



MACROECONOMICS

**10 PRINCIPLES OF
ECONOMICS**

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ECONOMY...

- . . . The word *economy* comes from a Greek word for “one who manages a household.”



PRINCIPLES OF ECONOMICS

- A household and an economy face many decisions:
 - Who will work?
 - What goods and how many of them should be produced?
 - What resources should be used in production?
 - At what price should the goods be sold?



PRINCIPLES OF ECONOMICS

- Society and Scarce Resources:
 - The management of society's resources is important because resources are scarce.
 - *Scarcity. . . means that society has limited resources and therefore cannot produce all the goods and services people wish to have.*



ECONOMICS

- *Economics is the study of how society manages its scarce resources.*
- The branch of knowledge concerned with the production, consumption and transfer of wealth



10 PRINCIPLES OF ECONOMICS

- How people make decisions.
 1. People face tradeoffs.
 2. The cost of something is what you give up to get it.
 3. Rational people think at the margin.
 4. People respond to incentives.



10 PRINCIPLES OF ECONOMICS

- How people interact with each other.
- 5. Trade can make everyone better off.
- 6. Markets are usually a good way to organize economic activity.
- 7. Governments can sometimes improve economic outcomes.



10 PRINCIPLES OF ECONOMICS

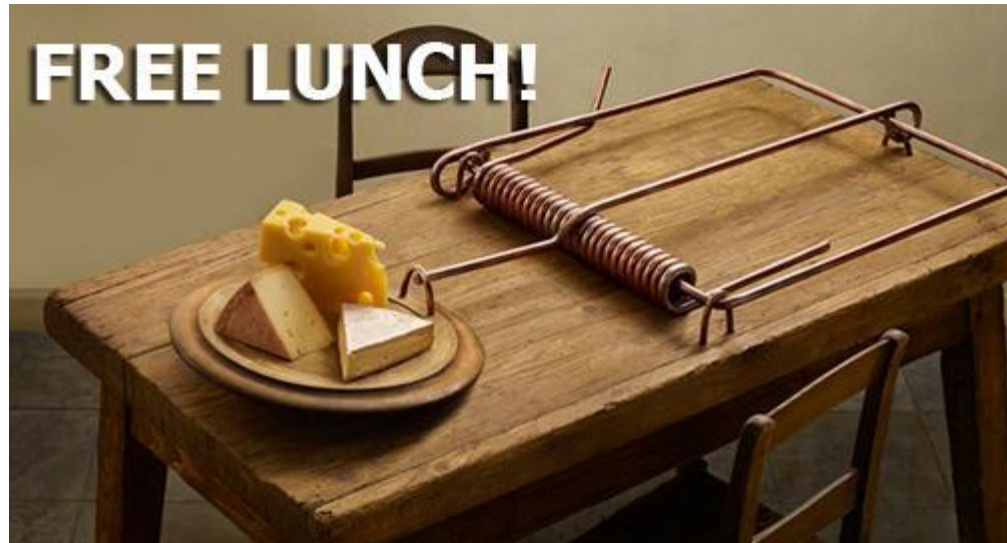
- The forces and trends that affect how the economy as a whole works.
8. The standard of living depends on a country's production.
 9. Prices rise when the government prints too much money.
 10. Society faces a short-run tradeoff between inflation and unemployment.



PRINCIPLE #1: PEOPLE FACE TRADEOFFS

- **Trade off** is a situation that involves losing one quality or aspect of something in return for gaining another quality or aspect

“There is no such thing as a free lunch!”



PRINCIPLE #1: PEOPLE FACE TRADEOFFS

- To get one thing, we usually have to give up another thing.
 - Food v. clothing
 - Leisure time v. work
 - Efficiency v. equity

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



PRINCIPLE #1: PEOPLE FACE TRADEOFFS

- Efficiency v. Equity
 - *Efficiency means society gets the most that it can from its scarce resources.*
 - *Equity means the benefits of those resources are distributed fairly among the members of society.*



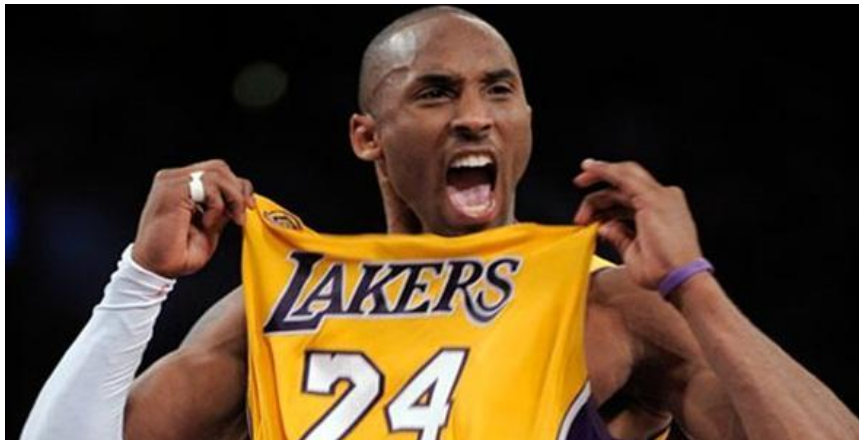
PRINCIPLE #2: THE COST OF SOMETHING IS WHAT YOU GIVE UP TO GET IT

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



PRINCIPLE #2: THE COST OF SOMETHING IS WHAT YOU GIVE UP TO GET IT

- Cricketing god Sachin Tendulkar decided to quit his education in order to play professional cricket for his country.



- LA Laker basketball star Kobe Bryant chose to skip college and go straight from high school to the pros where he has earned millions of dollars.

PRINCIPLE #3: RATIONAL PEOPLE THINK AT THE MARGIN

- *Rational people* people who systematically and purposefully do the best they can to achieve their objectives
- *Marginal changes are small, incremental adjustments to an existing plan of action.*
- **People make decisions by comparing costs and benefits at the margin**



PRINCIPLE #4: PEOPLE RESPOND TO INCENTIVES

- *Incentives* – something that induces a person to act
- 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!



PRINCIPLE #5: TRADE CAN MAKE EVERYONE BETTER OFF

- People gain from their ability to trade with one another.
- Competition results in gains from trading.
- Trade allows people to specialize in what they do best.



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 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



PRINCIPLE #6: MARKETS ARE USUALLY A GOOD WAY TO ORGANIZE ECONOMIC ACTIVITY

- 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.



PRINCIPLE #7: GOVERNMENTS CAN SOMETIMES IMPROVE MARKET OUTCOMES

- *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



PRINCIPLE #7: GOVERNMENTS CAN SOMETIMES IMPROVE MARKET OUTCOMES

- 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.
 - *market power*, which is the ability of a single person or firm to unduly influence market prices.



PRINCIPLE #8: THE STANDARD OF LIVING DEPENDS ON A COUNTRY'S PRODUCTION

- Standard of living may be measured in different ways:
 - By comparing personal incomes.
 - By comparing the total market value of a nation's production.



PRINCIPLE #8: THE STANDARD OF LIVING DEPENDS ON A COUNTRY'S PRODUCTION

- Almost all variations in living standards are explained by differences in countries' productivities.
 - *Productivity is the amount of goods and services produced from each hour of a worker's time.*
- Standard of living may be measured in different ways:
 - By comparing personal incomes.
 - By comparing the total market value of a nation's production.



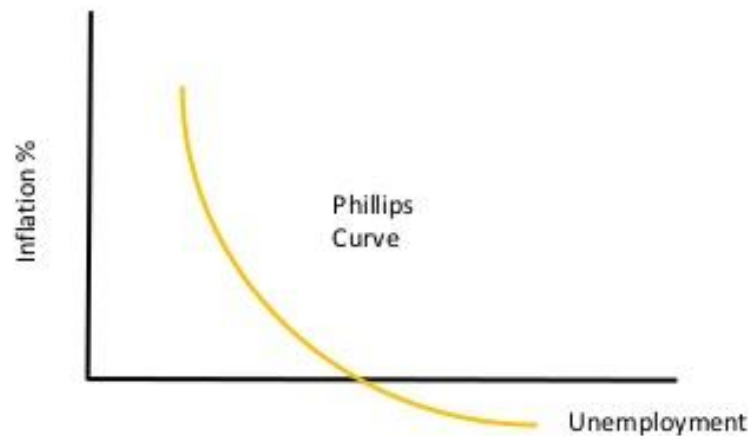
PRINCIPLE #9: PRICES RISE WHEN THE GOVERNMENT PRINTS TOO MUCH MONEY

- Inflation 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.



PRINCIPLE #10: SOCIETY FACES A SHORT-RUN TRADEOFF BETWEEN INFLATION AND UNEMPLOYMENT

Phillips Curve



The Phillips curve slopes from left to right, highlighting the trade-off policy makers face between controlling inflation or unemployment.

- It's a short-run tradeoff!



SUMMARY

- When individuals make decisions, they face tradeoffs among alternative goals.
- The cost of any action is measured in terms of foregone opportunities.
- Rational people make decisions by comparing marginal costs and marginal benefits.
- People change their behavior in response to the incentives they face.



SUMMARY

- Trade can be mutually beneficial.
- Markets are usually a good way of coordinating trade among people.
- Government can potentially improve market outcomes if there is some market failure or if the market outcome is inequitable



SUMMARY

- Productivity is the ultimate source of living standards.
- Money growth is the ultimate source of inflation.
- Society faces a short-run tradeoff between inflation and unemployment.



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MACROECONOMICS

INTRODUCTION TO MACROECONOMICS

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INTRO

- individual decision-making ***Microeconomics examines the behavior*** of units—business firms and households.
- ***Macroeconomics deals with the economy*** as a whole; it examines the behavior of economic aggregates such as aggregate income, consumption, investment, and the overall level of prices.
 - ***Aggregate behavior refers to the behavior of*** all households and firms together.



INTRO

- When we study the consumption behaviour or equilibrium of a consumer; the production pattern & equilibrium of a firm, the entire analysis is 'micro' in nature.....because

we study a UNIT and not the SYSTEM in which it is operating



INTRO

- Microeconomists generally conclude that markets work well.
- Macroeconomists, however, observe that some important prices often seem “sticky”
- ***Sticky prices are prices that do not*** always adjust rapidly to maintain the equality between quantity supplied and quantity demanded.



INTRO

- Macroeconomists often reflect on the microeconomic principles underlying macroeconomic analysis, or the *microeconomic foundations of macroeconomics*



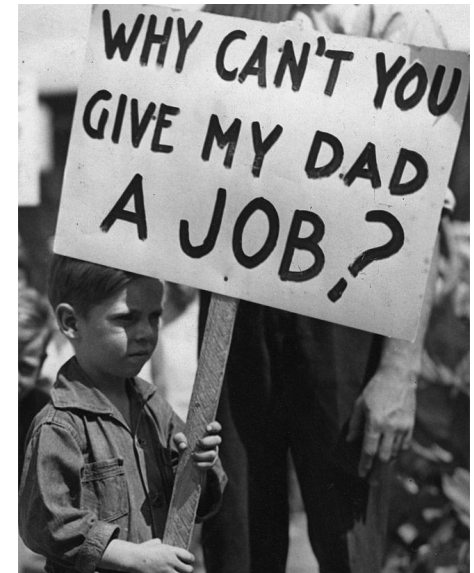
THE ROOTS OF MACROECONOMICS

- The *Great Depression* was a period of severe economic contraction and high unemployment that began in 1929 and continued throughout the 1930s.
- Stock Markets crashed!
- 9000 banks filed for bankruptcy
- Banks that survived stopped giving loans.
- People cut down spending
- Large amounts of inventories started piling up
- Businesses stopped production....layoffs!(25% unemployment)
- Purchasing power declined
- Hawley – Smoot tariff imposed on imports in 1930
- Decline in world trade & economic retaliation.



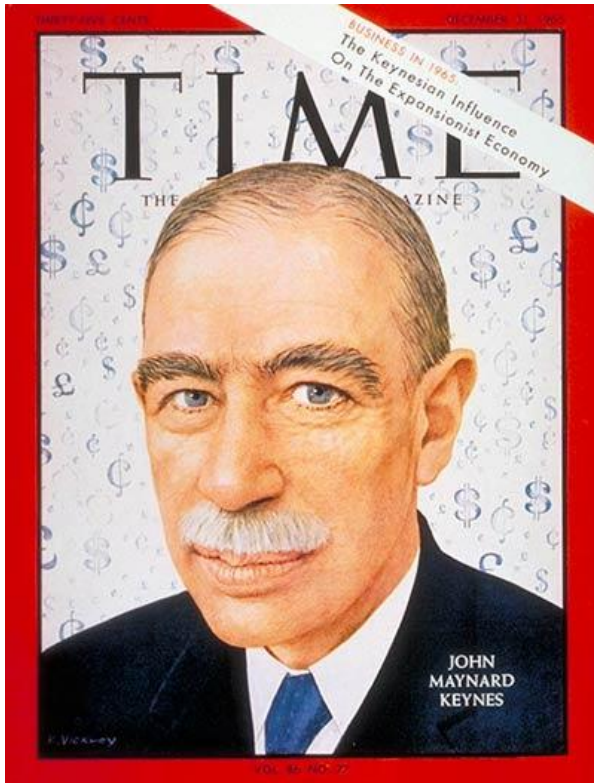
THE ROOTS OF MACROECONOMICS

- Classical economists applied microeconomic models, or “market clearing” models, to economy-wide problems.
- However, simple classical models failed to explain the prolonged existence of high unemployment during the Great Depression. This provided the impetus for the development of macroeconomics

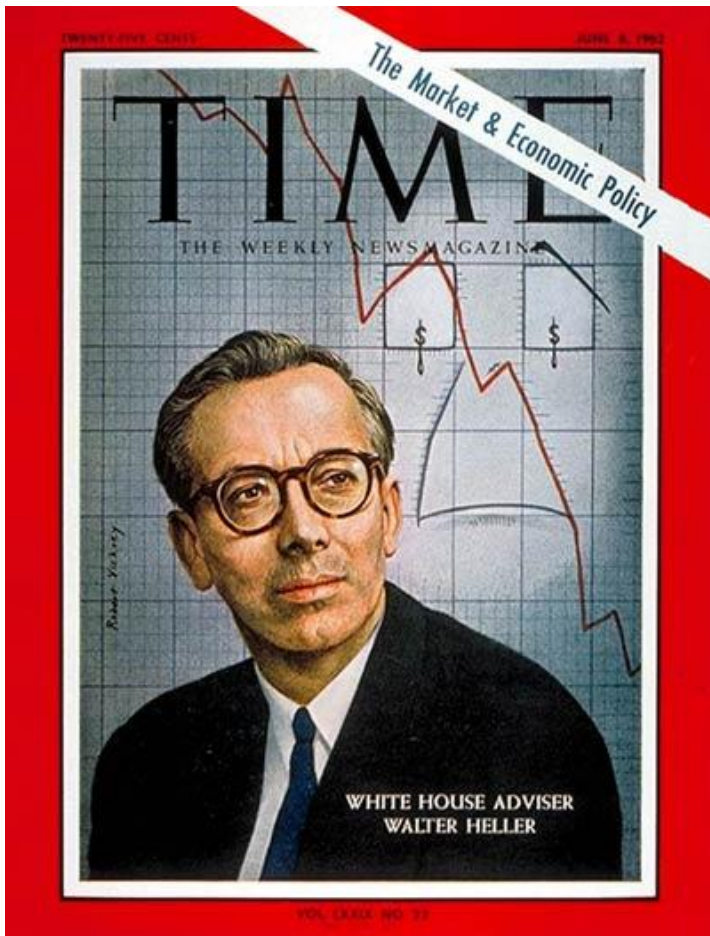


THE ROOTS OF MACROECONOMICS

- In 1936, John Maynard Keynes published *The General Theory of Employment, Interest, and Money*.
 - Keynes believed governments could intervene in the economy and affect the level of output and employment.
 - During periods of low private demand, the government can stimulate aggregate demand to lift the economy out of recession.



RECENT MACROECONOMIC HISTORY



- *Fine-tuning* was the phrase used by Walter Heller to refer to the government's role in regulating inflation and unemployment.
- The use of Keynesian policy to fine-tune the economy in the 1960s, led to disillusionment in the 1970s and early 1980s.



WHY TO STUDY MACROECONOMICS?

- Macroeconomics is the study of the nation's economy as a whole.
- We can use macroeconomic analysis to:
 - Understand why economies grow.
 - Understand economic fluctuations.
 - Make informed business decisions.



MACROECONOMIC CONCERNS

- Three of the major concerns of macroeconomics are:
 - Inflation
 - Output growth
 - Unemployment



INFLATION AND DEFLATION

- *Inflation is an increase in the overall price level.*
- *Hyperinflation is a period of very rapid increases in the overall price level.*

Hyperinflations are rare, but have been used to study the costs and consequences of even moderate inflation.

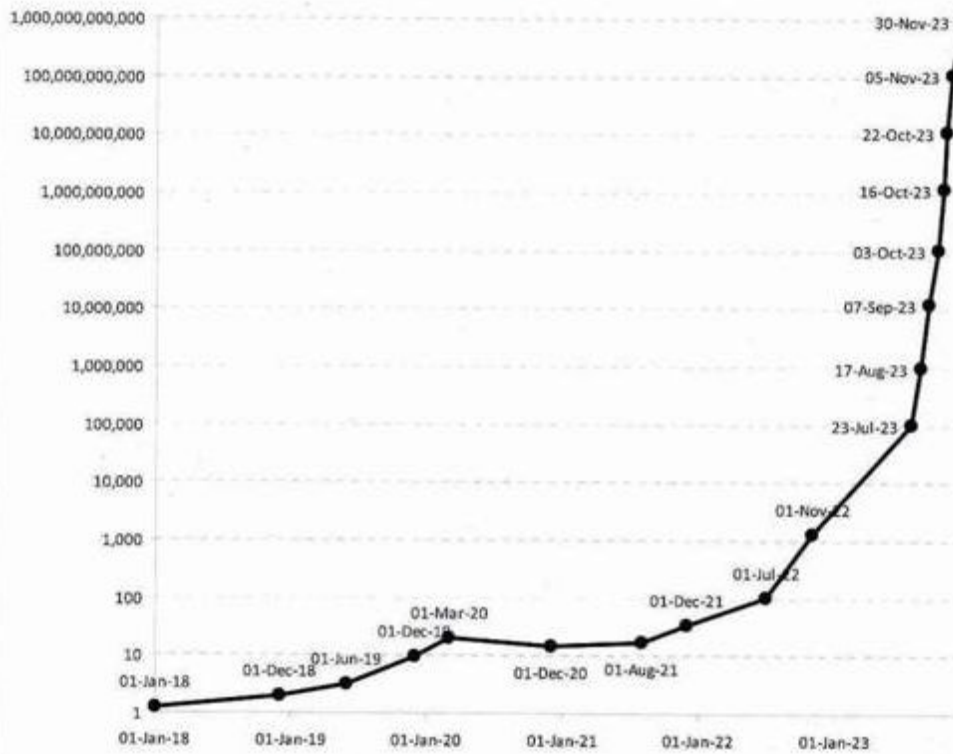
- *Deflation is a decrease in the overall price level. Prolonged periods of deflation can be just as damaging for the economy as sustained inflation.*



INFLATION



1 "Gold"Mark = "Reichs"Mark 1918-1924



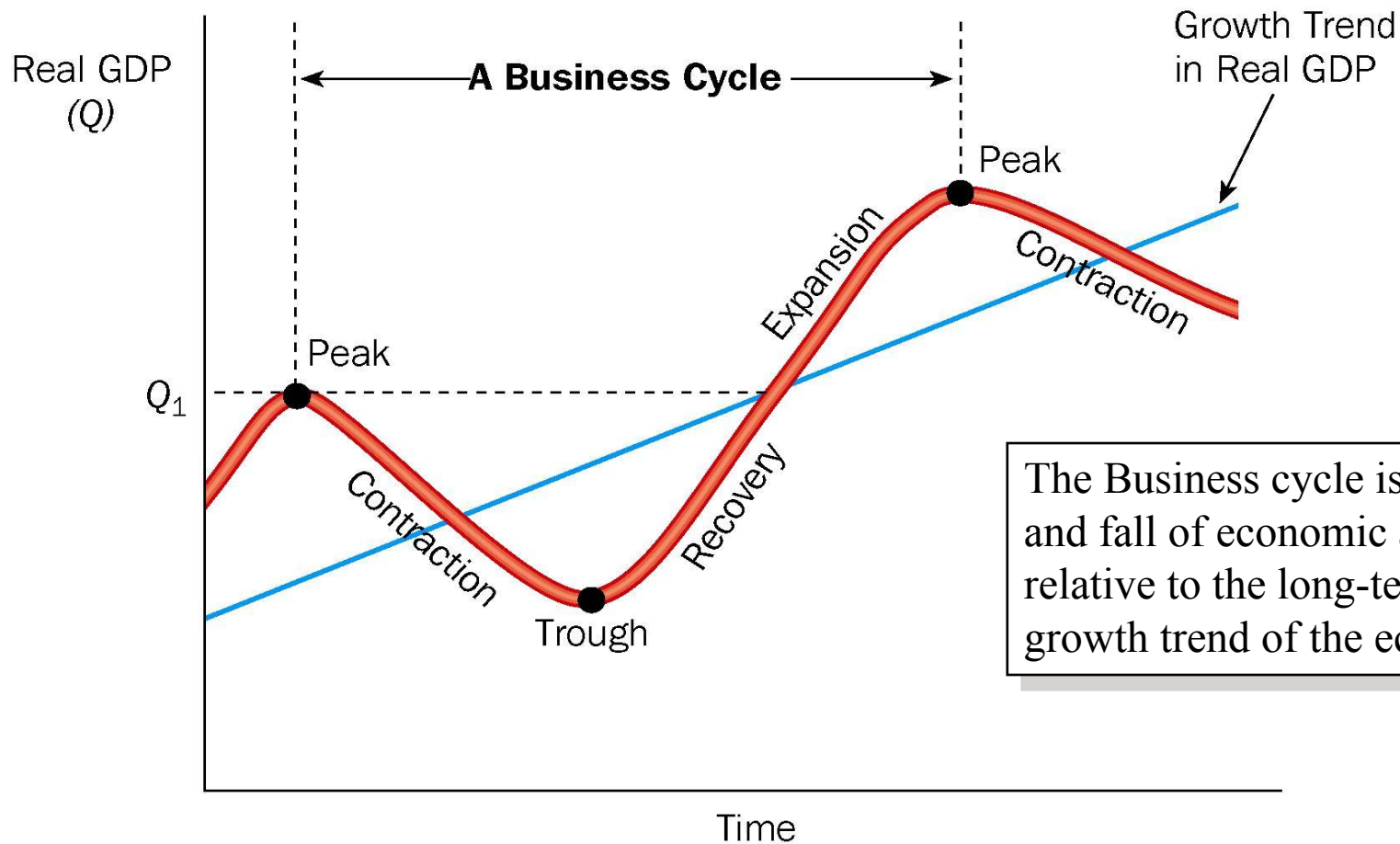
Logarithmic Scale Base 10



OUTPUT GROWTH: SHORT RUN AND LONG RUN

- The *business cycle is the cycle of* short-term ups and downs in the economy.
- The main measure of how an economy is doing is aggregate output:
 - *Aggregate output is the total quantity* of goods and services produced in an economy in a given period



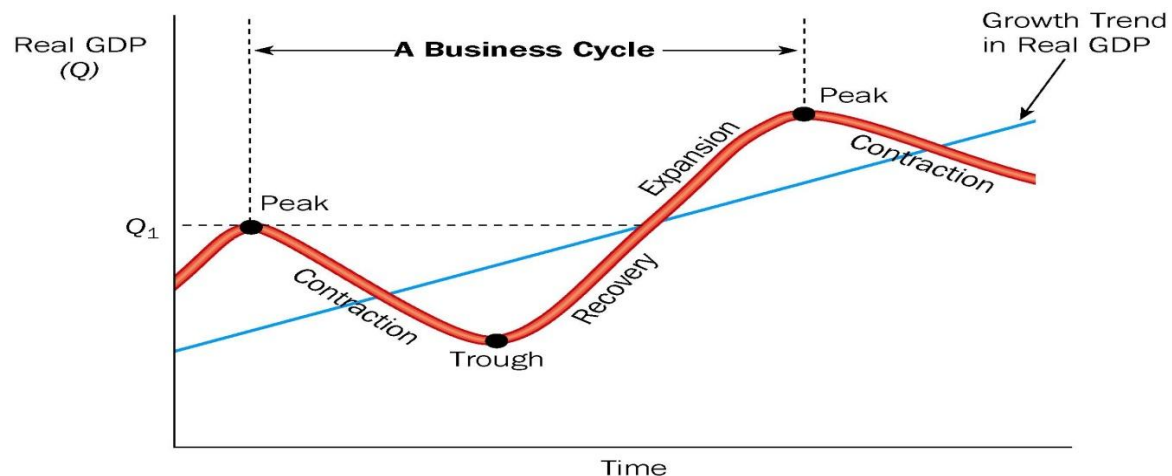


The Business cycle is the rise and fall of economic activity relative to the long-term growth trend of the economy



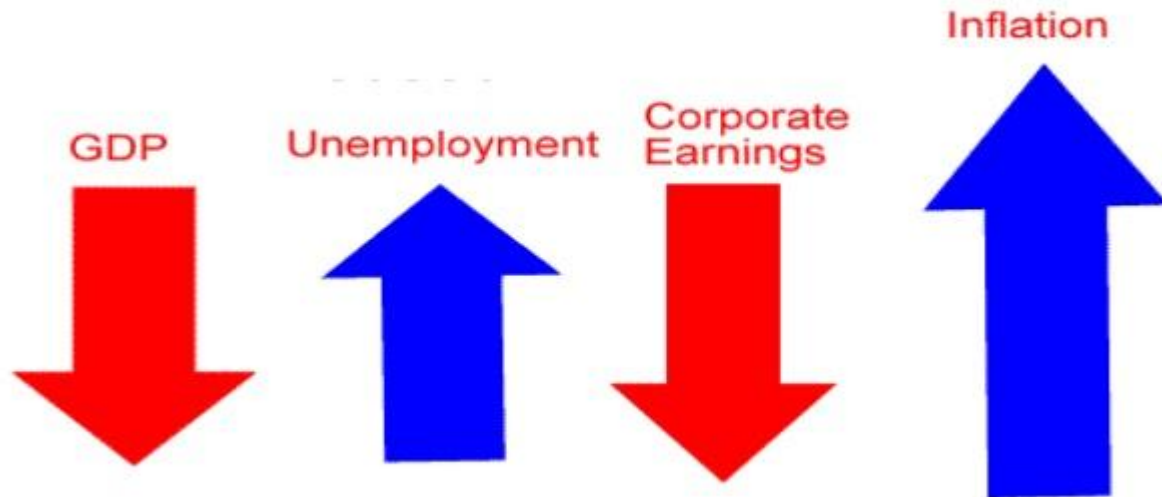
UPS AND DOWNS OF THE BUSINESS CYCLE

- **Peak:** at the peak of the business cycle, Real GDP is at a temporary high.
- **Contraction:** A decline in the real GDP. If it falls for two consecutive quarters, it is said the economy to be in a recession.
- **Trough:** The Low Point of the GDP, just before it begins to turn up.
- **Recovery:** When the GDP is rising from the trough.
- **Expansion:** when the real GDP expands beyond the recovery
- **Recession :** two consecutive quarter declines in Real DP



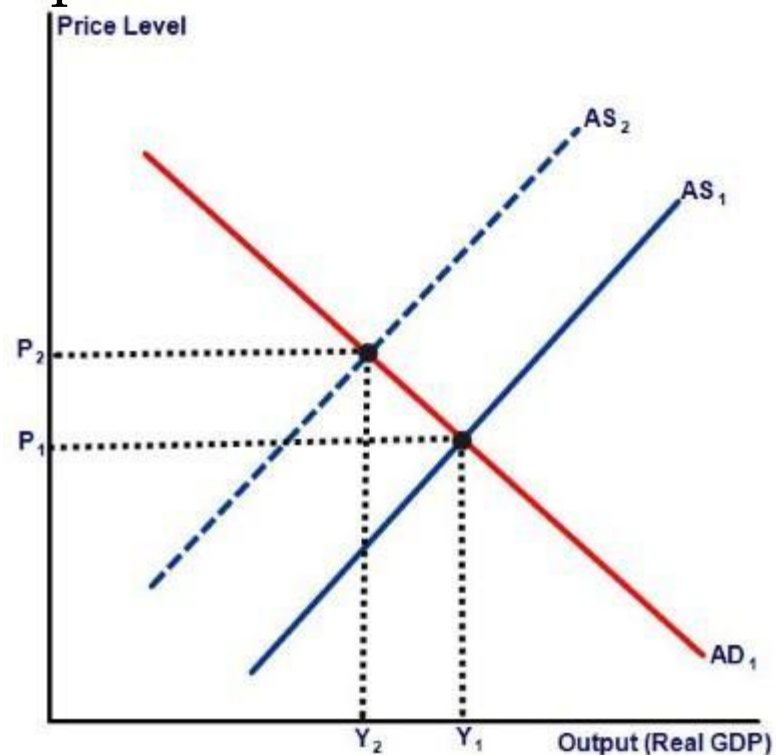
RECENT MACROECONOMIC HISTORY

- *Stagflation occurs when the overall price level rises rapidly (inflation) during periods of recession or high and persistent unemployment (stagnation).*



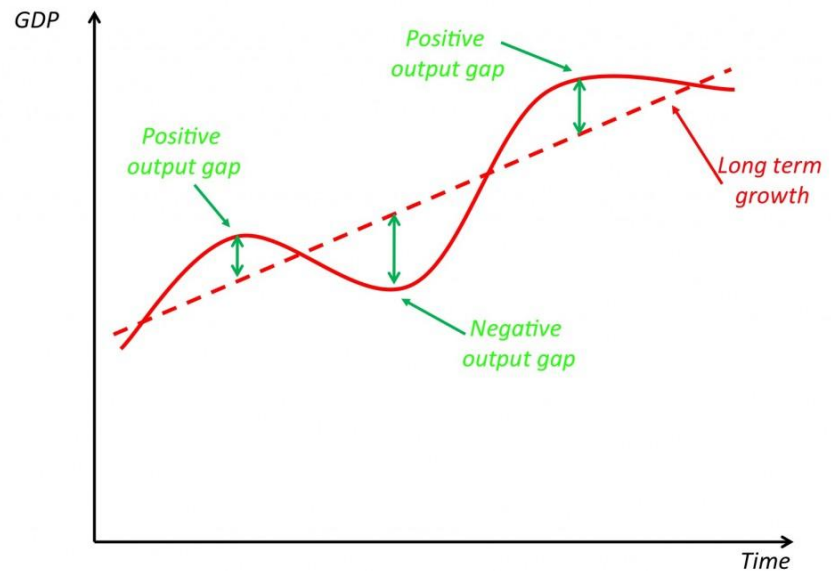
STAGFLATION

- Stagflation is a contraction of a nation's output accompanied by inflation
- Stagflation is generally a “supply-side” phenomenon
- A dramatic increase in oil prices caused the stagflation of the 1970s



OUTPUT GROWTH: SHORT RUN AND LONG RUN

- A *recession* is a *period during which* aggregate output declines. Two consecutive quarters of decrease in output signal a recession.

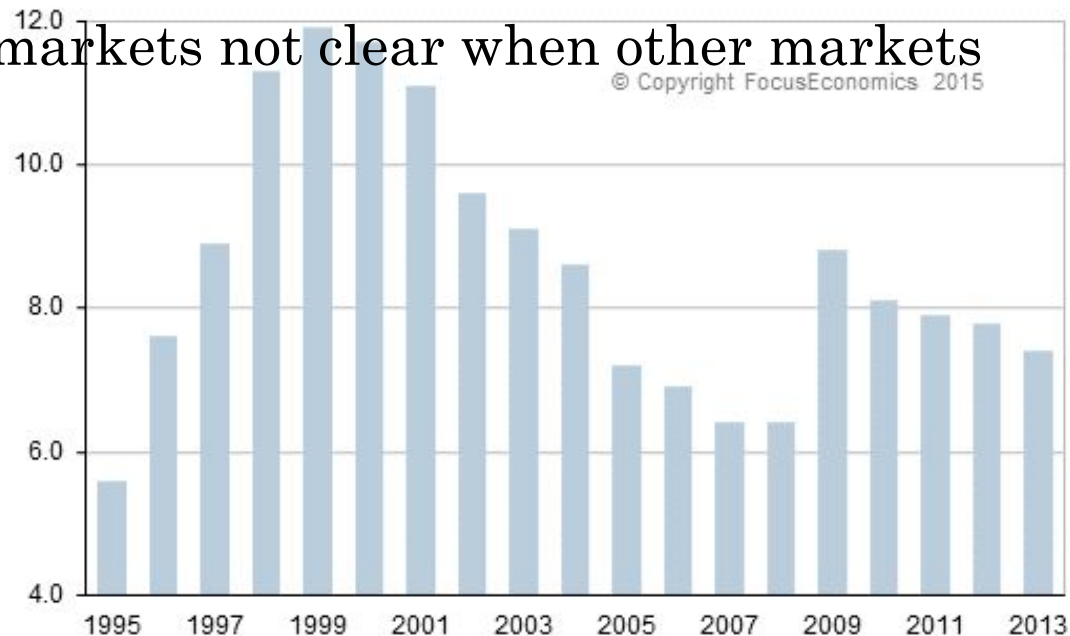


- A prolonged and deep recession becomes a *depression*
- Policy makers attempt not only to smooth fluctuations in output during a business cycle but also to increase the growth rate of output in the long-run.

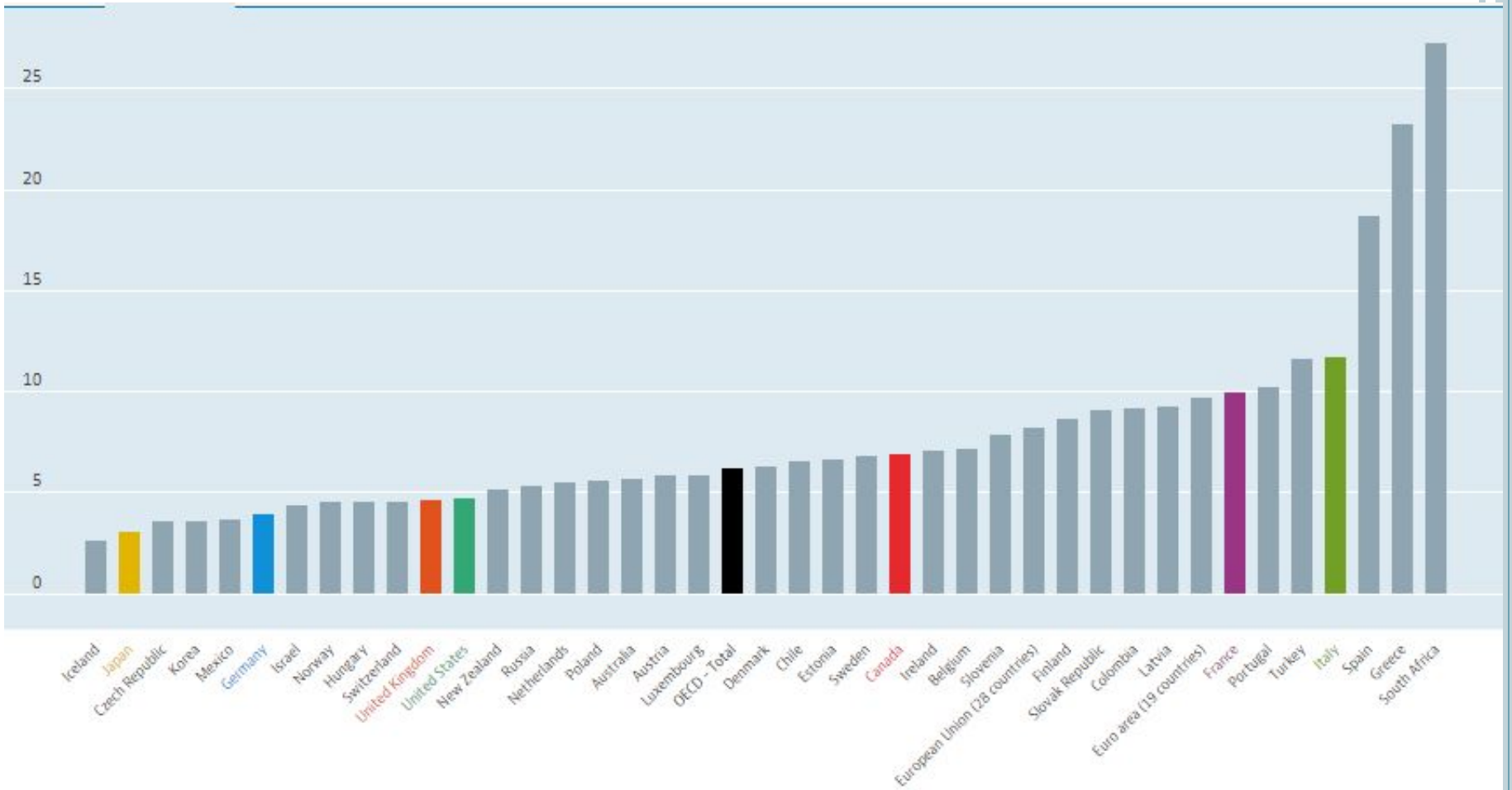


UNEMPLOYMENT

- The *unemployment rate is the* percentage of the labor force that is unemployed.
 - The unemployment rate is a key indicator of the economy's health.
 - The existence of unemployment seems to imply that the aggregate labor market is not in equilibrium.
 - Why do labor markets not clear when other markets do?



UNEMPLOYMENT



GOVERNMENT IN THE MACROECONOMY

- There are three kinds of policy that the government has used to influence the macroeconomics:
 - Fiscal policy
 - Monetary policy
 - Growth or supply-side policies



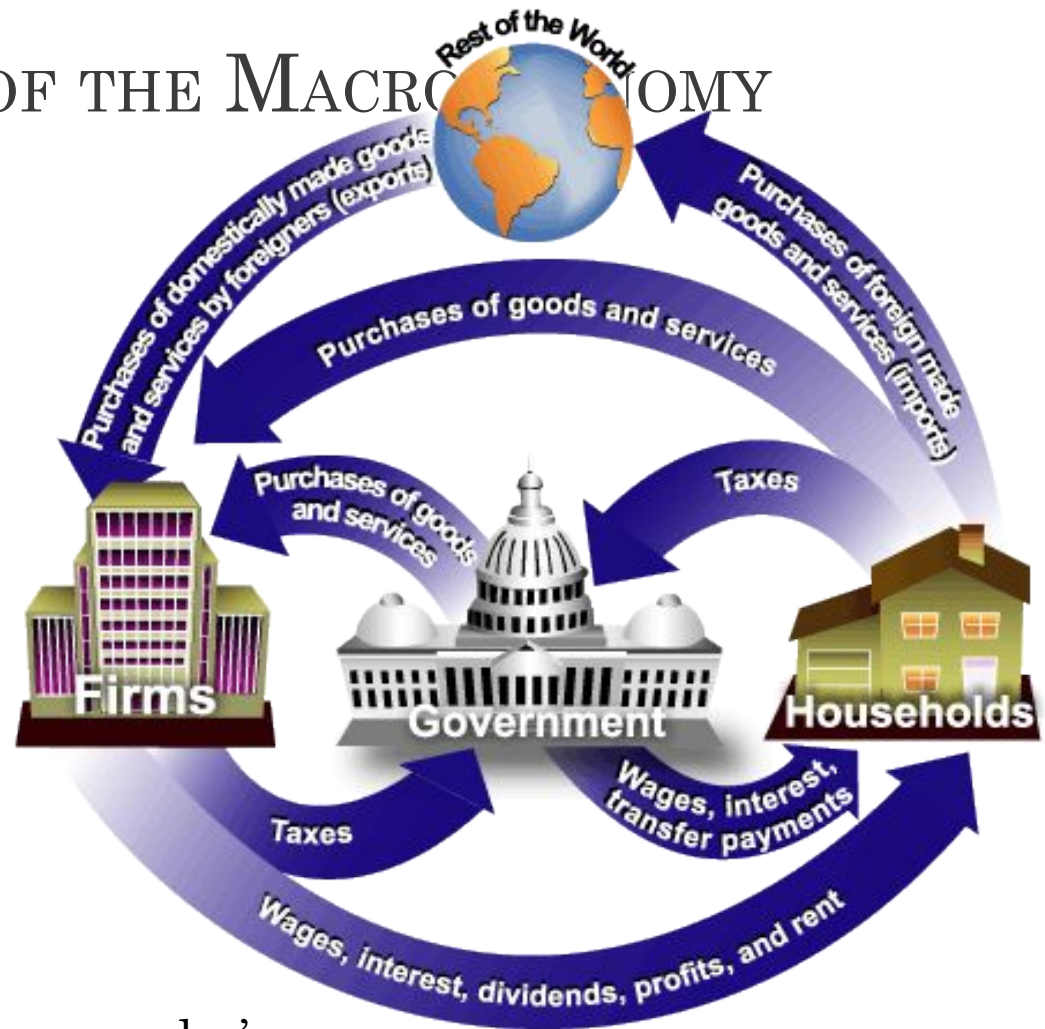
GOVERNMENT IN THE MACROECONOMY

- ***Fiscal policy refers to government policies*** concerning taxes and spending.
- ***Monetary policy consists of tools used by*** the Federal Reserve to control the quantity of money in the economy.
- ***Growth policies are government policies*** that focus on stimulating aggregate supply instead of aggregate demand.



