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## THE (NON)GENUITY OF CASH CRUNCH

Currency in circulation (CIC) in the economy has surpassed its pre-demonetisation level of Rs 17.98 lakh crore to reach Rs 18.29 lakh crore by Mar'18. Hence, the recent reports of cash shortage appear intriguing and defy logic. However, there are a couple of trends that beg explanation and may be the possible reasons for such apparent trend.

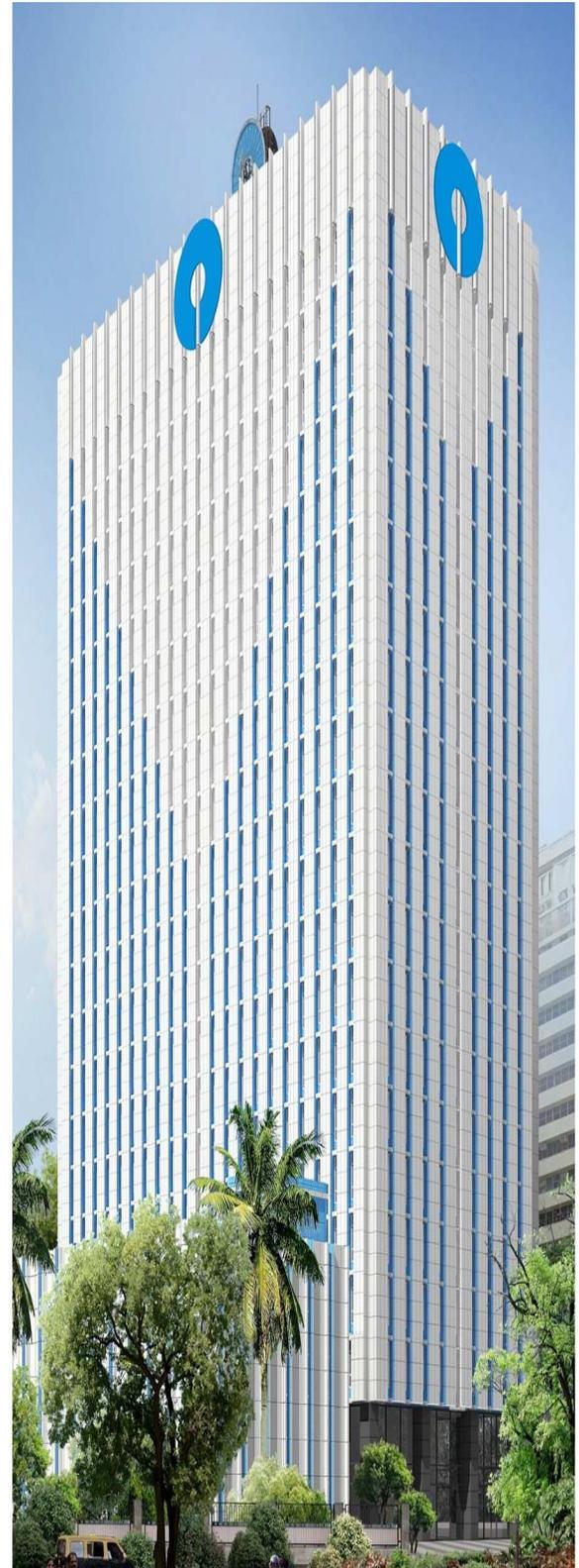
First, income velocity (of currency with public) has been on a declining trend in FY18, particularly in the second half. This indicates possibly currency of higher denomination/Rs 2000 is not getting adequately circulated in the economy. Though the State-wise/Region wise income velocity is hard to determine, yet our internal estimates suggest that in the States like Bihar, Gujarat and Southern States, the income velocity is far less than the national average. The other States have also started facing issues as there has been a 'domino effect' whereby any possible tendency to hoard cash may have spread to other States.

Second, juxtapose this trend with the ATM withdrawals. During FY18, ATM withdrawals increased by 12.2% in H2 compared to H1. This growth was much higher compared to FY16 or FY15 and even the 5-year average (8.2% during FY12 to FY16). Cash withdrawals in H2 are always more than the H1 due to many reasons like festival and procurement season that fall in H2 but in FY18 such a large increase is still not self explanatory.

So the moot question is why has there been such a dramatic change in demand for cash more than one year after re-monetization?

