# OUTLINE — October 21, 2019

- Overview of Macro
- Definition and Patterns of GDP
- Expenditure = C + I + G + (EX – IM)

GDP Video!!!

*Slides covered in detail in the video will be skipped over in class*

- 3 equations you must know
- Unemployment: Measurement & Patterns
- Inflation: Measurement & Patterns

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*PS3 due Gradescope & bcourses, Thursday 10/24 at 8 pm*

*bCourses quiz due Sunday 10/27 at 11:59 pm*

*Midterm 2 on Wednesday, Nov 6, 7 - 8:30 pm*

# Macroeconomics

- The economy as a whole
- Three main topics
  - (Long-run) Economic Growth
  - Unemployment
  - Inflation



# New meanings of “short” & “long”

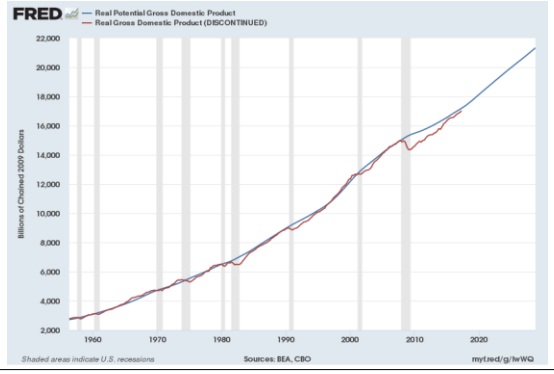
- In micro, *precise definitions*
  - Short run = so short that the firm can’t change amount of capital (K)
  - Long run = long enough that the firm can exit or enter or change K
- In macro, *not-so-precise*
  - Long run = decade-to-decade (10 years)
    OR generation-to-generation (20-25 years)
  - Short run = a couple of years or so, maybe more



# Total Output (GDP)

- Gross Domestic Product (GDP)
  - Monetary ($) value of total amount of goods and services produced in an economy in a year
- *Nominal* GDP versus *Real* GDP
- *Potential* GDP versus *Actual* GDP
- GDP per capita

## Actual vs Potential GDP, 1956-2018






## Various definitions of "growth"

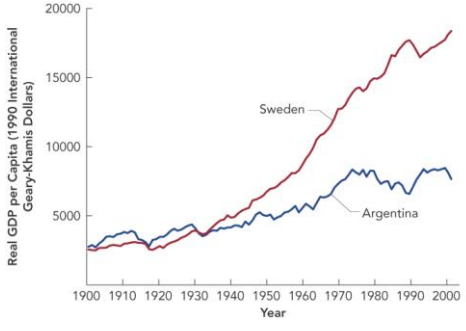
- "Economic growth" can mean . . .
  - . . . Long-run increases in potential GDP
  - . . . Long-run increases in actual GDP
  - . . . Short-run increases in actual GDP
- Therefore: Context matters . . . A lot.



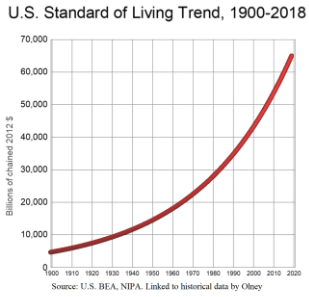
## Growth, Stagnation, or Decline



## Comparing Growth & Stagnation



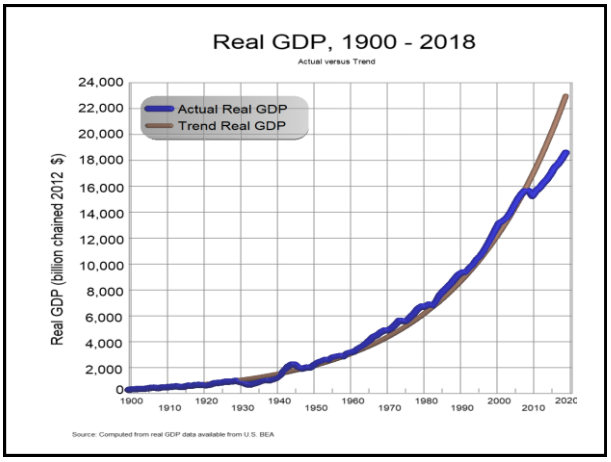
## U.S. economy: long-run growth




- What drives long-run growth?
  - September 4 class!

