

Article

The Effect of COVID-19 on Consumer Goods Sector Performance: The Role of Firm Characteristics

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Abstract: This study investigates the impact of the COVID-19 pandemic on company performance in the consumer goods industry. Additionally, it explores how company characteristics influence the relationship between the pandemic and company performance based on industry type and region. Analyzing data from 1491 companies across 79 countries between 2018 and 2022, we utilized ordinary least squares (OLS) with robust standard errors. Our findings confirm the pandemic's overall adverse effect on the performance of consumer goods companies. However, variations emerged when examining diverse industries and regions. Notably, larger companies, particularly in the Americas, Europe, and Asia-Pacific, demonstrated greater resilience and performance during the pandemic. Furthermore, effective leveraging, especially in the Americas and Asia-Pacific, contributed to supporting performance amid the pandemic. These results hold crucial policy implications for companies aiming to enhance their performance in the face of health crises.

Keywords: COVID-19; firm characteristics; performance; consumer goods



Citation: Irwansyah, Muhammad Rinaldi, Abdurrahman Maulana Yusuf, Muhammad Harits Zidni Khatib Ramadhani, Sitti Rahma Sudirman, and Rizky Yudaruddin. 2023. The Effect of COVID-19 on Consumer Goods Sector Performance: The Role of Firm Characteristics. *Journal of Risk and Financial Management* 16: 483. <https://doi.org/10.3390/jrfm16110483>

Academic Editor: Rebecca Abraham

Received: 4 October 2023

Revised: 24 October 2023

Accepted: 31 October 2023

Published: 14 November 2023



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1. Introduction

Discussing a company's performance is a crucial step in measuring and enhancing the success of an organization. By understanding and analyzing performance metrics such as revenue, net profit, operational efficiency, and customer satisfaction, companies can identify their strengths and weaknesses. This provides valuable insights for better decision-making, more efficient resource allocation, and continuous improvement. Furthermore, discussing performance is also important for maintaining accountability to shareholders, stakeholders, and society at large. Therefore, discussing a company's performance is not only about measuring achievements, but also ensuring long-term sustainability and growth in a competitive business world.

Numerous researchers investigated the impact that COVID-19 has on firm performance in a variety of geographical areas and business sectors, such as the manufacturing industry, the health care industry, the transportation industry, and the finance industry, among others. Focusing on a cross-country investigation, a number of researchers discovered that COVID-19 has a negative and statistically significant influence on the performance of businesses (Ahmad et al. 2021b; Atayah et al. 2022; Golubeva 2021; Guérin and Suntheim 2021; Toumi et al. 2023; Zhang and Zheng 2022; and Zheng 2022). In a similar vein, it can be discovered in a number of developed nations, including the United States (Au Yong and Laing 2021; Chebbi et al. 2021; Didier et al. 2021; Hsu and Liao 2022; Huang et al. 2021; Ke 2022; Kumar and Zbib 2022; Neukirchen et al. 2022; and Song et al. 2021), German (Eckey and Memmel 2023), Japanese (Kanno 2021; Morikawa 2021), English (Hsu and Yang 2022; Huynh et al. 2022), and the Netherlands (Groenewegen et al. 2021). For developing countries, the negative

impact of the COVID-19 pandemic on company performance was also found in China (Jin et al. 2022; Liu et al. 2021; Ren et al. 2021; Szczygielski et al. 2022; Yang et al. 2021; and Zhang and Zheng 2022), Indonesia (Achmad et al. 2023; Lestari et al. 2021; Riadi et al. 2022a; Ulfah et al. 2022; and Yударuddin 2023a), and Saudi Arabia (Makni 2023).

