OUTLINE — November 13, 2017

- Fiscal Policy, continued
  - Concerns regarding deficit spending
- The Fed & Monetary Policy
  - Money and Reserves and Bank Lending

PS4 due Mon/Tues Nov. 20/21
Other announcements sent by e-mail

Fiscal Policy Complications

- Concerns
  - This is summary slide
  - Read book re structural vs. cyclical deficit
- Temporary vs. permanent fiscal stimulus
- Federal vs. state & local policy
- Are we shifting only AD, or AD & PPF?
- How does government pay its bills when run a deficit?
  - Hint: By borrowing
- Impact on interest rates
  - “Crowding out” of investment?

Automatic vs Discretionary Policy

Automatic stabilizers	Discretionary fiscal policy
Leaving this to the book (read the book!)	

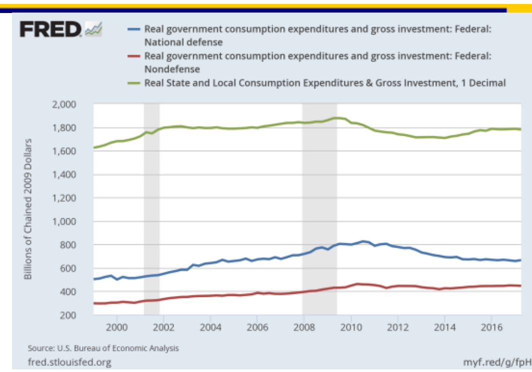
Temporary or Permanent Stimulus

- “Priming the pump”
  - A process of getting water flowing in a pump, and then the water *just keeps on flowing (even after the “priming” stops)*
- Does Government spending “prime the pump?”
  - What process keeps aggregate demand high after temporary increase in G ends?

Federal vs. State & Local Policy

- Federal government can run a budget deficit
- State & Local governments can not
- Recession? Income (Y) down, TA down, TR up
  - Federal: deficit automatically increases
  - State & Local: Deficit increases, but can't have deficit.
    So must cut G+TR or increase TA to eliminate deficit
- ***State & local governments worsen recessions***
  (not because they want to. . .)

State & Local swamps Federal Spending



Effect of G on GDP growth

BEA.gov, NIPA Table 2
Contributions to Percent Change in Real GDP

	2009	2010	2011	2012
Annual % change				
Real GDP	-2.8	2.5	1.6	2.3
By component of AD:				
Consumption	-1.1	1.3	1.6	1.3
Investment	-3.5	1.7	0.7	1.3
Net exports	1.2	-0.5	0.0	0.0
Government spending	0.6	0.0	-0.7	-0.3
Federal	0.4	0.4	-0.2	-0.2
State and local	0.2	-0.4	-0.4	-0.2

- Top # = sum of #s in next 4 rows (not last 2 rows, don't want to double count G)
- GDP grew in 2010
  - But state & local government spending was a drag on GDP growth

Are we shifting only AD, or AD & PPF?

- To shift PPF, need more inputs or higher productivity
- Some fiscal policy can shift both AD & PPF
  - Example: infrastructure spending
- But much fiscal policy shifts only AD
  - Example: tax cuts, transfer payments, some types of G
- When $Y_E < Y_{FE}$, expansionary fiscal policy helps close the output gap
- When $Y_E = Y_{FE}$ already, expansionary fiscal policy pushes economy beyond PPF
  - $Y_E > Y_{FE}$ typically leads to problems with inflation

How pay bills when run a deficit?

- Federal government does **not** "print money" to pay its bills
  - Deficit? **Federal government borrows**
    - Annual borrowing = (G + TR) – TA
  - Borrow by issuing "Treasuries" = I.O.U. from government
  - "Maturity" = how many months/years until fully repaid
    - Bills: Called "T-Bills"; Short-term, mature in 1 year or less
    - Notes: Mature in 2 to 10 years
    - Bonds: Long-term, mature in 20 to 30 years
- Who lends?
  - Everyone (see pie chart from Nov. 8)

ID #A01693790 $1,000

Payable to bearer on or after November 13, 2018

One Thousand and no/100 U.S. Dollars

Steven Mnuchin, Secretary of the U.S. Treasury

$1,000 ID #A01693790

T-bill prices and interest rates

- Market for Treasury bills

- Interest rate paid by borrower (government) = rate of return earned by lender (bond-holder)

Impact of deficits on Interest Rates

- Imagine bigger market: Market for loanable funds

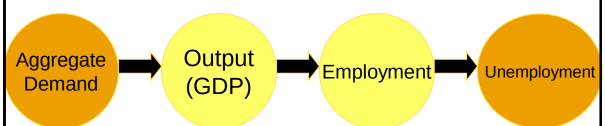
- *But, but, but . . . What if Supply changes too?*

Review

Question: Unemployment depends on?

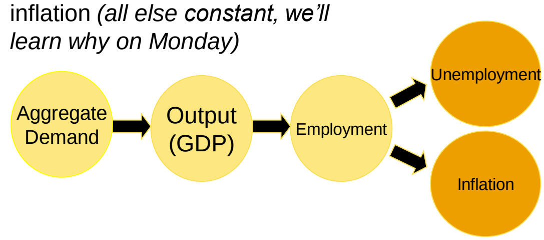
Answer: Ultimately, aggregate demand:

AD = C + I + G + (EX – IM)



What about inflation?

