Microeconomic Principles ECON111

The Production Possibilities Frontier

Definition of Economics

Economic questions arise from the unlimited nature of our wants and the limitation to resources. Scarcity is the inability to satisfy all wants and because of this, economics is the social science that studies the choices individuals, businesses, governments and societies make to cope with scarcity and the incentives that influence these choices.

Whereas Macroeconomics deals with the performance of the national economy and its role in the global economy, Microeconomics studies the choices individual components of the economy make, separating individuals from firms and analysing the way choices interact in markets.

2 Big Economic Questions

1. How do the choices people make determine what, how and for whom goods and services get produced?

What?
Goods and services are objects that people value and produce to satisfy human wants. The nature of production changes over time. In Australia, agriculture accounts for 4% of total production with manufactured goods at 26% and services at 70%.

How?
Factors of Production are the resources that produce G&S.

- **Land:** Natural resources (rent)
- **Labour:** Physical and mental effort (wages). The quality of labour depends on human capital→the knowledge and skill obtained from education, work experience and on-the-job training.
- **Capital:** Tools, machines and buildings that were produced in the past and businesses now use to produce goods and services (interest)
- **Entrepreneurship/Enterprise:** The ideas, risk taking and human resource that organizes factors and production to produce G&S (profit).

Whom?
People earn incomes by selling the factors of production they own. People with larger incomes earn a greater portion of production, satisfying more wants and enjoying a higher

standard of living. Education has a big impact on earnings, with people with a degree earning 65% more than those employed without qualifications.

2. How can choices made in the pursuit of self-interest also promote the social interest?

Self Interest:
Individuals make choices that are thought to be best for them.

Social Interest:
Choices that are best for society are said to be in the social interest. Its dimensions include:

-**Efficiency**
Achieved when available resources are used to produce G&S at the lowest possible price and in quantities that give the greatest possible benefit.
-**Equity**
Is fairness.

The Economic Way of Thinking

Because of scarcity, a tradeoff occurs when we make choices between available alternatives.

- What goods are produced depends on the choice made by individuals, governments and businesses. Individuals face the tradeoff in choosing how to spend their income and the government for spending taxes (increasing education for taxes).
- How G&S are produced depends on a business's choice between labour and capital
- For whom G&S are produced depends on the distribution of buying power (voluntary payments ie charity, theft and government benefits). The big tradeoff occurs when society votes for taxes and social programs that redistribute buying power to the poor. This is the tradeoff between equality and efficiency.

Making a Rational Choice:
A rational choice involves comparing the costs and benefits to achieve the greatest outcome for the person.

The benefit of something is often determined by individual preferences (their likes and dislikes). The opportunity cost of something is the highest-valued alternative that must be given up to get this. Opportunity cost has 2 components→ the things you can't afford in making the purchase and the things you cannot do with your time as a result.

Marginal Analysis:
To make a choice at the margin, evaluate the consequences of making incremental changes in the use of time. Comparing marginal benefit of a decision with marginal cost of a decision is marginal analysis, which agents use to make decisions.

- The benefit from pursuing an incremental increase in an activity is its **marginal benefit.** The marginal benefit of consuming one extra unit often decreases the more a good is consumed.
- The opportunity cost of pursuing an incremental increase in an activity is its **marginal cost**. The extra cost of making 1 extra unit of Good X is associated to the production of Good Y that is given up (1 pizza for 3 rulers).

The choice is rational is MB > MC, and choices at the margin thus allocate scare resources the most efficiently.

Choices Respond to Incentives:
A change in marginal cost or a change in marginal benefit changes the incentives we face and leads us to change our choice. The central idea of economics is that we can predict how choices will change by looking at changes to incentives. Incentives are key to reconciling self-interest and social interest. Choices not in the social interest arise from the incentives we face and economists thus try to determine the incentive systems that result in self-interest choices being in the social interest.

Economics: A Social Science and Policy Tool

- **Positive Statements:** What is. Statements that might be right or wrong but can be tested against facts.
- **Normative Statements:** What ought to be. Statements that depend on values and cannot be tested as they express an opinion (we ought to cut back on use of coal).

Economists create models, a representation of an economic phenomenon, to compare predictions with facts. They contain a description of some aspect of the economic world that includes only those features that are needed for the purpose at hand.

Production Possibilities Frontier

The PPF is the boundary between combinations of goods that can and cannot be produced. It assumes a model economy in which everything remains the same (ceteris paribus) except the 2 goods considered.

The model represents the ability of an economy to make, regardless of the price of the product. It doesn't refer to consumption, but graphs production limits because resources are limited in a given point of time. There are an infinite number of combinations that an economy can produce on its PPF at a given time, however, we can only choose one. As such, every choice along the PPF involves a tradeoff. The opportunity cost of Good X is the amount of Good Y forgone, represented by the slope of the PPF between 2 points.