According to OECD (2020), the COVID-19 pandemic resulted in the enforcement of physical distancing and confinement measures, which caused a shift of many offline activities to the online realm. During the same period, however, container trade in select ports around the world experienced a sharp decline, initially falling by approximately 10% and remaining 5% lower on an annual basis by April 2020. This downward trend is anticipated to continue due to a 15–18% drop in global demand during the second quarter. Baldwin and Di Mauro (2020) note that the implementation of COVID-19's social restrictions led to a decrease in global productivity. Moreover, Fernandes (2020) indicates that GDP growth forecasts could decline by as much as 3–5%, albeit with country-specific variations. Therefore, examining the performance of consumer goods companies worldwide in the context of the COVID-19 impact holds significant importance due to its far-reaching implications on the global economy. The consumer goods industry encompasses a wide range of consumer products, including food, beverages, and everyday consumables. The effects of the COVID-19 pandemic, such as mobility restrictions, shifts in consumer behavior, and demand fluctuations, placed substantial pressure on this industry. According to a report by the Economist Intelligence Unit (EIU), the decline in consumer spending during the pandemic was more pronounced and widespread compared to the Great Recession of 2009 (The Economist 2021). In the year 2020, the United Kingdom and Italy experienced a significant decrease in private consumption, amounting to approximately 11%. Similarly, Germany, France, and Japan observed a decline of around 6–7% in private consumption. The United States and China, on the other hand, witnessed a comparatively lower reduction of 4% and 3%, respectively. This decline can be attributed primarily to the adverse effects on in-person services, including travel, entertainment, and dining out. While certain sectors in the goods industry experienced a notable decline in consumer spending, there were also sectors that witnessed an upsurge in demand.

This study aims to gain a deeper understanding of how the pandemic affected the performance of consumer goods companies across the globe. By involving companies from various countries, the research provides a more comprehensive view of the COVID-19 impact and identifies patterns and differences that may emerge based on geographical locations. This is crucial because each country faces unique challenges in handling the pandemic, including variations in government policies, vaccination rates, and the spread of the virus. Furthermore, the study explores the role of company characteristics, such as size, liquidity, and leverage, in coping with this crisis. This information can offer insights into best practices that companies can employ to manage risks and maintain strong performance amid global economic uncertainties. Consequently, the findings of this research have the potential to provide valuable guidance for consumer goods companies in optimizing their business strategies in the face of future challenges.

The Wall Street Journal database was used for the data. From 2018 to 2022, it covers 1491 companies in 79 different countries. The results validate the pandemic's overall detrimental impact on the performance of consumer goods companies. However, when examining various industries, differences become apparent. Interestingly, non-alcoholic beverage and drink companies seem to be less affected by the pandemic, maybe because consumers were more health conscious at the time. Regional variations are revealed by looking at the relationship between COVID-19 and firm characteristics. Larger businesses fared better during the pandemic, especially in the Americas, Europe, and Asia-Pacific, demonstrating the advantages of scale, resources, and flexibility. Remarkably, higher cash holdings had a negative impact on Middle Eastern and European company performance, highlighting the necessity of region-specific liquidity management. Efficiency in leveraging helped sustain performance during the pandemic, especially in the Americas and Asia-

Pacific. The pandemic's effects on ROA varied by region, showing notable drops in the Americas, but less pronounced effects in Europe and the Middle East.

There are four significant contributions in this study. First, this study complements previous studies that focused on the impact of COVID-19 on the performance of companies in the consumer goods sector (Grimmer 2022; Hung et al. 2021; Kao et al. 2023; Klöckner et al. 2023; Li et al. 2022; Lukman 2022; and Rapaccini et al. 2020). Second, this research provides international evidence regarding the impact of COVID-19 and the role of company characteristics on the performance of energy companies (Alsamhi et al. 2022; Shen et al. 2020). Third, this study specifically provides evidence of the impact of COVID-19 on the performance of companies in the consumer goods companies based on industry and regional sector. Finally, this study makes significant contributions to understanding the impact of COVID-19 on the global consumer goods sector. Involving companies from various countries, the study identifies regional differences in the pandemic's effects and sheds light on the crucial role of company characteristics, such as size, liquidity, and leverage. The findings are relevant not only to academics, but also have valuable policy and business implications. They can assist governments in designing more effective economic policies and enable companies to plan adaptive strategies in the face of economic uncertainty.

