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Market turbulence and liquid mutual fund performance: Analytical Study of economic disruptions in India

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ABSTRACT

The objective of this study is to investigate evidence of economic disruption on the performance of liquid mutual fund schemes in India, investigate and compare the returns of liquid mutual funds before and after these economic disruptions, and identify factors contributing to change in performance. This study employed a descriptive-based research design to test the hypotheses that have already been defined, which were derived from a paired sample t-test on secondary data of 36 liquid mutual fund schemes over the period from January 2019 to December 2020 sourced from AMFI. This study examines the effect of liquid mutual fund performance during economic disruptions, such as market closures due to COVID-19. According to the average return, this decreased from 6.58% in 2019 to only 4.19% in 2020. Interest rates, coupled with liquidity expansion and inflation, have been identified as the three most crucial drivers of shrinking real returns. The findings suggest that even as policymakers grapple with the effects of economic disruptions, their impact may have to take a broader form for investors, particularly with regard to liquid mutual funds. This knowledge can be utilized to make informed investment decisions and formulate plans for reducing losses in similar capital–market catastrophes. This is a unique study in which researchers compare the ROI of liquid mutual funds before and after disruption, which can possibly contribute to the prediction of return determinants during time pressuring situations such as economic crises.

KEYWORDS*:* Mutual Fund, Economic disruptions, Investment decisions, Capital Market.

1. INTRODUCTION

With the Indian mutual fund industry on its exponential growth over the years, there is no denying that liquid mutual fund schemes have earned a segment of their own, with investors choosing them as one of the most preferred means to invest. This growth has been driven by several factors, including increased financial literacy, regulatory transformations, and the move to formal savings products. Among the lowest-risk marketable securities, liquid funds have been favoured not only by individual investors but also by institutional investors because of their high liquid profile. These schemes largely invest in money market instruments with short maturities, providing stable returns if an investor needs to park funds for the short term. With time, systematic investments in mutual funds in India have boomed as liquid schemes became one of them due to the exponential growth of this industry at a higher level, thereby changing everything regarding how these people would use their short-term funds with safer pathway options.

This has not only increased financial inclusiveness overall but also adds to the depth and maturity of Indian financial markets. If more investors begin to head into these ultra-low risk, high liquidity directions, it can create a functioning market system that will trickle down into the rest of the conducive economic atmosphere. As liquid mutual funds gained popularity, fund houses were also involved in a competition, providing varied offerings and better service experience. To be fair, however, competition has resulted in improved transparency regarding fund management practices and fee structures (which should ultimately benefit investors). Furthermore, the development of liquid funds has contributed to a somewhat more active short-term financial obligation market in India that has provided various other funding resources for corporations, which can minimize their dependency on conventional economic routes.

Moreover, this trend is not restricted to the financial sector but overflows out to different players in the economic landscape. For example, a very basic method such as foreign rupees coming in via banks through digital rupees introduces novel scopes around the investment space for us.

1.1. OBJECTIVES OF THE STUDY

- **RO1 -** To study the impact of the Covid pandemic on the performances of liquid mutual funds in India.
- **RO2 -** To compare the performance returns of liquid mutual fund schemes pre & post pandemic.
- **RO3 -** To determine the factors that caused the change in the performance of liquid mutual funds due to the pandemic.

Hypothesis Formulation:

Hypothesis statement: The Covid pandemic has impacted the performance in returns of Liquid mutual funds

- **Ho:** There is no significant impact of the Covid pandemic on performance in returns of Liquid mutual funds
- **Ha:** There is a significant impact of the Covid pandemic on performance in returns of Liquid mutual funds.

2. REVIEW OF LITERATURE

Table 1 shows the list of identified constructs from the review of literature.

S.no	Construct
1	Liquid mutual funds
2	Covid Pandemic
3	Market volatility
4	Interest rate/ Repo rate

The impact of economic disruptions on the performance of liquid mutual fund schemes is an important topic for investors and policymakers in the financial sector because this understanding can help investors make investment decisions and create strategies for minimizing losses in similar capital market crises. Economic disruptions influence the performance of liquid mutual funds, which results in decision-making for investors to move out of their investments and policymakers to inspire strategies that reduce losses during market crises. Therefore, thanks to their managers' ability to select stocks actively with information over other investors, some funds beat the market, delivering an annualized alpha of over 2.24% (Abou Tanos & Jimenez-Garcès, 2022). That said, pursuing known securities in times of turmoil does not add value to clients and underscores information-gathering activities. However, seeking familiar stocks during crises does not create value for clients, thus emphasizing the importance of information acquisition activities.

