SBI Research

The puzzle of Currency in Circulation (CiC) at all time high of ~Rs 40 Lakh crore, higher ATM withdrawals…declining currency /GDP ratio and record UPI transactions…the bottomline…Never disincentivize digital payments/UPI

Issue # 40, FY26 Date: 16 February 2026

Executive Summary (1/3)

- Currency in circulation (CiC) in India has continued to rise, reaching new, record-high levels in late 2025 and early 2026, of Rs 40 lakh crore for the month ended Jan 2026, with a **YoY growth of 11.1% (**vis-à-vis 5.3% last year). On incremental basis (YTD), CiC has increased by Rs 2.76 lakh crore (Rs 88,517 crore) in the same period /3.11 times
- In the similar line, the currency with public (CWP), which is ~97.6% of the CiC, also reached all time high of ~Rs 39 lakh crore for the month ended Jan'26, (11.5% vis-à-vis 5.4%. Going by **current trends, CWP will surpass the post pandemic FY21 incremental growth of Rs 4.6 lakh crore**
- **Intriguingly, though the volume of cash in circulation has continued to grow but the "cash-to-GDP" ratio has declined in recent years to 11% in FY26 from 14.4% in FY21. Our estimated money demand model reveals that GDP coefficient is insignificant and expectedly UPI is significant …which means the direction of change of currency and GDP may be same, but incremental GDP growth is now being less financed by cash and more through UPI**
- **The puzzle is why the UPI transaction has surged and currency in circulation has also jumped**…In fact, the overall ATM data, sourced from RBI, indicates that the per-month cash withdrawal from ATM could surpass the long-term average of Rs 2.5 lakh, with States like Karnataka, Tamil Nadu, WB are showing an increasing trend in cash withdrawal at ATMs..

Executive Summary (2/3)

- **Firstly, in July 2025, the Karnataka Commercial Taxes Department had issued around 18,000 GST notices to small traders and vendors for UPI transactions exceeding the ₹40 lakh registration threshold between 2022 and 2025..This might have acted a disincentive to UPI transactions**
  - To test the hypothesis that whether such event pushed consumers and small traders into the shadows of cash in Karnataka and even in other states through the news channel (selected randomly), we have employed the intensity-based Difference-in-Differences (DiD) framework in five select States on ATM withdrawals data
  - The estimated results from DiD indicate that in Karnataka, post GST notice in July 2025, the districts in the treatment group experienced a significant additional increase of Rs 37 crore in ATM withdrawals per month, on an average, relative to districts in the control group
  - The estimated results are also significant for West Bengal and Kerala
- **Secondly, the motive to hold cash has also jumped particularly in rural areas with low interest rates and the penchant for consumption**.. deposits growth remained sluggish during the current FY and grew by 10.6% as of end-Jan 2026
  - Our estimated augmented money demand function using GDP, UPI and other variables reveal demand for money is positively correlated to GDP, though statistically insignificant and negatively correlated to interest rate. In otherwards, with the rise in GDP, currency demand increases but not in same proportion with UPI and cash substitution. Declining interest rates may have also resulted into higher precautionary demand for money

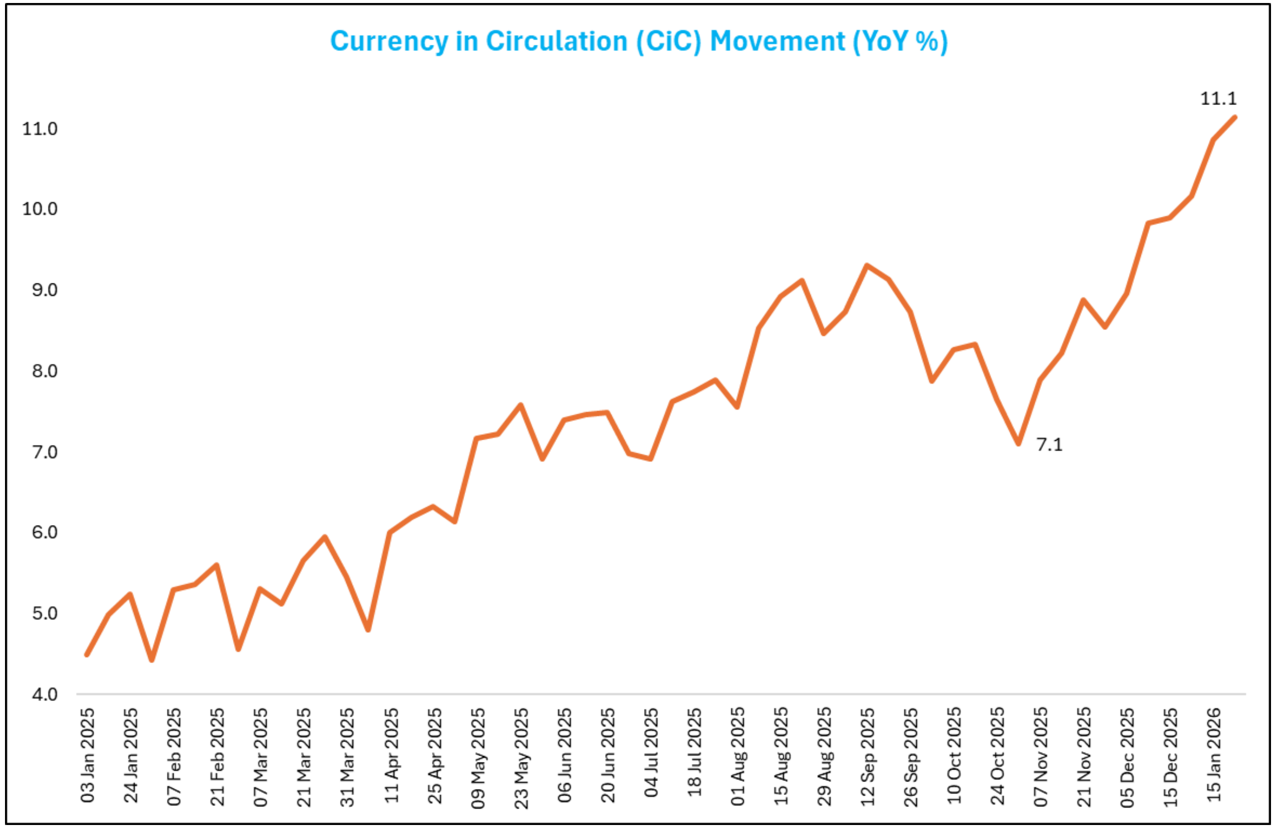
Executive Summary (3/3)

- **Thirdly, with the rise in precious metals prices, there could have been rising currency in circulation through recycling of gold/silver from households**.. Households have found recent surge in prices to cash out some holdings, leading to the rise of cash in circulation (CiC) in the economy. The cut in GST and income taxes has acted as an inventive to boost household consumption
- **Fourthly**, with the withdrawal of Rs 2000 note (RBI announced on 19 May 2023) and as on end-March 2025 the share of Rs 500 note has increased by 8.9% in terms of value to 86.0% and by 3.0% in terms of volume to 40.9%. In terms of value, the share of Rs 100 note has increased by 1.0% to 4.7% and Rs 200 note by 0.8% to 0.8% in 2025, from 2023
  - For public convenience, RBI has directed banks on 28 April 2025 to increase Rs 100/200 denomination notes in ATMs and ensure that 96% of the ATMs should dispense 100/200 notes by end-March 2026
  - Subsequently, we used the currency chest data to study the behavioral changes in the use of currency denominations. The analysis indicates that the share (in value terms) of Rs 500 note might have increased by ~4.4% in the current fiscal (Apr'25-Jan'26). However, the share of all other big denominations (like Rs 100/200) exhibited decline during the same period
  - However, as per NPCI, based on volume, the average ticket size of P2M transaction of less than Rs 500 has a whopping share of 86% in overall UPI transactions. Thus the substitution of low denomination notes with UPI is unlikely to happen completely
- **With the database upgradation, we believe RBI may look at providing quarterly/half-yearly denomination wise data. Additionally, the Sate-wise distribution of volume and value of key denominations will help facilitate research and insights to analyse the behavioral pattern of currency usage & provide guidance regarding evolving tenets of digital payments**