2. Literature Review

The COVID-19 pandemic had significant implications for firm performance, as evidenced by various studies. Ren et al. (2021) examined the performance of Chinese enterprises during the COVID-19 outbreak in the first quarter of 2020. Makni (2023) analyzed the performance of listed firms in the Saudi market during the pandemic, revealing the extent of the impact. Kumar and Zbib (2022) investigated the role of managerial ability in firm performance during the crisis. Zhang and Zheng (2022) examined the effect of COVID-19 on the performance of Chinese-listed companies, shedding light on the magnitude of the impact. Additionally, researchers explored the relationship between firm performance and other factors during the pandemic. Hu and Zhang (2021) conducted a cross-country analysis and found evidence of the impact of COVID-19 on firm performance. Hsu and Liao (2022) investigated the relationship between corporate governance and stock performance during the COVID-19 crisis. Liu et al. (2021) studied the impact of operating flexibility on firm performance, particularly in heavily affected Chinese provinces. Guérin and Suntheim (2021) examined the environmental performance of firms during the COVID-19 crisis, highlighting the negative effects. Wellalage et al. (2022) explored the relationship between environmental performance and firm financing during COVID-19 outbreaks, with a focus on SMEs. Zheng (2022) investigated the role of cash in mitigating the impact of the pandemic on corporate performance. Yudaruddin (2023a) showed a negative impact on bank lending banks.

Furthermore, several studies provided insights into specific sectors. Hsu and Yang (2022) examined the impact of corporate governance on financial reporting quality during the COVID-19 pandemic. Ahmad et al. (2021a) analyzed the firm-level dynamics in various countries, including the USA, UK, Europe, and Japan. Golubeva (2021) presented international evidence from 13 countries, showcasing the performance of firms during the COVID-19 outbreak. Eckey and Memmel (2023) focused on the impact of the pandemic on family business performance in Germany. Atayah et al. (2022) studied the financial performance of logistics firms in G-20 countries, highlighting the specific challenges faced by the industry. Toumi et al. (2023) modeled the effect of COVID-19 on the performance of the MENA healthcare sector, highlighting the unique challenges faced by this industry. Song et al. (2021) found that the COVID-19 pandemic significantly harmed liquidity and increased operational risks in the restaurant sector in the USA. Zoğal et al. (2022) demonstrated the dramatic effects of the pandemic on the tourism sector, leading to shifts in financial performance and changes in client behavior.

The COVID-19 pandemic also had significant implications for small and medium enterprises (SMEs) and the banking sector, as is evident from various research studies.

[Achmad et al. \(2023\)](#) examined the impact of the pandemic on eco-innovation and SME performance, highlighting the moderating role of environmental collaboration. [Lestari et al. \(2021\)](#) investigated the effect of the pandemic on the performance of small enterprises, comparing those that adopted e-commerce and those that did not. They found that the pandemic influenced the performance of both groups differently. [Riadi et al. \(2022b\)](#) showed that the adoption of e-commerce before the pandemic significantly benefited small enterprises in Indonesia by providing better market access, increasing sales, and reducing dependence on conventional distribution channels. Furthermore, during the COVID-19 pandemic, e-commerce proved to be an effective strategy for small enterprises to operate and survive, especially for those who already adopted e-commerce before the pandemic.

Several studies examined the impact of the COVID-19 pandemic on firms, focusing on different aspects; for instance, [Jin et al. \(2022\)](#) the effect of COVID-19 on innovation in Chinese companies, highlighting the advantages of state-owned businesses over private ones. [Morikawa \(2021\)](#) analyzed the productivity of Japanese firms during the early stages of the pandemic. [Ke \(2022\)](#) that the cost of equity capital increased for U.S. firms due to the COVID-19 crisis. [Hu and Zhang \(2021\)](#), using data from multiple countries, explored the impact of COVID-19 on firm performance and observed a decline in financial performance. [Yang et al. \(2021\)](#) examined the volatility of Chinese equities during the pandemic, which showed a positive correlation with economic policy uncertainty. [Huang et al. \(2021\)](#) focused on the relationship between firm performance and brand value during the pandemic, highlighting the resilience of leading brands in mitigating stock market collapse. [Neukirchen et al. \(2022\)](#) found that the stock market disruptions affected both efficient and inefficient firms, with highly efficient enterprises experiencing greater stock returns. [Huynh et al. \(2022\)](#) emphasized the significant interconnectedness among major European companies during the early phase of COVID-19. [Chebbi et al. \(2021\)](#) demonstrated the adverse effects of COVID-19 on the liquidity of U.S. stocks. [Ulfah et al. \(2022\)](#) analyzed the impact of board structure on earning management during the pre-pandemic and pandemic periods, providing insights into corporate governance practice.

