Income from the sale of things such as the sale of durable goods that has been used for a long time

1.1.4 Other income such as income from the sale of stamp duty Income from sales of commemorative coins for various occasions

1.2 Non-income income which can be divided as follows

1.2.1 Loans The government plans to spend money for the administration of the country in advance in order to achieve economic growth. People are eating well. And the main income of the government comes from taxes. But sometimes the amount of tax collected is insufficient. Therefore, the government must borrow money, which may be borrowed within the country or abroad. However, government borrowing is considered public debt. The law stipulates that public debt must not exceed 40% of gross domestic product (GDP).

1.2.2 Treasury balance _ is the amount of money or cash equivalent that is the residual income from government expenditures for the operation of the state which is accumulated at a certain point in time, as if it were the country's savings . If the state's revenue collection is higher than the state's operating expenses for that year, it will result in a balance. and increase the cumulative balance of the treasury But if the state's revenue collection is lower than the state's operating expenses in

that year, it may result in a decrease in the treasury level from the use of the treasury.

2. Government expenditure (government expenditure) refers to government expenditures to maintain the normal level of government operations. and for the benefit of society as a whole

type of expenditure

Government expenditures are divided into two categories:

1. Expenses for goods, services and investments are payments made for the purchase of goods and services. Therefore, government expenditure is part of the national income component, which has the following equation:

$$Y = AE = C + I + G + (X - M)$$

Therefore, the change in the letter G will inevitably change the national income as shown in Figure 9.3

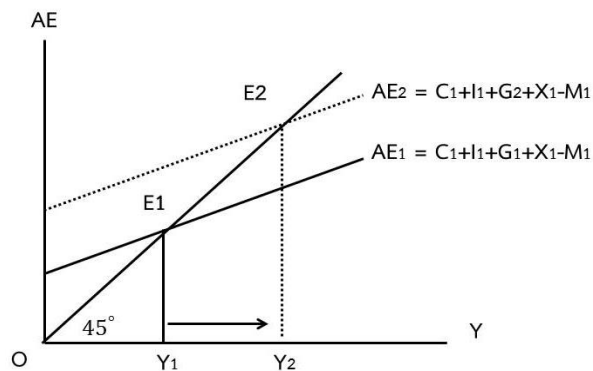


Figure 9. 4 change in the level of national income When the government changes spending on goods, services and investments

From Figure 9.3 when the government increases spending from G_1 to G_2 , with all other factors constant, will cause the AE curve to change from AE_1 to AE_2 . and the national income will change from Y_1 to Y_2

2. Transfer expenses It is an expense paid by the government which is the income of the household unit. Types of money transfer expenses

include: Old age allowance Unemployment compensation, etc., which the household unit can spend on consumption. Consequently, the consumption (C) will increase and AE will increase as shown in Figure 9.4

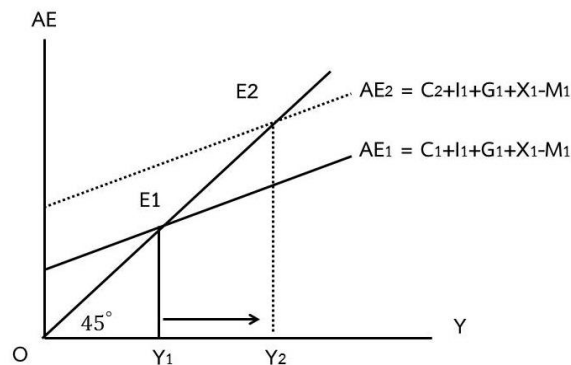


Figure 9.4 Changes in the national income level When the government changes the type of money transfer spending

From Figure 9.4 when the government increases transfer spending cause the consumption to change from C_1 to C_2 , with other factors constant, will cause the AE curve to change from AE_1 to AE_2 . and the national income will change from Y_1 to Y_2

Purpose of government payments

- 1) to maintain economic stability within and outside the country
- 2) promote economic growth and economic fairness
- 3) Maintain economic and political relations between countries.

when the economy is in trouble The government uses fiscal policy to solve problems by type of fiscal policy. Categorized by economic problems that need to be solved There are 2 formats:

1. expansionary fiscal policy

is a fiscal policy that increases government expenditure. and lower tax rates (Using a deficit budget) Used when the economy is in a downturn. The products and services of the manufacturer are not sold. The unemployment level in the country is high.

2) contractionary fiscal policy

is the fiscal policy Reduce government expenditures and increase tax rates. (Using a surplus budget) is used when the economy grows too much (overheat) causing inflation.