Trends in Currency in Circulation & Currency with Public

Currency in Circulation (CiC) is at All-Time High of ~ Rs 40 lakh crore…

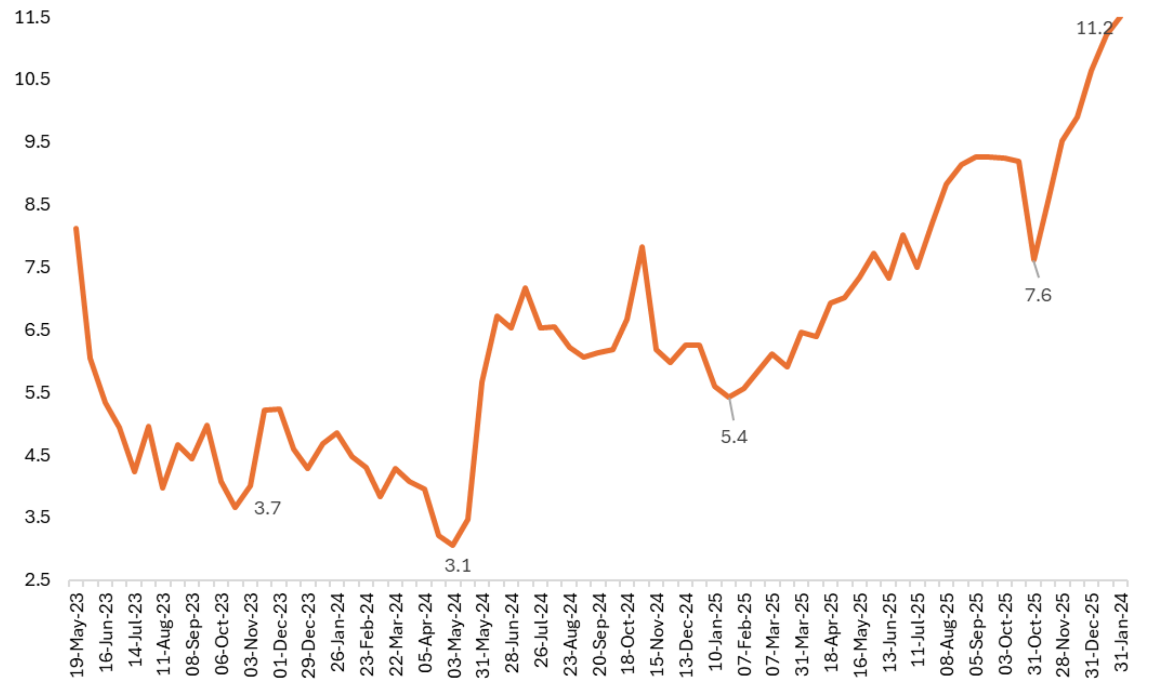
- As per the latest RBI data, the currency in circulation (CiC) has reached all time high of ~Rs 40.0 lakh crore for the fortnight ended 31 Jan'2026, with a growth of 11.1% YoY, compared to last year growth of 5.3% YoY
- On incremental basis (YTD), CiC has increased by Rs 2.76 lakh crore (7.4%) during Apr'25 to Jan'26, compared to last year growth of Rs 88,817 crore (2.5%)
- While the Reserve Money (M0) growth declined to 5.8% YoY from last year growth of 3.5%, due to the CRR cut which reduced the 'Bankers Deposits with RBI' component by Rs 1.86 lakh crore during Apr'25 to 31 Jan'26



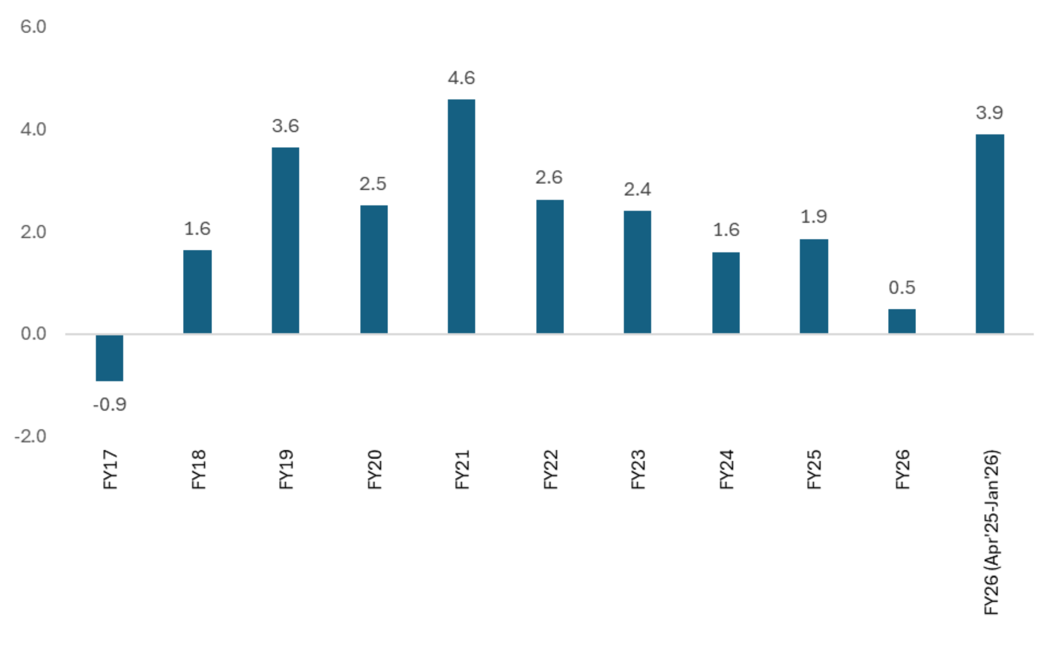
…similarly, Currency with Public (CWP) Reached All Time High of ~ Rs 39 lakh crore

- As currency with public (CWP) accounts for ~97.6% of the CiC, the CWP also reached all time high of Rs 39 lakh crore for the fortnight ended 31 Jan'26, with a YoY growth of 11.5%, compared to last year growth of 5.4%. The growth has continued with upward trend since end-October 2025
- On YTD basis, CWP increased by Rs 2.79 lakh crore (7.6%) during Apr 2025 to 31 Jan 2026, compared to last year YTD growth of only Rs 93,326 crore (2.7%) during the corresponding period
- **By looking at the current trend, in FY26 it is expected that CWP will surpass the FY21 incremental growth of Rs 4.6 lakh crore during the post-Covid19 pandemic period**

