The impact of the COVID-19 pandemic on firms: a survey in Punjab Province, Pakistan

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ABSTRACT

The goal of this paper is to research the impact of coronavirus disorder 2019 (COVID-19) at the monetary performance and coins holdings of Pakistan agri-food companies. We also have a look at whether or no longer business enterprise possession, the affected regions, and leverage degree affect this courting. The empirical effects show that the COVID-19 outbreak has had no extensive effect on financial performance and the cash-keeping level of agri-meals agencies. In addition, the economic performance of nation-owned groups is superior at some point of the sort of crisis, whereas COVID-19 reduced the economic performance and coins-protecting level of privately owned companies. In center- and excessive-danger regions, the pandemic has had a terrible impact on monetary performance, while it has had a nice impact on monetary overall performance in low-chance regions. The terrible effect of COVID-19 on coins keeping is extra in exceedingly leveraged businesses than it has been in low-leveraged corporations. This paper may offer some new insights for managers to ensure easy operation and improve companies' performance in order to conquer this crisis.

Keywords: COVID-19 pandemic, Economic impact, Public policy, Health risks, Performance Firm

1.INTRODUCTION

The COVID-19 pandemic has affected all sectors of the world economy and society. To understand the impact of the pandemic on firms in Pakistan and suggest public policies to deal with the negative effects, we investigated firms in Punjab Province.

I analyze the possible effect of the Covid-19 pandemic on the organizational designs of companies in this commentary and speculate on how the pandemic could affect the research on organizational design. By organizational design, given relevant internal and external contingencies, I mean the optimal levels of separation and integration of an organization. A main difference in this regard lies between the short-term situation, that is, the situation following the decision by a large number of nations, international organizations and other agencies that the health problem was a pandemic needing drastic action (i.e. about mid-March 2020) and the long-term situation in which the epidemic is well known and better understood.

The temporal structure is likely to play a crucial role in the impact of the pandemic on the organizational designs of companies. The long term can mean anything from a total reversal to a more or less permanent situation with intermittent outbreaks and lock-downs needing more social distance from the pre-pandemic situation. Whichever scenario manifests would have major organizational architecture consequences. However, there are likely to be lasting traces left on the organization architecture, even with a reasonably fast reversal to pre-pandemic trading and interaction patterns. The pandemic not only offers a fascinating test ground for organizational architecture researchers to analyze current organizational de-organisation concepts.

Thus, reflecting on the pandemic suggests that major external contingencies have different short-term as compared to long-term effects on

1.1 Short-run Consequences of the Pandemic on Firm Performance The
economic disruption caused by the Covid-19 was caused by governments responding to the threat to health by shutting down parts of the economy, as

well as by individuals responding cautiously to the threat by, for example, cutting back on restaurant services, pubs, cinemas, and the like. This had a variety of immediate effects for organizational design, caused by physical distance being a major contingency. First, much on-site work (particularly in the supporting "techno-structure"; Mintzberg, 1979) has been transformed into work mediated by instruments such as Zoom and, in general, electronic platforms substituted for direct coordination under conditions of co-presence in work coordination and work coordination. (e.g., Carlsberg transferred more competence to country managers; see also Dill, 2020).

1.2 Long-run Consequences of the Pandemic on Firm Performances One possibility is that the pandemic would turn out to be only a temporary disruption with respect to the longer-term effects of the pandemic. Thus, the economy will return to its pre-pandemic configuration, including the organisation of transactions around the economy (which will, of course, also include the global economy), as supply chains are restored, international mobility trends revert, capital flow back into the experienced economy, and so on. With the rapid production of an effective vaccine and/or the widespread use of reliable routines for testing and tracing, this may happen. If, on the other hand, there is no vaccine and the virus does not mutate into less dangerous Variations, constant safeguards in the context of social continuity Agreed Article This article is protected by copyright. The permanent features of the business environment would be all rights reserved for distancing, decreased international labor mobility and business travel and semi-closed borders. However, as technologies and modified job routines will arise to compensate, this will not be similar to the situation at the start of the pandemic. For instance, the quality of virtual meetings is likely to improve.

2. Literature Review

A substantial part of the current public health crisis literature suggests that pandemics or disasters have a direct effect on economic activity. By causing temporary or permanent losses (illness or death) in the work force, influenza and other epidemics are found to affect economic development. The travel restrictions and trade limitations placed to avoid the spread of a pandemic have contributed to a decline in the mobility of development factors. Consider the possible economic cost of modern epidemics and find that a country's degree of GDP loss is normally within the range of 0.5.

