

Impact of COVID-19 on Banking and the Imperative for FinTech and Digital Transformation: A Case Study

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Abstract:

In the midst of India's staggering 676 million COVID-19 cases, trailing only the United States, the International Monetary Fund anticipated a 6.3% growth in 2024, juxtaposed with significant job losses across its 36 states and Union Territories. This paper meticulously examined the multifaceted impact of COVID-19 on unemployment, Gross Domestic Product (GDP), and the capital market. It intricately explored the banking sector's involvement in COVID-19-related fatalities in Jammu and Kashmir through the application of multivariate regression analysis.

Key findings underscored a pronounced negative effect on unemployment, peaking at 23.5% nationally and 16.2% in Jammu and Kashmir. Despite economic turbulence, the capital market displayed resilience, manifesting an upward trajectory with a marginal downturn. Notably, the Nifty-50 index surpassed the significant milestone of 11,000, while market volumes remained steadfast.

This case study illuminated the intricate interplay between the pandemic, economic variables, and the banking sector. It underscored the imperative for innovative solutions, particularly highlighting the indispensable role of FinTech. These technologies emerged as vital instruments in fortifying the financial landscape in the post-COVID-19 era.

Keywords: FinTech, Economy, COVID-19, Banking, Unemployment, Kashmir

Introduction

The COVID-19 lockdown globally had a profound impact on various aspects of life and the economy. Towards the end of 2019, the emergence of an unknown coronavirus, COVID-19, in Wuhan City of Hubei province in China became a worldwide epidemic (ProMED, 2019). The majority of the world countries declared this epidemic a National emergency. The World health organisation (WHO), on March 11 2020, officially proclaimed coronavirus as a pandemic (Cucinotta & Vanelli, 2020).

According to World-O-meter, as of 9th October 2020, 214 countries and territories have reported approximately 37 million confirmed COVID-positive cases and an overall death toll of 1.7 million. The United States is the worst hit, with about 8 million confirmed cases and 2.2 lac deaths. India is ranked 2 with approximately 7 million confirmed cases and 1.1 lac deaths so far (Worldometers, 2020).

With a population of over 1.38 billion people, India is divided into 36 states & union territories (UTs). Jammu & Kashmir is the northernmost UT, with a population of over 13 million. On its official website, the Ministry of Health and Welfare, Government of India, has reported approximately 80 thousand confirmed cases of COVID-19 and over 1300 deaths in Jammu and Kashmir (MoHFW, 2020).

In August 2019, the Indian government placed direct rule over the region after revoking Article 370, a clause in the Indian constitution that gave some autonomy to Jammu and Kashmir (B. A. Pandow, 2020).

Like most countries worldwide, the lockdown was imposed in Jammu & Kashmir, India to reduce the spread of this unprecedented health catastrophe. The multiphase lockdown imposed on March 21 2020, restricted the movement and took a toll on mental health.

Apart from the loss of human lives, the exponential transmission of this virus has incurred huge economic losses. The scope and repercussions of this pandemic are still uncertain. The impact on the global economy is only in terms of projected numbers over some variables like GDP, growth rate and unemployment.

Considering this virus's novelty and strong contiguousness, we are in for a severe protracted downturn. The loss of jobs, frequent lockdowns, bank loan defaults, and drop in oil prices severely hit the tourism industry, has a ripple effect on the interconnected economy and the apprehension of financial aftershocks will only exacerbate the situation's impact. A plot for COVID-19 total confirmed cases separately for states and union territories is available and can be found in Annexure-I.

The COVID-19 pandemic and frequent lockdowns to combat this pandemic in Jammu & Kashmir have left a trail

of economic devastation and the financial insecurity, loss of jobs, pending medical bills and distress of daily wagers is evident. Business establishments that have borrowed from financial institutions are not able to pay back and either have closed down their businesses or are contemplating doing so. Industries like tourism and handicrafts considered the backbone of Kashmir's economy, suffered whopping losses due to these two extensive lockdowns. The consequent economic challenges are daunting, with about 500,000 job losses and economic losses of approximately 5.3 US dollars by September 2020 (Sharma, 2020).

Since information and communication systems are integral to modern businesses, issues related to their dependability, security, and cost-effectiveness have emerged as top priorities (Bhat et al., 2021). This is why keeping communication means, especially telecom and internet services, intact to ensure people have access to FinTech services even during the toughest of times, like the recent pandemic (Ali Ganai & Ahmad Pandow, 2023).