THE COMPONENTS OF THE MACROECONOMY

- The *circular flow diagram* shows the income received and payments made by each sector of the economy.

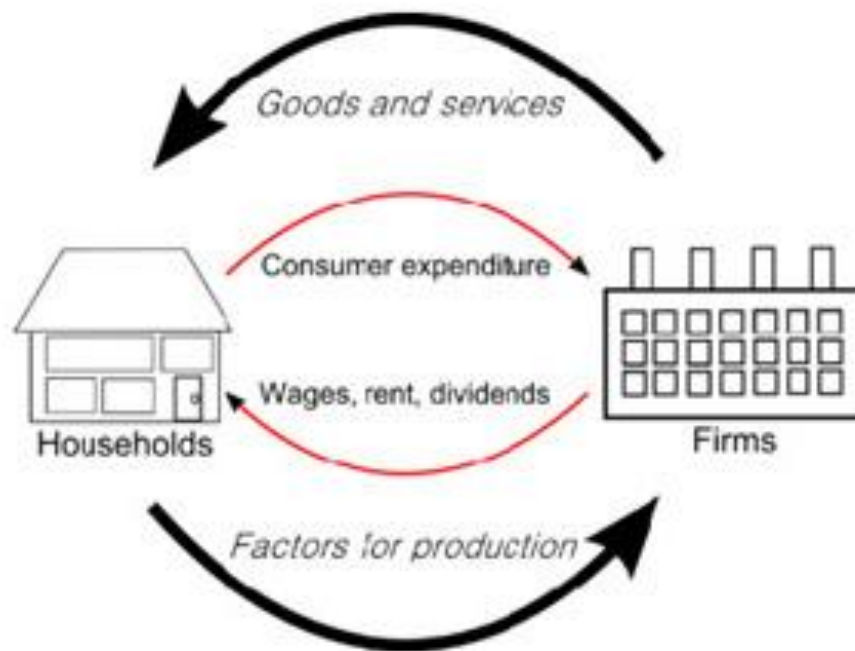


Everyone's expenditure is someone else's receipt. Every transaction must have two sides.

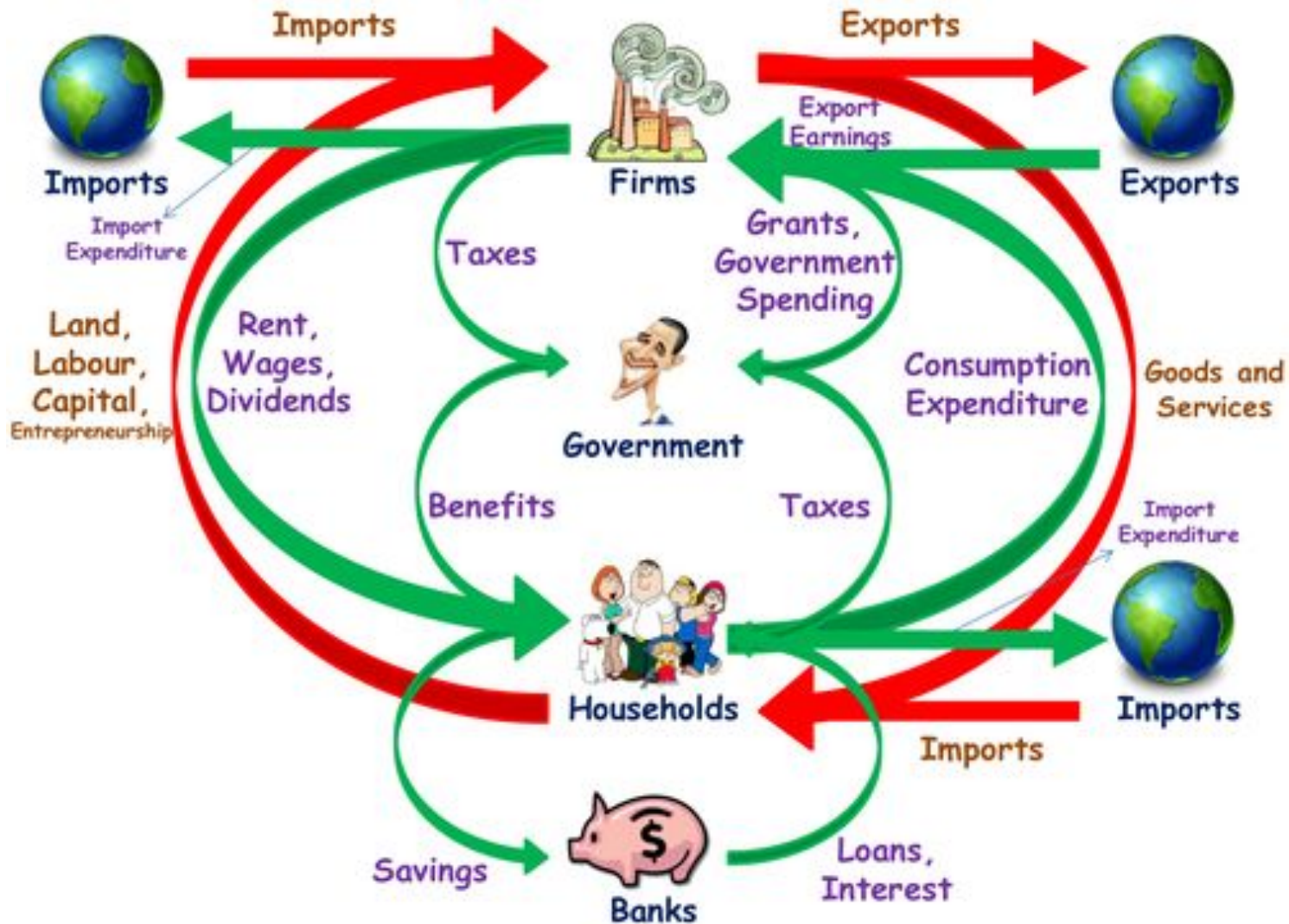


THE COMPONENTS OF THE MACROECONOMY

The circular flow of money and goods



THE COMPONENTS OF THE MACROECONOMY



THE COMPONENTS OF THE MACROECONOMY

- *Transfer payments are payments* made by the government to people who do not supply goods, services, or labor in exchange for these payments.



THE THREE MARKET ARENAS

- Households, firms, the government, and the rest of the world all interact in three different market arenas:
 - Goods-and-services market
 - Labor market
 - Money (financial) market



THE THREE MARKET ARENAS

- Households and the government purchase goods and services (*demand*) from firms in the ***goods-and services market, and*** firms supply to the goods and services market.
- In the ***labor market, firms and government*** purchase (demand) labor from households (supply).
 - The total supply of labor in the economy depends on the sum of decisions made by households.



THE THREE MARKET ARENAS

- In the *money market – sometimes called the financial market* – households purchase stocks and bonds from firms.
 - Households *supply funds to this market in the expectation of earning income, and also demand (borrow) funds from this market.*
 - Firms, government, and the rest of the world also engage in borrowing and lending, coordinated by financial institutions.



FINANCIAL INSTRUMENTS

- ***Treasury bonds, notes, and bills*** are promissory notes issued by the federal government when it borrows money.
- ***Corporate bonds are promissory*** notes issued by corporations when they borrow money
- ***Shares of stock are financial*** instruments that give to the holder a share in the firm's ownership and therefore the right to share in the firm's profits.
 - ***Dividends are the portion of a*** corporation's profits that the firm pays out each period to its shareholders when they borrow money.



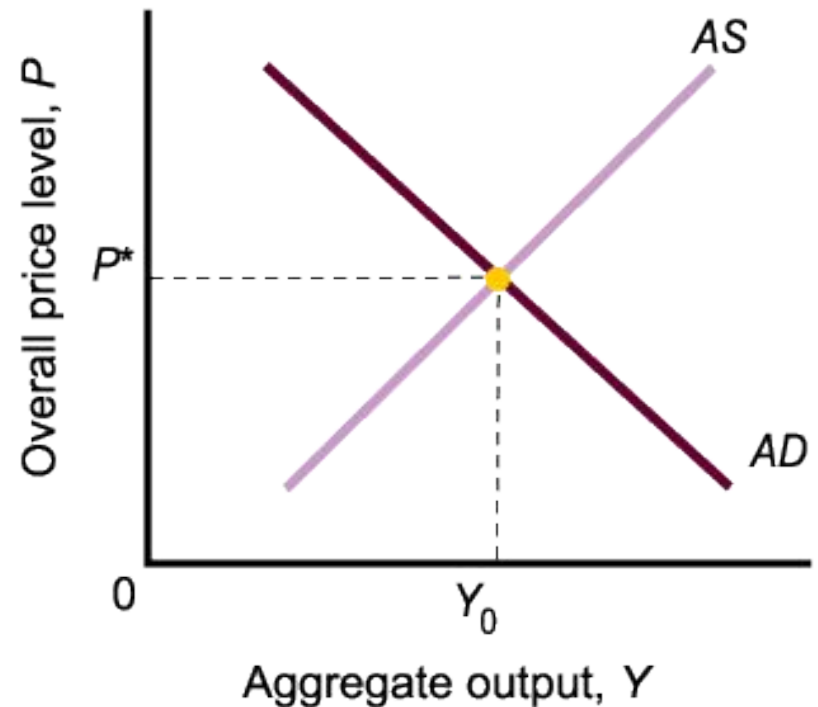
THE METHODOLOGY OF MACROECONOMICS

- Connections to microeconomics:
 - Macroeconomic behavior is the sum of all the microeconomic decisions made by individual households and firms. We cannot understand the former without some knowledge of the factors that influence the latter.



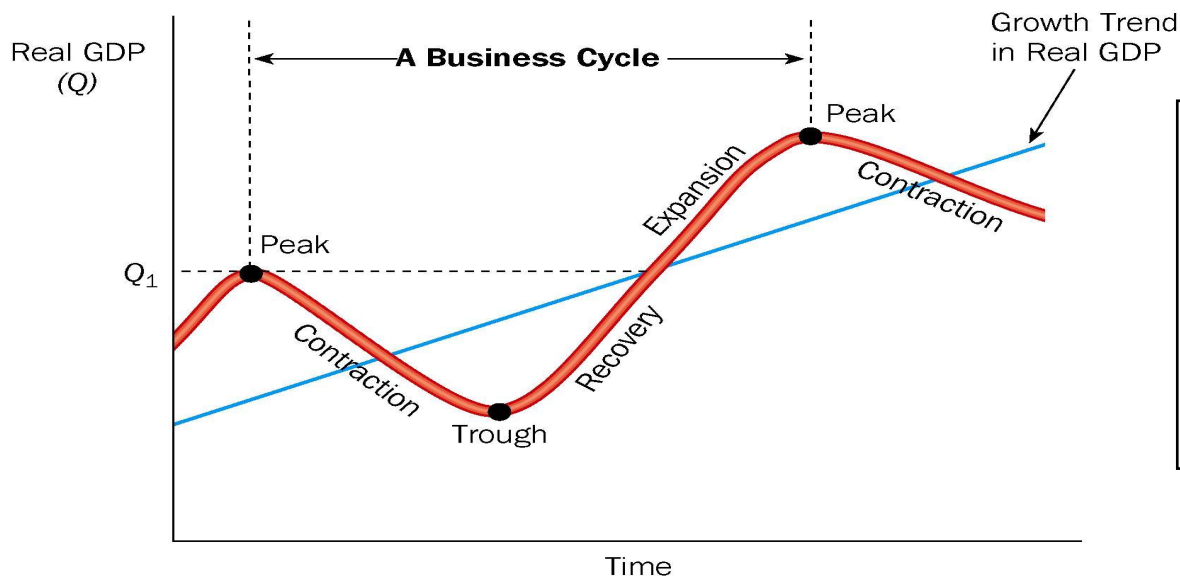
AGGREGATE SUPPLY AND AGGREGATE DEMAND

- ***Aggregate demand is the*** total demand for goods and services in an economy.
- ***Aggregate supply is the*** total supply of goods and services in an economy.
 - Aggregate supply and demand curves are more complex than simple market supply and demand curves.



EXPANSION AND CONTRACTION: THE BUSINESS CYCLE

- An ***expansion, or boom, is*** the period in the business cycle from a trough up to a peak, during which output and employment rise.
- A ***contraction, recession, or slump*** is the period in the business cycle from a peak down to a trough, during which output and employment fall.



The Business cycle is the rise and fall of economic activity relative to the long-term growth trend of the economy

REVIEW TERMS AND CONCEPTS

- aggregate behavior
- aggregate demand
- aggregate output
- aggregate supply
- business cycle
- circular flow
- contraction, recession, or slump
- corporate bonds
- deflation
- depression
- microeconomics
- monetary policy
- recession
- shares of stock





MACROECONOMICS

**THE MEASUREMENT AND
STRUCTURE OF THE
NATIONAL ECONOMY**

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OUTLINE

- National Income Accounting: The Measurement of Production, Income, and Expenditure
- Gross Domestic Product
- Saving and Wealth
- Real GDP, Price Indexes, and Inflation
- Interest Rates



NATIONAL INCOME ACCOUNTING

- The **national income accounts** is an accounting framework used in measuring current economic activity.

The **product approach** measures the amount of output produced, excluding output used up in intermediate stages of production.

The **income approach** measures the incomes received by the producers of output



NATIONAL INCOME ACCOUNTING

- Business example shows that all three approaches are equal

Important concept in product approach:

$$\text{(Value added)} = \text{(Value of output)} - \text{(Value of inputs purchased from other producers)}$$



NATIONAL INCOME ACCOUNTING

- Why are the three approaches equivalent?
 - They must be, by definition
 - Any output produced (*product approach*) is purchased by someone (*expenditure approach*) and results in income to someone (*income approach*)
- The fundamental identity of national income accounting:
total production = total income = total expenditure



NATIONAL INCOME ACCOUNTING

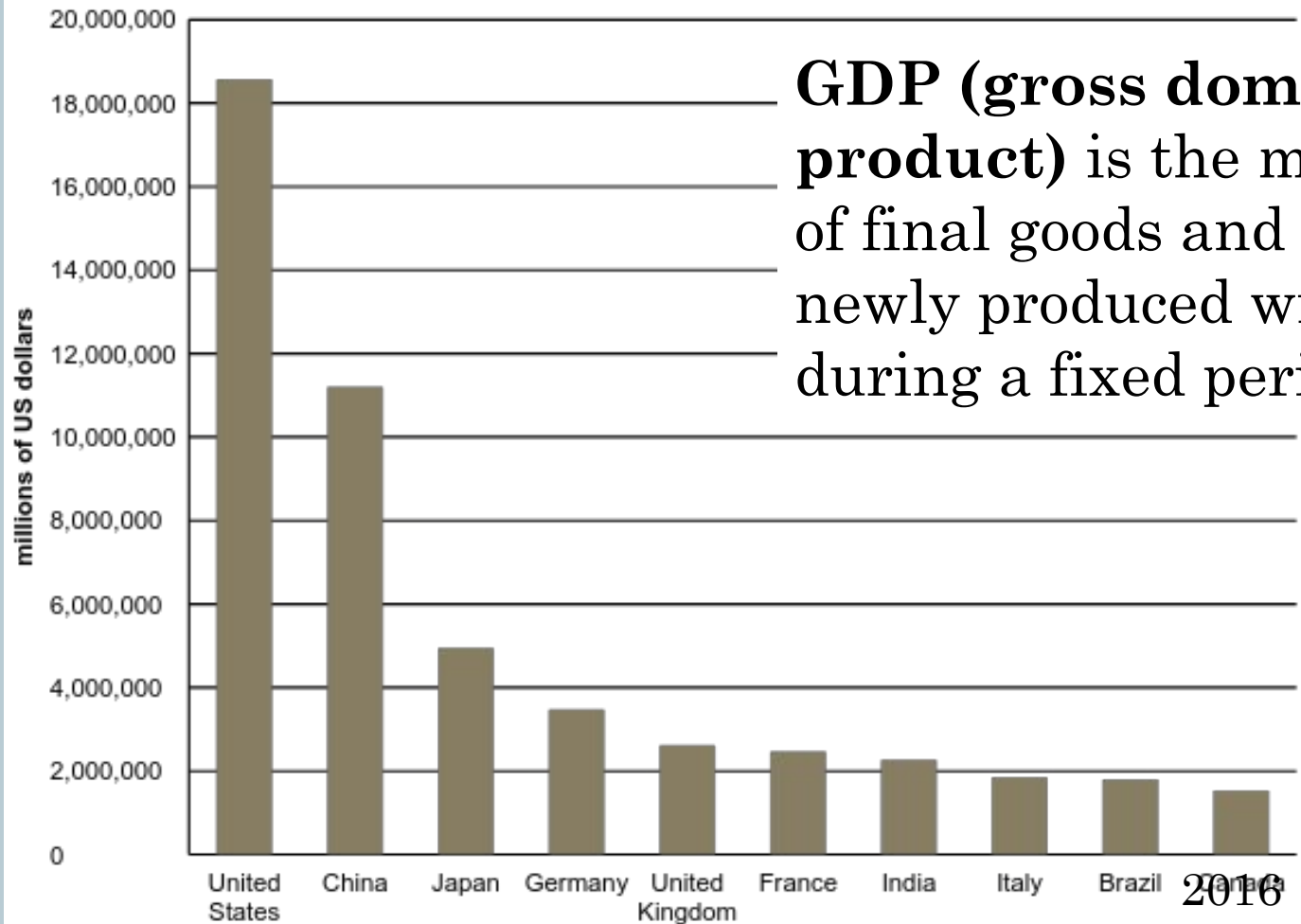
Some of the metrics calculated by using national income accounting include

- Gross Domestic Product (GDP)
- Gross National Product (GNP)
- Gross National Income (GNI).



GROSS DOMESTIC PRODUCT

The product approach to measuring GDP



GDP (gross domestic product) is the market value of final goods and services newly produced within a nation during a fixed period of time

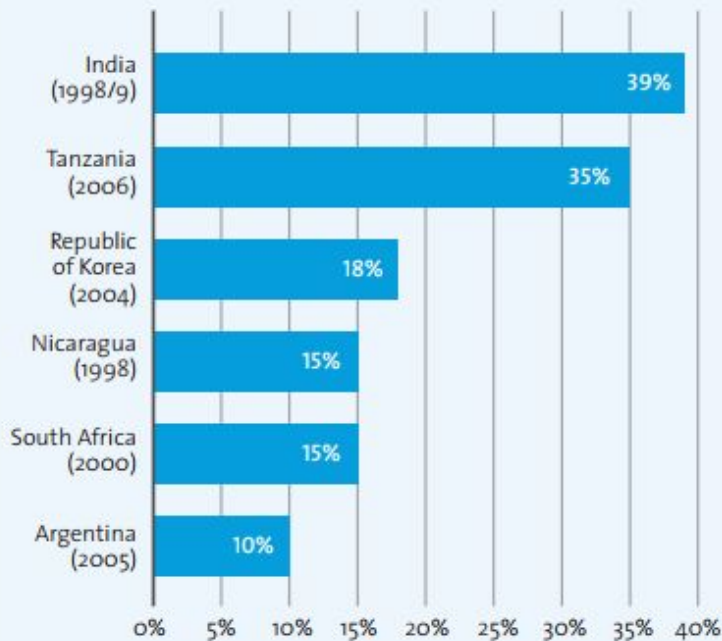


GROSS DOMESTIC PRODUCT

- Market value: allows adding together unlike items by valuing them at their market prices
 - Problem: misses nonmarket items such as homemaking, the value of environmental quality, and natural resource depletion
 - There is some adjustment to reflect the underground economy
 - Government services (that aren't sold in markets) are valued at their cost of production



Estimates of the value of unpaid care work as a percentage of GDP



Source: Budlender 2008. Estimates for Argentina are based on Buenos Aires only.

If every country matched the progress toward gender parity of its fastest-improving neighbor, global GDP could increase by up to \$12 trillion in 2025.

Incremental 2025 global GDP over business-as-usual scenario,¹ %

Incremental GDP, \$ trillion

Region/Country	Incremental 2025 global GDP over business-as-usual scenario, %	Incremental GDP, \$ trillion
India	16%	0.7
Latin America	14%	1.1
China	12%	2.5
Sub-Saharan Africa	12%	0.3
North America and Oceania	11%	3.1
World	11%	11.8
Middle East and North Africa	11%	0.6
South Asia (excl. India)	11%	0.1
Western Europe	9%	2.1
Eastern Europe and Central Asia	9%	0.4
East and Southeast Asia (excl. China)	8%	0.9

¹Sample = 95 countries.

Source: IHS; ILO; Oxford Economics; World Input-Output Database; national statistical agencies; McKinsey Global Growth Model; McKinsey Global Institute analysis

GDP

- Newly produced: counts only things produced in the given period; excludes things produced earlier
- Final goods and services* - are those that are not intermediate

**Don't count intermediate goods and services (those used up in the production of other goods and services in the same period that they themselves were produced)*

- Capital goods (goods used to produce other goods) are final goods since they aren't used up in the same period that they are produced
- Inventory investment (the amount that inventories of unsold finished goods, goods in process, and raw materials have changed during the period) is also treated as a final good
- Adding up value added works well, since it automatically excludes intermediate goods



GNP

- GNP (**G**ross **N**ational **P**roduct) = output produced by domestically owned factors of production
- GDP = output produced within a nation

$$\mathbf{GDP = GNP - NFP}$$

- NFP – **N**et **F**actor **P**ayments from abroad

$$\text{NFP} = (\text{Payments to domestically owned factors located abroad}) - (\text{Payments to foreign factors located domestically})$$



GNP

- Example: Engineering revenues for a road built by a U.S. company in Saudi Arabia is part of U.S. GNP (built by a U.S. factor of production), not U.S. GDP, and is part of Saudi GDP (built in Saudi Arabia), not Saudi GNP
- Difference between GNP and GDP is small for the United States, about 0.2%, but higher for countries that have many citizens working abroad

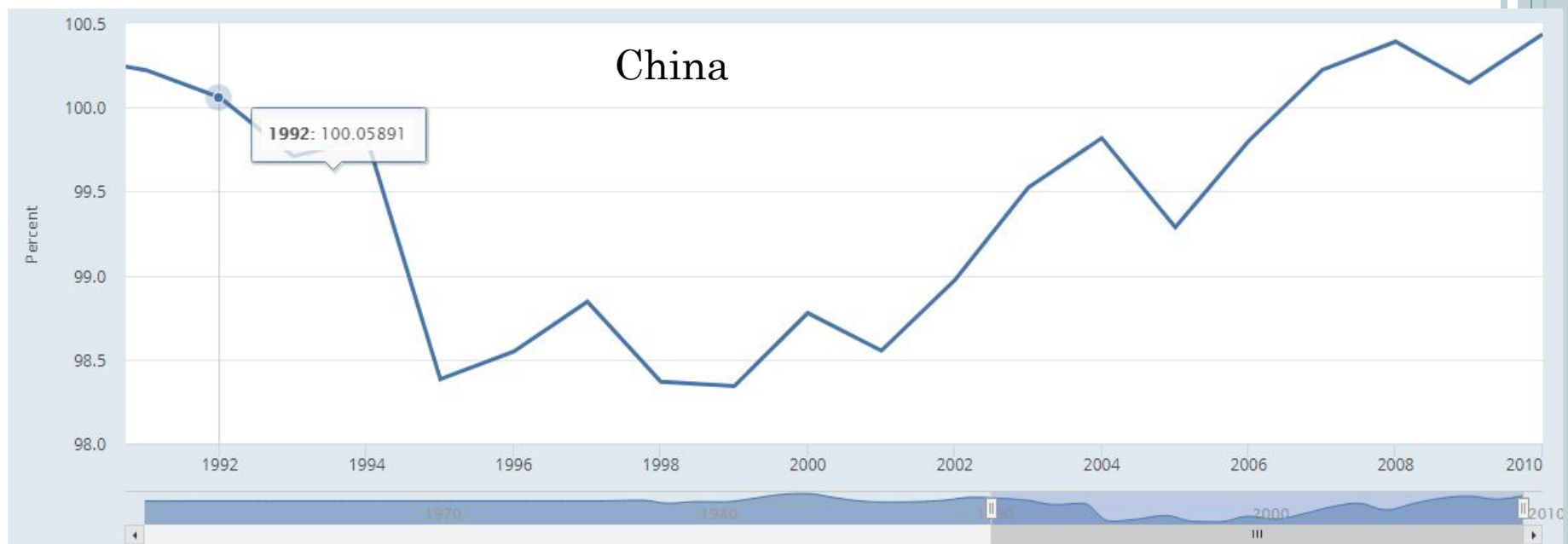


EXAMPLE

- If a Japanese multinational produces cars in the UK, this production will be counted towards UK GDP. However, if the Japanese firm sends £50m in profits back to shareholders in Japan, then this outflow of profit is subtracted from GNP. UK nationals don't benefit from this profit which is sent back to Japan.
- If a UK firm makes a profit from insurance companies located abroad, then if this profit is returned to UK nationals, then this net income from overseas assets will be added to UK GNP.
- Note, if a Japanese firm invests in the UK, it will still lead to higher GNP, as some national workers will see higher wages. However, the increase in GNP will not be as high as GDP.
- If a country has similar inflows and outflows of income from assets, then GNP and GDP will be very similar.
- However, if a country has many multinationals who repatriate income from local production, then GNP will be lower than GDP. For example, Luxembourg has a GDP of \$87,400 but a GNP of only \$45,360.



RATIO OF GNP TO GDP



GNI

- GNI (**G**ross **N**ational **I**ncome) – measures income received by a country both domestically and from overseas.

GNI = GDP + Net Income received from overseas

GNI	=	Value added by all producers who are residents in a nation	+	Product taxes (minus subsidies) not included in output	+	Income received from abroad (employee compensation and property income)
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GNI

- For most nations there is little difference between GDP and GNI
- GNI for the U.S. about 1.5% higher than GDP.
- GNI can be well **below** GDP
 - Ireland, since large-scale repatriation of profits from foreign companies located there far exceeds income flows from overseas. *Ireland's GNI was 20% below its GDP*, which means that although Ireland attracts substantial foreign investment that contributes to its economic growth, a big chunk of the profits arising from such foreign investment does not remain in the nation. In this case, GNI may be a better indicator of Ireland's economic performance than GDP, since the latter overstates the strength of the Irish economy.



TO CONVERT A NATION'S GDP TO GNI

- Three terms need to be added to the former:
 - net compensation receipts,
 - net property income receivable
 - net taxes (minus subsidies) receivable on production and imports.
- $\text{GDP}(\text{Canada}) = \$1,624.6$ million
 - Net compensation receipts = 0
 - Net property income receivable = - \$28.2 million
 - Net taxes = 0
- $\text{GNI}(\text{Canada}) = \$1,624.6 + (-28.2) = \$1,596.4$ million

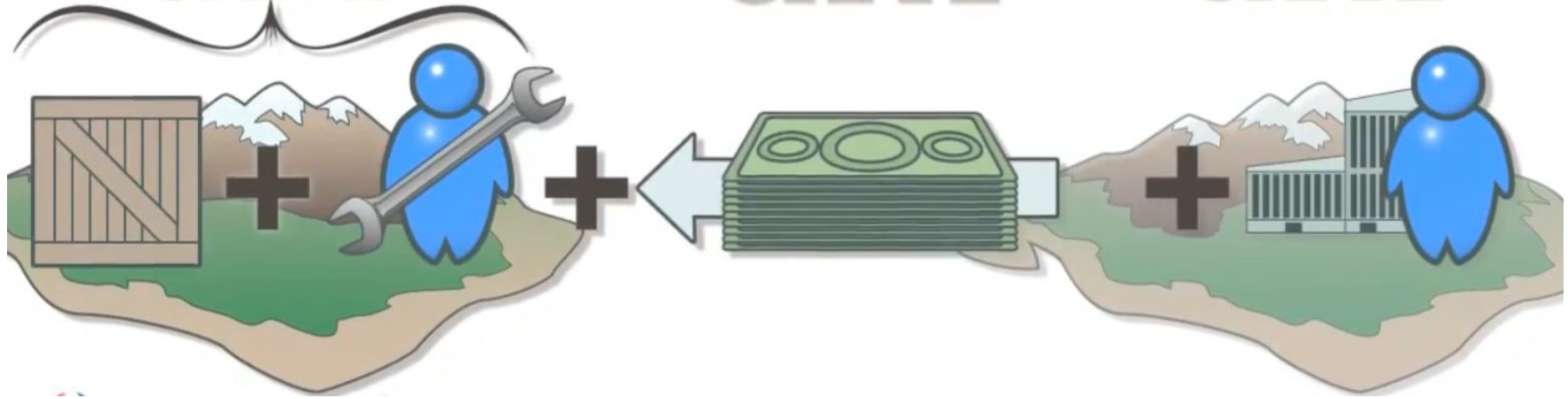


Income Earned by:	GDP	GNI	GNP
Residents in Country	Personal consumption (C) + business investment (I) + government spending (G) + [exports - imports (X)]	<p>GDP +(income from citizens and businesses earned abroad) – (income remitted by foreigners living in the country back to their home countries)</p> <hr/> <p>GNP + (income spent by foreigners within the country) – (foreign income not remitted by citizens)</p>	GDP + (income earned on all foreign assets) – (income earned by foreigners in the country)
Foreigners in Country	Includes	Includes If Spent in Country	Excludes All
Residents Out of Country	Excludes	Includes If Remitted Back	Includes All
Foreigners Out of Country	Excludes	Excludes	Excludes

**GROSS
DOMESTIC
PRODUCT
GDP**

**GROSS
NATIONAL
INCOME
GNI**

**GROSS
NATIONAL
PRODUCT
GNP**



GDP MEASUREMENT

The **expenditure approach** to measuring GDP

- Measures total spending on final goods and services produced within a nation during a specified period of time
- Four main categories of spending: consumption (**C**), investment (**I**), *Government purchases of goods and services* (**G**), and *net exports* (**NX**)

$$Y = C + I + G + NX$$

- the income-expenditure identity
- exports minus imports



GDP MEASUREMENT / EXPENDITURE APPROACH

- **Consumption:** spending by domestic households on final goods and services (including those produced abroad)
 - About 2/3 of U.S. GDP
 - Three categories:
 - Consumer durables (examples: cars, TV sets, furniture, major appliances)
 - Nondurable goods (examples: food, clothing, fuel)
 - Services (examples: education, health care, financial services, transportation)



GDP MEASUREMENT / EXPENDITURE APPROACH

- **Investment:** spending for new capital goods (fixed investment) plus inventory investment
 - About 1/6 of U.S. GDP
 - Business (or nonresidential) fixed investment: spending by businesses on structures and equipment and software
 - Residential fixed investment: spending on the construction of houses and apartment buildings
 - Inventory investment: increases in firms' inventory holdings



GDP MEASUREMENT / EXPENDITURE APPROACH

- **Government purchases** of goods and services: spending by the government on goods or services
 - About 1/5 of U.S. GDP
 - Most by state and local governments, not federal government
 - Not all government expenditures are purchases of goods and services
 - Some are payments that are *not made in exchange for current* goods and services
 - One type is transfers, including Social Security payments, welfare, and unemployment benefits
 - Another type is interest payments on the government debt
 - Some government spending is for capital goods that add to the nation's capital stock, such as highways, airports, bridges, and water and sewer systems



GDP MEASUREMENT / EXPENDITURE APPROACH

- **Net exports:** exports minus imports
 - Exports: goods produced in the country that are purchased by foreigners
 - Imports: goods produced abroad that are purchased by residents in the country
 - Imports are subtracted from GDP, as they represent goods produced abroad, and were included in consumption, investment, and government purchases



EXPENDITURE APPROACH TO MEASURING GDP (UNITED STATES)

	Billions of dollars	Percent of GDP
Personal consumption expenditures (C)	8745.7	70.0
Consumer durables	1026.5	8.2
Nondurable goods	2564.4	20.5
Services	5154.9	41.3
Gross private domestic investment (I)	2105.0	16.9
Business fixed investment	1329.8	10.6
Nonresidential structures	335.1	2.7
Equipment and software	994.7	8.0
Residential investment	756.3	6.1
Inventory investment	18.9	0.2
Government purchases of goods and services (G)	2362.9	18.9
Federal	877.7	7.0
National defense	587.1	4.7
Nondefense	290.6	2.3
State and local	1485.2	11.9
Net exports (NX)	-726.5	-5.8
Exports	1301.2	10.4
Imports	2027.7	16.2
Total (equals GDP) (Y)	12487.1	100.0

Note: Numbers may not add to totals shown owing to rounding.
Source: Bureau of Economic Analysis Web site, www.bea.gov, Table 1.1.5, May 31, 2006.

GDP MEASUREMENT / INCOME APPROACH

- Adds up income generated by production (including profits and taxes paid to the government)
 - **National Income** = (compensation of employees (including benefits) + (proprietors' income) + (rental income of persons) + (corporate profits) + (net interest) + (taxes on production and imports) + (business current transfer payments) + (current surplus of government enterprises)
 - National income + statistical discrepancy = Net National Product
 - Net National Product + Depreciation (the value of capital that wears out in the period) = Gross National Product (GNP)
 - $GNP - \text{Net Factor Payments (NFP)} = GDP$



GDP MEASUREMENT / INCOME APPROACH

- **Private sector and government sector income**
 - **Private Disposable Income** = Income of the Private Sector = $Y + NFP + TR + INT - T$
 - Y or GDP – private sector income earned at home
 - NFP – net factor payments from abroad
 - TR – payments from the government sector (transfers)
 - INT – interest on government debt
 - T – taxes paid to gouvernement
 - **Government's net income** = Taxes – TRansfers – INTerest payments = $T - TR - INT$
 - Private disposable income + government's net income = $GDP + NFP = GNP$



INCOME APPROACH TO MEASURING GDP (US)

	Billions of dollars	Percent of GDP
Compensation of employees	7113	57.0
Proprietor's income	939	7.5
Rental income of persons	73	0.6
Corporate profits	1352	10.8
Net interest	498	4.0
Taxes on production and imports	848	6.8
Business current transfer payments	80	0.6
Current surplus of government enterprises	-11	-0.1
Total (equals National Income)	10892	87.2
<i>Plus</i> Statistical discrepancy	55	0.4
<i>Equals</i> Net National Product (NNP)	10947	87.7
<i>Plus</i> Consumption of fixed capital	1574	12.6
<i>Equals</i> Gross National Product (GNP)	12521	100.3
<i>Less</i> Factor income received from rest of world	508	4.1
<i>Plus</i> Payments of factor income to rest of world	474	3.8
<i>Equals</i> Gross Domestic Product (GDP)	12487	100.0

Note: Numbers may not add to totals shown owing to rounding.
Source: Bureau of Economic Analysis Web site, www.bea.gov, Tables 1.7.5 and 1.12, May 31, 2006.



SAVING AND WEALTH

- **Wealth**

- Household Wealth = (Household's Assets) – (Household's Liabilities)
- National Wealth = sum of all households', firms', and governments' wealth within the nation
- Saving by individuals, businesses, and government determine wealth



SAVING AND WEALTH / MEASURES OF AGGREGATE SAVING

- **Saving** = Current Income – Current Spending
- Saving Rate = Saving / Current Income
- Private Saving = Private disposable income – Consumption

$$S_{pvt} = (Y + NFP - T + TR + INT) - C$$



SAVING AND WEALTH / MEASURES OF AGGREGATE SAVING

- **Government Saving** = Net Government Income
– Government purchases of goods and services

$$S_{gout} = (T - TR - INT) - G$$

- Government saving = government budget surplus
= Government Receipts – Government Outlays
 - Government receipts = Tax revenue (T)
 - Government outlays = Government purchases of goods and services (G) + TR ansfers (TR) + INT erest payments on government debt (INT)
- Government budget deficit = $- S_{gout}$

Simplification: count government investment as government purchases, not investment



SAVING AND WEALTH / MEASURES OF AGGREGATE SAVING

- National saving
 - National Saving = Private Saving + Government Saving

$$\begin{aligned} S &= S_{pvt} + S_{govt} = \\ &= [Y + NFP - T + TR + INT - C] + \\ &\quad + [T - TR - INT - G] = \\ &= Y + NFP - C - G = \\ &= GNP - C - G \end{aligned}$$



SAVING AND WEALTH / MEASURES OF AGGREGATE SAVING

- The uses of private saving

$$S = I + (NX + NFP)$$

$$S = I + CA$$

- Derived from

$$S = Y + NFP - C - G \text{ and } Y = C + I + G + NX$$

- $CA = NX + NFP = \text{current account balance}$



SAVING AND WEALTH

- The uses of private saving

$$S_{pvt} = I + (-S_{gout}) + CA$$

- (using $S = S_{pvt} + S_{gout}$)

- The uses-of-saving identity—saving is used in three ways:
 - investment (I)
 - government budget deficit ($-S_{gout}$)
 - current account balance (CA)



SAVING AND WEALTH / RELATING SAVING AND WEALTH

- Stocks and flows
 - Flow variables: measured per unit of time (GDP, income, saving, investment)
 - Stock variables: measured at a point in time (quantity of money, value of houses, capital stock)
 - Flow variables often equal rates of change of stock variables
- Wealth and saving as stock and flow (wealth is a stock, saving is a flow)



SAVING AND WEALTH / RELATING SAVING AND WEALTH

- **National wealth:** domestic physical assets + net foreign assets
 - Country's domestic physical assets (capital goods and land)
 - Country's net foreign assets = (Foreign assets (foreign stocks, bonds, and capital goods owned by domestic residents)) – (Foreign liabilities (domestic stocks, bonds, and capital goods owned by foreigners))
 - Wealth matters because the economic well-being of a country depends on it



SAVING AND WEALTH / RELATING SAVING AND WEALTH

- National wealth: domestic physical assets + net foreign assets
 - Changes in national wealth
 - Change in value of existing assets and liabilities (change in price of financial assets, or depreciation of capital goods)
 - National saving ($S = I + CA$) *raises wealth*
 - Comparison of U.S. saving and investment with other countries
 - The United States is a low-saving country; Japan is a high-saving country
 - U.S. investment exceeds U.S. saving, so we have a negative current-account balance



MEASURES OF THE AGGREGATE SAVINGS

Measures of Aggregate Saving

Saving measure

Definition and formula

Private saving

Private disposable income less consumption

$$S_{\text{pvt}} = (Y + NFP - T + TR + INT) - C$$

Government saving

Government receipts less government outlays

$$S_{\text{govt}} = (T - TR - INT) - G$$

National saving

Private saving plus government saving; also GNP ($Y + NFP$) less consumption and government purchases

$$\begin{aligned} S &= S_{\text{pvt}} + S_{\text{govt}} \\ &= Y + NFP - C - G \end{aligned}$$

REAL GDP, PRICE INDEXES, AND INFLATION

- Real GDP
 - Nominal variables are those in dollar terms
 - Problem: Do changes in nominal values reflect changes in prices or quantities?
 - Real variables: adjust for price changes; reflect only quantity changes
- Nominal GDP is the dollar value of an economy's final output measured at current market prices
- Real GDP is an estimate of the value of an economy's final output, adjusting for changes in the overall price level



COMPUTERS & BICYCLES

	Year 1	Year 2	Percent change from year 1 to year 2
Product (quantity)			
Computers	5	10	+100%
Bicycles	200	250	+25%
Price			
Computers	\$1,200/computer	\$600/computer	-50%
Bicycles	\$200/bicycle	\$240/bicycle	+20%
Value			
Computers	\$6,000	\$6,000	0
Bicycles	\$40,000	\$60,000	+50%
Total	\$46,000	\$66,000	+43.5%



COMPUTERS & BICYCLES

Calculation of real output with base year = Year 1

	Current quantities		Base-year prices		
Year 1					
Computers	5	×	\$1,200	=	\$6,000
Bicycles	200	×	\$200	=	\$40,000
				Total =	\$46,000
Year 2					
Computers	10	×	\$1,200	=	\$12,000
Bicycles	250	×	\$200	=	\$50,000
				Total =	\$62,000

Percentage growth of real GDP = $(\$62,000 - \$46,000) / \$46,000 = 34.8\%$

Calculation of real output with base year = Year 2

	Current quantities		Base-year prices		
Year 1					
Computers	5	×	\$600	=	\$3,000
Bicycles	200	×	\$240	=	\$48,000
				Total =	\$51,000
Year 2					
Computers	10	×	\$600	=	\$6,000
Bicycles	250	×	\$240	=	\$60,000
				Total =	\$66,000

Percentage growth of real GDP = $(\$66,000 - \$51,000) / \$51,000 = 29.4\%$



REAL GDP, PRICE INDEXES, AND INFLATION

- Price Indexes
 - A price index measures the average level of prices for some specified set of goods and services, relative to the prices in a specified base year
 - GDP deflator = $100 \times \text{nominal GDP} / \text{real GDP}$
 - Note that base year $P = 100$



REAL GDP, PRICE INDEXES, AND INFLATION

- Price Indexes
 - **Consumer Price Index (CPI)**
- Price index is a normalized average (typically a weighted average) of price relatives for a given class of goods or services in a given region, during a given interval of time. It is a statistic designed to help to compare how these price relatives, taken as a whole, differ between time periods or geographical locations.