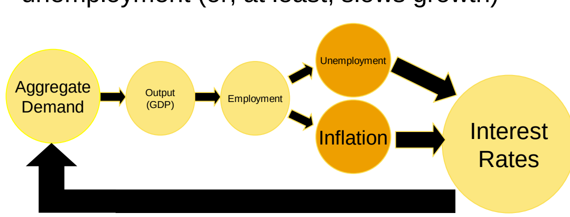
- Another Question: What determines the inflation rate?
- Answer: Output determines inflation *(all else constant, we'll learn why on Monday)*



Review Questions Deficits & Debt: Concerns Overview: Monetary policy Banks, Money, Interest Rates

Who Fights Inflation . . . And How?

- Who: The Fed
- How: Primarily, by changing interest rates
- What: To fight inflation, the Fed creates unemployment (or, at least, slows growth)



Review Questions Deficits & Debt: Concerns Overview: Monetary policy Banks, Money, Interest Rates

Financial Assets

"Money"	Other financial assets
- Advantage	- Advantage:
- Disadvantage:	- Disadvantage:

Review Questions Deficits & Debt: Concerns Overview: Monetary policy Banks, Money, Interest Rates

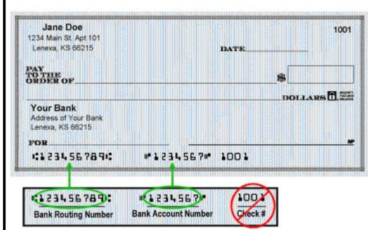
Banks and Money Creation

- A bank is an institution that
  - accepts deposits
  - makes loans
  - earns profit
  - and holds reserves – a fraction of deposits – to cover withdrawals
- Banks create money (checking account balances) by making loans with their “excess reserves”
  - The printing press is irrelevant

Bank (Checking) Accounts

You!

Bank



Movement of funds between accounts
- Electronic
- On demand
- Through “clearinghouse”
  Fed is the clearinghouse for U.S. banks

How checks (debits) clear

Bank A’s Ledger	
Account owner	Balance
Alejandra Barry Chelsea Dmitri etc., etc.	$15,000 $ 5,000 $24,000 $ 6,000
Total deposits	$1,000,000

How checks (debits) clear

Bank A’s Ledger	
Account owner	Checking Account Balance
Alejandra Barry Chelsea Dmitri etc., etc.	$15,000 $ 5,000 $24,000 $ 6,000
Total deposits	$1,000,000

Clearinghouse Ledger	
Bank name	Reserve Account Balance
Bank A Bank B etc., etc.	$200,000 $250,000
Total reserves	$150,000,000

How checks (debits) clear

Bank A's Ledger	
Account owner	Checking Account Balance
Alejandra	$15,000
etc., etc.	

Bank B's Ledger	
Account owner	Checking Account Balance
You!	$ 3,000
etc., etc.	

Federal Reserve Bank Ledger	
Bank name	Reserve Account Balance
Bank A	$200,000
Bank B	$250,000
etc., etc.	
Total reserves	$150,000,000

Alejandra writes you a check for (or, electronically sends you) $1,000
You deposit the check into (or, see the increase in) your account at Bank B

Bank "Reserves"

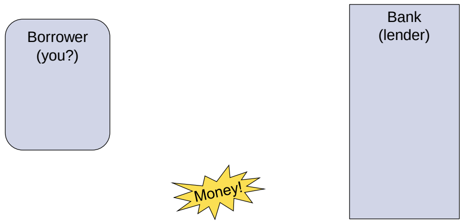
- Every bank has an account at Federal Reserve Bank
  - "Reserve Account"
- Bank reserves used to move funds between banks
- Required minimum balance = 10% of checking account balances
  - "Required reserves"
- Any balance beyond minimum requirement called "excess reserves"
  - Excess reserves = Total reserves – Required reserves

Banks make loans

- Banks earn profit by making loans

AND!

- Banks <u>create money</u> by making loans

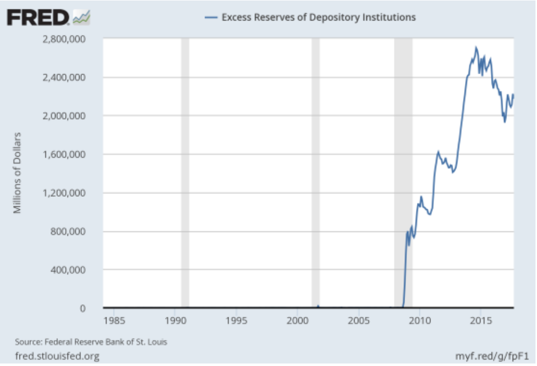


Changing the Money Supply

- Banks create money by making loans with their "excess reserves"
- Fed wants more money in economy?
  - Fed increases excess reserves held by banks
  - Banks lend more, creating more money (checking account balances)
- Fed wants less money in economy?
  - Fed decreases excess reserves held by banks
  - Banks lend less, creating less money (checking account balances)
- Or, at least, that's how it used to work . . .

How many unlent reserves?

Oh my, 2001 "blip" now barely registers



How Fed changes bank reserves

- To increase bank reserves, Fed buys assets – traditionally Treasury bills – from banks
  - Fed pays bank by increasing bank's reserves
- To decrease bank reserves, Fed sells assets to banks
- The Fed's Balance Sheet: https://www.clevelandfed.org/our-research/indicators-and-data/credit-easing.aspx

Federal Funds Rate

- Fed requires bank reserves ≥ 10% of deposits
  - Not enough reserves? Borrow from another bank
- FFR (federal funds rate): interest rate charged by banks on overnight loans to other banks
- Demand for federal funds
- Supply of federal funds
- Equilibrium