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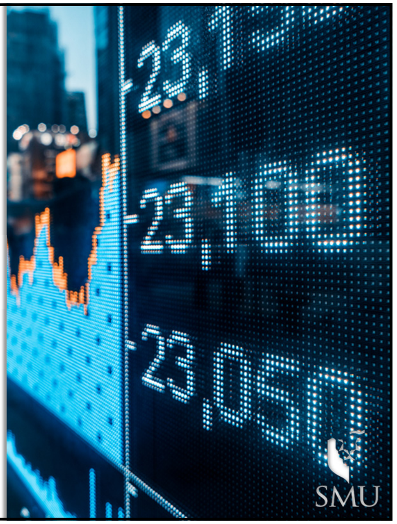
Lecture 9

Banking & The Monetary System

Economics
& Society



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Previously in E&S…

* Definition of growth
  exponential – catch-up – sustained growth
* History of growth
  earlier societies – Malthusian cycles – Industrial Revolution
* Inequality and poverty
* The Solow growth model
  production function – accumulation of capital – saving
* Causes of prosperity
  climate, geography, culture, institutions, history and luck

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Banking & The Monetary System

Estimated duration: 120min

Lecture 9

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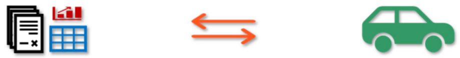
Money

- Money is ***neither*** a ***good***, nor a ***service***
  thus, its total face value is ***not included in GDP***
- Money, however, could be an ***asset***
  because it ***represents*** purchasing power
- Money ***simplifies*** transactions by splitting them into ***two halves***:



- Thus, holding money represents an
  only the first half of the transaction is ***completed;*** the other half is still ***pending***
- So, money can be interpreted as a

Roles & properties of money

- The ***3 roles*** of money:
  1. ***Medium of exchange***: an asset generally ***exchanged*** for goods and services
  2. ***Store of value:*** an asset used to ***transfer*** purchasing power into the future
  3. ***Unit of account***: a universal standard used to ***measure*** value, price or cost.
- ***Various forms*** of money have existed throughout ***history***
  metals, animals, sea-shells, cigarettes, phonecards, computing power
- ***Anything*** can be used as money as long as it has the following ***properties***:
  - To be ***generally accepted*** as an ***objective value carrier***
  - To be ***controllable in quantity*** (not in abundance – not easy to counterfeit)
  - To be ***portable*** and relatively ***durable***
  - To be non-destructively ***denominated***

Fiat vs. commodity money

There are ***3 technologies*** of money:

1. Commodity money: carries ***intrinsic value*** due to its nature or the value of the material it is made of
2. Commodity-backed money: carries no intrinsic value on itself but ***legally represents a fixed quantity of something else*** of intrinsic value
   invented around the 11th century in China
3. Fiat money: neither carries nor represents a fixed intrinsic value but is used as ***legal tender by government*** decree:
   it is valuable only because everyone ***has agreed to accept it*** as money

- Today all economic systems have switched to using ***fiat money***

The Banking System

- In every economy, the monetary system is ***run*** by a ***Central Bank (CB)***:
  - An ***administrative institution*** which serves as the ***monetary authority***
  - The CB operates ***completely autonomously*** from the government
  - The CB is the ***bank of commercial banks***.
- Commercial banks are ***profit maximizing firms***:
  - They accept deposits or CB money and provide credit
  - Banks act as a ***link*** between saving and investment
  - Banks perform ***2 impossible functions***:
    - ***Maturity transformation***: borrowing short – lending long
    - ***Risk handling***: depositors consider their deposits 100% secure – loans are risky
  - ***Moral hazard*** is inherent in banking.

