**Macroeconomics**

Microeconomics vs Macroeconomics

* Microeconomics: Analysis of production and consumption of each single agent  
  **it is concerned with the consumption and production decisions of individual consumers and producers and with the allocation of scarce resources among industries.**
* Macroeconomics: Analysis of the economy as a whole  
  **The effort to understand economic slumps and find ways to prevent them is at the core of macroeconomics**   
    
  It only started immediately after the **Great Depression**, big recession at the end 1929, so it is a relatively new subject. When that recession occurred, economists had a few ideas about what happened.  
    
  **Over time macroeconomics has broadened its objectives, such as long-run economic growth, inflation, and open-economy macroeconomics**

\*\*\* The Great Depression started in the United States after a major fall in stock prices that became worldwide news with the stock market crash of October 29, 1929 (known as Black Tuesday). \*\*\*

Macroeconomics: Theory and Policy

* Before 1930: **SELF REGULATING ECONOMY** 🡪 No government intervention, the market forces would finally regulate by themselves and find an equilibrium
* After: **KEYNESIAN ECONOMICS** 🡪 The economy alone was not able to find an equilibrium so the Keynesian view was introduced, only the government can act in order to solve recession periods. Economic slumps are caused by inadequate spending, and they can be mitigated by government intervention. (GDP is slow and Unemployment is high)

Consumption play a big role in the GDP 🡪 consumers are individuals acting and spending 🡪 Firms go down unless they get some profits

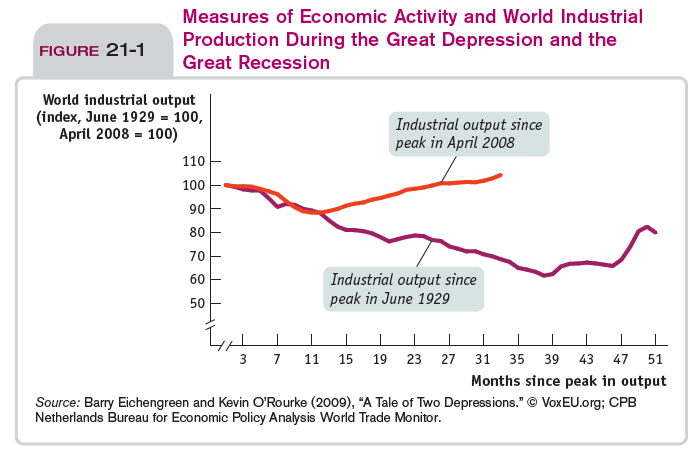
The Business Cycle (By Keynes)

First book of macroeconomics

**Since the 1930s, the U.S. (and most national governments) uses tools to improve the economy.**

* *Fiscal policy:* uses changes in government spending and taxes to affect overall spending.
* *Monetary policy:* uses changes in the quantity of money to alter interest rates and affect overall spending.

In general Keynes established the idea that managing the economy is a governmental responsibility. Keneysian ideas continue to have a strong influence on both economic theory and public policy



Why are present such substantial differences?

In 2008 they already knew how to put out policies to save countries in recession, while right after 1929 governments had no ideas how to reactivate the economy and implemented restricted monetary and fiscal policies, reduced public spending and increased taxes.

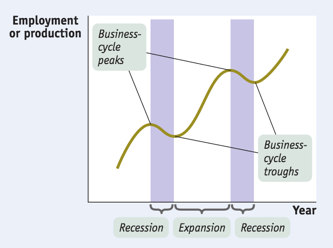
In 2008 instead, implemented expansionary (the government increased public spending, reduced taxes) fiscal policies and expansionary (reduction of interest rate) monetary policies

Charting the business cycle

***Business cycle:*** the short-run alternation between recessions and expansions.

***Recessions (contractions):*** periods of economic downturn, when output and employment are falling or at least not increasing.

***Expansions (recoveries):*** periods of economic upturn, when output and employment are rising.



The Business Cycle

The point at which the economy turns from expansion to recession is a ***business-cycle peak.***

The point at which the economy turns from recession to expansion is a ***business-cycle trough.***

The Pain of Recession

The most important effect of a recession is its effect on the ability of workers to find and hold jobs.

Taming the Business Cycle

The business cycle is a main concern of modern policy makers: they try to smooth out the business cycle.

Growth, The Long View

* Even if you observe ups and down🡪 economies are improving anyhow
* GDP is one of the measure of development
* Example: Americans have become able to afford many more material goods over time thanks to long-run economic growth.

