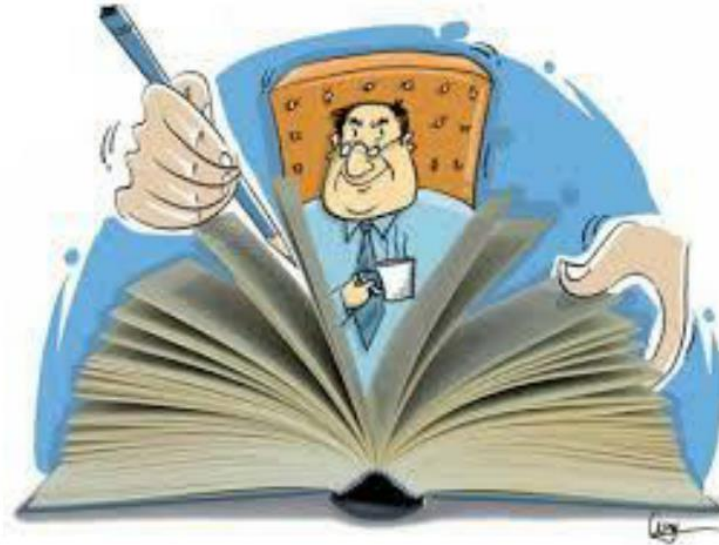




Ten Principles of Economics



Dr. Omnia Elmahdy

How people make decisions

How people interact with each other

The forces and trends that affect how the economy as a whole works.

How people make decisions

- People face **tradeoffs**. يواجه الناس المفاضلات.
- The **cost** of something is what you **give up** to get it.
تكلفة الشيء هي ما تتخلى عنه لتحصل عليه.
- **Rational** people think at the **margin**. العقلاء يفكرون في الهامش.
- People **respond** to **incentives**. الناس يستجيبون للحوافز.

How people interact with each other

- Trade can make everyone better off. التجارة يمكن أن تجعل الجميع أفضل حالاً.
- Markets are usually a good way to organize economic activity. عادة ما تكون الأسواق وسيلة جيدة لتنظيم النشاط الاقتصادي.
- Governments can sometimes improve economic outcomes. يمكن للحكومات في بعض الأحيان تحسين النتائج الاقتصادية.

The forces and trends that affect how the economy as a whole works.

- The standard of living depends on a country's production.
- Prices rise when the government prints too much money.
- Society faces a short-run tradeoff between inflation and unemployment

Principle #1:
People Face Tradeoffs

To get one thing, we usually have to give up another thing

- Food v. clothing
- Leisure time v. work

Making decisions requires **trading**
off one goal against another

How do you spend your time ?

How does a family spend its income ?



Recognizing that tradeoffs exist does not indicate what decisions should be made

Principle #2:

The Cost of Something Is What You Give Up to Get It

- Decisions require comparing costs and benefits of alternatives.
 - Whether to study or go out to the movie?
 - Whether to go to class or sleep in?
- The opportunity cost of an item is what you give up to obtain that item.

Opportunity Cost



or

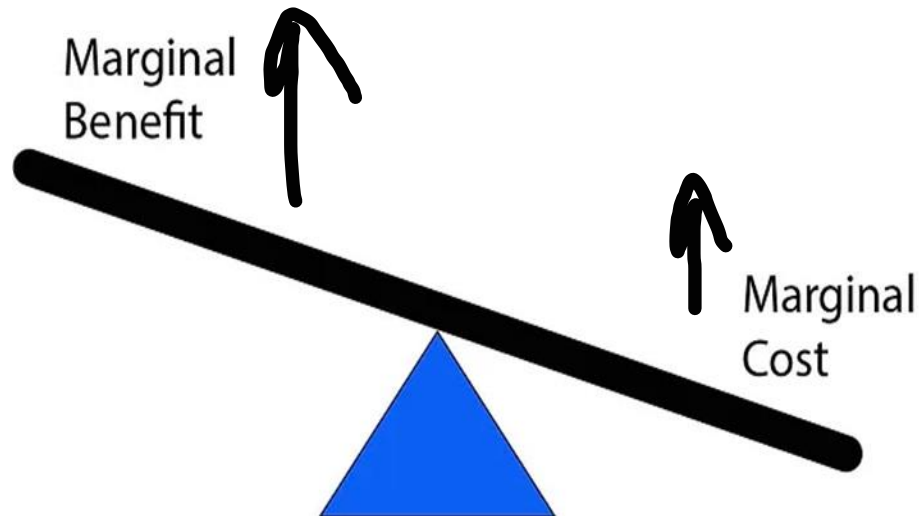


Principle #3:

Rational People Think at the Margin

- *Marginal changes* are small, incremental adjustments to an existing plan of action قيمة

People make decisions by **comparing costs and benefits at the margin.**



Thinking at the Margin

- o In addition to looking at opportunity costs, economists also look at the cost and benefits of adding or subtracting one more unit.
- o In economics, marginal means additional
 - o Marginal costs – extra cost of adding one more unit
 - o Marginal benefits – the extra benefit of adding the same unit
 - o ***As long as the marginal benefit is greater than the marginal cost, it pays to add one more unit

Example: **Try to decide how many years you should stay in school.**

Decide whether or not to remain in school for an additional year or two.

Thus, you need to compare the additional benefits of another year in school (the marginal benefit) with the additional cost of staying in school for another year (the marginal cost)

Principle #4:

People Respond to Incentives

Marginal changes in costs or benefits motivate people to respond

The decision to choose one alternative over another occurs when that alternative's marginal **benefits** exceed its marginal **costs**!

Marginal Cost v. Marginal Benefit

- People make decisions based on costs and benefits.
- The benefits must **always** outweigh the costs.
- When rational decisions occur, marginal benefit outweighs marginal cost. *****



Example

- When the price of a good rises, consumers will buy less of it because its cost has risen
- When the price of a good rises, producers will allocate more resources to the production of the good because the benefit from producing the good has risen

Principle #5:

Trade Can Make Everyone Better Off

- Trade is not like a sports competition where one side gains and the other side loses
- People gain from their ability to trade with one another.
- Trade allows people to specialize in what they do best
- Just like families benefit from trading with one another so do **countries**