Currency with Public (YoY %) is Increasing

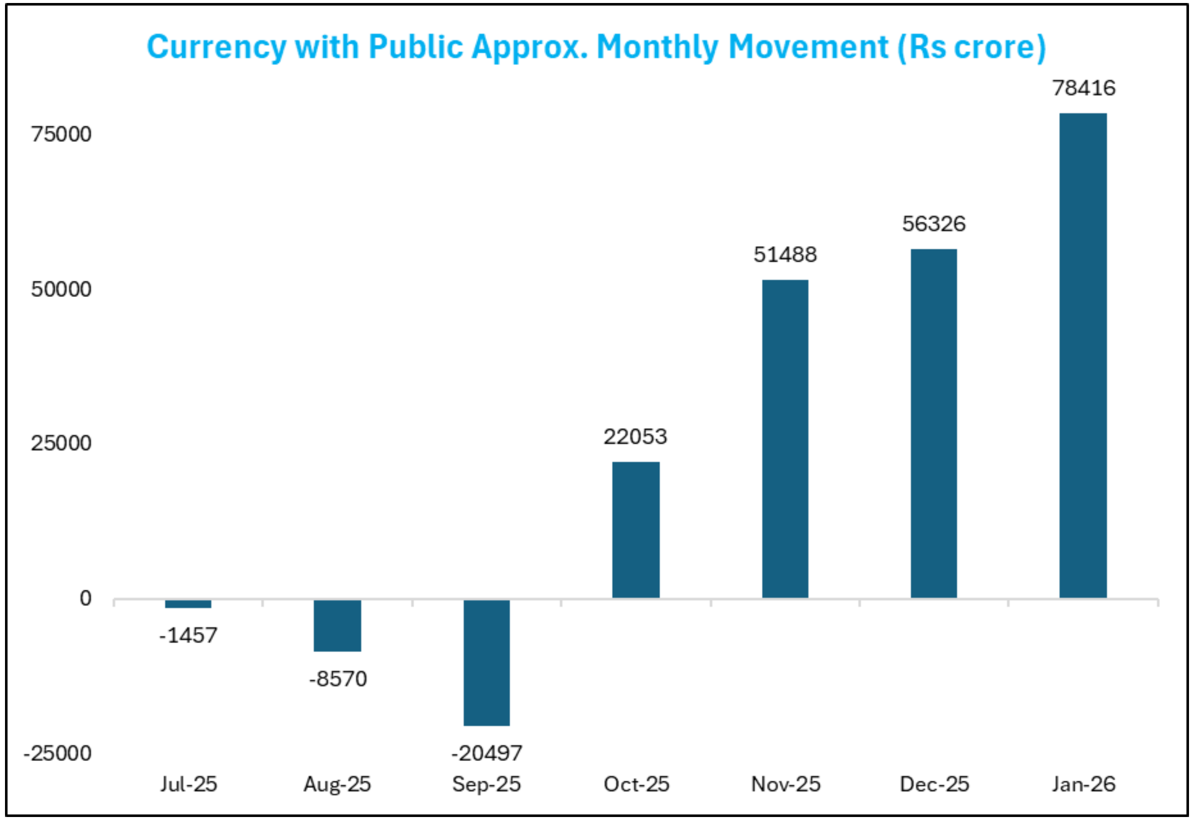


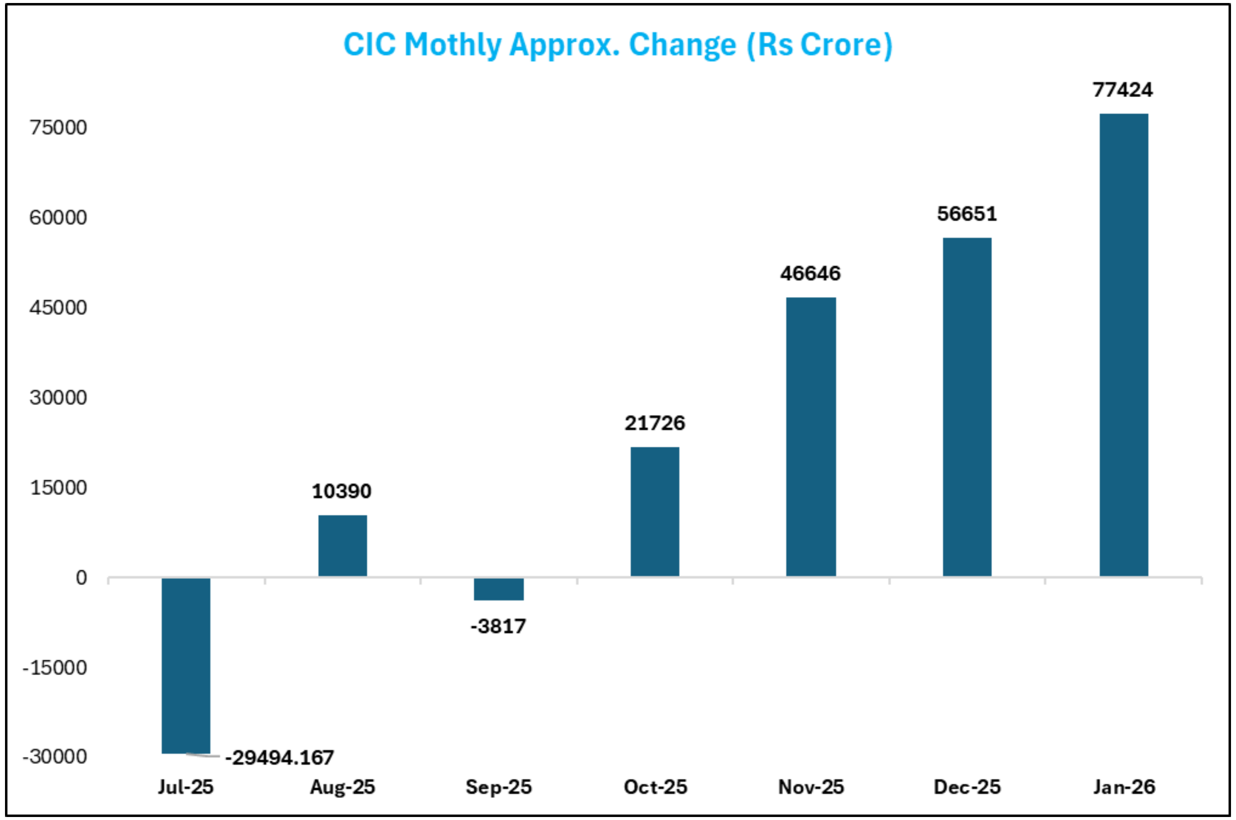
Incremental Growth in Currency with Public (CWP) in Rs Lakh crore



Incrementally, Currency (CiC and CWP) is increasing…

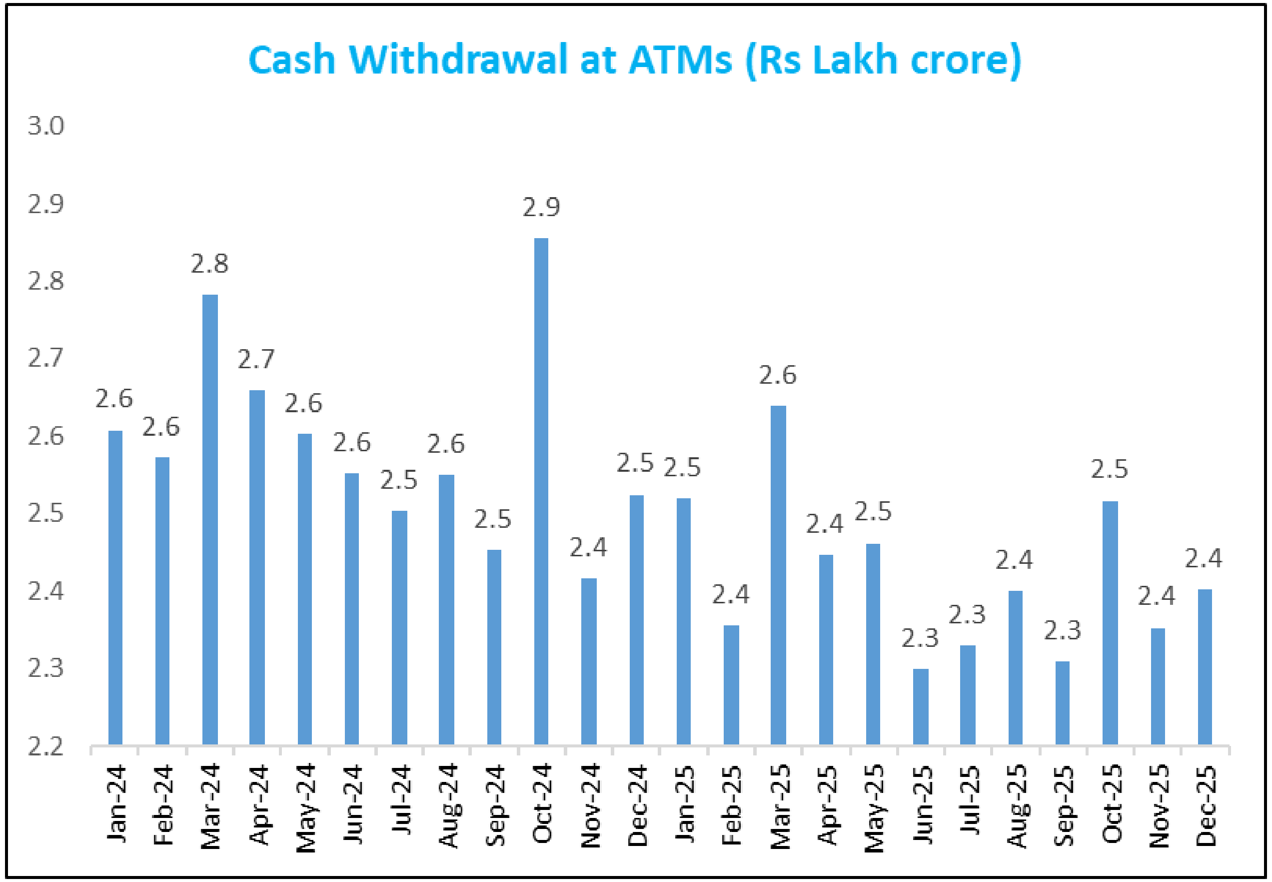
- The monthly change (approx.) of both Currency in Circulation (CiC) and Currency with Public (CWP) has been increasing since October 2025





