High Powered Money in India—an Empirical Analysis

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Abstract:
High powered money in the sum of commercial bank reserves and currency (notes and coins) held by Public. High powered money in the base for the expansion of bank deposit and creation of money supply. Thus high powered money H=C+RR+ER. Where C represents currency with the public, RR the required reserves in the commercial banks and ER the excess reserves with banks. High powered money also known as the monetary base. In India the Reserve Bank of India is responsible for regulatory and controlling the monetary base. It is important to note that the composition and dynamics of high powered money in India can change over time due to shifts in monetary policy, economic conditions, and changes in banking regulations.

High powered money plays a fundamental role in monetary system. It serves as the base upon which the broader money supply (M1, M2 etc) is created through the process of fractional reserve banking. When banks make loans, they create deposits, effectively increasing the broader money supply. The RBI uses various tools, such as open market operations and reserve requirement, to control the growth of high powered money and, consequently the money supply to achieves its monetary policy objectives, such as controlling inflation and promoting economic growth.

Keywords: Reserve requirement, Money supply, Deposits, Monetary policy, Bank reserves, Base money.

Introduction:
High powered money represents the total amount of money in an economy that serves as the foundation for broader money supply. High powered money consists of two main components:
1. Currency in circulation with policy. This includes all physical money in the form of bank notes and coins that is held by public and not deposited in banks. It is the most liquid form of money, readily available for transactions.
2. Reserves held by banks at the Central Bank: Commercial banks are required to hold a portion of their deposits as reserves with the Central Bank (RBI). These reserves serve as a net for the banking system and are used to settle interbank transactions.

High powered money is called high powered because it has a powerful impact on the money supply in economy. The central bank, through its monetary policy tools, can influence the growth of high powered money. High powered money in the base upon which the entire money supply of an economy built. Understanding its dynamic and the central bank’s control over it is a crucial for comprehending how changes in the money supply can affect economic activity, inflation and the interest rates.
Objective of the study:
1. To understand the concept of high powered money.
2. To study the changes in hpm over 20 years.
3. To study the components of hpm.
4. To study the process of credit creation, how high powered money serves as base money and leads to change in money supply.

Data collection and study period:
Secondary data has been used to conduct the research paper. Data was collected from various magazines, journals, newspapers and internet. The study was collected from RBI bulletin and RBI website the study period is 20 years from 2002-03 to 2021-2022.

Literature Review:
Lothian R James (1976) in his paper shows however, is that the choice is not nearly so simple, empirical analysis is often circumscribed by lack of data on money of the variables theory suggests can affect the demand for money. The rationale is that since high powered money is of relatively constant quality over time and space, such specification errors are likely to be less important for high powered money than for deposit inclusive totals.
Kanotor Brian (2022) in his research paper that the recent achievements of stabilization policy of South Africa give little cause for satisfaction. An unstable world economy and financial profligacy of politicians and civil servants have played their part.
Arato Hiroki (2020) in his research paper builds a model which allows an equilibrium nominal interest rate on reserve deposit below zero and examines the effect of high powered money and reserve rate policy. In this model, bank holds cash and reserve deposits for money creation and interbank settlement, but cash can be used only for money creation.
He find that the long run effect of a higher growth of high powered money on output is negative, but the sign of the effect of a lower reserve rate on output depends on the household’s labour disutility parameter and firm’s productivity.

Importance of High Powered Money:
High powered money is of significant importance in India for several key reasons:
1. High powered money is crucial tool for the RBI to implement monetary policy. RBI can influence the money supply and interest rate which are vital for achieving the central bank objectives, including price stability and economic growth.
2. Reserves held by commercial banks at RBI, which form part of high power money, serve as a source of stability and confidence in the banking system.
3. Managing high power money is instrumental in controlling inflation. RBI can influence the money supply, which in turn affects inflationary pressures in economy.
4. The RBI may use its foreign exchange reserves a component of monetary base, to stabilize or manage the value of the Indian rupee in international currency markets.
5. High powered money contribution to overall economic stability by ensuring the availability of liquid assets for transactions and maintaining confidence in Indian banking and financial system. Economic stability is essential for attracting investments and fostering economic growth.
6. The RBI conducts open market operations to influence the level of high powered money in the economy; these operations have a direct impact on liquidity conditions in financial markets and can affect short-term interest rates.

7. High powered money can indirectly impact government financing. When the RBI buys government securities in open markets, they can be used to finance public spending.

8. Monitoring high powered money is essential for macro prudential regulation, ensuring the stability of the financial system and protecting against systemic risks.

