

Monetary Statistics & Money Supply

Overview

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Overview

- I. Monetary Statistics
- II. Money Creation
- III. Summary

I. Monetary Statistics

- Scope of Financial Statistics
- Central Bank Accounts
- Commercial Bank Accounts
- Monetary Survey



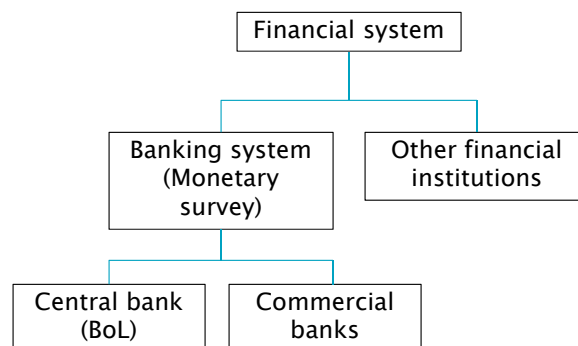
Why are monetary statistics important?



Monetary statistics accounts are critical for analysis of monetary conditions and formulation as well as implementation of monetary policy

Understanding links between monetary policy and inflation, real economic activity, external account and foreign exchange rate will require going beyond monetary accounts

I.A Scope of the Financial System



Lao P.D.R. Financial System

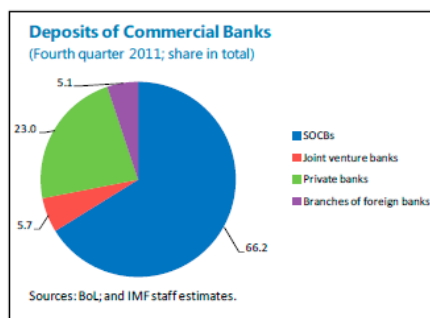
Central bank = Bank of Lao P.D.R. (BoL)

Commercial banks =

- ✓ State-owned commercial banks
- ✓ Private commercial banks

Other financial institutions =

- ✓ Microfinance institutions
- ✓ Financial leasing companies
- ✓ Insurance companies



I.B Central Bank Accounts

Selected functions of the central bank that have a direct impact on its balance sheet include

- ✓ Issuing of currency
- ✓ regulating the money supply (monetary policy)
- ✓ acting as banker of the government
- ✓ holding the country's foreign reserves (exchange rate policy)

Analytical Balance Sheet of CB

$$RM = NFA + NDA$$

Assets	Liabilities
Net foreign assets (NFA)	Reserve money (RM)
Net domestic assets (NDA)	Currency issued
Net claims on the government (NCG)	Held in banks
Claims on commercial banks	Held outside banks
Claims on other resident sectors	Deposits (reserves) of commercial banks with central bank
Outstanding CB securities (liabilities → Increase: minus sign Decrease: plus sign)	Other deposits
Other items net	

Analytical Balance Sheet of CB (continued)

Assets

- ▶ Net foreign assets
 - holding the country's foreign reserves (exchange rate policy)
- ▶ Net claims on government
 - acting as banker of the government
- ▶ Claims on commercial banks / Issuance of BoL securities
 - regulating the money supply (monetary policy)

Analytical Balance Sheet of CB (continued)

Liabilities

- ▶ Currency issued
 - Issuing of currency
- ▶ Deposits of commercial banks with central bank → regulating the money supply (monetary policy)

Why is Reserve Money (RM) important?

- The central bank can control reserve money because it is 'created' on its own balance sheet
- As we will see below when we consider the endogenous money creation process, some components of reserve money have an important influence over the creation of bank credit to the rest of the economy
- Bank credit is important for aggregate demand conditions, and it is a key part of broad money