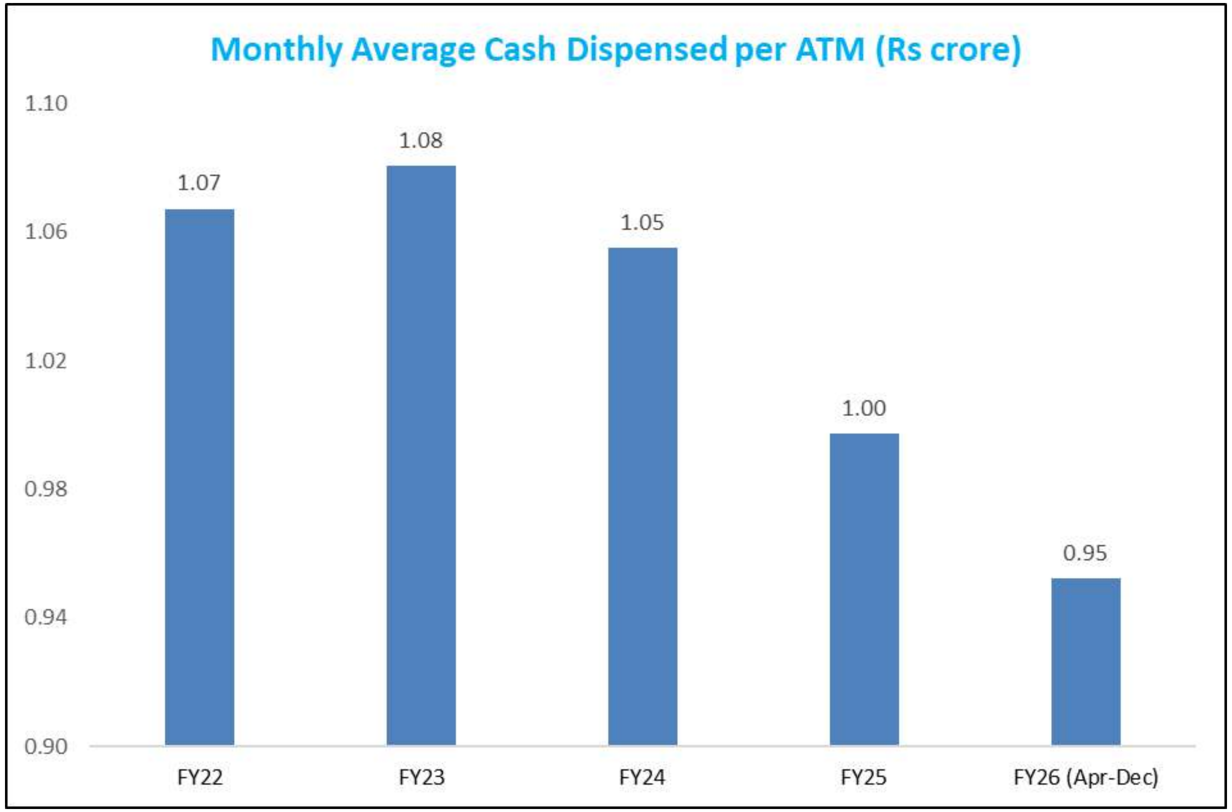
But ATM Cash Withdrawal remains at the Avg. Level

- Despite Festive Season in October 2025, the cash withdrawal from ATM is at the average level of Rs 2.5 lakh crore..
- **It is interesting to note that during FY18-FY25, the incremental average growth of currency with public was Rs 2.5 lakh crore**



ATM Cash Withdrawal: State-wise Average could surpass FY23 levels

- Average monthly cash withdrawals at ATMs, is likely to surpass FY24 and FY25 levels..Top 6 States are Karnataka, West Bengal, Tamil Nadu, Chhattisgarh, Punjab and Jharkhand are showing an increasing trend

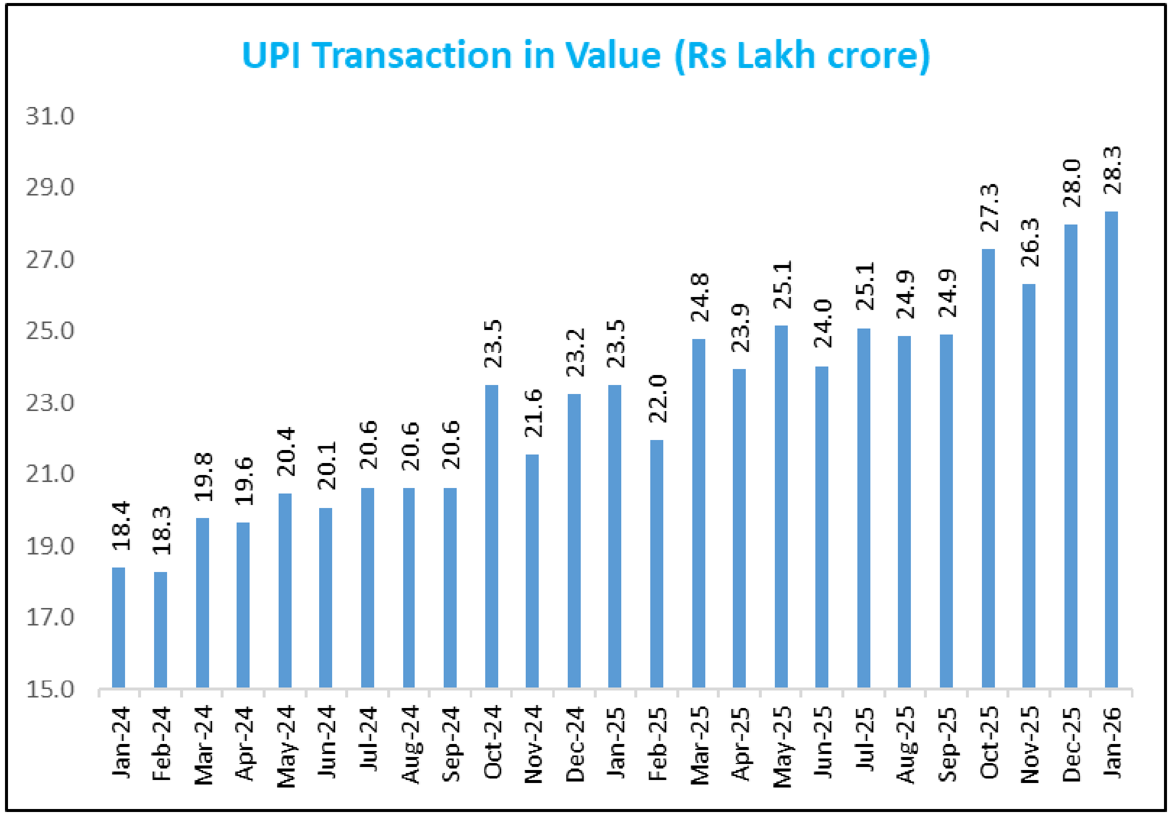


Monthly Average Cash Dispensed Per ATM (Rs crore)				
States	FY23	FY24	FY25	FY26 (Apr-Dec) E
ANDHRA PRADESH	1.57	1.61	1.59	1.34
ASSAM	1.39	1.30	1.20	1.04
BIHAR	1.18	1.22	1.32	1.23
CHHATTISGARH	1.58	1.61	1.64	1.49
DELHI	1.49	1.82	1.89	1.27
GOA	1.16	1.18	1.17	1.08
GUJARAT	1.27	1.29	1.37	1.07
HARYANA	1.40	1.40	1.40	1.39
HIMACHAL PRADESH	1.21	1.12	1.15	1.03
JAMMU AND KASHMIR	0.90	0.82	0.80	0.81
JHARKHAND	1.23	1.28	1.25	1.44
KARNATAKA	1.73	1.83	1.79	1.70
KERALA	1.34	1.29	1.11	0.91
MADHYA PRADESH	1.06	1.03	1.01	1.06
MAHARASHTRA	1.21	1.25	1.26	1.41
ODISHA	1.49	1.56	1.58	1.13
PUNJAB	1.50	1.48	1.45	1.46
RAJASTHAN	1.31	1.34	1.30	1.28
TAMIL NADU	1.33	1.56	1.56	1.59
TRIPURA	1.48	1.39	1.07	1.06
UTTAR PRADESH	1.20	1.33	1.38	1.41
UTTARAKHAND	1.40	1.39	1.39	1.24
WEST BENGAL	1.51	1.62	1.65	1.62

Source: SBI Research, CMS Data E: Estimated

UPI Transactions (in value) are increasing and is at all time high of Rs 28.3 lakh crore

