Kosmas Marinakis, Ph.D.

Lecture 9

Banking & The Monetary System

Economics & Society



1

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

© 2019-23 Kosmas Marinakis, SMU


Banking & The Monetary System
MONEY
MAS
Monetary Authority of Singapore
MONEY SUPPLY
MONEY DEMAND
THE MONEY MARKET
INFLATION
Lecture 9

3


MONEY

4

Money

- Money is ***neither*** a ***good***, nor a ***service***
  thus, its value is
- Money, however, sometimes is considered an ***asset***
  because it ***represents*** purchasing power
- Money is a technology that ***simplifies*** transactions

- Thus, holding money is like an or a on real output
  only the first half of the transaction ; the other half is still
- So, money can be interpreted as a form of

© 2019-23 Kosmas Marinakis, SMU

Uses & properties of money

- The ***3 uses*** of money:
  1. ***Medium of exchange***: to be ***exchanged*** for goods and services
  2. ***Store of value:*** to ***transfer*** purchasing power into the future
  3. ***Unit of account***: a unit of ***measurement*** for value.
- ***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***

© 2019-23 Kosmas Marinakis, SMU

3 technologies

1. Commodity money: its value is ***intrinsic*** due to its nature or the material it is made of

   for instance: gold coins, goats, cigarettes

2. Commodity-backed money: a token that does not carry intrinsic value but it is ***pegged to something*** of intrinsic value

   for instance: a receipt for the deposit of gold

3. Fiat money: neither carries nor represents a fixed intrinsic value – it is used as ***legal tender by government*** decree

   for instance: the Singaporean dollar, the Euro, the Yien

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

© 2019-23 Kosmas Marinakis, SMU

7



8

The Central Bank

- 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***.
- The ***institutional roles*** of the CB:
  1. ***Monitors*** and ***regulates*** the banking system
  2. Issues the ***cash money*** in the economy
  3. Keeps ***inflation*** in check
  4. Consolidates ***inter–bank transactions***
  5. Assists commercial banks in ***difficult situations***
  6. Manage the ***exchange rates*** and foreign currency reserves

© 2019-23 Kosmas Marinakis, SMU

9

Commercial Banks

- Commercial banks are ***profit maximizing firms***:
  - They accept deposits and provide credit
  - They ***link*** saving and investment (*)
  - Banks facilitate transactions and assess risks in the economy.
- Commercial banks can create money using an ***accounting process***:
  - When a bank **loans** $100 to a customer, it generates an asset (the expectation of the $100 to be paid back)
  - It also generates a $100 liability (the $100 credit in the customer's account)
  - Those two ***cancel each-other out*** and do not change the bank's net position
  - If the customer ever requests to withdraw the $100 in cash, the bank can ***borrow*** it from the CB using the loan (which is an asset) as collateral
  - Money creation only produces liquidity; it does not create ***real wealth***

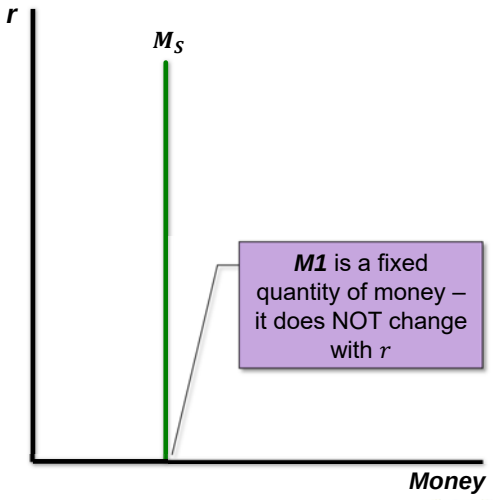
© 2019-23 Kosmas Marinakis, SMU

10

The money supply

- There are ***2 main definitions*** of M_S:
  - ***M1*** = *Cash + checking accounts (debit)*
  - ***M2*** = *M1 + saving accounts + fixed deposits.*
- M1 is ***more liquid*** than M2

  money in saving accounts and fixed deposits cannot be spent unless it is first ***converted to M1***
- Cash held by the Central Bank or commercial banks are ***NOT money***
- In our analysis, we will assume $\boldsymbol{M_S}$ ***is*** $\boldsymbol{M1}$



