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Impact of VRR auctions on interest rates

The last two months have witnessed increasing frequency of conduct of VRR as an effective liquidity management tool. The current exercise looks at historical episodes of such actions and examines if the auctions had any announcement effect on interest rates. Interestingly, announcement effects are expected for daily VRRs as RBI generally announces it a day before or on that day itself. This should theoretically align with market expectations. However, for certain longer tenor VRRs which have been announced based on evolving liquidity conditions, an impact is observed in market interest rates such as WACR. For 10Y GSec and TBill rates, the impact is minimal as these market rates are influenced by other factors such as global yields and evolving liquidity dynamics. Statistical results also show that WACR is more susceptible to VRR announcements. Hence it also attests to RBI's choice of WACR as the operating target of monetary policy.

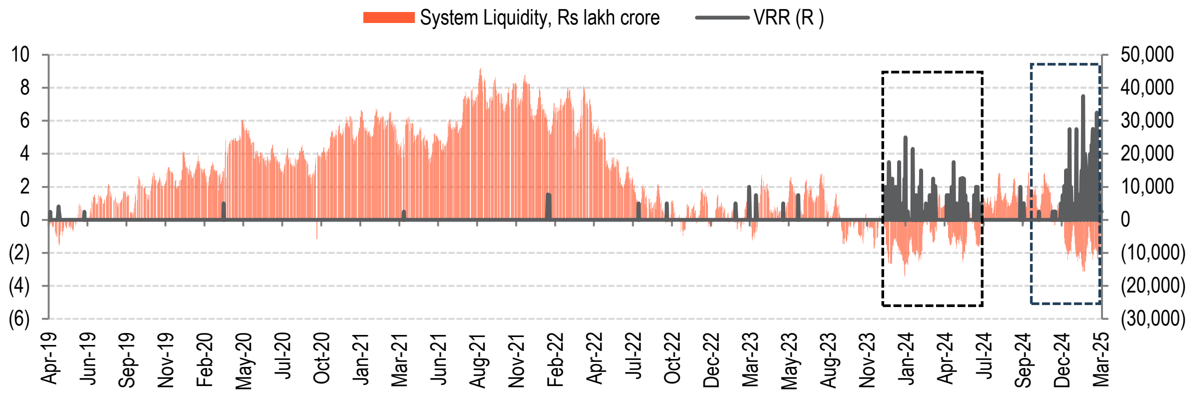
Liquidity situation and VRR

One of the effective liquidity management tools that has gained prominence in recent times has been the variable rate repo. As liquidity sprung into deficit from mid Dec'24 onwards, the recourse to VRR became a regular route to finetune system level liquidity. From nil auctions conducted during Jul'24 and Aug'24 (average system liquidity surplus of Rs 1.3 lakh crore during those two months), the frequency of conduct of VRR became a day-to-day alternative. In fact, on 15 Jan 2025 RBI announced conduct of daily VRRs. The short tenor VRRs was harmonised with long tenor VRRs, ranging from 45, 49 and 56 days VRRs. In this exercise, an attempt has been made to capture announcement effects of VRR on different rates such as weighted average call rate (WACR), 10Y GSec yield and TBill rates of different tenors under ceteris paribus conditions.

VRR auction since Apr'19 have been analysed in this exercise. The frequency and quantum of auctions are contingent on the evolving system liquidity conditions. India experienced liquidity overhang for a considerable period especially during Covid which obviated need for VRR. During the period Dec'19 to Jun'22, the period was marked by significant liquidity surplus and there were just 5 VRRs that have been conducted and 4 of them were overnight/3 day's tenor. Further, emphasis was given on variable rate repos/reverse repos as part of liquidity management tool.

Fig 1. shows that tighter liquidity conditions call for VRR. The notified amount for VRR has been significant in recent times. For the period Jan'24 to Apr'24, VRRs were conducted due to deficits in the system as the wedge between credit and deposit widened (on an average at Rs 3.3 lakh crore) due to sharp pickup in credit demand. During that time, call money rate spread over repo was ~ 27bps. However, the quantum of VRR issued cumulatively in these four months (~ notified amount of Rs 22 lakh crore) was just half of the amount that we are seeing currently, if we take from 15 Jan 2025 onwards, the notified amount is at ~ Rs 46 lakh crore). In the present situation, somewhat normalisation in credit growth against an elevated base is keeping the quantum of VRR capped, else it would have been far higher.

Fig 1: VRR and movement of system liquidity



Source: CEIC, Bloomberg, Bank of Baroda Research, Till 7[Th] Mar

What VRR auctions data convey?

VRR auctions analysed since Apr'19 gives some interesting insights.

1) Out of the 121 auctions analysed, 39 auctions have been overnight auctions for daily liquidity management.

2) The slightly longer tenor VRR are conducted especially towards the latter part, or more precisely, the second fortnight of the month due to tighter liquidity conditions emanating from seasonal tax outflows. Even during quarter end, especially coinciding with advance tax payments schedule, such long tenor repo auctions are seen.

3) For longer tenor VRRs (14 days and above), the general trend observed historically has been that the bids received are on an average higher than the notified amount contingent on the evolving liquidity situation. On an average, bids received has been ~1.5 times higher than the notified amount. The cut off yield for VRR above 7 days, is generally higher averaging at ~ 6.48% compared to overnight and short end VRRs (cut off yield on an average at 6.38%), thus showing robust demand for durable liquidity.

Have there been any movement in interest rates?