Numerous recent studies explored various COVID-19 impacts on businesses globally, encompassing performance, environmental consequences, financial challenges, and adaptation strategies. [Didier et al. \(2021\)](#) highlighted the challenges faced by firms in terms of financing and the need to adapt in times of uncertainty. [Maria et al. \(2022\)](#) focused on the impact of COVID-19 on bank stability and explored the role of bank size and ownership in determining resilience during the crisis. [Kanno \(2021\)](#) assessed the risk of COVID-19 contagion in Japanese businesses using a susceptible–infected–recovered–dead model. [Krammer \(2022\)](#) provided a theoretical perspective on the adaptation strategies of businesses during the pandemic. [Riadi et al. \(2022a\)](#) examined the relationship between bank concentration and stability during the pandemic, shedding light on the implications of industry structure ([Ahmad et al. 2021a](#)) investigated the economic integration of ASEAN nations and the impact of COVID-19 outbreaks and containment measures. [Groenewegen et al. \(2021\)](#) examined the influence of state aid in the Netherlands during the initial phase of 2020. Finally, [Au Yong and Laing \(2021\)](#) explored the effect of COVID-19 on the international exposure of U.S. firms.

Several studies also highlight the impact of the COVID-19 pandemic on the energy sector. During the COVID-19 storm, [Szczygielski et al. \(2022\)](#) highlighted the significance of uncertainty in the energy sector. [Gollakota and Shu \(2023\)](#) highlighted the unique opportunity for transitioning to clean energy presented by the pandemic. [Li et al. \(2022\)](#) revealed the frequently underestimated negative impact of COVID-19 on the growth of renewable energy in developing countries. [Akyildirim et al. \(2022\)](#) investigated the interconnectedness of global energy markets during the pandemic. [Amri Amamou and Bargaoui \(2022\)](#) analyzed the impact of the COVID-19 pandemic on the energy markets. [Ghosh \(2022\)](#) investigated the relationship between COVID-19, the clean energy stock market, interest rates, oil prices, the volatility index, and geopolitical risks. [Lu and Khan \(2023\)](#) investigated whether sustainable firms in developed and emerging economies were

more profitable during COVID-19. During the pandemic, [Clemente-Almendros et al. \(2022\)](#) conducted a comparative analysis of investment in renewable and traditional electricity among listed European electricity companies.

Recently, the impact of COVID-19 on the performance of the consumer good sector was extensively studied. Several research articles shed light on various aspects of this impact. [Klößner et al. \(2023\)](#) discovered that COVID-19 response announcements by firms within the S&P 500 index resulted in a significant abnormal increase in firm value, particularly favoring risk mitigation measures over responses targeting upside potential. Meanwhile, [Kao et al. \(2023\)](#) observed that industries such as automotive, tourism, and electronic product distribution experienced declines in productivity, whereas industries such as electronic components, optoelectronics, electricity and cables, and oil, gas, and electricity witnessed significant increases. These shifts suggest that the overall impact of COVID-19 on Taiwan's major corporations is not severe, with approximately five-sixths of industries expecting increased productivity in 2021. On the other hand, [Hung et al. \(2021\)](#) found that in Vietnam, the number of daily confirmed COVID-19 cases had a negative influence on stock returns, particularly within the consumer goods sector. [Li et al. \(2022\)](#) revealed that servitization negatively impacted organizational resilience in U.S.-listed manufacturing firms during the pandemic, leading to substantial stock price losses and longer recovery periods. In the context of small and medium enterprises (SMEs), [Grimmer \(2022\)](#) highlighted the detrimental effects of COVID-19 on the retail and consumer services sectors in Tasmania, Australia, while also shedding light on the role of company characteristics in mitigating these impacts. [Lukman \(2022\)](#) conducted an event study on the Indonesian consumer goods industry, concluding that the industry's stock returns remained unaffected despite stable profit levels during the pandemic. Finally, [Rapaccini et al. \(2020\)](#) focused on Italian manufacturing firms, revealing that COVID-19 lockdown measures had varying impacts on product and service businesses, with service businesses exhibiting higher resilience, contingent on market segments and industry specifics. These diverse findings underscore the multifaceted consequences of the pandemic across different sectors and geographical regions.