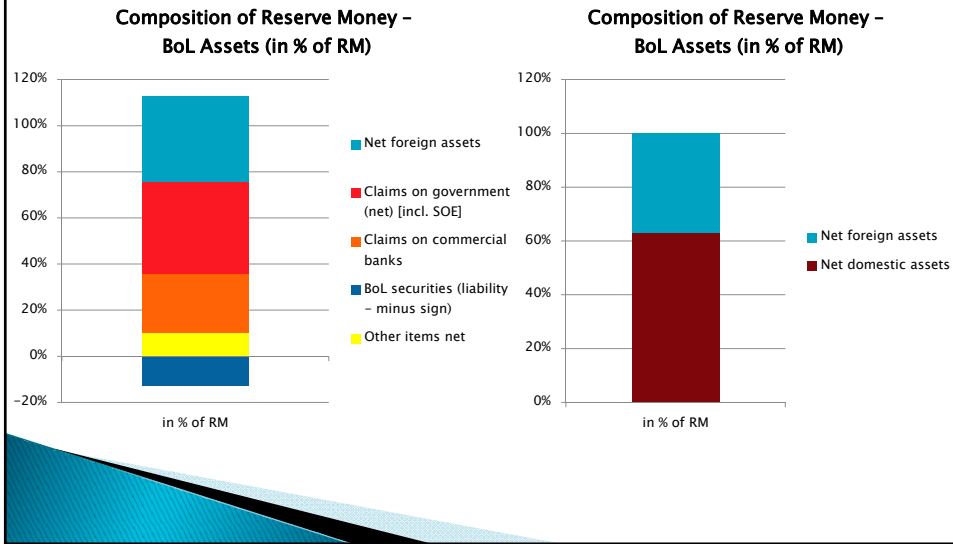
Main Components of BoL Balance Sheet

Exercise:

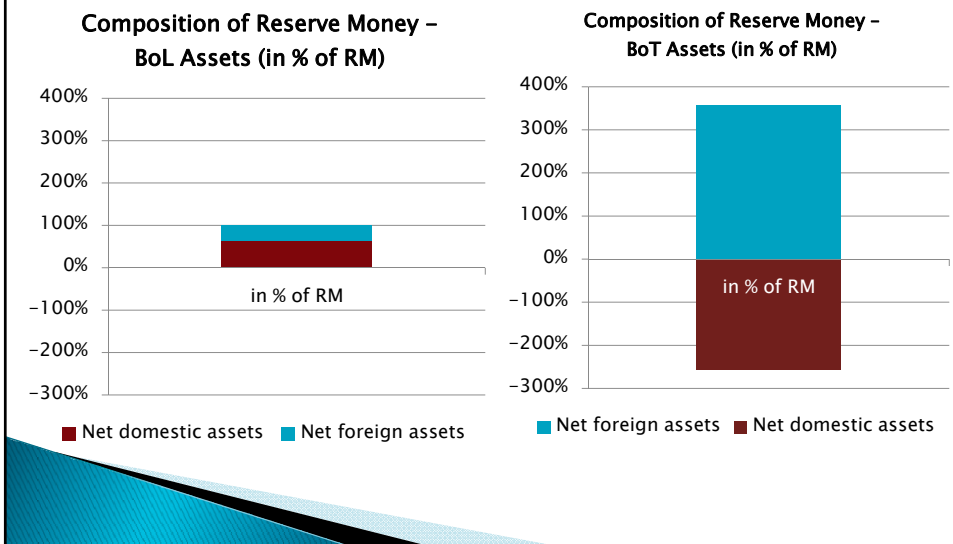
We will use monetary table in Article IV report to portray the BoL balance sheet for December 2012 in the form depicted in the previous slide; with this data, you can:

- ▶ analyze the relative importance of the individual asset and liability components by expressing them in percent of reserve money
- ▶ compare the composition of the BoL balance sheet with that of the Bank of Thailand