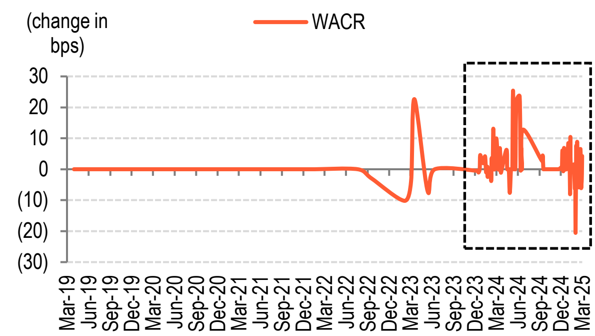
Next, we see whether different rates such as WACR, 10Y GSec and TBill yield had any immediate effect or not, due to announcement of VRR.

- Of the 121 auctions monitored, on 51 occasions there have been no change in WACR. Notably, in most of the cases the overnight VRR had no response shock on major rates as market participants might have priced in the same. For WACR, the most significant decline was seen in case of announcement of 56 days VRR, where WACR fell by 21bps. Even for the 14 days VRR as well, the announcement effect on WACR witnessed and averaged ~ 8bps decline. However, the reverse happened in 2024, where despite conduct of 14 days VRR in May'24 (17[th] and 31[st] May auction), WACR rose by 25bps and 22bps respectively, mainly on account of higher demand for funds by banks to support buoyant credit growth.
- For 10Y GSec yield, the announcement effect of VRR has had a less significant impact. In 62 out of 121 auctions, GSec yield has remained unchanged. The quantum of change has been

negligible, and has shown some momentum only on 7 occasions, primarily attributable to other factors such as direction of global yields, FPI flows etc, amongst others.

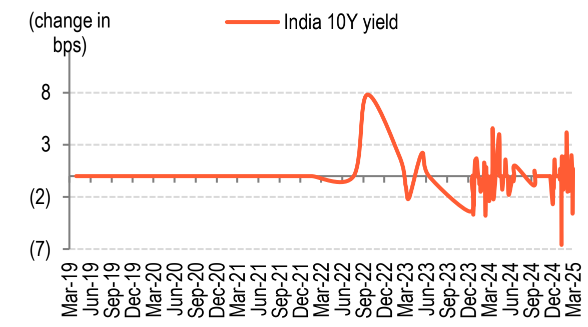
- For 91 days TBill, it remained unchanged for 59 occasions and for 182 and 364 days each, it was unchanged in 62 occasions. In fact, if we look at **Fig 2 & 3,** the range of axis for 10Y Gsec is very range bound compared to the axis of WACR.

Figure 2: Change in WACR between announcement and auction date



Source: CEIC, Bloomberg, Bank of Baroda Research

Figure 3: Change in 10Y GSec yield between announcement and auction date



Source: CEIC, Bloomberg, Bank of Baroda Research

Is there any empirical relationship between rates and VRR

For 121 auctions, observed since Apr-19, we tried to see whether any statistical relationship exists between call money rates, 10Y GSec yield, liquidity and VRR auctions. For the first exercise, WACR has been regressed on VRR and liquidity. The t statistic turns out to be significant for VRR and liquidity and one period lag liquidity. Even directionally it holds true. For example, higher frequency of VRR tend to lower WACR. So is true for liquidity, where higher surplus translates to lower WACR. Ceteris Paribus, what should be looked at from the exercise is the coefficient of determination which in this case is 0.63, thus explaining 63% of the variation in the series.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Liquidity	-0.2	0.0	**-5.4**	**0.0**
Liquidity (-1)	-0.1	0.0	**-2.2**	**0.0**
VRR	-0.2	0.0	**-3.6**	**0.0**
R-squared	**0.63**			
Prob(F-statistic)	0			

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In the next exercise, we have regressed 10-years Gsec on liquidity and VRR. However, albeit the t statistic being significant and directionally satisfactory, the R2 value is just 0.18, thus the coefficient of determination only explains 18% variation in the equation, in this case, unlike for WACR where most variation is explained. This result also corroborates with our earlier findings that WACR is impacted more than bond yields on account of VRR operations.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Liquidity	-0.1	0.0	**-4.2**	**0.0**
Liquidity (-1)	0.1	0.0	**2.6**	**0.0**
VRR	-0.1	0.0	**-3.5**	**0.0**
R-squared	**0.19**			
Prob(F-statistic)	0			

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WACR in line with RBI's operating target

RBI has been consistently vocal about keeping overnight call money market rate-WACR closely aligned with repo, which is also a part of the operating target of the monetary policy. Even our analyses of historical auctions reveal that WACR is more reactive to change in day-to-day liquidity management through VRR. Our regression exercise also validates that WACR is more sensitive to VRR, compared to any other rates.

Key takeaways:

1. Analysis of VRR auctions revealed that it has been an effective liquidity management tool for day-to-day frictions in system liquidity.
2. The frequency of longer tenor VRRs is low and only coincides with seasonal tax outflows (advance tax payment schedule). The demand for such funds is higher as seen in the bid /notified amount ratio.
3. Next it is seen that whether VRR has any announcement effect or not. In most cases, typically for overnight VRRs it is anticipatory in nature. Hence for such anticipated events, there has hardly been any change in rates-WACR, 10Y Gsec yield and TBill rates.
4. Out of all these rates, only some momentum is witnessed in the case of WACR, which is also the operating target of monetary policy. WACR has been more responsive for longer tenor VRRs.
5. For 10Y Gsec yields and TBill rates, hardly any change was seen with the conduct of VRR auction. This may be on account of other factors such as global yields, FPI flows impacting India's domestic yield and for the latter it may be the evolving liquidity conditions.
6. The results of empirical exercise also showed that WACR is more susceptible to VRR auction, which supports RBI's objective of getting WACR closely aligned to repo.
7. Thus, to conclude, VRR might be appropriate as a transient corrector for maintaining frictions in system liquidity. However, for the purpose of durability, instruments such as OMO would be appropriate.

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