Introduction and Overview

EC 313, Macroeconomics

Alex Li

Book Chapter 1, 2

About Me

About Me

Education

- **Ph.D.** student in the Department of `Economics`
- **M.A.** in `Economics` from the University of Oregon
- **B.A.** in `Computer Science` from Nanjing University
  - `Economics` at the University of Sydney and the University of Cambridge
- Research interests: `Macroeconomics Theory, Computational Methods, Heterogeneous Agent Modeling, Monetary Policy.`

About Me

Availability

- Office hours: **Friday** from **12:15 to 13:45pm**
- Zoom Link: See the announcement on Canvas or Syllabus.
- email: **jungangl@uoregon.edu**

About Me

Teaching Style

- I bring **real-world** connections
- I train you to be a **critical thinker**
- I ask **questions**, and I expect you to answer

Good Dynamics

- Raise your hand and **ask** me to slow down
- **Ask** me to repeat any materials you didn't get
- Be proactive and **ask** for help whenever you need

Syllabus

Syllabus

Final Grade

- **Homework 28%**: Seven Short Homeworks: Six 3.5%'s and one 7%
- **In-class Quizzes 8%**: Two Quizzes: 4% each (redeemable)
- **Midterm 32%**: Tuesday, Nov 3 at 12:15 pm
- **Final 32%**: Wednesday, Dec 9 at 8:00 am

Syllabus

Final Grade

- **Bonus 5%**: Ten In-class Bonus Questions: 0.5% each, five of them will be not be graded, and you will get the full credit for simply submitting it. I won't tell you which five are these.

Letter Grade

- The letter grade is what matters to your GPA.
- Letter grades are given based on your Final Grade. Depending on the class performance, I reserve the right to curve the letter grades:
  - 92 - 105: **A**
  - 90 - 92: **A-**
  - 87 - 89: **B+**
  - 83 - 86: **B**
  - 80 - 82: **B-**
  - 70 - 79: **C+**
  - 60 - 69: **C**
  - 0 - 59: **F**

Course Objective

Course Objective

Become an Economist

- Learn **Vocabulary**
- Use and Read **Data**
- Understand Human **Incentives**
- Describe Macroeconomic **Dynamics** (**Intuition** and **Models**)
- Evaluate **Policies**

Course Objective

Become Analytic

- **Think** Critically
- **Present** Arguments
- **Transfer** Skills & Knowledge
- **Read** Economics News

Macroeconomics Overview

Macroeconomics

What?

- **Definition**: A branch of economics dedicated to understanding an economy as a whole.
- **Aspects**: Performance, Structure, Behavior, Decision-Making

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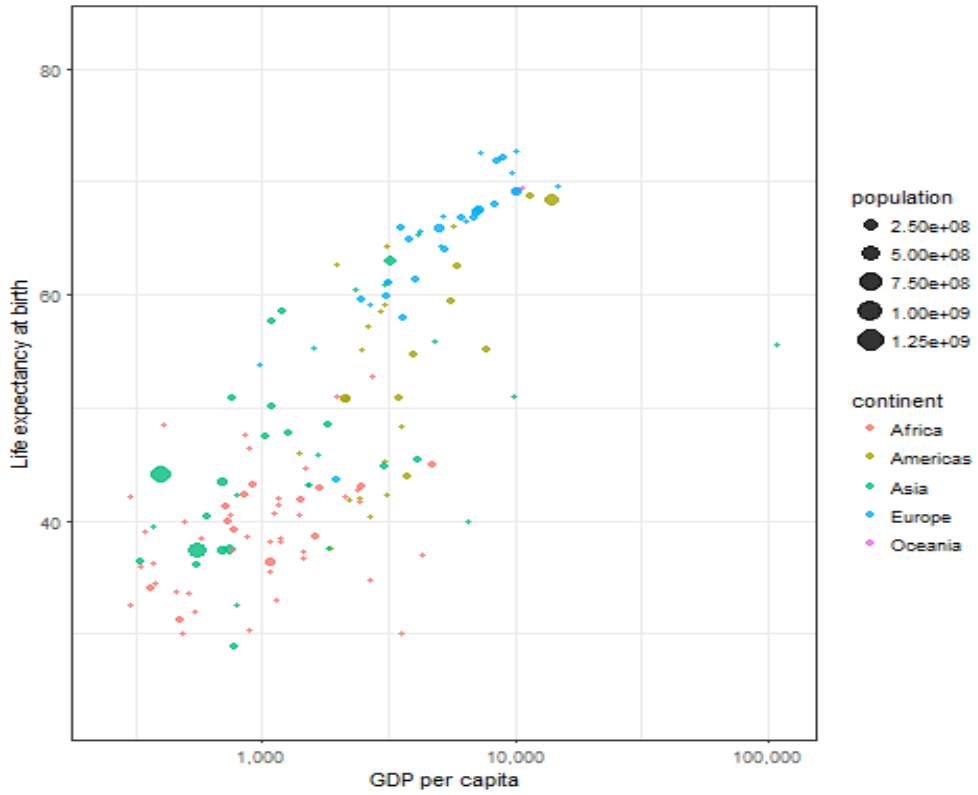
Why?