Factor influenced the demand of high powered money

- Interest Rates
- Economic Activity
- Technological Advancements
- Regulatory Changes
- Government Policies
- Inflation Expectation
- Global Economic Condition
- Banking Sector Behaviour
- Crisis Situation
FACTOR INFLUENCING THE SUPPLY OF HIGH POWERED MONEY

Central Bank Policies
- Open Market Operations

Monetary Policy Objectives
- Inflation Targeting

Banking System Behaviour
- Reserve requirements

Government Fiscal Policy
- Government spending and taxation

Foreign exchange operations
- Foreign currency reserves

Bank lending and deposit creation multiplier effect
- Multiplier effect

Financial crisis or Bank runs
- Emergency liquidity provision

Government Debts Issuance
- Government Bond issuance

Technological changes
- Digital payments

Legal and regulatory changes
- Currency printing and coin minting

International Trade
- Foreign exchange reserves

Empirical Analysis of High Powered Money:

Table 1: Components of money stock (Rupees in Crore)

<table>
<thead>
<tr>
<th>Year</th>
<th>Currency in circulation</th>
<th>Other deposits with the RBI</th>
<th>Bankers deposits with the RBI</th>
<th>Reserve Money (HPM)</th>
<th>Broad Money</th>
<th>Money Multiplier (Ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-03</td>
<td>282473</td>
<td>3219</td>
<td>83346</td>
<td>369038</td>
<td>1717936</td>
<td>4.655174</td>
</tr>
<tr>
<td>2003-04</td>
<td>327028</td>
<td>5097</td>
<td>104365</td>
<td>436490</td>
<td>2005654</td>
<td>4.59496</td>
</tr>
<tr>
<td>2004-05</td>
<td>368661</td>
<td>6454</td>
<td>113996</td>
<td>498111</td>
<td>2245653</td>
<td>4.508339</td>
</tr>
<tr>
<td>2005-06</td>
<td>429578</td>
<td>6843</td>
<td>135511</td>
<td>571932</td>
<td>2719493</td>
<td>4.754924</td>
</tr>
<tr>
<td>2006-07</td>
<td>504099</td>
<td>7467</td>
<td>197295</td>
<td>708861</td>
<td>3310038</td>
<td>4.669516</td>
</tr>
<tr>
<td>2007-08</td>
<td>590801</td>
<td>9027</td>
<td>328447</td>
<td>928275</td>
<td>4017855</td>
<td>4.328302</td>
</tr>
<tr>
<td>2008-09</td>
<td>691153</td>
<td>5533</td>
<td>291275</td>
<td>987961</td>
<td>4794775</td>
<td>4.853203</td>
</tr>
<tr>
<td>2008-10</td>
<td>799549</td>
<td>3806</td>
<td>352299</td>
<td>1155653</td>
<td>5602698</td>
<td>4.84808</td>
</tr>
<tr>
<td>2010-11</td>
<td>949659</td>
<td>3653</td>
<td>423509</td>
<td>1376821</td>
<td>6504116</td>
<td>4.72401</td>
</tr>
<tr>
<td>2011-12</td>
<td>1067230</td>
<td>2822</td>
<td>356291</td>
<td>1426344</td>
<td>7384831</td>
<td>5.177454</td>
</tr>
</tbody>
</table>
In above table-1 and column 1 shows the study period of empirical analysis of high powered money. Which is 2002-03 to 2021-22.

Column 2: In above table-1 shows that the component currency in circulation has continuously increased from 282473 crore (Rupees) in 2002-03 to 3133716 crore in 2021-22 with exceptional was decline in 2016-17 where it stood 1335266 crore. The other component which is though very small portion of total money supply and high powered money observed fluctuating trend.

Column 3: The second component of high powered money is other deposit with the RBI shows fluctuating trends throughout 2002-03 to 2021-22.

Column 4: The third component i.e. Bankers deposit with the RBI or reserves which serves as base for credit creation shows an increasing trend, but some times it’s fluctuate.

Column 5: Reserve money also known as High Powered Money (HPM) continuously increased from 369038 crores in 2002-23 to 4068887 crores in 2021-22 with exceptional was decline in 2016-17 where it stood 1900485 crores.

Column 6: In above table broad money is most flexible method for measuring the economic activities. It’s also shows as increasing trend. continuously increased 1717936 crores in 2002-03 to 20493729 crores in 2021-22.

Column 7: In this column we calculate money multiplier (broad money divided by reserve money) and value obtain was 4.65 in 2002-03 and it’s continuously fluctuate and in 2021-22 it has been 5.03. If money multiplier value is known the price stability in economy can be achieved. The money supply i.e. the purchasing power should be equivalent to production or output in the economy. Hence if multiplier value is known then that times reserve money can be generated which will be equal to output level to achieve price stability. This shows as important role the money multiplier plays.

Limitation:
- Limited control over currency in circulation.
- Dependence on Foreign Exchange Reserves.
- Limited Transmission Mechanism
- Informal Economy
- Structural Issues (NPAs)
- Liquidity Management
- Global Economic Factors.
Data Challenges.
These limitations highlight the complexity of managing high-powered money in the Indian context. To address these challenges, the RBI employs various tools and strategies to conduct effective monetary policy and maintain financial stability, including open market operations, reserve requirements, and policy rate adjustments. Additionally, ongoing financial sector reforms and efforts to promote digital payments aim to reduce the reliance on physical cash in the economy.

Conclusion:
High-powered money is the cornerstone of a country’s monetary system, allowing the central bank to control the money supply, influence interest rates, manage inflation and promote economic stability. Its proper management is crucial for the stability of an economy. High-powered money is the basis for the money multiplier effect, playing a significant role in the monetary system and economic management. HPM also plays a vital role in maintaining the stability of the Indian banking system.

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