This study examines the economic and social effects of the COVID-19 pandemic and subsequent lockdown in Jammu and Kashmir, India. The pandemic has caused significant economic losses, employment losses, and financial insecurity, particularly in the tourism and handicrafts sectors, which are crucial to the region's economy. This study investigates the effects of the pandemic on the financial industry, including changes in consumer behaviour, an increase in loan defaults, and government support. The study also emphasises the significance of maintaining communication infrastructure, such as telecommunications and internet services, to ensure that people can access FinTech services during crises such as the pandemic. This study aims to shed new light on the potential long-term effects of the pandemic on the banking sector and the economy of Jammu and Kashmir by addressing knowledge gaps.

Literature review

As the world is struggling to contain the present pandemic, the global economy has taken a big hit and this can be gauged by how countries are stressed and responding. In reaction to the novel coronavirus outbreak 2019 (COVID-19), the United States for executing polymerase chain

reaction testing that would require 64 mn USD (Corral et al., 2020). Some mentioned that the cost of infection is around 80k USD although the social cost plus infection externalities are around 286k USD (Bethune & Korinek, 2020).

The rapid rise of coronaviruses has startling effects on financial markets worldwide. It generated an unparalleled amount of risk and in too brief a period, it caused substantial losses to investors (Zhang et al., 2020).

Besides, some studies have found a year-on-year reduction in the United States GDP of about 11% for Q4-2020. Also, the study observed that nearly half of the predicted output reduction reflects the adverse effects of COVID-19 uncertainties (S. Baker et al., 2020).

While others (Bonaccorsi et al., 2020) illustrated that the lockdown's economic effect is heavy on municipalities with advanced fiscal abilities, the study also provided evidence of exclusion effects, as severe immobility was implemented in cities and established the social costs of shutdown.

Based on the introduction, the literature review, and the hypotheses, the following study objectives can be formulated: Assess the economic and social effects of the COVID-19 pandemic and subsequent closure in Jammu and Kashmir, India. Examine the association between COVID-19 fatalities and bank advances, deposits, non-performing assets (NPA), and the number of regional branches.

During the pandemic, investigate the changes in consumer behaviour, the increase in loan defaults, and the increase in government support in the banking sector. This study examines the significance of maintaining communication channels, particularly telecom and internet services, during periods of crisis to preserve access to FinTech services. Identify the economic losses, employment losses, and financial insecurity caused by the pandemic in Jammu and Kashmir, particularly in the tourism and handicraft industries.

The present study fills gaps in the extant literature regarding the effects of the COVID-19 pandemic on the Jammu and Kashmir banking sectors and economy. These objectives will guide the study in comprehending the

impact of the pandemic, examining the relationship between COVID-19 fatalities and banking factors, and shedding light on the region's long-term changes and challenges.

The researchers have analysed that the demand for electricity and petroleum for the specific populace of the contaminated lot is - 0.1% and - 0.65%, respectively. This amply shows the outbreak significantly impacts energy demands (Norouzi et al., 2020).

Most countries have suffered many facets of the economic loss of labour supply, medical costs, a decline in household consumption, a drop in investments due to lockdown, and disruption of trade and global value chains (Caracciolo et al., 2020).

These features may be associated with the financial shocks linked with the COVID-19 pandemic – lockdowns, downsizing and firm closures. However, supply disruptions in a single economic sector are never Keynesian. The study shows that the overall result extends to economic systems with imperfect marketplaces and limited liquidity (Guerrieri et al., 2020). The scenarios in a study indicate that even a minor epidemic may occur a significant short-term effect on the global economy (McKibbin & Fernando, 2020).

The studies have illustrated the tremendous economic and social impact of COVID-19. The financial implications and the results of other outbreaks of infectious diseases have been well documented (Goodell, 2020). There are pieces of evidence from some studies reveal that the government's trade and social distancing restrictions that work in a service economy are the key factors why U.S. financial markets responded much more strongly to COVID-19 as in 1918–19, 1957–1958 and 1968 than past pandemics (S. R. Baker et al., 2020a).

Seventy-seven government announcements of maintaining social distance programmes are adversely impacted by their detrimental effect on stock returns and not direct, encouraging influence by reducing the cases confirmed in COVID-19 (Ashraf, 2020). Also, it is important to evaluate the risk and return (Ahmad Pandow & Ahmad Butt, 2017). Some studies have found that quality and customer engagement are important (Ananda et al., 2022).

While total long-term unemployment then increases to almost 4.5 million people for more than 26 weeks and nearly 2 million for more than 46 weeks. In a recession, long-term unemployment rises even more (Chodorow-Reich & Coglianesse, 2020a).

A real worry for modern businesses is their information systems' stability, security and cost-effectiveness, which have become an essential aspect of modern organisations. In this aspect, the introduction of cloud computing was a major breakthrough. Cloud solutions have also benefitted higher education institutions (Bhat et al., 2021).