- **Intellectual Curiosity**: Understand (a part of) the World
- **Career**: Business is subject to the impact of macroeconomics
- **Life**: Make better life decisions

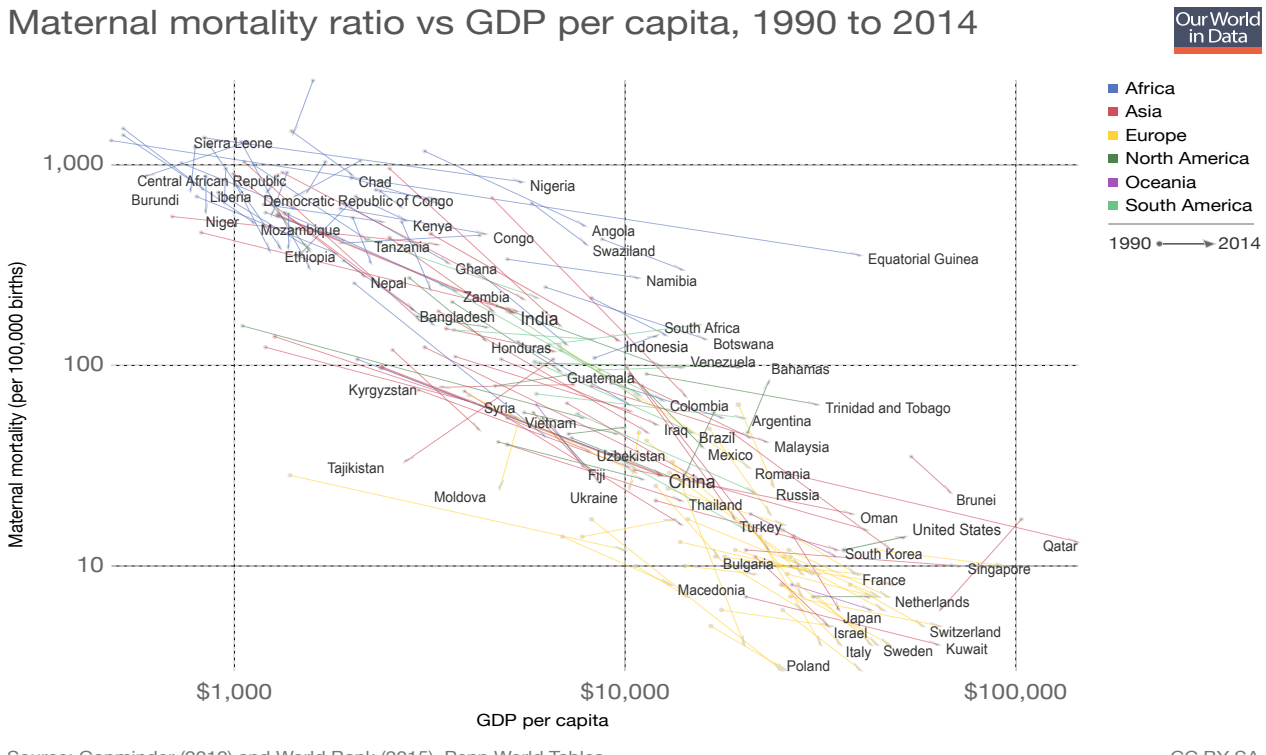
GDP

GDP per capita is **closely related** to life expectancy:



GDP

GDP per capita is **closely related** to maternal mortality rate:



GDP

- Economics is a social science that studies **people**
- At the end of the day, **People** want to be happy
- Measuring the **performance of an economy** boils down to how happy the people are.
- **GDP** (Gross Domestic Production) is a commonly used measure for happiness (standard of living).
- If a country produces more goods in value during a period (higher GDP), **in general**, the people in that country have more resources to be **happier**.

GDP

- In the 19th century, economists had **no measure of aggregate activity**. They had to put bits and pieces of information such as the shipments of iron ore or sales at some department stores to **infer** what was happening to the economy.
- Measures of aggregate output have been published on a **regular basis** in the United States since October 1947.
- The measure of aggregate output in the national income accounts is called the gross domestic product, or **GDP**, for short.

GDP Calculation

There are **two ways** to calculate GDP

- Production Side
- Income Side

Theoretically, these two sides should give you the **same results**.

GDP - Production Side

- GDP Is the **Sum of Value Added** in the Economy **during** a Given Period.
  - Suppose there are firms index by j, and there are J of them in the economy. Firm j produces good j.
  - The quantity of good j is q_j during this period.
  - Choose a year, say 2010, and get the market value (price) of good j is p_j for that year.
  - The GDP measured in 2010 dollar is $Y = q_1p_1 + q_2p_2 + \cdots + q_Jp_J$

Macroeconomics - GDP

Firms	Quantity2010	Quantity2018	Price2010	Price2018
Pizza	50	100	8	10
Beer	100	200	4	5
Coffee	150	300	1	2

- Compute GDP of the year 2010 measured in 2018 dollar Y_{2010}^{2018}
  - $q_1, q_2, q_3 = 50, 100, 150$ and $p_1, p_2, p_3 = 10, 5, 2$
  - $Y_{2010}^{2018} = q_1 p_1 + q_2 p_2 + q_3 p_3 = 50 \times 10 + 100 \times 5 + 150 \times 2 = 1300$

Macroeconomics - GDP

Firms	Quantity2010	Quantity2018	Price2010	Price2018
Pizza	50	100	8	10
Beer	100	200	4	5
Coffee	150	300	1	2