1) Greater quantity of inputs
   - Labor, capital, land
2) Greater productivity of inputs



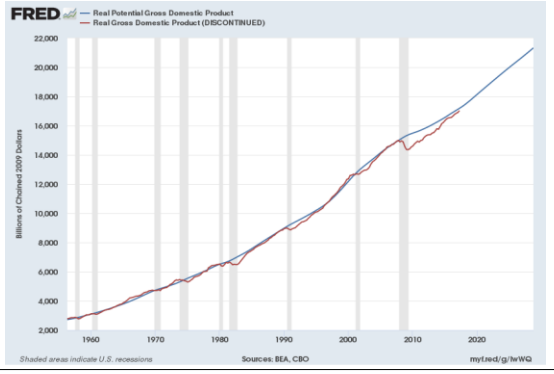



## Total Output in the Short Run

- Recession
- Depression
- Recovery
- Expansion

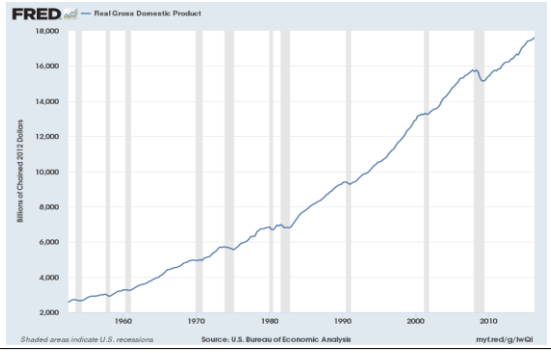


## Actual vs Potential GDP, 1956-2018



# Real GDP, 1955 – 2018

Shaded areas = recessions



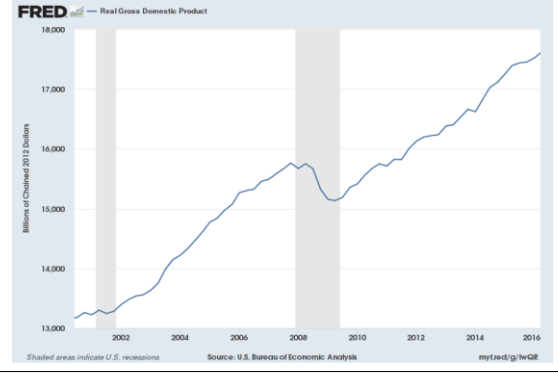



# Expenditure

- Consumption spending C
  - Households, for final goods and services
- Investment spending I
  - Businesses, for construction, equipment, changes in inventory holdings
- Government spending G
  - State, local, and federal government agencies, for goods and services (including government payrolls)
- Export spending EX
  - The rest of the world, for goods and services produced within U.S.
- Import spending IM
  - U.S. households, businesses & government, for goods and services produced outside U.S.