Although credit provision has increased, it may not be sustainable as the delinquency rate of fintech loans has tripled following the outbreak (Bao & Huang, 2021). This can also result in increase of the public debt (B. A. Pandow, 2018).

The results of a study (Lartey et al., 2022) also indicate that a lower risk of failure (or greater solvency) is a crucial factor in minimising the impact of business models on the practice of earnings management, both in the short and long run.

While the profitability of small and highly capitalised banks is more negatively impacted by macroprudential policy compared to larger and less capitalised banks. The findings of (Davis et al., 2022) suggest that various measures of macroprudential policy have different impacts on credit expansion and bank profitability. The findings (Tut, 2023) suggest that in Q1 of 2021, FinTech partially mitigated the adverse effects of the COVID-19 pandemic and also accelerated the adoption of FinTech and digital onboarding by consumers, particularly in Q3 and Q4 of 2022. Also, studies have shown that a surge in liquidity is related to the firm's ownership (B. Pandow & Ganai, 2023).

The COVID-19 pandemic has significantly impacted the global economy, resulting in a decline in labour supply, medical costs, household consumption, disruption of trade and global value chains, and a fall in investments. This effect is more pronounced in service-based economies with trade and social distancing restrictions. Additionally, the pandemic has accelerated consumer adoption of fintech and digital enrollment.

During the pandemic, the adoption of fintech and digital enrollment has increased, and the firm's ownership is correlated with a surge in liquidity. In addition, reduced risk of failure is essential to minimising the impact of business models on earnings management. Overall, the literature emphasises the significant economic and social effects of COVID-19 and the necessity of evaluating the risk and return of various strategies. This paper aims to fill gaps in the Jammu and Kashmir literature. Also, this study aims to investigate the pandemic's impact on the economy of Jammu and Kashmir and identify potential mitigation strategies through below discussion questions:

- i) **Economic Resilience:** How did the banking sector demonstrate resilience amidst the economic challenges posed by the COVID-19 pandemic, and what specific strategies were employed to navigate the downturn?
- ii) **Unemployment Dynamics:** Given the substantial peak in unemployment rates, what targeted measures were implemented by financial institutions to mitigate the impact on employment, and how effective were these interventions?
- iii) **Capital Market Trends:** What factors contributed to the observed upward movement in the capital market during the pandemic, and how did it correlate with the broader economic scenario?
- iv) **Nifty-50 Index Surge:** The Nifty-50 index reaching 11,000 suggests a level of market stability. How did the banking sector contribute to or benefit from this stability, and what lessons can be learned for future economic uncertainties?
- v) **Volumes in the Capital Market:** Despite economic turbulence, the volumes in the capital market remained unaffected. What role did the banking sector play in maintaining market volumes, and what implications does this have for financial institutions in crisis situations?
- vi) **Regional Disparities:** With a focus on Jammu and Kashmir, how did the banking sector's dynamics influence the region's response to COVID-19, and what role did it play in the observed mortality rates?

- vii) Innovation and Adaptation: In light of the paper's emphasis on the critical need for innovative solutions, what specific innovations or adaptations in FinTech and digital transformation are recommended for the banking sector to better navigate future crises?
- viii) Long-term Economic Recovery: What insights does the case study provide regarding the potential trajectory of long-term economic recovery in the aftermath of COVID-19, and what role can the banking sector play in facilitating this recovery?

These discussion questions aim to explore various facets of the research paper, encouraging a deeper understanding of the interplay between the pandemic, economic variables, and the banking sector, as well as stimulating thought on potential avenues for future research and industry practices.

Methodology

There are many methodologies that researchers have applied to analyse the financial brunt of COVID-19 in various geographies. While some have analysed and classified news and accordingly categorised it into positive and negative sentimentalities so as to comprehend the impact of the news on public behaviour both economically and politically (Binti Hamzah et al., 2020). The studies have shown that biases in the models can undervalue how rapidly herd immunity can arrive across regions and the impact of social distancing endogenous and politically motivated (Ellison, 2020).

Other studies, including (Elgin et al., 2020) have used cross-country OLS regressions with variables like the number of beds per capita in the hospitals, age of the population, per-capita GDP and the number of positive COVID-19 cases and found that all are significantly associated to the extent of nations' economic policy reactions.

Researchers have used text-based approaches to enhance these points regarding large daily stock exchange volatility from 1900 to 1985. The analysis also evaluates plausible causes for the inventory's unexpected response to the COVID-19 pandemic (S. R. Baker et al., 2020b).

While Forecast specific transformation hazards across employment, temporary layoffs, and permanent layoffs,

with each risk depending on the aggregate components and the history of an individual's workforce (Chodorow-Reich & Coglianesi, 2020b).