3. Methods

The Wall Street Journal database was used to collect the data for this study. We begin with observations for which data are available for each variable. Companies and countries with insufficient data are removed. Unbalanced panel data were used. Following the removal of observations with missing control variables, our final sample includes 1491 companies from 80 countries between 2018 and 2022. The sample is organized in Table 1 by country and company. Furthermore, Table 1 presents the distribution of sample companies by country. The table provides information on the number of companies and their corresponding percentages for each country included in the sample. This research utilizes a sample of companies from 79 different countries, focusing on the consumer goods sector. The distribution of these sampled companies varies, with several countries contributing a significant number of companies to the study. Countries such as China (10.1%), the United States (10.19%), and India (9.59%) make the largest contributions in terms of the number of companies in the sample. Additionally, countries such as Hong Kong (4.69%), Thailand (3.55%), and Canada (3.02%) also have a substantial presence in this sample. On the other hand, some countries have a smaller contribution, with only one company in the sample, such as Bahrain, Bulgaria, and others. With a total of 1491 companies from diverse countries, this research encompasses significant geographical diversity within the consumer goods industry.

Table 1. Distribution of the sample companies by country.

Country	Num. of Comp	%	Country	Num. of Comp	%	Country	Num. of Comp	%
Argentina	8	0.54	Israel	11	0.74	Qatar	4	0.27
Australia	32	2.15	Italy	9	0.6	Saudi Arabia	9	0.6
Austria	4	0.27	Ivory Coast	4	0.27	Serbia	1	0.07
Bahrain	1	0.07	Jamaica	4	0.27	Singapore	18	1.21
Bangladesh	13	0.87	Japan	127	8.52	South Africa	10	0.67
Belgium	6	0.4	Jordan	3	0.2	South Korea	82	5.5
Bulgaria	1	0.07	Kazakhstan	2	0.13	Spain	4	0.27
Canada	45	3.02	Kenya	4	0.27	Sri Lanka	15	1.01
Chile	8	0.54	Kuwait	1	0.07	Sweden	16	1.07
China	151	10.1	Latvia	1	0.07	Switzerland	10	0.67
Croatia	7	0.47	Lithuania	4	0.27	Taiwan	34	2.28
Cyprus	2	0.13	Malaysia	33	2.21	Tanzania	1	0.07
Thailand	53	3.55	Malta	1	0.07	Czech Republic	2	0.13
Denmark	5	0.34	Morocco	4	0.27	United States	152	10.19
Egypt	17	1.14	Mauritius	6	0.4	Tunisia	4	0.27
Estonia	2	0.13	Mexico	9	0.6	Turkey	31	2.08
Finland	5	0.34	Namibia	1	0.07	UEA	1	0.07
France	18	1.21	Netherlands	5	0.34	United Kingdom	41	2.75
Germany	16	1.07	New Zealand	7	0.47	Venezuela	1	0.07
Ghana	4	0.27	Nigeria	17	1.14	Vietnam	36	2.41
Hong Kong	70	4.69	Norway	2	0.13	Zambia	4	0.27
Hungary	2	0.13	Oman	1	0.07	Zimbabwe	4	0.27
Iceland	1	0.07	Pakistan	31	2.08	Colombia	2	0.13
India	143	9.59	Palestine	3	0.2	Greece	7	0.47
Indonesia	48	3.22	Peru	8	0.54	Trinidad and Tobago	4	0.27
Iraq	1	0.07	Philippines	18	1.21			
Ireland	3	0.2	Poland	16	1.07	Total	1491	100

We use return on assets (ROA) for performance measurements, as previously described (Athanasoglou et al. 2008; Tan 2016; Yudaruddin 2017, 2023b). Meanwhile, COVID-19 is the primary dependent variable in this analysis. COVID-19, as with the existing literature, measures a dummy variable. This dummy variable has a value of 1 if the COVID-19 pandemic begins in 2020, or 0 otherwise, and a value of 1 if the COVID-19 pandemic begins in 2021, or 0 otherwise (Alsamhi et al. 2022; Shen et al. 2020; and Song et al. 2021). As shown in Table 2, this study also includes several company characteristic variables such as firm size, cash holding, liquidity, leverage, and tangibility.