The institutional roles of the CB

1. To ***monitor*** and ***regulate*** the banking system
2. To ***issue the cash*** in the economy
3. To keep ***inflation*** under control
4. To clear complex ***inter–bank payments***
5. To assist ***solvent*** banks if they become ***illiquid***:
   - A bank is ***solvent*** when its assets can cover its obligations
   - A bank becomes ***illiquid*** when its cash reserves cannot cover withdrawals.
6. To manage the ***exchange rates*** and foreign currency reserves

The money supply

- There are ***2 main definitions*** of money supply:
  - ***M1*** = *Cash held outside banks + checking accounts (checks, debit, contactless)*
  - ***M2*** = *M1 + saving accounts + money market accounts.*
- M1 is ***more liquid*** (easier to be accepted for transactions) than M2

  money in saving and money market accounts cannot be spent unless it is ***converted to M1*** first
- In our analysis, we will mainly use the ***M1 money supply***
- Cash reserves held by the Central Bank or commercial banks are ***NOT money***

  because it is ***out of circulation***

Banks create money!

- If a bank has $100 in ***deposits***:
  - It can ***reserve*** say $10 in case some depositors decide to withdraw cash
  - It can ***loan out*** $90 in credit to some customer.
- If a bank has $10 of its owner's money (own capitalization):
  - It can use it as ***reserves***
  - It can ***loan out*** $90 in credit to some customer.
- In both cases, the bank has ***created $90*** that did not exist before in the economy

  the $90 of new credit will ***seize existing*** when the loan is paid back PS9-q1
- Money creation is an ***accounting process*** that does not generate ***wealth***:
  - The bank registers a $90 ***asset*** (the loan) together with a $90 ***liability*** (the credit)
  - ***Converts*** a "promise for repayment" and "guarantee for liquidity" to M1 money

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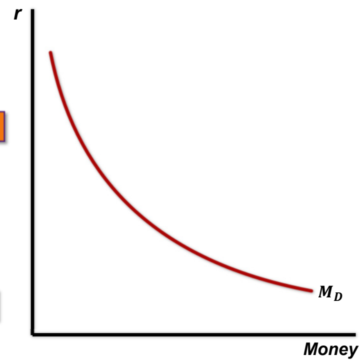
Money demand

- ★ ***Demand for money*** (M_D) is the amount of wealth individuals want to hold in money instead of other interest-bearing assets
- ★ Money demand for transactions and precaution is ***negatively related*** to r PS9-q4
  - r is the ***opportunity cost*** of holding M1 money
- ★ Money demand for speculation is also ***negatively related*** to r:
  - ▸ When r ***falls***
  - ▸ Prices of financial assets increase PS9-q5
  - ▸ Speculators sell assets and ***hold more cash***.



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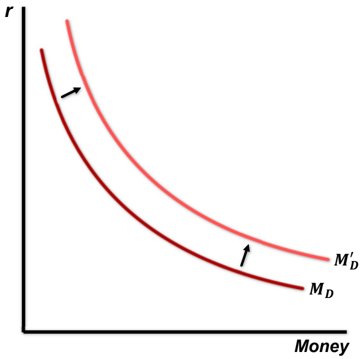
Money demand shifters

- ★ ***M_D*** will shift when people decide to hold ***more money*** independently of r:
  - ▸ If ***real GDP increases***, people will want to hold more money for their transactions ***[L1]***
  - ▸ If ***prices increase***, money demand will increase
  - ▸ If ***public safety*** is at risk, money demand may rise



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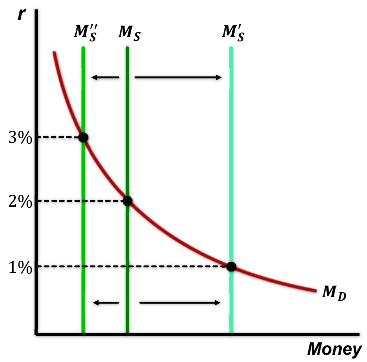
The money market

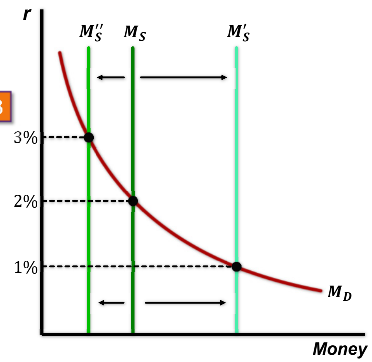
- Money Supply (M_S) is the ***sum*** of CB issued money and bank created credit
- The ***intersection*** of M_D and M_S determines r^*
- The CB can ***manipulate*** r^* by ***affecting*** M_S
- For instance, if the CB wishes $r = 1\%$
  - It can infuse more ***CB money*** to the economy
  - Or encourage banks to provide ***more credit***
  - Till M_s ***shifts*** to M_S'.
- If the CB wishes $r = 3\%$
  - It can do the ***reverse***, till M_s ***shifts*** to M_S''.