The present study employs a t-Test assuming equal variances based on other studies to check the mean difference between the COVID-19 cases and unemployment rate studies that include (B. A. Pandow & Butt, 2019). Also, to determine whether there exists any correlation between the banking variables and COVID-19 cases in Kashmir using multivariate regression to analyse the impact of variables (Khalil & Pandow, 2020). By examining the following multivariate regression equation.

Based on the above review Hypothesis for this is set and mentioned below:

H0: There is no significant relationship between COVID-19 deaths and the factors of bank advances, deposits, non-performing assets (NPA), and the number of branches in a given region.

H1: There is a significant relationship between COVID-19 deaths and the factors of bank advances, deposits, non-performing assets (NPA), and the number of branches in a given region.

Estimation Equation:

$$\text{COVID}_{19_DECEASED} = C(1) + C(2)*\text{ADVANCES} + C(3)*\text{CD_RATIO} + C(4)*\text{DEPOSITS} + C(5)*\text{GROSS_NPA} + C(6)*\text{NO_OF_BRANCHES}$$

Whereas the variable used in the equation mentioned above are COVID₁₉_DECEASED stands for the number of deaths due to COVID-19; ADVANCES stands for advances in terms of loan amount provided in the J&K region; CD_RATIO stands for Credit, Deposit ratio; DEPOSITS stands for public deposits that are with the banks operating in the region; GROSS_NPA stands for gross non-performing assets and NO_OF_BRANCHES variable represents the number of the bank branches in the region.

Results and Discussion

Some studies examine the financial brunt expected by government measures analysing the impact on stock market returns of such actions. Using regular details from the 77 countries from January 22 to April 17 2020, the

announcement by the respective governments of maintaining social distance initiatives has a clear downbeat impact on stock return because of their negative impact on financial development and an indirect positive effect by the reduction of cases confirmed in COVID-19 (Brown et al., 2020).

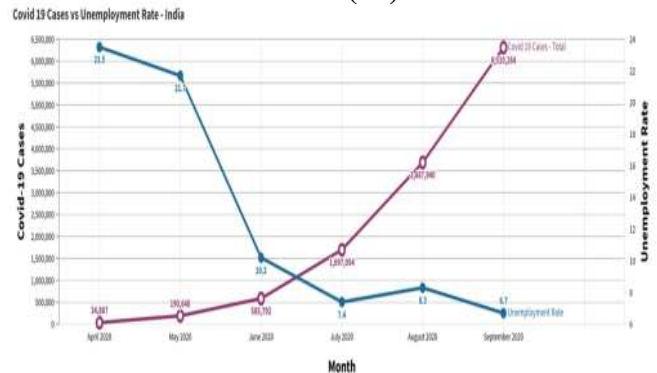
Also, researchers have found that deep-seated inequalities and challenges we have already experienced as crucial to our understanding of the dynamic implications of the disease outbreak and their reaction, and the ability of the epidemic itself to intensify a few of the disparities that have already taken place. Furthermore, the current crisis seems likely to leave legacies impacting long-term inequalities (Blundell et al., 2020).

Unemployment

The researchers recorded several details on the loss of jobs and found that it was significantly greater than the new unemployment claim that estimates 20 million jobs lost, much greater than the loss of jobs during the great recession. Also, most of those who lose work are no more pursuing new jobs (Coibion et al., 2020). Three determinants, including collaboration, information and social capital, have been established and empirically checked later in the analysis during the community debate (B. A. Pandow & Salem, 2020). Hunger and food shortages are predicted to rise in India due to the COVID-19 lockdown (Mishra & Rampal, 2020).

Based on the Centre for Monitoring Indian Economy Pvt. Ltd [CMIE] database that was available, a graph plotted from April to September 2020 and found that the unemployment rate peaked at 23.5 in April. Subsequent months witnessed a downward trend and reached its lowest in September at 6.7. However, contrary to this trend, COVID-19 cases all over India noticed an upward trend starting at 34,867 cases in April, ever-increasing without fail and crossing 6.3 million cases by the end of September 2020. The same can be observed in Fig 1.

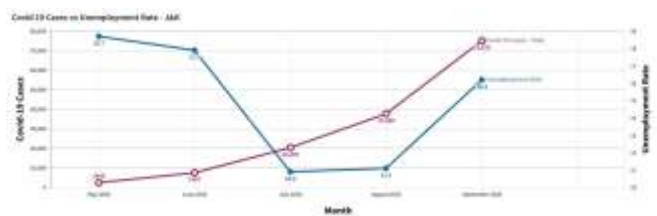
Fig. 1 Unemployment rate monthly time series (%) - India



Source: CMIE database and COVI-19India

Like all India levels, COVID-19 cases have increased in the Jammu and Kashmir region. The COVID-19-positive cases have risen from 2446 in May to 75,070 cases by the end of September. As shown in Fig.2, the unemployment rate has gone from 18.7 in May to 10.9 in July; subsequently, it witnessed an upward movement and reached 16.2 in September.