REAL GDP, PRICE INDEXES, AND INFLATION

- Price Indexes
 - GDP
 - Choice of expenditure base period matters for GDP when prices and quantities of a good, such as computers, are changing rapidly
 - BEA (Bureau of Economic Analysis) compromised by developing chain-weighted GDP
 - Now, however, components of real GDP don't add up to real GDP, but discrepancy is usually small



REAL GDP, PRICE INDEXES, AND INFLATION

- Inflation
 - Calculate inflation rate:

$$\pi_{t+1} = (P_{t+1} - P_t)/P_t = \Delta P_{t+1}/P_t$$

- inflation rate for the GDP deflator
 - *GDP deflator 2015 = 1*
 - *GDP deflator 2016 = 1,5*
 - *Inflation rate = (1.5-1.0)/1 = 0.5*



REAL GDP, PRICE INDEXES, AND INFLATION

- Price Indexes
 - Does CPI inflation overstate increases in the cost of living?
 - The Boskin Commission reported that the CPI was biased upwards by as much as one to two percentage points per year
 - One problem is that adjusting the price measures for changes in the quality of goods is very difficult

A consumer price index (CPI) measures changes in the price level of a market basket of consumer goods and services purchased by households



REAL GDP, PRICE INDEXES, AND INFLATION

- Price Indexes
 - Does CPI inflation overstate increases in the cost of living?
 - Price indexes with fixed sets of goods don't reflect substitution by consumers when one good becomes relatively cheaper than another
 - This problem is known as substitution bias



REAL GDP, PRICE INDEXES, AND INFLATION

- Does CPI inflation overstate increases in the cost of living?
 - If inflation is overstated, then real incomes are higher than we thought and we've over indexed payments like Social Security
 - Latest research suggests bias is still 1% per year or higher



INTEREST RATE

- Real vs. nominal interest rates
 - Interest rate: a rate of return promised by a borrower to a lender
 - Real interest rate: rate at which the real value of an asset increases over time
 - Nominal interest rate: rate at which the nominal value of an asset increases over time
- The expected real interest rate $r = i - \pi^e$

If $\pi = \pi^e$,
real interest rate = expected real interest rate



GROSS NATIONAL PRODUCT (GNP)

GROSS DOMESTIC PRODUCT (GDP)

NET NATIONAL PRODUCT (NNP)

NET NATIONAL INCOME (NNI)

- Gross National Product (**GNP**) is the total value of final goods and services produced in a year by domestically owned factors of production
- Gross Domestic Product (**GDP**) is the total value of final goods and services produced within a country's borders in a year
- **NNP** equals the GDP minus depreciation on a country's capital goods
- **NNP – Indirect Taxes = Net National Income (NNI)**, it encompasses the income of households, businesses, and the government. It can be expressed as:

$$\text{NNI} = \text{C} + \text{I} + \text{G} + (\text{NX}) + \text{net foreign factor income} \\ - \text{indirect taxes} - \text{depreciation}$$



THE BALANCE OF PAYMENTS, ALSO KNOWN AS BALANCE OF INTERNATIONAL PAYMENTS OF A COUNTRY IS THE RECORD OF ALL ECONOMIC TRANSACTIONS BETWEEN THE RESIDENTS OF THE COUNTRY AND THE REST OF THE WORLD IN A PARTICULAR PERIOD

- The current account shows the net amount a country is earning if it is in surplus, or spending if it is in deficit
- The capital account records the net change in ownership of foreign assets
- The IMF definition of Balance of Payment



PRODUCER PRICE INDEX (PPI) MEASURES THE AVERAGE CHANGES IN PRICES RECEIVED BY DOMESTIC PRODUCERS FOR THEIR OUTPUT

- It is one of several price indexes
 - Consumer price index
 - Producer price index
 - Export price index
 - Import price index
 - GDP deflator



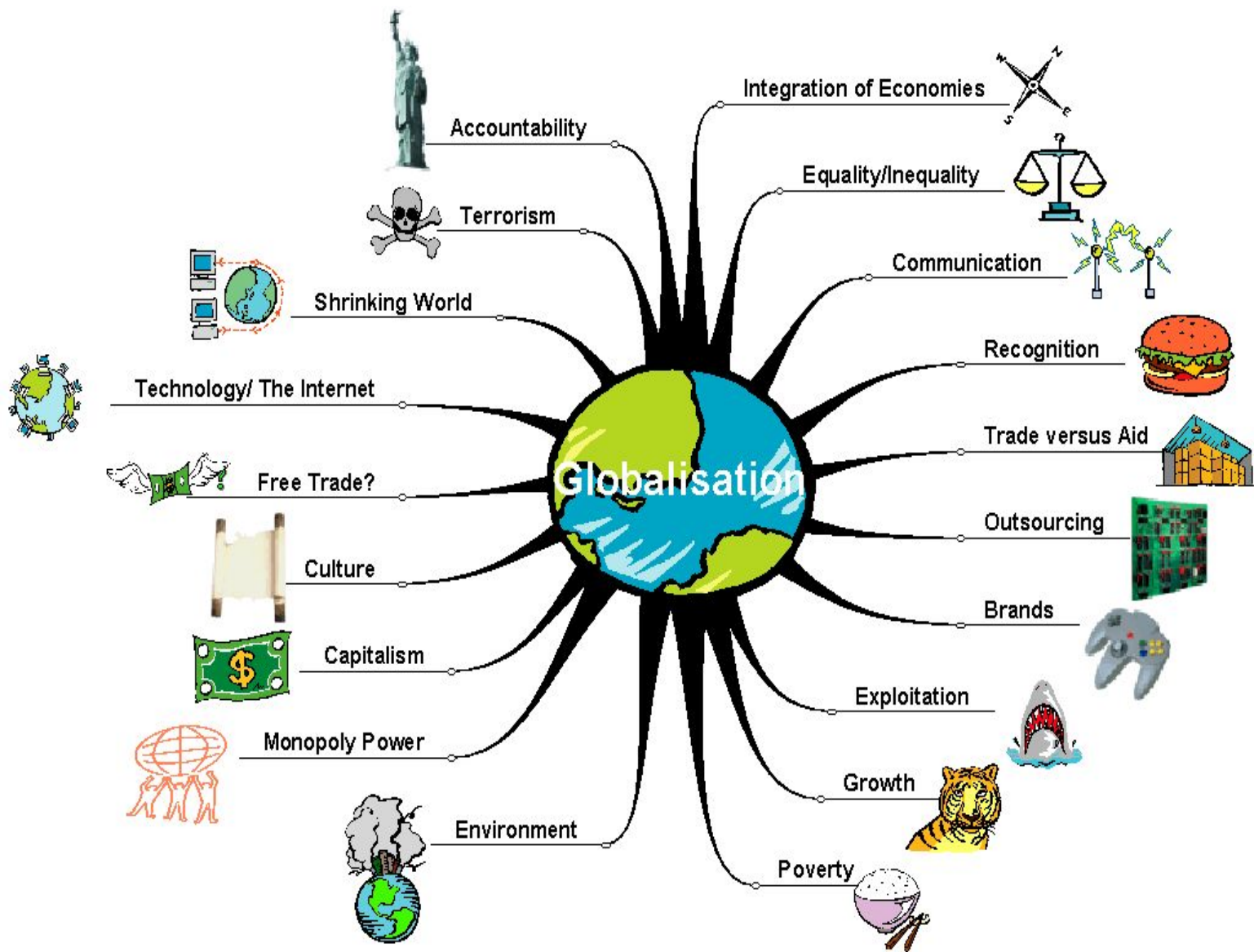


MACROECONOMICS

**THE MEASUREMENT AND
STRUCTURE OF THE
NATIONAL ECONOMY**

Zharova Liubov

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To turn our back on globalization, to turn our back on helping development, is exactly the wrong approach.

Christine Lagarde
Managing-Director of the IMF



“It isn’t a case of more globalization or less, but of a different and less predictable path, as some countries turned protectionist while others went in the other direction and deregulated their markets.”

Pier Carlo Padoan, Italy’s Finance Minister

WHAT IS GLOBALIZATION

- Globalization is defined as a process that, based on international strategies, aims to expand business operations on a worldwide level, and was precipitated by the facilitation of global communications due to technological advancements, and socioeconomic, political and environmental developments.
 - economic globalization
 - cultural globalization
 - political globalization



BASIC ASPECTS OF GLOBALIZATION

In 2000, the **International Monetary Fund** (IMF) identified four basic aspects of globalization:

- trade and transactions,
 - capital and investment movements,
 - migration and movement of people,
 - the dissemination of knowledge.
-
- **Environmental challenges** (global warming, cross-boundary water and air pollution, and overfishing of the ocean)



GLOBALIZATION ENCOMPASSES

- Internationalization (trade & investment)
- Liberalization (freeing markets)
- Universalization (cultural interchange)...or...
- Westernization (Western cultural dominance)
- “Deterritorialization” (the severance of social, political, or cultural practices from their native places and populations)



IMPACT

- Economic impact
 - Improvement in standard of living
 - Increased competition among nations
 - Widening income gap between the rich and poor
- Social impact
 - Increased awareness of foreign cultures
 - Loss of local culture
- Environmental impact
 - Environmental degradation
 - Environmental management



FOCUS ON: MEASURING GLOBALISATION

- **STATISTICAL INDICATORS**

- **OECD Economic Globalization Indicators** helps identify the economic activities of member countries that are under foreign control, and more particularly the contribution of multinational enterprises to growth, employment, productivity, labour compensation, research and development, technology diffusion and international trade. These indicators shed new light on financial, technological and trade interdepe
- **World Development Indicators (WDI)**. The WDI affords readers more than 900 indicators organized in six sections: World View, People, Environment, Economy, States and Markets, and Global Links. In each section a plethora of information is presented. ndencies within OECD countries.



FOCUS ON: MEASURING GLOBALISATION

- **STATISTICAL INDICATORS**
 - **UNCTAD** Development and Globalization: Facts and Figures. This publication covers subjects tackled by UNCTAD such as trade, investment, external finance, commodities and manufactures, together with relevant facts about population.
 - **Global Policy Forum (GPF)** gathers a large number of tables and graphs providing the main features of globalization, asking what is new, what drives the process, how it changes politics, and how it affects global institutions like UN. In addition to indicators of social and economic policy, trade and capital flows, global poverty and development etc.



FOCUS ON: MEASURING GLOBALISATION

- **COMPOSITE INDEXES**

- The A. T Kearney/FOREIGN POLICY Globalization Index (2016 – the last data, in free access up to 2006)
- Centre for the Study of Globalisation and Regionalisation (CSGR) Globalisation Index (2004 – the last data)
- Konjunkturforschungsstelle (KOF) Swiss Economic Institute Index of Globalization (2017 – the last data)



THE A. T KEARNEY/FOREIGN POLICY GLOBALIZATION INDEX (UKRAINE 39)

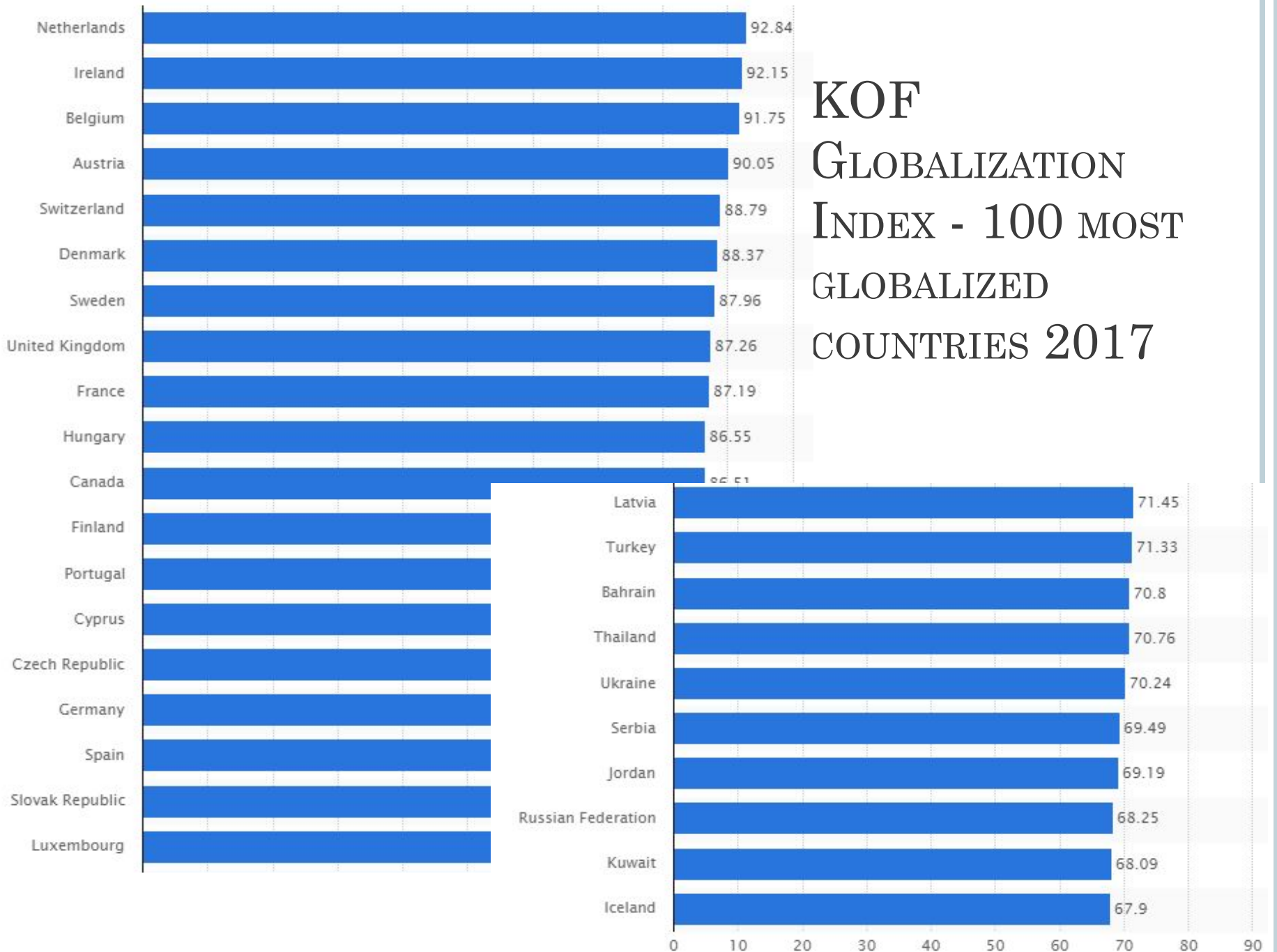
2006 GI Rankings		Change from 2005	Dimension				Item													2005 GI Rankings
			Economic	Personal	Technological	Political	Economic Integration		Personal Contact			Technological Connectivity			Political Engagement					
							Trade	FDI	Telephone	Travel	Remittances and Personal Transfers	Internet Users	Internet Hosts	Secure Servers	International Organizations	U.N. Peacekeeping	Treaties	Government Transfers		
1	Singapore	0	1	3	12	29	1	1	1	4	49	10	12	13	33	10	42	47	1	
2	Switzerland	1	9	1	7	23	17	7	2	6	2	17	15	5	33	9	42	10	3	
3	United States	1	58	40	1	41	62	36	18	33	52	6	1	1	1	25	58	38	4	
4	Ireland	-2	4	2	14	7	4	5	3	3	9	26	20	8	11	1	31	23	2	
5	Denmark	2	8	8	5	6	20	6	6	16	16	12	3	7	11	13	6	8	7	
6	Canada	0	23	7	2	10	30	12	4	20	57	7	14	2	2	14	6	32	6	
7	Netherlands	-2	21	11	6	5	11	52	8	11	40	9	2	11	5	17	6	6	5	
8	Australia	4	18	36	3	27	55	3	14	32	50	3	5	4	33	18	31	37	12	
9	Austria	-1	15	4	13	2	15	18	10	2	29	19	7	14	11	3	6	7	8	
10	Sweden	0	19	12	9	9	21	16	11	9	39	1	9	9	25	8	6	15	10	
11	New Zealand	0	35	15	4	24	41	26	5	23	54	8	8	3	33	22	6	26	11	
12	United Kingdom	1	25	14	8	4	48	10	12	15	42	4	17	6	5	7	6	20	13	
13	Finland	-4	31	21	10	14	33	30	19	12	45	5	4	12	11	6	31	18	9	
14	Norway	0	39	23	11	18	29	46	17	24	30	24	6	10	25	16	6	29	14	
15	Israel	2	20	9	17	40	19	20	7	27	12	16	16	17	48	4	61	4	17	
16	Czech Republic	-1	5	6	22	35	5	14	31	1	27	14	22	26	11	43	31	11	15	
17	Slovenia	3	13	13	20	15	10	28	22	7	22	18	25	20	11	19	6	16	20	
18	Germany	3	41	28	16	11	32	45	15	21	48	20	23	15	2	12	31	13	21	
19	Malaysia	0	3	19	28	48	2	11	29	10	18	23	39	34	33	45	42	49	19	
20	Hungary	3	7	17	27	20	7	13	41	5	34	29	19	27	11	32	1	24	23	

CSGR GLOBALISATION INDEX

Rank	80'	90'	2000'
1	Belgium	Belgium	Belgium
2	Switzerland	Canada	Singapore
3	Singapore	Switzerland	Canada
4	Canada	Singapore	Austria
5	France	USA	United Kingdom
6	United Kingdom	France	USA
7	Netherland	United Kingdom	Switzerland
8	USA	Sweden	Sweden
9	Sweden	Ireland	Ireland
10	Denmark	Russia	France
11	Italy	Denmark	Denmark
12	Finland	Germany	Germany
13	Ireland	Netherland	Italy
14	Australia	Finland	Finland
15	New Zealand	Italy	Netherland



KOF GLOBALIZATION INDEX - 100 MOST GLOBALIZED COUNTRIES 2017



METHODOLOGY

ECONOMIC GLOBALIZATION	[36%]
i) Actual Flows	(50%)
Trade (percent of GDP)	(22%)
Foreign Direct Investment, stocks (percent of GDP)	(27%)
Portfolio Investment (percent of GDP)	(24%)
Income Payments to Foreign Nationals (percent of GDP)	(27%)
ii) Restrictions	(50%)
Hidden Import Barriers	(23%)
Mean Tariff Rate	(28%)
Taxes on International Trade (percent of current revenue)	(26%)
Capital Account Restrictions	(23%)



METHODOLOGY

SOCIAL GLOBALIZATION	[37%]
i) Data on Personal Contact	(33%)
Telephone Traffic	(26%)
Transfers (percent of GDP)	(2%)
International Tourism	(26%)
Foreign Population (percent of total population)	(21%)
International letters (per capita)	(25%)
ii) Data on Information Flows	(35%)
Internet Users (per 1000 people)	(36%)
Television (per 1000 people)	(38%)
Trade in Newspapers (percent of GDP)	(26%)
iii) Data on Cultural Proximity	(32%)
Number of McDonald's Restaurants (per capita)	(46%)
Number of Ikea (per capita)	(46%)
Trade in books (percent of GDP)	(7%)



METHODOLOGY

POLITICAL GLOBALIZATION

[27%]

Embassies in Country (25%)

Membership in International Organizations (27%)

Participation in U.N. Security Council Missions (22%)

International Treaties (26%)



“Arguably no other place on earth has so engineered itself to prosper from globalization - and succeeded at it. The small island nation of 5 million people boasts the world's second-busiest seaport, a far higher per capita income than its former British overlord and a raft of No. 1 rankings on lists ranging from least-corrupt to most business-friendly countries.”



Singapore a 'canary in the gold mine of globalization'

Straits Times, May 24 2014



ECONOMIC DIMENSION

- Growing economic interdependence of countries worldwide through increasing volume and variety of cross-border transactions in goods and services, free international capital flows, and more rapid and widespread diffusion of technology



TOW TYPES GLOBALIZATION

Consumption	Production
The nation in which a product was made becomes independent of the nationality of the consumer	The nationality of the owner and controller of productive assets is independent of the nation housing them



MEASURING GLOBALIZATION (ECONOMIC ASPECTS)

- **Statistics related to trade.**

Total exports, total trade (imports + exports), Trade as a % of GDP

- **Statistics related to FDI.**

Foreign Direct Investment. Money invested in a country by a foreign company. FDI inflows and outflows.



FACTORS WHICH HELP THE SPREAD OF GLOBALISATION

- Low transport costs, containerization
- Telecommunications
- Internet
- Low trade barriers
- Political stability
- Increasing role of TNCs



INCREASED COMPETITION AMONG NATIONS

- For example, many companies have shifted their production facilities to emerging markets such as China and India to enjoy lower costs of production.
- Benefiting from the increased revenue, these countries are able to rapidly develop their infrastructure such as road networks and industrial parks, which further increased their attractiveness to foreign investors.
- This poses a strong challenge for developed economies like Singapore and Taiwan and more so for less developed countries with poor infrastructure and political stability such as Cambodia and East Timor



INCREASED COMPETITION AMONG NATIONS

- “They (economists) predict that increased competition from low-wage countries will destroy jobs in richer nations and there will be a “race to the bottom” as countries reduce wages, taxes, welfare and environmental controls so as to be more competitive, at enormous social cost. Pressure to compete will erode the ability of governments to set their own economic policies and the move towards deregulation will reduce their power to protect and promote the interests of their people.”

World Health Organization



WIDENING INCOME GAP

- For example, with improved communications and transportation, business owners in developed countries are able to outsource their operations to other countries to enjoy lower costs of production.
- This inevitably leads to higher retrenchment rates and loss of income among the average workers, which translates into the rich getting richer and the poor becoming poorer



PROS AND CONS OF GLOBALIZATION

1. Free trade is supposed to reduce barriers such as tariffs, value added taxes, subsidies, and other barriers between nations. This is not true. There are still many barriers to free trade. The Washington Post story says “the problem is that the big G20 countries added more than 1,200 restrictive export and import measures since 2008
2. The proponents say globalization represents free trade which promotes global economic growth; creates jobs, makes companies more competitive, and lowers prices for consumers.
3. Competition between countries is supposed to drive prices down. In many cases this is not working because countries manipulate their currency to get a price advantage.
4. It also provides poor countries, through infusions of foreign capital and technology, with the chance to develop economically and by spreading prosperity, creates the conditions in which democracy and respect for human rights may flourish. This is an ethereal goal which hasn't been achieved in most countries



PROS & CONS

5. According to supporters globalization and democracy should go hand in hand. It should be pure business with no colonialist designs.
6. There is now a worldwide market for companies and consumers who have access to products of different countries.
7. Gradually there is a world power that is being created instead of compartmentalized power sectors. Politics is merging and decisions that are being taken are actually beneficial for people all over the world. This is simply a romanticized view of what is actually happening.
8. There is more influx of information between two countries, which do not have anything in common between them.
9. There is cultural intermingling and each country is learning more about other cultures.
10. Since we share financial interests, corporations and governments are trying to sort out ecological problems for each other.



PROS & CONS

11. Socially we have become more open and tolerant towards each other and people who live in the other part of the world are not considered aliens.
12. Most people see speedy travel, mass communications and quick dissemination of information through the Internet as benefits of globalization.
13. Labor can move from country to country to market their skills. (*but this can cause problems with the existing labor and downward pressure on wages*).
14. Sharing technology with developing nations will help them progress (*true for small countries but stealing technologies and IP have become a big problem with larger competitors like China*).
15. Transnational companies investing in installing plants in other countries provide employment for the people in those countries often getting them out of poverty.
16. Globalization has given countries the ability to agree to free trade agreements like NAFTA, South Korea Korus, and The TPP.



PROS & CONS

1. The general complaint about globalization is that it has made the rich richer while making the non-rich poorer. “It is wonderful for managers, owners and investors, but hell on workers and nature.”
2. Globalization is supposed to be about free trade where all barriers are eliminated but there are still many barriers. For instance 161 countries have value added taxes (VATs) on imports which are as high as 21.6% in Europe. The U.S. does not have VAT.
3. The biggest problem for developed countries is that jobs are lost and transferred to lower cost countries.” According to conservative estimates by Robert Scott of the Economic Policy Institute, granting China most favored nation status drained away 3.2 million jobs, including 2.4 million manufacturing jobs. He pegs the net losses due to our trade deficit with Japan (\$78.3 billion in 2013) at 896,000 jobs, as well as an additional 682,900 jobs from the Mexico –U.S. trade-deficit run-up from 1994 through 2010.”



PROS & CONS

4. Workers in developed countries like the US face pay-cut demands from employers who threaten to export jobs. This has created a culture of fear for many middle class workers who have little leverage in this global game
5. Large multi-national corporations have the ability to exploit tax havens in other countries to avoid paying taxes.
6. Multinational corporations are accused of social injustice, unfair working conditions (including slave labor wages, living and working conditions), as well as lack of concern for environment, mismanagement of natural resources, and ecological damage.
7. Multinational corporations, which were previously restricted to commercial activities, are increasingly influencing political decisions. Many think there is a threat of corporations ruling the world because they are gaining power, due to globalization.
8. Building products overseas in countries like China puts our technologies at risk of being copied or stolen, which is in fact happening rapidly

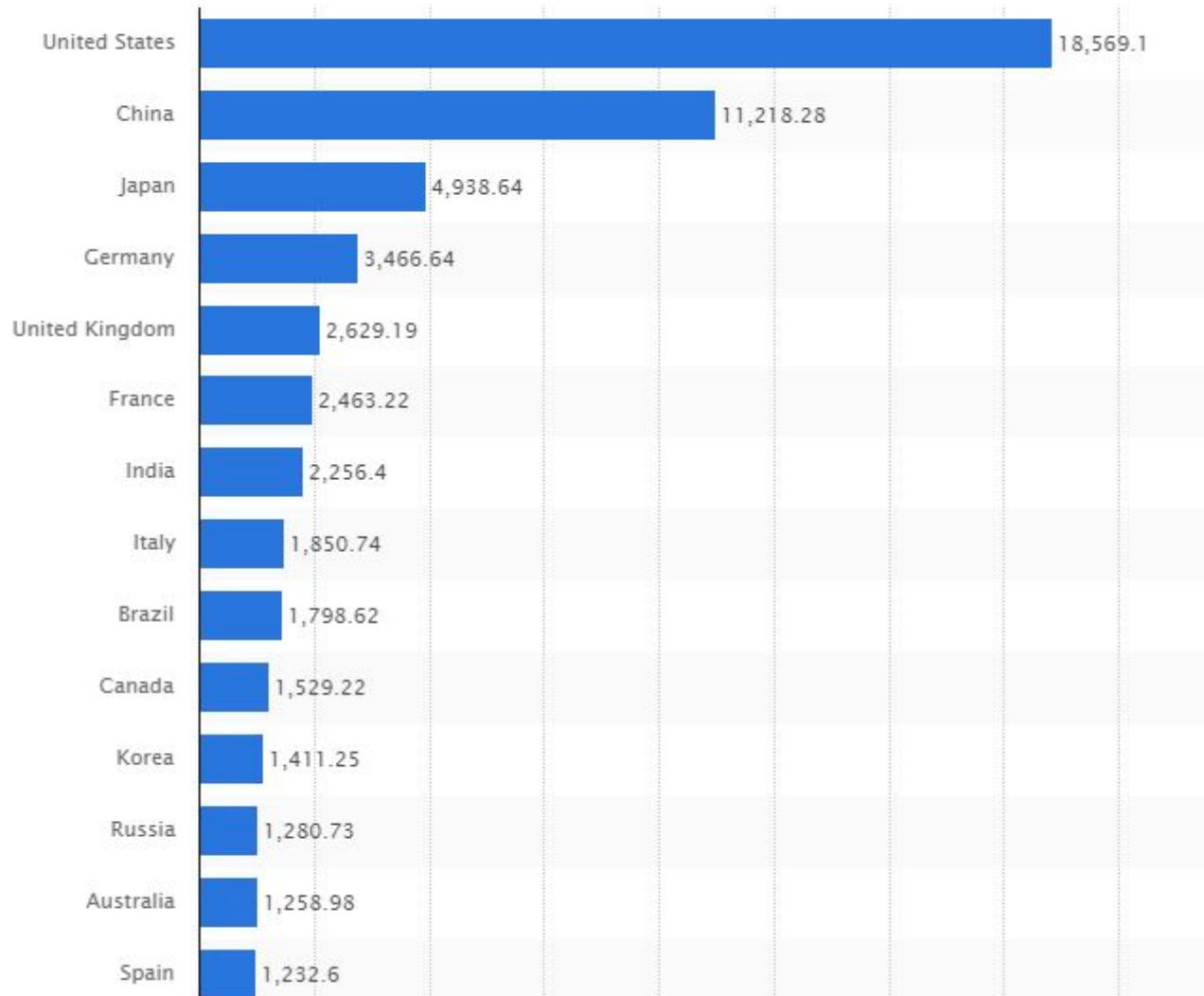


PROS & CONS

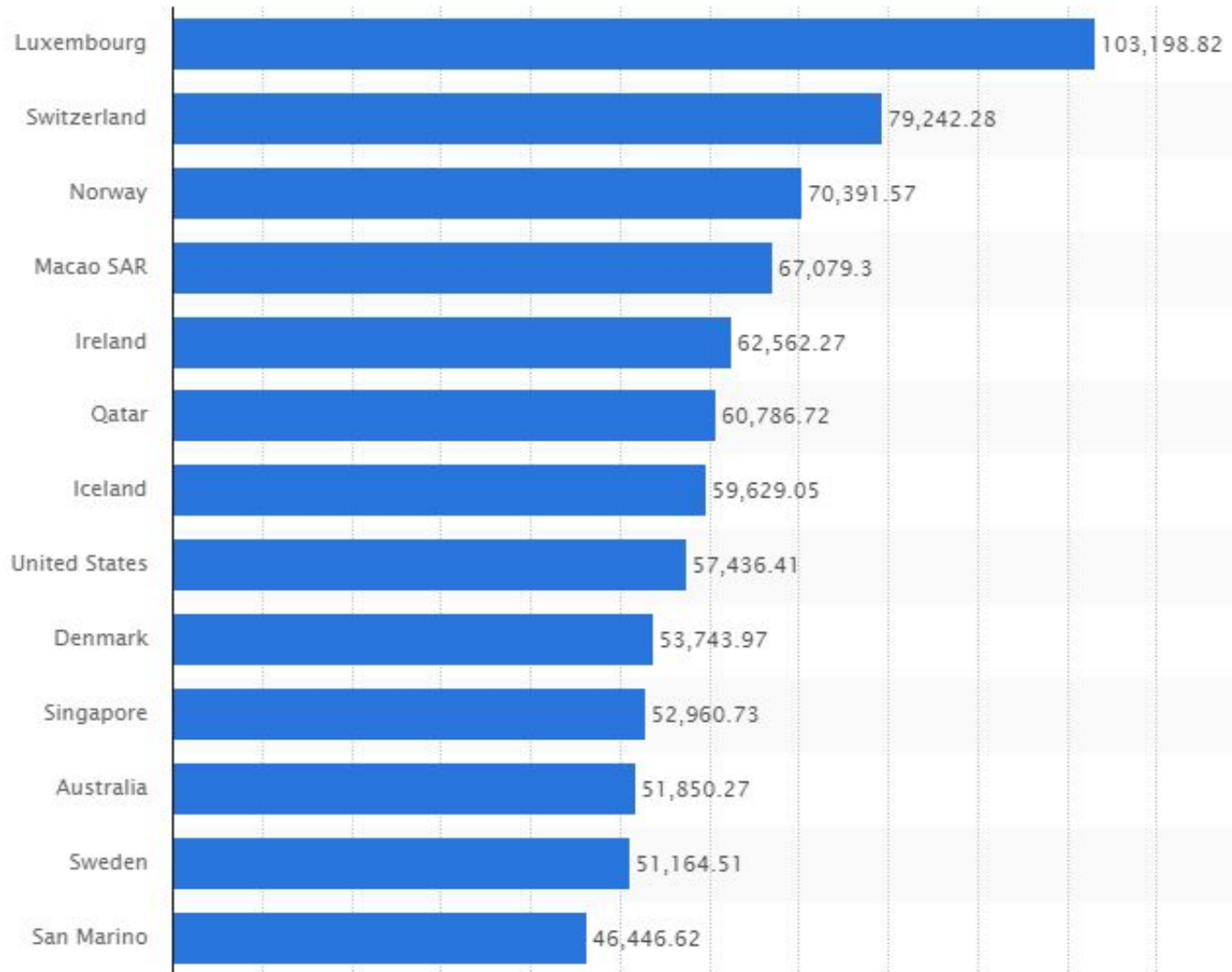
9. The anti-globalists also claim that globalization is not working for the majority of the world. “During the most recent period of rapid growth in global trade and investment, 1960 to 1998, inequality worsened both internationally and within countries. The UN Development Program reports that the richest 20 percent of the world's population consume 86 percent of the world's resources while the poorest 80 percent consume just 14 percent. “
10. Some experts think that globalization is also leading to the incursion of communicable diseases. Deadly diseases like HIV/AIDS are being spread by travelers to the remotest corners of the globe.
11. Globalization has led to exploitation of labor. Prisoners and child workers are used to work in inhumane conditions. Safety standards are ignored to produce cheap goods. There is also an increase in human trafficking.
12. Social welfare schemes or “safety nets” are under great pressure in developed countries because of deficits, job losses, and other economic ramifications of globalization.



GDP (2016)



GDP PER CAPITA (2016)





MACROECONOMICS

**PRODUCTIVITY, OUTPUT &
EMPLOYMENT**

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HOW MUCH DOES THE ECONOMY PRODUCE?

- The quantity that an economy will produce depends on two things-
 - The quantity of inputs utilized in the production process and
 - The **PRODUCTIVITY** of the inputs
- An economy's productivity is basic to determining living standards.
- In this lecture we shall see how productivity affects people's incomes by helping to determine how many workers are employed and how much they receive.
- Among all the inputs for production, labor is usually considered the most important input.
- Therefore, first we shall study the factors that determine demand and supply of labor and then the forces that bring the labor market into equilibrium.
- Equilibrium in the labor market determines wages and employment; and the level of employment together with other inputs and the level of productivity determines how much output an economy produces.



FACTORS AFFECTING PRODUCTIVITY

- Technology
- Inputs
 - Labor
 - Capital
 - Land
 - Raw materials
 - Machinery
 - Power
- Time period





THE PRODUCTION FUNCTION

- The quantity of inputs does not completely determine the amount of output produced.
- How effectively the factors of production are used is also important.
- The effectiveness with which factors of production are used may be expressed by a relationship called the production function.
- Mathematically, we express production function as-

$$Y = A f(K, N, L, \dots)$$

- Where, **Y** stands for output, **A** - number that indicated productivity, **K** - capital, **N** – number of labor employed, **L** - land. *Other factors could be, machinery, energy, building etc.*
- The symbol “A” in the equation above captures the overall effectiveness of the factors of production. We call A the “total factor productivity”



EMPIRICAL EXAMPLE: US PRODUCTION FUNCTION

- Studies show that the relationship between outputs and inputs in the US economy is described reasonably well by the following production function:

$$Y = A \cdot K^{1-\alpha} \cdot N^{\alpha} \quad (R^2 \geq 0.94)$$

- This type of production function is called the **Cobb-Douglas production function**.
- Historical GDP data of US for the period 1899 – 1922 showed that the production function for US followed the form:

$$Y = A \cdot K^{0.30} \cdot N^{0.70}$$



CALCULATING “A”

$$Y = A \cdot K^{0.30} \cdot N^{0.70}$$

Year	Real GDP	Capital, K Billion USD	Labor N Millions of workers	A	Growth rate of A
2005	8160	8749	129.6	17.80	
2006	8509	9100	131.5	18.16	2.0
2007	8859	9457	133.5	18.49	1.8
2008	9191	9849	135.2	18.78	1.6
2009	9215	10115	135.1	18.69	-0.5



SHAPE OF THE PRODUCTION FUNCTION

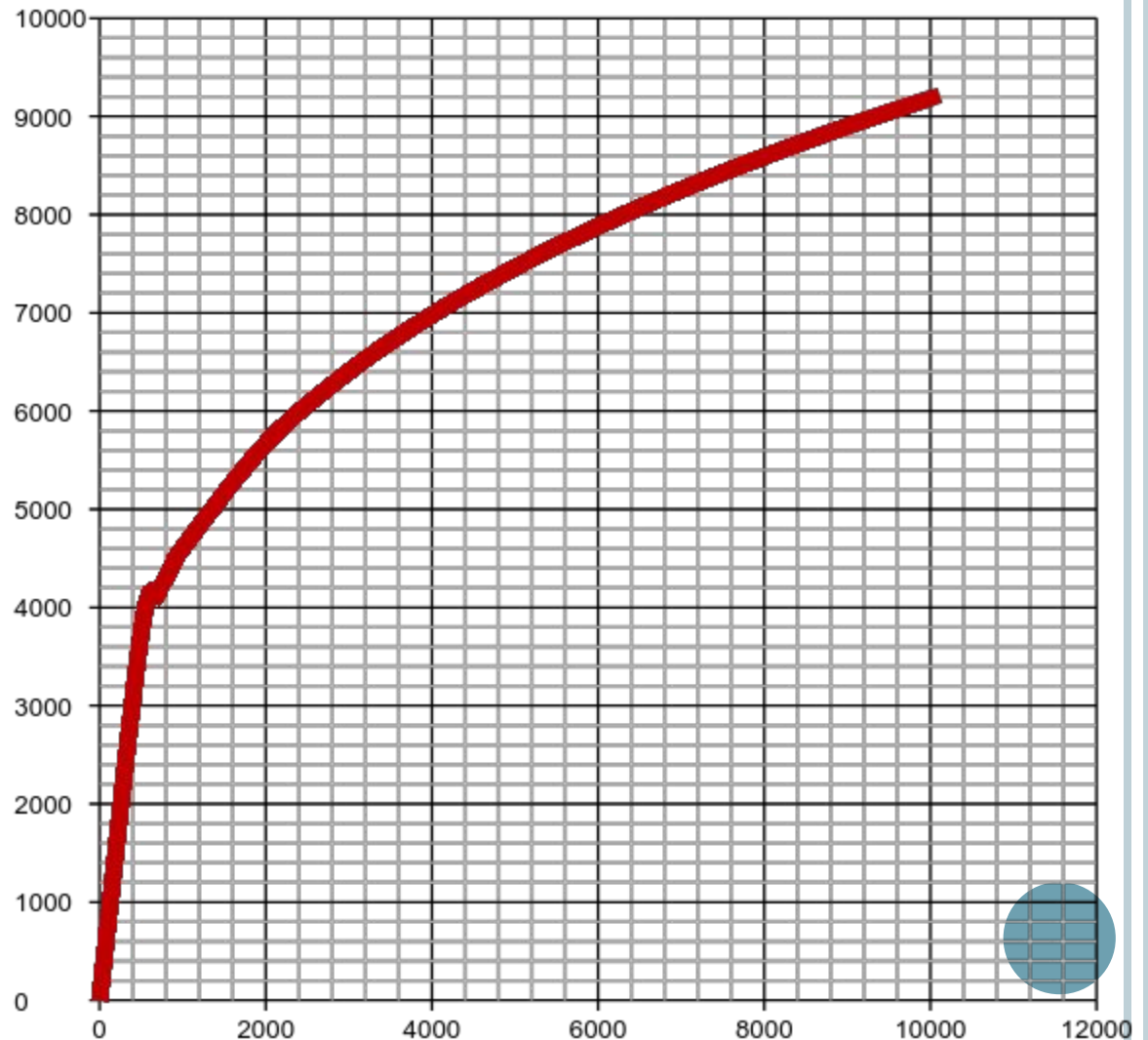
- We can have an idea about the shape of the production function by holding one of the two factors of production and the value of total factor productivity (A) constant.
- For example, if we want to see the relationship between capital and total output for the **year 2009**, then we hold the values of A and N constant for that year and treat K as variable.
- As a result our production function gets the shape as:

$$Y = (18.69)(135.10)^{0.7} (K^{0.3})$$



SHAPE OF THE PRODUCTION FUNCTION

K	Y
0	0
500	3739
700	4136
800	4305
900	4460
1000	4603
2000	5667
3000	6400
4000	6977
5000	7460
6000	7879
7000	8252
8000	8590
9000	8898
10115	9216



SHAPE OF THE PRODUCTION FUNCTION: PROPERTIES

- The production function slopes upward from left to right: this means that as the capital stock increases more output can be produced.
- The slope of the production function becomes flatter from left to right: this means that although more capital always leads to more output, it does so at a decreasing rate.



