

Econ 2 - Lecture 4 - 4/9/25

Lecture Quiz #2 Released Today, Due Monday @ 12:30<sup>PM</sup>

Discussion Activity #1 This Week!

Top 3 of 5 needed for full credit!

Weekly Review Session on Thursdays 5:30<sup>PM</sup>, NH 1110

Today: GDP (Chapter 3.1)

Next Week: CPI (3.2) & Unemployment (3.3)

Midterm Exam: April 28<sup>th</sup> (Week 5)

Last Class:

GDP = the market value of all final goods and services produced for a marketplace during a given period of time, within a country's borders

Market Value: convert production to a dollar amount

Final: DO NOT COUNT intermediate goods  
(Best Buy Computer, word cloud) used to produce final good

Produced: must be production

Stocks, bonds, land are important, but not GDP

For a marketplace: only formal transactions count  
Informal activities / transactions DO NOT count  
Illegal Activities  $\Rightarrow$  greater than \$2 Tril/yr!

During a given period of time: isolate date of production

Buy a car in 2025, originally produced in 2017

→ sold

In 2017: Added car value to 2017 GDP

2017 Used Car is sold in 2025 from a dealer

→ What new good/service is being produced today?

→ Capture the service of a dealer safely net?

↳ Car value already counted

↳ Mark up in price for buying from a dealer

↳ Service that is new → counted towards

GDP today,

Commission of sales person

Other good is sold used often?

Buy a used home,

New Home Purchase

Counted towards  
GDP today?

Real Estate Service

Value of home  
Counts towards  
GDP

Within a country's borders:

GDP ⇒ "Domestic" ⇒ borders

GNP ⇒ Gross National Product ⇒ citizenship

Sarah born in the US → US citizen → US GNP

↳ Works & Lives in the UK → UK GDP

# Measuring GDP: Bureau of Economic Analysis (BEA)

## Categorize GDP Components: Expenditure Approach

1. Consumption (C): purchases by households
2. Investment (I): purchases by firms
  - ↳ firm is final user → machines
  - ↳ intermediate good: passed on in production
    - ↳ tires on car → do not count
3. Government Purchases (G):  
Bought by government

$$4. \text{Net Exports (NX)} = \underbrace{\text{Exports (X)}}_{\substack{\text{Goods leaving} \\ \rightarrow \text{money} \\ \text{returning} \\ \text{Add to} \\ \text{GDP}}} - \underbrace{\text{Imports (M)}}_{\substack{\text{Goods} \\ \text{arriving} \\ \rightarrow \text{money} \\ \text{is leaving} \\ \text{Subtract} \\ \text{Imports} \\ \text{in GDP}}}$$

Consumption: 67% of GDP

(21%) Goods: item you gain ownership of

Durable Goods: Car, Computers, Appliances, furniture  
Non-Durable Goods: food, TP, gas

(47%) Services: intangible item that we do not gain ownership of

Example: Hair cut, rental service, Wi-Fi, hotels, restaurants, education, travel, sporting events, etc. (Health care)

Rental Housing  $\rightarrow$  \$2000/month

What if you own, do not rent similar unit?

Estimate Imputed Rent

Monetary value of all housing shelter  
(rentals or owner-occupied units)

A street in TX has 10 homes  $\rightarrow$  Half rent for 2K/mo.

$\rightarrow$  Half owned

Assume all 10 homes are "rented" for 2K/mo.

\$20K in imputed rent per year

Investment (I): Goods/Services bought by firms (~ 18%)

### 3 Sub-categories

#### 1. Capital / Non-Residential Investment

↳ Tractor, assembly line, office furniture, software, hardware, etc.

↳ Starbucks → Espresso Maker → Investment!  
    ↳ Coffee Beans? Intermediate Good

#### 2. New Homes

↳ Fixed structures in same way a manufacturing plant is fixed

↳ Producing family goods/Services

#### 3. Change in Private Inventory (+/- 0%)

Campus Bookstore in 2024: Produced \$10K in hoodies

2024 GDP increased by \$10K

But only \$8K in hoodies were bought in 2024  
↳ Increase C by \$8K

→ unsold product

Remaining \$2K in hoodies → Storage / Inventory

Add \$2K to inventory → Add \$2K to investment

In 2024, C ↑ \$8K, I ↑ \$2K ⇒ ↑ in GDP of \$10K

In 2025, extra \$2K from inventory are sold

In 2025 → Cons. ↑ by \$2K, Inventory ↓ by \$2K  
                    (C)                      (I)

Total 2025 GDP Change = +2000 - 2000 = 0

## Government Purchase (G)

(17%)

Bought by government

Buy products / services that are necessary but hard to profit from

↳ Nat'l Defense

↳ Police

↳ Fire

↳ Education

↳ Infrastructure

$$\text{Net Exports (NX)} = \text{Export (X)} - \text{Imports (M)}$$

$$NX < 0 \Rightarrow M > X$$

- 3.1% of GDP

$$\begin{aligned} \text{GDP} = Y &= C + I + G + NX \\ &20.24T \quad 5.29T \quad 5.10T \quad 3.22-4.14T \\ &= 29.27T \end{aligned}$$

## Alternative GDP Measures

Best Buy Computer:

\$50 in materials

→

\$150 in parts

→

\$350

→

\$400

Best Buy

\$50 in value

→ add \$100 in value

→ add \$200 in value

→ add \$50 in value

"Firm Profit" → value added at each step of production

$$50 + 100 + 200 + 50 = \$400$$

New angle of GDP

Best Buy  $\rightarrow$  \$50 in "profit"  $\rightarrow$  become income

Labor  $\rightarrow$  income

Rent  $\rightarrow$  landlord income

Interest Payment  $\rightarrow$  income

Share holders  $\rightarrow$  income

GDP = Y = Production

= Firm Profit (Value-Added GDP)

= Income (Factor Payments GDP)

What are we missing? Happiness!

Discussion Activity #2 - Create an  
well-being index!

Calculate GDP

Simple UCSB Economy

Product	2009		2016	
	Q	P	Q	P
Food	1000	1	1500	2
Housing	100	100	150	150
Movies	500	5	1000	10

Total dollar value exchanged in economy

$$\begin{aligned}\text{Nominal GDP} &= \text{Quantity} \times \text{Price and summing} \\ &= Q_{09}^F \cdot P_{09}^F + Q_{09}^H \cdot P_{09}^H + Q_{09}^M \cdot P_{09}^M \\ &= 1000 \times 1 + 100 \times 100 + 500 \times 5 =\end{aligned}$$

$$\text{Nominal GDP}_{2009} = \$13,500$$

$$\begin{aligned}\text{Nominal GDP}_{2016} &= Q_{16}^F \times P_{16}^F + Q_{16}^H \times P_{16}^H + Q_{16}^M \times P_{16}^M \\ &= \\ &= 35,500\end{aligned}$$

Nom. GDP increased from 13,500 to 35,500

Does this represent more production?

Quantity increases  $\rightarrow$  more production

Prices increases are not production

Hold prices constant, allow only quantity to change  
 $\hookrightarrow$  Real GDP