Types of Economic Systems

- **Market**

Economy

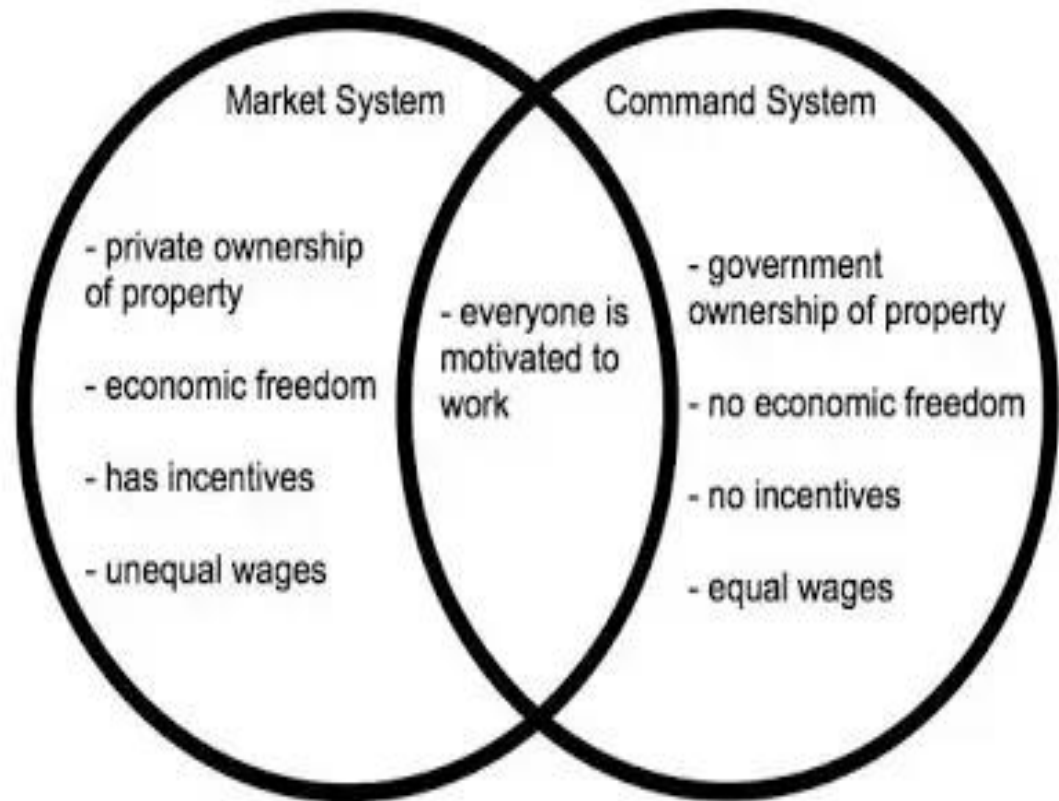
إقتصاد السوق

- **Command**

Economy

الاقتصاد الموجه

Market System vs. Command System



Principle #6:

Markets Are Usually a Good Way to Organize Economic Activity

A market economy is an economy that allocates resources through the decentralized decisions of many firms and households القرارات اللامركزية للعديد من الشركات والأسر as they interact in markets for goods and services.

- Households decide what to buy and who to work for.
- Firms decide who to hire and what to produce.

Market Economy

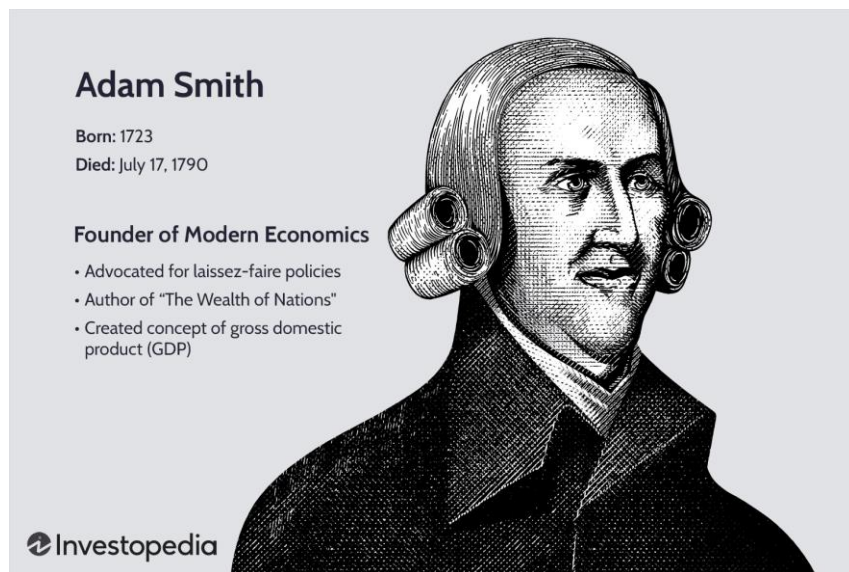
- A market is defined as the sum of **interaction** between **buyers** and **sellers**

A **perfectly competitive market** has the following characteristics:

- 1- There are **many buyers and sellers** and no one is large enough to **influence the price**
- 2- Buyers and sellers act **independently**
- 3- Buyers and sellers are **free to enter or leave** the market at any time
- 4- There is **perfect information** of the buyers (consumer sovereignty) سيادة المستهلك

Adam Smith made the observation that households and firms interacting in markets act as if guided by an “invisible hand”

- Because households and firms look at prices when deciding what to buy and sell, they unknowingly take into account the social costs of their actions.
- As a result, prices guide decision makers to reach outcomes that tend to maximize the welfare of society as a whole.



Invisible Hand

Government does not get involved

Needs of society automatically met

Profit-seeking producers will make more

Competition keeps quality high

Competition keeps prices low

Competition & self-interest act as an invisible hand that regulates the free market



- **The role of government in a market economy is minimal**
- Government maintains order and competition by insuring that basic conditions of a market are observed



The illustration shows a stylized building with a striped awning. A person is sitting inside the building, handing a box to another person standing outside. A third person stands nearby. A dashed line connects the box to a collection of coins (dollar and cent) and another box on the ground. The background is a light blue gradient.

Market Economy

['mär-kat i-'kä-nə-mē]

An economic system in which economic decisions and the pricing of goods and services are guided by the interactions of a country's individual citizens and businesses.

 Investopedia

Command Economy اقتصاد موجه

- This is done by centralized planning of economic life
- Allocation choices are made by the government rather than the consumer
- Socially desirable goals can be achieved through planning
- Government prevents any economic **failure**



Command Economy

[kə-'mand i-'kɑ-nə-mē]

An economic system in which a central government dictates permissible levels of production and prices.

- When a government interferes in a market and restricts price from adjusting, decisions that households and firms make are not based on the proper information.
- Thus, these **decisions may be inefficient**
- **Centrally-planned economies have FAILED** because they did not allow the market to work

Thus



Centrally Planned Economy

['sen-trə-lē 'pland i- 'kă-nə-mē]

An economic system in which decisions are made by a central authority rather than by market participants.

Principle #7:

وَيَسْرُحُ / تَسِين

Governments Can Sometimes Improve Market Outcomes

- *There are two broad reasons for the government to interfere with the economy: **the promotion of efficiency and equity.***
- **Market failure** occurs when the market **fails to allocate resources efficiently**.
- When the market fails (breaks down), government can intervene to promote efficiency and equity.

- Market failure may be caused by
 - An *externality*, which is the impact of one person or firm's actions on the well-being of a bystander. متفرج ، أحد الحضور
 - Market power, which is the ability of a single person or firm to unduly influence market prices. بلا مبرر

Because a **market economy rewards** people for their ability to produce things that other people are willing to pay for, there will be an unequal distribution of economic prosperity ازدهار.