In the case of asset allocation, it is curious that individual investors (often described as noise traders) react collectively to economic signals in a rational manner. Capital flows away from high-risk equity funds and towards low-risk money market funds (Chalmers et al., 2013) during expected economic turmoil or downturns. This behaviour is even more pronounced among savvy investors in low-cost and low-turnover funds. Moreover, tax efficient equity funds not only lower trading costs and tax liabilities but also expose households to favourable styles and information (skills) (Sialm & Zhang, 2013). Thus, insights into economic shocks and their effect on liquid mutual fund returns are important for both investors and policymakers. Using sophisticated liquidity management tools and developing risk management policies can help investors achieve optimal trading returns while reducing their exposure to systemic risk (Ben-Rubi et al., 2024). Moreover, policymakers should also help with the creation of a context for investments by managing country-specific factors to increase the availability of external finance for firms in times featuring higher-level uncertainties (Guizani et al., 2023). This would help minimize losses while ensuring overall market stability during a crisis.

A robust financial ecosystem can be developed by adopting a comprehensive approach that combines both institutional and regulatory efforts to tackle future economic challenges. A few studies have analysed mutual fund performance in challenging times, but not much work has been done on how economic turmoil affects liquid schemes of mutual funds, specifically in India.

Throughout the globe, as well as in India, the Covid-19 pandemic had an amazing impact on the overall performance of common funds. A study examining the post-pandemic performance of various mutual fund categories in 2021 found that tax planning funds (58%), sectoral funds (57%), and equity-diversified funds (55%) achieved better returns than the 4,305 schemes analysed (Riyazahmed et al., 2022). Aside from this, low-importance factors such as scheme type, access type, and corpus size were not significant; however, tracking error reduced fund returns significantly by 4.52%. India has seen a spectrum of pandemics reflected in mutual funds and other related sectors. As most industries spiralled downward, the pharmaceutical industry was a notable exception (Shobha, 2023)

This comparative study of the data from December 2019 to June 2021 was conducted to offer new insights into how well the mutual fund industry had performed before and after the COVID-19 outbreak, and there is limited research on liquid mutual funds in India. Most studies have focused on equity funds for a broader range of mutual fund categories. One study examined open-ended, growth-oriented equity funds from 2012 to 2021 for their financial performance. This study found that factors such as inflation, interest rates, and GDP have a 0.8% impact on fund performance (T & J.P, 2022). Although ample research has been conducted on mutual fund performance during unstable market conditions, there is a significant gap in liquid mutual fund performance behaviour during economic disruptions. Future research could benefit from a more targeted analysis of this fund category in the context of economic shock. This study addresses this knowledge gap by examining the performance of liquid mutual fund schemes in India before and after economic disruptions and identifying the factors influencing these performance changes. The performance of liquid mutual funds in India fluctuates based on economic circumstances. In times of a steady market, such funds usually provide low volatility and stable positive returns (B & Baskaran, 2024). However, their performance can be severely affected by economic shock. For example, mutual funds in different categories were also impacted by the COVID-19 pandemic, which disturbed global financial markets (Riyazahmed et al., 2022).

Interestingly, this study shows that different types of mutual funds react differently to economic disruptions. However, liquid funds are not risk-free and may not necessarily outperform them in times of stress. In contrast, over the long term, equity-based funds have generated superior results compared to other investment avenues, especially during economic recovery (B & Baskaran, 2024; Sharma & Tripathi, 2023). This underlines the need for portfolio diversification by mutual funds at the macro level with regard to performance in different economic cycle phases.

Overall, Indian liquid mutual fund schemes are influenced by various factors, such as market volatility, management strategies of assets, and overall economic conditions (B & Baskaran, 2024). Several risk management strategies practiced by mutual fund companies help reduce the effect of economic disruption on fund performance (Begum, 2024). Investors need to keep these in mind, despite their own risk appetite and investment goals, before allocating them into liquid mutual funds against the backdrop of economic uncertainties. Against the background of evolving inflation and recession signals, this complex mix of positive and unforgiving real economic development suggests that investors need to consider their investment strategies as well as update portfolio allocations depending on modifications in market dynamic features and financial conditions. This study focuses on how economic disruptions affect liquid mutual fund performance and will help investors and policymakers choose the best option to act and develop strategies that lead to loss minimization during market crises. Financial performance has been improved by government aid during the COVID-19 pandemic and more money for firms (Eltamboly & Abdallah, 2022). When mutual funds face redemption pressure from investors, they usually cut their cash positions and most liquid asset holdings. However, depending on market conditions, fund managers have different liquidity strategies. In the most volatile markets, they trade with cash and liquid assets to remain liquid in their portfolios, while in low-volatility markets, they may have extreme dependency on cash but increase portfolio illiquidity (Popescu & Xu, 2023).

