Eco 10350 Principles of Macro

Lecture 9



Money

- Define money ...
- Related issues:
 - What counts as money?
 - Why does money have value?

Money

- Define money ...
- What are its functions?
 - Better than barter, avoid "double coincidence of wants"
- Money is
 - Medium of Exchange
 - Store of Value
 - Unit of Account
 - Standard of Deferred Payment
- Commodity Money vs Fiat Money
 - Faith-based currency
- Money is liquid has immediate value, which is not lost to immediate need
 - Compared w other assets?

Measures of Money in US

M1 =

- Cash (in circulation; held outside banking system); currency
- Checking accounts (demand deposits)
- Travelers checks
- M2 = M1 +
 - Savings account deposits & other time deposits
 - Certificates of deposit (less than \$100k)
 - Money Market funds
- Most money isn't cash, just electronic notations

Currency & M1



Currency as fraction of M1



M2



M1 as fraction of M2



MI/M2

Money as fraction of GDP



Measures of Money in US

- Obviously there are fuzzy areas
 - Many banks allow easy or even automatic transfer of funds from saving to checking account (M2 -> M1)
 - Plastic isn't there!
 - debit cards are linked to checking account
 - credit cards represent loans and direct funds from one account to another
 - Crypto ain't there (yet?)
 - Local money
- Other measures include:
 - Currency (Mo) just cash in circulation
 - Institutional Money Funds
 - MZM zero maturity assets

Banks

- Maturity transformation
- Take deposits that can be withdrawn at any time
- Lend at long maturities
- "classic" bank -->
- Shows "T-account" of really simple bank
- "T-account" shows assets and liabilities, should net to zero



Bank Assets & Liabilities

- Bank "Magic" is getting depositors to think of their deposits as perfectly safe
- But actually they're loans from individuals to bank
- An "investment club" might work the same way, where people pool their funds to invest
- But depositors get told they can withdraw at any time
- These are assets to individuals but liabilities to banks
- "Magic" is that enough people put their deposits in, all knowing that they could withdraw at any time
- But bank lends for long maturity (eg for a 30-year mortgage)
- So if everybody wants to withdraw at once then ... oh shit
- For centuries banks were unstable because of this, but in US the government has made it simple & guarantees safety
- Every institution (called "bank" or not) that has this mismatch between maturities of Assets & Liabilities has this issue
 - When it works, it seems like magic
 - When it doesn't work, oh shit

Bank Assets & Liabilities

- Bank assets include
 - Cash on hand (vault cash) and in the ATMs
 - Reserves held at Federal Reserve Bank
 - Loans
 - Ioans to US government ie buy a Treasury bond
 - loans to other entities other bonds such as munis, corporates
 - loans to businesses
 - loans to homeowners eg mortgages
 - loans that have been securitized (we'll come back to that)
- Here we pretend that these all have a value that is easy to know but real world is messier by far!

Securitization of loans

- Most banks don't make many individual loans anymore
- Diversification
- Would bank rather have assets of
 - I mortgage worth \$300,000 on one property or
 - 10 shares of 10 different \$300,000 mortgages, each for 1/10 of that mortgage, on 10 properties in 10 different cities
 - duh, diversification is safer
- same for other loans: auto, student debt, credit cards, business,
- More "magic" where loan originators make a bunch of loans, package them into securities, then sell of bits of the security
- Often with additional features such as "waterfall" some bits get the first repayments, other bit get later
- These "bits" are called tranches
- So if there are 100 loans then some bits get interest payments of the first 10 to repay; others get payments of last 20...
- These different risk/return profiles are sold for different prices & implied rates of return

Banks balance assets & liabilities

- In super-simple example, bank had 108 deposits of \$1000 and 1 loan of \$100,000 so \$8000 cushion
- What is the right cushion?
- Larger cushion is safer but less profitable
- Bank makes interest on loan, pays about o% on deposits, and uses that margin to buy ATMs, pay tellers, rent
 offices, run a website, etc give people the illusion that there's a safe & secure institution as well as pay
 shareholders a profit
- In exchange for government guarantee against bank runs, banks are regulated to keep a certain cushion
- May have a required reserve ratio, that maybe 10% of loans be kept in reserve

again a multiplier...

- One bank's assets are another bank's liabilities
- For now think of just 1 mega-bank in economy, then worry about segmentation
- Assume 10% required reserve ratio = RR
- (and for now assume zero vault cash, they're an online bank w no ATM or other branch)
- Suppose bank gets \$7m of new deposits
- 90% is re-loaned out and becomes more deposits
- This keeps on percolating through!
- That \$7m of new deposit can become \$7m/RR = \$7om of new money

А	L
\$7m reserves	\$7m deposits
А	L
\$0.7m reserves \$6.3m loans	\$7m deposits
А	L
\$0.7m reserves \$6.3m loans	\$7m deposits \$6.3m deposits
Α	L
etc	etc

Real world is obviously more complicated

- Multiple banks so one bank's loan does not automatically become its own deposits but those new deposits go to other banks, so the other banks make new loans with these new deposits – but multiple banks don't change the equation for overall multiplier
- Confidence does change if loans get put to work as deposits in banking system then good
- If loans get used to buy gold & bury in the backyard then no multiplier
- If loans get put into foreign banks that are seen as safer, then no multiplier for local economy
- Some loans get used by businesses that want to keep cash in registers