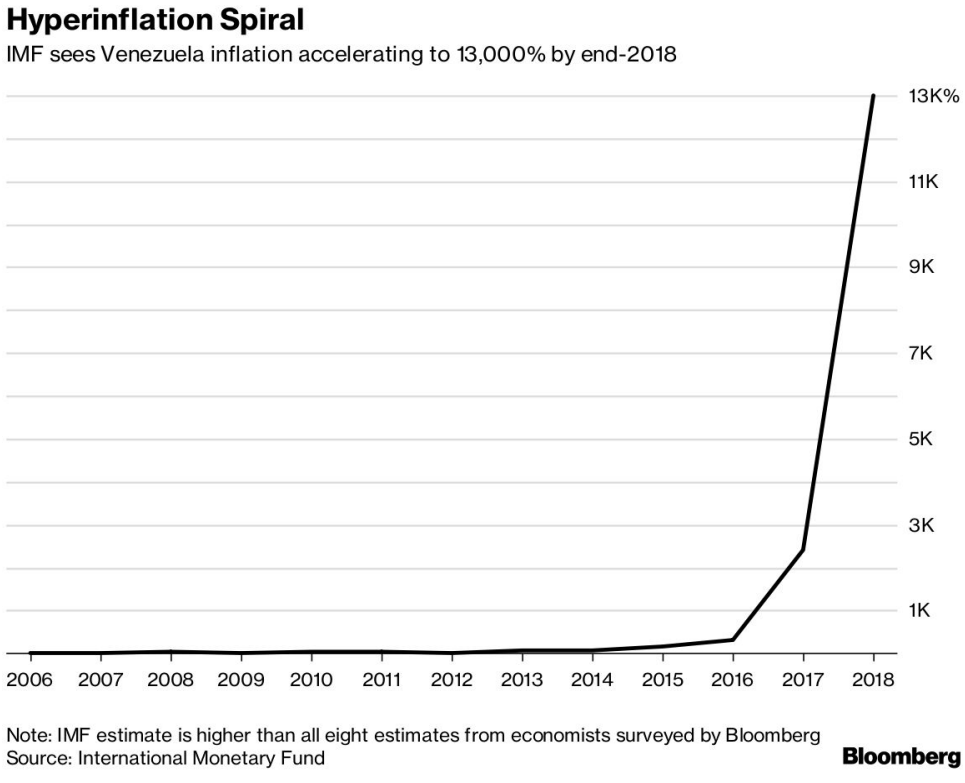
- Compute GDP of the year 2018 measured in 2010 dollar
  - $q_1, q_2, q_3 = 100, 200, 300$ and $p_1, p_2, p_3 = 8, 4, 1$
  - $Y_{2018}^{2010} = q_1 p_1 + q_2 p_2 + q_3 p_3 = 100 \times 8 + 200 \times 4 + 300 \times 1 = 1900$

GDP - Income Side

- GDP Is the **Sum of Incomes** in the Economy **during** a Given Period.
  - Suppose there are people index by i and there are I of them in the economy
  - Person i works h_i hours during this period
  - Person i's wage (dollar per hour) is w_i during this period.
  - The GDP is $Y = h_1 w_1 + h_2 w_2 + \cdots + h_N w_N$

(Hyper) Inflation

(Hyper) Inflation



Inflation Computation (Pt.1)

- **Inflation** measures the **price change in percentage**. When we compute the inflation, we need three things:

  1. Base Year: τ
  2. Start Year: T_0
  3. End Year: T_1

  - Formula: $\Pi^{\tau}_{T_1,T_0} = \frac{CPI^{\tau}_{T_1}}{CPI^{\tau}_{T_0}} - 1$

Inflation Computation (Pt.2)

- **Price (CPI)** measures the **value of the basket of goods** relative to the **base year**. When we compute the CPI, we need two things:
  1. Value of Basket of Goods Evaluated at the **Base Year Price**: V_τ
  2. Value of Basket of Goods Evaluated at the **Year of Interest's Price**: V_T
  - Formula: $CPI_T^\tau = V_T / V_\tau$

Inflation Computation (Pt.3)

- **The basket of goods** is a fixed set of consumer products and services.
- This basket contains what an **average consumer** consumes for that year.
- The basket is **updated**, and CPI will need revisions as long as there are significant changes in consumer buying habits or shifts in population distribution or demographics.
- Check out the full list through this link