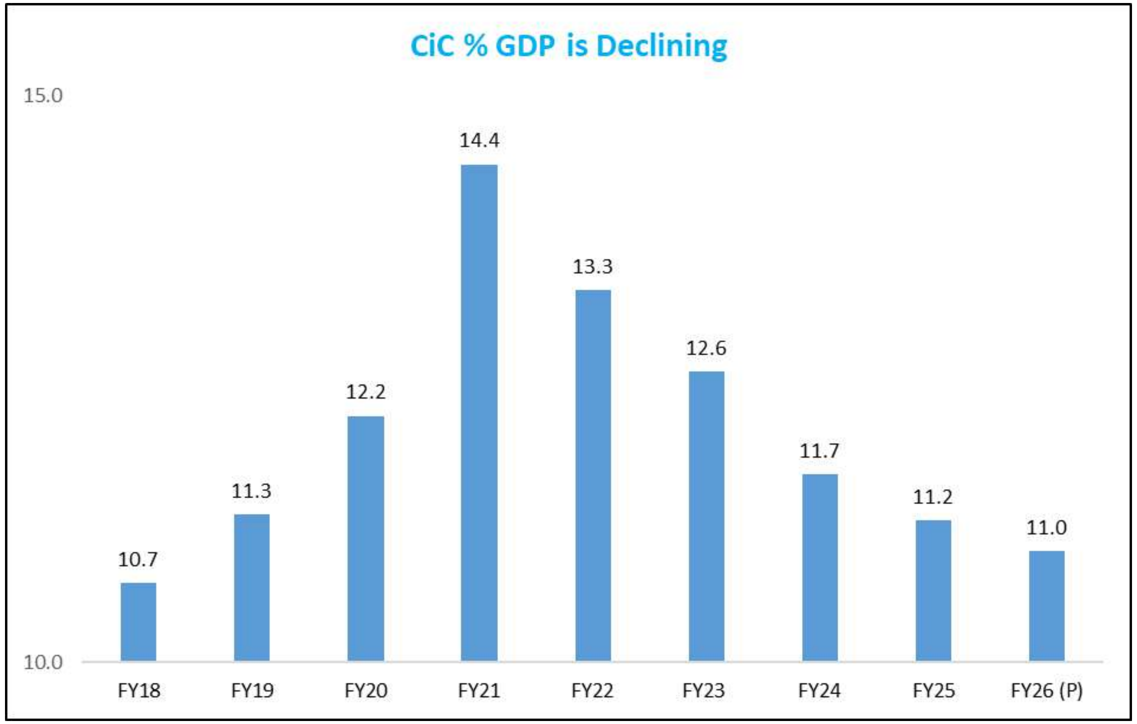
- UPI transactions value is much higher than the currency circulation in India. **For instance, CiC is Rs 40 lakh crore, while one month UPI transaction in value is Rs 28.0 lakh crore, which is ~70% of the total currency of the economy**
- UPI transactions in value terms indicate a huge jump of Rs 2.1 lakh crore in October but declined in November by Rs 96,158 crore…. again, increased by Rs 1.65 lakh crore in December

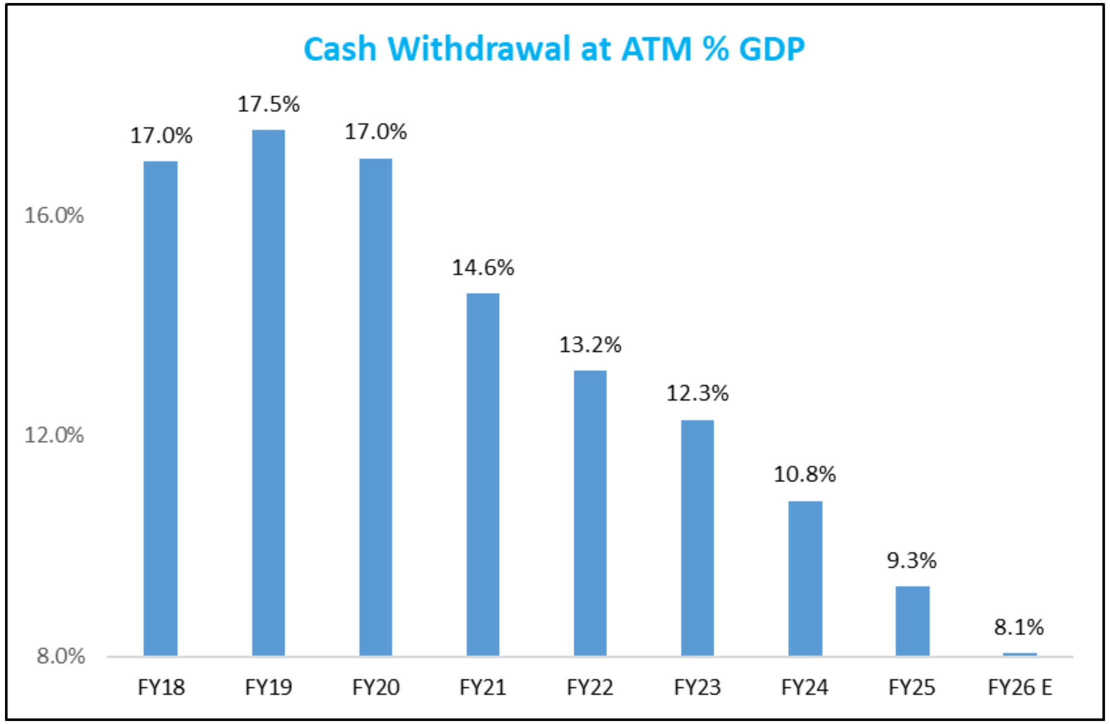


…But Cash as % GDP is declining since FY21..

- Despite increase in CiC, cash as % of GDP is declining and ATM cash withdrawal as % of GDP is also declining

- **This clearly indicates that digital transactions continue to dominate our economy**





The puzzle of high CiC, high UPI, high currency withdrawals through ATM and declining currency /GDP ratio

Reason 1: Using DiD to estimate the impact of GST Notice

- In the second half of July 2025, it was reported that Karnataka issued nearly 18,000 GST demand notices based on UPI transaction
- **This news may have pulled back UPI transactions not only in Karnataka but in certain other states also through signaling impact. To empirically test for this, we estimated the impact of GST notices on ATM transaction in random five states (to check whether this news had impact on other states also) along with Karnataka..** These were West Bengal, Kerala, Bihar & Chhattisgarh, by using data ATM withdrawal data from January 2025 to January 2026 of selected 5 states
- **We construct an intensity measure and bifurcated the districts in high and low intensity districts using each district's ATM withdrawal with State-mean during the pre-GST notice**. Higher withdrawal compared to mean indicate high demand for cash as well as greater pre-existing financial infrastructure
- In our model: **Treatment group are the districts that had above-average ATM withdrawals in the pre-July period and Control group are districts that had below-average ATM withdrawals in the pre July period**
- **DID usually focused on the group that has been exposed to intervention but in our case announcements will affect all the districts and across state..so we implemented intensity DID by interacting a post-July dummy** to estimate whether districts with stronger pre-existing ATM activity experienced a change in withdrawals after the July announcement relative to districts with lower initial activity

Estimated Model

- We then juxtaposed this exposure indicator with a post-July dummy to estimate whether districts with higher ATM withdrawal experienced a differential change after the GST notice. The estimated model as:

$$y = \beta_0 + \beta_1 dB + \delta_0 d2 + \delta_1 d2 \cdot dB + u$$

  - where y is the outcome of interest, d2 is a dummy variable for the second time period. The dummy variable dB captures possible differences between the treatment and control groups prior to the policy change (i.e. GST notice). The time period dummy, d2, captures aggregate factors that would cause changes in y even in the absence of a policy change. The coefficient of interest, δ1, multiplies the interaction term, d2*dB, which is the same as a dummy variable equal to one for those observations in the treatment group in the second period
  - As indicated earlier, in July, small merchants received GST notice based on UPI transactions. We termed this as an intervention and looked how treatment and control performed after this news

- **Each state was estimated separately and the results are in the next slide**

Estimated Results from intensity-based DiD

- The interpretation of our results from intensity-based DiD is as follows:
  - **In Karnataka, post GST notice, the districts in the treatment group experienced an additional increase of Rs 37 crore in ATM withdrawals per month, on an average, relative to districts in the control group**
  - As Bengaluru Urban has almost 30% share in total ATM withdrawals it was judicious to estimate the Karnataka state excluding it. Our results indicate that the districts in the treatment group experienced an additional increase of Rs 10 crore in ATM withdrawals per month, on an average, relative to districts in the control group
  - We also got significant results for West Bengal and Kerala, the results from Bihar and Chhattisgarh were insignificant

Intensity Difference in Difference Regression High Intensity districts over low intensity districts			
State	DiD Coefficient	p-value	Significance level
Karnataka (All Districts)	37.14	0.075	at 10%
Karnataka (ex Bengaluru Urban)	10.10	0.046	at 5%
West Bengal	16.76	0.092	at 10%
Bihar	7.06	0.787	Insignificant
Chhattisgarh	6.25	0.756	Insignificant
Kerala	3.68	0.087	at 10%