EFFECT OF INCREASING 1000 UNITS OF CAPITAL EACH TIME

K	Y	Change in Y for every 1000 units of K
2000	5667	...
3000	6400	733
4000	6977	577
5000	7460	483
6000	7880	419
7000	8253	373
8000	8590	337
9000	8899	309
10115	9216	317

Marginal Product of Capital:

$$\frac{\Delta Y}{\Delta K}$$

Marginal product of capital between
K = 2000 and 3000

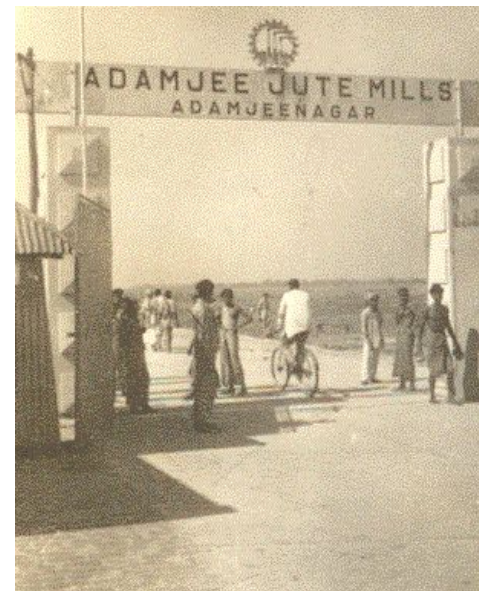
$$\begin{aligned}\frac{\Delta Y}{\Delta K} &= \frac{6400 - 5667}{3000 - 2000} \\ &= \frac{733}{1000} \\ &= 0.733\end{aligned}$$

What is the marginal product of capital between K = 4000 and 5000? Is it less than the previous one? What does it mean?

MARGINAL PRODUCTIVITY

- The previous example shows that marginal productivity is falling as we increase the amount of capital
- Generally, when amount of labor is high compared to the amount of capital, marginal productivity of capital is high. Alternatively, when amount of labor is low compared to the amount of capital, marginal productivity of labor is high

Real life example: Adamjee Jute Mill had many workers employed against every single machine. Therefore, productivity of workers were low as many workers used to sit idle without a machine to work with. If we would have increased number of machines, perhaps, we could have increased production of jute; and as a result productivity of workers would have increased. Unfortunately, we shut down the mill!



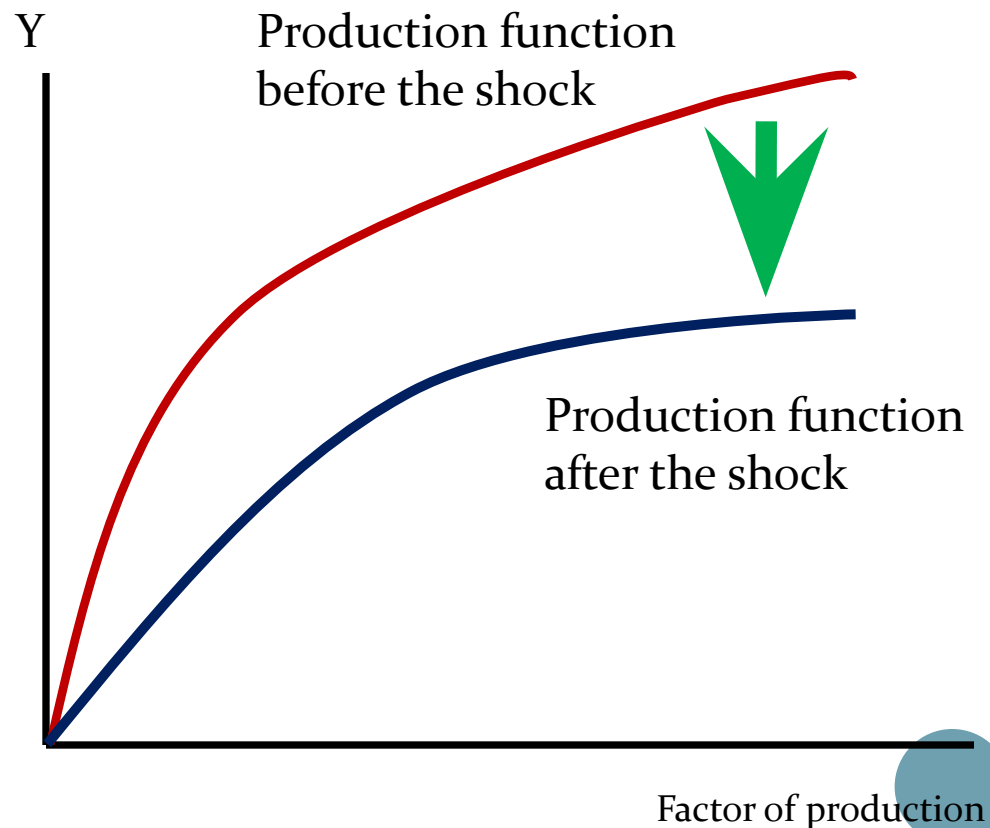
FORMAL DEFINITIONS OF MARGINAL PRODUCTIVITY

- **Marginal Productivity of Capital:** means additional output produced by each additional unit of capital.
- **Marginal Productivity of Labor:** means additional output produced by each additional unit of labor.
- Because of diminishing marginal productivity for both labor and capital the slope of production function becomes flatter from left to right.
- If the marginal productivity were increasing, slope of the production function would become steeper from left to right.
- If the marginal productivity were constant, the slope would be constant and the shape of the curve of production function would be a straight line.



CHANGES IN THE PRODUCTION FUNCTION

- The production function does not remain fixed over time. It may change.
- Economists use the term “supply shock” or “productivity shock” to refer to change in an economy’s production function.
- A positive supply shock raises the amount of output, and a negative supply shock reduces the amount of output.
- Sources of supply shock: natural calamities, changes in governmental regulation, innovations etc.



DEMAND FOR LABOR

- In contrast to the amount of capital, the amount of labor employed in the economy can change quickly.
- Thus, year-to-year changes in production can be traced to the changes in employment.
- Demand for labor determines the level of employment.
- For this reason, understanding demand for labor is important.
- To understand demand for labor we shall make the following assumptions to keep things simple:
 - ❖ Workers are alike
 - ❖ Firms have to pay competitive wage to hire workers
 - ❖ Firms objective is to maximize profit



DETERMINATION OF THE DEMAND FOR LABOR

- Demand for labor is determined based on the marginal product of labor, cost of labor and price of the product that labor produces.
- Example: Suppose, wage rate (**W**) of labor is 80 per/day.

Number of workers (N)	Number of shirts produced (Y)	MPN	MPN X Price (Price is 10 per/shirt)
0	0		
1	11	11	110
2	20	9	90
3	27	7	70
4	32	5	50
5	35	3	30
6	36	1	10

DETERMINATION OF DEMAND FOR LABOR

- To maximize profit the firm will follow the following rules:

Increase employment if for an additional worker	Decrease employment if for an additional worker
$(MPN * price) > W$ or $MPN > W/price$	$(MPN * price) < W$ or $MPN < W/price$

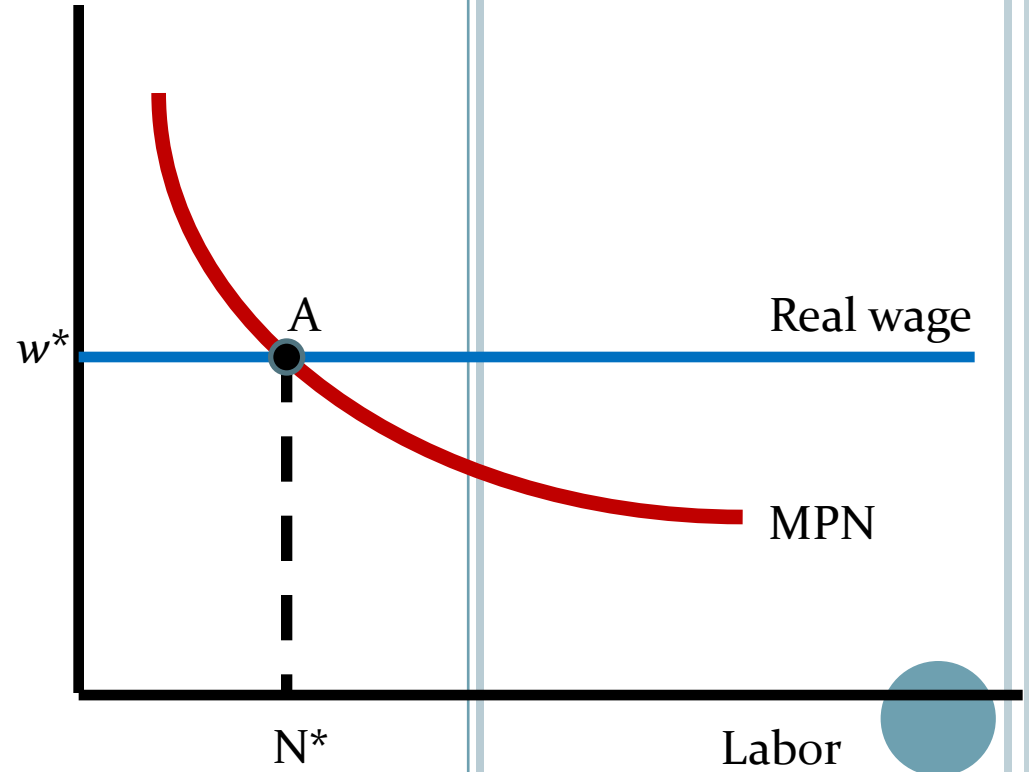
The expression “ $W/price$ ” is called, in economics, “real wage”. Why? Because when we divide wage by price we get a figure that shows the units of physical goods produced by labor.



DETERMINATION OF LABOR DEMAND

- The MPN curve on the right can be thought of as the demand for labor. Because quantity of labor is determined by the price of labor (the real wage).
- What happens when the $MPN > w^*$? Firms hire more labor.
- What happens when $MPN < w^*$? Firms lay-off labor
- What happens at point A? Equilibrium established.

MPN and real wage



FACTORS THAT SHIFT LABOR DEMAND CURVE

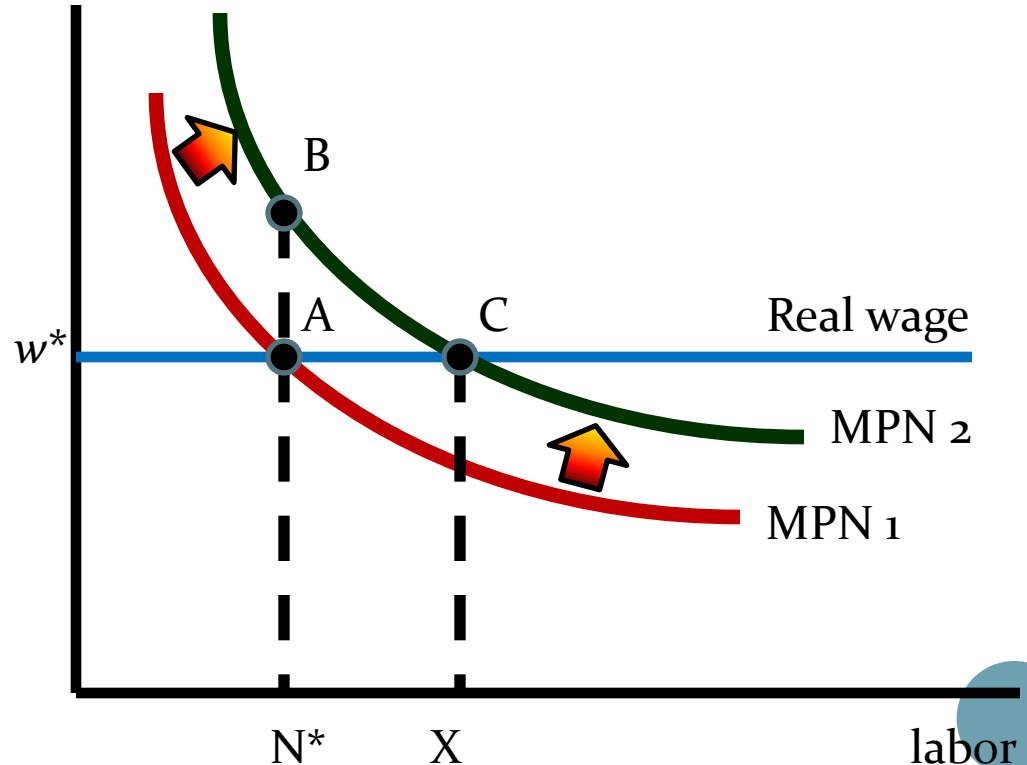
- Changes in the wage do not shift the labor demand curve. Changes in the wage will cause movement along the labor demand curve.
- Factors that shift labor demand curve would be something that will change the demand for labor at any given wage.
- A beneficial shock will shift the labor demand curve to the right.
- An adverse shock will shift the labor demand curve to the left.



SHIFT OF THE LABOR DEMAND CURVE

- A beneficial supply shock, such as invention of a new technology, will shift the MPN curve to the right.
- Originally, the firm employed N^* amount of labor.
- Now the real wage and the new MPN curve intersects at point C up to which the firm will want to hire labor to maximize profit.
- As a result employment will rise and new employment level will be at X .

MPN and real wage



SUPPLY OF LABOR

- We have seen that firm's demand for labor depend on labor productivity and wage paid to labor.
- However, supply of labor depends on workers' personal choice to work.
- Personal choice about being a part of the labor force generally depends on the following two factors:
 - ❖ Income-leisure trade-off
 - ❖ Real wage



LABOR SUPPLY CURVE

- Labor supply curve looks the same as the supply curve we studied before.
- Usually, we assume that a higher real wage will increase labor supply.
- Labor supply curve will not shift because of a change in the wage.
- Any factor that changes the amount of labor supply at a given wage rate will shift the labor supply curve.



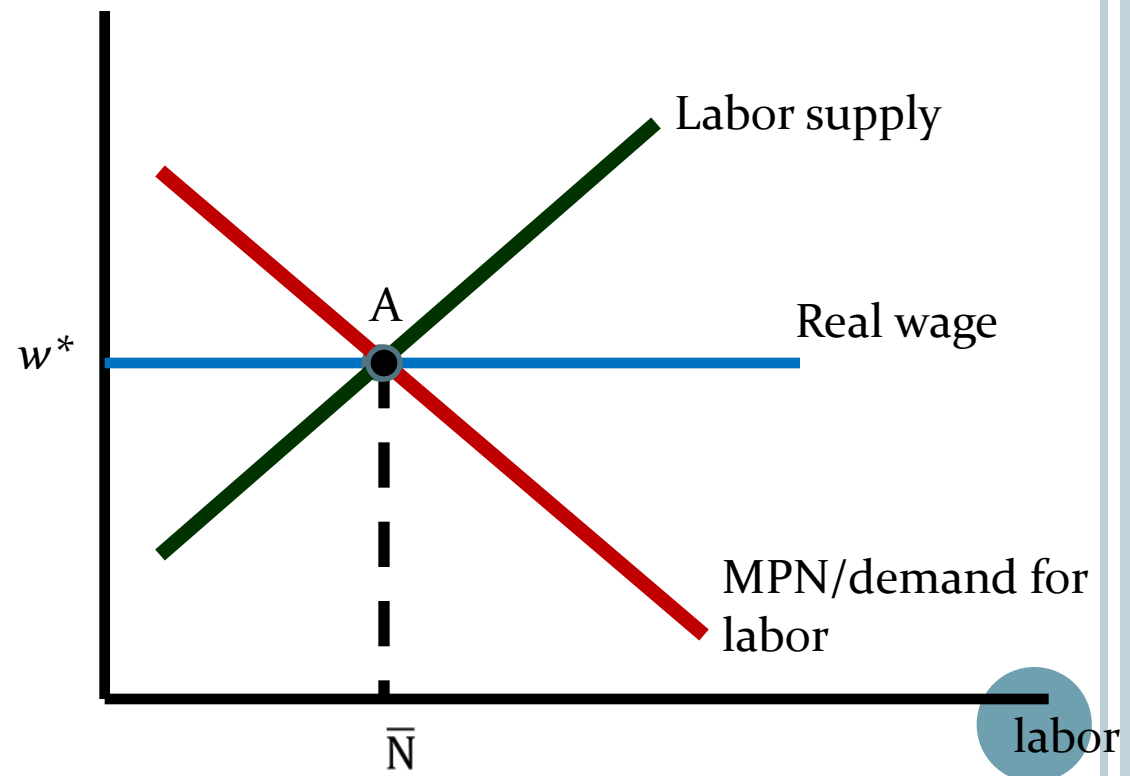
FACTORS THAT SHIFT THE LABOR SUPPLY CURVE

An increase in	Cause the labor supply curve to shift	Reason
Wealth	Left	Increase in wealth increases amount of leisure workers can afford
Expected future real wage	Left	Increase in expected future real wage increases amount of leisure workers can afford
Working-age population	Right	Increased number of potential workers increases amount labor supplied
Participation rate	Right	Increased number of people wanting to work increases amount of labor supplied

LABOR MARKET EQUILIBRIUM

- Equilibrium in the labor market is reached in the same way we found equilibrium in the demand-supply model.
- In case of labor market, equilibrium will be reached at the point where labor demand interacts with labor supply.
- This w^* is not necessarily the wage that maximizes firm's profit.
- \bar{N} is called the **full employment** level of employment.

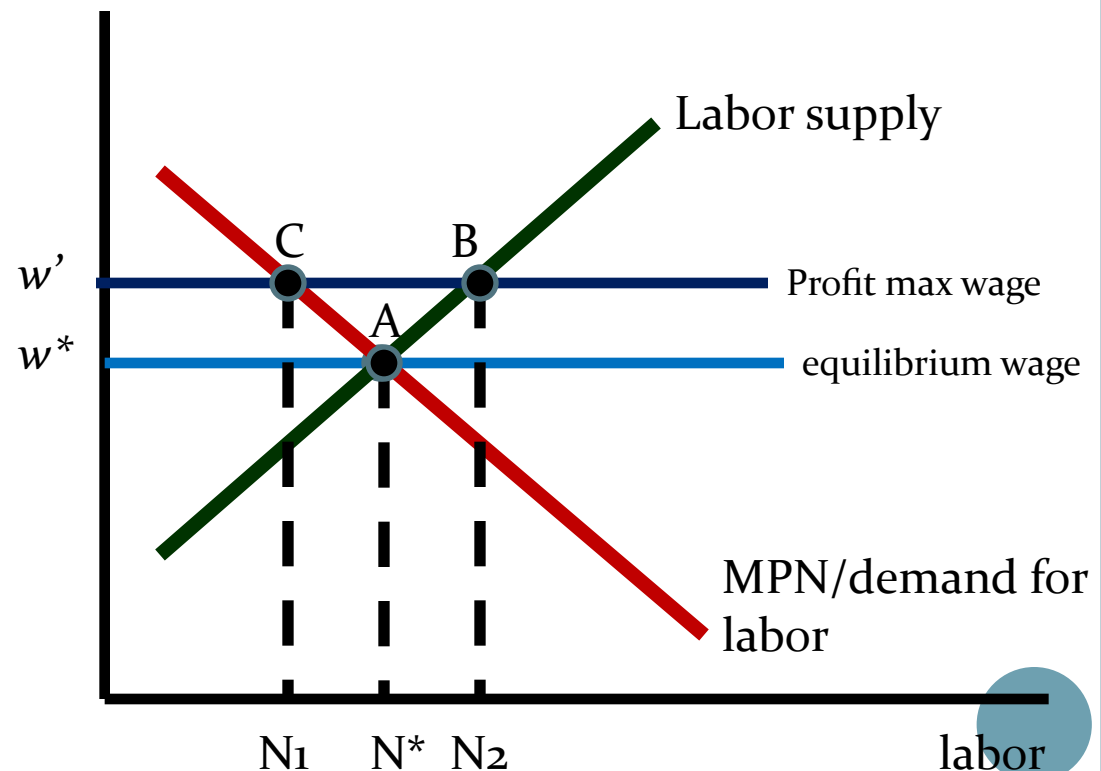
MPN and real wage



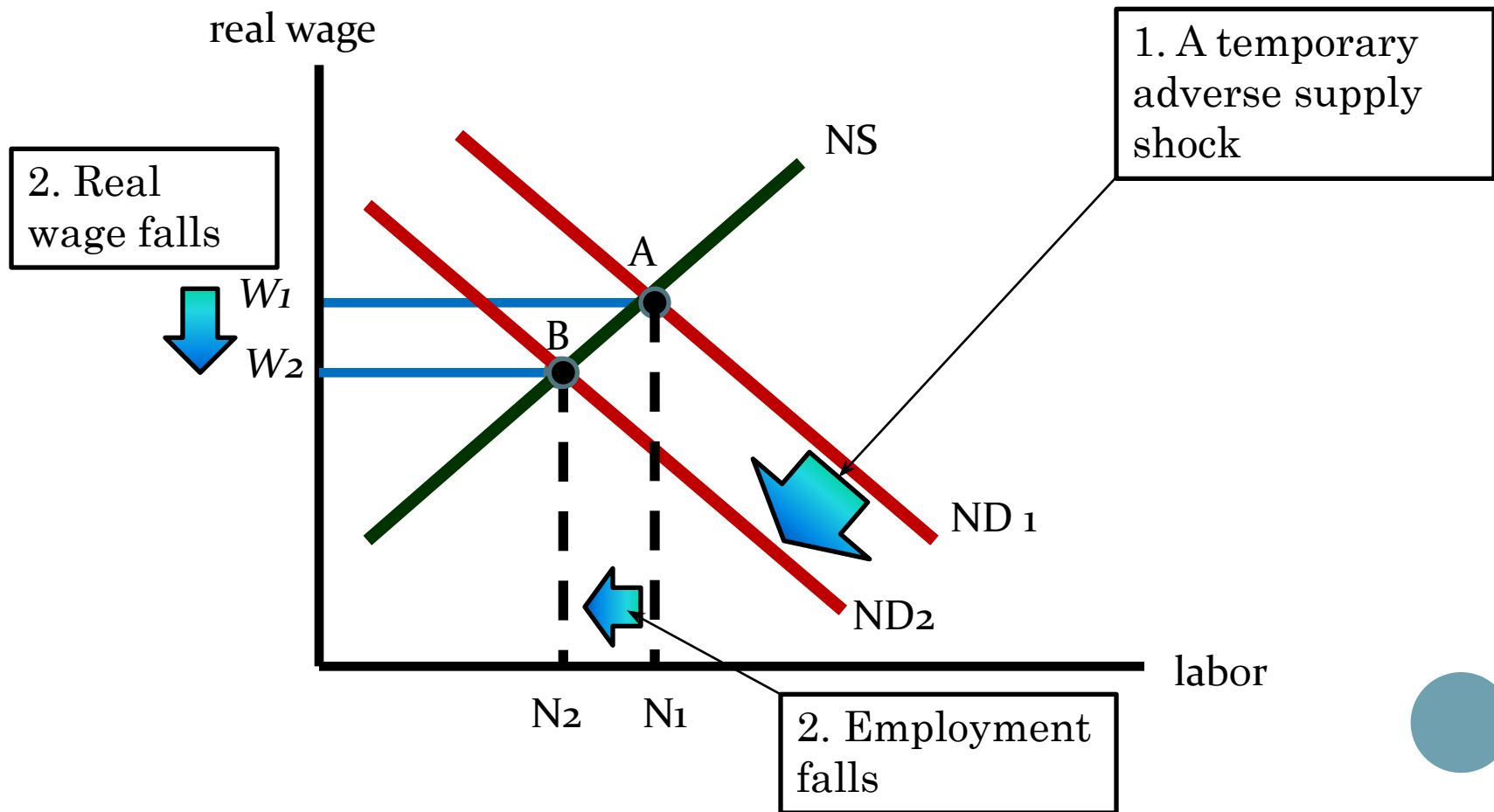
WHEN PROFIT MAXIMIZING WAGE IS HIGHER THAN EQUILIBRIUM WAGE

- Labor market equilibrium is at point A.
- But, as the profit maximizing wage is higher than the equilibrium wage, firms will hire labor that corresponds to point C, where N_1 amount of labor is employed by the firms.
- As a result, although the potential labor supply will be at point B, N_2 amount of labor will not be employed.
- This gives the firm the power to lower wage until equilibrium is reached at point A.

MPN and real wage



EFFECTS OF ADVERSE SUPPLY SHOCK



WHAT IF ALL WORKERS ARE NOT ALIKE?

- We assumed that all workers are alike. By this, we meant that all workers have the same skill level.
- However, if workers have different skill level then supply shocks will not affect all workers in the same way.
- Example: if a production process introduces computer based production, then workers who can operate computers will cope with the new process quickly. On the other hand, workers who cannot operate computers will find it difficult to cope with the process. This will create difference in the marginal productivity level of these two groups of workers. Most likely, the workers who can use computers will get higher wage at cost of those who cannot.
- Therefore, whether a shock will be considered beneficial or adverse depends on the skill/education level of the workers.



UNEMPLOYMENT: THE UNTOLD STORY OF FULL-EMPLOYMENT

- *Full-employment* level implies that all the workers who are willing to work at the equilibrium wage rate will find a job.
- All workers in real life do not find jobs even if they want to. When workers are unemployed for a long time the sum of all such workers constitute “**structural unemployment**”.
- If workers are unemployed for a brief period (for example: the brief period in which they search for a suitable job) we call it “**frictional unemployment**”.
- The rate of unemployment that prevails when output and unemployment rate the full-employment level, we call it **natural rate of unemployment**.
- The difference between actual unemployment rate and natural unemployment rate is called **cyclical unemployment**.
- If workers are not willing to work, this will not constitute unemployment. We shall consider these workers as out of work force.





Productivity / GDP per capita & GDP (PPP)

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GDP Per Capita / GDP PPP (purchasing parity power)

GDP per capita = GDP / Population (number of people in the country)

- The per capita GDP is especially useful when comparing one country to another, because it shows the relative performance of the countries. A rise in per capita GDP signals growth in the economy and tends to reflect an increase in productivity.

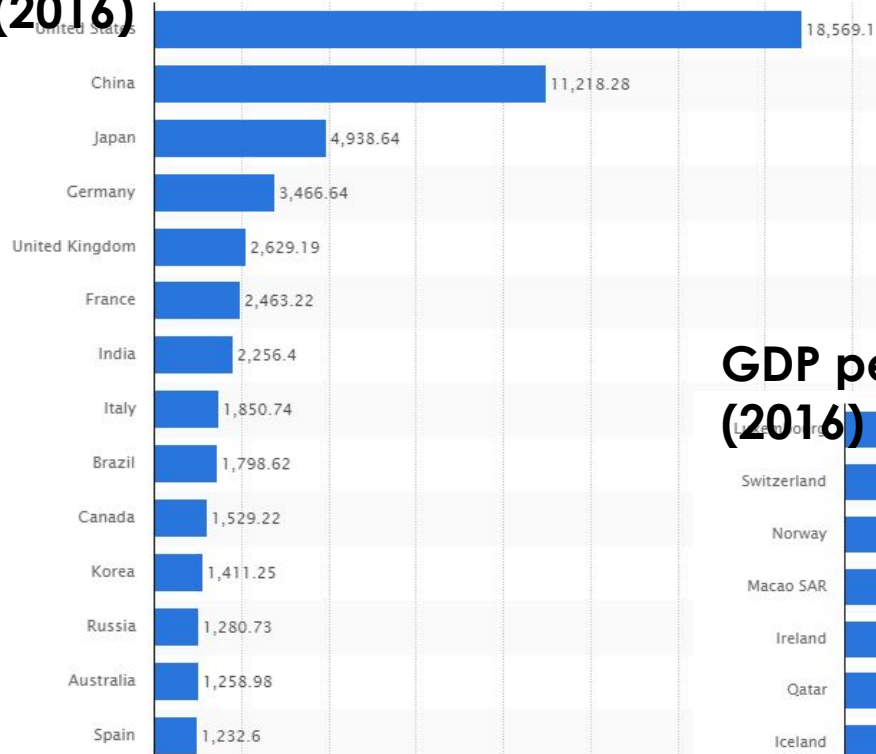


Why do we need GDP per capita?

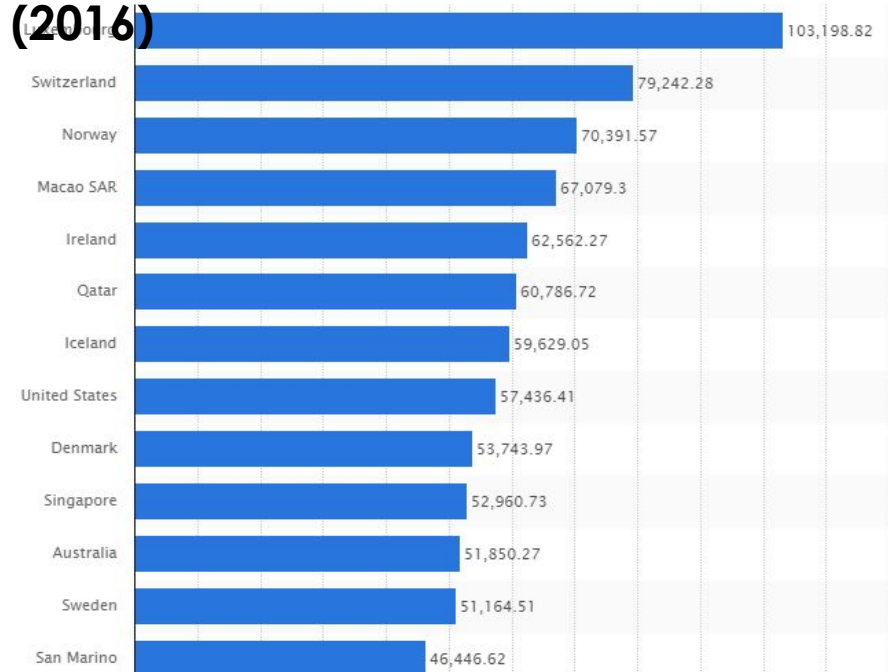
- sometimes used as an indicator of standard of living, with higher per capita GDP equating to a higher standard of living.

NB: A **standard of living** is the level of wealth, comfort, material goods and necessities available to a certain socioeconomic class or a certain geographic area. The standard of living includes factors such as income, gross domestic product, national economic growth, economic and political stability, political and religious freedom, environmental quality, climate, and safety. The standard of living is closely related to quality of life.

GDP (2016)



GDP per capita (2016)





Why do we need GDP per capita?

- can also be used to measure the productivity of a country's workforce, as it measures the total output of goods and services per each member of the workforce in a given nation.

(better measure of worker productivity may be GDP per hours worked (?) - per capita GDP does not take into account the influence of technology over a worker's output. If two countries each have a workforce that possesses an equal measure of per capita GDP, it appears that both nations hold an equal standard of living. However, a further examination of GDP per hours worked offers a different view of worker efficiency. The country with the lower GDP per hours worked actually enjoys more leisure time.)

Methodology: Productivity is calculated by dividing each country's GDP by the average number of hours worked annually by all

The most productive

Rank	Country	GDP per hour worked, USD	Employed Population	GDP (USD)	Average work week (hrs)
1	Luxembourg	93.4	405,600	57b	29
2	Ireland	87.3	1,989,400	302b	33.5
3	Norway	81.3	2,753,000	318b	27.3
4	Belgium	69.7	4,601,200	498b	29.8
5	United States	68.3	151,000,000	18,037b	33.6
6	Denmark	67.6	2,829,000	270b	27.2
7	France	65.6	27,523,000	2,648b	28.2
8	Germany	65.5	43,057,000	3,857b	26.3
9	Netherlands	65.4	8,792,000	818b	27.4
10	Switzerland	64.2	4,962,600	506b	30.6

NB: Working longer hours doesn't necessarily result in increased productivity. Mexico—the least productive of the 38 countries listed in 2015 data from the Organization for Economic Cooperation and Development (OECD)—has the world's longest average work week at 41.2 hours (including full-time and part-time workers). At the other end of the spectrum, Luxembourg, the most productive country, has an average workweek of just 29 hours.

Year	Real GDP per capita	Events affected GDP
1999	43,935	Glass-Steagall repealed. (Act is a law that prevented banks from using depositors' funds for risky investments, such as the stock market)
2000	44,492	Tech bubble burst.
2001	44,687	Bush 43 took office. Recession. 9/11 attacks.
2002	44,996	War on Terror
2003	46,560	Fed lowered rate. Iraq War. JGTRRA (the Jobs and Growth Tax Relief Reconciliation Act is an investment tax cut that was enacted by the Bush Administration on May 28, 2003, to finally end the 2001 Recession)
2004	47,800	
2005	48,856	Fed raised rates, hurting interest-only loan holders.
2006	48,987	
2007	49,060	Dow hit 14,164.43
2008	46,941	Financial crisis. Fed lowered rates. QE (Quantitative easing is a massive expansion of the open market operations of a central bank to stimulate the economy by making it easier for businesses to borrow money.)
2009	47,280	Obama took office. ARRA (Congress approved the \$787 billion American Recovery and Reinvestment Act - economic stimulus package)
2010	47,805	ACA passed (Patient Protection and Affordable Care Act). Tax cuts
2011	48,757	Iraq War ended.
2012	49,039	Fiscal cliff (combination of four tax increases and two spending cuts)
2013	49,472	Sequestration (Congress couldn't agree on the best way to lower the deficit, so it used the sequester as a threat to force itself. It didn't work. Instead, the sequester cut spending by 10 percent from 2013 - 2021.)
2014	50,718	
2015	51,123	Strong dollar hurt exports



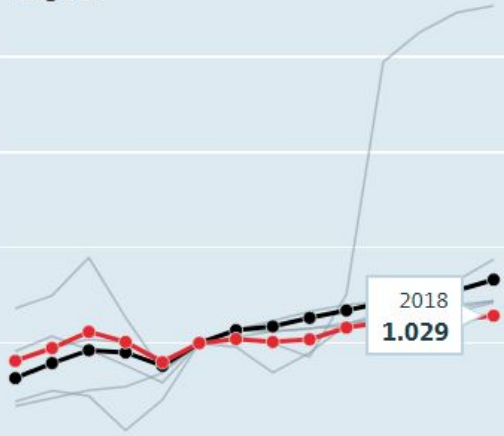
Labour productivity

- **Labour productivity** is defined as real gross domestic product (GDP) per hour worked.

This captures the use of labour inputs better than just output per employee, with ***labour input defined as total hours worked by all persons involved***.

The data are derived as average hours worked multiplied by the corresponding and consistent measure of employment for each particular country. Forecast is based on an assessment of the economic climate in individual countries and the world economy, using a combination of model-based analyses and expert judgement. This indicator is measured as an index with 2010=1.

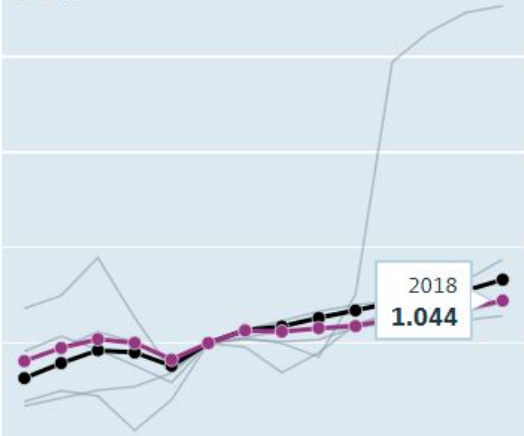
Belgium



Denmark



France



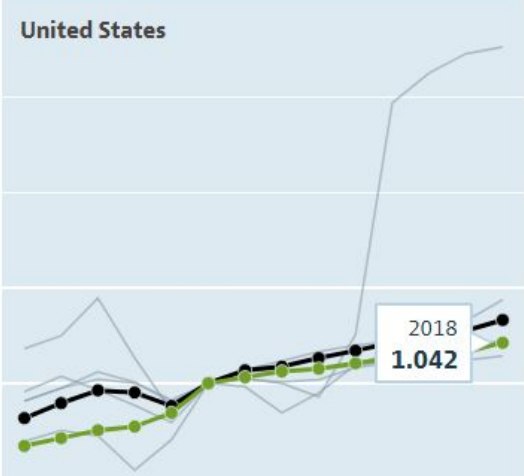
Ireland



Luxembourg



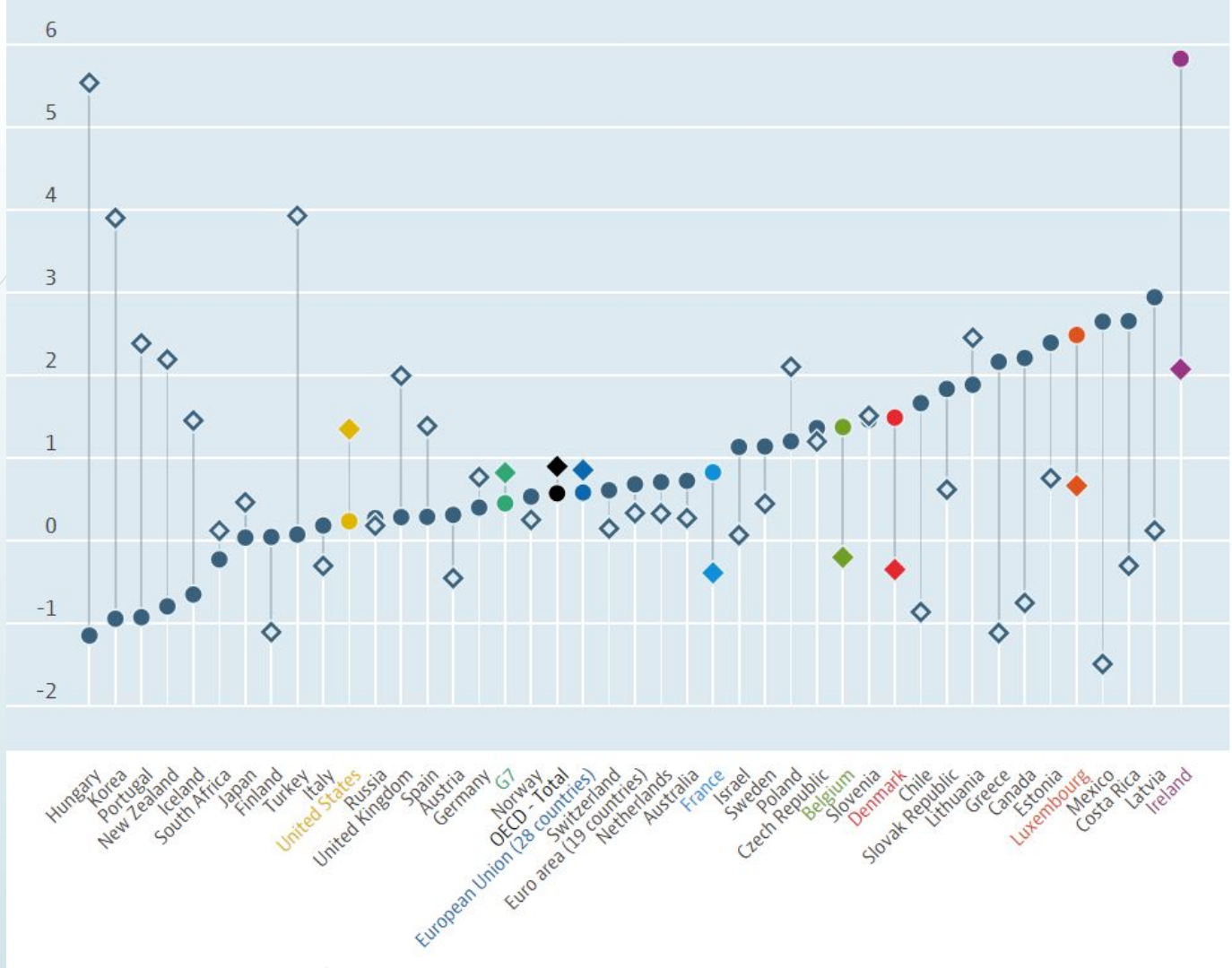
United States





Labour productivity and utilization

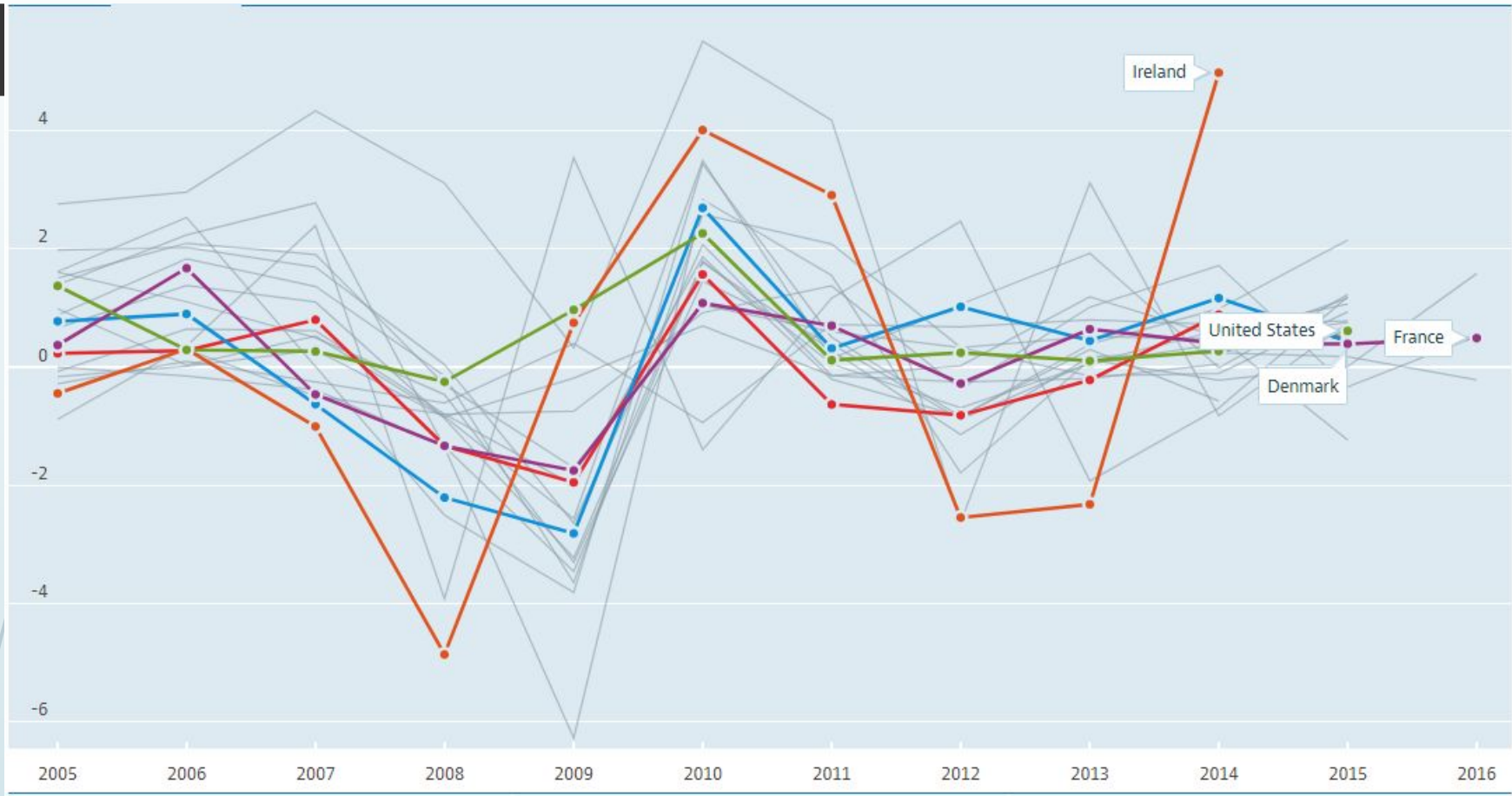
- Labour productivity growth is a key dimension of economic performance and an essential driver of changes in living standards. Growth in gross domestic product (GDP) per capita can be broken down into growth in **labour productivity**, measured as growth in GDP per hour worked, and changes in the extent of **labour utilisation**, measured as changes in hours worked per capita. High labour productivity growth can reflect greater use of capital, and/or a decrease in the employment of low-productivity workers, or general efficiency gains and innovation





Multifactor productivity

- **Multifactor productivity** (MFP) reflects the overall efficiency with which labour and capital inputs are used together in the production process. Changes in MFP reflect the effects of changes in management practices, brand names, organizational change, general knowledge, network effects, spillovers from production factors, adjustment costs, economies of scale, the effects of imperfect competition and measurement errors.
 - Growth in MFP is measured as a residual, i.e. that part of GDP growth that cannot be explained by changes in labour and capital inputs. In simple terms therefore, if labour and capital inputs remained unchanged between two periods, any changes in output would reflect changes in MFP. This indicator is measured as an index and in annual growth rates



What Is Purchasing Power Parity?