Table 2. Dependent, independent, and control variables.

Variables	Abbreviation	Definition and Measure	Expected Sign
Return on asset	ROA	Net profit/total asset	
COVID-19	COVID	This dummy variable, which has a value of 1 if the first year of the COVID-19 pandemic (2020–2022), or 0 otherwise	—
Firms size	SIZE	Ln total_assets	+ / —
Cash	CASH	Cash and cash equivalent to total asset (%)	+
Liquidity	LIQ	liquid assets current liabilities	+

Table 2. Cont.

Variables	Abbreviation	Definition and Measure	Expected Sign
Leverage	LEV	Total debt to total equity (%)	+ / −
Tangibility	TANG	Ratio of gross block, i.e., book value of plant and machinery to total assets	+

The association between return on asset and COVID-19 was evaluated using a regression analysis. The regression equation is as follows:

$$ROA_{i,t} = \alpha_{i,t} + \beta_1 COVID_t + \beta_2 SIZE_{i,t} + \beta_3 CASH_{i,t} + \beta_4 LIQ_{i,t} + \beta_5 LEV_{i,t} + \beta_6 TANG_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$ROA_{i,t} = \alpha_{i,t} + \beta_1 COVID_t + \beta_2 SIZE_{i,t} + \beta_3 COVID_t * SIZE_{i,t} + \beta_4 CASH_{i,t} + \beta_5 COVID_t * CASH_{i,t} + \beta_6 LIQ_{i,t} + \beta_7 COVID_t * LIQ_{i,t} + \beta_8 LEV_{i,t} + \beta_9 COVID_t * LEV_{i,t} + \beta_{10} TANG_{i,t} + \beta_{11} COVID_t * TANG_{i,t} + \varepsilon_{i,t} \quad (2)$$

The variables used as controls are Firms size (SIZE), cash (CASH), Liquidity (LIQ), Leverage (LEV), and Tangibility (TANG). Regarding firm size, the relationship between firm size and firm performance indicates that larger firms tend to exhibit superior performance. Larger firms typically have greater access to resources, economies of scale, and market power, which can have a positive effect on their financial performance and profitability (Dietrich and Wanzenried 2011; Lee et al. 2016; and Yudaruddin 2017, 2023a). Cash holding, or the amount of cash and cash equivalents held by a company, can have an effect on its performance (Musviyanti et al. 2022). Cash reserves provide a buffer against unforeseen events, enhance a company's financial flexibility, and allow it to seize strategic opportunities. However, excessive cash reserves may indicate an inefficient allocation of capital, resulting in lower returns. The relationship between cash on hand and firm performance is contingent on the firm's industry, growth prospects, and financial strategy. Performance and liquidity, defined as a company's ability to meet short-term obligations, are closely related. In general, higher liquidity levels indicate greater financial stability and flexibility, enabling businesses to effectively manage operations and meet financial obligations. Enhanced liquidity is frequently correlated with enhanced performance and can positively impact profitability and risk management (Abuzayed 2012; Notta and Vlachvei 2014; and Samo and Murad 2019). The relationship between capital structure and firm performance investigates how the mix of debt and equity financing affects the performance of a business. A firm's performance can be improved by achieving an optimal capital structure in which debt and equity are balanced. Higher leverage (debt) can magnify returns but also increase financial risk, whereas a greater proportion of equity can provide stability but limit growth opportunities (Amalia et al. 2022; Le and Phan 2017; Margaritis and Psillaki 2010; and Salim and Yadav 2012). The relationship between tangibility and ROA is that the greater a company's asset tangibility, the easier it is to identify and value those assets. This can impact ROA because firms with more easily identifiable and valued assets have a lower risk profile and a greater likelihood of generating greater profits. However, asset management and operational efficiency also play a major role in determining ROA (Dietrich and Wanzenried 2011).

