Monetary Aggregates in Digital Era

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Introduction - Money

- Social construct – co-evolving with socio-economic, financial and technological developments
- No unique definition
- Medium of exchange
- Store of value
- Unit of account
- Standard of deferred payment
- Need to account for changes brought by digitalisation
Measuring Money – Monetary Aggregates

- IMF Manual (MFSMCG) - principles and guidelines
- Institutional framework
  - Money-creating, money-holding, money-neutral sectors
- Characteristics of financial instruments
  - Transaction costs, divisibility, maturity, yield

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‘near’ money assets

Financial instruments

Institutions
Monetary Statistics Compilation in India

- First Working Group 1961: Treatment of Time Deposits
  - Money Supply with the Public
  - Aggregate Monetary Resources

- Second Working Group 1977: Analytical Approaches to Theoretical Concept of Money
  - Medium of exchange
  - Temporary abode of purchasing power
  - Whole structure of liquidity
  - Non-monetary financial intermediaries

- Disaggregated view- Four distinct measures of money stock: M1, M2, M3, M4
Monetary Statistics Compilation in India


- Newer payment systems - statistical definitions, classification systems, reporting procedures
Digitalisation and Monetary Aggregates – Two Impact Channels

Digitalisation Impact

- Substitution of physical forms
- Change in “moneyness” of existing components
First Channel – Currency Substitution

- Transition from Central Bank Money to Commercial Bank Money

- Payment innovations encourage use of bank deposits (inside money), while limiting the use of outside money

- Demand for cash - Precautionary and Store-of-value role

![Graph showing Broad Money and its Components](image)
First Channel – Currency Substitution

- Commercial bank deposits and central bank reserve requirements

- Monetary base and money supply-behavioral relationship

- Money multiplier: \( m = \frac{M3}{H} = \frac{C + D}{C + R} = \left(\frac{1 + c}{c + r}\right) \)

- Net effect depends on currency contraction vis-a-vis deposit accretion
Second Channel - Prepaid Payment Instruments

- Digital wallets, smart cards issued by both banks and non-banking entities
- Financial services against value stored

- 45 per cent of PPIs issued by non-banks, accounting for 20 per cent of transactions
Treatment of Prepaid Payment Instruments in Monetary Aggregates

- PPIs in India
  - Small PPIs
    - Purchase of goods and services
  - Full-KYC PPIs
    - Fund transfer
    - Cash withdrawal
  - Closed System PPIs
    - Not regulated by the RBI
    - Not used for payment or settlement for third party services

- E-money stored in PPIs = transferable deposit to be included in broad money

- Banks
  - Outstanding balance forms part of NDTL- reflected in calculation of broad money

- Non-banks
  - Escrow account with commercial bank, part of commercial bank’s NDTL

Outstanding PPI balances in the escrow account
Second Channel - Tokenisation of Commercial Bank Deposits

- DLT-based economic equivalents of traditional deposits
- Medium of exchange and store of value – “singleness” of money
- Non-bearer (burn/issue) model within the current two-tier fractional reserve system
- Part of broader ecosystem of tokenised assets

- Liquidity
  - Transferability
  - Divisibility
  - Programmability
    - Smart-contracts
Conclusion

▪ Competition - degree of substitution between physical and digital forms of money

▪ Degree of moneyness/liquidity of existing constituents

▪ Comprehensive accounting within the orbit of regulated banking system

▪ Regulatory and supervisory frameworks overseeing digital payment systems

▪ Disaggregating constituents for analytical and policy purposes

▪ Other issues:
  ▶ Concept of residency - center of economic interest
  ▶ Sources side: FinTech and BigTech credit, venture capital, peer-to-peer lending
References

- Reserve Bank of India. Master Directions on Prepaid Payment Instruments
Thank You