We believe, there has been a forced shift in currency composition with more of smaller denomination notes in circulation now, which is positive (Government sources suggest printing of Rs 2000 note being less or stopped). For example, in FY17 when remonetization was achieved there was no Rs 200 denomination note. However, in FY18 the pace of circulating 200 denomination has increased, as has happened with notes of smaller denomination. This may have altered the demand for smaller denomination notes in a larger way to possibly substitute (more transaction) for the currency of larger denominations which are getting less. As ATMs have to be replenished more frequently, it can lead to the conjecture that cash is not available.

Additionally, heightened economic activity beginning Q4 of FY18 has meant that the demand for working capital cycle has changed for the better resulting in more usage of cash for transactional purposes. This may have also prompted more withdrawals at the ATM to support the same level of currency demand. This has amplified over time and is known in the supply chain literature as the Bullwhip Effect.



Various news reports have been coming up regarding cash crunch in certain parts of the country. It is reported that in the states like Andhra Pradesh, Bihar, Karnataka, Maharashtra, Rajasthan, Uttar Pradesh, Madhya Pradesh, and Telangana the rate of cash withdrawal exceeded cash deposits in banks. The cash crunch has been mainly reported from semi-urban and rural areas.

**CURRENT STATUS OF CURRENCY IN CIRCULATION**

- ◆ Currency in circulation (CIC) in the economy has surpassed its pre-demonetisation level of Rs 17.98 lakh crore to reach Rs 18.29 lakh crore by Mar’18. Meanwhile, currency with public as % percentage of currency in circulation declined significantly (to a low of 75% as on 25 Nov’16) during the demonetisation period, however by the end of FY17 it recovered to its previous levels as % of Currency in Circulation. Currency with public has now reached around 96% of currency in circulation. This means that cash in hand (cash at ATM etc) with banks has declined. During FY18, cash in hand with banks peaked to Rs 0.92 lakh crore by Sep-end and it has now reduced to Rs 0.7 lakh crore by mid-Mar’18.

**REQUIREMENT OF CURRENCY WITH PUBLIC**

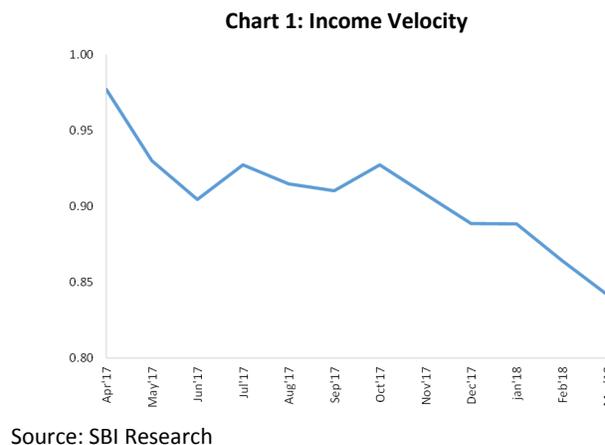
- ◆ Based on the nominal GDP growth of 10.8% and 9.8% in FY17 and FY18, currency with public would have been Rs 19.4 lakh crore by Mar’18. However, currently currency with public is at Rs 17.5 lakh crore which shows a gap of Rs 1.9 lakh crore. The increase in digital modes of payment compensates some part of the existing gap. The shift to digital modes could be at least Rs 1.2 lakh crore. The apparent shortfall thus could be around Rs 70,000 crore or even less.

Arithmetic of Ideal Cash Requirement (Rs lakh crore)	
Currency with Public as on 31 Mar’16	16.0
Nominal GDP growth in FY17	10.8%
Required Currency with Public as on 31 Mar’17 (keeping velocity constant)	17.7
Nominal GDP growth in FY18	9.8%
Required Currency with Public as on 31 Mar’18 (keeping velocity constant)	19.4
Currency with Public as on 31 Mar’18	17.5
Currency gap	-1.9
Movement towards Digital modes	1.2
Source: SBI Research	

**CURRENCY IN CIRCULATION (CIC) & INCOME VELOCITY OF MONEY: THE VICIOUS CYCLE**

- ◆ On a monthly basis CIC growth has been 0.45 lakh crore, 0.51 lakh crore and 0.39 lakh crore in Jan’18, Feb’18 and Mar’18 respectively, compared to an average of 0.1 lakh crore, 0.2 lakh crore and 0.2 lakh crore respectively in these three months in previous years (except 2017).
- ◆ Incidentally, income velocity (of currency with public) has been on a declining trend in FY18. This indicates money is not getting adequately circulated in the economy. Though the State-wise/Region wise income velocity is hard to determine, yet our internal estimates suggest that in the States like Bihar, Gujarat and Southern States, the income velocity is far less than the national average. The other States have also started facing issues as there has been a ‘domino effect’ whereby any possible tendency to hoard cash may have spread to other States.