- Macroeconomic analysis relies on several different metrics to compare economic productivity and standards of living between countries and across time. One popular metric is purchasing power parity (PPP).
- **Purchasing Power Parity** (PPP) is an economic theory that compares different countries' currencies through a market "basket of goods" approach. According to this concept, two currencies are in equilibrium or at par when a market basket of goods (taking into account the exchange rate) is priced the same in both countries.
Where:
 S represents exchange rate of currency 1 to currency 2
 P_1 represents the cost of good "x" in currency 1
 P_2 represents the cost of good "x" in currency

PPP calculation

Problem: To make a comparison of prices across countries that holds any type of meaning, a wide range of goods and services must be considered. The amount of data that must be collected, and the complexity of drawing comparisons makes this process difficult.

Solution: To facilitate this, the **International Comparisons Program (ICP)** (established in 1968 by the University of Pennsylvania and UN). Purchasing power parities generated by the ICP are based on a worldwide price survey that compares the prices of hundreds of various goods. This data, in turn, helps international macroeconomists come up with estimates of global productivity and growth.

Correction & Updating: Every three years, the World Bank constructs and releases a report that compares various countries in terms of PPP and U.S. dollars.

Usage: Both the International Monetary Fund (IMF) and the Organization for Economic Cooperation and Development (OECD) use weights based on PPP metrics to make predictions and recommend economic policy.



The Big Mac Index: an example of PPP

(The Economist)

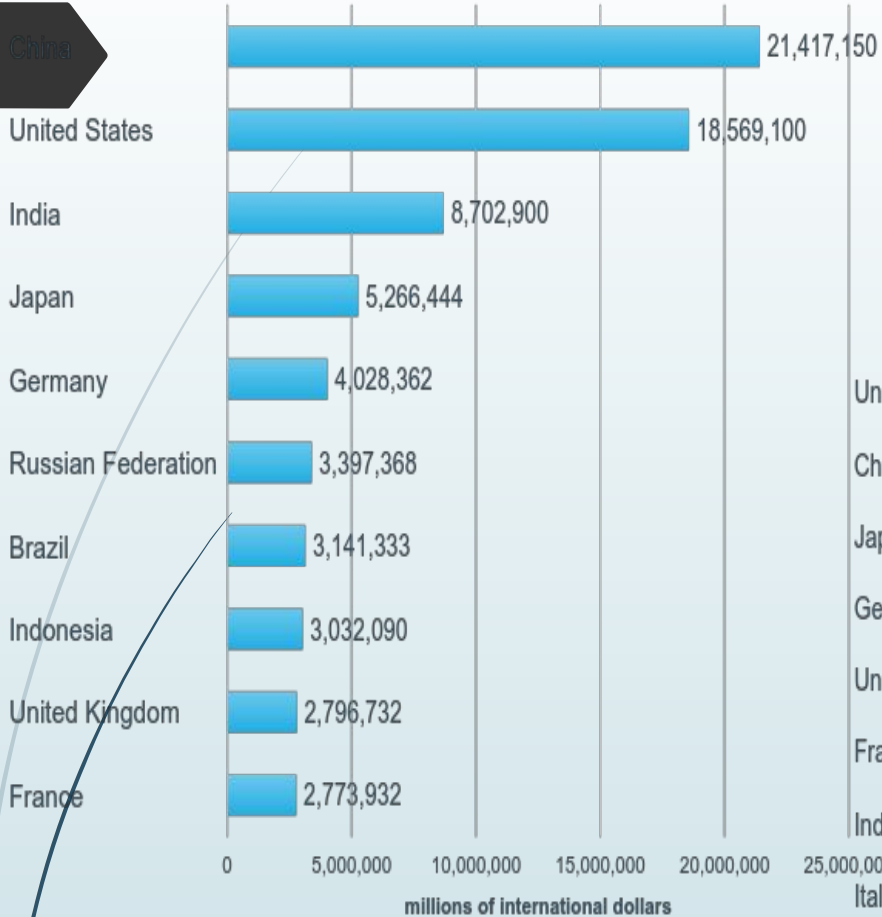
Prehistory: The Economist has tracked the price of McDonald's Corp.'s (MCD) Big Mac burger in many countries since 1986. The highly publicized Big Mac Index is used to measure the purchasing power parity (PPP) between nations, using the price of a Big Mac as the benchmark. The Big Mac index suggests that, in theory, changes in exchange rates between currencies should affect the price that consumers pay for a Big Mac in a particular nation, replacing the "basket" with the famous hamburger.

Example: if the price of a Big Mac is \$4.00 in the U.S. as compared to 2.5 pounds sterling in Britain, we would expect that the exchange rate would be 1.60 ($4/2.5 = 1.60$). If the exchange rate of dollars to pounds is any greater, the Big Mac Index would state that the pound was overvalued, any lower and it would be under-valued.

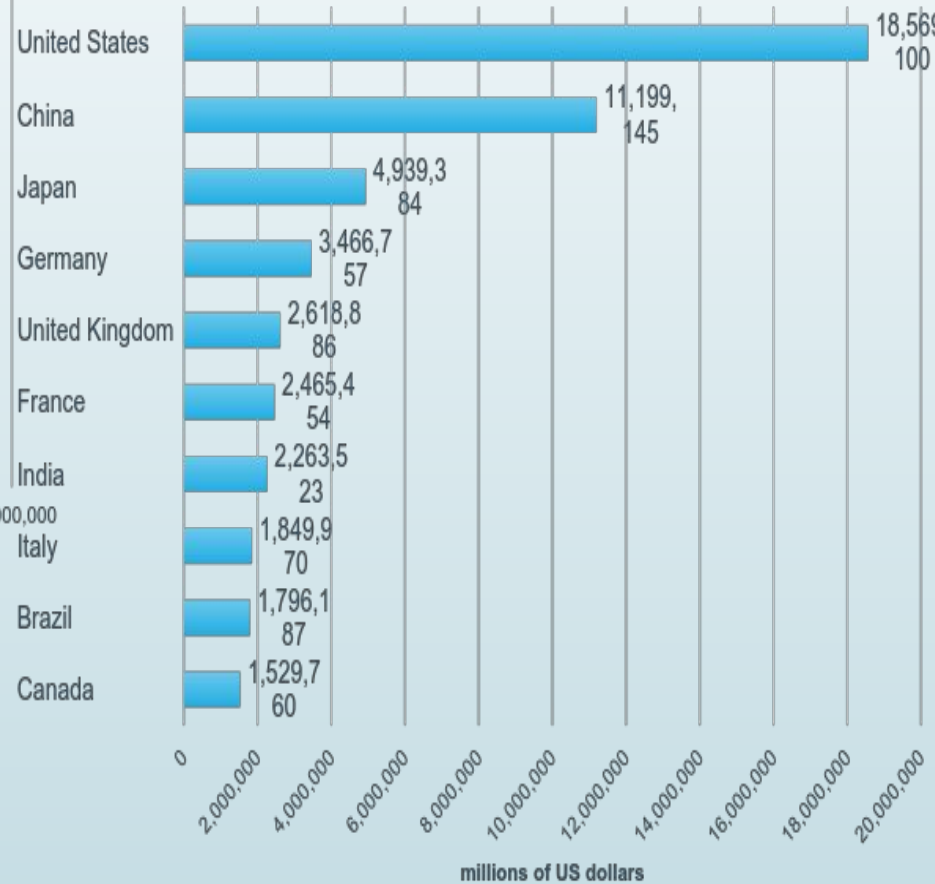
Flaws: (1) the Big Mac's price is decided by McDonald's Corp. and can significantly affect the Big Mac index. (2)

Gross domestic product 2016, PPP

China



Gross domestic product 2016



GDP with PPP

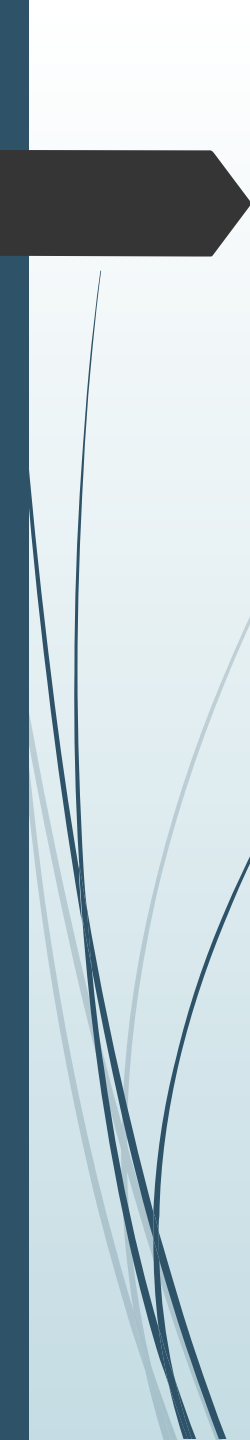
Example: One way to think of what GDP with PPP represents is to imagine the total collective purchasing power of Japan if it were used to make the same purchases in U.S. markets. This only works after all yen are exchanged for dollars, otherwise, the comparison does not make sense. The net effect is to describe how many dollars it takes to buy \$1 worth of goods in Japan as opposed to in the U.S.

GDP at PPP reflects the purchasing power of a citizen in one country to a citizen of another.

BUT (!) empirical evidence has shown that for many goods and baskets of goods, PPP is not observed in the

short run. "Burgonomics" by Michael Pikkio and Patricia Pillard applies

Pillard (2003) explores the Big Mac Index and PPP and cites several confounding factors as to why PPP theory does not line up with reality.

- 
- **Transport Costs:** Goods that are not available locally will need to be imported, resulting in transport costs. Imported goods will consequently sell at a relatively higher price than the same goods available from local sources.
 - **Taxes:** When government sales taxes, such as value-added tax (VAT), are high in one country relative to another, this means goods will sell at a relatively higher price in the high-tax country.
 - **Government Intervention:** Import tariffs add to the price of imported goods. Where these are used to restrict supply, demand rises, causing the price of the goods to rise as well. In countries where the same good is unrestricted and abundant, its price will be lower. Governments that restrict exports will see a good's price rise in importing countries facing a shortage, and fall in exporting countries where its supply is increasing.
 - **Non-Traded Services:** those costs are unlikely to be at parity internationally. These costs can include the cost of the storefront, and other expenses such as insurance, heating and the cost of labor.
 - **Market Competition:** Goods might be deliberately priced higher in a country because the company has a

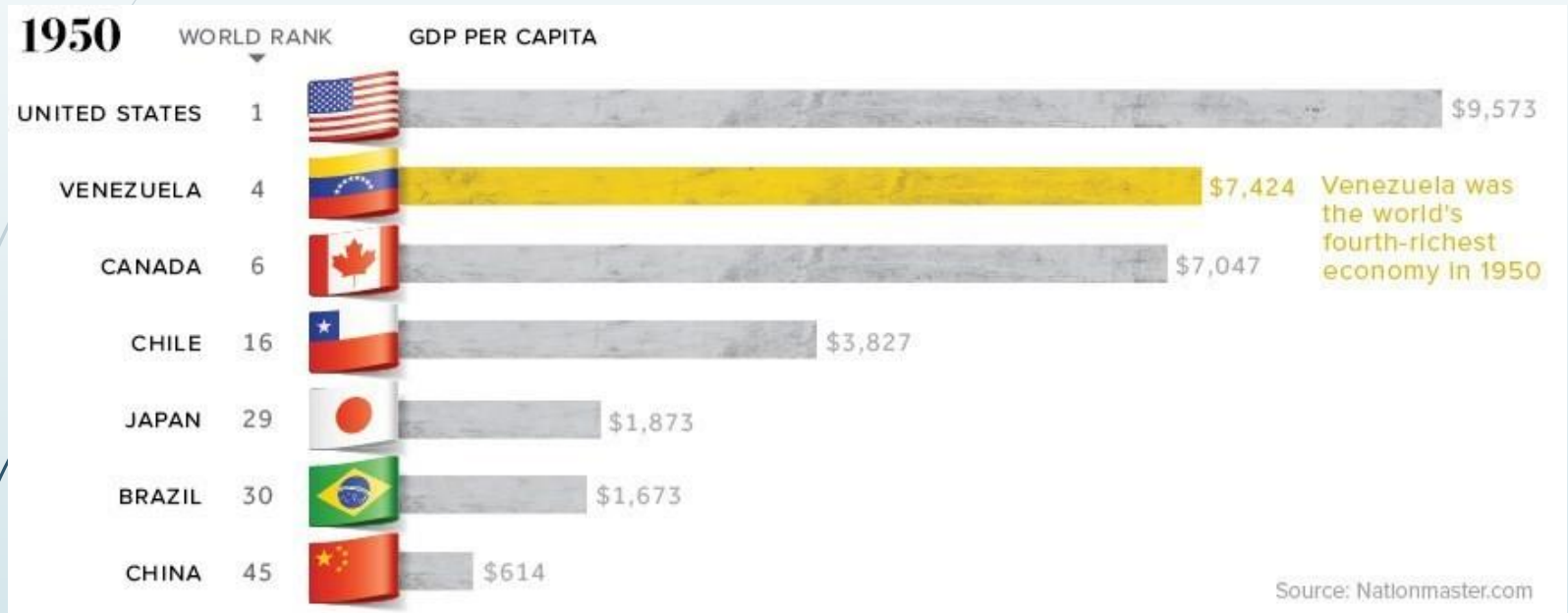


Venezuela case

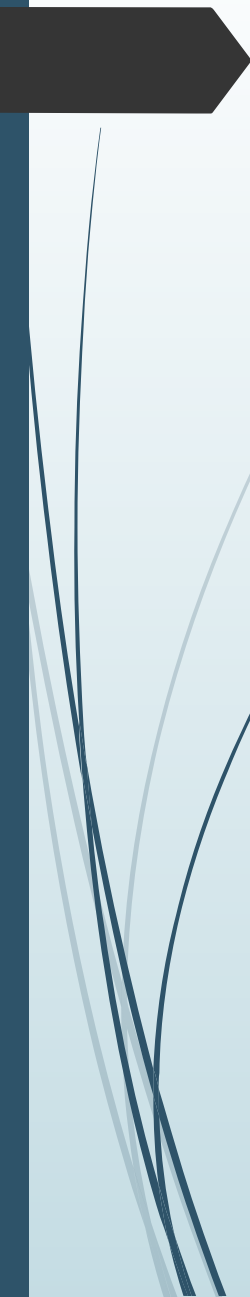
- From the 10 years of military dictatorship between 1948-1958 to the impeachment of Carlos Andrés Pérez for corruption in 1993, Venezuelan politics have often been both rocky and eventful.
- But despite these challenges throughout its history, no one has ever denied Venezuela's economic potential. After the discovery of oil in the early 20th century, the nation quickly built its economy on back of black gold and even today, Venezuela leads the world in proven



By 1950, as the rest of the world was struggling to recover from World War II, Venezuela had the fourth-richest GDP per capita on Earth. The country was 2x richer than Chile, 4x richer than Japan, and 12x richer than China!



Unfortunately for Venezuela, this wealth wouldn't last – and an over-reliance on oil would soon decimate the economy in unexpected ways.



The Downfall of Venezuela's Economy

From 1950 to the early 1980s, the Venezuelan economy experienced steady growth.

By 1982, Venezuela was still the richest major economy in Latin America. The country used its vast oil wealth to pay for social programs, including health care, education, transport, and food subsidies. Workers in Venezuela were among the highest paid in the region.

However, from there things went quickly downhill. In the mid-1980s, an oil glut and a free-falling oil price ended up decimating the Venezuelan economy, which was unable to diversify away from energy.

Today, Venezuela has one of the poorest major economies in Latin America – and as the current crisis rides itself out, the IMF foresees it getting far worse. By 2022, the organization predicts Venezuela's GDP per capita (PPP) will be just \$12,210, which would be a



 GDP BASED ON PPP PER CAPITA
Current international dollars per capita

2022^e

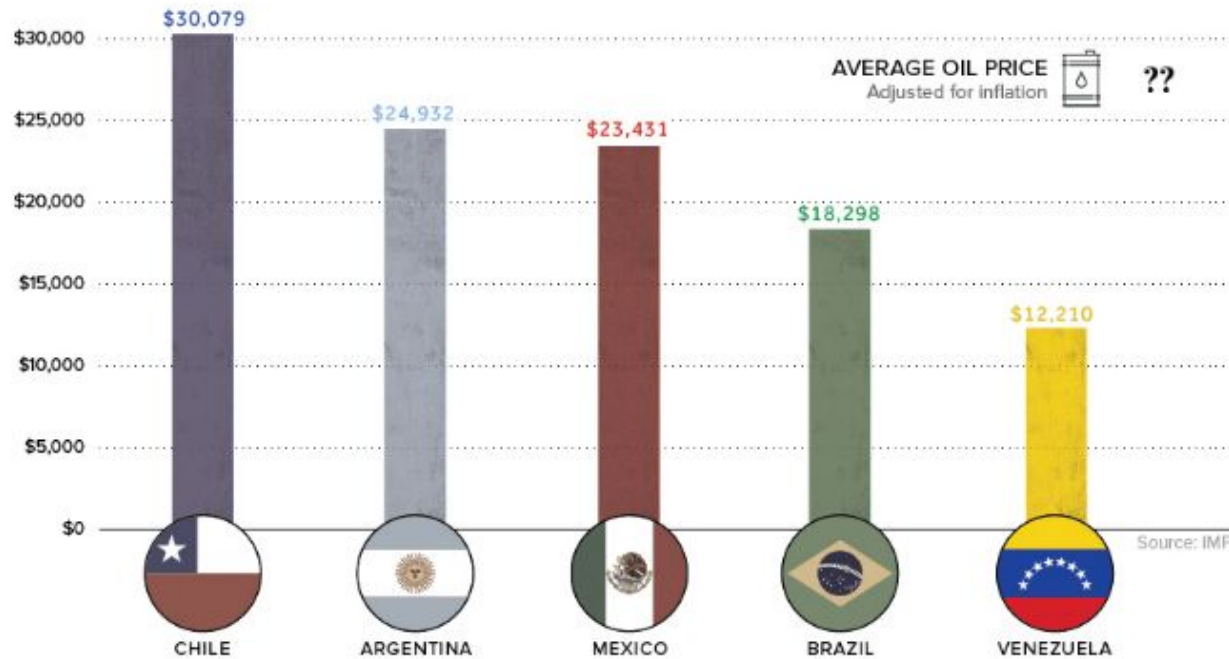
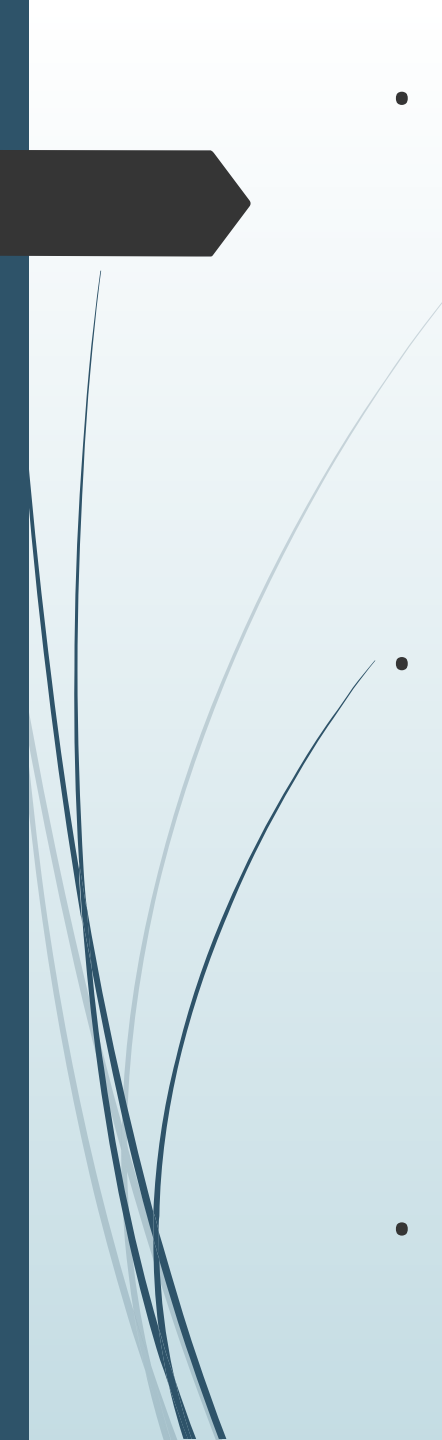
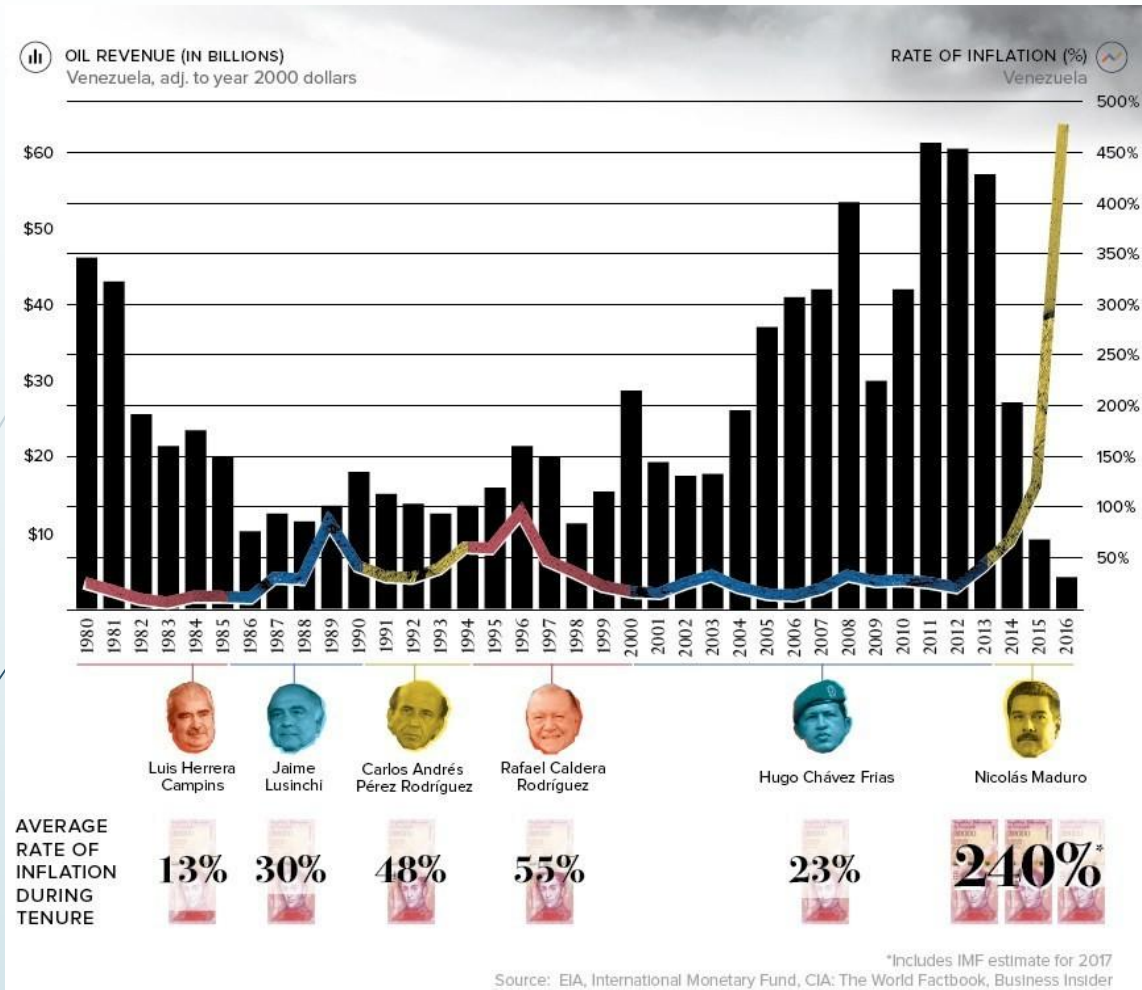


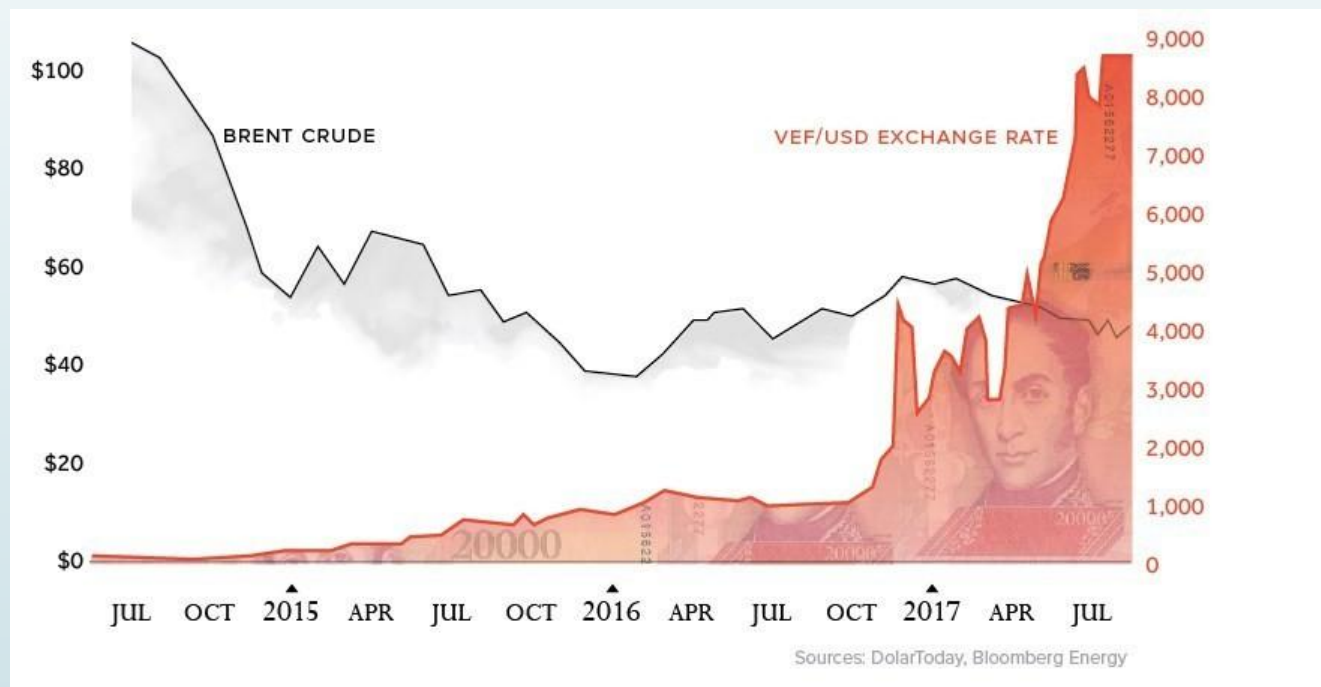
Image: Visual Capitalist

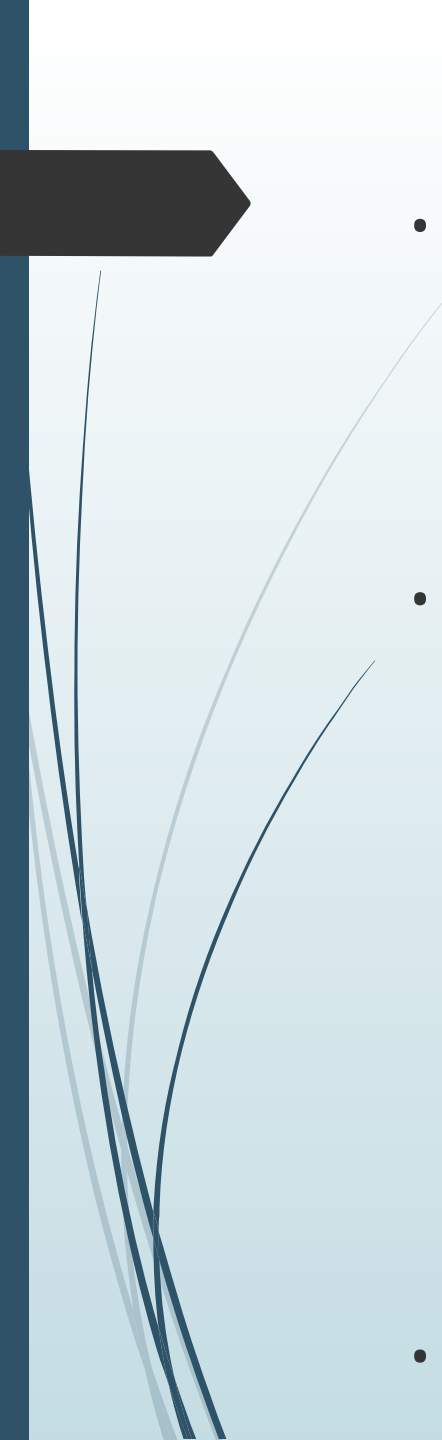
- 
- Although oil revenues are tempting to rely on to maintain social order, they come with a degree of unpredictability. According to OPEC, Venezuela still relies on oil for 95% of its exports, which means that any fluctuations in oil price can be the difference between immense wealth and near-poverty.
 - After the oil glut in the 1980s, Venezuela's oil revenues dropped significantly. It was then that Venezuela had its first bout with inflation, where rates peaked in 1989 (84.5% inflation) and later in 1996 (99.9% inflation). Without sufficient money coming in, the country had to rely on its printing presses in an attempt to maintain living standards
 - In 1998, Hugo Chávez was elected with the promise that Venezuela could reduce poverty and step up living standards by leaning even more heavily on its energy wealth. The recovery



The graphic shows Venezuela's oil revenues (in 2000 dollars) against the rate of inflation – and it symbolizes the story of Venezuela's recent economic history as succinctly as possible.

- Nicolás Maduro, who took over after the death of his predecessor, saw oil prices crash almost immediately, and it was clear that Venezuela's intense battle with inflation was only just beginning. The national currency, the Venezuelan bolívar, would soon be almost worthless.



- 
- The details of today's crisis and intense hyperinflation are widely shared.
(<http://money.visualcapitalist.com/trajectory-venezuelan-hyperinflation-familiar/>)
 - The country has massive shortages of food, electricity, and other essential goods, and violence is escalating in Caracas. More recently, the government is attempting to tighten its grip around power, and mismanagement of the economy has led to people starving on the streets. People are calling the situation a humanitarian crisis, which is extremely disheartening to see in what was once one of the richest countries on the planet.
 - And while the current condition of Venezuela is a tragedy in itself, the country's inability to live up to



MACROECONOMICS

**CONSUMPTION, SAVINGS &
INVESTMENT**

Zharova Liubov

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CONSUMPTION

- **Consumption** can be defined in different ways, but is usually best described as the final purchase of goods and services by individuals. It is also often referred to as **consumer spending**
 - Every time you purchase food at the drive-thru or pull out your debit or credit card or cash to buy something, you are adding to consumption.
 - Consumption is one of the biggest concepts in economics and is extremely important because it helps determine the growth and success of the economy.
 - Businesses can open up and offer all kinds of great products, but if we don't purchase or consume their products, they won't stay in business very long



THEORIES OF CONSUMPTION

- **Keynes** mentioned several subjective and objective factors which determine consumption of a society. However, according to Keynes, of all the factors it is the *current level of income that determines the consumption of an individual and also of society*.
 - Since Keynes lays stress on the absolute size of income as a determinant of consumption, his theory of consumption is also known as **absolute income theory**.
 - Keynes put forward a psychological law of consumption, according to which, *as income increases consumption increases but not by as much as the increase in income*. In other words, marginal propensity to consume is less than one.



S. KUZNETS VISION

- Contrary to Keynes's proposition that *proportion of income spent on consumption declines as income increases* (that is, average propensity to consume falls with the increase in income), Kuznets found from a statistical empirical study of consumption of the economy of the USA that *average propensity to consume had remained constant* over a long period despite the substantial increase in income.
- How the average propensity to consume has remained stable despite the substantial increase in income has been a great puzzle in consumption theory for a long time.

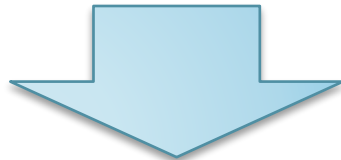


Theories of Consumption

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RELATIVE INCOME THEORY OF CONSUMPTION (J.S. DUESENBERY)

- Assumptions:
 - the determinant of consumption is relative income of an individual rather than his absolute income
 - the consumption of a person does not depend on his current income but on certain previously reached income level



because his relative income has remained the same the individual will spend the same proportion of his income on consumption as he was doing before the absolute increase in his income. That is, his **average propensity to consume (APC)** will remain the same despite the increase in his absolute income.



- **Demonstration Effect:** individuals or households try to imitate or copy the consumption levels of their neighbours or other families in a particular community. This is called demonstration effect or Duesenberry effect.



if incomes of all families increase in the same proportion, distribution of relative incomes would remain unchanged and therefore the proportion of consumption expenditure to income which depends on relative income will remain constant.



family with a given income would devote more of his income to consumption if it is living in a community in which that income is regarded as relatively low because of the working of demonstration effect.



- **Ratchet Effect** - when income of individuals or households falls, their consumption expenditure does not fall much
 - this is partly due to the demonstration effect. People do not want to show to their neighbours that they no longer afford to maintain their high standard of living.
 - partly due to the fact that they become accustomed to their previous higher level of consumption and it is quite hard and difficult to reduce their consumption expenditure when their income has fallen. They maintain their earlier consumption level by reducing their savings. Therefore, the fall in their income, as during the period of recession or depression, does not result in decrease in consumption expenditure very much as one would conclude from family budget studies.

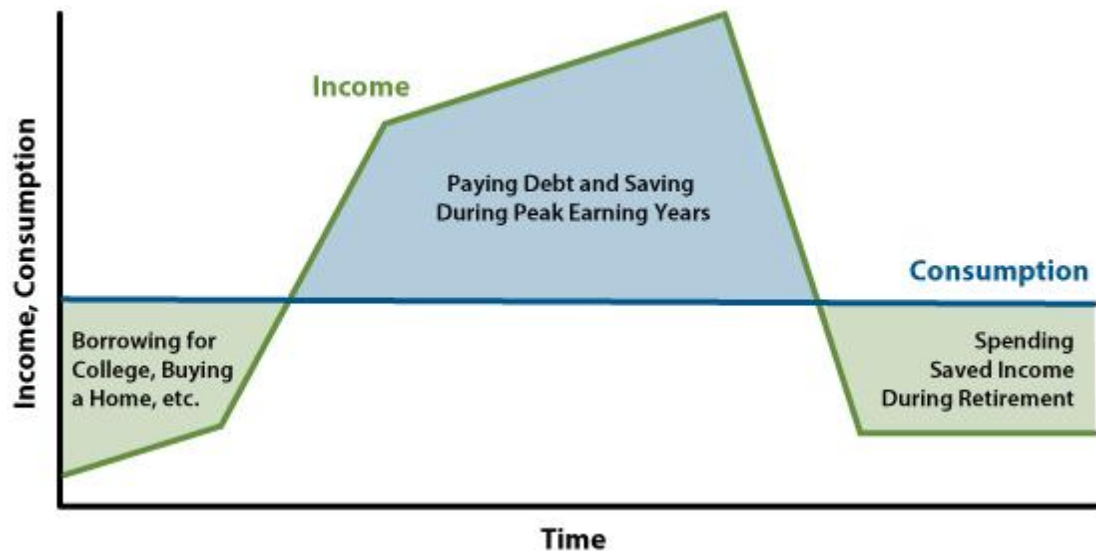
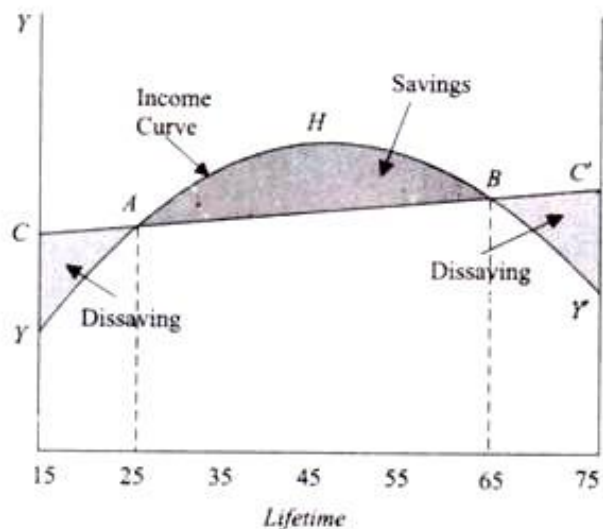


LIFE CYCLE THEORY OF CONSUMPTION (ALBERT ANDO & FRANCO MODIGLIANI)

- Idea: the consumption in any period is not the function of current income of that period but of the whole lifetime expected income
- Assumptions:
 - to plan a pattern of consumption expenditure based on expected income in their entire lifetime
 - individual maintains a more or less constant or slightly increasing level of consumption
 - his level of consumption is limited by his expectations of lifetime income



- A typical individual in this theory in his early years of life spends on consumption either by borrowing from others or spending the assets bequeathed from his parents.
- It is in his main working years of his lifetime that he consumes less than the income he earns and therefore makes net positive savings. He invests these savings in assets, that is, accumulates wealth which he consumes in the future years. In his lifetime after retirement he again dissaves, that is, consumes more than his income in these later years of his life but is able to maintain or even slightly increase his consumption in the lifetime after retirement.



