Answer on question #59687 -Economics - Macroeconomics

Suppose Mr. Master deposits AED 400,000 into a one-year Certificate of Deposit at 5% interest. The Central Bank sets the reserve ratio for the banks at 20%.
a) Illustrate how the banks create money with the help of given information.
(Show first 6 steps)
b) Calculate the total money creation in the economy with the help of formula

Solution

a)
As you know, the banks provide financial services. But the reason that the banks provide such services is that banks exist create money. Banks need money to use as raw material to create more money. Money comes from customer deposits which clients deposit into the bank.

If Mr. Master deposits AED 400,000 into a one-year Certificate of Deposits at 5% interest, the bank can use his money to create loans.

The Central Bank sets the reserve ratio for the bank at 20%. A 20% reserve rate indicates the bank's obligation keep 20% of the AED 400,000 on reserve and can loan the remaining 80%.

20% of AED 400.000 is AED 80,000 (reserve)

80% of AED 400,000 is AED 320,000 (loan)

The 20-% reserve rate allows the bank to loan AED 320,000 of Mr. Master 's AED 400,000 deposit.

The bank makes loan#1 (Step1)

Loan#1:

Bank loans AED 320,000 and keeps AED 80,000 on reserve.

On the bank's balance sheet, the AED 320,000 loan to the borrower is also AED 320,000 asset for the bank.

The bank has created AED 320,000 out of thin air.

Since the bank has an asset of AED 320,000 it can make another loan based on this asset.

Since the same reserve, the bank must keep 20% of this asset on reserve.

This means bank can loan only 80% of the AED 320,000.

This means that **Loan #2** is AED 256,000

20% of AED 320,000 is AED 64,000 (reserve)

80% of AED 320,000 is AED 256,000 (loan).

By creating another loan, the bank has created another asset.

The AED 256,000 loan to the barrower becomes an AED 256,000 asset for the bank.

As the bank has an additional AED 256,000 asset, as it can make another loan.

Loan#3 is only 80% of the AED 256,000 assets, which is AED 204,800.

20% of AED 256,000 is AED 51,200 (reserve)

80% of AED 256,000 is AED 204,800 (loan)

Similarly, the assets will be created for the Loan#4, Loan#5, Loan#6.

Loan#4 is only 80% of the AED 204,800 assets, which AED 65,610

20% of AED 204,800 is AED 40,960 (reserve)

80% of AED 204,800 is AED 163,840 (loan)

Loan#5 is only 80% of the AED 163,840 assets, which AED 131,072

20% of AED 163,840 is AED 32,768 (reserve)

80% of AED 163,840 is AED 131,072 (loan)

Loan#6 is only 80% of the AED 131,072 assets, which AED 104,867.6

20% of AED 131,072 is AED 26,214.4 (reserve)

80% of AED 131,072 is AED 104,867.6 (loan)

When Mr. Master cashes out his CD, he gets his AED 400,000 deposits back, in addition to the AED 20,000 interest.

b) The total quantity of money has created in the economy calculate the following formula:

$$\text{Total quantity of money} = \text{ Initial Excess Reserves x Money Multiplier}$$

$$\begin{aligned}\text{Initial Excess Reserves } &= \text{ Total Reserves} - \text{ Required Reserves}\\ &= \text{AED } 400{,}000 - \text{AED } 80{,}000 = \text{AED } 320{,}000\end{aligned}$$

$$\text{Money Multiplier } = \frac{1}{\text{RR}} = \frac{1}{0{,}2} = 5$$

$$\text{Total quantity of money} = \text{AED } 320{,}000 * 5 = \text{AED } 1{,}600{,}000$$

If the reserve rate is 20%, then increasing the reserves multiplies the increase in potential deposits by 5.

The money multiplier shows the relationship between the reserves in a banking system and the money supply.

The money multiplier shows us the maximum amount the money supply could increase based on an increasing in reserves within the banking system.