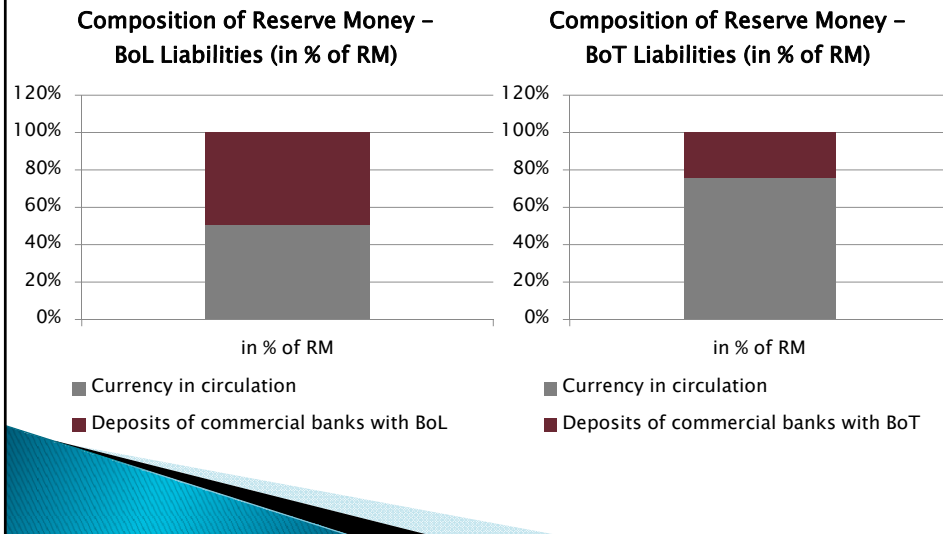
Main Components of BoL Balance Sheet: Assets



Comparison with Bank of Thailand Balance Sheet



Main Components of BoL Balance Sheet: Liabilities



Central Bank Balance Sheet Examples

- ▶ Example: On the first day of its operations, central bank decides to issue domestic currency (Kip 100) in exchange for foreign currency.

<u>Assets</u>		<u>Liabilities</u>	
CB's Net Foreign Assets	100	Base money	100
Foreign exchange	100		
CB's Net Domestic Assets			

- ▶ Example: Central bank sells BoL securities (worth Kip 30).

<u>Assets</u>		<u>Liabilities</u>	
CB's NFA	100	Base money	70
Foreign exchange	100		
CB's NDA	-30		
Outstanding CB securities liabilities → increase = minus	-30		

I.C Commercial Bank Accounts

Selected functions:

- ▶ Facilitate savings by offering deposits
- ▶ Offer loans by transforming deposits into loans
- ▶ Commercial banks are an important channel for the transmission of monetary policy

Analytical Balance Sheet of Commercial Banks

Assets	Liabilities
Net foreign assets (NFA)	Deposits
Net domestic assets (NDA)	Demand deposits
Claims on the central bank	Time and saving deposits
◦ Currency held in vaults	Foreign currency deposits
◦ Deposits at the central bank	Liabilities to the central bank
◦ Holding of CB securities	
Domestic credit	
◦ Net credit to the government	
◦ Credit to private sector	
Other items net	

Commercial Bank Balance Sheet Example

Central bank sells Kip 100 in BoL securities to commercial banks:

Commercial Bank Balance Sheet

Assets		Liabilities	
Net Foreign Assets	...	Deposits	...
Net Domestic Assets	0	Demand deposits	...
Claims on central bank	0	Time and saving deposits	...
Currency held in vaults		Foreign currency deposits	...
Reserves	-100	Liabilities to the central bank	...
Holding of CB securities	+100		
Domestic credit	...		
To the government	...		
To other resident sector	...		
Other items net	...		

Commercial Bank Balance Sheet Example (cont.)

Central bank sells Kip 100 in BoL securities to ODCs:

Central Bank Balance Sheet

Assets		Liabilities	
Net Foreign Assets	...	Reserve money (RM)	-100
Net Domestic Assets	-100	Currency issued	...
Net claims on the gov.	...	Held in banks	...
Claims on commercial banks	...	Held outside banks	...
Claims on other res. sector	...	Deposits of commercial banks	-100
Outstanding CB securities (liability → Increase: minus Decrease: plus)	-100	Other deposits	...
Other items net	...		

I.D Monetary Survey

Consolidated balance sheet for the banking system:

- ▶ Add up balance sheets for the central bank and commercial banks, but ...
- ▶ ... before doing so, consolidate common items on the two balance sheets!