Principle #8:

The Standard of Living Depends on a Country's Production

1. Differences in living standards from one country to another are quite large.

2. Changes in living standards over time are also great.

3. The explanation for **differences** in **living standards** lies in **differences** in **productivity**.

- **Productivity** إنتاجية is the amount of goods and services produced from each hour of a worker's time.
- **High productivity** implies يدل على a **high standard** of living.
- **Policymakers** must understand the **impact** of any **policy** on our **ability to produce** goods and services.



Productivity

[,prō-dək-'ti-və-tē]

Measuring output per unit of input to gauge the efficiency of production.

Principle #9:

Prices Rise When the Government Prints Too Much Money

- Inflation التضخم is an **increase in the overall** level of **prices** in the economy.
- One cause of inflation is the growth in the **quantity of money**.
- When the government creates **large quantities** of money, the value of the money falls.



Inflation

[in-'flā-shən]

A rise in prices, which can be translated as the decline of purchasing power over time.

Principle #10:

Society Faces a Short-run Tradeoff Between Inflation and Unemployment ←

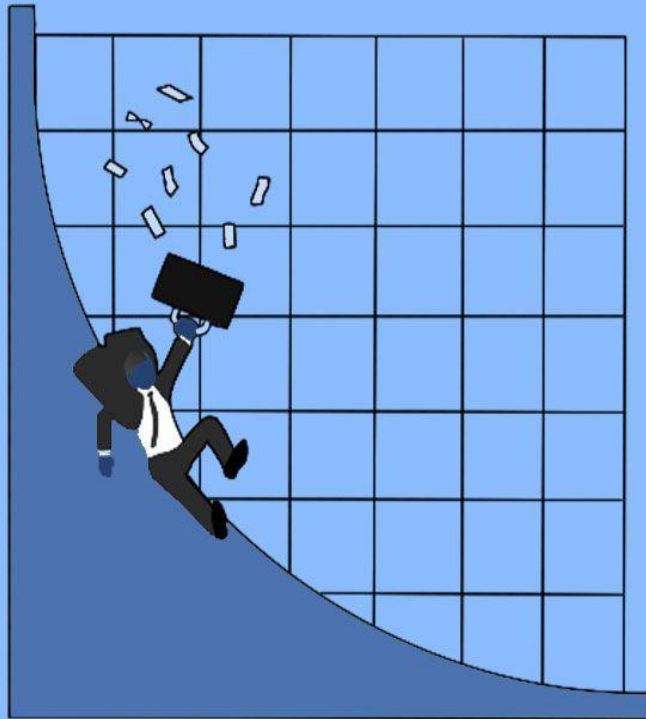
- The Phillips Curve illustrates the tradeoff between inflation and unemployment:

↓ Inflation ⇔ ↑ Unemployment

It's a short-run tradeoff! (temporary)

- The Phillips curve is important for understanding the **business cycle**.

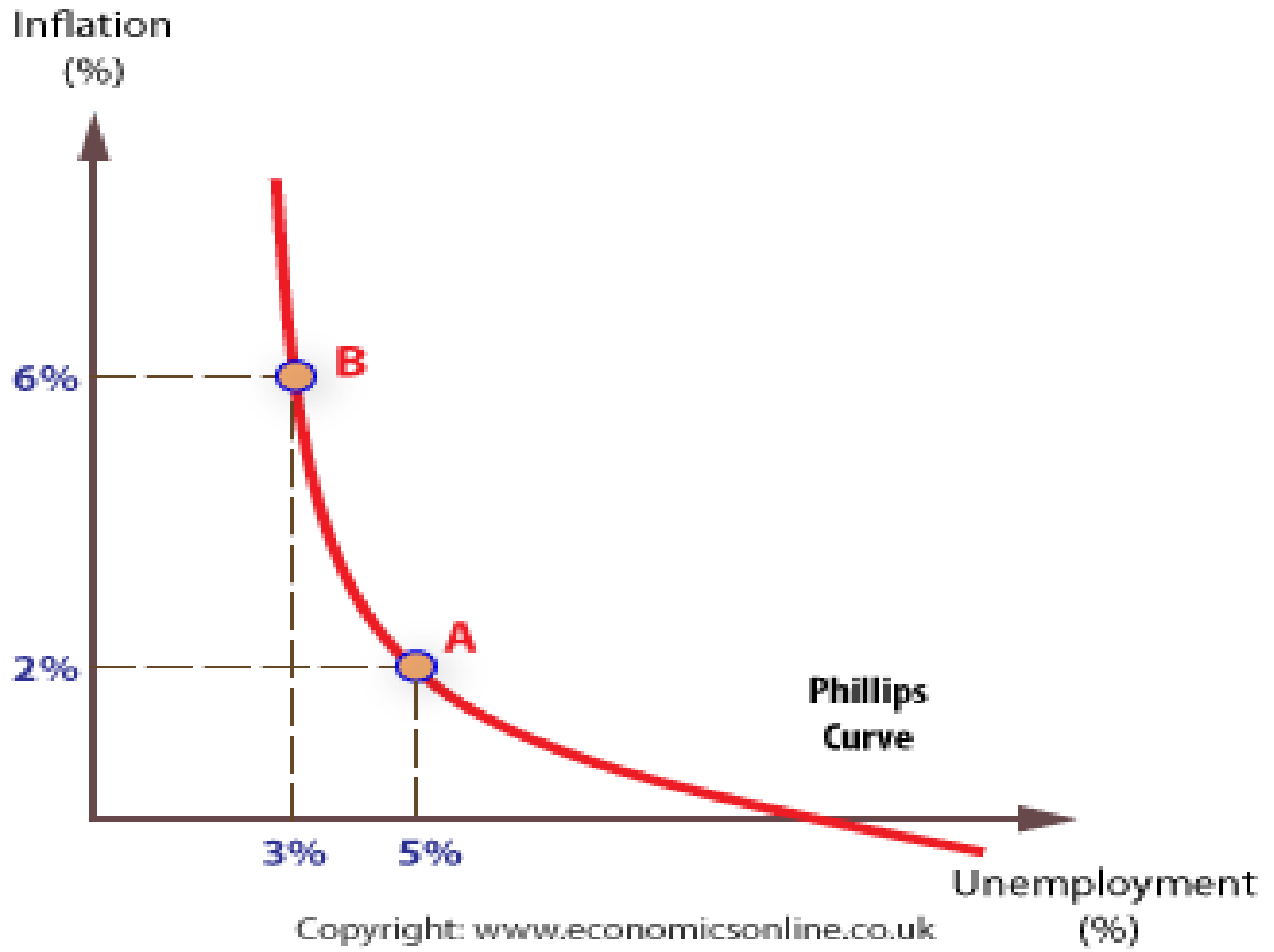
Business cycle: are fluctuations in economic activity, such as employment and production.



Phillips Curve

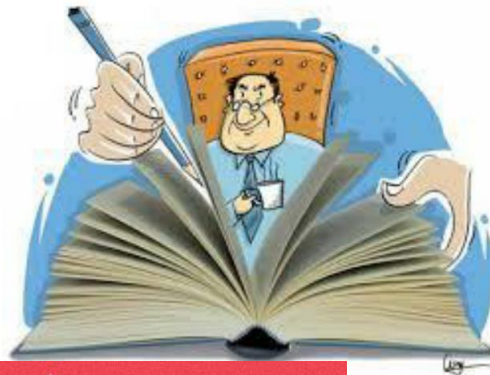
[;fi-leps 'kerv]

An economic concept developed by A. W. Phillips stating that inflation and unemployment have a stable and inverse relationship.





