OUTLINE — October 18, 2017

- Expenditure = C + I + G + (EX – IM), continued
- 3 equations you must know
- Measuring Unemployment
- Measuring Inflation

PS 3 due 10/23 – 10/24in section

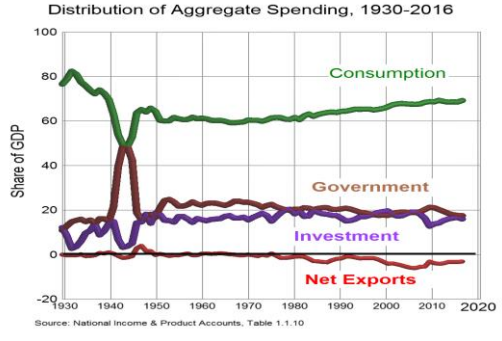
*Midterm 2 in **two weeks**: Wed., Nov 1, 7-8:30 pm*

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?

Focus: Total Expenditure



Expenditure

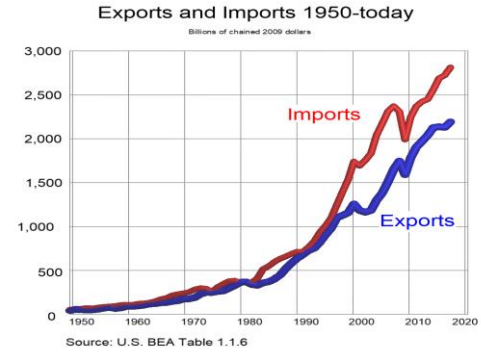
- Consumption spending C
  - Households, for final goods and services
- Investment spending I
  - Businesses, for construction, equipment, changes in inventory holdings
- Government spending G
  - State, local, and federal government agencies, for goods and services (including government payrolls)
- 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.

Expenditure, continued

- Export spending EX
  - 10-12 %
  - by the rest of the world
  - for goods and services produced within U.S.
- Import spending IM
  - 15-17 % of total
  - by U.S. households, businesses & government
  - for goods and services produced outside U.S.

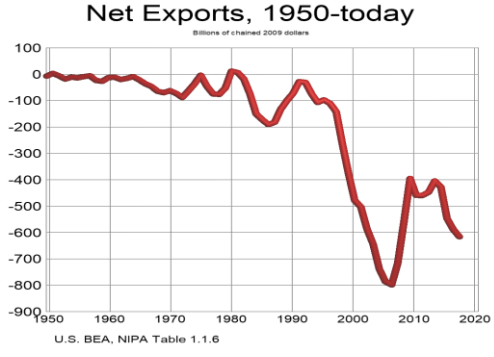
GDP = C + I + G + EX - IM Unemployment Inflation

In 2007-09, exports were rising



GDP = C + I + G + EX - IM Unemployment Inflation

And exports rose faster than imports



GDP = C + I + G + EX - IM Unemployment Inflation

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	

GDP = C + I + G + EX - IM Unemployment Inflation

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

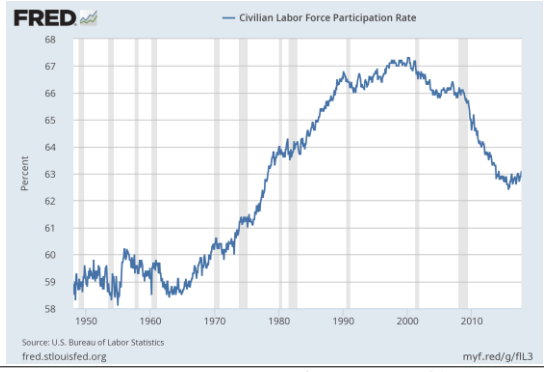
How many people?

- As of Sept 2017, of 255.6 million in population 16+

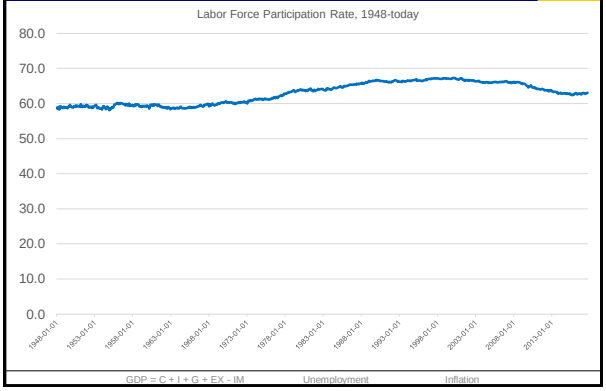
employed	154.3 million
unemployed	6.8 million
not in labor force	94.4 million