In addition, the negative effect of such infectious diseases is unevenly distributed across industries: demand shocks are likely to limit industries such as shipping, catering, and tourism, while industries linked to manufacturing and mining face significant supply shocks . The COVID-19 outbreak papers concentrate primarily on the dynamics and macroeconomic effects of the pandemic (Apergis. and Apergis 2020; Fu and Shen 2020; Gil-Alana and Monge 2020 ; Liu, Wang, and Lee 2020; Narayan, 2020). They have studied the relationship between pandemic incidence and economic outcomes both at the local level and in the aggregate outcome. However, there are very few quantitative attempts to identify how firms respond to the COVID-19 pandemic.

In many ways, our article adds to the literature. First, our findings are complementary to articles examining the economic effects of COVID-19 by presenting proof of the electricity consumption situation in China. Second, a unique insight on how businesses have responded to the pandemic is given by high-frequency data. Third, we also investigate how the effect of the pandemic on companies in Suzhou differs according to the structure of ownership and other corporate characteristics. Our findings provide information that can help us understand the wider economic consequences of the disease's impact with observed effects across industries.

2.1. COVID-19 and Firm Performance COVID-19 is a major health emergency worldwide. More than seven million people have been diagnosed worldwide, since January 2020,2 and several countries and regions are affected by the pandemic. Countries are forced to adopt quarantine measures because of the highly infectiousness nature of COVID-19. These measures have a great negative impact on aggregate demand, especially on consumption and exports. On the one hand, people were asked to go out less, and crowded places such as shopping malls were shut down. On the other hand, several countries-imposed restrictions on import to prevent viral transmission, which greatly hit export-oriented businesses in China. Consequently, gross domestic product of China decreased by 6.8% in the first quarter of 2020. Extant studies investigated the connection between COVID-19 and oil price (Gil-Alana and Monge 2020; Narayan 2020), while few studies examined the impact of COVID-19 on the performance of public companies.Based on this analysis, we proposed the following research hypothesis:

H1-1: Ceteris paribus, COVID-19 has a positive impact on the health risks of company employees of Punjab Pakistan. Via which channel, however, does the COVID-19 affect corporate performance? According to the real options theory, managers tend to defer investment when uncertainties rise, which may lead to miss profitable projects (Zeng et al. 2016). COVID-19 brings higher external risks, which lead managers to increase their cash holdings in case of emergencies. More cash retention takes up the investment funds and reduces enterprises' momentum of sustainable development. In the short term, based on Maslow's hierarchy of needs, Consumers' demand for health and safety is more urgent than that for social contact during the pandemic, resulting in a shrinking demand (Hagerty and Williams 2020). These factors lead to a decline in corporate revenue, and ultimately a decline in corporate performance. The companies' productivity and revenue declined sharply due to the implementation of the quarantine EMERGING

MARKETS FINANCE AND TRADE 2215 measures, which inevitably led to performance decline. Based on this analysis, we hypothesized that:

H1-2: Ceteris paribus, when public policy is not good, the negative impact of COVID-19 on firm performance is more pronounced.

H1-3: Ceteris paribus, the negative impact of health risks on firm performance is more pronounced, if a firm's sales revenue is less.

2.2. The Impact of COVID-19 on the Sector Dimension A sector refers to the detailed division of the organizational structure system of business units or individuals engaged in homogenous production in the national economy (Narayan, 2015). Sector classification can explain the development stage of the industry itself and its status in the national economy. Previous studies investigated that country responses and the reaction of the stock market to COVID-19 (Narayan and Phan 2020), and the impact of COVID-19 on US partisan conflict index (Apergis and Apergis 2020). The drawback of investigating the impact of the pandemic at the aggregate market level is that such an investigation assumes a homogeneous impact on sectorial performance – which implies that COVID-19 has the same impact for all sectors.