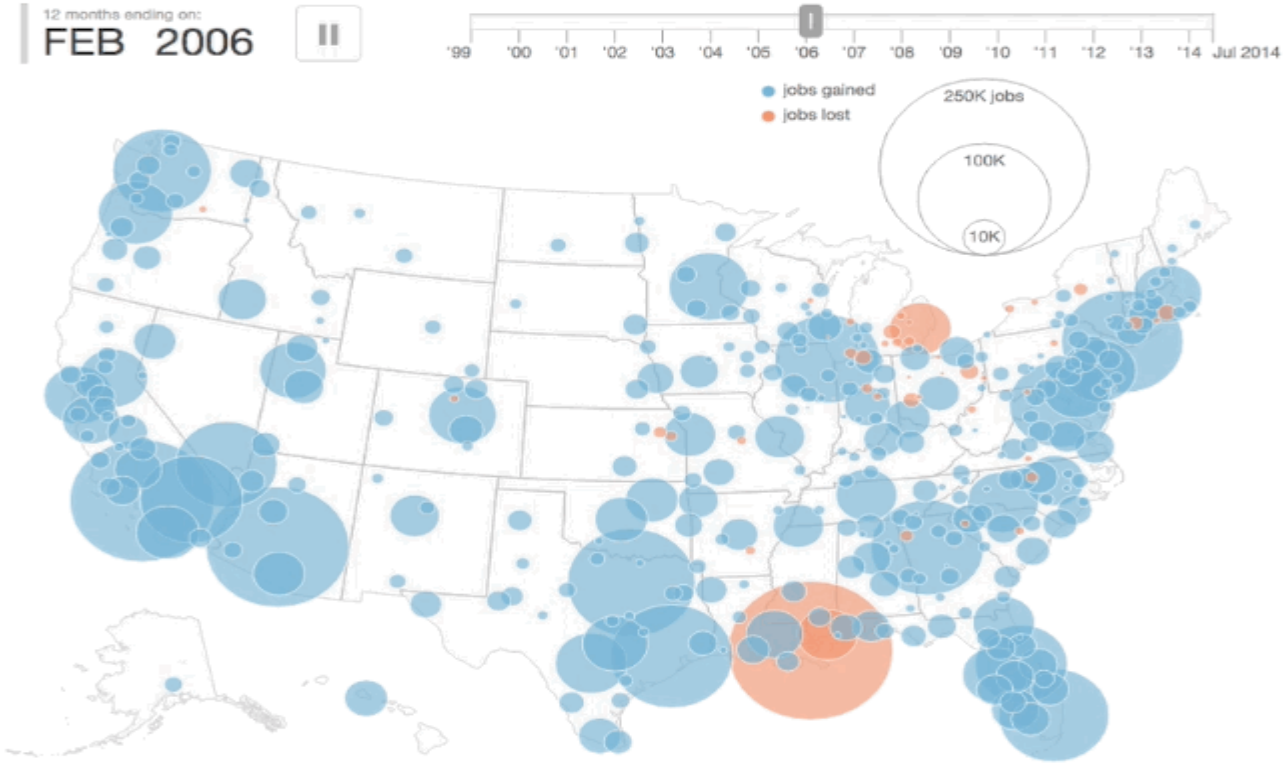
Inflation

Suppose in an **imaginary country**, the basket of goods only contains **pizza, beer, coffee**, and the base year is 2010. The consumption quantities and prices are given by

Firms	Quantity	Price2010	Price2015	Price2018
Pizza	50	8	8	10
Beer	100	4	3	5
Coffee	150	1	2	2

Macroeconomics - Recession

Recession



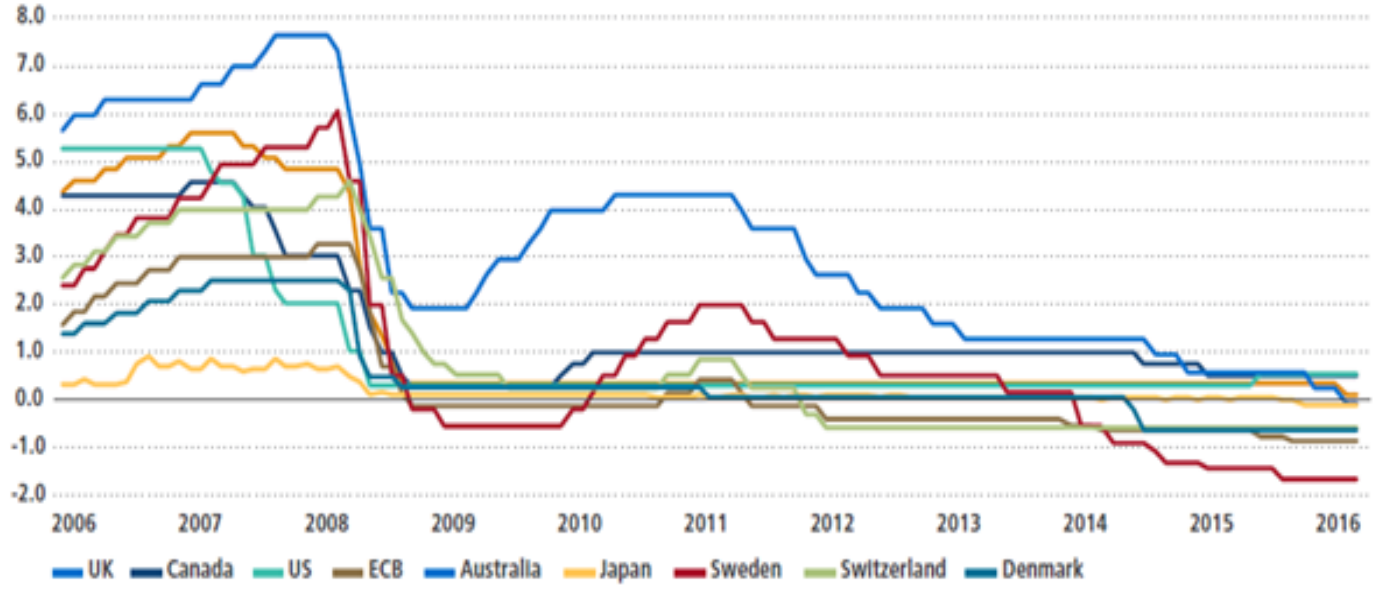
Recession

- A period of **temporary** economic **decline**. Characterized by lower output and higher unemployment than what we normally observe.
- Recession is **bad**. People lose their jobs, houses, insurance.
- **Who** gets hurt the most when a recession hits the economy?
- **Causes** for recessions.
- What should **we** (as you and me) do? (Consumption, Saving, Asset Portfolio)
- What should **policymakers** do? (Monetary Policy, Fiscal Policy)