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

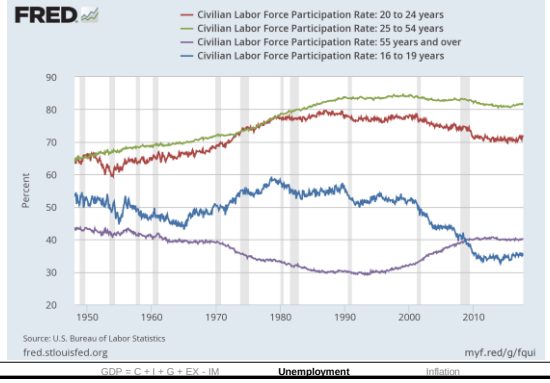
Steep decline in LFPR since 2000



But careful: truncated axis!



Drop for which age group(s)?



Sept '16 unemployment rate = 4.2%

White	3.7 %
African-American	7.0 %
Hispanic	5.1 %
Asian	3.7 %
16 – 19 yrs old	12.9 %
20 yrs old +	3.9 %

(Of population ages 25 & over)

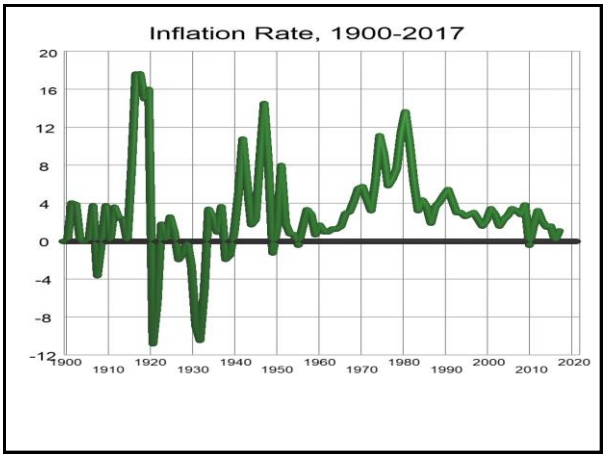
HS grads, no college (26% of LF)	4.3 %
B.A. or higher (40% of LF)	2.3 %

Types of unemployment

- Frictional
- Seasonal
- Structural
- Cyclical
- Hidden

The Unemployment Problem

- Discouraged workers
  - 146,000 in Sept 2017
- Underemployed workers
  - Part-time (<35 hrs/week) & want full-time: 5.1 million in Sept 2017
- Neither group included in unemployment rate
  - "U-6 unemployment rate" in Sept 2017 was 8.3%



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 2009*

"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

$CPI_{Sept\ 2017} = 246.8$

$CPI_{Sept\ 2016} = 241.4$

Inflation rate =

Core CPI = CPI Excluding food & energy:

Core CPI in Sept 2016 = 248.7

Core CPI in Sept 2017 = 252.9

Inflation Rate with GDP Deflator

$GDP\ deflator_{2017:II} = 113.0$

$GDP\ deflator_{2016:II} = 111.6$

Inflation rate =

What determines unemployment?

- Output (GDP) → Employment → Unemployment
- So key question: what determines how much output firms produce?

- **Key assumption** of Keynesian Model:
  - *Businesses change how much output they are producing only when they experience or anticipate changes in demand*
    - That is, businesses respond to aggregate demand
      - Aggregate demand = C + I + G + EX - IM
    - Businesses maximize profit, not employment

Macroeconomic Equilibrium

- We say:
  The economy is in "macroeconomic equilibrium" when total output (GDP) equals aggregate demand (C+I+G+EX-IM)
- Equilibrium isn't a policy goal; it's where the economy takes itself
- If AD is not changing, then firms have no incentive to change output between one period and the next

Moving to A New Equilibrium

- Why would businesses change how much output they are producing?
  - Because there's an actual or anticipated change in demand for their goods and services
    - **Increase** in aggregate demand? Produce **more** output
    - **Decrease** in aggregate demand? Produce **less** output

Adjustment Process

- How do they know demand changed?
  - For businesses selling services:
    -
  - For businesses selling goods:
    -
- Demand falls unexpectedly?
  -
- Demand rises unexpectedly?
  -

Macroeconomic Equilibrium

- The macroeconomy is in equilibrium when

  Output = Aggregate Demand

  GDP = AD

  Y = AD

  Y = C + I + G + (EX – IM)