Table 9.1 Economic Problems and Use of Fiscal Policy to Solve Problems

	contraction fiscal policy	expansionary fiscal policy
Problem condition	The economy grew a lot inflation	Depression deflation , unemployment
way	reduce government expenditures increase income (tax)	increase state expenditure Reduce income (tax)
budget	budget surplus	deficit budget
aggregate demand	reduce	more
final effect	GDP goes down, prices go down	GDP goes up, prices go up

3. Macroeconomic policy in terms of monetary policy

Monetary policy is the management of money and credit supply to achieve economic goals, such as stabilizing prices. promote employment maintaining economic growth Maintaining the balance of international payments fair income distribution.

Monetary policy tools

Monetary policy is administered by a central bank. for Thailand The central bank of Thailand is the central bank. The tools used are as follows.

1. Money supply control (quantitative control) is to make the amount of money circulating in the country not too much and not too little That is, the demand for money must be given. equals the supply of money If the money supply is too high, it will cause inflation. and if too little will cause deflation Therefore, money supply control can be classified as follows.

1.1 Securities trading through the money market (open market operation: OMO) Generally, the government will issue bonds. and debt instruments for budget allocation through the central bank The government will use the money for various activities planned by the government. If the government wants to reduce the money supply in the economy, the government sells bonds. and bonds But if the government wants the amount of money circulating in the economy to decrease, the government will announce the return of bonds. and bonds

1.2 The change in the legal reserve ratio is the rate of cash reserves that must be maintained. It is the minimum rate set by the central bank for all commercial banks. Must comply because when the public or business unit Deposit the money to the bank Causing the bank to use this money to seek returns by lending and to people or business units This group may come to withdraw money. or request later without notifying the bank in advance Therefore, in order to achieve liquidity The government, through the central bank, therefore sets a statutory cash reserve rate in part. And the rest can be used by commercial banks for transactions such as investment or lending. Therefore, if wanting to reduce lending will announce an increase in the statutory cash reserve

rate This causes commercial banks to release less credit, causing higher interest rates to reduce inflation. But if the economy is down The government must announce a reduction in the legal reserve cash rate. for commercial banks to grant more credit

1.3 Change in discount rate (rediscount rate) means interest on loans that the central bank collects in advance from commercial banks when commercial banks discount the bills that commercial banks buy (discounting). to be sold to the central bank

1.4 Changes in standard interest rates (bank rate) is the interest rate that the central bank charges from commercial banks. It is usually a loan secured by government securities. If the central bank wants to increase the money supply, it will lower the benchmark interest rate. Conversely, if the central bank wants to decrease the money supply, it will increase the benchmark interest rate.

2. Quality control (qualitative control) is a control in problem areas such as lending of financial institutions. If inflation is found The country experiences a trade deficit. deficit of payments The government may take control of consumer loans. Modify the installment payment period or interest rate and may be requested amicably (gentleman's agreement) or moral suasion

4. Macroeconomic policy on trade

International trade means the exchange of goods. and international service What country will attempt to produce all kinds of goods and services without importing or exporting? That country will develop slowly. and the standard of living of the people will be low

Therefore, at present, every country will have contact for trading, exchanging goods and services between countries. The international trade will be part of the national income according to the equation.

$$Y = C + I + G + (X - M)$$

Where X = Export is the export.

and M = Import is an import.

Export policy

If the government promotes exports will increase the national income. Because exports have increased production. employment increase Increased consumption in the country There is more foreign currency, so the government has come up with various measures to promote exports (Somjin Sunthawarak, 2015 , pages 8-65).

1. Export subsidies Refers to the government subsidizing some exports. Make business units save capital Able to produce export products as an advantage over exporters from other countries that are not subsidized by the government

2. Exporter production support with tax measures such as reduction or exemption of export tax This will enable the business unit to produce products to compete with other manufacturers in the global market.

3. Government assistance in other areas that support exports For example, the government invests in building transportation-related infrastructure. such as building a deep sea port building a high-speed train or the government joining ASEAN members making trade agreements, etc.

Import policy

government import policy will help support the business unit

1. Imposing import tariffs on certain goods by domestic business units. able to produce The government therefore encourages people to buy locally produced products. Therefore, the government prohibits

imports of such goods by increasing import measures. or may impose relatively high import taxes to support domestic production

2. Import quota (import quota) by the government will determine the amount of imports in each period. If the country is lacking The government will increase the import quota. But if the amount of goods in the country is quite large. The government will reduce the import quota.