Macroeconomics - Interest Rate

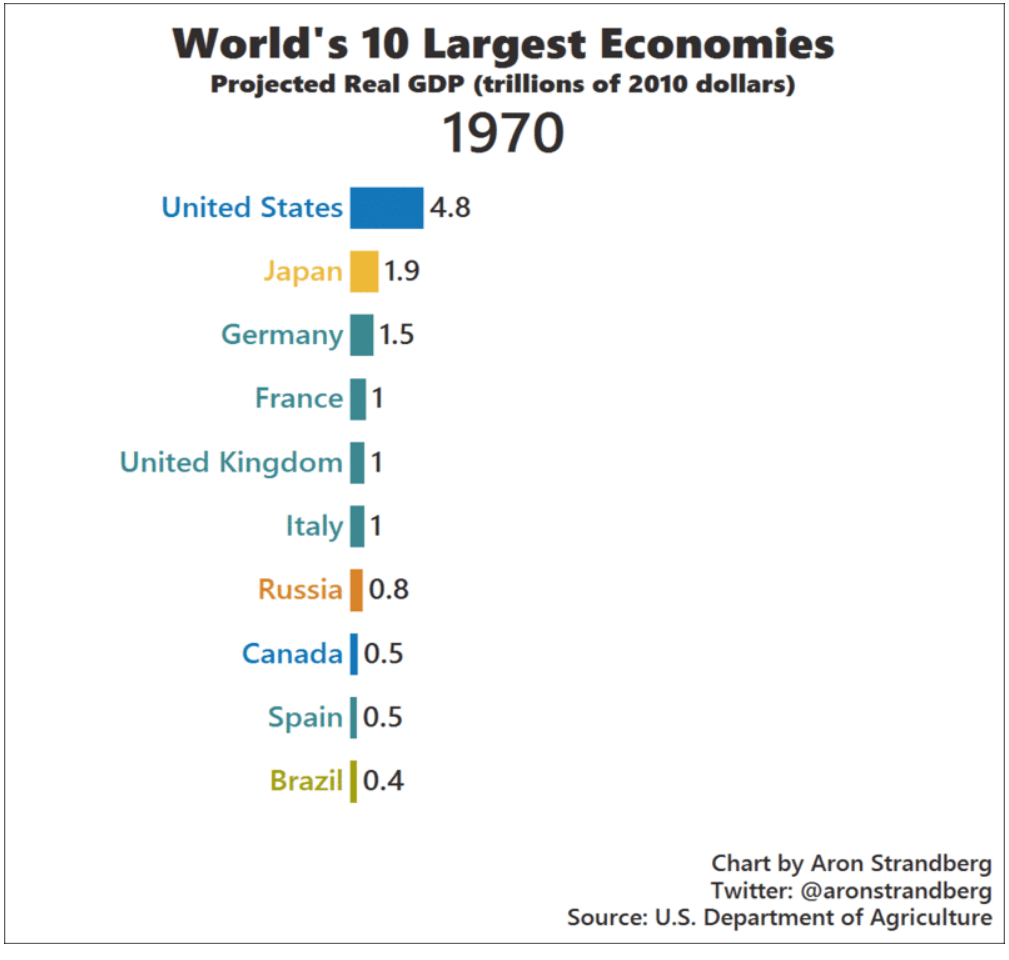
Interest Rate

FIGURE 1: GLOBAL CENTRAL BANK RATES



Source: Bloomberg as of 17 October 2016

Growth


World's 10 Largest Economies
Projected Real GDP (trillions of 2010 dollars)
1970
United States 4.8
Japan 1.9
Germany 1.5
France 1
United Kingdom 1
Italy 1
Russia 0.8
Canada 0.5
Spain 0.5
Brazil 0.4
Chart by Aron Strandberg
Twitter: @aronstrandberg
Source: U.S. Department of Agriculture