Reason 2: Estimating Augmented Money Demand Function

- To know the factors affecting the rise in currency, we estimated the following augmented money demand function (using UPI as one of the variable) for the Indian economy over the period FY18 to FY26 (Q3), based on the quarterly data. The data has been deflated by inflation and long transformation has been done when ever required. The estimated money demand model as:

$$Md = (M/P) = b1 + b2\ GDP + b3\ Call + b4UPI + \varepsilon$$

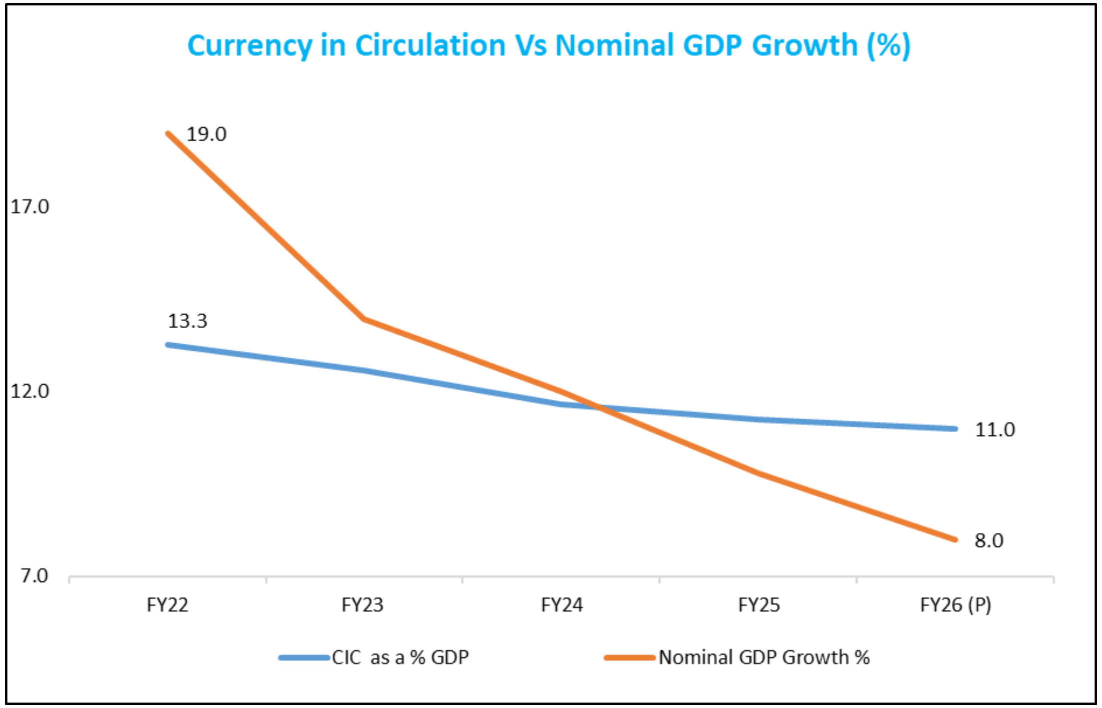
- The estimated results confirms to the theoretical underpinnings of money demand function, i. e. ***demand for money is positively correlated to GDP and negatively correlated to interest rate, however coefficient of GDP is insignificant as UPI is substituting cash***
- The hypothesis that the rise in UPI transaction value results in a decline in currency is confirmed in our results, Hence there is ***inverse relationship between money demand and UPI transaction value***
- **A lower interest rate is also resulting in higher demand for cash**, particularly in Rural areas with a penchant for consumption. Direct and Indirect tax cuts are also resulting in higher consumption in Urban areas

Variables & Expected Sign			
Symbol	Var. Name	Description	Exp. Sign
Dependent Variable			
M0	Reserve Money	Growth Rate (%)	
Independent Variable			
GDP	GDP	Growth Rate (%)	+
Call	Call Rate	Quarter End	-
UPI	UPI Trans. In Value	Log of UPI Transaction Value	-

Estimated Results of Money Demand Function		
Dependent Variable: M0		
Independent Variable	Coefficient	P-Value
GDP	0.1420	0.3301
Call	-0.9986	0.0316*
UPI	-7.3771	0.0010*
Constant	32.0211	0.0000*
* Significant at 5% Level		

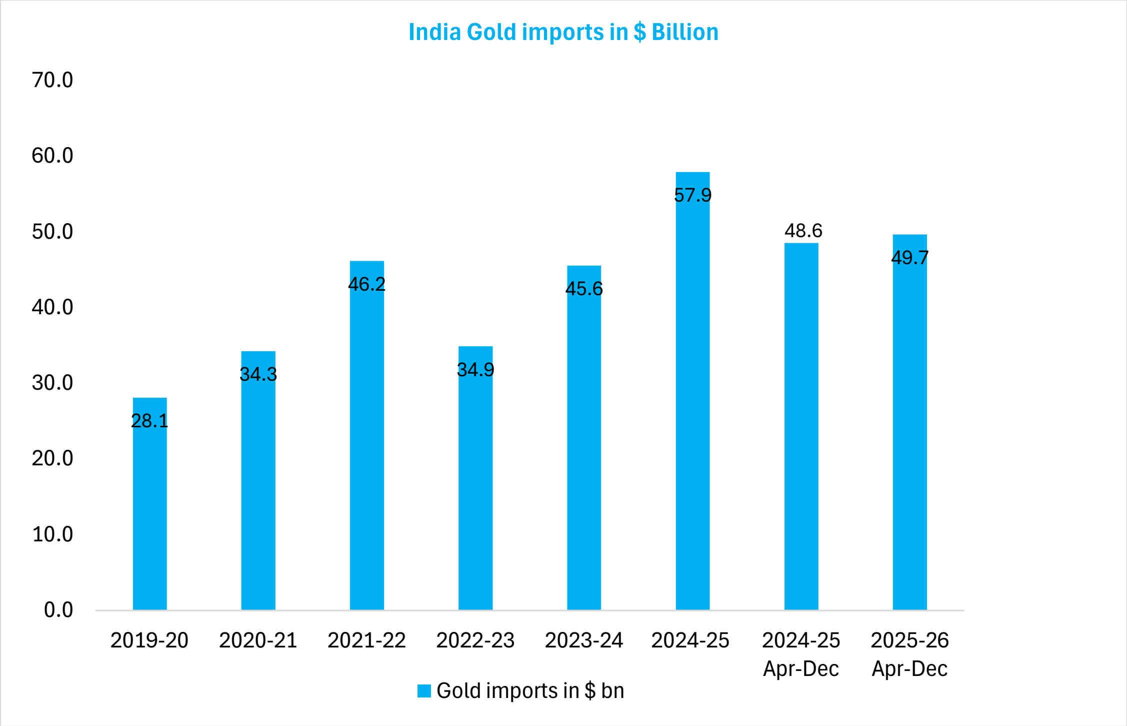
Currency growth is following Economic Growth