© 2019-23 Kosmas Marinakis, SMU

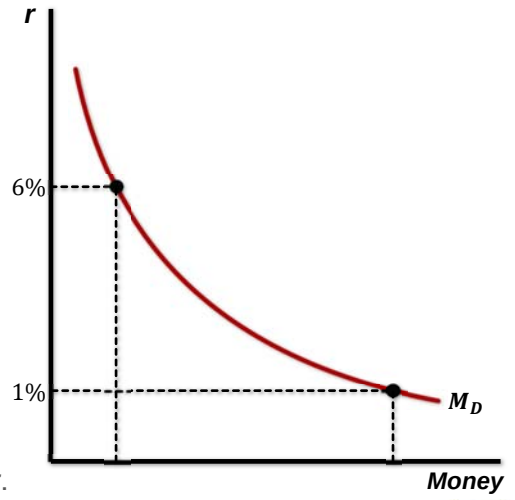
11



12

Money demand

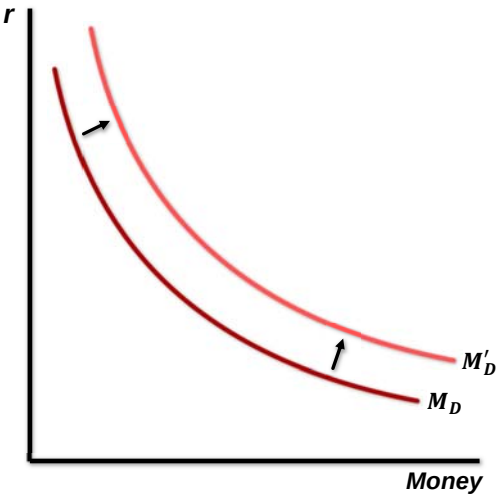
- People ***hold*** M1 money for 3 reasons
- M1 is ***convenient*** but does not earn ***interest***
- ***Money demand*** (M_D) is the amount of wealth individuals want to hold in M1 money instead of other interest-bearing assets (IBAs)
- Money demand is ***negatively related*** to r:
  - At low r, individuals hold ***more*** money for convenience because ***little*** interest is forgone
  - At high r, holding money is ***expensive*** – they would rather buy ***IBAs*** to earn ***interest***.



© 2019-23 Kosmas Marinakis, SMU

Money demand shifters

- ***M_D*** will shift when people change their money holding habits independently of r:
  - If ***real GDP increases***, people will want to hold more money because they will be doing more transactions ***[Link #1]***
  - If ***prices increase***, people will want to hold money because products are more expensive
  - If there is ***public unrest***, people may want to hold more money to have peace of mind…

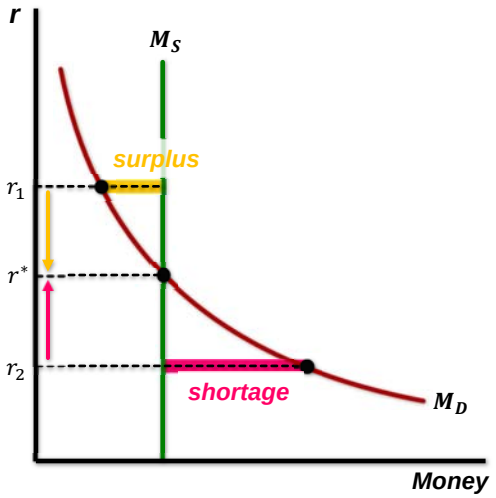


© 2019-23 Kosmas Marinakis, SMU



The money market

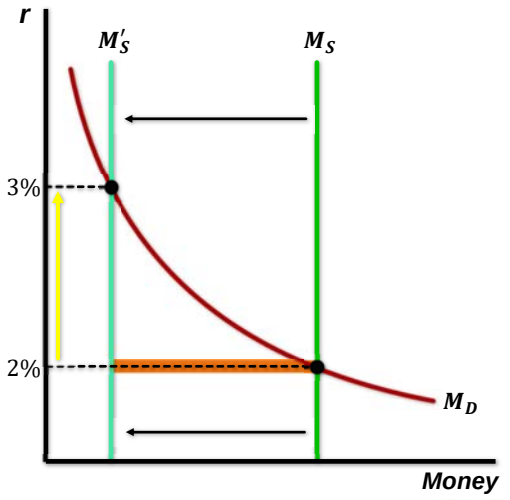
- The equilibrium interest rate r^* occurs at the ***intersection*** of M_D and M_S
- Above r^*, there would be ***more money*** in circulation than people want to hold
  this will pressure banks to **decrease** r
- Below r^*, there would be ***less money*** in circulation than people want to hold
  this will pressure banks to **increase** r