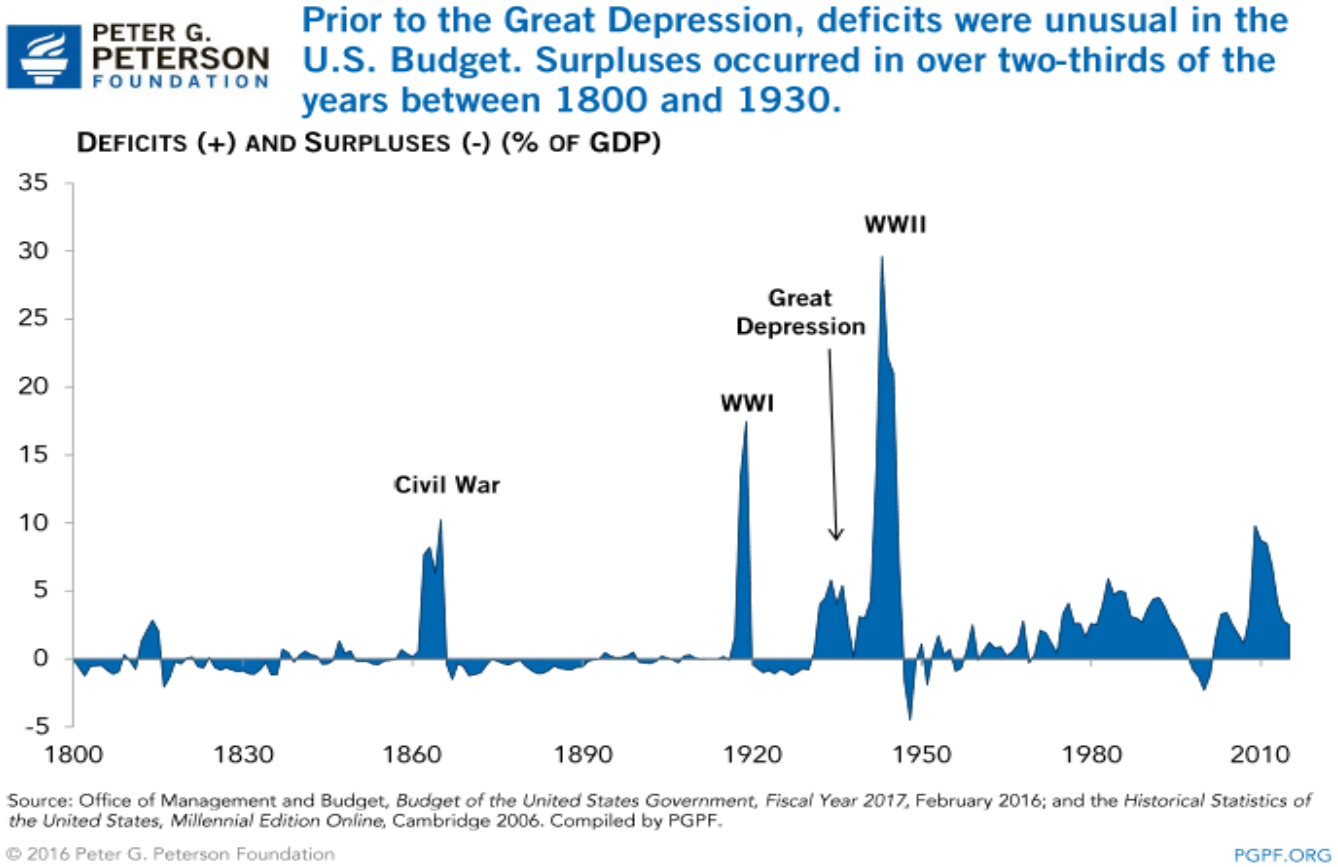
Growth


This 20-second Video Summarizes 35 Years of World's Economy
Year: 1980
1980
1985
1990
1995
2000
2005
2010
2015
GDP % by Continent
North America 30.3%
Europe 32.2%
South America 4.0%
Asia 20.2%
Oceania 1.5%
Africa 1.5%
Other 10.4%
Other
S. Africa
Brazil
S. Arabia
Japan
Turkey
India
China
Iran
Indonesia
Germany
Austria
Sweden
France
Belgium
United Kingdom
Netherlands
Italy
Spain
Mexico
Canada
United States
0:00 / 0:20
howmuch.net