How can the CB affect M_S

- If banks have ***ample reserves***:

  M_S will adjust ***on its own*** to r^* because banks will provide more (M_S') or less (M_S'') ***credit***
- If banks have ***scarce reserves*** or M_S needs to change ***substantially***: PS9-q3
  - CB increases M_S by selling government securities to the public ***collecting cash*** and taking it out of circulation (OMS)
  - CB decreases M_S by buying securities from the public ***injecting cash*** to the economy. (OMP)
  - These actions are known as ***OMOs*** or ***QE***.



What prevents banks from over-loaning?

1. The ***money demand***

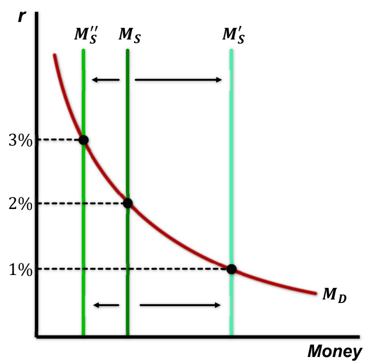
   at the interest rate set by the CB there is a ***limited demand*** for loans by ***sensible*** debtors
2. The bank's ***capital requirements***

   the CB mandates that bankers must use some of their ***own money*** for loans
3. Exposure to ***risk of default***

   insensible lending is ***not profit-maximizing***

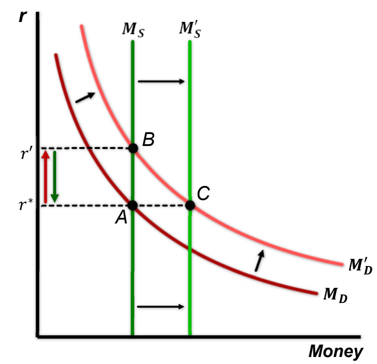
- ***NOT*** the reserve ratio

  today banks have sufficient reserves or access to CB money to cover ***all sensible loans***.



Monetary policy

- Assume that the CB has ***set*** r^*
- Then, some ***shock*** causes M_D to ***shift*** to M_D'
- If reserves were scarce:
  - r^* will ***tend to increase*** to r'
  - The CB can ***prevent*** r^* from changing by conducting OMPs that will ***shift*** M_s to M_S'.
- If reserves were ample:
  - Banks ***already have reserves*** to provide ***loans*** at r^* till M_s becomes M_S'.



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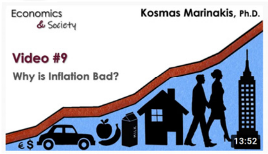
Internal video

In this video I explain why inflation is bad. There are several different reasons that come from all sides of economics: distortion of the income distribution, worsening of the economic environment, distortion of credit relations, distortion of competition, inefficiencies from anti-inflationary policies and more.

YouTube



E&S Video 9 - Why is Inflation Bad?
86 views • 2 months ago
Kosmas Marinakis
Economics & Society Tutorial Video #9 Kosmas Marinakis, Ph.D. www.kmarinakis.org/es In this video we will examine why ...

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External video

Watch how hyperinflation has recently caused a major societal crisis in Zimbabwe and what are the consequences in the economy when money loses its value almost entirely.

YouTube

Zimbabwe's Currency Crisis: the worthless $100 trillion bill
4.4M views • 1 year ago
PolyMatter
This includes a paid sponsorship which had no part in the writing, editing, or production of the rest of the video. Music by Epidemic ...
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Thank you!

(you are welcomed to stay for *consultation* or *discussion*)

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