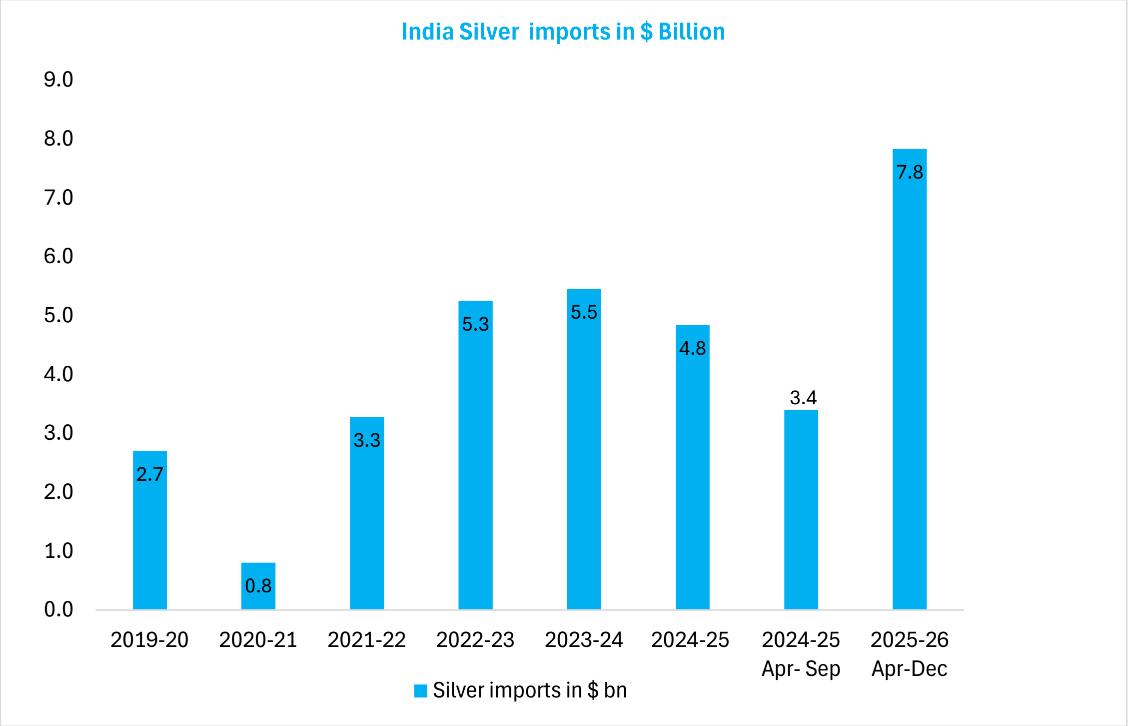
- ❑ RBI continues to follow the minimum reserve system (MRS), which has been in place since 1956. Though, RBI doesn’t define a specific fixed numerical ‘optimal level’ of currency for the entire economy, as this fluctuates with many factors like economic growth, transaction needs, and seasonal demand but manages currency issuance to ensure adequate liquidity for economic activities
- ❑ Generally, the number of pieces (notes) to be printed is generally calculated by taking nominal GDP growth projections, plus replacement of soiled notes and accounting for seasonal demands.



Reason 3: High precious metal prices could also result in higher CiC

- Thirdly, with the rise in precious metals prices, there could have been rising currency in circulation through recycling of gold/silver from households.. Households have found recent surge in prices to cash out some holdings, leading to the rise of cash in circulation (CiC) in the economy. The cut in GST and income taxes has acted as an inventive to boost household consumption
- **The linkage of gold imports and now silver with monetary policy reveal interesting anecdotes…..Gold imports to GDP were rising from FY10 till FY13 when it reached its peak and currently it is also at the highest level since FY13. However, back in FY10-13, RBI 2013 report showed that currency to deposits was also rising at a faster pace indicating that increase in high value cash transactions perhaps took place for gold purchases. Such definancialisation was undesirable to the financial system.. However, this time, people are cashing out gold /silver holdings to boost household consumption..This is the power of financialization**





Reason 4…Notes of Rs 100/200/500 has increased to replace Rs 2000 Notes…

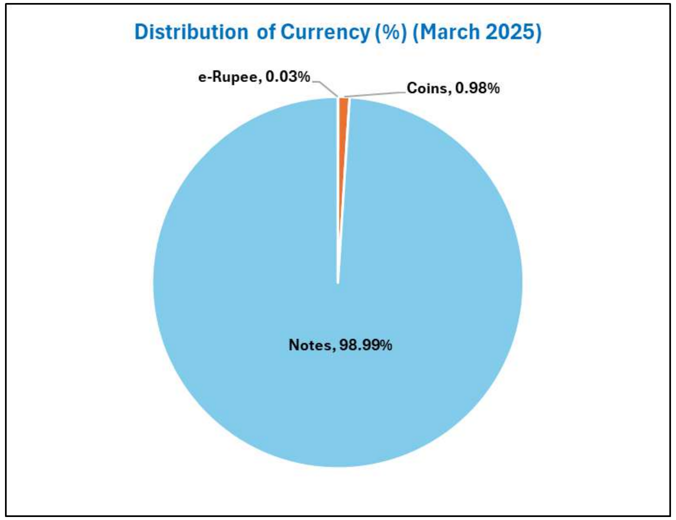
SBI
The banker to every Indian

- India's currency is mostly dominated by notes in value terms, with a significant share of 98.99%, while 0.98% in coins and 0.03% in e₹
- During the last 3-years (2023 to 2025), the small notes share in Volume (no of pieces) has declined by 4.1% to 32.4%, while the notes of Rs 50/100 has increased by 1.5%...The Rs 200 & Rs 500 notes has increased by 4.0%
- With the withdrawal of ₹2000 denomination banknotes of Rs 3.56 lakh crore w.e.f. 19 May 2023, the share of Rs 2000 notes has reduced to 0.02% from 11.3% share in FY23, in terms of volume
- **However, for the public convenience, RBI has directed banks on 28 April 2025, to increase Rs 100/200 denomination notes in ATMs and ensure that 96% of the ATMs should dispense 100/200 notes by end-March 2026…With this, it is expected that RBI will supply more 100/200 notes to the bank branches through Currency chests to meet the public demand**

Share (%) of Bank Note Type in Circulation

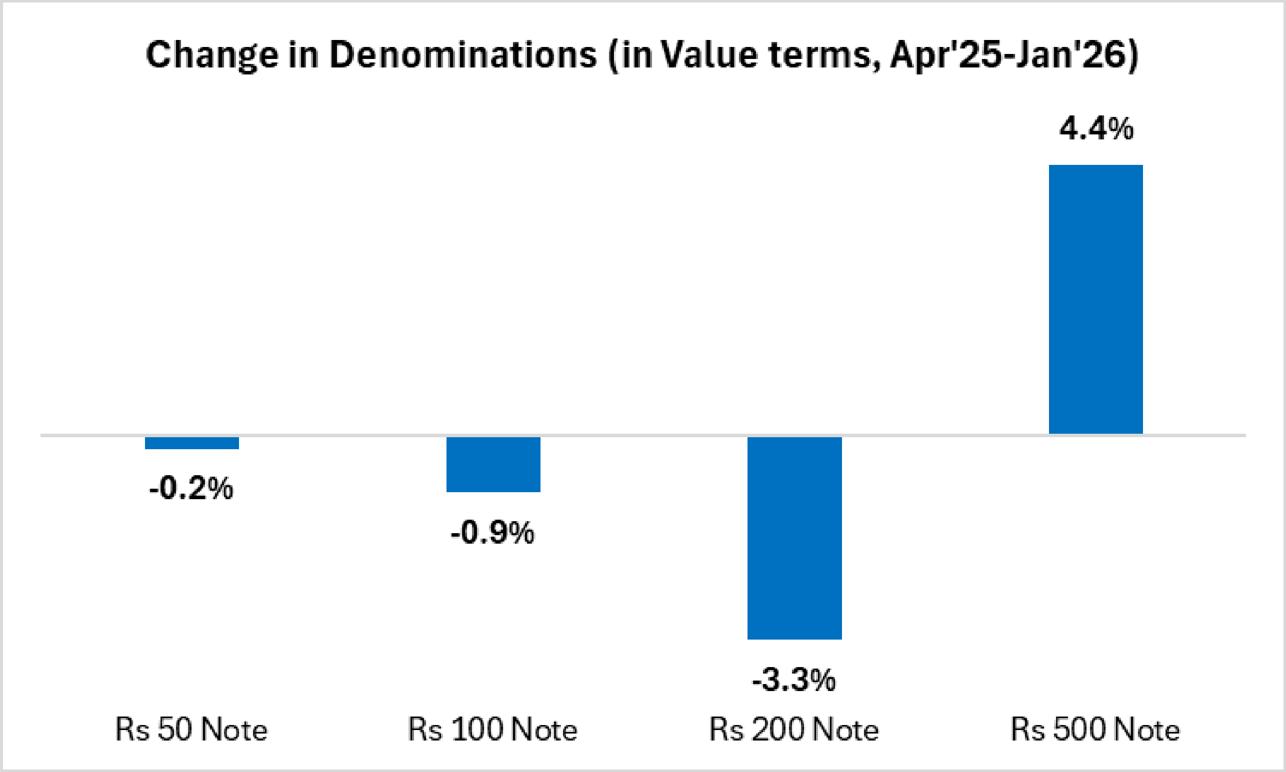
Note Denomination	In terms of Volume				In terms of Value			
	2023	2024	2025	Change 2025/2023 (%)	2023	2024	2025	Change 2025/2023 (%)
Below Rs 20 note	36.5	33.6	32.4	-4.1	1.7	1.6	1.6	-0.1
RS 50 Note	6.3	6.1	6.4	0.1	1.3	1.3	1.3	0.0
Rs 100 Note	13.3	14.0	14.7	1.4	5.4	5.9	6.2	0.8
Rs 200 Note	4.6	5.2	5.6	1.0	3.7	4.4	4.7	1.0
Rs 500 Note	37.9	41.0	40.9	3.0	77.1	86.5	86.0	8.9
Rs 2000 Note	1.3	0.03	0.02	-1.3	10.80	0.20	0.20	-10.6