In fact, liquid funds contribute to the liquidity of a portfolio when there is an outflow, whereas illiquid funds preserve their liquidity position. Namely, the change in portfolio liquidity affects near-term performance, with liquid funds underperforming illiquid funds after increasing their portfolio liquidity (Popescu & Xu, 2023). In addition, tax-efficient equity funds have lower trading costs, better style exposure, and better selectivity, which lowers investor taxes (Sialm & Zhang, 2013). Overall, these findings underscore the need for effective liquidity management strategies using mutual funds during economic disruptions. This can be done through advanced liquidity management tools and adaptable, market-orientated regulations that ensure that investor returns are maximized while potential systemic risks to financial stability are minimal (Ben-Rubi et al., 2024). The trade-off between liquidity and fund performance is significant, especially when confronted by a crisis, so investors and fund managers have to understand the implications of both sides to make informed decisions or develop an optimal strategy for their funds in order to minimize losses.

2.1 Liquid Mutual Funds

Liquid Funds are a type of debt mutual fund that invests primarily in short-term market instruments, including government securities, treasury bills, and certificates of deposits. Pooled funds are invested in lower-risk investments. Outbound of the funds, liquid funds possess an average maturity of no more than 91 days; thus, liquid funds have vastly shorter average maturities. Liquid mutual funds can be withdrawn at any time, as there is no lock-in period (Chaluvadi, 2021). Today, these are liquid, low-duration funds that yield the market. Typically, when liquid funds invest in low-maturity instruments, it provides a better choice for fund managers to meet investors' redemptions. Any investment done, on the other hand, in liquid funds can be redeemed with a click (Hirani, 2019). Apart from the interest rate environment, the performance of these funds is also linked to the credit quality of the underlying securities, the composition, and the modified duration of the funds. Since money market funds can be easily liquidated within a short time frame (Karmakar, 2020), most institutional investors choose to lean toward this type of fund.

2.2 Economic Disruptions

The extreme uncertainties of the pandemic have rendered a fragile Indian mutual fund industry with excessive inflow of funds but also exposing illiquidity in the domestic debt market (Ramelli & Wagner, 2020) Under these limitations, the Reserve Bank of India (RBI) conducted Open Market Operations that results to reach market liquidity with the volume operations of 100 billion rupees in 2020 and159 billion rupees during 2021((López-Salido et al., 2017). On the other hand, this flow of liquidity is a changing paradigm for liquid mutual funds, where sudden high liquidity due to a decline in interest rates has become detrimental to generating better price returns in fixed income asset class issuer spaces. In a related context, Liu (2023) similarly asserted that during those times, debt markets could be extremely bearish. Liquidity, Interest Rates, Mutual Fund Industry and Investor Sentiment: Examining their Interplay during Economic Disruptions Understanding the importance of within and cross market linkages among liquidity, interest rates, investor sentiment and mutual fund industry is paramount – especially in times when economic disruptions prevail. With RBI intervention bringing liquidity, this high level of shooing-away decent returns is likely to push investors further into the fixed income space. It also reflects the requirement for analysing emotions in the debt market, particularly because adverse sentiment can eventually squeeze investment strategies and performance results of already-throated markets (Ramelli & Wagner, 2020;

López-Salido et al., 2017; Liu, 2023).

The India Mutual Fund Industry was also not spared by COVID. Apart from these peaks in inflow the illiquid nature of India's debt markets had demonstrated a handy (Kumar Das& Das,2020). Owing to the impact of covid pandemic, RBI had to replace open market operations with policy-induced changes in liquidity. Open market operations of Rs.10000 crores and Rs. 15000 crores each in 2020 and 2021 were also conducted by the RBI to inject liquidity (Reserve

Bank of India - Press Releases, n.d.). The rise in liquidity is reflected in the liquid mutual funds. With decreasing Interest rates and increasing liquidity, trying to squeeze a higher yield out of fixed income is not ideal. Additionally, it has been stated that the sentiment in the debt market can become negative.

