

The Impact of the COVID-19 Pandemic on Firm Performance: Firm-Level Evidence from Pakistan Stock Exchange

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The massive spike of global pandemic of Coronavirus deteriorates public, financial and economic health which severely affected national and global economies. At the firm-level, the Coronavirus negatively affect performance of the firms. We used the financial data of 540 listed firms in Pakistan Stock Exchange to estimate the effect of COVID-19 on firms' performance. The results of the empirical analysis shown shows that global pandemic of COVID-19 has significant negative effect of the return on asset of the listed firms in Pakistan Stock Exchange. The efficiency and the profitability of the firm can be boost only through hygienic work environment and ensuring minimum human contact which finally reduce the impact of global pandemic of COVID-19.

Key words: *Pandemic, COVID-19, Firms' performance, Investment*

GEL: G31, M41, L25

1. Introduction

The massive spike of global pandemic of Coronavirus deteriorates public, financial and economic health which severely affected national and global economies. The quarantine policy dropped population mobility, declined purchasing power and aggregate economic activity (Baker et al., 2020). At the macro level, pandemic effect financial markets (Phan & Narayan, 2020), increased unemployment (Fu & Shen, 2020), riskiness and liquidity (Just &

Echaust, 2020; Rizwan et al., 2020). At the firm-level, the Coronavirus negatively affect performance of the firms (Choi, 2020; Kapoor et al., 2021; Njindan Iyke, 2020; Phan & Narayan, 2020). Many firms experienced different problem and losses ranging from disruptions in supply, shortage of raw material, transportation problems and declined demand that may significantly affect firm's efficiency and profitability (Bartik et al., 2020; Hagerty & Williams, 2020).

Since January 2020, in several regions and countries almost seven million people have been affected with COVID-19. The Pakistan is also among the economies that has lost one third of its revenue. Such pandemic not only significantly impact enterprises economically but also create a explicit hazard to business continuity. In Pakistan, due to strict quarantine measures, exports dropped by 50% which reduces real GDP growth by 2.2% (Junaidi, 2020). The enterprises faced halt in their operation due to strict polices of lockdown. The 2650 factories in Sindh province stop working immediately after lockdown which affect 5 million poor people, 04 million workers in Punjab and Sindh provinces (Hussain, 2020).

Table 1: Current Status of COVID-19 in Pakistan

Provinces	Confirmed Cases	Active Cases	Deaths	Recoveries
AJK	18808	1618	532	16658
Baluchistan	24583	966	270	23347
Gilgit Baltistan	5500	102	107	5291
Islamabad	80418	7531	745	72142
KPK	129883	6202	3950	119731
Punjab	334760	23367	9784	301609
Sindh	309647	23131	4920	281596
Total	903599	62917	20308	820374

Source: Pakistan-COVID-19 Health Advisory Platform

Keeping in view the adverse effect of COVID outbreak on the national economy as well as on the enterprise performance, it is worthwhile to investigate the impact of COVID-19 on firms' performance in Pakistan. According to the United Nations Conference on Trade and Development (UNCTAD), the global pandemic of COVID-19 may effect Pakistan economy severely (UNCTAD, 2020). Thus to quantify the impact of global pandemic on firm's performance is a valid research question. The empirical analysis of COVID-19 at firm level is scarce due to unavailability of data. To the best of our knowledge, till to date, only a single

study have investigated the impact of COVID-19 on enterprise performance in Pakistan (Shafi et al., 2020). But, the Shafi et al. (2020) focused only on the performance of Small & Medium Enterprises (SMEs). Thus, the objective of current research is to investigate the impact of the COVID- 19 outbreak on 540 firms listed in Pakistan Stock Exchange. The current study helps the economists and experts in pinpointing effective strategies to overcome the impact of this viral infection on firm's performance in Pakistan.

The current paper contributes to the existing literature through investigating the impact of COVID-19 on firms 'performance in different industries. The several studies investigated devastating effects of pandemic on the macro level such as on exchange rate and (Apergis & Apergis, 2020; Njindan Iyke, 2020; Phan & Narayan, 2020). This paper diverts the opinion of the researcher toward firm level channel that show the effect of COVID-19 on firm's performance and suggest policy recommendations for firm's survival.

2. Research Hypotheses

COVID-19 is a major health emergency worldwide. At the firm-level, the Coronavirus negatively affect performance of the firms (Choi, 2020; Kapoor et al., 2021; Njindan Iyke, 2020; Phan & Narayan, 2020). The existing literature compels to propose the following research hypothesis.

H₁: COVID – 19 has a negative impact on the firms' performance

The several studies investigated devastating effects of pandemic (Apergis & Apergis, 2020; Njindan Iyke, 2020; Phan & Narayan, 2020). The global pandemic increased uncertainties which retards firm to invest in profitable project and hence decline ROA (Ming et al., 2016). The risk on investment raises in case of uncertain situation of global pandemic which results in higher cash holding of the manager ultimately reduced return on assets and ultimately firms' performance.

3. Data and Methodology

The current study based on the data of 540 listed firms of Pakistan Stock Exchange.