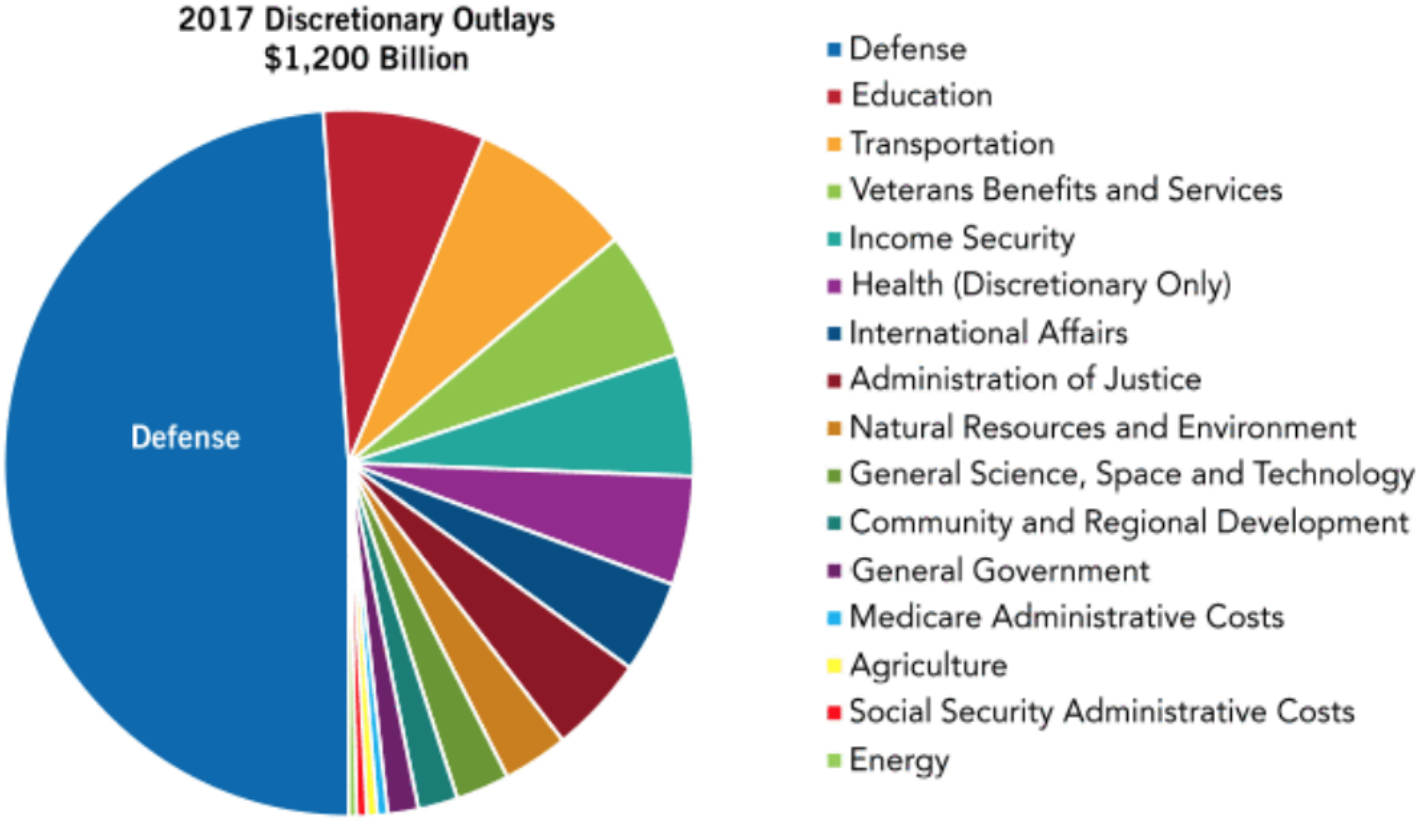
Growth

- Is growth a **historical trend**?
- What makes an economy grow in the first place? **Human Capital, Physical Capital, Technology, Institution, Culture** ...
- Why do **some** economies grow **whereas** some others do not?
- Can the less prosperous countries **learn from** the prosperous countries?