Fig. 2 Covid-19 cases vs Unemployment Rate - J&K (Jammu and Kashmir)



Source: CMIE database and CovidKashmir

The correlation between the employment rate and COVID-19 cases is -0.2437, clearly showing the negative relationship between the two variables. Also, a t-Test was employed to check the difference between the two means of the unemployment rate and COVID-19 cases in J&K. As can be seen from the Table 1, the p-value at 0.033 for one-tail was found to be insignificant at a 99% confidence level and a p-value at 0.067 for a two-tail was found to be insignificant even at a 95% confidence level. So, the null hypothesis of no relationship between the unemployment rate and COVID-19 case variables can not be rejected. It is, as such, concluded that the COVID-19 variable does affect the unemployment rate.

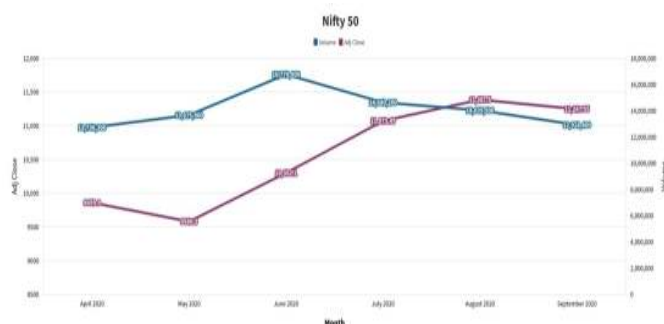
Table 1:t-Test for the unemployment rate and COVID-19 cases in J&K

t-Test: Two -Sample Assuming Equal Variances		
	<i>Unemployment rate</i>	<i>COVID19 cases</i>
Mean	15.05	23947.33
Variance	11.159	8.19E+08
Observations	6	6
Pooled Variance	4.09E+08	
Hypothesised Mean Difference	0	
Df	10	
t Stat	-2.04895	
P(T<=t) one-tail	0.033813	
t Critical one-tail	1.812461	
P(T<=t) two-tail	0.067627	
t Critical two-tail	2.228139	

Capital Market

The outbreak of COVID-19 forced people to observe social distancing, which led to the closure of the capital markets, offices, and other business establishments. This exponential rise in deaths and the virus spread increased the uncertainties, affecting consumption and investments and adversely impacting international trade (Ozili& Arun, 2020).

It was found that the Nifty-50 index went up from 9859, in between, witnessed some slight downward movement but again went up and reached 11247. While in the case of the volumes, the market has witnessed an upwards movement from April till August. However, the volumes have gone down 12928400, almost to the level of April 2020 and can be seen in Fig 3.

Fig. 3 Nifty-50:a benchmark of the Indian capital market

Source: NSE-India

The correlation between the Nifty-50 index and COVID-19 cases is 0.8132, clearly showing the positive and strong relationship between the two variables. Also, a t-Test was employed to check the difference between the two means of the unemployment rate and COVID-19 cases at all Indian levels. As shown in Table 2, the p-value at 0.033 for a one-tail was insignificant at a 99% confidence level and a p-value at 0.067 for a two-tail was insignificant even at a 95% confidence level. So, the null hypothesis of no relationship between the capital market and COVID-19 case variables can not be rejected. It is, as such, concluded that the COVID-19 variable does affect the capital market index, i.e. Nifty-50, in the present case.

Table 2:t-Test for the Nifty-50 index and COVID-19 cases

t-Test: Two -Sample Assuming Equal Variances		
	<i>Adj Close</i>	<i>COVID-19</i>
Mean	10575.1333	2084427.5
Variance	587240.5088	6.1224E+12
Observations	6	6
Pooled Variance	3.0612E+12	
Hypothesised Mean Difference	0	
Df	10	
t Stat	-2.053016809	
P(T<=t) one-tail	0.033584102	
t Critical one-tail	1.812461123	
P(T<=t) two-tail	0.067168204	
t Critical two-tail	2.228138852	