Table 2: Sampling Distribution of Industries

Industries	Percentage	Frequency
Finance and Real Estate	3.26	17.604
Construction	5.98	32.292
Manufacturing	9.78	52.812
IT	4.89	26.406
Pharmaceutical	6.52	35.208
Education	6.52	35.208
Agriculture	10.87	58.698
Transportation	5.43	29.322
Travel and Tourism	7.07	38.178
Restaurant and Hotel	9.78	52.812
Retail and Wholesale	27.72	149.688
Others	2.17	11.718
Total	100	540

The econometric model to predict firms' performance is given in Equation 1.

$$\text{Firm's Performance} = \alpha + \beta\text{COVID19} + \gamma\text{Firm Controls} + \varepsilon \quad 1$$

The Firms' performance is measured by return on assets (ROA). The core explanatory variable "COVID19 is measured by the logarithm of cumulative COVID-19 cases". The firm level control variables include the firm size, tangibility, cash holding and cash flow. The firm size is the "logarithm of the book value of total assets". Leverage is "total debt divided by total assets in percentage". Tangibility is "tangible assets over total assets in percentage". Cash holding is "cash and short-term investments over total assets in percentage". Cash flow is "operating income before depreciation over total assets in percentage".

4. Empirical Results

The descriptive statistics are given in Table.3.

Table 3: Descriptive Statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
Return on Assets (ROA)	540	0.12	4.36	-23.16	5.29
Cumulative Cases (COVID19)	540	14.64	3.98	0	13.89
Firm Size (SIZE)	540	0.0713	0.2574	0	1
Leverage (LEV)	540	23.26	18.29	0	90.78
Tangibility (TAN)	540	32.45	21.37	0	92.36
Cash holding (CHOL)	540	21.77	13.71	0.02	90.28
Cash flow(CFLOW)	540	0.66	4.73	-38.45	9.56

Table 4 shows the theoretical correlation. The results of correlation matrix show negative relationship between COVID-19 and return on assets.

Table 4: Correlation Matrix

	ROA	COVID19	SIZE	LEV	TAN	CHOL	CFLOW
ROA	1.0000						
COVID19	-0.0469	1.0000					
SIZE	-0.1737	0.0231	1.0000				
LEV	0.1066	0.0339	0.3000	1.0000			
TAN	-0.2591	0.0216	0.2825	0.1339	1.0000		
CHOL	-0.1559	0.3636	0.1019	0.1408	0.1091	1.0000	
CFLOW	-0.1334	0.0577	0.1528	0.1298	0.2428	0.0986	1.0000

Table 5: Result of the Regression Model

Variables	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Cumulative Cases (COVID19)	-0.779347	.1459867	5.34	0.000	.4932191	1.065476
Firm Size (SIZE)	-0.002449	.0189651	0.13	0.897	-.0347211	.0396209
Leverage (LEV)	1.12694	.0858279	13.13	0.000	.9587294	1.295169
Tangibility (TAN)	-0.013814	.0027906	4.95	0.000	.008345	.0192839
Cash holding (CHOL)	-0.445125	.0773831	5.75	0.000	.2934569	.596793
Cash flow (CFLOW)	-0.024247	.0045926	5.28	0.000	.0152462	.0332488
Constant	-2.25071	.499481	-4.51	0.000	-3.229683	-1.271753
Observation	540					
R ²	0.879					
F-Test	350.22	-	-	0.000	-	

Note: *and** indicate level of significance at 5 and 10 percent, respectively.

The results of the empirical analysis shown in Table 5 shows that global pandemic of COVID-19 has significant negative effect of the return on asset of the listed firms in Pakistan Stock Exchange. The results suggest that sharp increase in cumulative cases of COVID-19 reduces return on assets, thus supporting hypothesis. The value of coefficient -0.77 indicates that return on assets drop by 77 percent as cumulative cases increases by 1%. The global pandemic increased uncertainties which retards firm to invest in profitable project and hence decline ROA (Ming et al., 2016). These results are in line with the findings of real option theory. The risk on investment raises in case of uncertain situation of global pandemic which results in higher cash holding of the manager ultimately decrease sustainable investment momentum. At the same time, the demand side shock also effect the corporate performance. Because consumer's preference shifted toward health care services instead of consumer goods which reduce demand for goods of different industries which reduced return on assets and ultimately firms' performance. The results suggest that firm size reduces return on assets,



the value of coefficient -0.0024 indicates that return on assets drop by 0.24 percent as a results of increase in size of the firm. The results indicate that leverage has positive impact on the return on assets, which shows that if leverage of the firms increases the performance of the firm improves. The tangibility, cash holdings and cash flow all has negative effect of the return of assets in case of COVID-19.

5. Conclusion and Policy Recommendation

At the firm-level, the Coronavirus negatively affect performance of the firms. The current study utilized data of 540 listed firms in Pakistan Stock Exchange to estimate the effect of COVID-19 on corporate performance. The results of the empirical analysis shown shows that global pandemic of COVID-19 has significant negative effect of the return on asset of the listed firms in Pakistan Stock Exchange. The results suggest that sharp increase in cumulative cases of COVID-19 reduces return on assets, thus supporting our research hypothesis. In this global health crisis, firms must act responsibly and strictly follow the health and safety instruction issued by the Ministry of National Health Services, Government of Pakistan. The sustainable development of the nation depends upon the decent performance of the corporate sector. The efficiency and the profitability of the firm can be boost only through hygienic work environment and ensuring minimum human contact which finally reduce the impact of global pandemic of COVID-19.



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