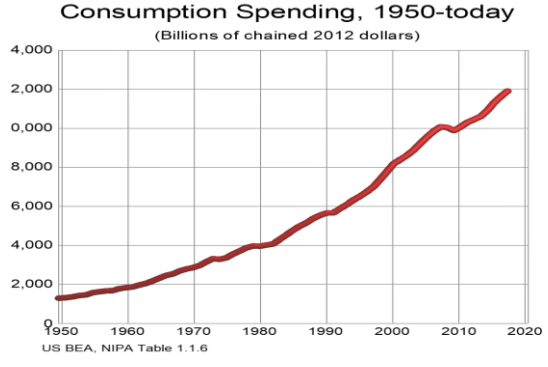


# Note how BAD 2007-09 was!






# Consumption dropped (!) in 2007-09



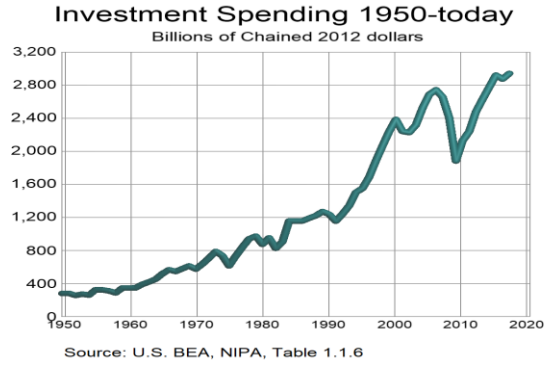
## Investment vs Intermediate Goods

- Investment
  - business spending for *capital*: equipment, construction of structures, and changes in inventory holdings
- Investment goods: used but not used up when producing other goods and services

- Intermediate goods
  - business spending for goods and services used as *inputs* in production
- Intermediate goods: used up when producing other goods and services