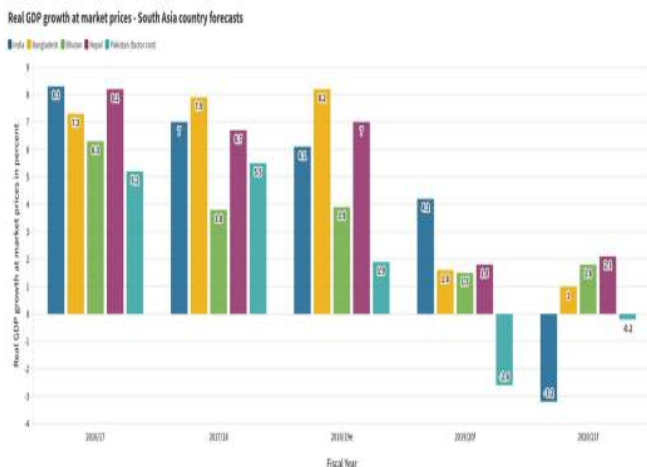
GDP growth

The international plague picture baseline shows a 2% decrease in the gross domestic product below world benchmarks, 2,5% in emergent economies and 1.8% in countries with industrial settings. The decline is almost 4% below the world standard in an enlarged plague setting where restraint is expected to take longer and now appears to be more likely (Maliszewska et al., 2020).

Due to the non-availability of the J&K-specific data, the study has taken all India figures assuming that the region is currently clubbed with India for all financial and economic purposes. As such, the study considers all India data and the trend gets reflected in the J&K region.

As can be seen, in Fig. 4. India was leading the South Asian economies in the Gross Domestic Product [GDP] at a rate of 8.3 in 2016-17, followed by Nepal at 8.2. However, post-COVID-19 pandemic, the scenario seems to have changed drastically, with the World Bank forecasting India's GDP to decrease to -3.2 for fiscal 2020-21.

Fig. 4 Real GDP growth at market prices - South Asia country forecasts

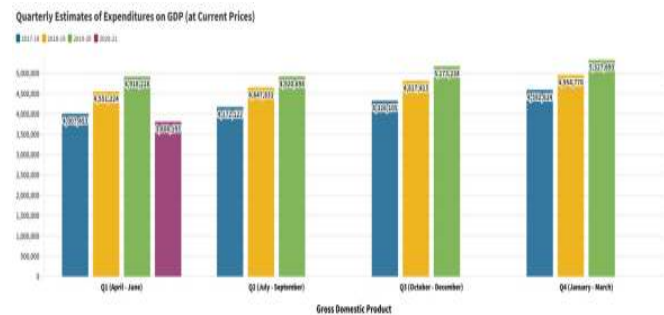


Source: World Bank

Note: e = estimate; f = forecast. The fiscal year runs from July 1 through June 30 in Bangladesh, Bhutan, and Pakistan, from July 16 through July 15 in Nepal, and April 1 through March 31 in India.

Likewise, the quarterly projection made by the Ministry of Statistics and Programme Implementation of India, as seen from Fig.5 below for the Q1 2020-21, thereby suggesting that COVID-19 is hitting the Indian economy badly so gets reflected for the region of Jammu and Kashmir.

Fig. 5 Quarterly Estimates of Expenditures on GDP of India (at Current Prices)



Source: Ministry of Statistics and Programme Implementation of India

Banking sector

According to a study, the banks' current capital adequacy levels appear satisfactory in dealing with present liquidity stresses; hence, the regulators should continue with this model to safeguard the economy and financial sectors globally (Steffen, 2020).

The growth in liquidity demand was focused on the largest banks serving the largest companies (Li et al., 2020). Confronting noticeable stress in the Covid-19 currency markets during the pandemic, the FED lowered the swap rate with the other five Central banks and new banks also opened in nine other currencies (Bahaj & Reis, 2020). Banks must reassess their credit reserves by upgrading their risk models. Potential default rates and macroeconomic and financial trends are anticipated (Barnoussi et al., 2020).

The study takes into account the number of deaths due to COVID-19; advances in terms of loan amount provided in the J&K region; Credit/Deposit ratio (CD ratio), public deposits that are with the banks operating in the region; gross non-performing assets and the number of the bank branches in the region. The data has been collected district-wise for all the region's 20 districts; the same can be seen in Fig. 6.

Fig. 6 Variables include for the study are regional level Bankers' Committee (UTLBC) of Jammu and Kashmir



Source: CovidKashmir, DIPR-J&K, UTLBC J&K database

The Jammu and Kashmir region has a 1995 banking branch network, with 19 public and ten private sector banks. As per the UTLBC, overall, the region has INR 1,24,838 crore deposits and INR 63,905 crore advances, having a C.D ratio of 51.19%.

The UTLBC secretariat, in its meeting on January 28, 2020 noted that total bank credit in J&K's has grown by 11.94% on a Year-on-Year [YoY] basis, whereas deposits have grown by only 14.64% on YoY basis. Of the combined advances of INR 59,273.41 crore pending on September 30 2019, a sum of INR 29,257.47 crore (49.36%) went to Priority Sector and INR 30,015.94 crore (50.64%) went to Non-Priority Sector.

