Principles of Macroeconomics: GDP

Class 1

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University of Notre Dame

Administration

Syllabus

- Syllabus is on Canvas (read it)
- My OH: Monday & Wednesday, 12:00-1:00 in 3005 Jenkins-Nanovic
- Readings: textbook and journal articles
- Grades: Homework + Attendance + Presentation + Midterm + Final
- Schedule

Course Materials

- Register for Macmillan Achieve (online homework) using the link on Canvas
- Includes E-textbook: Macroeconomics (7th edition) by Krugman and Wells
- These are both provided on the Canvas page already (no need to buy a separate textbook/homework pass)
- Subscriptions to the WSJ, NYT, and Financial Times – through the Hesburgh Library
- Sign up for iClicker and download app on your phone

Electronics

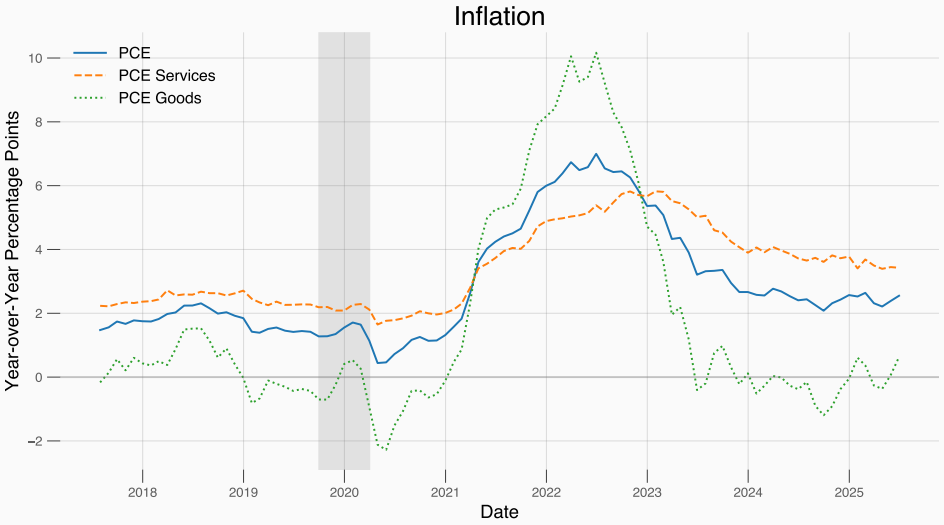
None – outside of iClicker use or tablet for notes

This Course

Questions We Want to Answer

- Why is the average American 10 times richer today than 100 years ago?
- Why is income per person in South Korea 5 times higher than in Thailand? Why is Norway 100 times richer than Malawi?
- What determines inflation?
- What determines unemployment?
- Why do recessions happen?
  - Why did the Great Depression happen?
  - Why has there only been one "Great Depression?"
- Can the government help in recessions? In booms?
- What are the costs/benefits of trade?

Here's a Question Lots of People Want to Answer



Explanations

- By economists:
  - Loose monetary policy (Fed kept rates too low)
  - Lots of government spending
  - Lots of government debt ← my research!
  - Supply chain disruptions
  - Labor market shortages
- Outside the field (generally):
  - "Greedflation"
  - Corporate collusion
  - "Shrinkflation"

Skills You'll Develop

- Break problems down into their core concepts/ideas
- Keep it simple (but complete)
- Explicate economic logic using stories

- We will use math to *clarify* the ideas, not to create ideas
- The best economists use math, which introduces logical rigor, to tell their stories

- See Robert Lucas's commencement address for a very good example of story-telling

Course Outline

- The Long Run
  - Economic Growth
  - Income Differences between Countries
  - Capital Markets
  - Labor Markets
  - International Trade

- The Short/Medium Run
  - Aggregate Demand/Supply
  - Fiscal and Monetary Policy
  - Inflation and Unemployment
  - Exchange Rates

Course Objectives

- Analyze and interpret economic data
- Apply models to think about growth and business cycles
- Critically think about current events and economic news