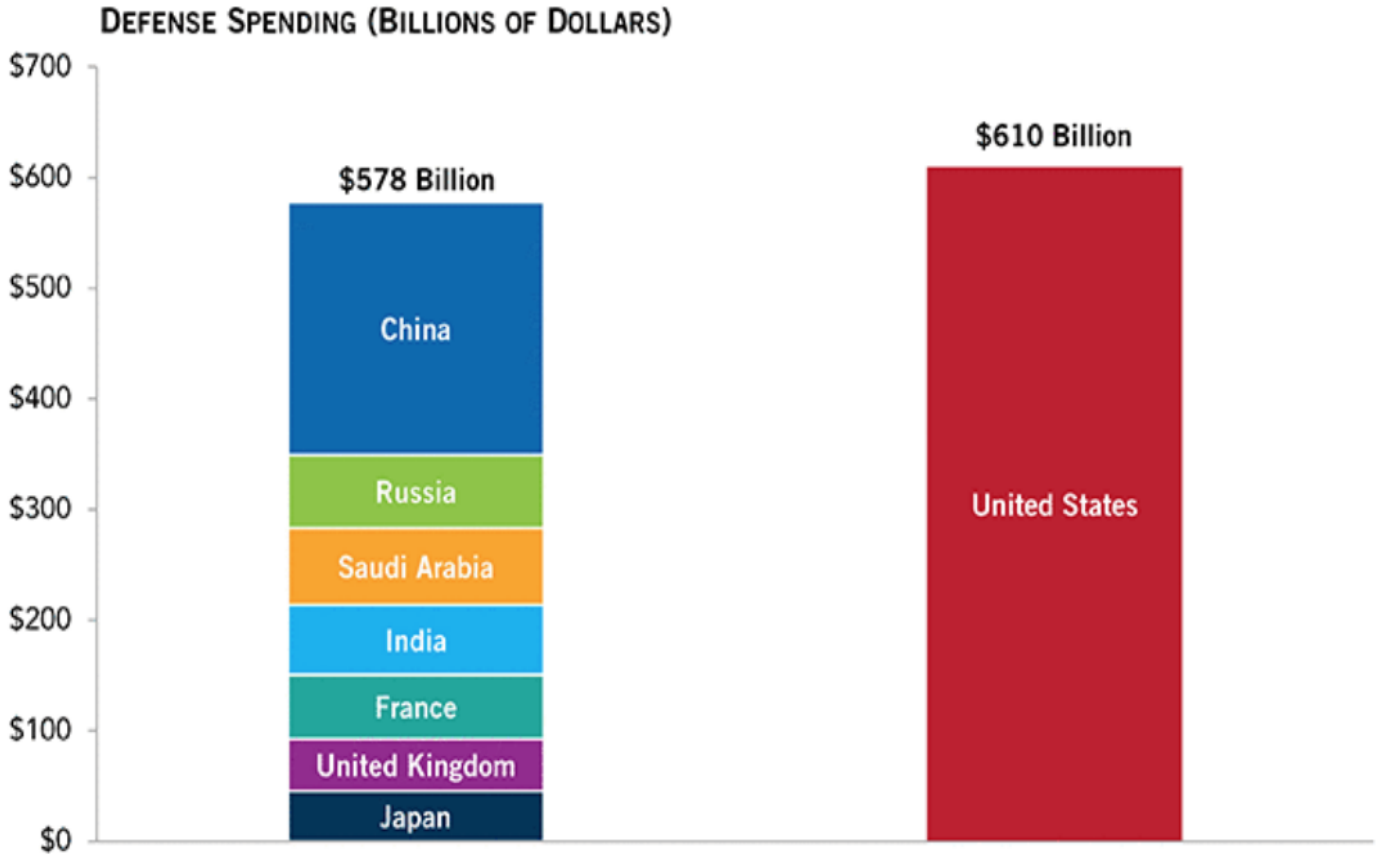
Government Deficit



Government Deficit



Government Deficit



Government Deficit

- The U.S. federal budget deficit for the fiscal year 2020 is **$1.103 trillion**
- The **deficit** occurs because the U.S. **government spending** of $4.746 trillion is higher than its **tax revenue** of **$3.422 trillion**.
- The deficit is **18 percent greater** than last year.

Government Deficit

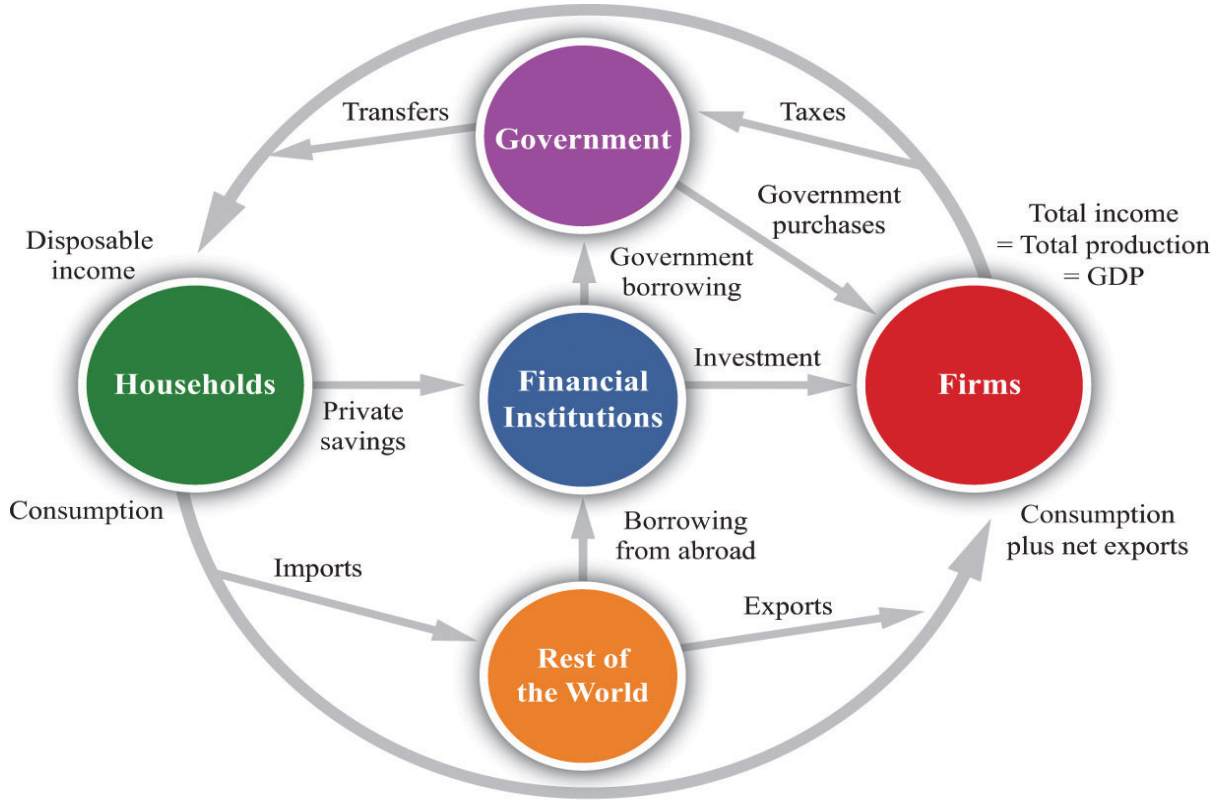
- Deficit = **Government Spending** - **Tax Revenue**
- Why do we need **Government Spending**
  - **Boost Economy** (That's why political parties overspend on purpose)
  - Provide **Public Goods**
    - Flood Control in the Netherlands v.s. Hurricane Katrina
    - Education
    - Defense

Government Deficit

- Why do we need **Tax**
  - To Finance **Government Spending**
  - To Provide **Incentives (Externalities)**
- Why don't we like **Tax**
  - American **Traditional Value** (Small Government)
  - **Market Distortion** (Can be partially avoided)
  - **Coporation Lobbying** (Tax Cuts $\Longrightarrow$ Efficiency $\Longrightarrow$ More Revenue)

Money Flow

Reverse the money flow, you get the goods/assets flow



Macroeconomics - The Big Picture

Money Flow

Markets:

- **Goods Market** - *Next Two Lectures*
- Money Market
- Labor Market
- International Financial Market

Policies

- Monetary Policy
- Fiscal Policy