To check whether there is any correlation between the chosen variables, the study computed the correlation coefficient of all the variables, as mentioned in Table 3. It was found that advances have a negative correlation with the C.D ratio at -0.13 and for the rest of all variables, it has a positive correlation. In the case of the C.D ratio, the variable has a negative co-relationship with all the variables. For the COVID-19 death, the variable has a negative correlation with the C.D ratio, while for all other variables, it has a strong correlation with other variables. The variable deposit has a negative correlation with the C.D ratio and for all other variables, it has a positive correlation, as is the case with gross NPA and the number of branches.

Table 3: Correlation for the variable used in the study

VARIABLES	ADVANCES	CD_RATIO	COVID_19_DECEASED	DEPOSITS	GROSS_NPA	NO_OF_BRANCHES
ADVANCES	1.00	-0.13	0.96	0.94	0.93	0.92
CD_RATIO	-0.13	1.00	-0.26	-0.30	-0.09	-0.20
COVID_19_DECEASED	0.96	-0.26	1.00	1.00	0.83	0.96
DEPOSITS	0.94	-0.30	1.00	1.00	0.79	0.96
GROSS_NPA	0.93	-0.09	0.83	0.79	1.00	0.72
NO_OF_BRANCHES	0.92	-0.20	0.96	0.96	0.72	1.00

Regression analysis

The study analysed the banking variables and COVID-19 cases in Kashmir using multivariate regression, which can be found in Table 4. The model suggests that public advances by the banks in the twenty districts do have an impact as the p-value of advances is 0.000, which is significant at a 99% confidence level. While as C.D ratio of

the banks, these districts do impact as the p-value of advances is 0.043, which is significant at a 95% confidence level. In the case of deposits, gross NPA and the number of branches in the twenty districts have an impact, as the p-value of advances is 0.00, which is significant at a 99% confidence level. Besides, the model has an R-square of 0.99.

Table 4: Multivariate regression for the variable used in the study

Dependent Variable: COVID_19_DECEASED				
Method: Least Squares				
Date: 10/11/20 Time: 14:45				
Sample: 1 20				
Included observations: 20				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	63.56580	11.31342	5.618620	0.0001
ADVANCES	1.046554	0.020993	49.85260	0.0000
CD_RATIO	0.348516	0.157024	2.219512	0.0435
DEPOSITS	0.994430	0.001624	612.3719	0.0000
GROSS_NPA	-0.865445	0.095189	-9.091843	0.0000
NO_OF_BRANCHES	-1.310804	0.412975	-3.174051	0.0068
R-squared	0.999999	Mean dependent var		8862.258
Adjusted R-squared	0.999999	S.D. dependent var		13196.27
S.E. of regression	14.45229	Akaike info criterion		8.422908
Sum squared resid	2924.163	Schwarz criterion		8.721628
Log likelihood	-78.22908	Hannan-Quinn criter.		8.481222
F-statistic	3168197.	Durbin-Watson stat		2.310624
Prob(F-statistic)	0.000000			

Based on the above multivariate regression, the Substituted Coefficients are filled in the equation mentioned in the methodology section and is given below.

Substituted Coefficients:

$$\begin{aligned} \text{COVID_19_DECEASED} = & 63.5657989819 + \\ & 1.04655392663 * \text{ADVANCES} + \\ & 0.348516319186 * \text{CD_RATIO} + \\ & 0.994429908275 * \text{DEPOSITS} - \\ & 0.865445229223 * \text{GROSS_NPA} - \\ & 1.31080433921 * \text{NO_OF_BRANCHES} \end{aligned}$$

Conclusion

With over 14 months of a blanket breakdown of all kinds of trade and commerce, the UT population is increasingly trapped in a deep hole. The staggering figures reveal over 500 thousand job losses during the specified period coupled with severe economic depressions in core sectors of its economy, thus accumulating financial losses to approximately 5.3 billion US dollars.

Based on the analysis, it was found that the banking sector of the J&K region significantly impacts COVID-19-associated deaths. The model used by the study suggests

that public advances by the banks in the twenty districts do have a significant impact on COVID-19 deaths. While C.D ratio of the banks in these districts also significantly impacts a 95% confidence level. In the case of deposits, gross NPA and the number of branches in the twenty districts also have a significant impact. The study concludes that the districts with decent advances, deposits, number of banks, C.D ratio and number of branches contribute to the COVID-19 cases. Hence we accept the alternate hypothesis that there is a significant relationship between COVID-19 deaths and the factors of bank advances, deposits, non-performing assets (NPA), and the number of branches in a given region.