Consolidation of Central Bank & Commercial Bank Balance Sheets

Central Bank	
Assets	Liabilities
Net Foreign Assets	Reserve money (RM)
Net Domestic Assets	Currency issued
Net claims on the government	Held in banks
Claims on commercial banks	Held outside banks
Claims on other resident sector	Deposits of commercial banks
Other items net	Other deposits
Commercial Banks	
Assets	Liabilities
Net Foreign Assets	Deposits
Net Domestic Assets	Demand deposits
Claims on the central bank	Time and saving deposits
Currency held in vaults	Foreign currency deposits
Deposits at the central bank	Liabilities to the central bank
Domestic credit	
Other items net	

Monetary survey	
Assets	Liabilities
Net Foreign Assets	Broad money (M2)
Of the central bank	Narrow money (M1)
Of the commercial banks	Currency in circulation
Net Domestic Assets	Demand deposits
Net credit to the government	Quasi money
Credit on the other resident sector	Time and saving deposits
Other items net	Foreign currency deposits

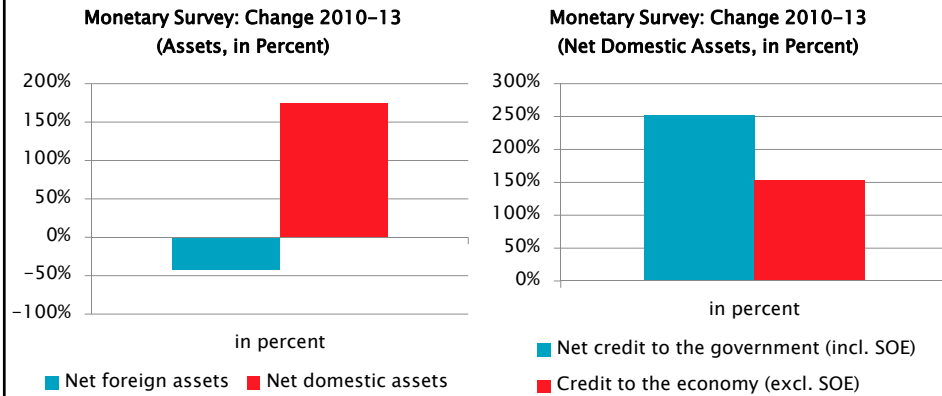
Main Components of Monetary Survey in Lao P.D.R.

Exercise:

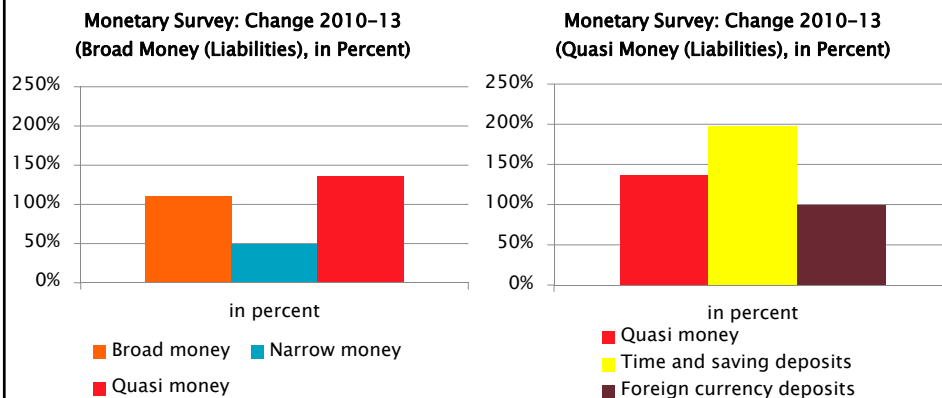
We will use monetary table in Article IV report to take a closer look at the changes in the monetary survey from December 2010 to 2013:

- ▶ Look at the absolute changes (in kip) and relative changes (in %) to identify the main changes between 2010 and 2013
- ▶ Next, speculate and try to form a picture of what happened, i.e., what were the driving forces behind these changes. Are they sustainable?