- **Shortcomings:**

- criticized the assumption of life cycle hypothesis that in making consumption plans, households have “a definite and conscious vision.”
- theory fails to recognize the importance of liquidity constraints in determining the response of consumption to income. According to critics, even if a household has a concrete vision of future income, the opportunities to borrow from the capital markets for quite a long period on the basis of expected future income are very little.



PERMANENT INCOME THEORY OF CONSUMPTION (MILTON FRIEDMAN)

- Assumptions:
 - consumption is determined by **long-term expected income** (permanent income) rather than current level of income (*According to Friedman, an individual who is paid or receives income only once a week, say on Friday, he would not concentrate his consumption on one day with zero consumption on all other days of the week*)
 - an individual would prefer a smooth consumption flow per day rather than plenty of consumption today and little consumption tomorrow. Thus consumption in one day is not determined by income received on that particular day.
 - permanent income or expected long-term average income is earned from both “human and non-human wealth”



- Relationship between Consumption and Permanent Income: $C_p = k(i, w, u) \times Y_p$

C_p – permanent consumption;

Y_p – permanent income

k - the proportion of permanent income that is consumed

- **Rate of interest (i):** at a higher rate of interest the people would tend to save more and their consumption expenditure will decrease.
- **The proportion of non-human wealth to human wealth (w):** the greater the amount of wealth or assets held by an individual, the greater would be its propensity to consume and vice-versa
- **Desire to add to one's wealth (u):** households' preference for immediate consumption as against the desire to add to the stock of wealth or assets also determines the proportion of permanent income to be devoted to consumption



- In addition to **permanent income (Y_p)**, the individual's income may contain a transitory component - **transitory income (Y_t)**. A transitory income is a temporary income that is not going to persist in future periods.

When income of an individual increases in the current year as compared to the last year, the permanent income will be less than the current year's income. This is because individual is not sure whether the increase in income will persist in the future and therefore does not immediately revise his estimate of permanent income by the full amount of the increase in his income in the current year



- **Conclusions:**

- Permanent income hypothesis is similar to life cycle hypothesis and differs only in details
- Permanent income hypothesis is also consistent with the evidence from the cross-sectional budget studies that high income families have low average propensity to consume than that of low- income families. A sample of high income families at a given time is likely to contain a relatively larger number of families who are having positive transitory increase in incomes.
- laying stress on changes in rate of interest and the wealth or assets held by the people and desire to add to one's wealth as important determinants of consumption and savings, Friedman's permanent income hypothesis has made an important contribution to the theory of consumption and saving.



REAL INCOME VS. NOMINAL INCOME

- The term 'real' that is used in describing income refers to how your income is affected by **inflation**, or the natural rise in prices of goods and services. So to elaborate, if your income went up 5% in a year, but the price of goods or inflation went up 5% also, your real income remained flat. You can't really buy or consume any more goods than you could before.



SAVINGS

- Savings, according to Keynesian economics, consists of the amount left over when the cost of a person's consumer expenditure is subtracted from the amount of disposable income he earns in a given period of time. For those who are financially prudent, the amount of money left over after personal expenses have been met can be positive; for those who tend to rely on credit and loans to make ends meet, there is no money left for savings.
- Saving involves income that is not consumed
- Savings can be turned into further increased income through investing in different investment vehicles.
 - Saving is often confused with investing, but they are not the same.
 - Although most people think of purchases of stocks and BONDS as investments, economists use the term “INVESTMENT” to mean additions to the real stock of capital: plants, factories, equipment, and so on



Types of Savings

Personal savings

- What people save, avoiding to consume all their income, is called "**personal savings**". These savings can remain on the bank accounts for future use or be actively invested in houses, real estate, bonds, shares and other financial instruments

National savings

- National savings = personal savings + the business savings + public savings.
- Business savings can be measured by the value of undistributed corporate profits. Public savings are basically tax revenues less public expenditure.

INVESTMENTS

- Definition: Money committed or property acquired for future income.

“**INVESTMENT**” to mean additions to the real stock of capital: plants, factories, equipment, and so on.

- *An investment is an asset or item that is purchased with the hope that it will generate income or will appreciate in the future. In an **economic sense**, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth. In **finance**, an investment is a monetary asset purchased with the idea that the asset will provide income in the future or will be sold at a higher price for a profit.*



- **Leverage Firms (Companies)**, are the best place to invest, because it's Earning per share is high. So, the high amount you put the more profit you gain from your share or stock.

Always invest in that firm or thing whose rate of return or profitability in future is high

- **Fixed Investment** - is spending on new capital machinery and plant, construction, housing, vehicles, etc.
- **Working Capital** - is spending on stocks/ inventories of finished goods and raw materials. The accumulation of stocks by firms, whether voluntary or involuntary, is counted as investment



Types of Investments

Traditional investments:

- In finance, the notion of **traditional investments** refers to putting money into well-known assets (such as bonds, cash, real estate, and shares) with the expectation of capital appreciation, dividends, and interest earnings

FINAL CONCLUSIONS

- Consumed is what you buy or ability to pay.
- High consumption makes any product to stay long in market.
- If consumption is not high then product will failed.
- Saving is what you have after all your expenses.
- Saving is not what you invest.
- Investment is for the future profits.
- Investment made when the earning per share of the company is high.





MACROECONOMICS

GDP

INCOME

ECONOMIC GROWTH

Zharova Liubov

GDP = IS THE MONETARY VALUE OF ALL THE FINISHED GOODS AND SERVICES PRODUCED WITHIN A COUNTRY'S BORDERS IN A SPECIFIC TIME PERIOD

- Includes all domestic production in a boarders
- Monetary measurement of value
- To avoid multiple counting – must include **ONLY new** production (sold to consumers)

-
- Does **NOT** include:
 - intermediate goods (ex: tires for new auto)
 - public transfer payments (welfare payment)
 - private transfer payments (cash gifts)
 - stock market transactions (stocks & bonds)
 - secondhand sales (used books, cars, homes)



APPROACHES TO CALCULATE GDP

Expenditure & Income Methods

- Expenditure Method – count all new goods & services that are purchased by: consumers, businesses, government, & net exports ($X - M = X_n$)

$$GDP_{Expenditure} = C + I + G + NX$$

Consumption

Investment

Government purchases of goods and services

Net eXports



	Billions of dollars	Percent of GDP
Personal consumption expenditures (C)		
Consumer durables	1026.5	8.2
Nondurable goods	2564.4	20.5
Services	5154.9	41.3
Gross private domestic investment (I)		
Business fixed investment	1329.8	10.6
Nonresidential structures	335.1	2.7
Equipment and software	994.7	8.0
Residential investment	756.3	6.1
Inventory investment	18.9	0.2
Government purchases of goods and services (G)		
Federal	877.7	7.0
National defense	587.1	4.7
Nondefense	290.6	2.3
State and local	1485.2	11.9
Net exports (NX)		
Exports	1301.2	10.4
Imports	2027.7	16.2
Total (equals GDP) (Y)		
<i>Note:</i> Numbers may not add to totals shown owing to rounding.		
<i>Source:</i> Bureau of Economic Analysis Web site, www.bea.gov , Table 1.1.5, May 31, 2006.		



	Billions of dollars	Percent of GDP
Personal consumption expenditures (C)	8745.7	
Consumer durables	1026.5	8.2
Nondurable goods	2564.4	20.5
Services	5154.9	41.3
Gross private domestic investment (I)		
Business fixed investment	1329.8	10.6
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	Billions of dollars	Percent of GDP
Personal consumption expenditures (C)	8745.7	
Consumer durables	1026.5	8.2
Nondurable goods	2564.4	20.5
Services	5154.9	41.3
Gross private domestic investment (I)	2105.0	
Business fixed investment	1329.8	10.6
Nonresidential structures	335.1	2.7
Equipment and software	994.7	8.0
Residential investment	756.3	6.1
Inventory investment	18.9	0.2
Government purchases of goods and services (G)		
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	Billions of dollars	Percent of GDP
Personal consumption expenditures (C)	8745.7	
Consumer durables	1026.5	8.2
Nondurable goods	2564.4	20.5
Services	5154.9	41.3
Gross private domestic investment (I)	2105.0	
Business fixed investment	1329.8	10.6
Nonresidential structures	335.1	2.7
Equipment and software	994.7	8.0
Residential investment	756.3	6.1
Inventory investment	18.9	0.2
Government purchases of goods and services (G)	2362.9	
Federal	877.7	7.0
National defense	587.1	4.7
Nondefense	290.6	2.3
State and local	1485.2	11.9
Net exports (NX)		
Exports	1301.2	10.4
Imports	2027.7	16.2
Total (equals GDP) (Y)		

Note: Numbers may not add to totals shown owing to rounding.

Source: Bureau of Economic Analysis Web site, www.bea.gov, Table 1.1.5, May 31, 2006.



	Billions of dollars	Percent of GDP
Personal consumption expenditures (C)	8745.7	
Consumer durables	1026.5	8.2
Nondurable goods	2564.4	20.5
Services	5154.9	41.3
Gross private domestic investment (I)	2105.0	
Business fixed investment	1329.8	10.6
Nonresidential structures	335.1	2.7
Equipment and software	994.7	8.0
Residential investment	756.3	6.1
Inventory investment	18.9	0.2
Government purchases of goods and services (G)	2362.9	
Federal	877.7	7.0
National defense	587.1	4.7
Nondefense	290.6	2.3
State and local	1485.2	11.9
Net exports (NX)	-726.5	
Exports	1301.2	10.4
Imports	2027.7	16.2
Total (equals GDP) (Y)		

Note: Numbers may not add to totals shown owing to rounding.

Source: Bureau of Economic Analysis Web site, www.bea.gov, Table 1.1.5, May 31, 2006.



	Billions of dollars	Percent of GDP
Personal consumption expenditures (C)	8745.7	70.0
Consumer durables	1026.5	8.2
Nondurable goods	2564.4	20.5
Services	5154.9	41.3
Gross private domestic investment (I)	2105.0	16.9
Business fixed investment	1329.8	10.6
Nonresidential structures	335.1	2.7
Equipment and software	994.7	8.0
Residential investment	756.3	6.1
Inventory investment	18.9	0.2
Government purchases of goods and services (G)	2362.9	18.9
Federal	877.7	7.0
National defense	587.1	4.7
Nondefense	290.6	2.3
State and local	1485.2	11.9
Net exports (NX)	-726.5	-5.8
Exports	1301.2	10.4
Imports	2027.7	16.2
Total (equals GDP) (Y)	12487.1	100.0

Note: Numbers may not add to totals shown owing to rounding.

Source: Bureau of Economic Analysis Web site, www.bea.gov, Table 1.1.5, May 31, 2006.



GDP Components – United States (\$ Billions)

Line		2009 I	2009 II	2009 III	2009 IV	2010 I
1	Gross domestic product					
2	Personal consumption expenditures					
3	Goods	3,197.7	3,193.8	3,292.3	3,337.1	3,406.6
4	Durable goods	1,025.2	1,011.5	1,051.3	1,052.0	1,072.8
5	Nondurable goods	2,172.4	2,182.2	2,241.0	2,285.1	2,333.8
6	Services	6,790.0	6,805.6	6,840.6	6,899.3	6,955.8
7	Gross private domestic investment					
8	Fixed investment	1,817.2	1,737.7	1,712.6	1,731.4	1,726.9
9	Nonresidential	1,442.6	1,391.8	1,353.9	1,366.9	1,371.3
10	Structures	533.1	494.8	457.9	434.1	417.5
11	Equipment and software	909.5	897.0	895.9	932.8	953.9
12	Residential	374.6	345.9	358.8	364.5	355.5
13	Change in private inventories	-127.4	-176.2	-156.5	-23.6	36.9
14	Net exports of goods and services					
15	Exports	1,509.3	1,493.7	1,573.8	1,680.1	1,729.3
16	Goods	989.5	978.1	1,045.2	1,140.6	1,180.0
17	Services	519.8	515.6	528.5	539.6	549.3
18	Imports	1,887.9	1,832.8	1,976.0	2,129.7	2,228.7
19	Goods	1,508.2	1,461.1	1,592.8	1,739.4	1,827.8
20	Services	379.6	371.7	383.1	390.3	400.9
21	Government consumption expenditures and gross investment					
22	Federal	1,106.7	1,138.3	1,164.3	1,170.1	1,186.4
23	National defense	750.7	776.2	795.8	793.5	805.6
24	Nondefense	356.0	362.1	368.5	376.7	380.7
25	State and local	1,772.3	1,791.2	1,791.1	1,789.0	1,788.3

GDP Components – United States (\$ Billions)

Line		2009 I	2009 II	2009 III	2009 IV	2010 I
1	Gross domestic product	14,178.0	14,151.2	14,242.1	14,453.8	14,601.4
2	Personal consumption expenditures	9,987.7	9,999.3	10,132.9	10,236.4	10,362.3
3	Goods	3,197.7	3,193.8	3,292.3	3,337.1	3,406.6
4	Durable goods	1,025.2	1,011.5	1,051.3	1,052.0	1,072.8
5	Nondurable goods	2,172.4	2,182.2	2,241.0	2,285.1	2,333.8
6	Services	6,790.0	6,805.6	6,840.6	6,899.3	6,955.8
7	Gross private domestic investment	1,689.9	1,561.5	1,556.1	1,707.8	1,763.8
8	Fixed investment	1,817.2	1,737.7	1,712.6	1,731.4	1,726.9
9	Nonresidential	1,442.6	1,391.8	1,353.9	1,366.9	1,371.3
10	Structures	533.1	494.8	457.9	434.1	417.5
11	Equipment and software	909.5	897.0	895.9	932.8	953.9
12	Residential	374.6	345.9	358.8	364.5	355.5
13	Change in private inventories	-127.4	-176.2	-156.5	-23.6	36.9
14	Net exports of goods and services	-378.5	-339.1	-402.2	-449.5	-499.4
15	Exports	1,509.3	1,493.7	1,573.8	1,680.1	1,729.3
16	Goods	989.5	978.1	1,045.2	1,140.6	1,180.0
17	Services	519.8	515.6	528.5	539.6	549.3
18	Imports	1,887.9	1,832.8	1,976.0	2,129.7	2,228.7
19	Goods	1,508.2	1,461.1	1,592.8	1,739.4	1,827.8
20	Services	379.6	371.7	383.1	390.3	400.9
21	Government consumption expenditures and gross investment	2,879.0	2,929.4	2,955.4	2,959.2	2,974.7
22	Federal	1,106.7	1,138.3	1,164.3	1,170.1	1,186.4
23	National defense	750.7	776.2	795.8	793.5	805.6
24	Nondefense	356.0	362.1	368.5	376.7	380.7
25	State and local	1,772.3	1,791.2	1,791.1	1,789.0	1,788.3

EXPENDITURE APPROACH FOR 1 PRODUCT ECONOMY

Roaster

Wages \$15,000

Taxes \$5,000

Revenue \$35,000

beans sold to public \$10,000

beans sold to coffee bar \$25,000

Coffee bar

Wages \$10,000

Taxes \$2,000

Beans bought from roaster \$25,000

Revenue from coffee sold to public \$40,000

Total expenditure = Consumption Expenditures = Beans purchased by public + Coffee purchased by public = \$10,000 + \$40,000 = **\$50,000**

final goods.



EXPENDITURE APPROACH FOR 1 PRODUCT ECONOMY

Winegrower

Wages \$20,000

Taxes \$7,000

Revenue \$50,000

sold to public \$20,000

sold to wine-maker \$30,000

Wine-maker

Wages \$18,000

Taxes \$8,000

Total expenditure = Consumption Expenditures = Grapes purchased

by public + Wine purchased by public = 20 000 + 40 000 = **60 000**

Revenue from wine sold to public \$40,000

final goods.



PRODUCT APPROACH

- GDP is the sum of the value added created in all the sectors of the economy.
- Value added is sales minus materials, intermediate inputs and energy costs.
- The value of a final good is equal to the value added at each stage of production.
- Expenditure method = Production Method



PRODUCT APPROACH FOR 1 PRODUCT ECONOMY

Roaster

Wages \$15,000

Taxes \$5,000

Revenue \$35,000

beans sold to public \$10,000

beans sold to coffee bar \$25,000

Coffee bar

Value Added – revenue earned by selling products minus the amount paid for

intermediate goods

Wages \$10,000

Taxes \$2,900

Beans bought from roaster \$25,000

Revenue from coffee sold to public \$40,000

Roaster value added = \$35,000 in revenue - \$0 spent on intermediate goods = \$35,000

Coffeebar value added = \$40,000 in revenue - \$25,000 spent on intermediate goods (beans) = \$15,000

Total value added = **\$50,000**



EXPENDITURE APPROACH FOR 1 PRODUCT ECONOMY

Winegrower

Wages \$20,000

Taxes \$7,000

Revenue \$50,000

sold to public \$20,000

sold to wine-maker \$30,000

Wine-maker

Wages \$18,000

Winegrower value added = 50 000 in revenue – 0 spent on

intermediate goods = 50 000

Taxes \$8,000

Grapes from winegrower = \$30,000

Wine-maker value added = 40 000 in revenue – 30 000 spent on

intermediate goods (beans) = 10 000

Revenue from wine sold to public \$40,000

Total value added = 50 000 + 10 000 = **60 000**



INCOME METHOD

- Income Method – count all earnings received by those who produce the goods & services
- Workers, owners of property, interest earned on savings, profit earned by business owners (proprietors, partners & corporation stockholders)

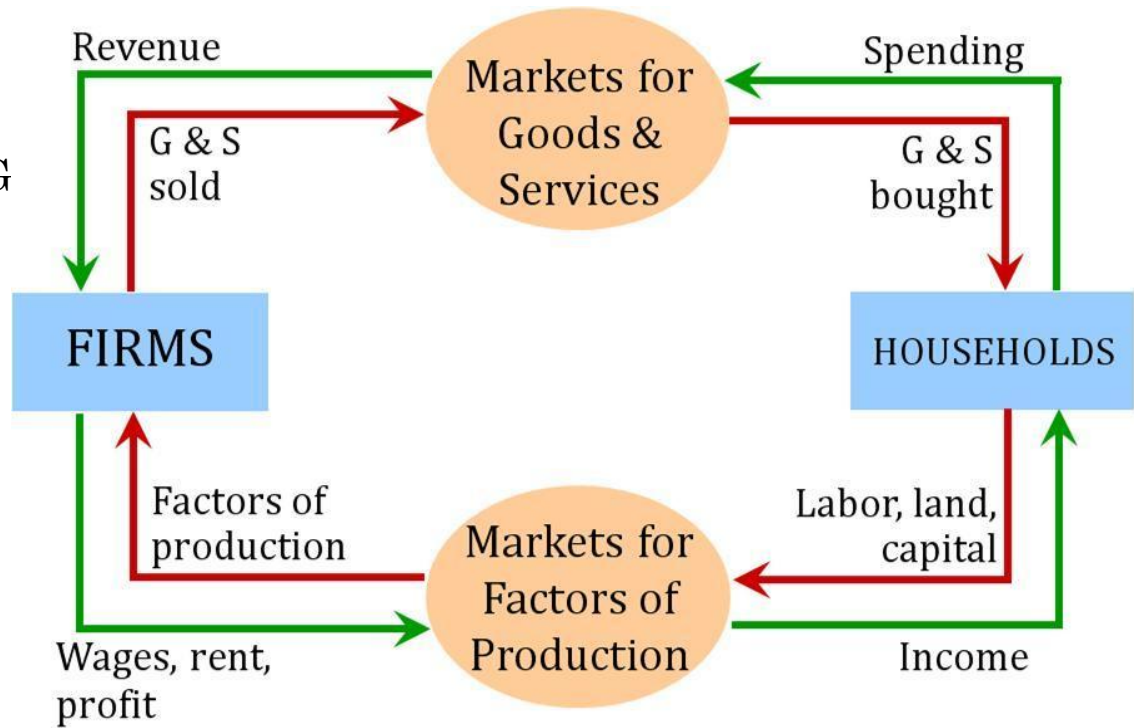
*Requires some accounting adjustments => Expenditures =
Income (must balance)*

*National income => all citizens supplied resources (here &
abroad)*

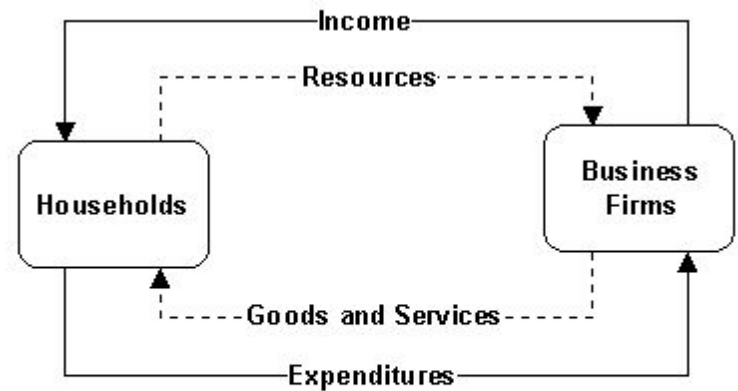
National Income + **statistical discrepancy** =
Net National Product



- Consumption (C)
- Investment (I)
- Government purchases (G)
- Exports (X)
- Imports (M)
- Taxes (T)
- Saving (S)



- $(I - S) + (G - T) + (X - M) = 0$

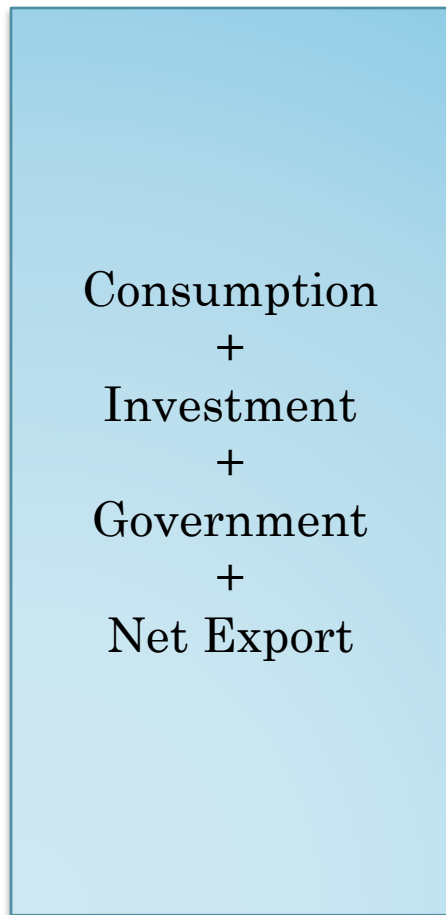


Solid Lines - Flow of Money
Dashed Lines - Flow of Goods and Services

Compensation of Fixed Capital = Depreciation (costs of capital over its lifetime)

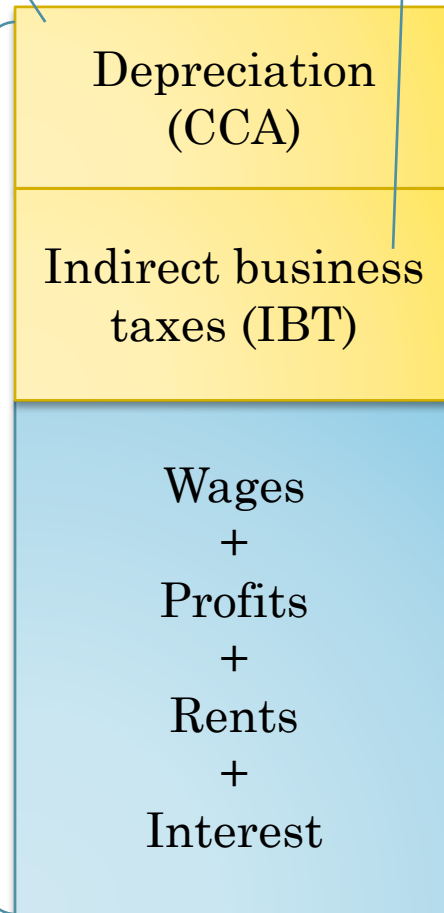
Sales, excise, property, customs duties, license fees, etc

W - employee compensation (wages)
P - profits received by proprietors & corporation owners (income taxes, dividends, & undistributed profits (retained earnings))
R - rent received for use of property
I - Interest received for use of money



Expenditure approach

GDP in market prices



Income approach

National income



	Billions of dollars	Percent of GDP
Compensation of employees	7113	57.0
Proprietor's income	939	7.5
Rental income of persons	73	0.6
Corporate profits	1352	10.8
Net interest	498	4.0
Taxes on production and imports	848	6.8
Business current transfer payments	80	0.6
Current surplus of government enterprises	-11	-0.1
Total (equals National Income)		
Plus Statistical discrepancy	55	0.4
Equals Net National Product (NNP)		
Plus Consumption of fixed capital	1574	12.6
Equals Gross National Product (GNP)		
Less Factor income received from rest of world	508	4.1
Plus Payments of factor income to rest of world	474	3.8
Equals Gross Domestic Product (GDP)		

Note: Numbers may not add to totals shown owing to rounding.
Source: Bureau of Economic Analysis Web site, www.bea.gov, Tables 1.7.5 and 1.12, May 31, 2006.

NFIA = Factor income earned from abroad by residents - Factor income of non-residents in domestic territory

	Billions of dollars	Percent of GDP
Compensation of employees	7113	57.0
Proprietor's income	939	7.5
Rental income of persons	73	0.6
Corporate profits	1352	10.8
Net interest	498	4.0
Taxes on production and imports	848	6.8
Business current transfer payments	80	0.6
Current surplus of government enterprises	-11	-0.1
Total (equals National Income)	10892	87.2
<i>Plus</i> Statistical discrepancy	55	0.4
<i>Equals</i> Net National Product (NNP)	10947	87.7
<i>Plus</i> Consumption of fixed capital	1574	12.6
<i>Equals</i> Gross National Product (GNP)	12521	100.3
<i>Less</i> Factor income received from rest of world	508	4.1
<i>Plus</i> Payments of factor income to rest of world	474	3.8
<i>Equals</i> Gross Domestic Product (GDP)	12487	100.0

Note: Numbers may not add to totals shown owing to rounding.

Source: Bureau of Economic Analysis Web site, www.bea.gov, Tables 1.7.5 and 1.12, May 31, 2006.

INCOME APPROACH FOR 1 PRODUCT ECONOMY

Roaster

Wages \$15,000

Taxes \$5,000

Revenue \$35,000

beans sold to public \$10,000

beans sold to coffee bar \$25,000

Note: profit = revenue - expenses

Coffee bar

Total wages: \$15,000 + \$10,000 = \$25,000

Wages \$10,000

Total taxes: \$5,000 + \$2,000 = \$7,000

Taxes \$2,000

Beans bought from roaster \$25,000

Roaster profit = Revenue - Expenses = \$35,000 - (\$15,000 in wages +

\$5,000 in taxes) = \$15,000

Revenue from coffee sold to public \$40,000

Coffeebar profit = Revenue - Expenses = \$40,000 - (\$10,000 in wages +

\$2,000 in taxes + \$25,000 in beans) = \$3,000

Total profit = \$15,000 + \$3,000 = \$18,000.

Total income = Total Wages + Total Taxes + Total Profits = \$25,000 +

\$7,000 + \$18,000 = **\$50,000**



INCOME APPROACH FOR 1 PRODUCT ECONOMY

Winegrower

Wages \$20,000

Taxes \$7,000

Revenue \$50,000

sold to public \$20,000

sold to wine-maker \$30,000

Wine-maker

Wages \$18,000
Total wages = 20 000+18 000 = 38 000

Taxes \$8,000
Total taxes = 7 000+8 000 = 15 000

Grapes from winegrower \$30,000

Revenue from wine sold to public \$40,000
Profit (winegrower) = 50 000 - (20 000+7 000) = 23 000

Profit (wine-maker) = 40 000 - (18 000+8 000+30 000) = -16 000

Total revenue = 23 000 - 16 000 = 7 000

Total income = 38 000+15 000+7 000 = **60 000**



GDP – BY SUM OF SPENDING, FACTOR INCOMES OR OUTPUT

GDP (Expenditure) (known as aggregate demand)

- Consumption
- Government spending
- Investment spending
- Exports
- - Imports

GDP (factor incomes)

- Income from people in jobs and self-employment
- Profits of private sector of businesses
- Rent income from the ownership of land

GDP (Product) (value of output)

- Value added from each of the main economic sectors
- These sectors are:
 - Primary
 - Secondary
 - Tertiary
 - Quaternary

Summary National Income and Product Accounts, 2012

[Billions of dollars]

Account 1. Domestic Income and Product Account

Line		Line		
1	Compensation of employees, paid.....	8,618.5	15 Personal consumption expenditures (3-3)	11,050.6
2	Wages and salaries	6,938.9	16 Goods.....	3,739.1
3	Domestic (3-12).....	6,924.0	17 Durable goods	1,191.9
4	Rest of the world (5-15).....	14.9	18 Nondurable goods	2,547.2
5	Supplements to wages and salaries (3-14)	1,679.6	19 Services	7,311.5
6	Taxes on production and imports (4-15).....	1,132.1	20 Gross private domestic investment.....	2,511.7
7	Less: Subsidies (4-8)	58.0	21 Fixed investment (6-2)	2,449.9
8	Net operating surplus.....	4,131.7	22 Nonresidential.....	2,007.7
9	Private enterprises (2-19).....	4,151.0	23 Structures.....	448.0
10	Current surplus of government enterprises (4-28)	-19.3	24 Equipment	937.9
11	Consumption of fixed capital (6-14).....	2,534.2	25 Intellectual property products.....	621.7
12	Gross domestic income	16,358.5	26 Residential.....	442.2
13	Statistical discrepancy (6-20).....	-203.3	27 Change in private inventories (6-4)	61.8
			28 Net exports of goods and services	-565.7
			29 Exports (5-1)	2,198.2
			30 Imports (5-13).....	2,763.8
			31 Government consumption expenditures and gross investment (4-1 plus 6-3).....	3,158.6
			32 Federal.....	1,292.5
			33 National defense.....	817.8
			34 Nondefense	474.7
			35 State and local	1,866.1
14	Gross domestic product	16,155.3	36 Gross domestic product	16,155.3

The first account displays the expenditure and income approaches to measuring GDP. The **right-hand side** of the account shows the final expenditures by consumers, private business, governments and foreigners. The **left-hand side** of the account shows the incomes that are generated in the production of that output.

GDP (BEA COMMENTARIES)

- The entries on the **right side** of account 1 show the approach used by BEA for deriving GDP: It is measured using the expenditures approach – that is, as the sum of purchases by final users.
- The **left (income) side** – the sum of all the incomes earned and costs incurred in production.
- Specifically, the left side shows GDI as the sum of the income earned by labor, governments and entrepreneurs and the consumption of fixed capital.
- In theory, **GDI should be equal to GDP**. In practice, differences in the source data used to estimate the two measures result in a “statistical discrepancy,” which, in the NIPAs (national income and product accounts), is calculated as GDP less GDI.
- Because the source data used to develop the product-side estimates of the account are based on more comprehensive surveys and censuses, BEA considers them more reliable. Therefore, the statistical discrepancy appears as a component on the income side of the account to equate GDI with GDP.



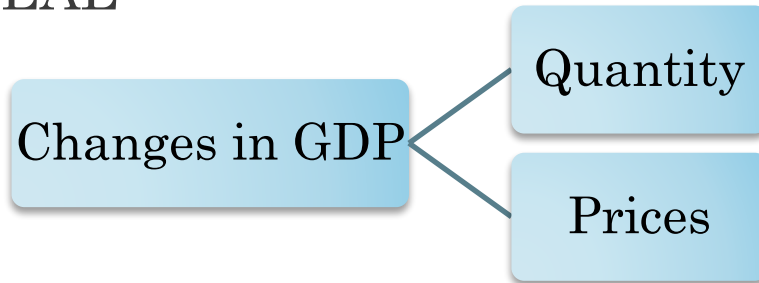
US GDP FROM AGRICULTURE



US GDP FROM PRIVATE SERVICES PRODUCING INDUSTRIES



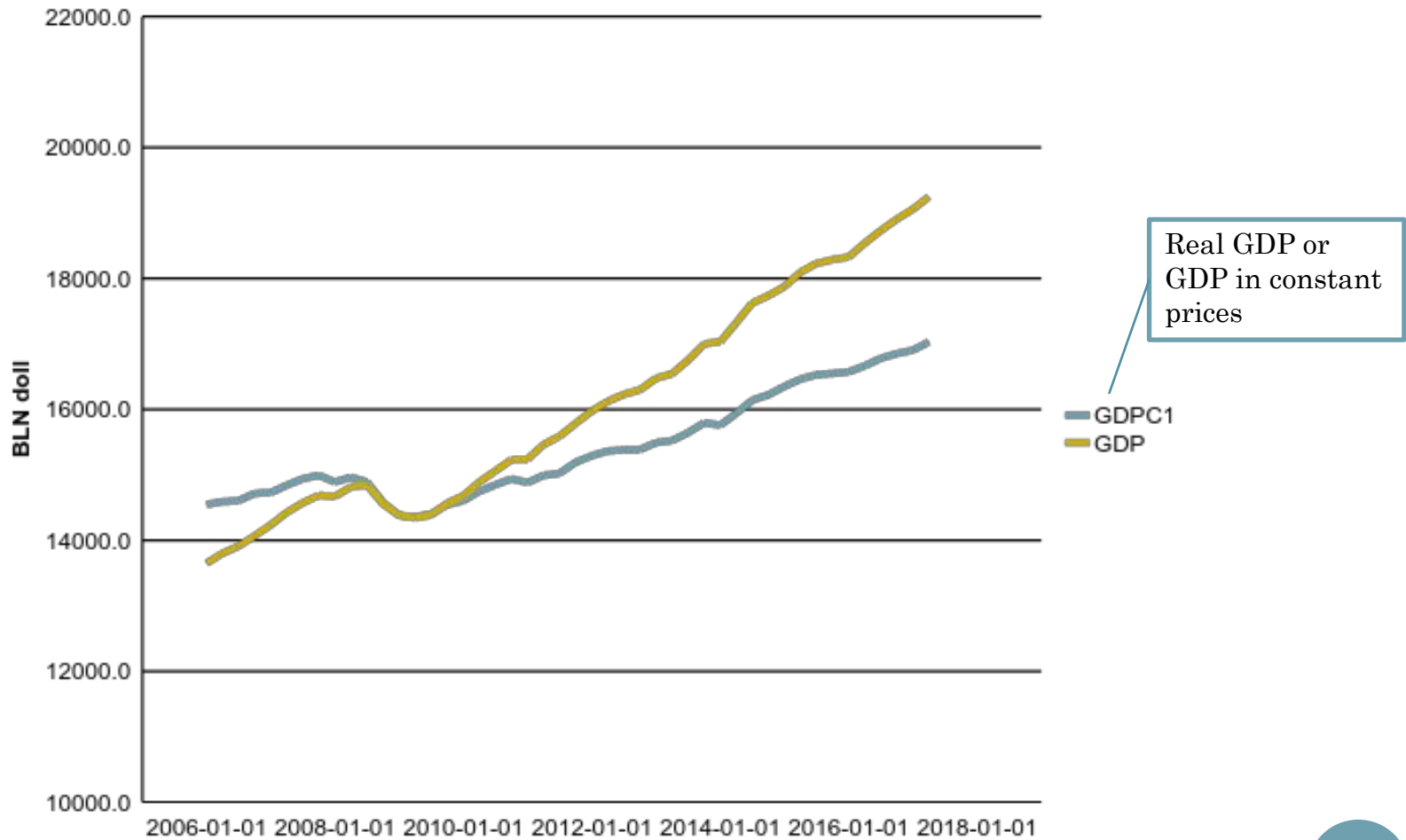
GDP – NOMINAL VS. REAL

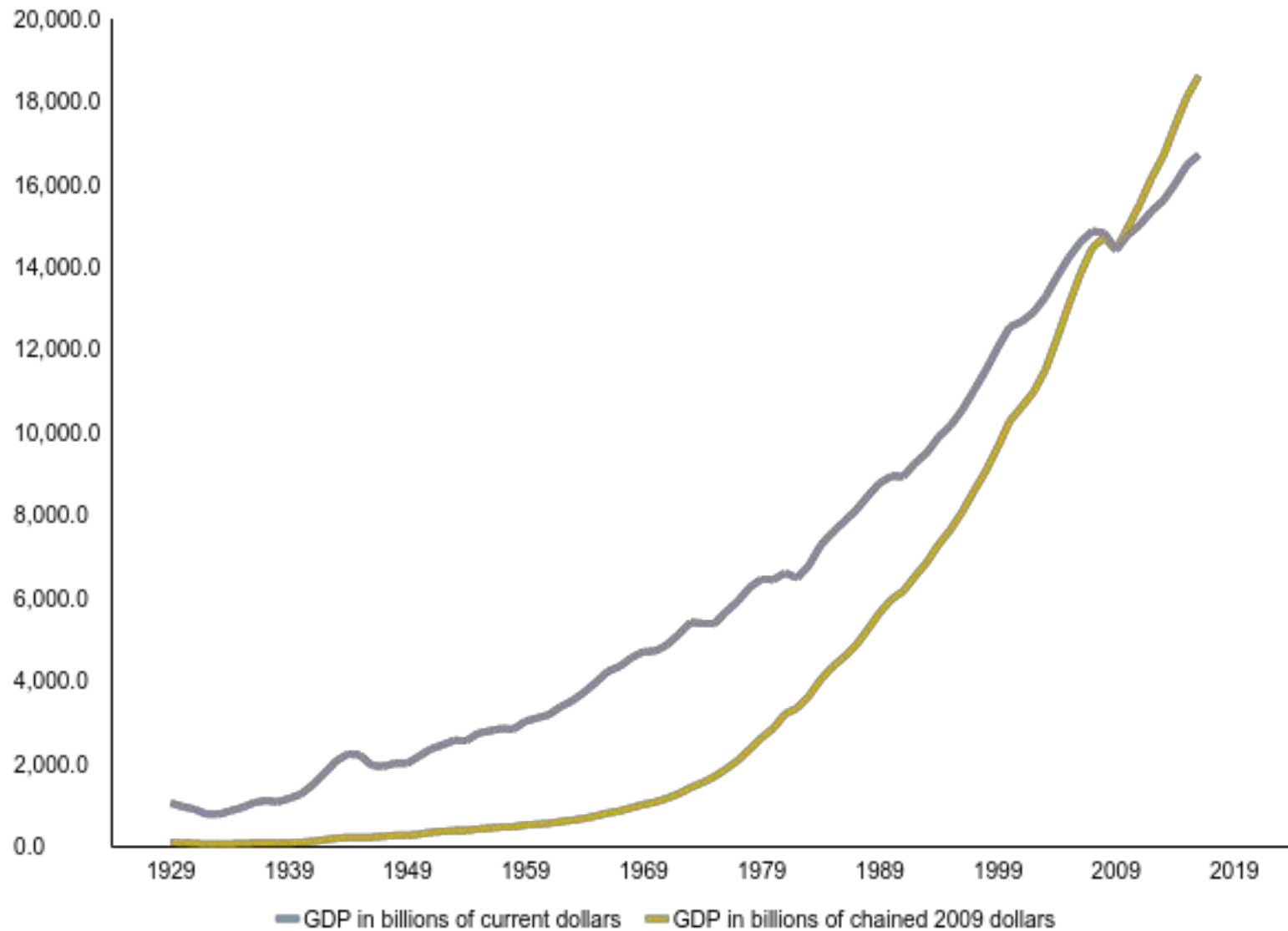


- Nominal = current year prices
- Real = prices adjusted for inflation
 - Nominal > Real (in the most cases)
 - *Nominal GDP is used when comparing different quarters of output within the same year. When comparing the GDP of two or more years, real GDP is used because, by removing the effects of inflation, the comparison of the different years focuses solely on volume.*



USA GDP NOMINAL AND REAL





EXAMPLE

Based year

Year	Price of cheese	Quantity of Cheese	Price of Wine	Quantity of Wine
2010	\$5	2 Blocks	\$10	4 bottles
2011	\$12	3 Blocks	\$17	3 bottles
2012	\$ 12	4 Blocks	\$20	3 bottles

$$\text{Nominal GDP} = P^{\text{cheese}} * Q^{\text{cheese}} + P^{\text{wine}} * Q^{\text{wine}}$$

$$\text{Nominal GDP}^{2010} = 5 * 2 + 10 * 4 = 50$$

$$\text{Nominal GDP}^{2011} = 12 * 3 + 17 * 3 = 87$$

$$\text{Nominal GDP}^{2012} = 12 * 4 + 20 * 3 = 108$$

$$\text{Real GDP} = P^{\text{cheese}2010} * Q^{\text{cheese}} + P^{\text{wine}2010} * Q^{\text{wine}}$$

$$\text{Real GDP}^{2010} = 5 * 2 + 10 * 4 = 50$$

$$\text{Real GDP}^{2011} = 5 * 3 + 10 * 3 = 45$$

$$\text{Real GDP}^{2012} = 5 * 4 + 10 * 3 = 50$$

$$\text{Real GDP grow} = (\text{Real GDP}^{2011} - \text{Real GDP}^{2010}) / \text{Real GDP}^{2010}$$

$$\text{Real GDP grow}^{2011-2010} = (45 - 50) / 50 = -0.1$$

$$\text{Real GDP grow}^{2011-2012} = (50 - 45) / 50 = 0.1$$

$$\text{Nominal GDP grow}^{2011-2010} = (87 - 50) / 50 = 0.74$$

$$\text{Nominal GDP grow}^{2011-2012} = (108 - 87) / 87 = 0.24$$

US GDP ANNUAL GROWTH RATE



SOURCE: TRADINGECONOMICS.COM | U.S. BUREAU OF ECONOMIC ANALYSIS

$$r = \left[\left(\frac{GDP_t}{GDP_0} \right)^{m/n} - 1 \right] \times 100$$

where

GDP_t is the level of activity in the later period;

GDP_0 is the level of activity in the earlier period;

m is the periodicity of the data (for example, 1 for annual data, 4 for quarterly data, or 12 for monthly data); and

n is the number of periods between the earlier period and the later period (that is $t-0$).