\*\*\*Epidemiologist 🡪 Famous for a project “gap minder”\*\*\*

Inflation and Deflation

Both Deflation and Inflation are BAD for the economy

* A rising overall level of prices is ***inflation.  
  (Overall rising level of prices)***
* A falling overall level of prices is ***deflation. (Overall falling of prices)***

The economy has ***price stability*** when the overall level of prices changes slowly or not at all.

The Causes of Inflation and Deflation

In the **short run,** movements in **inflation** are **closely related to the business cycle.**

* When the economy is depressed and jobs are hard to find, inflation tends to fall
* When the economy is booming, inflation tends to rise.

In the **long run,** the overall level of **prices** is mainly determined by **changes** in the **money supply.**

* Inflation rate depends on the money supply
* Increases if the government pushes money into the economy and decreases if the gov. imposes contractionary monetary policy

The Pain of Inflation and Deflation

Both inflation *and* deflation are problematic.   
They both affect the purchasing power of the individuals:

* **Inflation** **discourages people from holding onto cash** (because cash loses value if prices are rising) and may use different monetary measures. In extreme cases, **people stop using cash altogether.**
* **Deflation** can cause the reverse problem. Since cash gains value if the price level is falling, **holding on to it is more attractive than investing in new factories and other productive assets.** This can **deepen a recession.**  
    
  Cash gains value 🡪 Agent Keeps The Money 🡪 No Investment 🡪 Reduced GDP 🡪 Reduces Consumption 🡪 Negative Cycle that Push Country into a Recession

International Imbalances

The United States is an ***open economy:*** it trades goods and services (and also financial goods) with other countries.

In this case we need to consider: **In 2013, the United States ran a big *trade deficit.***

* ***Trade deficit:*** the value of goods and services bought from foreigners is more than the value of goods and services sold to them. 🡪 **Value of Import > Value of Export 🡪** Great Debt
* ***Trade surplus:*** the value of goods and services bought from foreigners is less than the value of the goods and services sold to them. 🡪 **Value of Export > Value of Import** 🡪 Great Surplus

GDP and CPI

How can you compare the sizes of two economies when they produce different things?

By comparing the *value of their production.*

GDP (gross domestic product) is the most important and common way to estimate an economy’s size.

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Descrizione generata automaticamenteThe National Accounts

* measure nations’ economic performance
* track the economy’s condition throughout the business cycle

An Expanded Circular-Flow Diagram

* Governments interacts with households through taxes and government transfers. They are able to affect the househols
* Gov. interacts with the Market for G. and S., they measure the fiscal policy through an increase in public spending
* Rest of the world is important for tade in both markets

**KEY CONCEPTS BEHIND THE NATIONAL ACCOUNTS**

* *Consumer spending:* household spending on goods and services
* *Stock:* a share in the ownership of a company held by a shareholder.
* *Bond:* a debt security, under which the issuer owes the holders a debt and, depending on the terms of the bond, is obliged to pay them interest and/or to repay the principal at a later date
* *Government transfer:* payment by the government to individuals for which no good or service is provided in return.
* *Disposable income:* income plus government transfers minus taxes; available to spend on consumption and to save.

The National Accounts

**Households don’t spend all of their disposable income. Some of it is saved in the financial markets.**

* ***Private savings:*** disposable income minus consumer spending.
* ***Financial markets:*** the **banking, stock,** and **bond markets,** which channel private savings and foreign lending into investment spending, government borrowing, and foreign borrowing.

**The government spends and borrows for various reasons.**

* ***Government borrowing:*** the total amount of funds borrowed by federal, state, and local governments in the financial markets.
* ***Government purchases of goods and services:*** total expenditures on goods and services by federal, state, and local governments*.*
* ***Exports:*** goods and services sold to other countries.
* ***Imports:*** goods and services purchased from other countries.

What is the GDP?

Gross Domestic Product: It is the measure of all the market value of all final goods and services **produced** **within a country** in **a year**.

1. Produced: GDP measures ***production***.  
   Sale of *used* goods: *NOT* included.  
   The sale of *financial assets,* such as stocks and bonds, are not included.
2. Within a Country: **Only production that takes place within the borders of a country is included in GDP.**
3. In a Year: **GDP is like *annual income****:* it measures production during a given period

**Calculating the GDP**

3 ways 🡪 same number

1. Add up the *total value of all final goods and services produced*
2. Add up all spending on domestically produced final goods and services.
3. Add up the *total factor income earned by households* from firms in the economy

Why Method N°1 = Method N°2 🡪 **Spending = Income**

It doesn’t matter HOW we measure the production, since one person’s spending is another’s income.

**\*\*\* Limitation of GDP \*\*\***

* Problem: GDP does not count the value of services family members provide to each other… except for the estimated value of housing “services” for those that own their home (instead of renting)

**Method 1: Value Added***Value added* of a producer is the final value of its sales minus the value of its purchases of intermediate goods and services.