Main Components of Monetary Survey: Assets

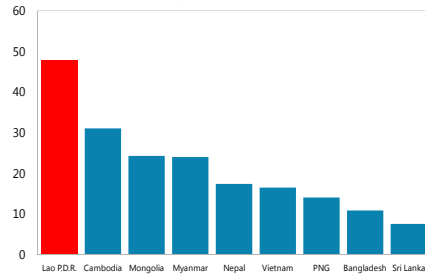


Main Components of Monetary Survey: Liabilities



Regarding sustainability of credit growth, you may want to consider:

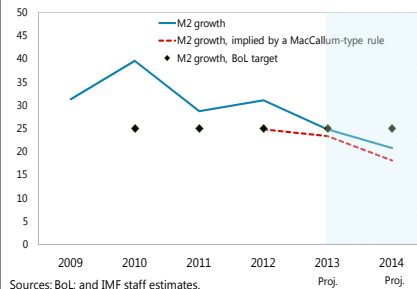
Annual Average Real Credit Growth, 2007–12
(Year-on-year percentage change)



Sources: Country authorities; and IMF staff estimates.

Broad Money

(Year-on-year percent change)



Sources: BoL; and IMF staff estimates.

You may also want to take a look at Box 3 In the IMF Article IV report (Lao P.D.R.: Normal Financial Deepening or Excessive Credit Growth?).

Monetary Survey and “Money”

Why is M2 “money”?

Because it is what the economy can use to make payments and economic transactions:

- Currency in circulation: “cash”
- deposits constitute a means of payment, as one can write checks, or make transfers, or withdraw cash against deposits upon demand (depending on the type of deposit)



Is the Monetary Survey All We Need to Understand “Money”?

No!

We have not discussed yet in much detail how money is created:

- We did discuss the creation of reserve money by the central bank, but there are other channels, partly interacting with the central bank
- We will discuss these in the next chapter!



II. Money Creation

- Impact of other sectors on monetary survey
 - ✓ External sector
 - ✓ Fiscal sector
- Endogenous money creation



II.A Impact of Other Sectors on Monetary Survey

External Sector

Monetary survey	
Assets	Liabilities
Net foreign assets	
Accumulation of foreign reserves in BOP	→ Currency in circulation
“money flowing in from abroad”	→ Deposits
→ NFA ↑	→ M1 & M2

Fiscal Sector

Monetary survey	
Assets	Liabilities
Net domestic assets	
E.g., increase in fiscal spending that is bank-financed	→ Currency in circulation
“government injects liquidity into economy by buying goods and services”	→ Deposits
↓	→ M1 & M2
Net credit to government increases	
→ NDA ↑	

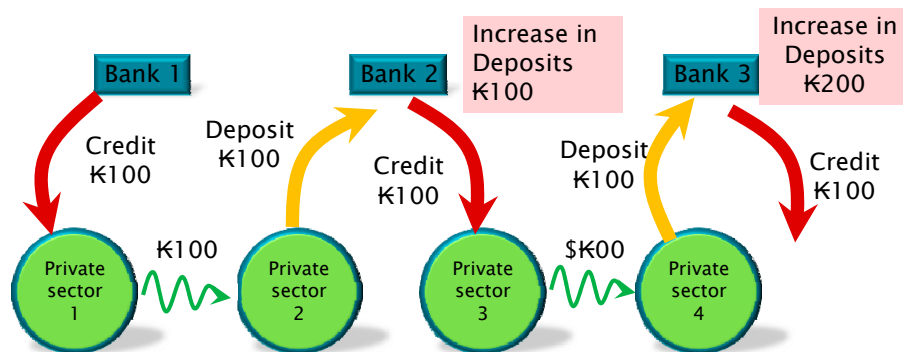
II.B Endogenous Money Creation

Let's begin with a YouTube video on fractional reserve banking ...



Consider Endogenous Money Creation in a World Without Reserve Requirements

Example for boundless endogenous money creation without reserve requirements: a bank extends credit of Kip 100, which fuels further deposit and credit creation ...