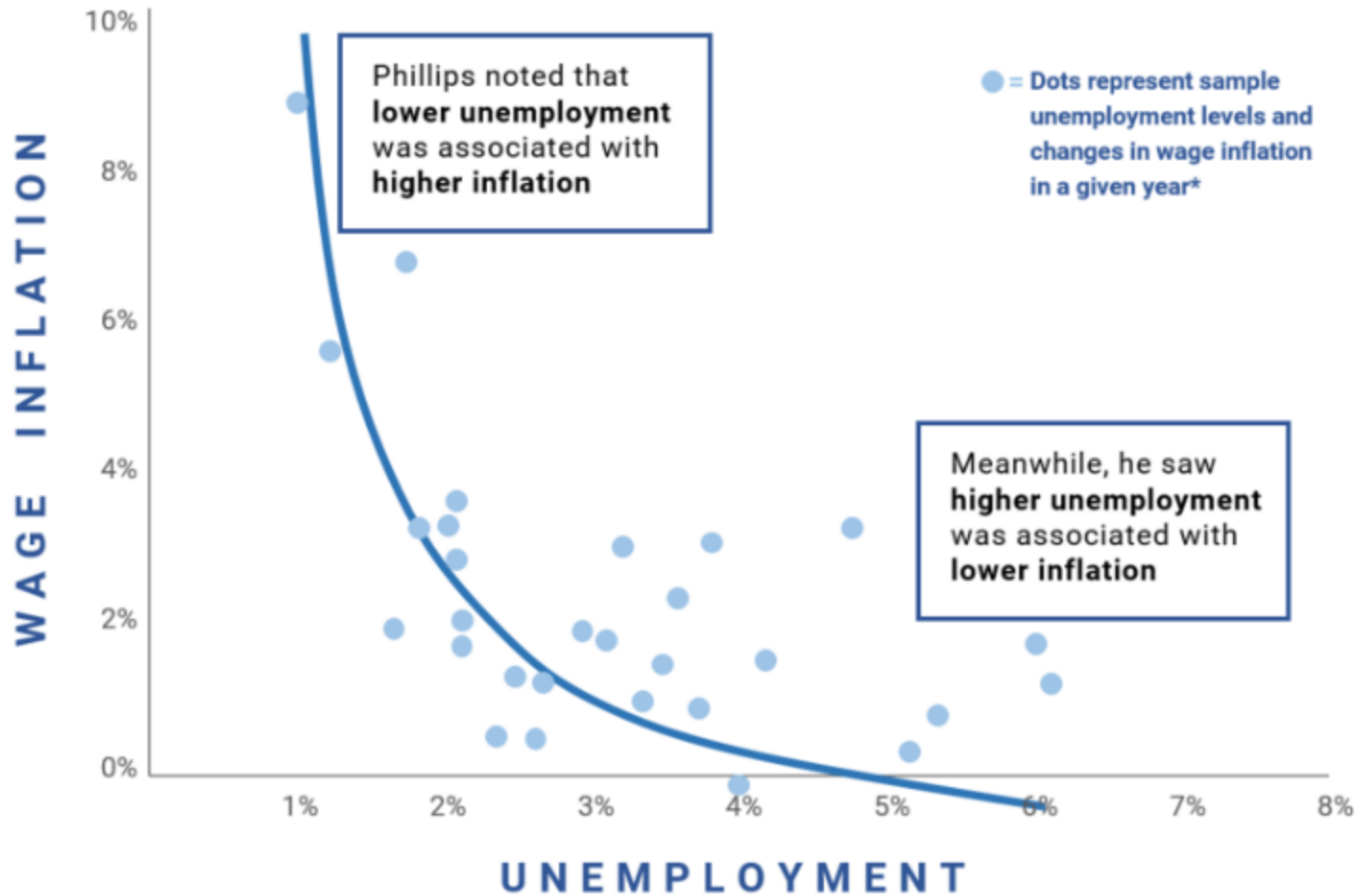
Ten Principles of Economics



Dr. Omnia Elmahdy

UNDERSTANDING THE PHILLIPS CURVE

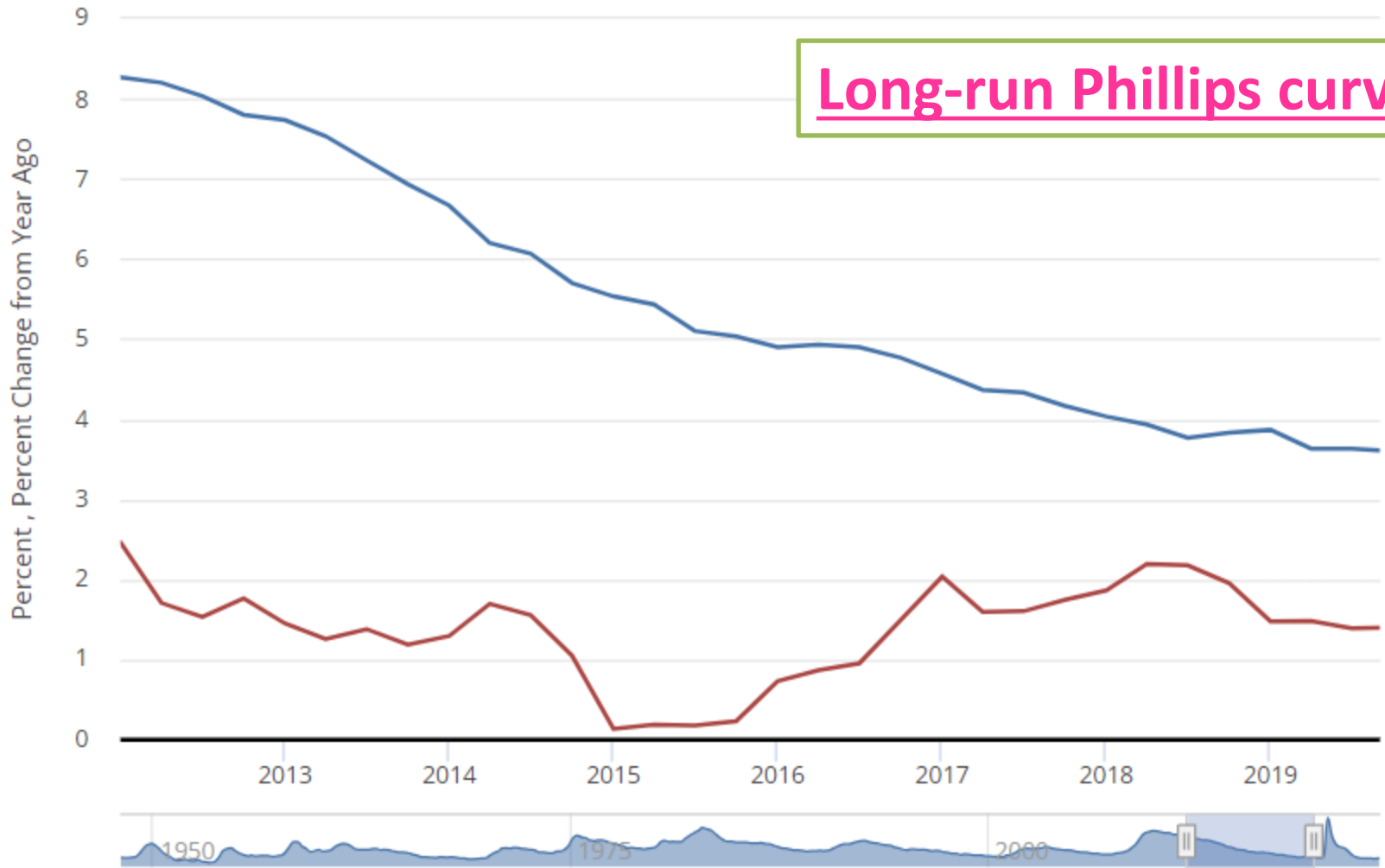
In the 1950s, A.W. Phillips plotted decades' worth of data on wage inflation and unemployment. He noticed an inverse relationship between these two indicators.