Narayan and Sharma (2011) argue that sectors are heterogenous and therefore are likely to react to market shocks differently. Phan, Sharma, and Narayan (2020) also found strong evidence that return predictability has links to certain industry characteristics. Therefore, the supply–demand relationship varies with the characteristics of the industry during the pandemic. Which sectors are hard hit by the outbreak? Tourism, film and TV entertainment, catering retail, and transportation sectors are the most affected industries in China (Fu and Shen 2020). Following the restrictions, civil aviation during the 2020 Spring Festival travel rush period decreased by 29.5%.3 Many countries canceled Chinese flights and imposed immigration controls on international routes following the COVID-19 outbreak, which greatly and negatively impacted China's transportation industry in the first

quarter. In addition, the highly anticipated movies in the Chinese Spring Festival season pulled from the shelves before their release, and cinemas closed for a short time to prevent people from gathering in confined space. Based on historical data, the box office of Chinese New Year movies accounted for about 21% to 32% of the annual box office.4 However, the withdrawal of Chinese New Year movies this year caused loss in production costs, marketing costs, and other expenses, which is difficult to be estimated. Tourism has also been seriously affected by the pandemic.

H4: Ceteris paribus, the public policy due to COVID-19 pandemic has a negative impact on the performance of enterprises in serious-impact industries.

That is, the enterprises in serious-impact industries have lower performance than those in other industries, following the pandemic.

2.3. Pandemic Impact in the Regional Dimension A common feature of all recent studies on COVID-19's economic impacts is that they focus on the aggregate market. Gil-Alana and Monge (2020) investigated the relationship between crude oil prices and COVID-19, finding a persistent shock on oil prices. Narayan and Phan (2020) also discussed the country responses and the reaction of the stock market to COVID-19. In other words, these studies take a macro perspective in analyzing the role of COVID19 in determining the fluctuations in economies. However, extant research found that the incremental impact of the degree and speed of operations within a given region, is greater for regions exhibiting faster economic growth than others exhibiting slower growth (Demirbag, Glaister, and Sengupta 2019).

This means the impact of COVID-19 on corporate performance has obvious regional heterogeneity, since the growth rate is different across regions. Therefore, the region where the enterprise operates plays a crucial role in strategic selection and operation management. After China began its comprehensive fight against the pandemic, seven provinces – Henan, Hunan, Jiangxi, Anhui, Zhejiang, Guangdong, and Hubei – implemented tight

restrictions on labor and delayed the resumption of work. In contrast, for those cities located far away from the epicenter with a low rate of staff turnover, the time for resumption will be significantly earlier. By the end of February, the resumption of work in 31 provinces reached more than 50%, while Hubei province was still in line. According to the signal theory, early resumption of work gives managers a signal of reduced risk (Fu and Shen 2020). These companies will end their cash crisis earlier and invest more capital in profitable projects. In addition, lenders in these regions, such as banks and investment institutions, will also be affected by risk reduction signals, thus reducing the financing constraints on enterprises in these regions. Early resumption provides these companies more time and capital to cope with the decline in corporate performance, which may make a great difference. To sum up, we hypothesized that:

H5: Ceteris paribus, the COVID-19 pandemic has a negative impact on corporate performance in the Punjab Pakistan**.**

That is, corporate performance in the serious-impact regions is lower than in other regions.

Research Model

That is, corporate performance in the serious-impact regions is lower than in other regions.
Research Model:
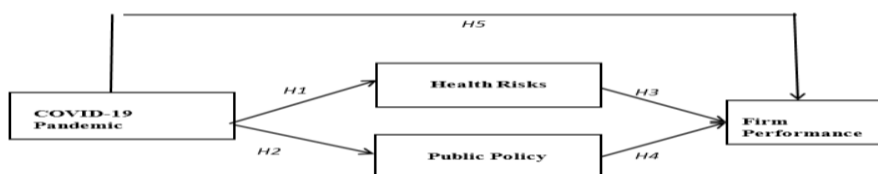
3. Research Methodology

3.1 Sample Selection and Data Collection

The sample has used food industries listed companies of Pakistan stock exchange. Almost 779 values for 42 food industries collected data for analysis. Moreover we collected data from 2016-2021 of quartly data from Pakistan stock exchange market and Stata software used for the data

analysis.

3.2 Variables

Table 1. Variable definition.