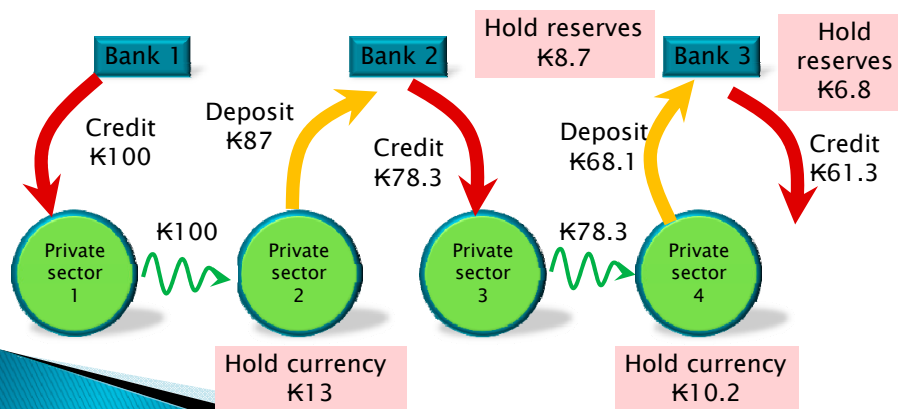
Now Limit Money Creation through Reserve Requirements & Currency Demand

Adding more detail to the Central Bank Balance Sheet:

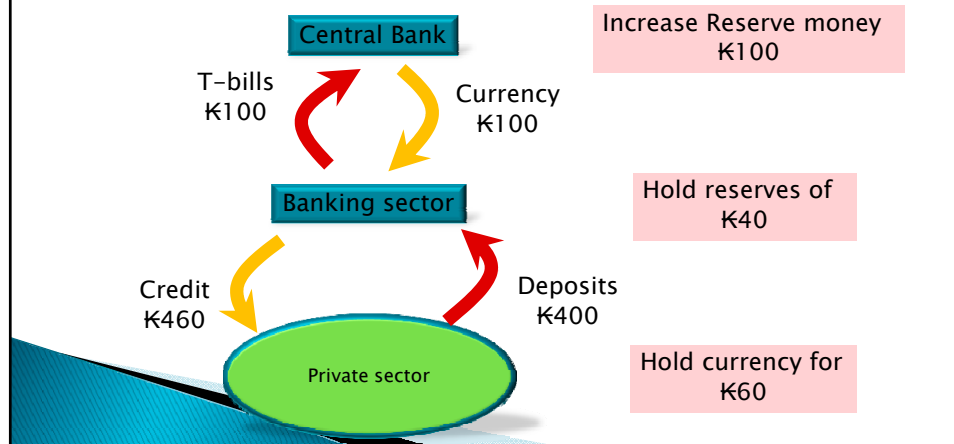
Net foreign assets (NFA)	Reserve money (RM)
Net domestic assets (NDA)	Currency issued
Net claims on the government (NCG)	Reserves of commercial banks with central bank (deposits with CB)
Claims on commercial banks	Required reserves
Claims on other resident sectors	Excess reserves
Other items net	Other deposits

Limiting Money Creation through Reserve Requirements & Currency Demand

Now: a bank extends credit of Kip100 with 10% reserve requirements and currency-to-deposit ratio of 15 %



End-result: increase in reserve money by Kip 100 leads to increase in broad money by Kip 460 (deposits 400 + currency 60). That is, increase in broad money exceeds increase in reserve money by factor of 4.6!



The Money Multiplier



Deriving the Money Multiplier

The extent of endogenous money creation is governed by the money multiplier which links broad money (M2) to reserve money (RM):

$$M2 = m \cdot RM$$

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

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

The money multiplier is a function of

- c = currency-to-deposits ratio (behavioral variable)
- r = reserve-to-deposits ratio (policy variable)

The Money Multiplier (continued)

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

Question

Having expanded our understanding of the money-creation process, let's revisit the questions:

- ▶ What are the operating targets of the Bank of Lao P.D.R.?
- ▶ And what are its instruments?



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Operating Targets and Instruments of Bank of Lao P.D.R. (2012)

- ▶ Operating target: still under study (as of 2012)
 - Quantitative-based? (vs. interest-rate based)
 - Operational independence: issue is fiscal financing
- ▶ Instruments:
 - Reserve requirements → affects money multiplier
 - Statutory liquidity requirement → also affects money multiplier
 - Money market operations (sales of BoL bonds) → affects bank reserves (withdraws liquidity)
 - Standing facility → also affects bank reserves (injects liquidity)

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IV. 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!