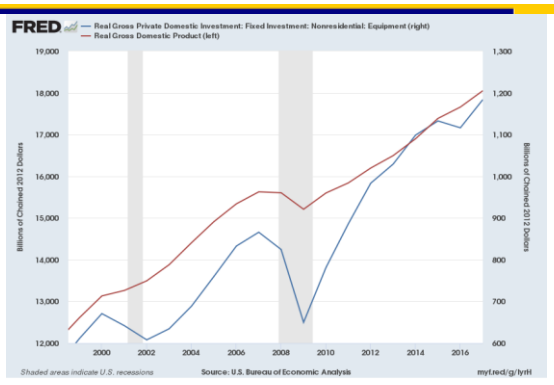


## Investment fell ~35% in 2007-09



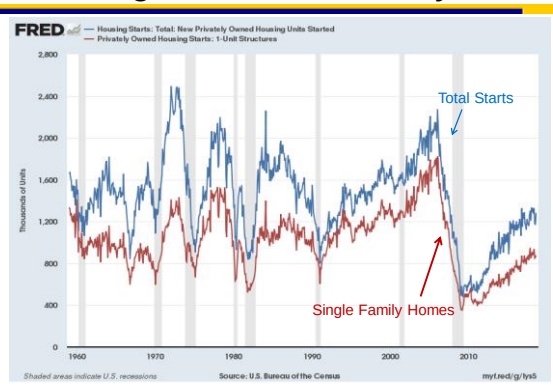



## Investments Swings > GDP Swings

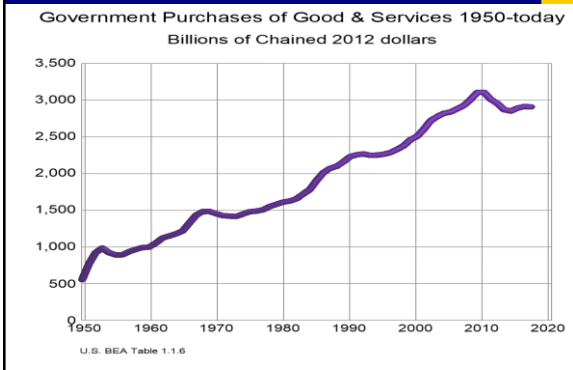





## Housing Construction Way Down

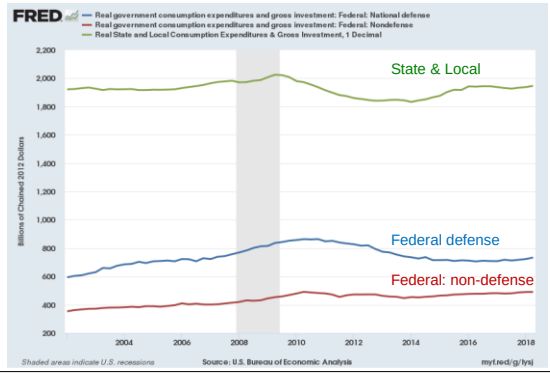


## After 2010, government spending was a drag



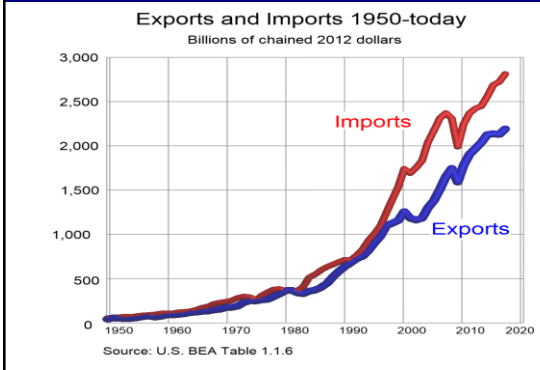



## State & Local swamps Federal Spending



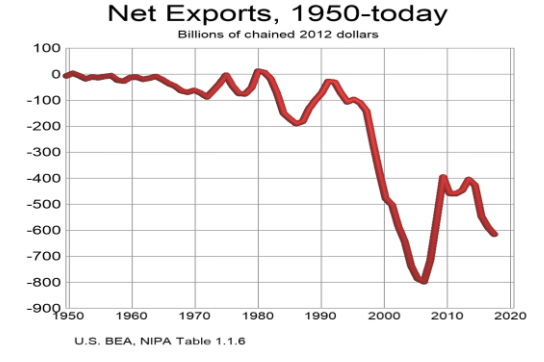



## In 2007-09, imports fell more than exports






## Net exports = exports – imports



# Aggregate Expenditure

- Aggregate Expenditure = C + I + G + EX – IM
- Why subtract imports?
  - Because C, I, G include both domestic & foreign output
  - AE (or, AD) defined as total expenditure for only domestic output

| Consumption | Investment | Government | Exports |
|---|---|---|---|
| Purchases of domestically-produced consumer goods and services | Purchases of domestically-produced machines & buildings | Purchases of domestically-produced goods and services | Purchases by foreigners of domestically-produced goods and services |
| Purchases of foreign-produced consumer goods and services | Purchases of foreign-produced machines & buildings | Purchases of foreign-produced goods and services | |



# Key concepts

- When figuring out IF some activity is counted in GDP and, if so, where, keep these three things in mind:

1. Is there a connection to employment?
2. Don't double count.
3. Who is buying what and where was it produced?



# Three Important Equations

1) Aggregate Demand (AD) = C + I + G + EX – IM

2) T = TA – TR

3) YD = Y + TR – TA
= Y – T



# Unemployment and the PPF

- "Being on the PPF" is equivalent to "full employment"
- "unemployment problem" = being inside the PPF
- Policy issue during recession: how do we get back to PPF

## Unemployment

- Unemployed people
  - Have no job
  - Have looked for work within the past 4 weeks
- Employed
- Labor force = employed + unemployed



## How many people?

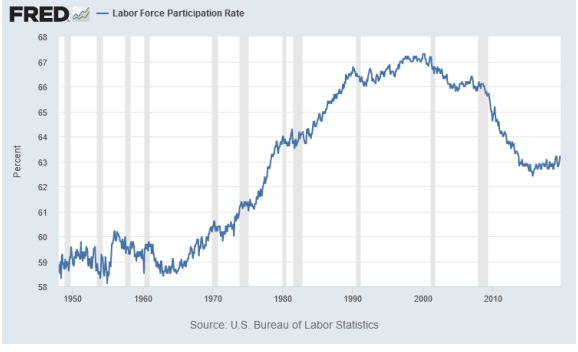
- As of Sept 2019, of 259.6 million in population 16+

| | |
|---|---|
| employed | 158.3 million |
| unemployed | 5.8 million |
| not in labor force | 95.6 million |