Variable	Symbol	Measurement
Return on Assets	ROA	Net income/Total assets
Return on Equity	ROE	Net income/Shareholders' Equity
Cash holding	CASH	Cash and cash equivalents/Operating income
COVID-19 Pandemic	Covid	Dummy variable that takes 1 for the quarters of 2020 and 2021, 0 otherwise
Firm Size	Size	Natural logarithm of total assets
Debt Ratio	LEV	Total liabilities/Total assets
Current Ratio	CR	Current assets/Current liabilities
Sales growth rate	GROW	Current year's sales-last year's sales)/Last year's sales Year
YEAR	YEAR	Dummy variable that takes 1 for the test year, 0 otherwise

3.3 Model Specification

To test H1, which predicts a negative relationship between COVID-19 and firms' financial performance, we used Models (1) and (2).

$$ROA_{i,t} = \beta_0 + \beta_1 COVID_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 CR_{i,t} + \beta_5 GROW_{i,t} + YEAR_i + \varepsilon_{i,t} \quad (1)$$

$$ROE_{i,t} = \beta_0 + \beta_1 COVID_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 CR_{i,t} + \beta_5 GROW_{i,t} + YEAR_i + \varepsilon_{i,t} \quad (2)$$

Table 2. Descriptive statistics.

Variable	N	Mean	Median	Min	Max	S.D
ROA	779	0.0565	0.0559	−0.2094	0.3746	0.0598
CASH	779	0.1394	0.1099	−1.9081	0	0.0993
COVID	779	0.2657	0	0	1	0.0081
SIZE	779	22.2559	22.1481	20.272	25.5859	1.0871
LEV	779	0.3989	0.3948	0.0215	0.9943	0.1697
CR	779	2.2824	1.5026	0.4477	36.7954	3.1117
GROW	779	0.2578	0.139	−0.8163	24.3954	1.0519

Figures1and2 depict the changing trends of financial performance (ROA and ROE) and the cash-holding level of agri-food companies over the observed period
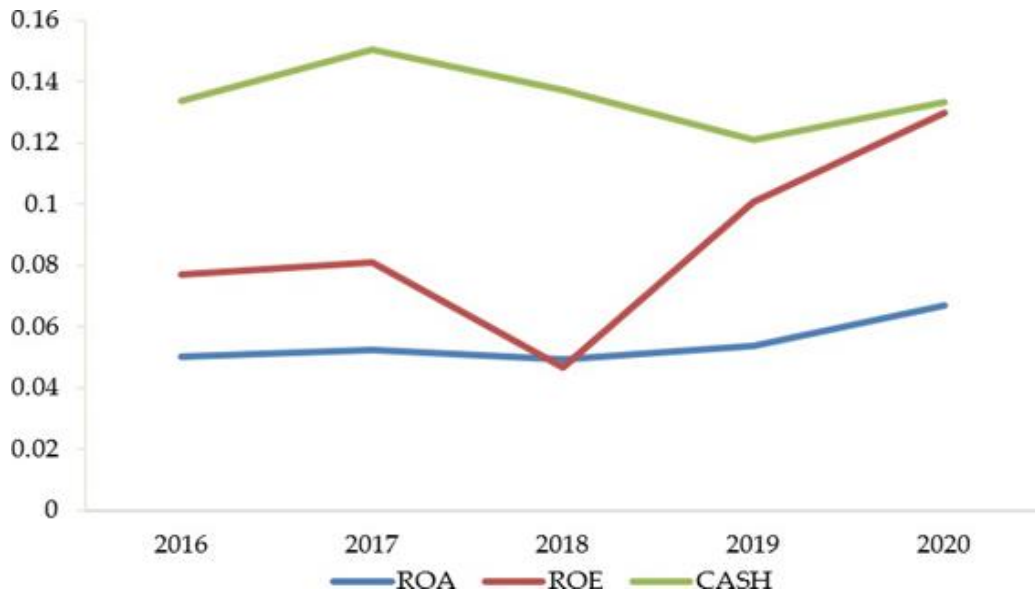
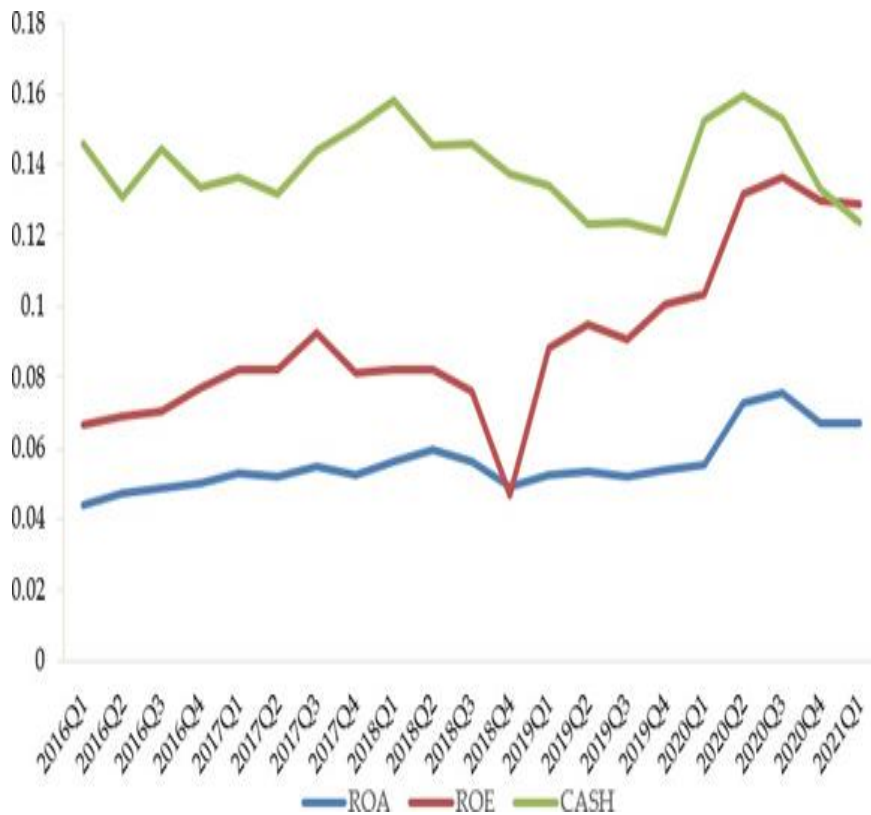**Figure 1.** Financial performance and cash holding in 2016–2020