DEFLATOR GDP

- GDP deflator is an index of the price level relative to some base year.
- It is the cost of purchasing the goods that represent GDP relative to the cost of purchasing the exact same goods if they had been sold at the prices prevailing in the base year

CONSUMER PRICE INDEX

- The CPI is a measure that examines the weighted average of prices of a basket of consumer goods and services
- Price index in the base year is always 100



Total amount of money on GDP (raw data)

$$\text{GDP deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100\%$$

Corrects the value of Nominal GDP for inflation

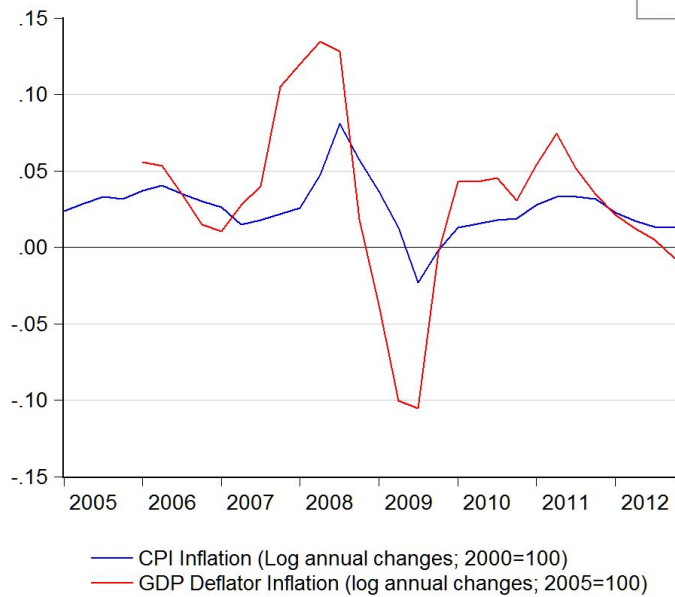
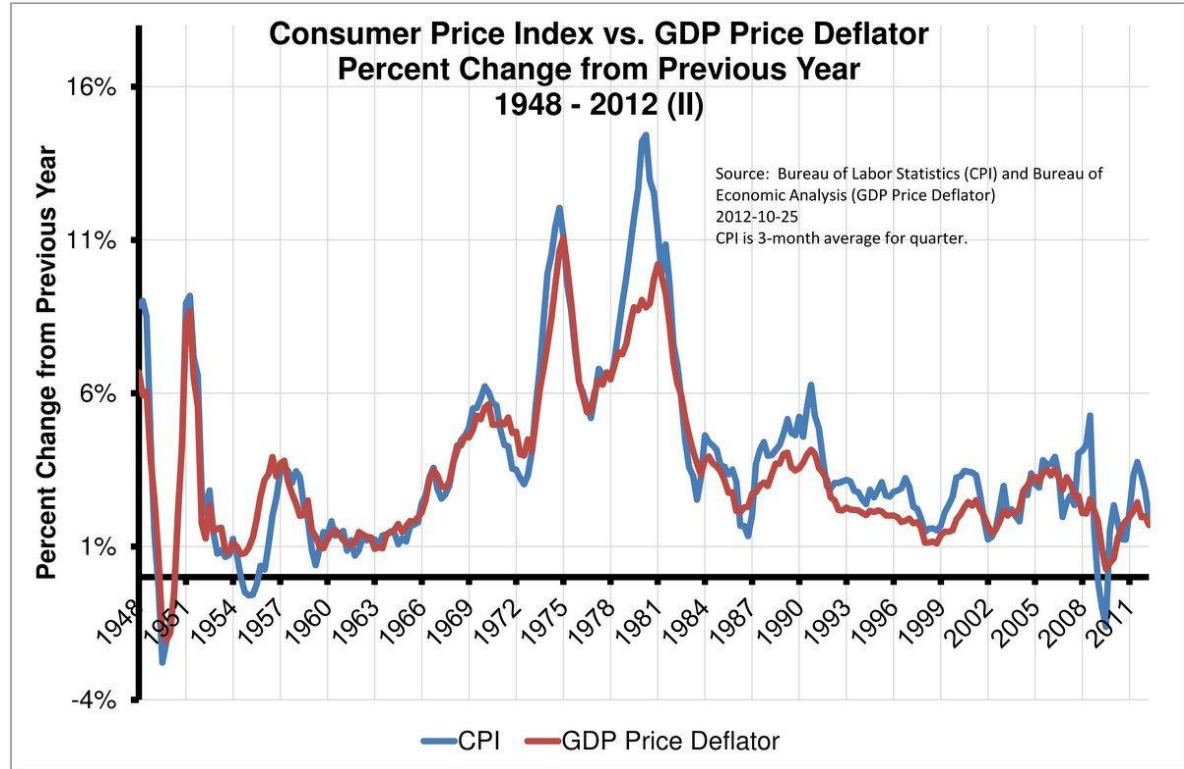
GDP Deflator	CPI
Reflected the prices of all goods and services <i>produced domestically</i>	Reflect the prices of a <i>representative basket</i> of all goods and services <i>bought by the consumers</i>
Compare the price of currently produced goods and services to the price of the same goods and services in the base year	Compares the price of a fixed basket of goods and services to the price of the basket in the base year



WHAT IS THE RELATIONSHIP BETWEEN GDP DEFLATOR & CPI?

- Both GDP deflator and CPI are measures of inflation.
- GDP deflator measures price level but will focus more on all new, domestically produced, final goods and services in an economy
- CPI is the measure of changes in the price level of consumer goods purchased by households over time.
- CPI uses a fixed basket to compare prices in determining inflation progress. GDP deflator uses the price of the currently produced product relative to the price from the base year.





Malaysia



EXAMPLE

	Quantities in Basket	2010 prices (base)	2012 prices
Cheese	1	5	12
Wine	2	10	20

Deflator GDP²⁰¹⁰ = (Nominal GDP²⁰¹⁰/Real GDP²⁰¹⁰) × 100 = (50/50) × 100 = 100

Deflator GDP²⁰¹² = (108/50) × 100 = 216

Inflation = [(Def GDP²⁰¹² - Def GDP²⁰¹⁰) / Def GDP²⁰¹⁰] × 100 = [(216 - 100) / 100] × 100 = 116

The value of this market basket in the base year :

$$5 \times 1 + 10 \times 2 = 25$$

The value of the market basket in the year 2012 :

$$12 \times 1 + 20 \times 2 = 52$$

CPI²⁰¹² = (52/25) × 100 = 208

To convert a nominal value to a real value:

So a Television that cost \$100 in 2012 would cost \$48 ([100/208] × 100 = 48) (CPI) or \$46.3 ([100/216] × 100 = 46.3) (Deflator GDP) in 2010

Real GDP_{2012 in 2010 dollars} = 50 × (100/216) = 23.14



INFLATION

- Define Inflation as the growth rate of prices.
- The greek letter π is often used as a symbol of inflation

Inflation means that prices are growing

Disinflation means that inflation is slowing down but still positive

Deflation means that inflation is negative and prices are actually dropping.

$$1 + \pi_t \equiv \frac{P_t}{P_{t-1}}$$

$$\pi_t = \frac{P_t - P_{t-1}}{P_{t-1}}$$

$$\text{Inflation Rate} = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100\%$$





MACROECONOMICS

GDP / BUSINESS CYCLE

UNEMPLOYMENT

Zharova Liubov

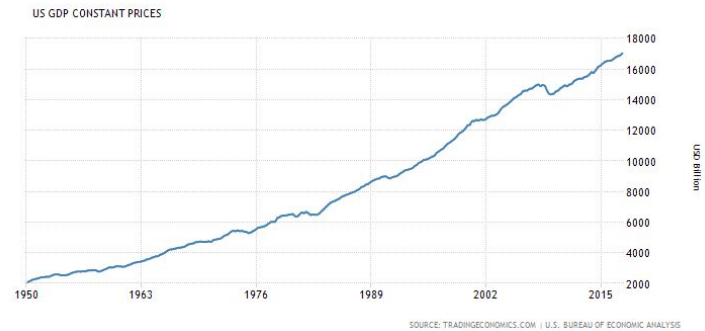
EXAMPLE

- In 1966, Howard Hughes was forced to sell TWA (trans world airlines) and received a single check for US\$650 million. How much is that in 2004 dollars?
- The GDP deflator in USA in 1966 was 22.855. The deflator in 2004 was 107.958.
- In 2004 dollars this is

$$650 \cdot \frac{P_{2004}}{P_{1966}} = 650 \cdot \frac{107.958}{22.855} = 3044.63294$$



TRENDS AND CYCLES

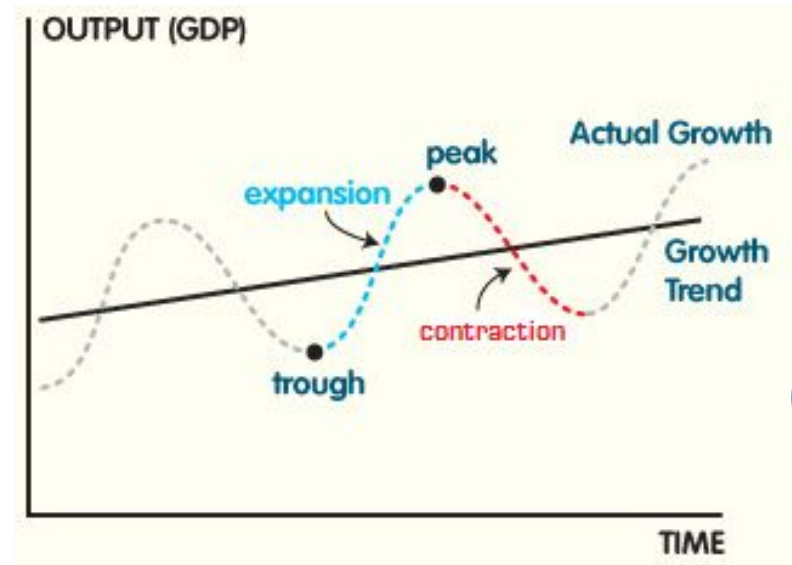


- We observe that real GDP is growing over time but at a non-constant rate.
- We call the growth path, if the economy were always growing at its average rate, the trend path.
- Fluctuations around the trend are called business cycles.

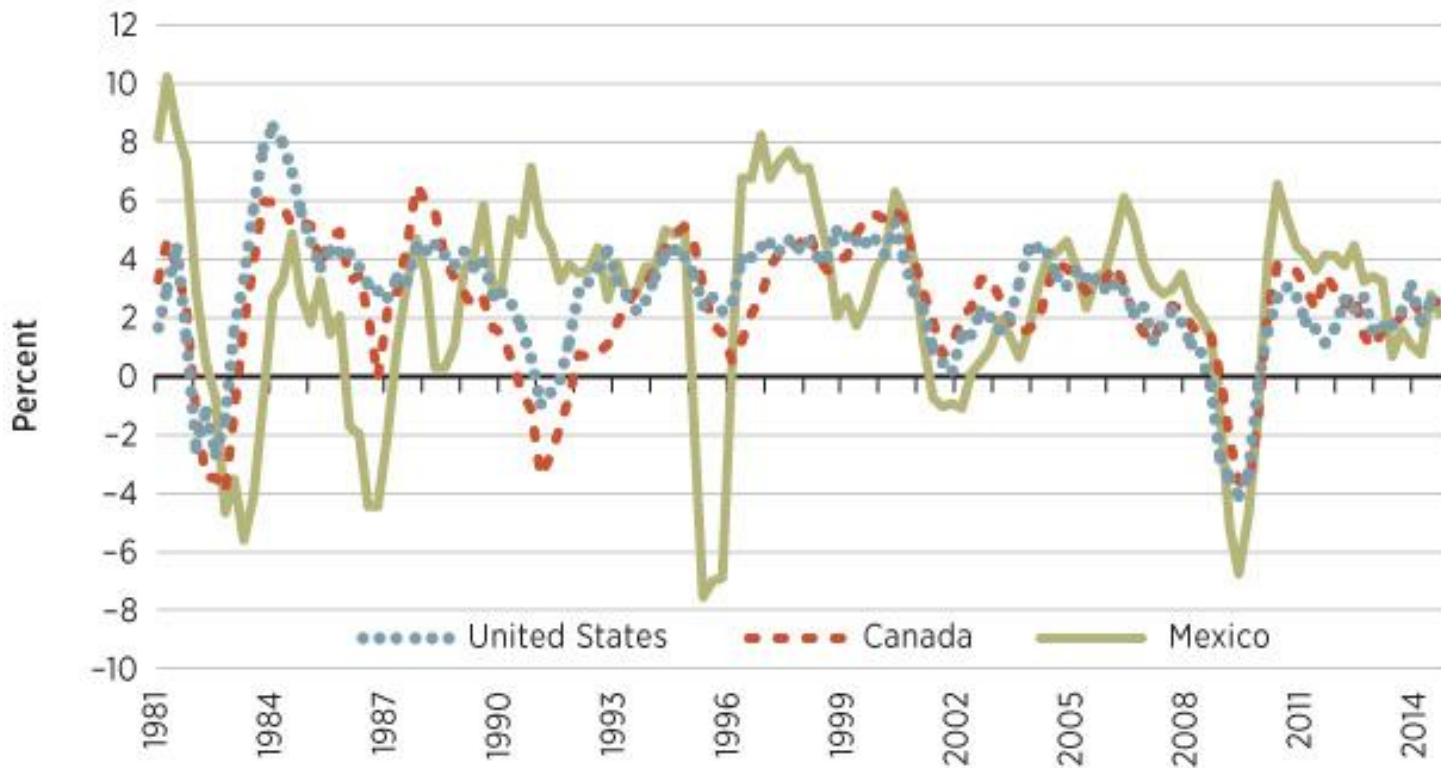


BUSINESS CYCLE TERM

- As the economy fluctuates around the trend, the economy is experiencing business cycles.
- When economy is moving from a peak level to trough level, the economy is in a *contractionary* phase.
- When economy is moving from trough to peak, the economy is in an *expansionary* phase.
- When economy is moving from peak to trough the economy is in a contractionary phase



An Example of How Countries' Business Cycles Can Become Correlated



SOURCE: Organization for Economic Cooperation and Development.

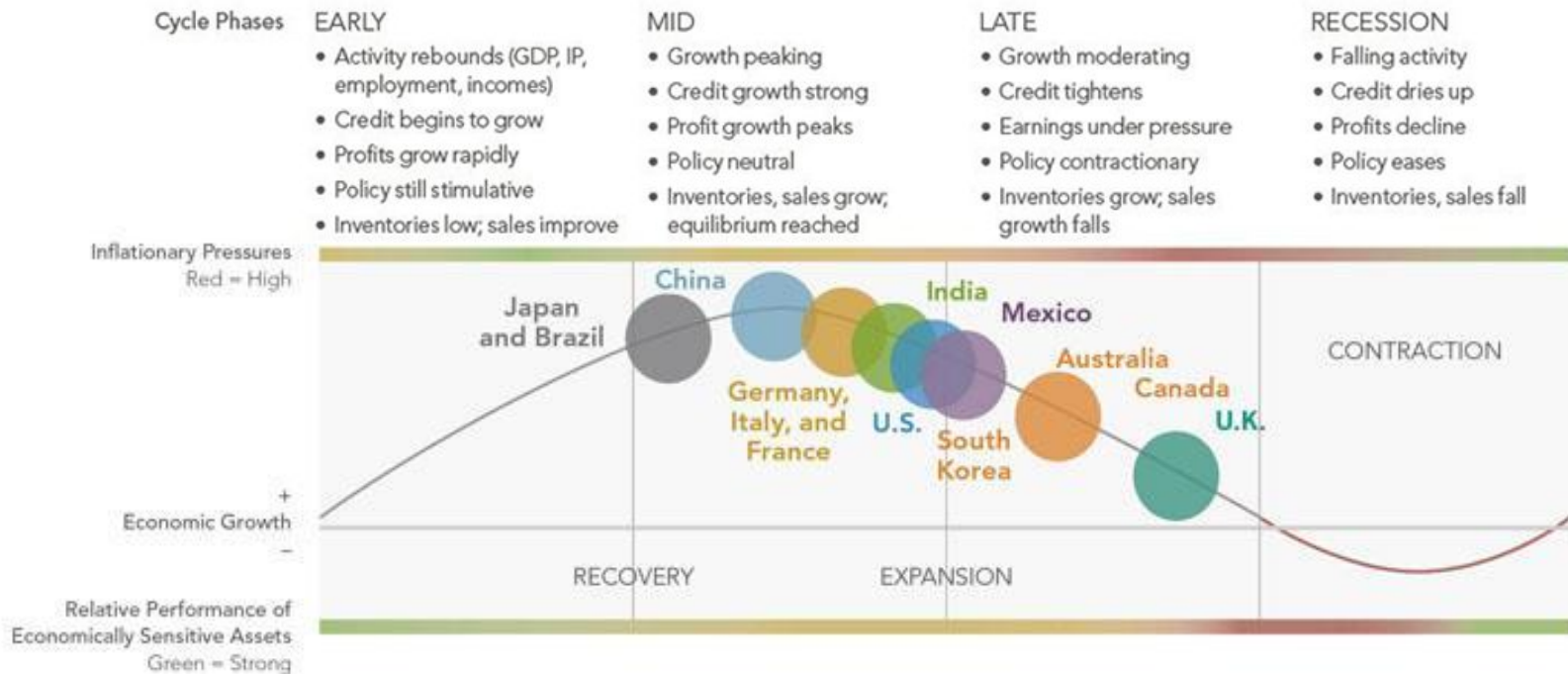
■ FEDERAL RESERVE BANK OF ST. LOUIS

The correlation of business cycles implies that groups of countries are in the same phase for stretches of time. An example of this can be seen in the figure, which shows the annual gross domestic product (GDP) growth rates in the United States, Canada and Mexico from 1981 through 2014. Notice that U.S. and Canadian data moved similarly over the past 30 or so years. In the past decade, the Mexican economy also fell into sync: The correlation between U.S. and Mexico increased by over 100 percent.

NORTH AMERICAN FREE TRADE AGREEMENT (NAFTA)

- It is a piece of regulation implemented January 1, 1994 simultaneously in Mexico, Canada and the United States that eliminates most tariffs on trade between these nations.
- The essence of a free trade measure, NAFTA's purpose is to encourage economic activity between the three major economic powers of North America.
- NAFTA has two supplements: the North American Agreement on Environmental Cooperation (NAAEC) and the North American Agreement on Labor Cooperation (NAALC).
- About 1/4 of all U.S. imports (especially crude oil, machinery, gold, vehicles, fresh produce, livestock and processed foods) comes from Canada and Mexico, which are the United States' second- and third-largest suppliers of imported goods. In addition, about one-third of U.S. exports, particularly machinery, vehicle parts, mineral fuel/oil and plastics are destined for Canada and Mexico.





Note: The diagram above is a hypothetical illustration of the business cycle. There is not always a chronological, linear progression among the phases of the business cycle, and there have been cycles when the economy has skipped a phase or retraced an earlier one. Source: Fidelity Investments (AART), as of Sep. 15, 2017.

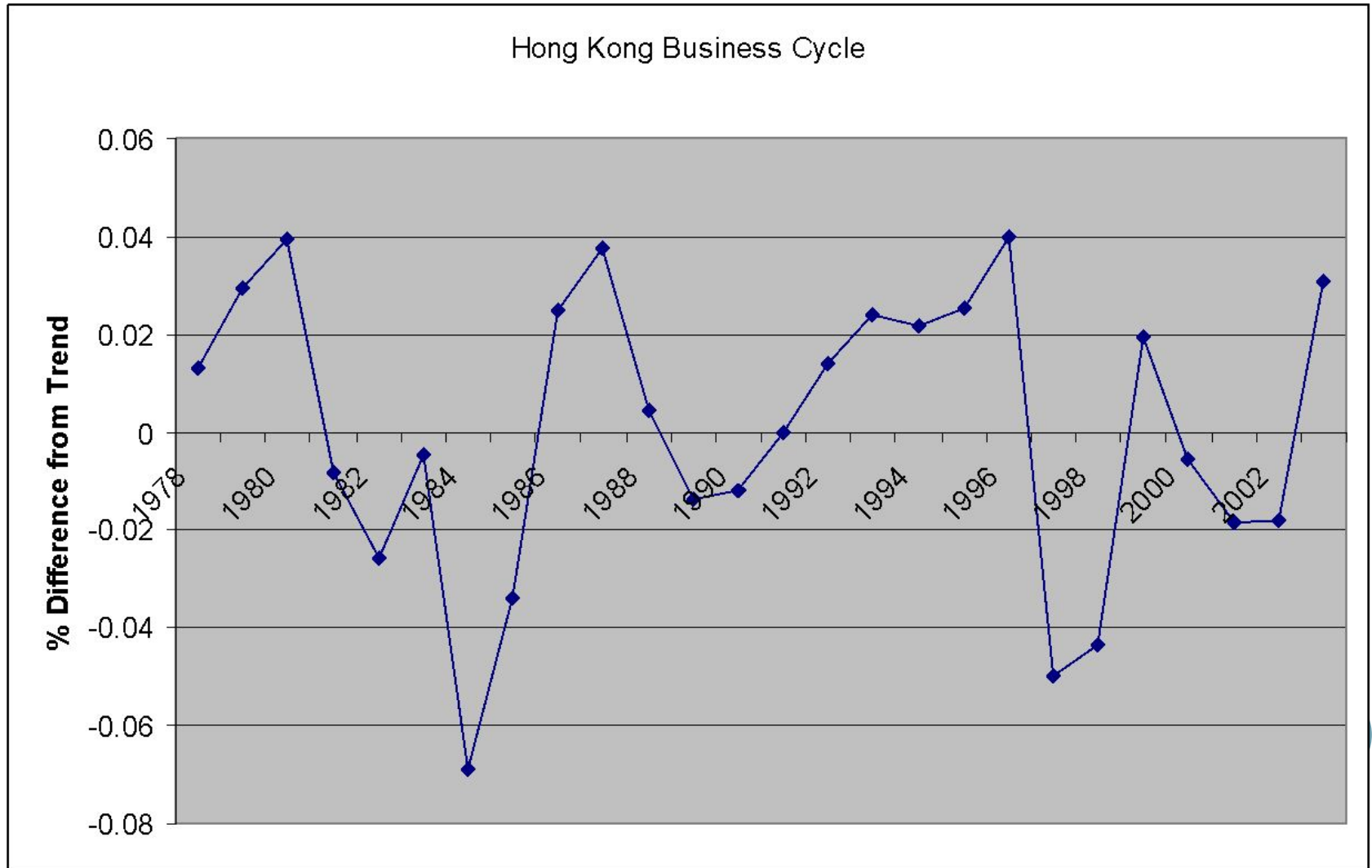
- The global expansion remains relatively steady and synchronized across major economies.
- Broadly speaking, most developed economies have low recession risk and are in more mature (mid-to-late) stages of the business cycle.
- The Eurozone is not as far along as the U.S. in the cycle, and it continues to benefit from improving sentiment and credit conditions.
- China's activity has rebounded to multiyear highs, but policy tightening and slowing momentum in industrial activity and housing suggest that most of the upside has already occurred.
- Overall, the global expansion is on firm ground, but peak activity levels have probably already been reached.

RECESSION AND BOOMS

- Business cycle positions are sometimes characterized as booms and recessions.
- These names have many definitions
 - a boom occurs roughly when real output is above the trend growth path (detrended output is positive).
- A recession occurs roughly when real output is below trend growth.
 - In the USA, recessions are sometimes defined as 2 consecutive periods of negative growth.



HONG KONG BUSINESS CYCLE



BUSINESS CYCLES & CO-MOVEMENT

- Business cycles are fluctuations in the economy as a whole.
- Different sub-categories of GDP tend to co-move with business cycles though to different degree.
- Business cycles tend to co-move across countries though not as strongly as within countries.

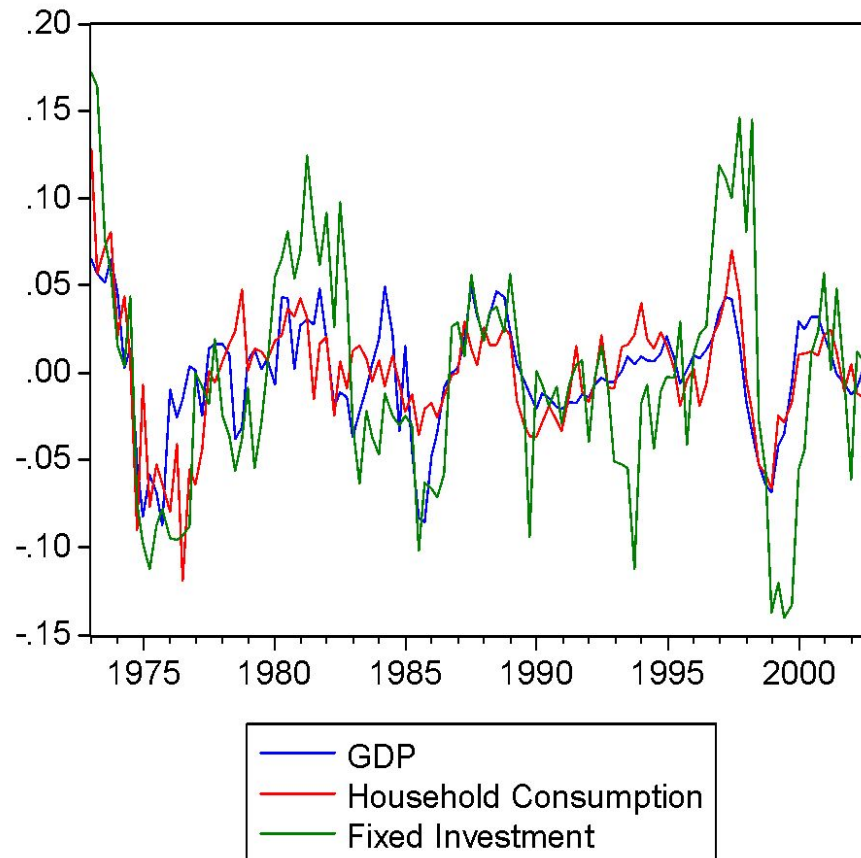


BUSINESS CYCLES & SUB-CATEGORIES

- **Expenditure**. Consumption and Investment co-move with output. Investment is more volatile than consumption. Consumer durables are most volatile part of consumption.
- **Production** – Production sectors co-move with business cycles. Manufacturing & Construction most volatile. Services least volatile.
- **Income** – Worker Compensation & Capital Income are both pro-cyclical. Capital Income tends to be more volatile.

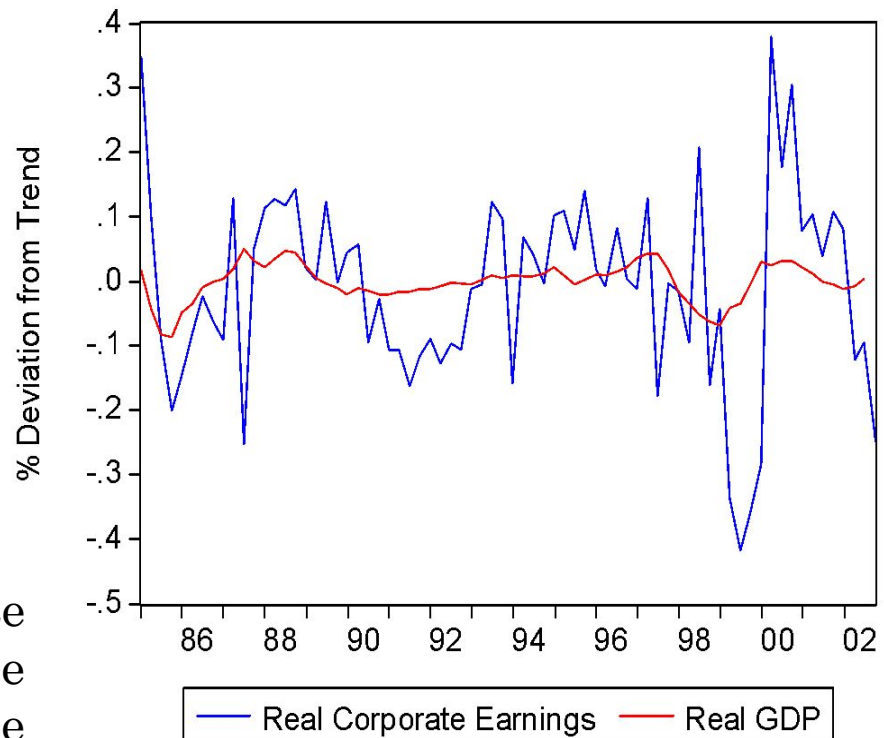


HONG KONG EXPENDITURE CYCLE



CORPORATE PROFITS

- Corporate profits are strongly pro-cyclical and volatile.
- When the economy is doing well, corporations tend to earn high real profits.
- Corporate profits fluctuate far more than the economy as a whole

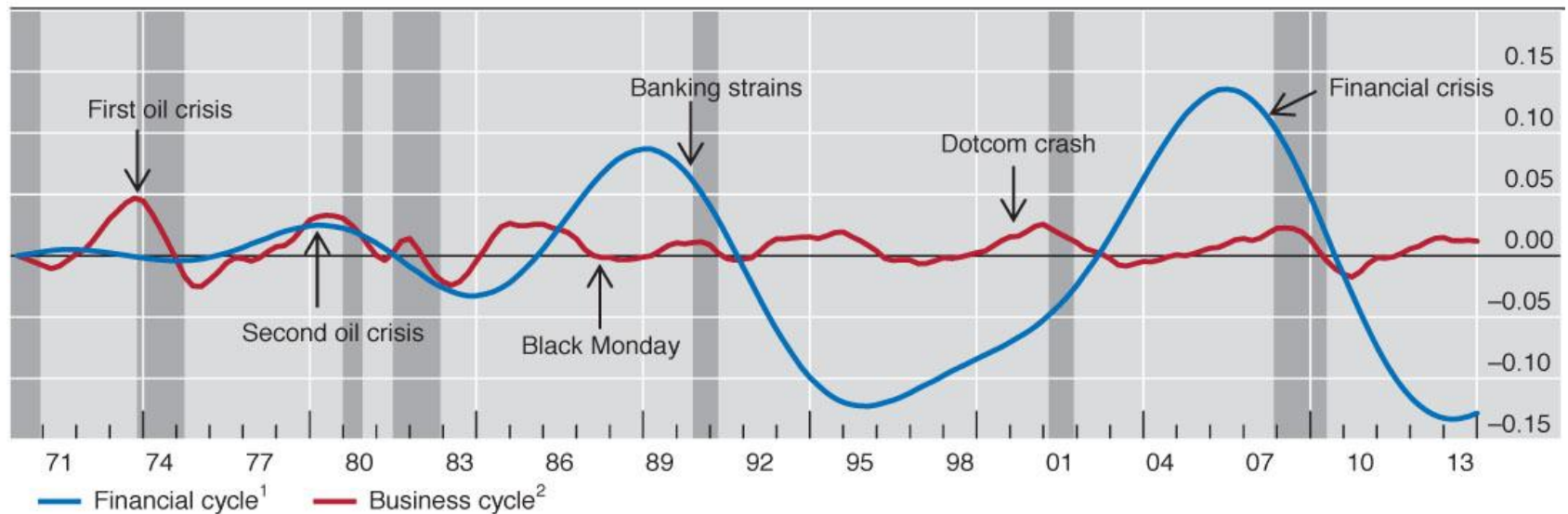


HK Corporate Earnings & the Business Cycle

USING FINANCIAL MARKET DATA TO PREDICT BUSINESS CYCLES

- It has been joked that stock markets have predicted 7 out of the last 5 recession.
(In fact there does seem to be a moderately strong, positive correlation between cyclical variation in stock prices and business cycles)
- In the USA, some financial market indicators have been shown to predict business cycles.
 - Default Spread : Interest rates on lower rated bonds vs. Interest rates on better rated bonds.
 - Term Spread: Interest rates on long-term bonds vs. short-term bonds (when this is inverted, recession is likely)





¹ The financial cycle as measured by frequency-based (bandpass) filters capturing medium-term cycles in real credit, the credit-to-GDP ratio and real house prices. ² The business cycle as measured by a frequency-based (bandpass) filter capturing fluctuations in real GDP over a period from one to eight years.

Source: M Drehmann, C Borio and K Tsatsaronis, "Characterising the financial cycle: don't lose sight of the medium term!", *BIS Working Papers*, no 380, June 2012.

- The traditional business cycle frequency is around one to eight years. By contrast, the financial cycles that matter most for banking crises and major macroeconomic dislocations last 10-20 years. Focusing on medium-term frequencies is appropriate for two reasons. First, credit and property prices move much more closely together at these frequencies than at higher ones. Second, these medium-term cycles are an important driver of overall fluctuations in these two series, much more so than medium cyclical fluctuations are for real GDP. Financial cycles identified in this way are closely associated with systemic banking crises and serious economic damage. This holds irrespective of whether they are identified with a turning point approach or a statistical filter

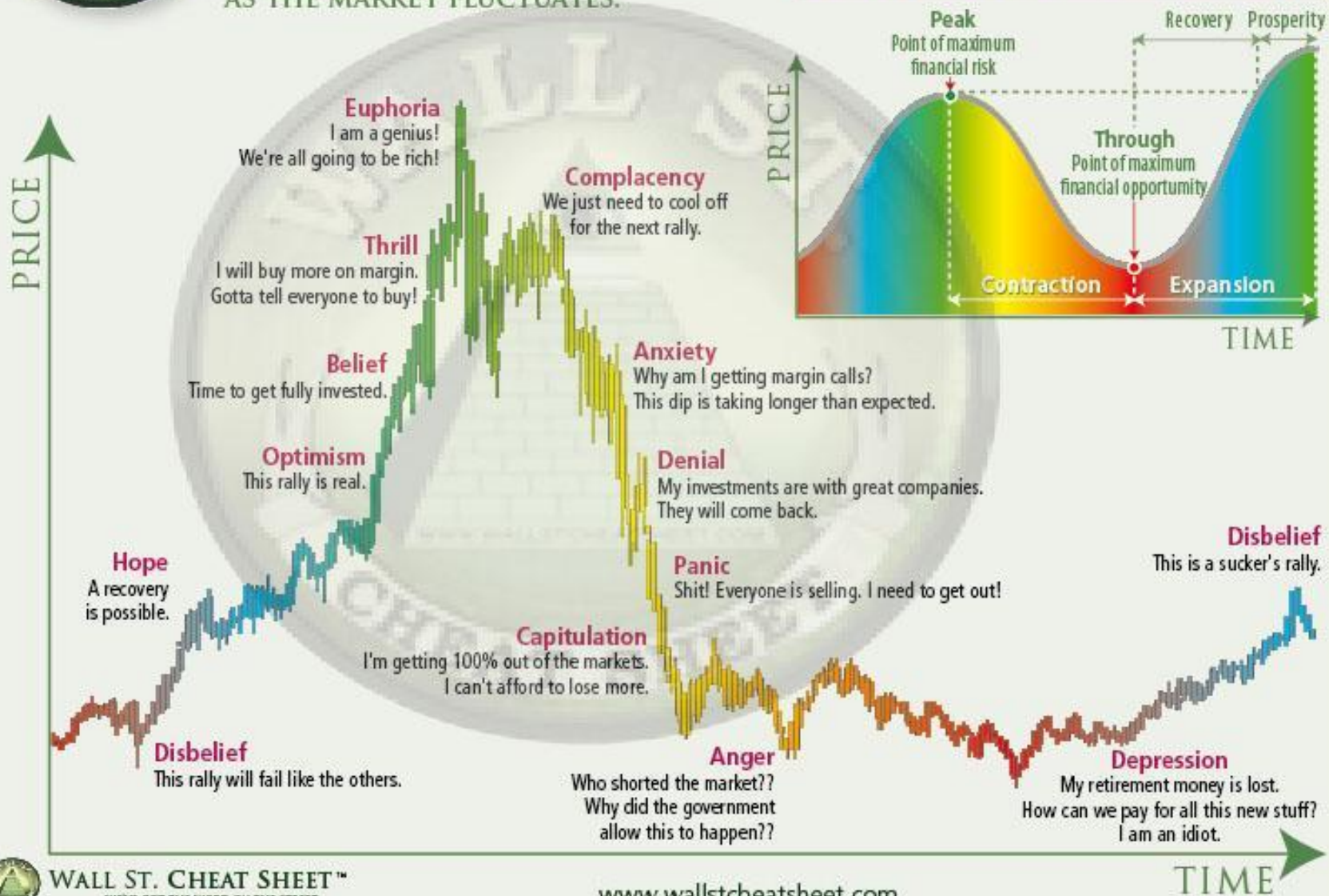


WALL ST. CHEAT SHEET™ WE'VE GOT THE WORD ON THE STREET

PSYCHOLOGY OF A MARKET CYCLE

THE FEELINGS APPEARING AS THE MARKET FLUCTUATES.

SIMPLIFIED MARKET CYCLE



LEVEL OF UNEMPLOYMENT (HK)

HONG KONG UNEMPLOYMENT RATE

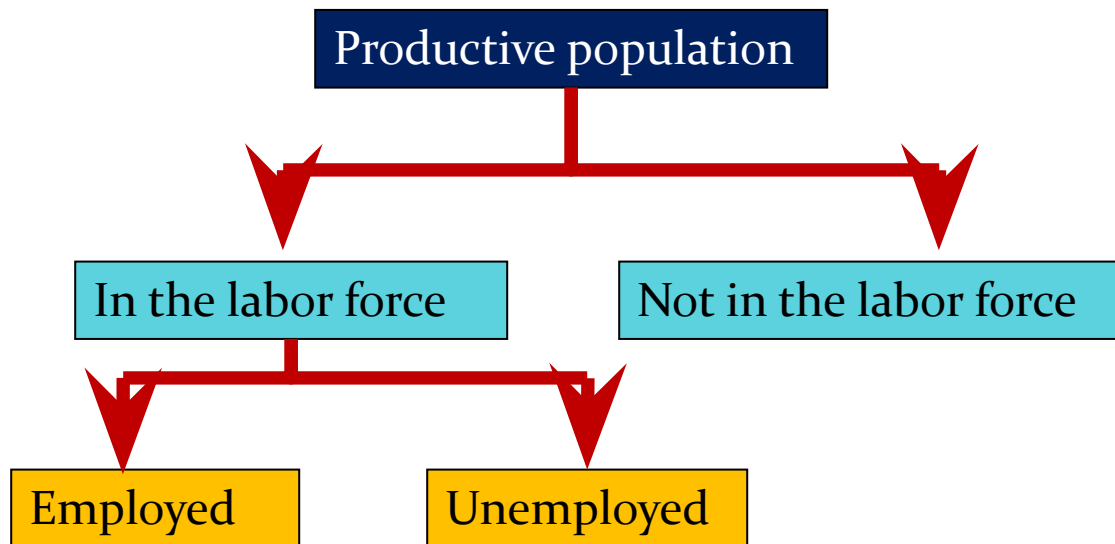


SOURCE: TRADINGECONOMICS.COM | CENSUS AND STATISTICS DEPARTMENT, HONG KONG



UNEMPLOYMENT

- Is defined by the International Labor Organization (ILO) as a situation in which people are without jobs and they have actively looked for a job for the past four weeks.
- According to this definition, people who do not look for a job will not be considered unemployed.