- Unemployment Rate
- Personal Consumption Expenditures: Chain-type Price Index

Long-run Phillips curve



Sources: BLS; BEA

- At recent years, starting in 2012. While the unemployment rate has declined to levels not seen in 50 years, inflation has remained low for most of the period. This suggests that the Phillips curve has “flattened,” or that the relationship might not be as strong as it once was.
- Long-run Phillips curve (“LRPC”) a curve illustrating that there is no relationship between the unemployment rate and inflation in the long-run; the LRPC is vertical at the natural rate of unemployment.

Example 1

- Three managers of the magic potion company are discussing a possible increase in production.

Harry	Ron	Hermione
We would examine whether our company's productivity – gallons of potion per worker – will raise or fall	We should examine whether our average cost – cost per worker – would rise or fall	We should examine whether the extra revenue from selling the additional potion would be greater or smaller than the extra costs

Three managers of the Magic Potion Company are discussing a possible increase in production. Each suggests a way to make this decision:

- a. Harry: We should examine whether our company's productivity - gallons of potion per worker- will rise or fall.
- b. Ron: We should examine whether our average cost - cost per worker - would rise or fall.
- c. Hermione: We should examine whether the extra revenue from selling the additional potion would be greater or smaller than the extra costs.

Productivity
OK

Average Cost
OK

Costs & Revenues
**THINKING AT THE
MARGIN**
(Principle #3)

Example 2

- Your roommate is a better **cook** than you are, but you can **clean** more quickly than your roommate.
- If your **roommate did all the cooking and you did all the cleaning**, would your chores take you more or less time than if you **divided each task evenly**?

Example 2

Your roommate is a better cook than you are, but you can clean more quickly than your roommate can. If your roommate did all of the cooking and you did all of the cleaning, would your chores take you more or less time than if you divided each task evenly?

Give a similar example of how specialization and trade can make two countries both better off.

SPECIALIZATION
(Principle #5)

Example 2

Your roommate is a better cook than you are, but you can clean more quickly than your roommate can. If your roommate did all of the cooking and you did all of the cleaning, would your chores take you more or less time than if you divided each task evenly?

Give a similar example of how specialization and trade can make two countries both better off.

SPECIALIZATION (Principle #5)

Example

- French workers can make perfumes efficiently.
- Spanish workers takes
 - less time to make clothes.
- Spain and France can exchange perfumes for clothes.

Example 3

You win \$100 in a lottery.

You have a choice between spending the money now or putting it away for a year in a bank account that pays 5 percent interest.

What is the opportunity cost of spending the \$100 now?

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What is the opportunity cost of spending the \$100 now?

OPPORTUNITY
COST

Principle (#2)

If you spend \$100 now instead of saving it for a year and earning 5 percent interest, you are giving up the opportunity to spend \$105 a year from now.

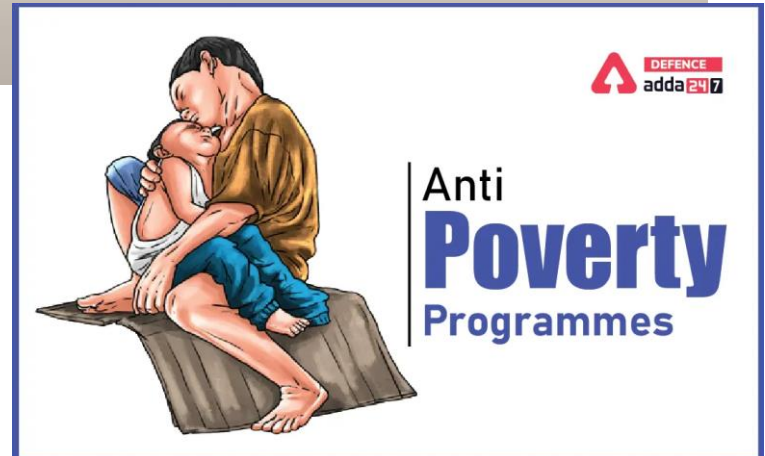
Example 4

قد أدى مشروع قانون حديث لإصلاح برامج مكافحة الفقر الحكومية إلى تقييد العديد من المستفيدين من الرعاية الاجتماعية لمدة عامين فقط

A recent U.S. bill reforming the government's antipoverty programs limited many welfare recipients to only two years of benefits.

How does this change affect the incentives for working?

How might this change represent a trade-off between equity and efficiency?



Example 4

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INCENTIVE
Principle (#4)

A greater incentive to find
jobs

Example 4

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How does this change affect the incentives for working?

How might this change represent a trade-off between equity and efficiency?

INCENTIVE Principle (#4)

A greater incentive to find jobs

EQUITY & EFFICIENCY Principle (#7)

- The distribution of income will become less equal.
- Welfare recipients have a greater incentive to find jobs.
- Increases efficiency but reduces equity.

Example 5

Explain whether each of the following government activities is motivated by a concern about equality or a concern about efficiency. In the case of efficiency, discuss the type of market failure involved.

- a. regulating internet prices
- b. imposing higher personal income tax rates on people with higher incomes



Monopolistic Market

[mə-nä-pə-'li-stik]

An industry in which many firms offer products or services that are similar (but not perfect) substitutes.

 Investopedia



regulating internet prices

Example 5

Explain whether each of the following government activities is motivated by a concern about equality or a concern about efficiency. In the case of efficiency, discuss the type of market failure involved.