* Adding up the value added (by the **Government**, by **Households** and by **Businesses**)
* We consider the V.A. produced in the production process

*Final goods and services:* goods and services sold to the final, or end, user.

*Intermediate goods and services:* goods and services (bought from one firm by another firm) that are inputs for production of final goods and services.

**Method 2: Spending**

* Add up all **spending on domestically produced final goods and services** (Government purchases of goods and services, Investment Spending, Consumer Spending)

This results in the equation: GDP = *C* + *I* + *G* + *X* – *IM* where

*C* = consumer spending, spending by households

*I* = investment spending, value of all the investments conducted by firms and households in assets

*G* = government purchases of goods and services, spending on services for communities for ex

*X* = sales to foreigners, value of export

*IM* = imports (purchases here of foreign goods… or income that has leaked across national borders) from abroad.

X-IM = Net Export (the difference between the value of exports and the value of imports).

**Method 3: Factor Income**

According to this new method, we need to add up all the income earned by factors of production from firms in the economy:

* Wages earned by labor (remuneration of labor)
* The rent earned by those who lease their land or structures to firms
* Dividends, i.e. profits paid to the shareholders, the owners of the firms’ physical capital (used in the production process)

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Descrizione generata automaticamenteLearn By Doing: Practice Question

Conditions: Exclude Import and Export Value, Government is not playing any role (no production of goods or sevices)and Only 3 firms [1) Producing 1 car per year, 2) Supply Pieces, 3) Supply Iron]

1. Method   
   - The company 1 does not use intermediate goods, but it has to pay wages, needed to get a loan for a bank (so there are interests), it has to pay the rent, it has to pay profits to the owner  
   Value Added = Value of intermediate goods produced by the company  
   - From 9,000 🡪 subtract 4,200 = 4,800

SUM OF VALUE ADDED 🡪 21,500 which has to be equal to GDP

**Real GDP: a measure of aggregate output**

We need to be able to track the quantity of total output over time.

* ***Real GDP:*** the total value of the final goods and services produced in the economy during a given year, **calculated using the prices of a selected base year.**It really takes into account the level of prices and how prices change
* ***Nominal GDP:*** the value of all final goods and services produced in the economy during a given year, **calculated using the prices current in the year in which the output is produced.**

**Real vs Nominal GDP**

Except in the base year, real GDP is not the same as ***nominal GDP*:** output valued at current prices.

* ***Chained dollars:*** the method of calculating changes in real GDP using the average between the growth rate calculated on an early base year and the growth rate calculated on a late base year.
* ***GDP per capita:*** average GDP per person; not by itself an appropriate policy goal.

**Beyond GDP**

Does money buy happiness? Can well-being be measured? Does growth equal progress? These may sound like esoteric questions, but they are at the heart of efforts to move beyond GDP to develop more accurate ways of measuring human development.

**GDP is not the only/best measure to measure the wealth of a nation**

HDI: **Human Development Index**

Emphasizes that outcomes for people and their capabilities should be the ultimate criteria for assessing the progress of a country, not economic growth alone. Accounts for average achievements in:

* life expectancy (proxy for leading a long and healthy life),
* education (proxy for being knowledgeable) and being successful in the labor market
* income per capita (proxy for command over resources to have a decent standard of living).

Definitions:

* A standard definition of human development (1990 HDR):   
  “[…] a process of enlarging people’s choices to live lives they have reason to value… The most critical ones are to lead a long and healthy life, to be knowledgeable and to enjoy a decent standard of living.”
* A broader definition (2010 HDR):  
  “Human development is the expansion of people’s freedoms to live long, healthy and creative lives; to advance other goals they have reason to value; and to engage actively in shaping development equitably and sustainably on a shared planet”

Gross National Income

PRICE INDEXES AND THE AGGREGATE PRICE LEVEL

***Aggregate price level:*** a measure of the overall level of prices in the economy.

To measure the aggregate price level, economists calculate the cost of purchasing a ***market basket*.**

***Market basket:*** a hypothetical set of consumer purchases of goods and services.

Price Index

***Price Index:*** the cost of purchasing a given market basket in a given year, where that cost is normalized so that it is equal to 100 in the selected base year

**Price index in** = Cost of market basket in a given year x 100

**a given year**  Cost of market basket in base year

**Price Indexes**

* We use cost of market basket in different year so we se how prices change
* Important because is the only way to get a precise measure of the inflation rate