Unemployed and underemployment (not used to full potential) of resources occurs when a combination is chosen inside the curve (production inefficient). At such a point it is possible to produce more of one good without producing less of the other.

Productively efficient occurs when all resources are fully used (production on the curve). We cannot produce more of 1 good without producing less of another. Production at a point beyond the curve is **currently unattainable**. Production can possibly expand in the future.

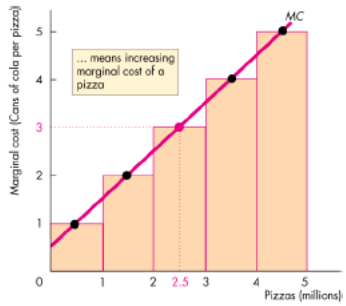
Using Resources Efficiently

Because resources are not equally productive in all activities, the PPF is a curve. This means that as the quantity produced of each good increases, so does its opportunity cost.

The Law of increasing opportunity cost: opportunity cost increases as slope steepens.

Marginal Costs

Each point along the PPF is efficient. To determine which alternative efficient quantities to produce, we compare the costs and benefits. The marginal cost of Good X is the opportunity cost of producing one more unit of Good Y.

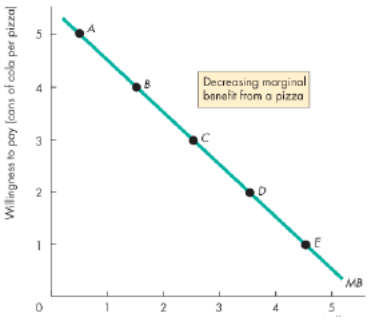


Preferences and Marginal Benefit

To describe preferences, economists use the concepts of marginal benefit and the MB curve. Marginal benefit is measured by the amount that a person is willing to pay for an additional unit of a good. The principle of decreasing marginal benefit→ the more we have of any good the smaller its marginal benefit and the less we are willing to pay for an additional unit of it.

The line through the points shows the marginal benefit from a pizza.

Possibility	Pizzas (millions)	Willingness to pay (cans of cola per pizza)
A	0.5	5
B	1.5	4
C	2.5	3
D	3.5	2
E	4.5	1



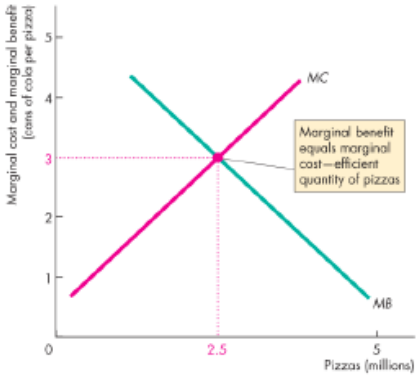
Allocative Efficiency

While production efficiency is achieved when we cannot produce more of any good without giving up another (point on the PPF), allocative efficiency is when we cannot produce more of any good without giving up some other good that we value more highly. Production is the point on the PPF that we prefer above all other points.

Figure 2.4 illustrates allocative efficiency.

The point of allocative efficiency is the point on the *PPF* at which marginal benefit equals marginal cost.

This point is determined by the quantity at which the marginal benefit curve intersects the marginal cost curve.



(b) Marginal benefit equals marginal cost

Economic Growth

The expansion of production possibilities and an increase in the standard of living. 2 key factors that influence economic growth include:

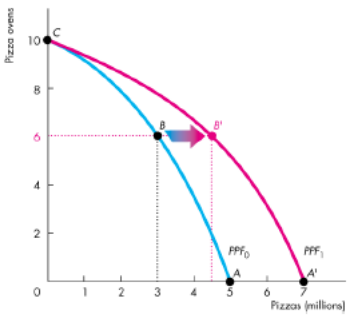
- Technological change is the development of new goods and better methods of production
- Capital accumulation is the growth of capital resources which includes human capital

Economic growth has a cost. To use resources in R&D and to produce new capital, we must decrease our production of consumption goods. The opportunity cost of economic growth is less current consumption.

Figure 2.5 illustrates the tradeoff we face.

We can produce pizzas or pizza ovens along PPF_0.

By using some resources to produce pizza ovens today, the *PPF* shifts outward in the future.



Outward Shifts in the PPF:

- Technologic improvements
- Population growth (more labour and entrepreneurship→more people with more ideas).
- Accumulation of capital
- Discovery of new resources

Why would the curve shift inwards?

- War
- Natural disaster
- Anything that destroys resources could shift the curve inwards