© 2019-23 Kosmas Marinakis, SMU

Control of the interest rate

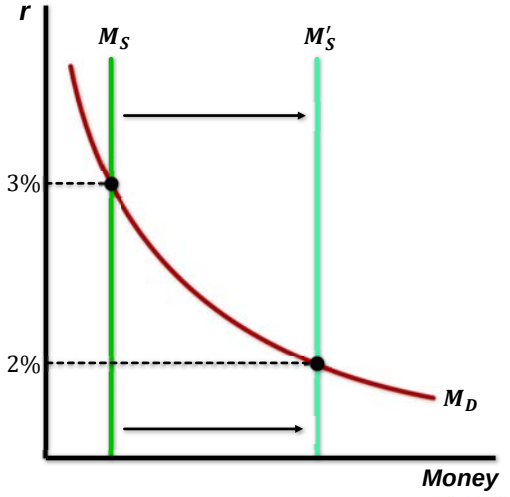
- The CB can indirectly ***set*** r^* by affecting how much ***credit*** banks want to provide
- Assume that $r^* = 2\%$, and the CB wants to ***increase*** it to 3%:
  - This requires a massive ***decrease in loans*** by banks to bring M1 to M_S'
  - The CB will offer banks to deposit their reserves to the CB for 2.5%
  - Thus, banks ***will NOT*** want to loan out to clients for 2% anymore
  - Banks will only loan to clients for **3%** or more
  - The ***excess M1*** will be deposited to the CB



© 2019-23 Kosmas Marinakis, SMU

Decreasing the interest rate

- If the CB wants to ***decrease*** r^* back to 2%:
  - It will ***lower*** the rate it offers to banks for their reserves to 1.5%
  - Banks see that there is ***excess demand*** for loans at 2%
  - Banks will then ***withdraw*** reserves from the CB and loan to their clients for 2%
  - New loans will ***shift*** M1 to M_S'



© 2019-23 Kosmas Marinakis, SMU

Where do bank reserves come from?

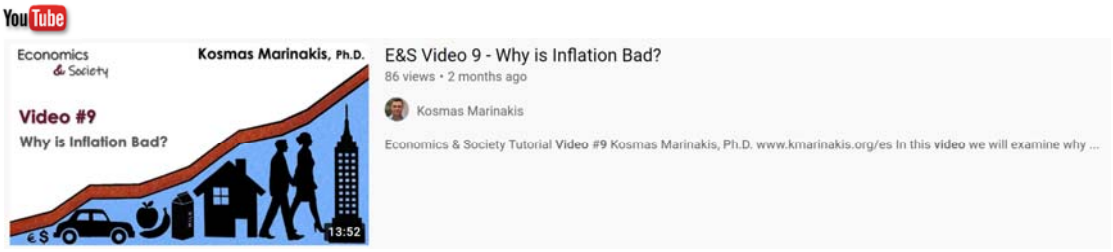
- Reserves is ***digital credit*** the CB provides to banks according to their ***assets***
- Banks use those reserves to provide ***loans*** to the economy
- Before 2007, banks had ***scarce reserves***, thus CBs often conducted ***OMOs*** to adjust banks' liquidity when needed:
  - ***Open Marker Purchases***: The CB would ***purchase government securities*** the banks owned and pay in reserves → bank reserves would ***increase***
  - **Open Market Sales:** The CB would ***sell government securities*** to banks in exchange for reserves → bank reserves would ***decrease***.
- After 2007, with the QE programs, CBs around the world allowed banks to collateralize a wide variety of assets and gain access to ***ample reserves***

© 2019-23 Kosmas Marinakis, SMU



Internal video

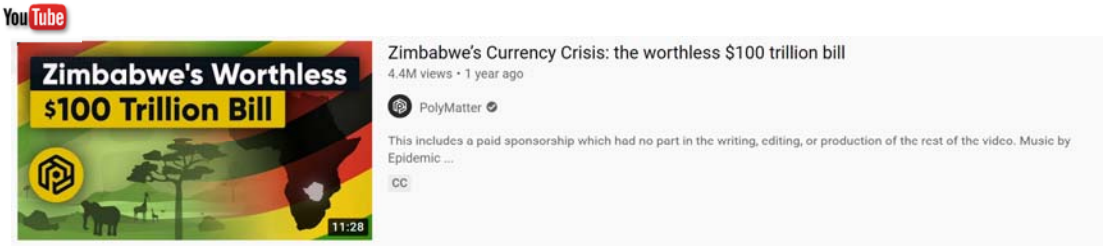
In this video I explain why inflation is bad. There are several different reasons that come from all sides of economics: distortion of the income distribution, worsening of the economic environment, distortion of credit relations, distortion of competition, inefficiencies from anti-inflationary policies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



© 2019-23 Kosmas Marinakis, SMU

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.



© 2019-23 Kosmas Marinakis, SMU

Thank you!

(you may stay for *consultation*)

30

WARNING!

The slides in this handout are created with the intention to serve a visual aid for the audience during the live presentation of the material in the lecture. As such, **they are not designed to be standalone reading material** and should be used strictly as **reference**, side by side with notes taken in the lecture. Studying solely from the slides **is not recommended** and might in some cases **mislead** those who have not attended the relevant lecture. **Less than 20% of tasks in test and exam can be answered solely from the slides**.

31