This Class

Overview

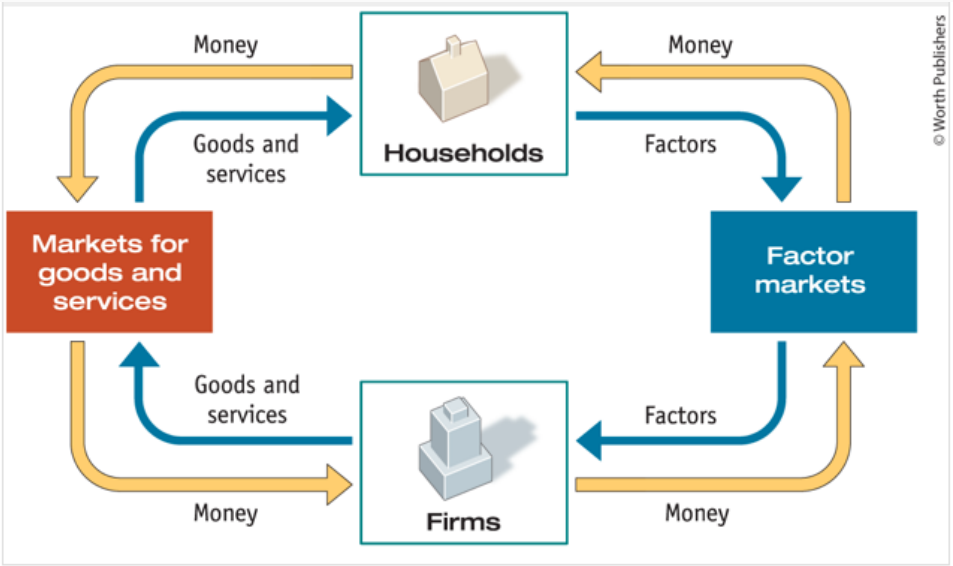
- Announcements:
  - Make sure you can access the Canvas page
  - Sign up for Achieve and iClicker
- Topics:
  - Introduction to the course
  - The National Accounts
  - Gross Domestic Product (GDP)
- Readings:
  - Chapter 7.1 (National Accounts), chapter 7.2 (Real GDP), chapter 7.3 (Price Indices)

- We want to track how the economy is doing. How do we do this?

1. Production (GDP):
   - How much does the whole US produce each year?
   - Two ways to measure: final expenditure vs. value added
2. Expenditure:
   - How much is spent on domestically produced goods each year?
   - Four buyers: consumers, firms, the government, and foreigners
3. Income:
   - How much income is generated by production and spending?
   - Where does that income go?

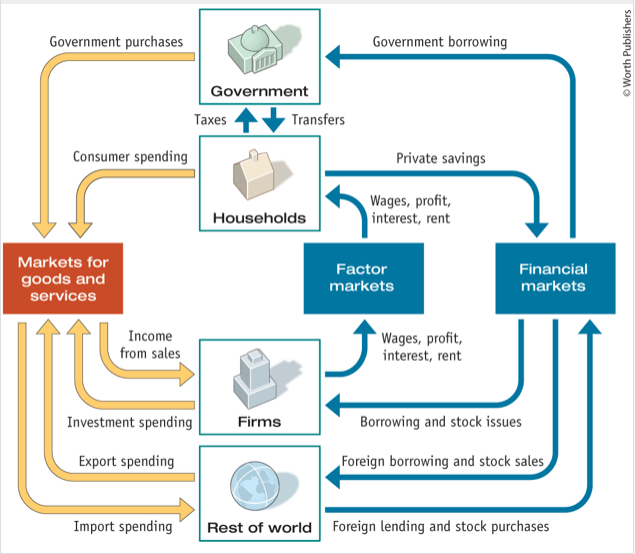
- At the end of the day: GDP = Expenditure = Income

Why Are They Equal – Circular Flow



- Firms produce everything that households consume (production)
- But consumers must purchase everything that firms produce (expenditure)
- But firms pay out wages/rent land from households (income)
- Of course, this is an extremely simple economy

Circular Flow – More Complicated



GDP

- Now that we have the idea – everything that is produced must be bought – we can use math to formalize the idea