UNEMPLOYMENT

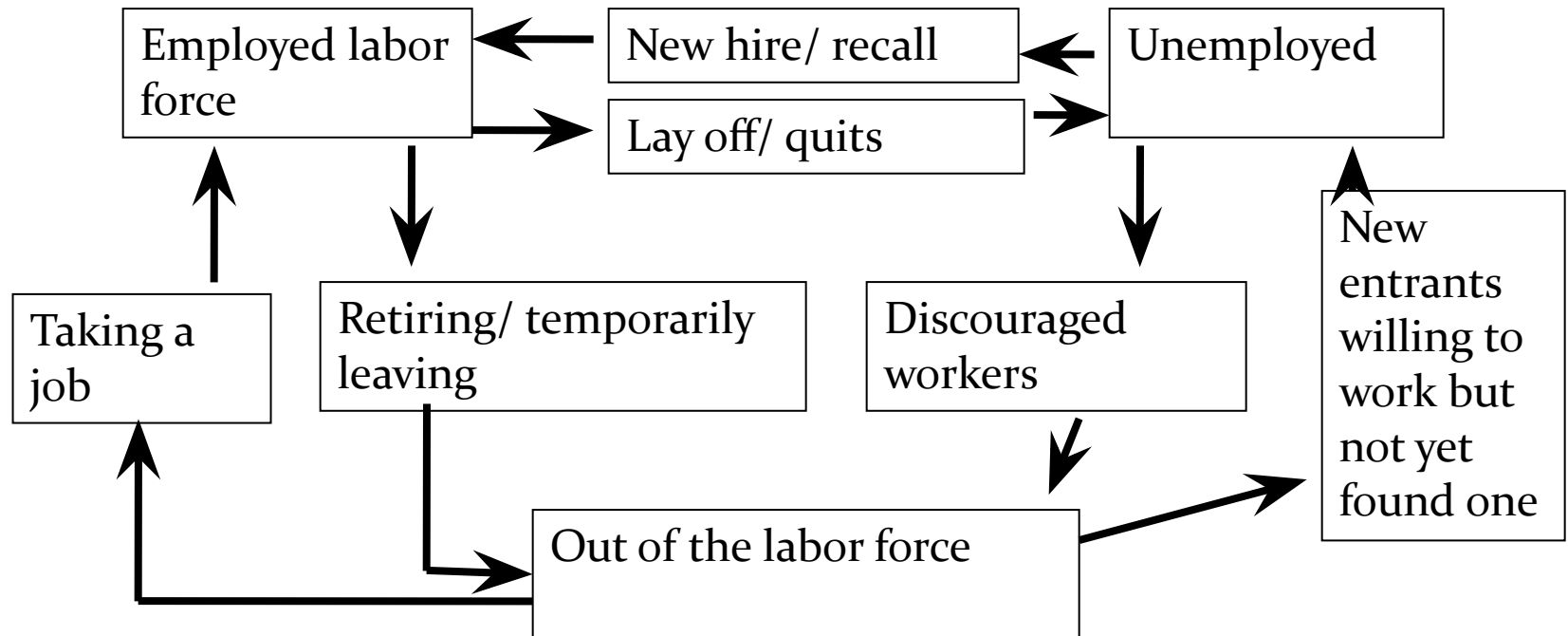
- The population resides in 1 of 3 categories
 1. **Employed**: Currently working
 2. **Not in the Labor Force**: Not working and not actively seeking work
 3. **Unemployed**: Not working but seeking work

Unemployment Rate (*U-3 rate*)

$$UR = \frac{\text{Unemployment}}{\underbrace{\text{Employment} + \text{Unemployment}}_{\text{Labor force}}} \times 100\%$$

Many people who would like to work but cannot (due to a disability, for example), or have become discouraged after looking for work without success, are not considered unemployed under this system; since they are not employed either, they are categorized as outside the labor force. Critics see this approach as painting an unjustifiably rosy picture of the labor force. U3 is also criticized for making no distinction between those in temporary, part-time and full-time jobs, even in cases where part-time or temporary workers would rather work full-time but cannot due to labor market conditions.

EMPLOYMENT DYNAMICS



A discouraged worker is a person who is eligible for employment and is able to work, but is currently unemployed and has not attempted to find employment in the last four weeks.



EXAMPLE

- **Who is counted as employed?**
 - On vacation
 - Ill
 - Experiencing child care problems
 - On maternity or paternity leave
 - Taking care of some other family or personal obligation
 - Involved in a labor dispute
 - Prevented from working by bad weather

Fictional scenarios:

- Elena reported to the interviewer that last week she worked 40 hours as a sales manager for a beverage company. Elena is **employed**.
- Steve lost his job when the local plant of an aircraft manufacturing company closed down. Since then, he has been contacting other businesses in town trying to find a job. Steve is **unemployed**.
- Linda is a stay-at-home mother. Last week, she was occupied with her normal household activities. She neither held a job nor looked for a job. Her 80-year-old father who lives with her has not worked or looked for work because of a disability. Linda and her father are **not in the labor force**.

EXAMPLE

- Garrett is 16 years old, and he has no job from which he receives any pay or profit. However, Garrett does help with the regular chores around his parents' farm and spends about 20 hours each week doing so.
- Lisa spends most of her time taking care of her home and children, but she helps in her husband's computer software business all day Friday and Saturday.
- Both Garrett and Lisa are considered employed. They fall into a group called unpaid family workers, which includes any person who worked without pay for 15 hours or more per week in a business or farm operated by a family member with whom they live. Unpaid family workers comprise a small proportion of total employment. Most of the employed are either wage and salary workers (paid employees) or self-employed (working in their own business, profession, or farm).
- In addition to estimating the number of employed people, the survey collects information about the job characteristics of the employed. For example, the survey gathers and provides data about workers' industry and occupation, hours worked, usual earnings, and union membership.



TYPES OF UNEMPLOYMENT

Cyclical Unemployment	Structural Unemployment	Frictional Unemployment
<p>Unemployment associated with business cycles.</p> <ul style="list-style-type: none"> When demand falls, demand for labor falls. Workers may not be at first willing to work at new market wage rate and may sit idle 	<ul style="list-style-type: none"> When specific demands for workers (location or skills) does not match the characteristics of the workforce. Restrictions on job conditions may make it difficult for firms to find workers that match their needs under given conditions Minimum wage means only high skill workers may be hired. Firing costs may mean that jobs for young or difficult to evaluate workers may not appear 	<p>Unemployment that occurs as a part of the movement in and out of the workforce.</p> <ul style="list-style-type: none"> Very frequently when a worker changes their employment situation there is some period of unemployment

UNDEREMPLOYMENT

- Underemployment is a measure of employment and labor utilization in the economy that looks at how well the labor force is being utilized in terms of skills, experience and availability to work.
 - Labor that falls under the underemployment classification includes those workers who are highly skilled but working in low paying jobs, workers who are highly skilled but working in low skill jobs and part-time workers who would prefer to be full time. This is different from unemployment in that the individual is working but is not working at his full capability.



DISGUISED (HIDDEN) UNEMPLOYMENT

- Disguised unemployment exists where part of the labor force is either left without work or is working in a redundant manner where worker productivity is essentially zero. It is unemployment that does not affect aggregate output. An economy demonstrates disguised unemployment when productivity is low and too many workers are filling too few jobs.
 - exists frequently in developing countries whose large populations create a surplus in the labor force. It can be characterized by low productivity and frequently accompanies informal labor markets and agricultural labor markets, which can absorb substantial quantities of labor.
 - can refer to any segment of the population not employed at full capacity, but it is often not counted in official unemployment statistics within the national economy. This can include those working well below their capabilities, those whose positions provide little overall value in terms of productivity, or any group that is not currently looking for work but is able to perform work of value



ALTERNATIVE MEASURES

- **U-1** People who have been unemployed for 15 weeks or longer, expressed as a percentage of the labor force.

$$\frac{\text{Unemployed 15-plus weeks}}{\text{Labor force}} * 100\% = U1$$

- **U-2** People who lost their jobs, or whose temporary jobs ended, as a percentage of the labor force.

$$\frac{\text{Job losers}}{\text{Labor force}} * 100\% = U2$$

- **U-4** Unemployed people, plus discouraged workers, as a percentage of the labor force (plus discouraged workers).

$$\frac{\text{Unemployed + discouraged workers}}{\text{Labor force + discouraged workers}} * 100\% = U4$$

Discouraged workers are those who are available to work and would like a job, but have given up actively looking for one.**



ALTERNATIVE MEASURES

- **U-5** Unemployed people, plus those who are marginally attached to the labor force, as a percentage of the labor force (plus the marginally attached).

$$\frac{\text{Unemployed + marginally attached}}{\text{Labor force + marginally attached}} * 100\% = \text{U5}$$

People who are marginally attached to the labor force include discouraged workers and anyone else who would like a job and has looked for one in the past 12 months, but have given up actively searching. As with U4, the denominator is expanded to include the marginally attached, who are not technically part of the labor force.



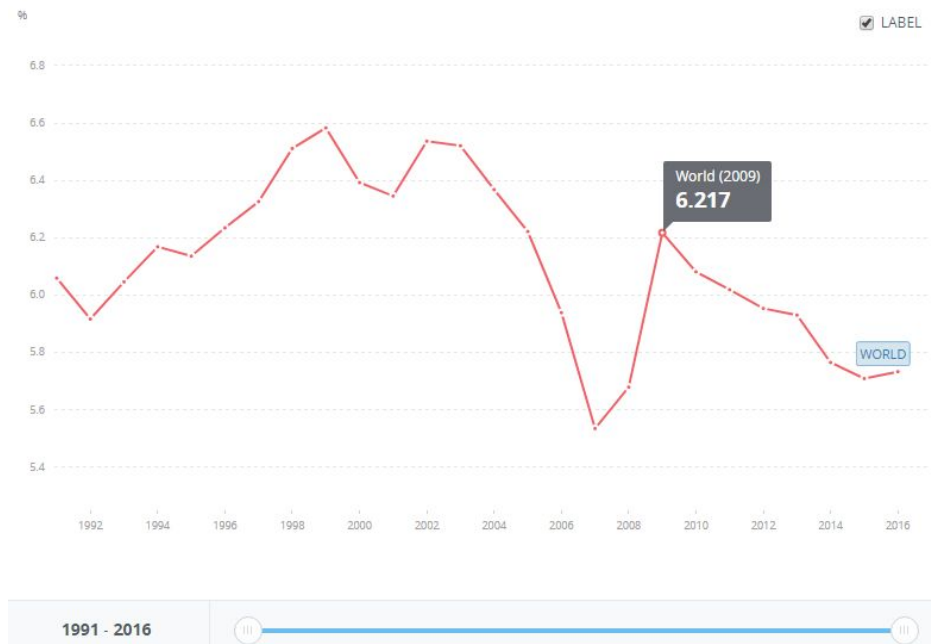
ALTERNATIVE MEASURES

- **U-6** Unemployed people, plus people who are marginally attached to the labor force, plus those who are employed part-time for economic reasons, as a percentage of the labor force (plus marginally attached).

$$\frac{\text{Unemployed} + \text{marginally attached} + \text{part-time for economic reasons}}{\text{Labor force} + \text{marginally attached}} * 100\% = \text{U6}$$

This metric is the Bureau of Labor Statistics (BLS) most comprehensive. In addition to the categories included in U5, it accounts for people who have been forced to settle for part-time work even though they want to work full-time. This category is often referred to as "underemployed," although that label arguably includes full-time workers who are overqualified for their jobs. The denominator for this ratio is the same as in U5.





Rank	Country	1991	2016
1	Qatar	0,8	0,2
2	Cambodia	0,5	0,3
3	Belarus	0,6	0,5
4	Thailand	2,7	0,6
5	Maynmar	0,9	0,8
26	Japan	2,1	3,1
47	China	4,9	4,6
51	USA	6,8	4,9
55	Nigeria	5,9	5,0
81	Poland	12,0	6,2
117	Ukraine	7,6	8,9
...	Solomon Islands	32,0	31,4

- Tightly regulated labor markets increase structural unemployment.
- High social welfare benefits increase frictional costs as workers have little incentive to search diligently until the benefits work out.



HOW TO SOLVE THE PROBLEM

- There are two ways the government can help the unemployed.
 1. There are **passive programs**, such as unemployment insurance, that help the unemployed make ends meet and stabilize the economy by providing funds that are generally spent immediately. Then there are active programs, such as might help the unemployed meet the skills requirements of available jobs.
 2. **Active labor market policies** (ALMP). They can be divided into six categories:
 - Training programs to help workers move from one industry and occupation to another.
 - Job-search assistance to help match the unemployed with employers.
 - Employment incentives for employers.
 - Supported employment to subsidize cost of new hires.
 - Direct job creation of government spending programs.
 - Other policies, which can be diverse, including entrepreneurship incentives





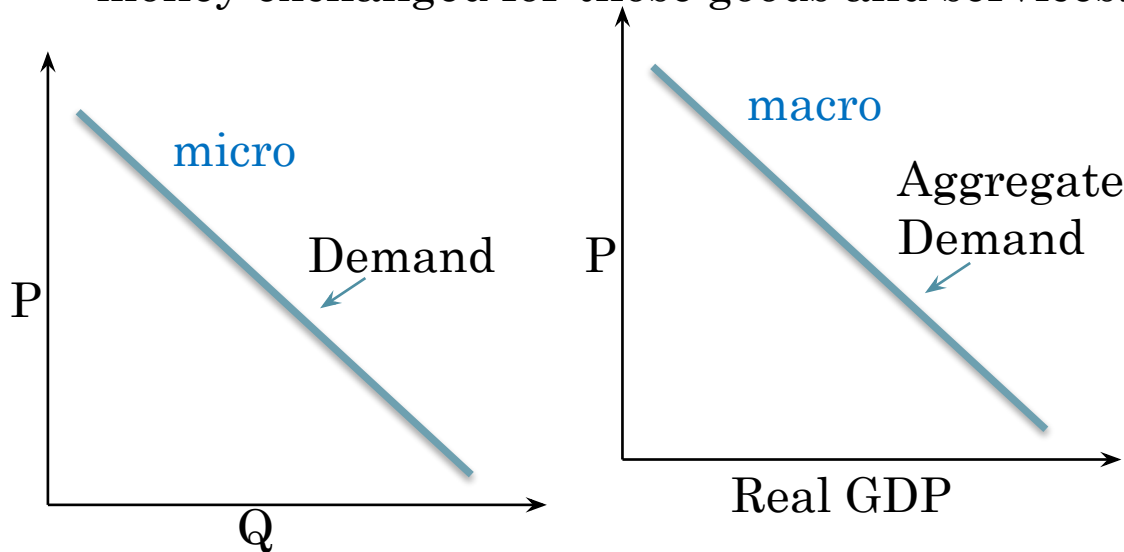
MACROECONOMICS

**AGGREGATED SUPPLY AND
DEMAND**

Zharova Liubov

AGGREGATE DEMAND (AD)

- **Aggregate demand** is the total demand for goods and services is an economic measurement of the sum of all final goods and services produced in an economy, expressed as the total amount of money exchanged for those goods and services.



1. Wealth effect
2. Savings and Interest rate effect
3. Foreign exchange effect

AD = total spending on goods and services = Real GDP
AD = C+I+G+NX

C - Consumer spending on goods and services

I - Private investment and corporate spending for non-final capital goods (factories, equipment, etc.)

G - Government spending for public goods and social services (infrastructure, Medicare, etc.)

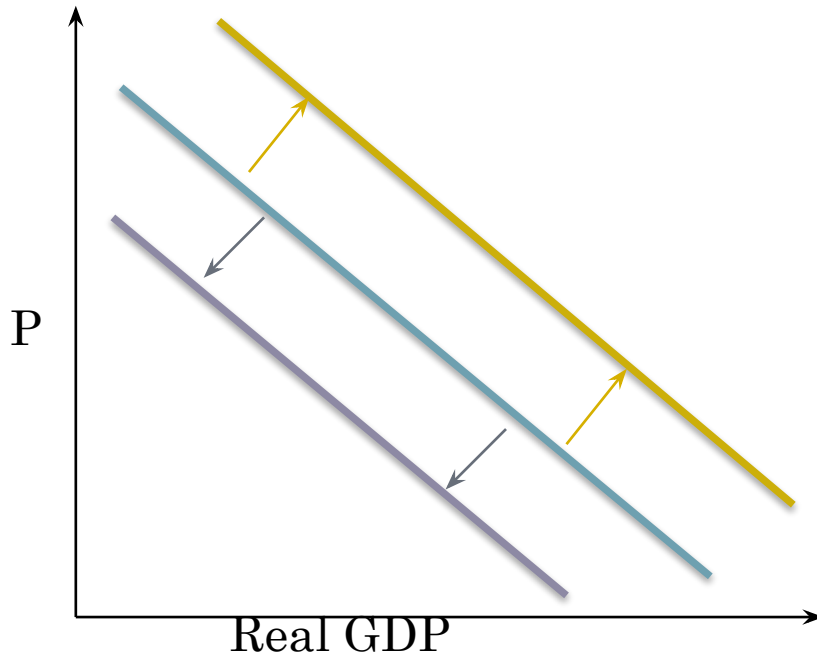
NX = Net exports (exports minus imports)

AD SHIFTS

$$AD = C + I + G + NX$$

change in consumption
(eg cut tax)

Or tax increasing



Shifts in
Investment
Governmental spending
Export



AGGREGATE SUPPLY (AS)

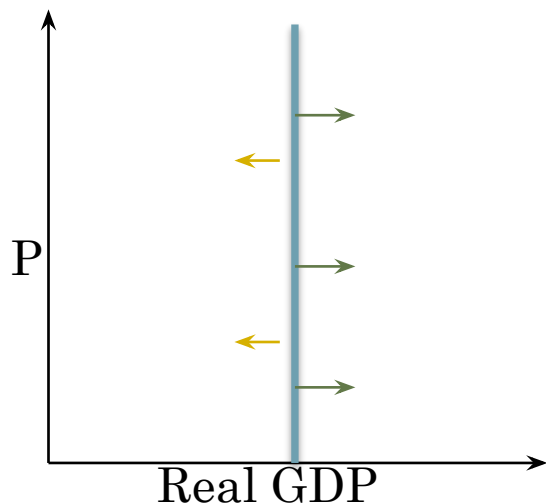
- (or total output) is the total supply of goods and services produced within an economy at a given overall price level in a given time period.

COMPONENTS OF AS

- **Consumer goods.** Private consumer goods and services, such as motor vehicles, computers, clothes and entertainment, are supplied by the private sector, and consumed by households.
- **Capital goods.** Capital goods, such as machinery, equipment, and plant, are supplied to other firms.
- **Public and merit goods.** Goods and services produced by private firms for use by central or local government, such as education and healthcare, are also a significant component of aggregate supply.
- **Traded goods.** Goods and services for export, such as chemicals, entertainment, and financial services are also a key component of aggregate supply.



LONG-RUN AGGREGATE SUPPLY (LRAS)



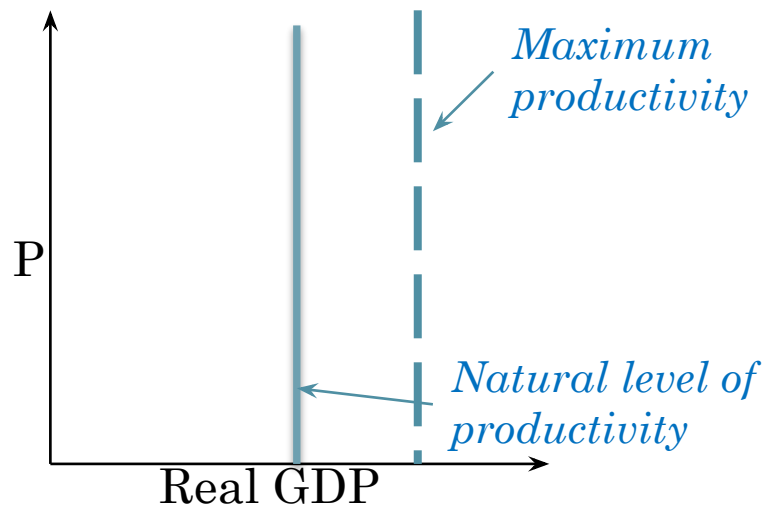
Supply = capability to produce

Population growth

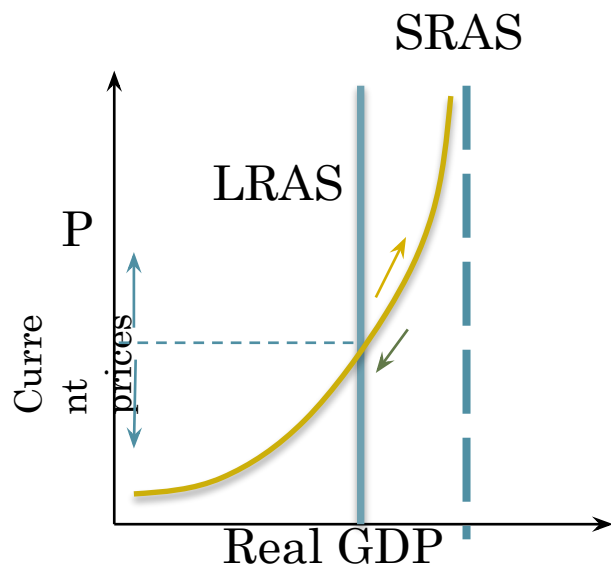
Easy to find a job (training...)

More productive (new resources...)

... War, conflicts ...



SHORT-RUN AGGREGATE SUPPLY (SRAS)



- Rising the price – labor pool, work more, less vacation...
- Decreasing price – more leisure time...

Shape

1. Misperception theory:
2. Sticky wages (cost/prices) theory

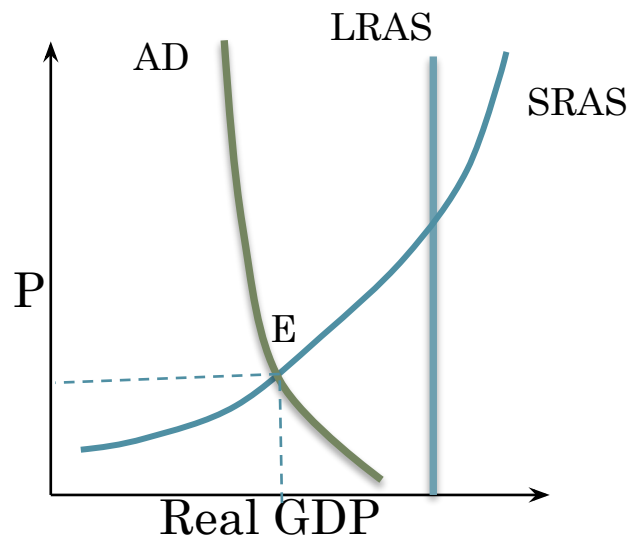


SUMMIRISING

- **Aggregate supply** is the total quantity of output firms will produce and sell – in other words, the real GDP.
- The upward-sloping **aggregate supply curve** – also known as the **short run aggregate supply curve** – shows the positive relationship between price level and real GDP in the short run.
- The aggregate supply curve slopes up because when the price level for outputs increases while the price level of inputs remains fixed, the opportunity for additional profits encourages more production.
- **Potential GDP**, or **full-employment GDP**, is the maximum quantity that an economy can produce given full employment of its existing levels of labor, physical capital, technology, and institutions.
- **Aggregate demand** is the amount of total spending on domestic goods and services in an economy.
- The downward-sloping **aggregate demand curve** shows the relationship between the price level for outputs and the quantity of total spending in the economy.



EQUILIBRIUM IN THE AGGREGATE DEMAND/AGGREGATE SUPPLY MODEL



- At a relatively low price level for output, firms have little incentive to produce, although consumers would be willing to purchase a high quantity. As the price level for outputs rises, aggregate supply rises and aggregate demand falls until the equilibrium point is reached.

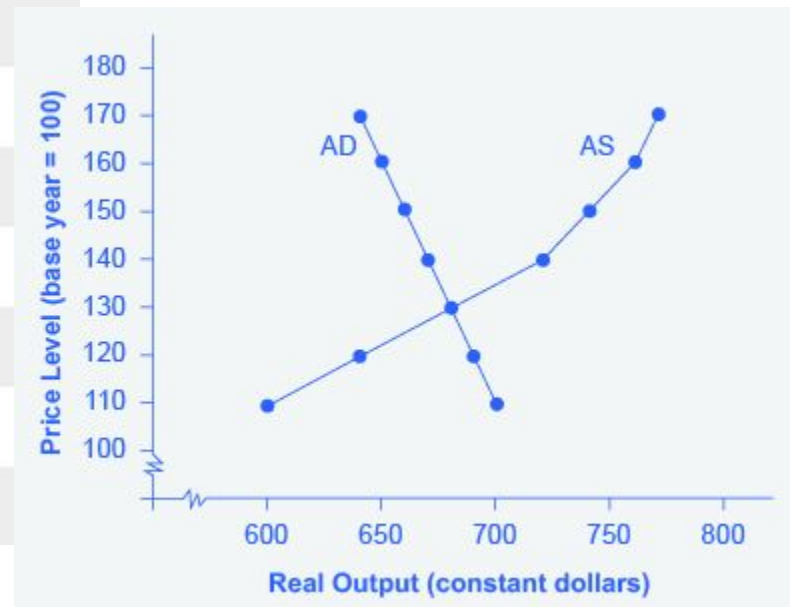
Conclusions

If equilibrium occurs in the flat range of AS, then economy is not close to potential GDP and will be experiencing unemployment but stable price level. If equilibrium occurs in the steep range of AS, then the economy is close to or at potential GDP and will be experiencing rising price levels or inflationary pressures, but will have a low unemployment rate.



PRICE LEVEL: AGGREGATE DEMAND/AGGREGATE SUPPLY

Price level	Aggregate demand	Aggregate supply
110	\$700	\$600
120	\$690	\$640
130	\$680	\$680
140	\$670	\$720
150	\$660	\$740
160	\$650	\$760
170	\$640	\$770



Conclusions: the equilibrium is fairly far from where the AS curve becomes steep. This implies that the economy is not close to potential GDP. Thus, unemployment will be high, and changes in the price level are likely to be small.

EXAMPLE

- **Bebebe.** The imaginary country of Bebebe has the aggregate supply and aggregate demand curves given in the table below.
- Plot an AD/AS diagram from the data above. Identify the equilibrium.
- Would you expect unemployment in this economy to be relatively high or low? Would you expect concern about inflation in this economy to be relatively high or low?
- Imagine that consumers begin to lose confidence about the state of the economy, so AD becomes lower by 275 at every price level.
- Identify the new aggregate equilibrium. How will the shift in AD affect the original output, price level, and employment?

Price level: AD/AS

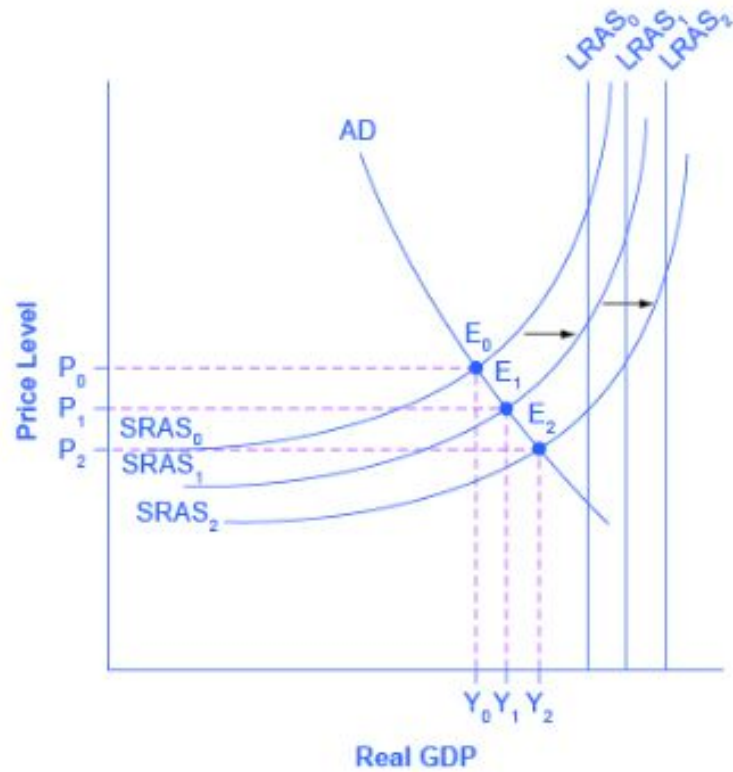
Price level	AD	AS
100	700	200
120	600	325
140	500	500
160	400	570
180	300	620



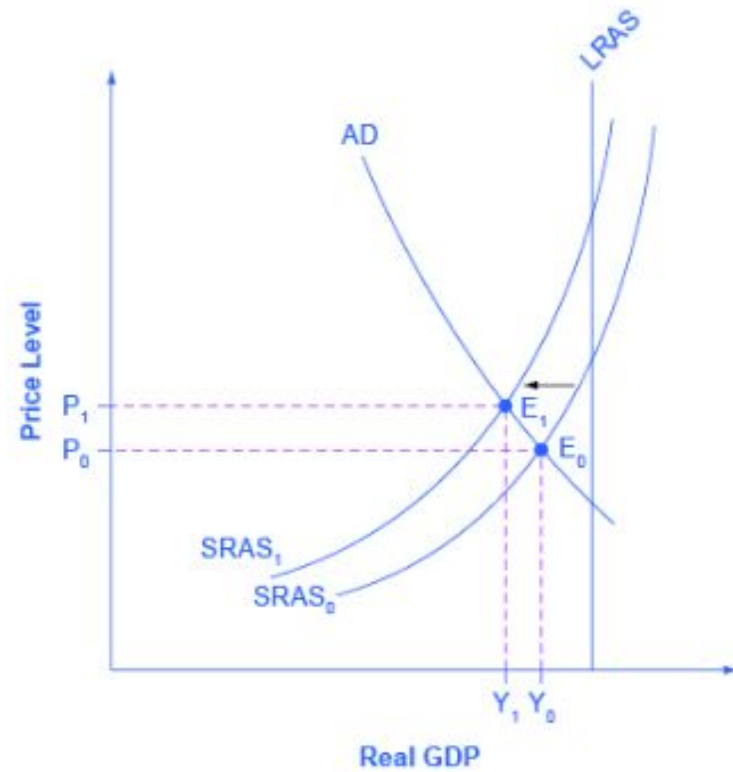
HOW PRODUCTIVITY GROWTH SHIFTS THE AS CURVE

- Over time, productivity grows so that the same quantity of labor can produce more output. Historically, the real growth in GDP per capita in an advanced economy like the United States has averaged about 2% to 3% per year, but productivity growth has been faster during certain extended periods.
- A higher level of productivity shifts the SRAS curve to the right because with improved productivity, firms can produce a greater quantity of output at every price level.





(a) Productivity growth shifts AS to the right



(b) Higher prices for key inputs shifts AS to the left



SUMMARY

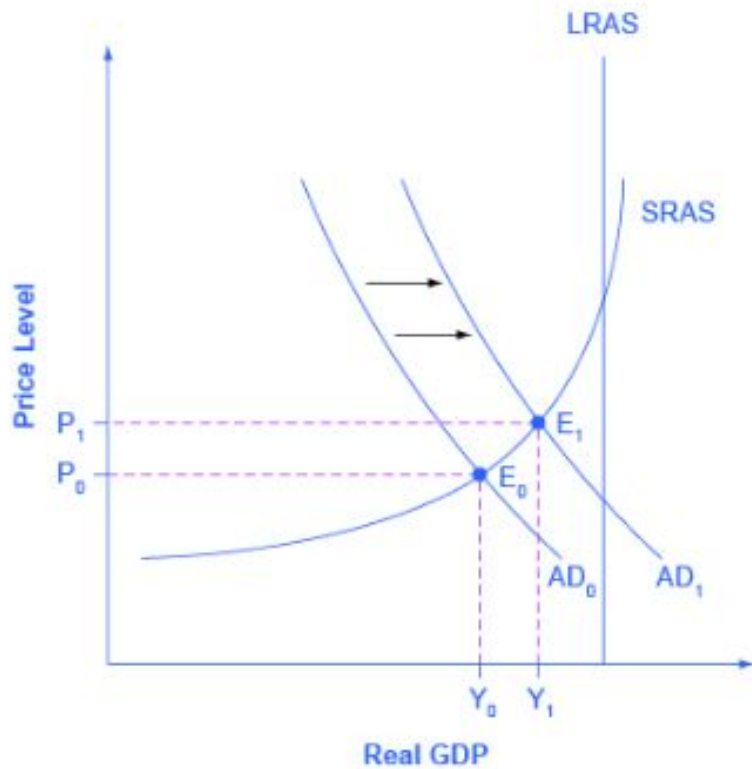
- The *aggregate demand/aggregate supply model* is a model that shows what determines total supply or total demand for the economy and how total demand and total supply interact at the macroeconomic level.
- Movements of either the aggregate supply or aggregate demand curve in an AD/AS diagram will result in a different equilibrium output and price level.
- The aggregate supply curve shifts to the right as productivity increases or the price of key inputs falls, making a combination of lower inflation, higher output, and lower unemployment possible.
- The aggregate supply curve shifts to the left as the price of key inputs rises, making a combination of lower output, higher unemployment, and higher inflation possible.
- When an economy experiences stagnant growth and high inflation at the same time it is referred to as *stagflation*.



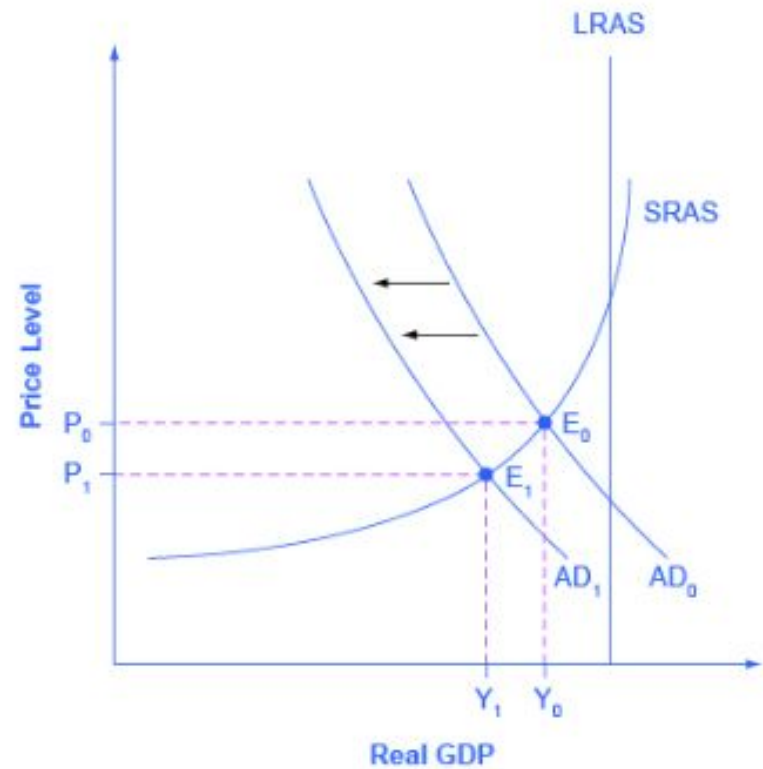
HOW DO CHANGES BY CONSUMERS AND FIRMS AFFECT AD?

- When consumers feel more confident about the future of the economy, they tend to consume more. If business confidence is high, then firms tend to spend more on investment, believing that the future payoff from that investment will be substantial. On the other hand, if consumer or business confidence drops, then consumption and investment spending decline.
- Consumer and business confidence often reflect macroeconomic realities. For example, confidence is usually high when the economy is growing briskly and low during a recession. However, economic confidence can sometimes rise or fall due to factors that do not have a close connection to the immediate economy, like a risk of war, election results, foreign policy events, or a pessimistic prediction about the future by a prominent public figure.





(a) Aggregate demand shifts right

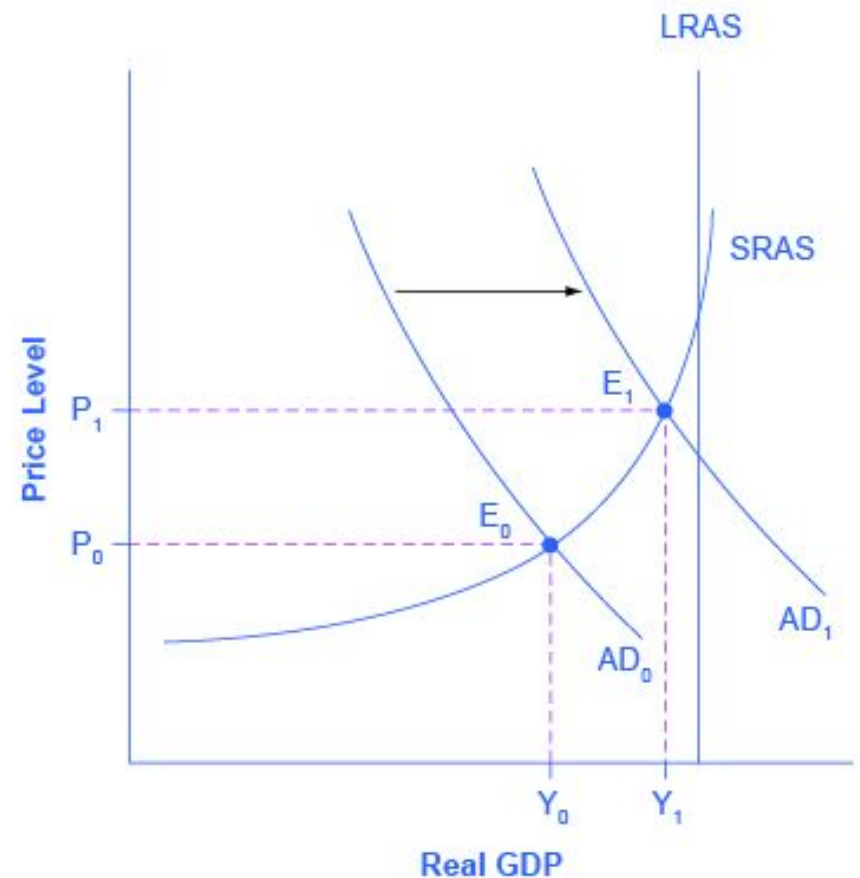


(b) Aggregate demand shifts left

Government macroeconomic policy choices can shift AD.

Take, for example, government spending—one component of AD. Higher government spending causes AD to shift to the right—see Diagram A, on the left above—while lower government spending will cause AD to shift to the left—see Diagram B, on the right above.

- During a recession, when unemployment is high and many businesses are suffering low profits or even losses, the US Congress often passes tax cuts. During the recession of 2001, for example, a tax cut was enacted into law. At such times, the political rhetoric often focuses on how people going through hard times need relief from taxes. The aggregate supply and aggregate demand framework, however, offers a complementary rationale.



The original equilibrium during the recession is at point E_0 relatively far from the full-employment level of output. The tax cut, by increasing consumption, shifts the AD curve to the right. At the new equilibrium E_1 real GDP rises and unemployment falls and – because in this diagram the economy has not yet reached its potential or full-employment level of GDP – any rise in the price level remains muted.

SUMMARY

- The *aggregate demand/aggregate supply model* is a model that shows what determines total supply or total demand for the economy and how total demand and total supply interact at the macroeconomic level.
- The aggregate demand curve shifts to the right as the components of aggregate demand—consumption spending, investment spending, government spending, and spending on exports minus imports—rise. The AD curve will shift back to the left as these components fall.
- AD components can change because of different personal choices—like those resulting from consumer or business confidence—or from policy choices like changes in government spending and taxes.
- If the AD curve shifts to the right, then the equilibrium quantity of output and the price level will rise. If the AD curve shifts to the left, then the equilibrium quantity of output and the price level will fall.
- Whether equilibrium output changes relatively more than the price level or whether the price level changes relatively more than output is determined by where the AD curve intersects with the AS curve.

