INTRODUCTION TO MONEY CREATION

Yangon
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Overview

I. Impact of other sectors on monetary survey
   a) External sector
   b) Fiscal sector

II. Endogenous money creation
I Impact of Other Sectors on Monetary Survey—External Sector

External Sector
Monetary survey

Assets
Net foreign assets
Accumulation of foreign reserves in BOP
“money flowing in from abroad”

Liabilities
Currency in circulation
Deposits
M1 & M2

NFA
Impact of Other Sectors on Monetary Survey—Fiscal Sector

Fiscal Sector

Monetary survey

Assets

Net domestic assets

E.g., increase in fiscal spending that is bank-financed

“government injects liquidity into economy by buying goods and services”

↓

Net credit to government increases

Liabilities

Currency in circulation

↓

Deposits

M1 & M2

↑

NDA

↑
Example for boundless endogenous money creation: a bank extends credit of Kyat 100, which fuels further deposit and credit creation …
Adding more detail to the Central Bank Balance Sheet:

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net foreign assets (NFA)</td>
<td>Reserve money (RM)</td>
</tr>
<tr>
<td>Net domestic assets (NDA)</td>
<td>Currency issued</td>
</tr>
<tr>
<td>Net claims on the government (NCG)</td>
<td>Reserves of commercial banks with central bank (deposits with CB)</td>
</tr>
<tr>
<td>Claims on commercial banks</td>
<td>Required reserves</td>
</tr>
<tr>
<td>Claims on other resident sectors</td>
<td>Excess reserves</td>
</tr>
<tr>
<td>Other items net</td>
<td>Other deposits</td>
</tr>
</tbody>
</table>
Now: a bank extends credit of Kyat 100 with 10% reserve requirements and currency-to-deposit ratio of 15%
Endogenous Money Creation—Reserve Requirements & Currency Demand: End-Result

End result:

Increase in **broad money** by **Kyat 460** (deposits 400 + currency 60) and in **reserve money by Kyat 100** (required reserves 40 + currency demand 60)
Exercise 4

Replicate this process in the supplied Excel spreadsheet in order to verify that the end-result shown here is correct.

Start out with the first round:

Deposit $87

- Credit $100 to households or businesses
  - \( c = 0.15 = 13/87 \) currency-to-deposits ratio

- Hold reserves $8.7
  - \( r = 0.10 = 10/87 \) req. reserves-to-deposits ratio

- Credit $78.3

- Hold currency $13
Endogenous Money Creation: Money Multiplier
The extent of endogenous money creation can be analyzed via the money multiplier which links broad money (M2) to reserve money (RM):

\[ M2 = m \cdot RM \quad \Rightarrow \quad m = \frac{M2}{RM} \]

\[
m = \frac{M2}{RM} = \frac{C + D}{C + R} = \frac{C}{D} + \frac{D}{D} = \frac{c + 1}{c + r}
\]

where \( C = \text{currency in circulation} \), \( R = \text{Reserves held at CB (commercial bank deposits at CB)} \) and \( D = \text{deposits of private sector with commercial banks} \).

The money multiplier is a function of
- \( c = \text{currency-to-deposits ratio (behavioral variable)} \)
- \( r = \text{reserve-to-deposits ratio (policy variable)} \)
Endogenous Money Creation—Determinants of the Money Multiplier

Fundamental determinants of the money multiplier:

- reserve requirements decided by the central bank → matters for reserve-to-deposits ratio

- Willingness of banks to hold excess reserves (liquidity risks, credit risk, foregone interest earnings) → matters for reserve-to-deposits ratio

- Willingness of households and firms to hold cash instead of deposits (liquidity risks, foregone interest earnings) → matters for currency-to-deposits ratio
Consider our previous example for the money creation process:

Currency-to-deposit ratio \( c = 15\% \)

Required reserves-to-deposit ratio = 10%

\[
m = \frac{c + 1}{c + r} = \frac{0.15 + 1}{0.15 + 0.1} = \frac{1.15}{0.25} = 4.6
\]

Increase in reserve money by Kyat 100 leads to increase in broad money by Kyat 460.
What about the direction of causality?

• The money multiplier concept suggests that creation of reserve money, which is under the control of the central bank, leads to an increase in broad money via the money multiplier. In essence, the central bank creates liquidity that then is lent out by banks, thereby starting the credit-deposit money creation process.

• But in our example, money creation started with increase in bank lending, not increase in reserve money. The money multiplier should still matter because banks need to satisfy reserve requirements; the supply of reserve money can become a binding constraints for bank lending by limiting the amount of liquidity available to meet reserve requirements, thereby tying reserve and broad money closely together.
The presence of excess reserves can lead to variability in the money multiplier and undermine its usefulness:

- Imagine that banks hold excess reserves and the central bank increases these reserves further through open market operations. What happens to the money multiplier? What does this mean for the effectiveness of money policy for stimulating credit creation?
- Consider a situation where banks hold excess reserves and find new lending opportunities, leading to an increase in bank lending and rise in broad money. What happens to the money multiplier here?
Exercise 5

Work out approximate currency-to-deposit and reserves-to-deposit ratios that could explain key movements of the money multiplier.

What kind of developments could have led to these changes in the money multiplier?
III Summary

- Monetary accounts are critical for analysis of monetary conditions and formulation as well as implementation of monetary policy.
- Money creation is partly linked to developments in other sectors and partly an endogenous process that can be influenced by monetary policy.
Thank You!

This presentation provides you with a basic introduction to the monetary accounts that we will put into practice soon tomorrow.