2.3 Market Volatility

The mutual fund industry was still reeling from the effects of volatility subsequent to the Covid-19 crisis, as investors were concerned about the ongoing turmoil in the Indian economy (Sridhar, 2020). Assets under the management of the Indian mutual fund industry grew from Rs. 24.28 trillion in May, 2020 to 33 trillion in May 2021. This represents a 35.87 per the assets from May 2020 onward. Although institutional investors came to the top in liquid and money market funds (AMFI Industry Trends Report, 2021), the weighted average holding was 85 per cent. CC: Individual investors holding in liquid/money market funds has gone down by 13.28% YOY from Rs. 97928 crores to Rs. 84923 crores between May 20 and May 2021 respectively (2021, AMFI Investors composition report).

2.4 Interest rate/ Repo rate

In monetary policy, changes in interest affect the demand for and supply of money in the economy. The same opulence of money (liquidity) lowers interest rates, which leads to more investment. Interest will remain low until liquidity continues to grow (Nehra, 2020). Similar to other central banks, the Reserve Bank of India (RBI) also cuts interest rates to weaken. This surge in liquidity has tangentially lowered the short-term rates. This leads to lower returns for liquid funds (Walavalkar 2021). With liquid funds, the quality of returns is likely to drop as the current interest rate environment remains low and liquidity increases.

3. METHODOLOGY

The present research work is purely based on secondary data. The time duration of the study is between January 2019 to December 2020. The descriptive research method is used to test the hypothesis and answer the three research questions (RQ).

- **RQ1 -**What is the impact of the Covid pandemic on the performance of liquid mutual funds in India?
- **RQ2 -** What are the returns associated with liquid mutual funds pre- & post-pandemic?
- **RQ3 -** Which factors caused the change in the performance of liquid mutual funds due to the pandemic?

The study is quantitative in nature. The quantitative data is collected from the below secondary sources: AMFI website, Statista, Proptiger, Paisa Bazar, RBI website.

3.1 Sample size

There are currently 38 mutual fund schemes. However, two of them were newly added in 2020. Hence, data is not available for those two schemes for the pre-pandemic year (2019). So, the remaining 36 liquid mutual fund schemes are considered for the analysis.

3.2 Statistical analysis/tool used

Data analysis has been performed in IBM SPSS 26. As we are comparing pre and postpandemic returns of liquid funds, a paired sample t-test has been used for data analysis. The level of significance is chosen as 5%.

3.3 Reliability

The data collected for analysis is from the Association of Mutual Funds in India (AMFI), which is a non-profit government organisation and regulator of mutual funds under the preview of SEBI. Hence, the data is reliable.

4. DATA ANALYSIS & FINDINGS

Concerning our first & second objectives - analysed the impact of the Covid pandemic on liquid mutual funds by comparing the returns in the years 2019 & 2020 using paired sample t-test.

Ho: $\mu = 0$ - There is no significant impact of the Covid pandemic on performance in returns of
Ha: $\mu \neq 0$ - There is Liquid mutual funds a significant impact of the Covid pandemic on performance in returns of Liquid mutual funds .

Table 2: Paired samples statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair	2019	6.5806	36	.31672	.05279
	2020	4.1947	36	.33803	.05634

Table 3: Paired Samples Correlations

		N	Correlation	Sig.
Pair	2019 & 2020	36	.887	.000

Table 4: Paired Samples Test

		aired ifferences					t	df	Sig. (2tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	2019- 2020	2.38583	.15674	.02612	2.33280	2.43887	91.329	35	.000

Table 2 shows the Descriptive statistics – Mean & Standard deviation

The average return of liquid mutual funds was 6.5806 in 2019 and 4.1947 in the year 2020. This indicates a decrease in the returns delivered by liquid mutual funds in the year 2020, which is post-COVID-19 pandemic.

The standard deviation increased to 0.338 in the year 2020 from 0.317 in 2019, which shows more dispersions from the mean in the year 2020 (post-COVID-19 pandemic).

Table 3 shows the paired sample correlation

The correlation is 0.887, indicating a decrease in the returns for each fund from the year 2019 to 2020. If a particular fund delivered 1% in 2019 is delivering only 0.887% in 2020.