Figure 2. Financial performance and cash holding during 2016Q1–2021Q1.

4.2 Correlation Analysis

Table3shows the results of Pearson's correlation analysis. ROA and ROE positively correlate with COVID. CASH does not show a significant correlation with COVID. We computed the variance inflation factors (VIFs) and found that all values were less than 2, suggesting that multi-collinearity was not a major issue in our study.

	1	2	3	4	5	6	7	8
1.ROA	1							
2.ROE	0.821 ***	1						
3.CASH	0.295 ***	0.210 ***	1					
4.Covid	0.111 ***	0.149 ***	0.03	1				
5.Size	0.281 ***	0.280 ***	−0.034	0.117 ***	1			
6.LEV	0.012	-0.60**	-0.085 **	0.105 ***	0.455 ***	1		
7.CR	0.044	−0.044	0.034	-0.063 **	-0.2766***	-0.494***	1	
8.GROW	0.096* **	0.105 ***	−0.010	0.011	0.038	0.096* **	-0.064 *	1

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4.3 Regression Results

Table4shows the results of the regression analysis. Based on the Hausman test, the fixed effect (FE) model was used in Models (1) and (2).

Table 4. Regression results of Models (1), (2), and (3).

	Model-1	Model-2
	FE	RE
Constant	−1.377 (−8.22)	−3.661 ***(-7.66)
COVID	−0.003 (−0.25)	−0.031 (-1.04)
Size	0.069 *** (8.86)	0.178 *** (8.08)
LEV	-0.271 ***(- 12.09)	0.178 *** (8.08)
CR	0.0004 (0.69)	−0.4573 *** (-7.25)
GROW	0.004 *** (2.98)	0.014 *** (3.40)
YEAR	Included	Included
N	779	779
R2	0.22	0.1532
F (Wald)	8.38 ***	5.37 ***
Hausman test	Prob > chi2 = 0.0033	Prob > chi2 = 0.0000

5. Conclusion and Recommendations

The current study has some limitations. First, this study is only limited to the agri-food sector, while a cross-sector analysis will be needed to establish more specific suggestions for different industries in future studies. Second, this study focuses on China, which is among the first countries to recover from the COVID-19 pandemic, and future research could be carried out in

other countries or regions to explore the impact of COVID-19 elsewhere. Third, future research could take other control variables that influence financial performance and cash-holding levels into consideration.

The research observe has a few limitations. First, this have a look at is most effective limited to the agri-meals sector, whilst a move-area analysis can be needed to establish greater particular guidelines for one-of-a-kind industries in future research. Second, this have a look at makes a speciality of Pakistan, that is many of the first international locations to recover from the COVID-19 pandemic, and destiny studies might be completed in different international locations or regions to discover the impact of COVID-19 some place else. Third, future research may want to take different manage variables that have an effect on monetary performance and cash holding levels into consideration.

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