- Unemployment rate =
- Labor Force Participation Rate (LFPR) =

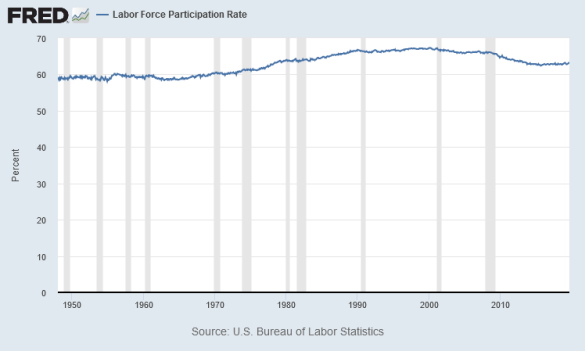


## Steep decline in LFPR since 2000

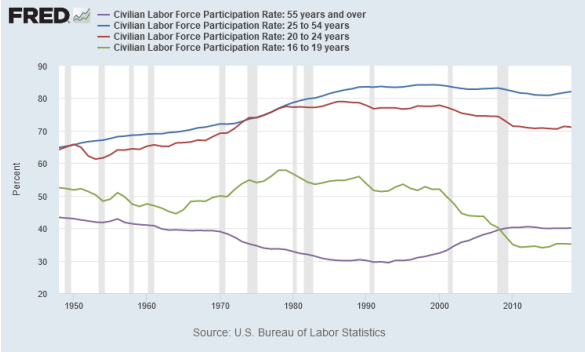





## But careful: truncated axis!



## Drop for which age group(s)?






## Sept '19 unemployment rate = 3.5%

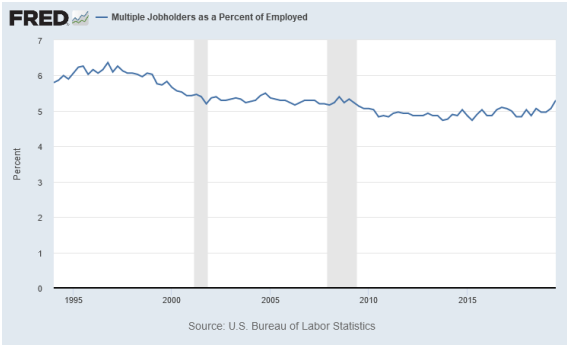
| | |
|---|---|
| White | 3.2 % |
| African-American | 5.5 % |
| Hispanic | 3.9 % |
| Asian | 2.5 % |
| 16 – 19 yrs old | 12.5 % |
| 20 yrs old + | 3.3 % |

(Of population ages 25 & over)

| | |
|---|---|
| HS grads, no college (22% of LF) | 3.6 % |
| B.A. or higher (36% of LF) | 2.0 % |



## Multiple jobholders as % of E, 1994 on






## Types of unemployment

- Frictional
- Seasonal
- Structural
- Cyclical
- Hidden

## The Unemployment Problem

- Discouraged workers
  - 151,000 people in Sept 2019
- Underemployed workers
  - Part-time (<35 hrs/week) & want full-time: 4.4 million (2.7% of labor force) in Sept 2019
- Neither group included in unemployment rate
  - "U-6 unemployment rate" in Sept 2019 was 6.9%



## Measuring Prices

- Measures average price of a mix of goods and services
- No units . . . Just a number
- CPI -- Consumer Price Index
  - Uses "typical urban market basket" from base period
    - *Base period is 1982-84*
- GDP Deflator (or, GDP Price Index)
  - Uses all goods & services produced from that year
    - *1998 index uses 1998 quantities; 2016 index uses 2016 quantities*
    - *Base year is 2012*



## "Typical Market Basket"

| Item | Share of total |
|---|---|
| Food | 14 % |
| Energy | 7 % |
| Goods other than food & energy | 19 % |
| Shelter | 34 % |
| Medical care | 7 % |
| Transportation services | 6 % |
| Other services | 14 % |



## Inflation Rate with CPI

$CPI_{Sept\ 2019} = 256.8$

$CPI_{Sept\ 2018} = 252.4$

Inflation rate =

Core CPI = CPI Excluding food & energy:

Core CPI in Sept 2019 = 264.5

Core CPI in Sept 2018 = 258.4

## Inflation Rate with GDP Deflator

GDP deflator$_{2019:II}$ = 112.2

GDP deflator$_{2018:II}$ = 110.8

Inflation rate =