Table 4 shows the results of the paired sample t-test

The mean difference is 2.385, which shows a decrease of 2.385 in the mean from the year 2019 to 2020. This indicates that returns of liquid mutual funds have decreased from 2019 to 2020.

- T value is 91. 329, and the significance value (P =0.000) is less than the level of significance (0.05).
- This implies that we need to reject our null hypothesis and accept the alternate hypothesis.

P=0.000 shows a strong significance that COVID-19 has impacted the returns of liquid mutual funds.

Concerning our 3rd objective, i.e., to determine the factors that caused the change in the performance of liquid mutual funds due to the pandemic.

It has been identified from the review of the literature and thorough research that decreased interest rates and increased liquidity and inflation led to the decline in the performance of liquid mutual funds post-pandemic.

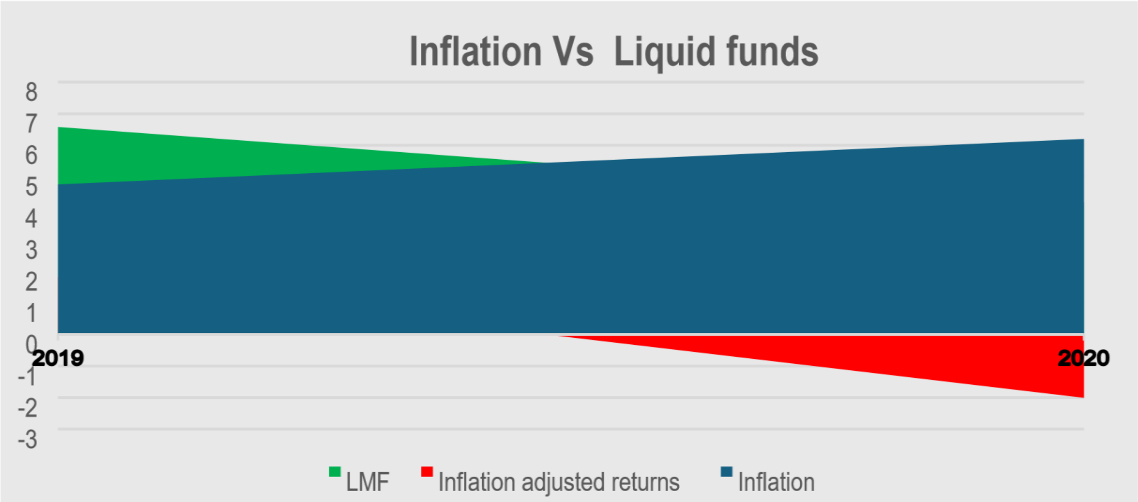
Impact of inflation:

Generally, liquid mutual funds have the ability to deliver decent inflation-adjusted returns. Often, investors with short-term goals park their idle money or excess cash reserves into liquid funds in order to achieve better inflation-adjusted returns. If inflation rises faster than anticipated, then liquid funds might not also deliver higher returns than inflation. Inflation risk is one of the reasons for the underperformance of liquid funds. Inflation risk raises price levels, eroding the purchasing power of fixed interest payments on bonds. Inflation risk will be high for the debt instruments with longer maturity. However, liquid funds invest in short-term instruments. As a result, they have a low risk of inflation. The underperformance of liquid funds due to decreased interest rates and an increase in inflation to 6.2% because of the Covid pandemic led them to deliver negative inflation-adjusted returns in the year 2020.

Table 5: Shows the inflation rate, returns of liquid funds, and inflation-adjusted returns pre- and post-pandemic

Particulars	2019	2020
Inflation	4.76	6.2
Liquid funds	6.58	4.19
Inflation adjusted returns	1.82	-2.01

Graph 1: Comparison of Liquid funds with inflation (Authors' Contribution)



As we see in the above graph, the green area denotes the inflation-adjusted returns of 1.82% delivered by liquid mutual funds in 2019. The blue area indicates the inflation in 2019 & 2020. The red area denotes the inflation-adjusted returns of 2.01% delivered by liquid mutual funds in 2020. This is due to the COVID pandemic, which made them not prefer post-pandemic investments. This negative performance can be attributed to decreased interest rates and an increase in Liquidity & inflation due to the Covid-19 pandemic.