Source: SBI Research, RBI



Prevalence of Rs 500 increase

- As of Mar'25, in value terms, Rs 500 note has share of 86%
- Our research from currency chest withdrawal data indicates that this share (in value terms) may increase by ~4.4% in the current fiscal (Apr'25-Jan'26)
- Share of all other big denominations exhibited decline during the same period



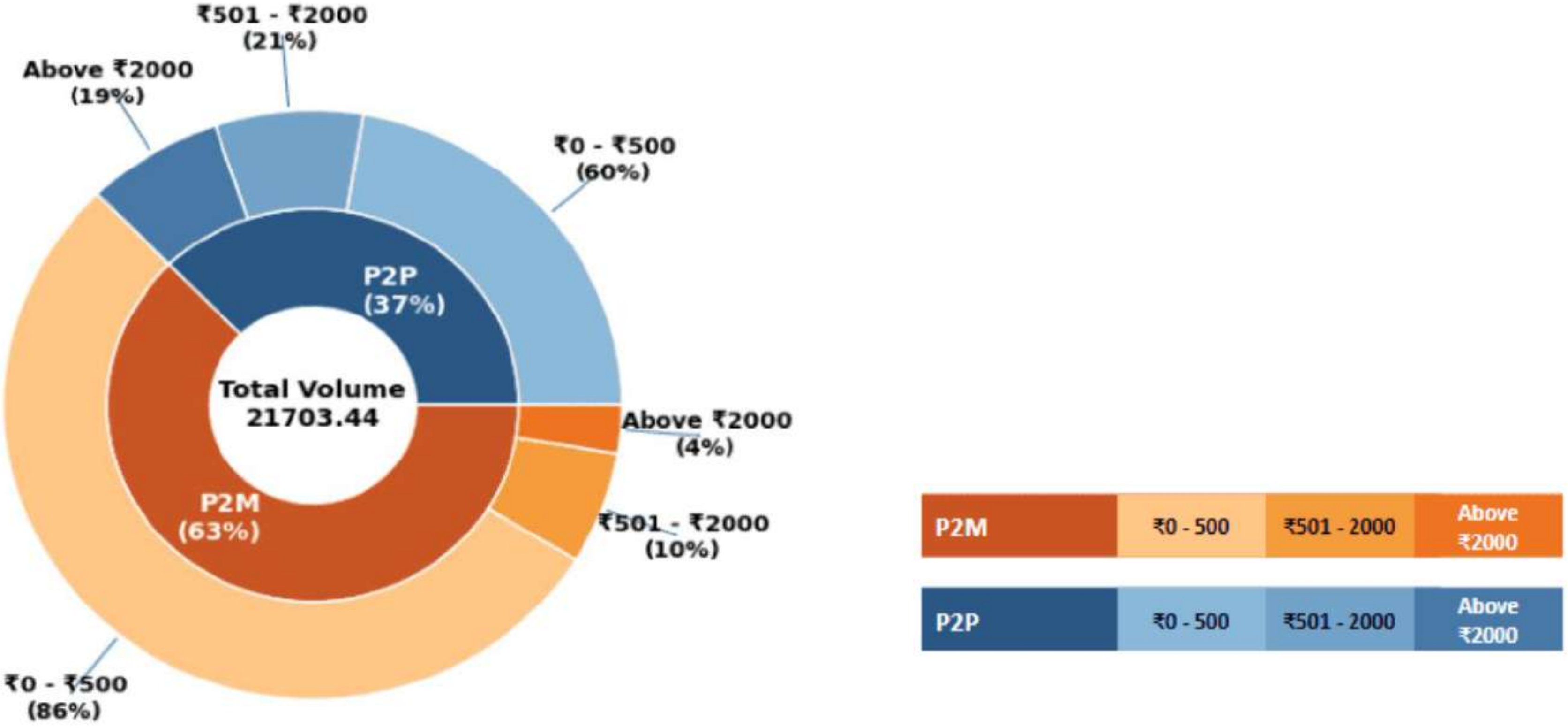
Source: SBI Research

However, UPI is rival of Lower Denomination…. not of Rs 500 note (Yet!)

- Our results that the share of Rs 50/100/200 notes declined are perfectly corroborated with UPI usage data

- As per NPCI, based on volume the average ticket size of P2M transaction of less than Rs 500 has share of whopping 86% in overall UPI transactions

UPI: Transactions (by Volume in Mn) for Jan'26



Source: NPCI

Denomination Matrix

State where share of,		Name of States
Rs 50 note	Increase	Chhattisgarh, Goa, Haryana, HP, J&K, Punjab, TN, Uttarakhand
	Decrease	In remaining major states
Rs 100 note	Increase	AP, Chhattisgarh, J&K, Kerala, MP, TN, Telangana
	Decrease	In remaining major states
Rs 200 note	Increase	TN
	Decrease	Decrease in all other major states
Rs 500 note	Increase	Increase in all other major states
	Decrease	Chhattisgarh, J&K, TN
Source: SBI Research		

Disclaimer:

This Report is not a priced publication of the Bank. The opinion expressed is of Research Team and not necessarily reflect those of the Bank or its subsidiaries. The contents can be reproduced with proper acknowledgement. The write-up on Economic & Financial Developments is based on information & data procured from various sources and no responsibility is accepted for the accuracy of facts and figures. The Bank or the Research Team assumes no liability if any person or entity relies on views, opinion or facts & figures finding in this Report.

Contact Details:

Dr. Soumya Kanti Ghosh
Member, 16th Finance Commission &
Group Chief Economic Advisor
State Bank of India, Corporate Centre
Nariman Point, Mumbai - 400021
Email: soumya.ghosh@sbi.co.in
gcea.erd@sbi.co.in
Phone:022-22742440
:@kantisoumya

Afterthought
Is Large denomination a curse? India is perhaps the only country to have cracked this puzzle

The massive quantities of cash circulating today, and especially large-denomination notes, are a huge public policy problem that needs to be urgently discussed, <u>not taken as an immutable fact of life</u>.

- Kenneth Rogoff, The Curse of Cash

Demand for large-denomination notes is qualitatively different from that for small-denomination notes

- Kenneth Rogoff in his 2016 book "The Curse of Cash" said that, "*Cash, though, is still an important part of the mix, and if one wants to contemplate phasing it out, it is critical to have a hard look at both the goals and the alternatives (e.g., prepaid cash cards with strict limits). Maintaining the convenience and privacy of paper currency in small transactions are important reasons that any path toward phasing out paper currency needs to begin with large- denomination notes and possibly leave small- denomination notes circulating indefinitely or until fully satisfactory alternatives are in place*."

- A staunch believer that cash is a curse, he has the view that, "*the vast bulk of the world currency supply is in large-denomination notes* ***that ordinary citizens seldom see or use****, including the United States' $100 bill, Japan's 10,000-yen note, the Euro zone's 500-euro note, Switzerland's 1,000-franc note, and a host of cousins from other countries*." And the **demand for large-denomination notes is qualitatively different from that for small- denomination notes**

- He said that new technologies have now made even small-denomination notes increasingly less essential than they once were, a fact that is underscored by the progress that some countries (notably Sweden and Denmark) have already made toward reducing the use of cash

The share of large notes expands sharply and accounts for more than 80% of the currency supply in most advanced countries

Proportion of large notes in circulation, by country			
Country	Year of Data	Proportion of Large Notes in Total Currency in Circulation (%)	Local Currency Threshold Used to Define Large Notes
Switzerland	2015	96.6	50
Israel	2015	94.8	100
Norway	2015	94.1	200
Russia	2014	93.5	1,000
Australia	2015	92.2	50
Japan	2015	91.1	5,000
Eurozone	2015	90.7	50
Singapore	2014	90.6	50
Taiwan	2014	89.6	1,000
Argentina	2015	88.3	100
China	2014	86.8	100
Brazil	2015	85.5	50
South Africa	2014	85.1	100
Mexico	2015	84.7	500
United States	2015	84.2	50
Hong Kong	2014	83.4	500
Thailand	2015	82.4	1,000
Sweden	2015	79.2	500
Denmark	2015	75.4	500
Canada	2015	71.3	50
New Zealand	2015	70.7	50
United Kingdom	2015	68.6	20
Turkey	2015	58.4	50
Colombia	2014	35.7	50,000
Chile	2014	31.9	20,000
Source: Kenneth Rogoff, The Curse of Cash			