3. In some capital goods that the country cannot produce need to rely on foreign goods Such as tools, machinery, etc., the government will reduce or exempt imports. to create benefits for business units

The role of the private sector in the economy

The private sector plays an important role in making the country grow. How is there progress? The government's goal is to help people in the country live well. by using various tools that will result in the domestic economy targeted growth In considering the implementation of the state in the macro sector (Somjin Santhawarak , 2015, pp. 8-10)

Adjustment of business units when government adopts fiscal policy

When the government implements fiscal policy by increasing government spending in various areas along with reducing tax rates, people in the country tend to spend more. Business units therefore expanded considerably. Therefore, business units must study government policies that support the public. How are spending? along with studying the consumption behavior of the people to see how they tend to consume for the benefit of business units

Adjustment of business units when the government adopts monetary policy.

when the government adopts strict monetary policy (decreases money supply) will lower the inflation rate. Business units can plan production. without having to worry about the cost of raw materials and

labor thus resulting in price stability. on the contrary If the government adopts accommodative monetary policy (increasing the money supply) will cause inflation. If it's mild inflation, it's good for business units. But if the inflation rate is too high, the cost of production will increase. because of high interest rates higher wages Rising raw material prices Therefore, business units must carefully plan their production.

Adjustment of business units when government adopts trade policy

When the government implements trade policies with various measures in terms of exports Business units should have to build confidence in overseas markets. and seeking more foreign markets along with studying the needs of consumers in foreign markets As for imports, it was during the period when the government had measures. Support domestic business units to be able to compete with foreign countries Therefore, business units must develop quality products. No complaints from using the product. and if it is necessary to add tools Machines that cannot be found in the country Business units should act quickly. Because during this period, the government has exempted import taxes.

Thailand's economic development plan that affects business operations

economic development Refers to the process that produces long-lasting and consistent economic growth. with a higher real income (Boontham Ratcharak, Supat Ouipaiboonsawat, 2012 , page 237). There has been a change or improvement in the structure of the economy. as well as political, social, administrative and educational systems in line with the development that will result in better welfare of the people Average real income per The long-term increase in population considers data concerning the welfare and well-being of people. Including the basic capital of the society (infra structures) such as the availability of various utilities in society.

Thailand has set guidelines for major structural changes in the economy and society. It is set out in the form of a document called the National Economic and Social Development Plan prepared by the Office of the National Economic and Social Development Board : NESDB . Currently, Thailand has 12 economic development plans , with the current one being the 12th , starting in 2016. 2017 - 2021

12th Economic Development Plan (2017 - 2021)

12th National Development Plan has a conceptual framework and key planning principles as follows:

- (1) Introduction and application of the philosophy of sufficiency economy
- (2) People are the center of participatory development.
- (3) Support and promotion of national reform ideas
- (4) Development towards stability, prosperity, sustainability, and a happy society

Vision Framework of the 12th National Development Plan

from the state of the country and the context of various changes that the country is experiencing As a result, the vision of the 12th National Development Plan continues from the vision of the 11th National Development Plan and the principle framework of planning that introduces and applies the philosophy of sufficiency economy. Put people at the center of participatory development. Development based on balanced and sustainable principles. The development vision in the 12th Plan must focus on setting a development direction that aims to transform Thailand from a middle-income country to a low-income country. high, stable and sustainable, society living together happily and lead to the achievement of a long-term vision “ Stable, Wealthy, Sustainable ” of the country

determining the strategic position of the country (country strategic positioning)

It is a strategic positioning of the country that is in line with the national strategy that NESDB has prepared. Thailand is a high-income country with fair income distribution. It is the center of transportation and logistics of the region to become a nation of trade and services (Trading and Service Nation). It is a source of organic and safe agricultural products. Creative and highly innovative industries that are environmentally friendly.

12th Economic Development Plan

1. Breaking out of the middle-to-high income trap

1.1 Average economic growth of not less than 5.0 percent.

1.2 Gross domestic product per capita (GDP per capita) and national income per capita (GNP per capita) at the end of the 12th National Development Plan in 2021 increased to 317 , 051 baht (9 , 325 US dollars).) and 301 , 199 baht (8 , 859 US dollars) per person per year.

1.3 Productivity increases not less than an average of 2.5 percent per year.

1.4 Total investment grew no less than an average of 8.0 percent (government investment grew no less than 10.0 percent and private investment grew no lower than an average of 7.5 percent . average growth of not less than 4.0 percent per year)

2. Development of human potential to support the growth of the country and the creation of a quality aging society.

2.1 People of all ages have economic and social stability and have a better quality of life

2.2 Education and learning quality development

2.3 Strong social institutions serve as foundations conducive to human development.

3. Reducing social inequality

3.1 Income distribution is more equitable

3.2 Social services are of good quality and widely distributed.

4. Creating environmentally friendly economic and social growth

4.1 Maintain the stability of the resource base Create a balance between conservation and sustainable and fair use.

4.2 Driving the country toward an eco-friendly economy and society

4.3 Enhance capacity to deal with disasters and climate change

4.4 Enhance efficiency and strengthen good governance in managing natural resources and the environment.

4.5 Water management is in place to balance between water demand and supply.

5 . Efficient administration of state affairs

5.1 Public administration that is transparent, fair and efficient and participate

5.2 Eliminate corruption

5.3 There is decent decentralization.

New economic model Thailand 4.0

“Thailand 4.0” is a change in economic structure to a “Value-Based Economy” or “Innovation-Driven Economy” with the main idea being to change from producing “commodities” to “innovative” products, changing from driving country with industry to be driven by technology Creativity and innovation and shift from focusing on product

manufacturing to focus more on the service sector The issues that need to be developed are as follows:

1. Food, agriculture and biotechnology groups such as creating new business routes (New Startups) in agricultural technology food technology, etc.