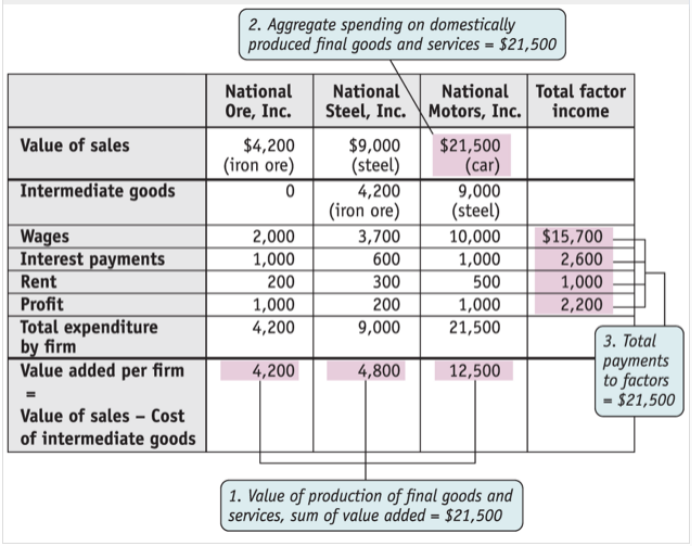
$$Y = C + I + G + (x - i)$$

- $Y \equiv$ production, aka GDP
- $C \equiv$ consumption by households (domestic and imported goods)
- $I \equiv$ investment
  - Firm and household spending on capital goods
  - Capital goods include factories, machines, housing, etc.
- $G \equiv$ government expenditure
  - Government consumption of goods and investment
  - Does NOT include transfer payments (like COVID stimulus checks)
- $x \equiv$ exports, $i \equiv$ imports
  - We call $x - i$ the trade balance

Value Added and Income

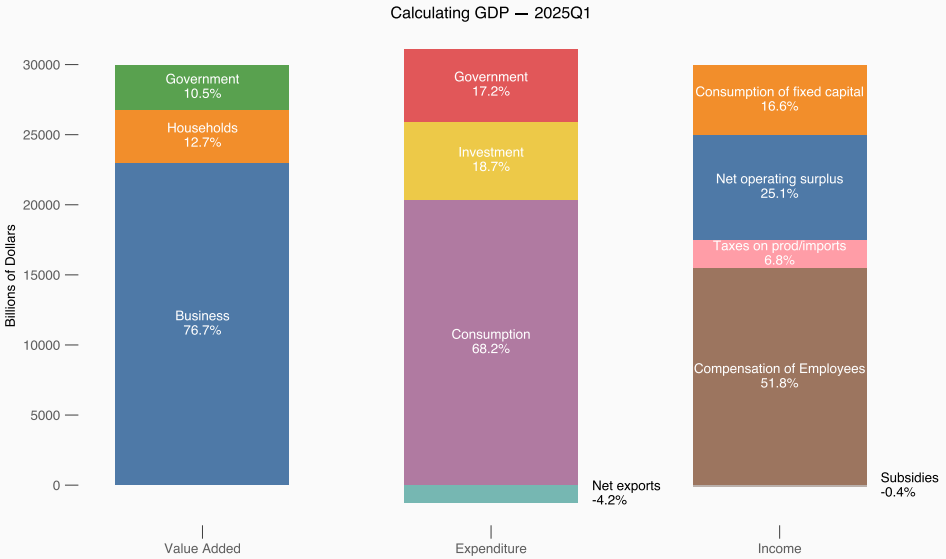
- GDP = Value Added
  - Value Added is the value of output sold minus the cost of inputs used in production
  - Can compute value added firm-by-firm, then add that up across all firms
- Value Added = Income
  - Firms hire workers $\longrightarrow$ wages
  - Firms use capital $\longleftarrow$ rent, interest payments, profits (owners of firms)
  - As above, net of intermediate inputs
- Income = Expenditure
  - Government, firms, and households use income to purchase goods, services, or investment
- In practice, the BEA uses expenditure data from business surveys, the Census, the BLS, US Customs, and the Treasury to calculate GDP (with statistical adjustments)

GDP Example



	National Ore, Inc.	National Steel, Inc.	National Motors, Inc.	Total factor income
Value of sales	$4,200 (iron ore)	$9,000 (steel)	$21,500 (car)	
Intermediate goods	0	4,200 (iron ore)	9,000 (steel)	
Wages	2,000	3,700	10,000	$15,700
Interest payments	1,000	600	1,000	2,600
Rent	200	300	500	1,000
Profit	1,000	200	1,000	2,200
Total expenditure by firm	4,200	9,000	21,500	
Value added per firm = Value of sales – Cost of intermediate goods	4,200	4,800	12,500	

The Real World



Summary

- Know that GDP = Expenditure = Income
- Next Class: Read chapters 7.2 (Real GDP) and 7.3 (Price Indices)