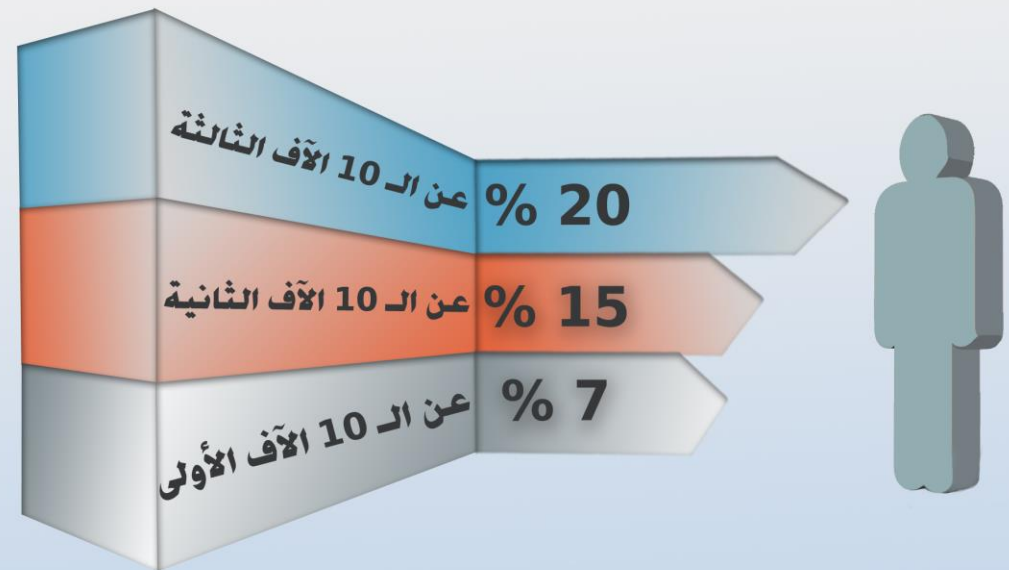
- a. regulating internet prices
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EQUITY & EFFICIENCY
Principle (#7)

Efficiency
Market Power
(Monopoly)

imposing higher personal income tax rates on people with higher incomes

الضريبة المقتطعة على الافراد حسب الشريحة



المصدر: قانون ضريبة الدخل 2014

جميع الحقوق محفوظة لموقع "عمان نت"

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EQUITY & EFFICIENCY Principle (#7)

Efficiency
Market Power
(Monopoly)

Equity



Healthcare Economic Terms: Cost



Dr. Omnia Elmahdy

I. Cost:

In economic terms, cost is what a health services activity will **impose** on patients, their families and other agencies as well as the **costs** to the health sector itself.

The **cost** of using a resource in a particular service or treatment is, not (necessarily) the price that is paid for that resource but the benefit foregone (the opportunity lost) by not choosing the alternative

Efforts to determine the cost of services and programmes from the perspective of a health economist are likely to differ from those employed by an accountant.





Seriously ill requires:

- More devoted time (cost)**
- Higher qualifications and expertise (cost)**
- Sophisticated equipment (cost)**
- Potent medication (cost)**



Less Seriously ill requires:

- Less devoted time (cost)**
- Lower qualifications and expertise (cost)**
- Regular equipment (cost)**
- Regular medication (cost)**

There are basically three stages involved in the process of costing health care services and interventions:

(1) Identification of costs

(2) Measurement of identified costs; and

(3) Translation into a monetary amount مبلغ نقدي (*bearing in mind that money may not always be the most representative indicator of opportunity cost*)

Direct vs indirect cost

1. Direct costs

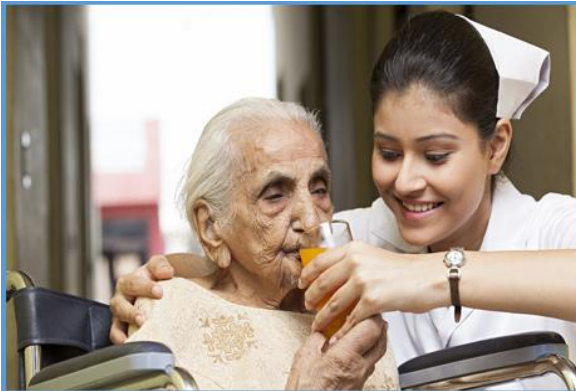
These relate to the use of resources directly as a result of the treatment and health care process.

They include:

- **Drug** costs,
- Cost of **nursing**,
- Medical and other staff **time** involved in **delivering care** and **administering** the procedures,
- Costs of **materials and equipment** used in service provision,

• **PLUS** costs to **other organizations** involved in the process

AND to patients, in terms of **time** costs, **transport** costs and out-of-pocket **expenses**.



Dr Omnia Elmahdy



2. Indirect costs/productivity costs



These relate to 'losses' to society incurred as a result of the impact of disease, illness and treatments in preventing people from engaging in normal daily activities, such as work, domestic responsibilities and social and leisure engagements.

In terms of work losses, this is called 'productivity costs' – which refer to 'the costs associated with lost or impaired ability to work or to engage in leisure activities due to morbidity and lost economic productivity due to death.

3. Intangibles غير ملموسة

These relate to the **distress, suffering, anxiety** and impact on **quality of life** (QOL) resulting from illness and poor health and their treatments

An intangible good is a good that **does not have a physical nature**, as opposed to a physical good (an object). Digital goods such as downloadable music, mobile apps or virtual goods used in virtual economies are all examples of intangible goods.

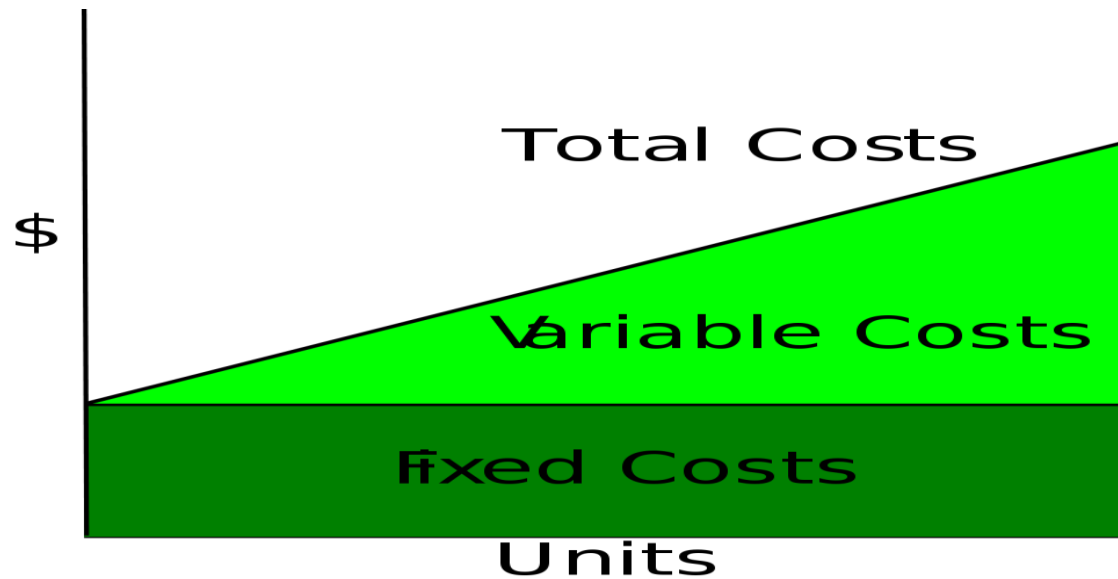
(These are the things that **have to be experienced** to be measured and valued)