2. Public health, health and medical technology groups, such as health technology development medical technology, spa, etc.

3 . Tools group Smart devices, robots, and electronically controlled mechanical systems such as robot technology, etc.

4 . Digital group, internet technology that connects and controls various devices Artificial intelligence and embedded technologies such as financial technology The device connects online without human intervention. Educational technology, e - marketplace, e - commerce, etc.

5. Creative industries, culture and high-value services such as technology, design lifestyle business travel technology service enhancement, etc.

National development under the “ Thailand 4.0” model will be successful using the “ Pracharat Collaboration ” approach as the driving force. with a focus on the participation of the private sector Banking and finance sector, public sector, educational institution sector Universities and research institutes together to brainstorm Join forces to drive through projects, memorandums of cooperation, activities or research by the operations of " Pracharat " groups, which are:

Group 1 Upgrading innovations and products, amending laws and government mechanisms Developing industrial clusters of the future and attracting investment and infrastructure development

Group 2 Modern agricultural development and grassroots economic development and civil state

Group 3 Promotion of Tourism and Miles monetization and stimulating government spending

Group 4 Basic Education and Leadership Development (Pracharat Schools), including enhancing professional quality

Group 5 Promotion of Exports and Foreign Investment Including the promotion of SMEs and new entrepreneurs (start up) , each group is setting up a system and setting guidelines for intensive policy driving.

summarize

Macroeconomic problems that play an important role in business operations include inflation. The appropriate rate of inflation will benefit the overall economy of the country. Unemployment refers to people who are ready to enter the labor market, want to work, but do not have a job. The unemployment that affects the national economy is unemployment due to economic volatility. and changes in economic structure and economic growth The advantages of economic growth cause the economy to expand. The downside of economic growth is personal costs. social cost and opportunity cost Therefore, the government must take various measures to solve macroeconomic problems, consisting of

1. The role of expansion or contraction in the economy If the government wants the economy to expand The government will encourage investment and the manufacturing sector will expand resulting in more employment. and increase national income And if the government wants the economy to contract, the government will issue policies that reduce the level of public spending.

2. Fiscal macroeconomic policy means the policy on receipts and payments. and public debt recovery, which is undertaken by the government in order to have an effect in helping to maintain stability and progress in the country's economic development.

3. Monetary Macroeconomic Policy It is a government policy that is determined by the central bank of each country by using interest rate measures, etc.

4. Macroeconomic policy on trade means the exchange of goods. and international service which includes exports and imports

5. Planning for Thailand's economic development to keep pace with the global economic growth By laying down various policies that

make people in the country have a good living The economy has expanded resulting in better welfare of the people. Average real income per person increases over the long term.

Business units must adapt to various policies imposed by the government amid the global economic crisis. Businessmen have to go through various problems. by studying government policies which are considered as macro-level policies

Questions at the end of chapter 9

1. What kind of inflation is good for the national economy?
2. general inflation And what is the difference between core inflation?
3. What does temporary unemployment mean? Explain and give examples.
4. Economic growth causes losses. or negative impact
5. If the government wants the economy to expand, what policy will the government have?
6. What is monetary policy and what are its tools?
7. If the country is experiencing excessive inflation , how will the government use monetary policy to solve the problem?
8. What is fiscal policy and what are the tools?
9. Why is it that in business Business units must therefore study macroeconomics.
10. The economic driving policy in the current national economic and social development plan has a new economic development model called Thailand 4.0 to allow Thailand to transcend middle-income countries. to high-income countries Have students explain how such policies will drive the economy.

Reference

- Kim Chaisansuk. (2557) . Business Economics . Bangkok:
Ramkhamhaeng University Press.
- Boon Kong Han Changsit (25 44). Macroeconomics .
Bangkok : O.S. Printing House Co., Ltd.
- Rattana Saikanit. (1996). Analytical macroeconomics. From
theory to policy. Bangkok : Chulalongkorn University.
- Somjin Santhawarak. (2015). Business Economics and
Business Finance . Bangkok : Sukhothai Thammathirat
Open University Press.
- the National Economic and Social Development Board .
(2017-2021). Bangkok : Office of the Prime Minister.