We also found that fintech can play an important role in helping economies and individuals during the COVID-19 pandemic by providing digital financial services, increasing access to credit, and helping to stabilise the financial system. By leveraging technology, fintech companies can help mitigate the impacts of the pandemic and support economic recovery.

The study was limited to the effects of COVID-19 on economic parameters, and social and cultural factors were not considered. Also, the scope was restricted to Jammu and Kashmir and the results may not apply to other regions. The present study is based on secondary data sources, which may lack precision and completeness.

The future research can examine the effects of COVID-19 on India's other economic sectors and regions. Also studyable is the impact of government policies on the economy during the pandemic. More research can be conducted to investigate the potential of fintech to support economic recovery during pandemics.

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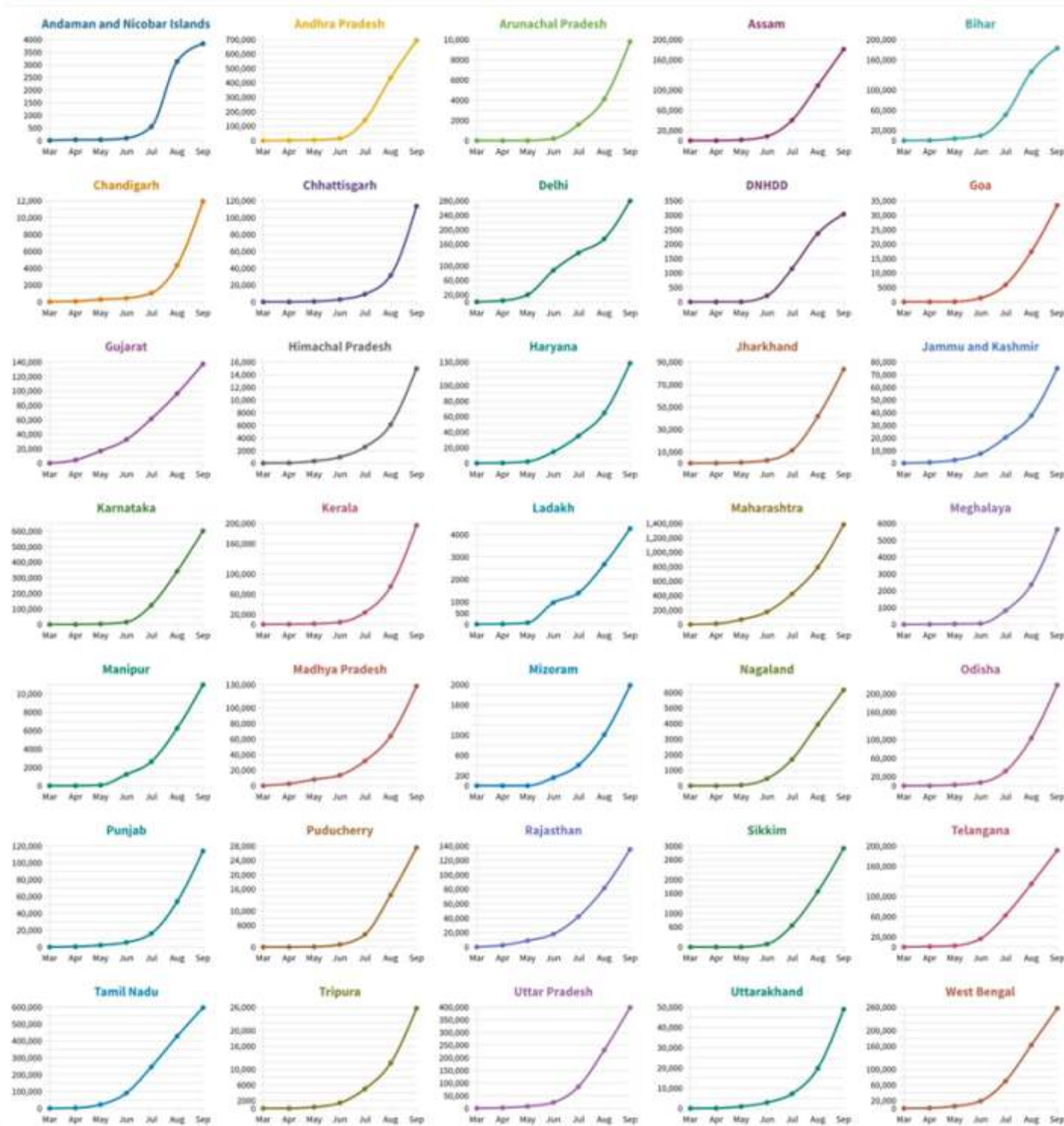
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Annexure I Covid-19 Total Confirmed Cases

Covid-19 Total Confirmed Cases



Source: Covid19India: <https://www.covid19india.org/>