M-o-M Incremental Currency in Circulation (Rs lakh crore)							
	2012	2013	2014	2015	2016	2018	
Jan	0.18	0.17	0.03	0.15	0.14	0.45	
Feb	0.19	0.20	0.17	0.20	0.37	0.51*	
Mar	0.13	0.12	0.13	0.23	0.42	0.39	
Apr	0.37	0.35	0.41	0.44	0.57	-	
May	0.16	0.02	0.24	0.19	0.13		
Jun	-0.05	-0.11	-0.06	-0.14	0.00		
Jul	-0.15	-0.11	-0.10	-0.22	-0.09		
Aug	0.01	-0.03	-0.10	0.03	0.09		
Sep	-0.08	-0.01	-0.04	0.14	-0.05		
Oct	0.21	0.31	0.33	0.24	0.50		
Nov	0.23	0.28	0.02	0.39	-		
Dec	0.02	0.07	0.20	0.15	-		
Source: RBI, SBI Research, *data for 2 Mar 2018 used to calculate this							



**ATM WITHDRAWALS INCREASED IN H2 FY18**

- ◆ RBI's data on ATM withdrawal through Debit cards in H2 FY18 shows an interesting trend. During FY18, ATM withdrawals increased by 12.2% in H2 compared to H1. This growth was much higher compared to FY16 or FY15 and even the 5-year average also (8.2% during FY12 to FY16). Cash withdrawals in H2 are always more than the H1 due to many reasons like festival season and procurement season which always fall in H2 but in FY18 that increase is not self explanatory.

Cash Withdrawals at ATM by Debit Cards (Rs Billion)			
Year	H2	H1	Growth (%)
FY18*	15291	13633	12.2
FY17	10336	13267	-22.1
FY16	13130	12242	7.3
FY15	11334	10945	3.6
FY14	10199	9449	7.9
FY13	8771	7912	10.9
FY12	7368	6629	11.2

Source: RBI, SBI Research \* March Month Estimated

**REASONS FOR CHANGE IN CURRENCY DEMAND**

- ◆ Why has there been such a dramatic change in demand for cash more than one year after re-monetization? This is when money supply has been restored to full level and has expanded in line with transaction demand of the economy. This begs attention and a deeper analysis.
- ◆ To understand this one has to search for other measure of re-monetization. The notion of re-monetization can as well be framed in another way. This alternate definition can be efficiency of transaction under the new currency structure. In FY17 when re-monetization was achieved, there was no 200 rupee denomination. However in FY18 the pace of circulating 200 denomination has increased manifold, as has been the case with notes of smaller denomination. This may have altered the demand for smaller denomination notes in a larger way to possibly substitute for the currency of larger denominations. As ATMs have to be replenished more frequently, it can lead to the conjecture that cash is not available.
- ◆ Additionally, heightened economic activity beginning Q4 of FY18 has meant that the demand for working capital cycle has changed for the better resulting in more usage of cash for transactional purposes. This may have also prompted more withdrawals at the ATM to support the same level of currency demand. This has amplified over time and is known in the supply chain literature as the Bullwhip Effect.
- ◆ One of the reasons that has been attributed for sudden rise in demand is the proposal of The Financial Resolution and Deposit Insurance Bill. However this explanation is not correct for there is lag of five-six months from date of announcement in Aug 2017 to manifestation of panic in Jan-Feb 2018.

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## ABOUT US

The Economic Research Department (ERD) in SBI Corporate Centre is the successor to the Economic and Statistical Research Department (E&SRD). The latter came into being in 1956, immediately after the State Bank of India was formed, with the objective of “tendering technical advice to the management on economic and financial problems in which the Bank has interest and which required expert analysis”.

After the first reorganization of the Bank, when specialized departments like Management Science, Management Information Systems, Planning and Market Segment Departments took over the statistical work of E&SRD, the Department was renamed as ERD.

However, with the ERD team now taking on multidimensional functionalities in the area of risk management, corporate analytics, strategy and so on, who knows, the time may have come to rename it again!

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