**Inflation Rate, CPI, and Other Indexes**

* The ***Inflation rate:*** the yearly percentage change in a price index, typically based upon ***consumer price index, or CPI,*** the most common measure of the aggregate price level.
* The ***consumer price index, or CPI,*** measures the cost of the market basket of a typical urban (American) family

**Inflation rate** = Price index in year 2 – Price index in year 1 x 100

Price index in year 1

**Other Price Measures**

1. PPI  
   ***Producer price index* (PPI):** similar to the CPI but measures changes in the prices of goods purchased by producers.  
   It consider the price level of good and services that are intermediate, namely goods used as inputs in the production process
2. GDP Deflator  
   which **measures the** **price level by calculating the ratio of nominal to real GDP.**  
   It is not really an index, rather a proxy of inflation rate which ratio is a measure of the level of increase in prices (we see if prices are raising).   
   ***The GDP deflator*** for a given year is 100 times the ratio of nominal GDP to real GDP in that year.

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Descrizione generata automaticamente**CPI, PPI, GDP Deflator**

* The three are really well correlated
* If you consider the trend, the ppi seems to be more sensitive to something/ external chock of the inputs of production (peak is amplified in PPI in both positive and negative chock)
* CPI is more correlated with GDP deflator

Inflation and Deflation, again

Inflation hurts the economy, but most people misunderstand how.

THE LEVEL OF PRICES DOESN’T MATTER

**Inflation does not make everyone poorer because incomes often rise with prices.**

**A better measure? Real wages.**

* ***Real wage*** is the wage rate divided by the price level.
* ***Real income*** is income divided by the price level.

THE RATE OF CHANGE DOES MATTER

**It’s crucial to distinguish between the level of prices and the inflation rate**

**Inflation rate** = Price level in year 2 – Price level in year 1 X 100

Price level in year 1

**Cost of Inflation**

1. Shoe-Leather costs: ***:*** the increased costs of transactions caused by inflation  
     
   Money loose purchasing power quickly when inflation is high (since cash loses its value quickly) 🡪 Business and Consumers need to consume money ASAP
2. Menu costs: the real cost of changing a listed price.  
   🡪 inflation high 🡪 need to change continuously the price of each item.  
    *When inflation is high, merchants may decide to stop listing prices in local currency and may use a more stable currency, such as the U.S. dollar.*
3. Unit of account costs: costs arising from the way inflation makes money a less reliable unit of measurement.

Calculations are hard when inflation is high.  
The effect is to reduce the quality of economic decisions: the economy as a whole makes less efficient use of its resources because of the uncertainty caused by changes in the unit of account  
  
Inflation is high and I took some agreement which is paid in nominal value, its meaning does not make sense anymore in the original value.

*Unit-of-account costs may be particularly important in the tax system because inflation can distort the measures of income on which taxes are collected****.***

Winners and Losers from Inflation

If inflation is different from predictions, some will lose, and some will benefit.

The main reason inflation sometimes helps some people while hurting others is that economic transactions often involve contracts that extend over a period of time, such as loans, and these contracts are normally specified in nominal terms

In case of a loan, the borrower receives a certain amount of funds at the beginning, and the loan contract specifies the interest rate on the loan and when it must be paid off.

The interest rate is the return a lender receives for allowing borrowers the use of their savings for one year, calculated as a percentage of the amount borrowed.

* Nominal Interest Rate: The interest rate expressed in currency of the country considered
* Real Interest Rate: The nominal interest rate minus the rate of inflation.  
  It considers the different costs of money along time

Study of a Loan during when Inflation plays an important role

* When a borrower and a lender enter into a loan contract, the contract is normally written in dollar(nominal) terms (the interest rate is nominal).
* Each party to a loan contract has an expectation about the future rate of inflation and therefore an expectation about the real interest rate on the loan.
* If the actual inflation rate is higher than expected, borrowers gain at the expense of lenders: borrowers will repay their loans with funds that have a lower real value than had been expected.
* Conversely, if the inflation rate is lower than expected, lenders will gain at the expense of borrowers: borrowers must repay their loans with funds that have a higher real value than had been expected.

**Inflation is easy; Disinflation is hard**

* ***Disinflation*** is the process of bringing the inflation rate down.

Case Study: Policy Interventions to mitigate the costs of Inflation

**Unemployment**

Defining Unemployment (part 1)

***Employment rate:*** the percent of the total number of people in the labor force who have a job.

***Unemployment rate:*** the percent of the total number of people in the labor force who are unemployed. The U.S. Census Bureau considers the unemployed those who are: “jobless, looking for jobs, and available for work”.