Fixed cost VS Variable cost

	Fixed cost مصاريؑ ثابتة	Variable cost مصاريؑ متغيرة
Definition	Cost of production, which does not vary with time , or with size of production (output) over time	Cost of production, which varies with time and size of production (output).
Examples	<ul style="list-style-type: none">- Cost of building- Fixed cadre;- Worker salaries & benefits.	<ul style="list-style-type: none">- Worker supplies (e.g. gloves)- Patient care supplies- Paper- Food- Lab supplies- Medications



Fixed Costs	Variable Costs
<ol style="list-style-type: none"> 1. These costs are independent of output. 2. These are the costs of fixed factors. 3. These costs exist or arise, even at zero level of output. 4. These costs are found only in the short period. 	<ol style="list-style-type: none"> 1. These costs vary with the level of output. 2. These are the costs of variable factors. 3. These costs become zero at zero level of output. 4. These costs are seen in short and long periods.



Medical Care Cost

Average cost:

Is the total cost divided by the number of units provided or produced.

Average Cost

Numerator

$$\text{Average Cost Formula} = \frac{\text{Total Cost of Production}}{\text{Number of Units Produced}}$$



denominator



When average costs are **falling**, there exist **economies of scale** اقتصادية جدوى; when average costs are **rising**, there exist **diseconomies of scale** مساويء اقتصادية

One of the reasons **diseconomies** arise is because beyond **a certain occupancy level** it becomes **increasingly difficult**, if not impossible, for staff to **deal with a larger number of beds** in a ward setting.



Medical Care Cost

Opportunity cost:

Implications of Opportunity Cost:

1. Optimal service planning
2. Deciding to do A implies deciding not to do B,
i.e. **value of benefits from A > B.**

**OPPORTUNITY COST
IS WHAT A PERSON
SACRIFICES WHEN THEY
CHOOSE ONE OPTION
OVER ANOTHER**

$$\text{Opportunity Cost} = \frac{\text{What One Sacrifice}}{\text{What One Gain}}$$



- Health economists **stress** **the importance of** value unlike accountants who are just interested in money.
- When budgets are limited, resources invested into one area will be **at the expense of** a loss of opportunity in another and resources should be valued in terms of this lost opportunity—the opportunity cost.



Opportunity Cost

[ä-pär-'tü-nä-tē 'kōst]

The potential benefits that an individual, investor, or business misses out on when choosing one alternative over another.

Investopedia



Medical Care Cost

Fiction cost:

Value of **production lost** due to time needed to find a replacement worker and restore production to a previous level.

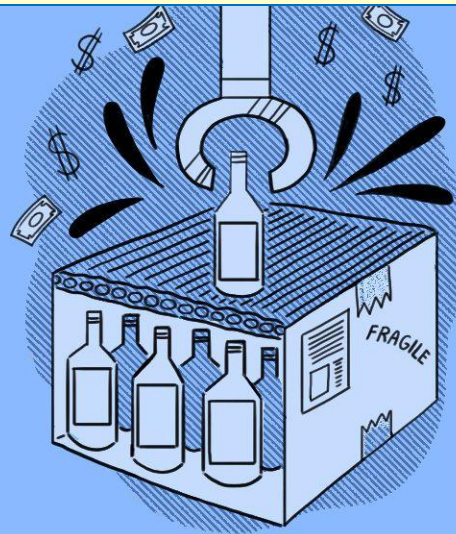
- What does it cost to the economy if a worker **misses a day of work** to go to the doctor?
- What if a **sick person can go back** to work – what is the gain to economy?
- Use the friction cost to value lost time from paid work.



Medical Care Cost

Marginal cost:

This is the **cost of producing one extra unit**, or in health care terms, the **cost of delivering one extra item of services** (treating one extra case, vaccinating one extra child and so on).



Marginal Cost

[ˈmɑːrj-nəl ˈkɒst]

The change in total production cost that comes from making or producing one additional unit.

Marginal cost or average cost?

For example, in a comparison of two anaesthetic programmes that require different types of infrastructure, average costs are recommended because the fixed cost element would be ignored by the use of marginal cost.

However, when the choice is between two or more analgesics, the use of marginal cost rather than average would be more appropriate.

Capital costs

These costs are incurred when major assets رأس المال are acquired – the buildings, the equipment, etc.

- Capital costs are not merely the sum actually paid for their acquisition and the interest payments on any loans used to fund such purchases.

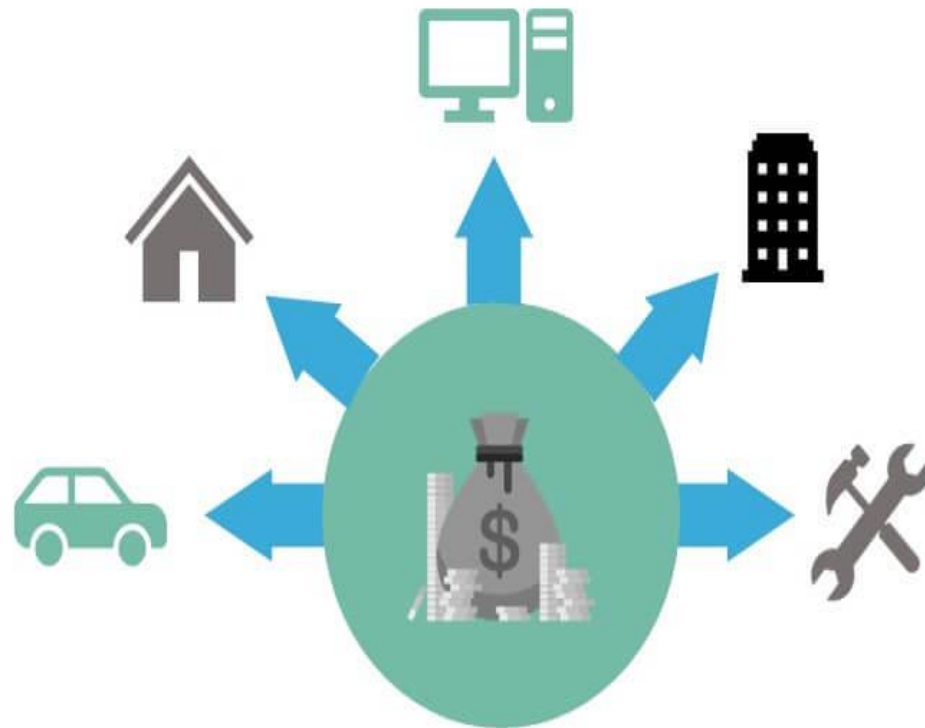
تكاليف رأس المال ليست مجرد المبلغ المدفوع فعلياً لاقتنائها ومدفوعات الفائدة على أي قروض تستخدم لتمويل مثل هذه المشتريات

- Account also has to be taken of the opportunity cost of using such assets in one particular way, thereby depriving them of being used elsewhere.