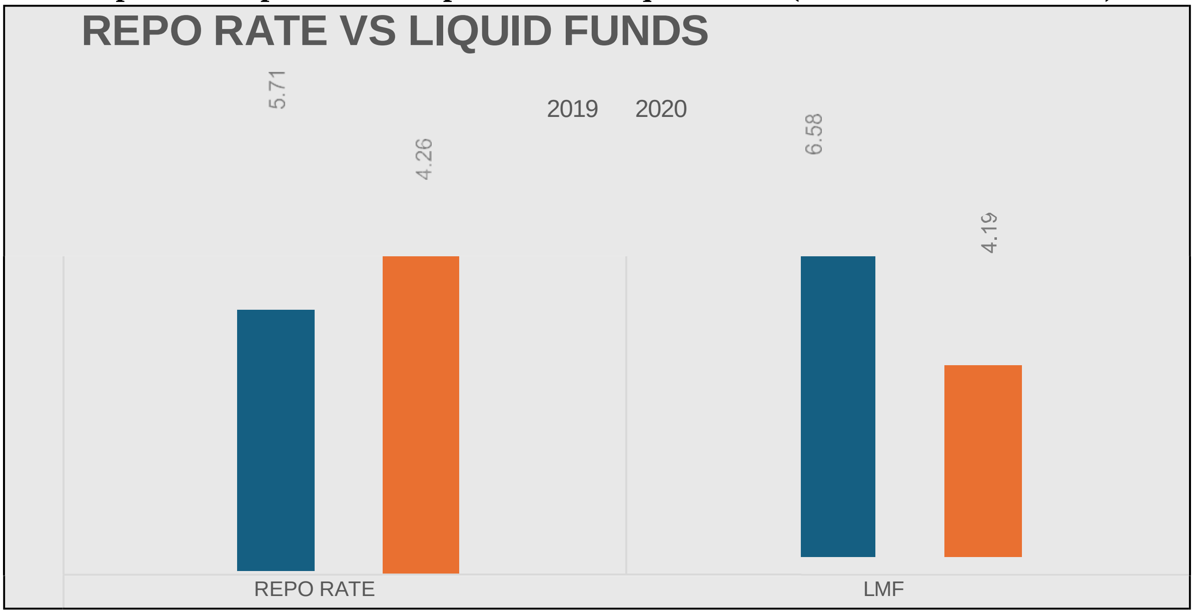
Impact of decrease in Interest rates & increase in Liquidity

A decrease in interest rates encourages credit, which led to an increase in Liquidity in the market. As liquid funds also fall under the debt category, their performance is also dependent on the change in interest rates.

Table 6: Shows Repo rate/ Interest rate and returns of liquid funds pre and post-pandemic

Particulars	2019	2020
Repo rate	5.71	4.26
Liquid funds	6.58	4.19

Graph 2: Comparison of Repo rate with liquid funds (Authors' Contribution)



If we see the above graph, when the interest rates were high in 2019, returns on liquid mutual funds were also high. Due to the COVID-19 pandemic, the Government has decreased the interest rate to encourage borrowing & for economic stability. However, the decline in interest rates led to an increase in liquidity in the market. In addition, RBI also conducted open market operations, which also fuelled the liquidity in the economy.

As we can see, interest rates and the returns on liquid mutual funds decreased in 2020. From this, we can conclude that a decrease in the repo rate due to the Covid pandemic has impacted the performance of liquid mutual funds.

5. CONCLUSION

The results show that change in interest rates, increased liquidity, and inflation due to the Covid pandemic has decreased the returns of liquid funds from the year 2019 (prepandemic) to 2020 (post-pandemic). However, whenever the interest rates begin to rise, undoubtedly, liquid funds will make a comeback with decent inflation-adjusted returns. The research is limited only to liquid mutual funds in India, not the mutual industry as a whole. The time period of the study is limited to one year before and one year after the pandemic. Direct plan mutual fund schemes are considered for the analysis, ignoring the regular plan schemes. Franklin Templeton (FT) Mutual Fund announced the closure of six of its credit-focused debt schemes in April 2020. This came as an unpleasant awakening to all debt mutual fund investors. This might also have an impact on the performance of the liquid funds post-COVID-19 pandemic (2020). Further research can be done to understand the impact of this wind-up of schemes on the performance of liquid mutual funds.

Researchers can also repeat the same pre- & post-COVID-19 Covid pandemic performance comparisons for other types of mutual funds. This will help in knowing which type of mutual funds have underperformed or performed better after the COVID-19 pandemic.

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