* Retired people don't 'count because they are not looking for jobs
* An individual is **considered unemployed if he or she does not currently have a job and has been actively seeking a job during the past four weeks**
* Not included in the employment rate 🡪 seasonal workers   
  So it is a bit inaccurate

***Labor force:*** all workers, employed or unemployed.

***Labor force participation rate:*** the percentage of adults (people 16 and over) in the labor force.

*Unemployment always rises during recessions and usually (but not always) falls during periods of economic expansion.*

**Measuring the labor force participation rate:** The % of the adult (16+) civilian population who are working or actively looking for work.

**Measuring unemployment**: The *unemployment rate* is the % of the labor force without a job

The significance of the unemployment rate

**The unemployment rate is a good indicator of how easy or difficult it is to find a job given the current state of the economy.**

* **It can overstate the true level of unemployment.**Even if the labor market is healthy, it takes time to find the right job. (Meanwhile, you’re “unemployed.”)
* **It can understate the true level of unemployment.**You are not “unemployed” if you have given up looking for a job because there are no jobs available.

Problems with unemployment statistics

***Discouraged workers:*** nonworking people who have given up looking for work for the time being. Not considered unemployed.

***The deeper the recession, the more discouraged workers there are.***

***Marginally attached workers:*** thosewho were available and actively looked for work recently but are not currently looking (in the past 12 months but NOT in the past 4 weeks)

***Underemployed workers:*** people who work part time because they cannot find full-time jobs.

* Underemployed workers 🡪 acting below their potential

Defining Unemployment (part 2)

So how good an indicator is the unemployment rate?

It isn’t perfect, It doesn’t measure the quality of jobs or how well people are matched to their jobs.

*Economists also look at other indicators:*

* + - Labor force participation rate
    - Number of full-time jobs
    - Average wages
    - Sex and Ethnicity

Growth and Unemployment:

* A ***jobless recovery*** is a period in which the real GDP growth rate is positive but the unemployment rate is still rising.
* Generally there is a negative relationship between economic growth and the unemployment rate.

The natural Rate of Unemployment

Three types of Unemployment

**Frictional**: unemployment due to the time workers spend in job search)

* Scarcity of information creates frictional unemployment

**Structural**: more people are seeking jobs in a particular labor market than there are jobs available at the current wage rate, even when the economy is at the peak of the business cycle.

Changes if there are policies that protect and give advantages to workers, some causes:

* Labor unions: an association of workers that bargains collectively with employers over wages, benefits, and working conditions.  
  CONS: *Unions take many forms: some act to increase wages simply by restricting entry into a profession with licensing requirements.* Too strong and too active in setting the minimum wage; they are to powerful and affect too much the labour market
* ***Efficiency wages:*** wages that employers set above the equilibrium rate as an incentive for better employee performance.   
  They do that in order to keep individuals with a lot of experience and that are precious to them, in their own company.  
  CONS: The traditional argument: minimum wage creates low-skilled unemployment: the higher the wage, the more structural unemployment.   
  Furthermore, Government Intervention to the minimum wage increases unemployment, since there is a surplus of labor.   
  Moreover, at a macro level it has negative consequences because it avoid people to become part of a company.
* Side effects of government policies
* Mismatches between employees and employers

**Cyclical** (changes if the economy is in recession or not)

Labor Market Flows in an Average Month in 2007

Even in years in which economic growth is going well, individuals move from one side to the other, this happens because of frictions on finding in the perfect match (frictions, are time and costs for each individual to find a job that best suits them)

The Natural Rate of Employment

Frictional and structural unemployment are always present and they are “natural.”

* **Natural**: rate of unemployment that we observe even if a country is in expansion (usually between 2-5 %).  
  Natural Unemployment = Frictional Unemployment + Structural Unemployment:

**Natural unemployment** = frictional unemployment + structural unemployment.

**Actual unemployment** = natural unemployment + cyclical unemployment.

Actual Unemployment = Natural Unemployment + Cyclical Unemployment

* Depression, reduced production or closed down 🡪 reduce number of individuals

Cyclical Unemployment

Negative relationship Growth/Unemployment 🡪 but not 1:1, because labor market need to adjust and change

***Cyclical unemployment****:* unemployment correlated with the business cycle—the deviation from the natural rate.

Lower growth is usually correlated with higher unemployment for two reasons:

* 1. *When GDP falls, firms lay off workers.*
  2. *Idle labor and capital → economic growth not being maximized → ↓ ability of the economy to create more jobs.*

Changes in the natural rate of unemployment

We need estimates of the natural rate of unemployment both to make forecasts and to conduct policy analyses. *What causes it to change?*

* Changes in characteristics of the labor force
* Changing demographics
* Changes in labor market institutions
* Unions, temp agencies, and new technology
* Changes in government policies
* Job training programs