ويجب أيضاً أن تؤخذ في الاعتبار تكلفة الفرصة البديلة لاستخدام هذه الأصول بطريقة معينة، وبالتالي حرمانها من استخدامها في مكان آخر

Capital Expenditure

The money that government spends on developing buildings, machinery, equipment, schools, and other infrastructure is known as capital expenditure.



Example

Long after the land, buildings and equipment have been paid for, there is a **capital cost of continuing to use a hospital** to provide health care, that is, as long as it could be used in an alternative way. For example, if the hospital could be sold, the opportunity cost would be its market value.

There are many examples of **ex-hospital sites** now occupied by **houses**, with the street names the only visible indicator that a hospital was located there.

It is important to remember that the cost of treatment is not only the cost of drugs or medical and nursing time but includes recovery times, incidence of side-effects, rate of delayed discharge, use of other care resources and the cost of system deficiencies and problems.



It has been argued that the cost of system deficiencies and problems are much more expensive than drug costs and ‘it is important to remember that the cost to a facility of a 30-minute delay in the arrival of a surgeon is greater than the cost of a 2-hour infusion of propofol.

Other factors that inflate costs of health care provision

- Many people **fail to comply with their treatment requirements** عدم الامتثال لمتطلبات العلاج الخاصة بهم, leading to **disposal of old pharmaceuticals** and **repetition of prescriptions** and eventually the increase in cost of medications.
- The **unnecessary consultations** that result from inappropriate and ineffective treatments being utilised.
- The **costs resulting from litigation and claims for damages following treatment and care**, التقاضي والمطالبات بالتعويض عن الأضرار بعد العلاج والرعاية, which have gone wrong.



Burden of disease



DALYs & QALYs

OSMOSIS.org

COST of illness



Incidence

Prevalence

death / cure



Dr. Omnia Elmahdy

**There are a number of approaches and indicators
used to assess the burden of illness**

Prevalence

Impact of disease on resources

DALYs and QALYs

Approach 3

The WHO approach to estimating the **burden of disease** is to calculate the impact of illness on disability-adjusted life years (DALYs) and quality-adjusted life years (QALYs)

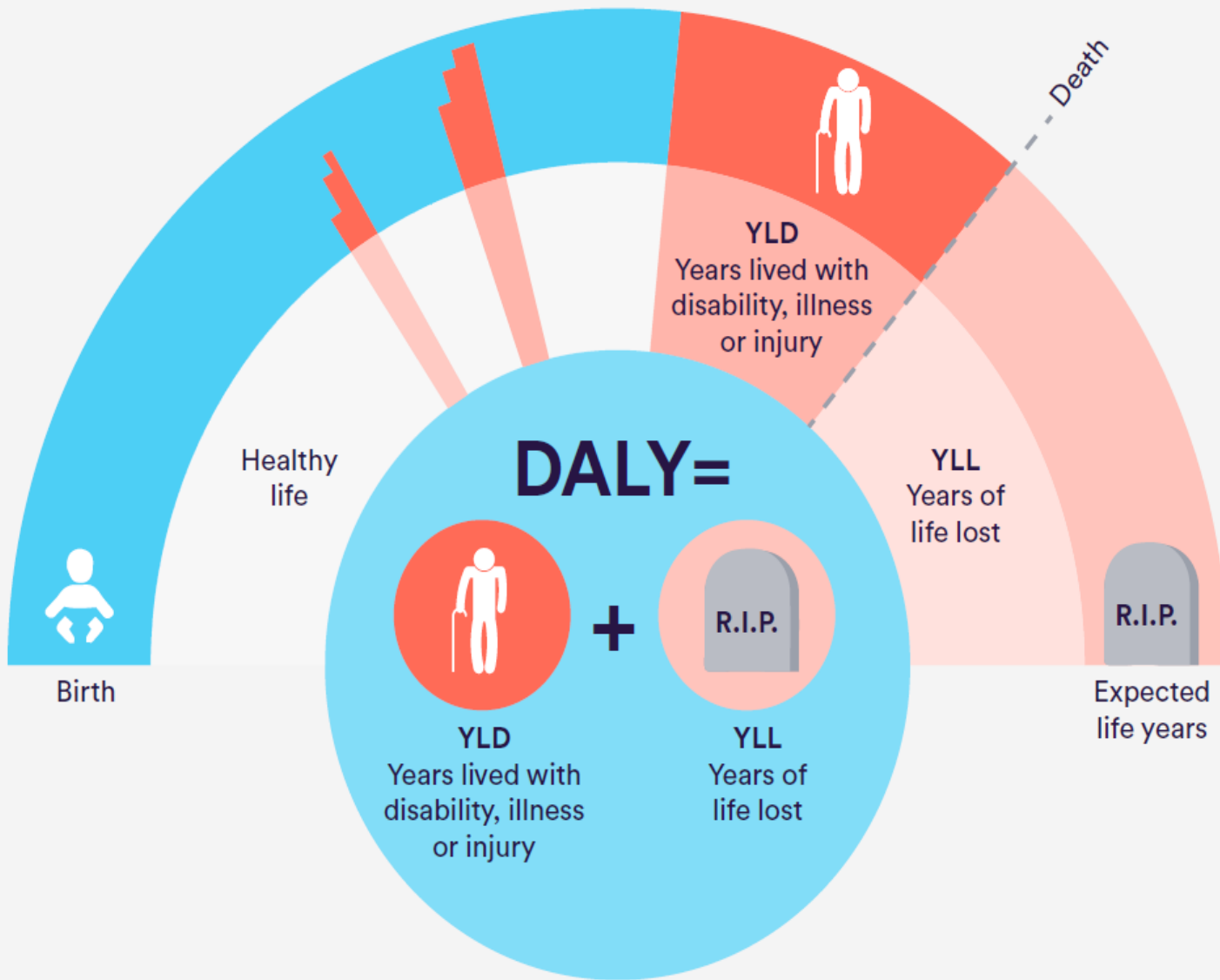
DALY

Standardized quantitative measure of the BOD

$$\text{DALY} = \text{MORTALITY} + \text{MORBIDITY}$$

(Years of life lost due to premature death)

(The measure of all non fatal disease effects such as illness episodes Or chronic disability)



(Disability Adjusted Life Years)

DALYs is for quantifying the burden of disease from mortality and morbidity

It can be used of as a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability.

Disability-Adjusted Life Years (DALYs)

DALY

Disability Adjusted Life Years measure the overall burden of disease, expressed as the cumulative number of years lost due to ill-health, disability or early death.

$$= \text{YLD} + \text{YLL}$$

Years Lived with Disability + Years Life Lost



Source : Wiki Commons

QALY (Quality Adjusted Life Years)

- A **quality-adjusted life-year (QALY)** takes into account both the quantity and quality of life generated by healthcare interventions.
- It is the arithmetic product of life expectancy and a measure of the quality of the remaining life-years.

Quality adjusted life-years (QALYs) = Area under the curve