Following Maria et al. 2022, this analysis employed the OLS technique with robust standard errors. When estimating with OLS, certain regression test assumptions necessitate the use of the best linear unbiased estimator (BLUE). To address heteroscedasticity and autocorrelation issues, robust heteroscedasticity and autocorrelation (HAC) standard errors involving panel data are employed (Wooldridge 2010).

4. Results and Discussion

Table 3 provides a descriptive statistical overview of several variables across industries and geographic regions. Firstly, looking at the industry statistics, we can observe that

the alcoholic beverages/drinks (B/D) sector stands out with the highest mean return on assets (ROA) at 0.0191, signifying superior profitability compared to other industries. Conversely, the tobacco industry exhibits a negative mean ROA of -0.0281 , implying relatively poor financial performance on average. When considering company size (SIZE), alcoholic beverages/drinks emerges as the largest industry on average with a mean SIZE of 10.369, while the tobacco industry is characterized by the smallest average SIZE (9.7971), indicating the presence of smaller-sized companies within this sector. In terms of liquidity (LIQ), food products exhibit the highest mean LIQ (1.5944), indicating that, on average, these companies have more liquid assets readily available. Conversely, the tobacco industry shows the lowest mean LIQ (1.4101), suggesting relatively lower liquidity levels. The leverage (LEV) variable reveals that the tobacco industry carries the highest mean LEV (1.0242), indicating a greater reliance on debt financing. Conversely, the food products industry has the lowest mean LEV (0.8875), implying a more conservative approach to debt. Finally, the tangibility of assets (TANG) within the tobacco industry is the highest with a mean TANG of 0.2014, indicating a larger proportion of tangible assets, such as property and equipment. On the other hand, the non-alcoholic B/D sector has the lowest mean TANG (0.1426), implying a smaller proportion of tangible assets in their asset structure.

Table 3. Descriptive statistics.

Variables	Descriptive Statistics by Industry									
	All Industries (N = 7046)		Alcoholic B/D (N = 935)		Food Products (N = 5154)		Non-Alcoholic B/D (N = 672)		Tobacco (N = 285)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
ROA	0.0165	0.1510	0.0191	0.1566	0.0198	0.1415	-0.0281	0.1911	0.0533	0.1719
COVID	0.5955	0.4908	0.5925	0.4916	0.5949	0.4910	0.6042	0.4894	0.5965	0.4915
SIZE	10.122	2.1841	10.369	2.1481	10.087	2.1652	9.7971	2.2514	10.698	2.3047
CASH	11.057	12.410	10.860	12.098	10.877	12.159	12.085	13.687	12.544	14.442
LIQ	1.4840	1.6823	1.5944	1.8116	1.4814	1.6780	1.4101	1.5501	1.3437	1.6038
LEV	0.9036	1.5025	0.8637	1.3967	0.8875	1.4941	1.0242	1.6930	1.0397	1.4996
TANG	0.1723	0.1345	0.1710	0.1334	0.1748	0.1333	0.1426	0.1266	0.2014	0.1633

Variables	Descriptive Statistics by Region									
	Americas (N = 1088)		Europe (N = 1048)		Middle East (N = 134)		Africa (N = 395)		Asia-Pacific (N = 4381)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
ROA	-0.0707	0.2159	0.0304	0.1302	0.0249	0.1258	0.0388	0.1303	0.0325	0.1297
COVID	0.6075	0.4885	0.5840	0.4931	0.6045	0.4908	0.5747	0.4950	0.5969	0.4906
SIZE	9.5659	2.1125	10.175	2.0435	9.7695	2.0514	10.264	2.1354	10.245	2.2205
CASH	10.102	12.311	8.8022	10.660	9.0598	9.6857	11.002	11.187	11.900	12.906
LIQ	1.5739	1.8870	1.3091	1.5616	1.3449	1.3142	1.2316	1.5362	1.5306	1.6741
LEV	1.2462	1.8652	1.0784	1.6706	0.7548	1.2944	0.9424	1.4014	0.7777	1.3491
TANG	0.1671	0.1418	0.1708	0.1359	0.1677	0.1264	0.1834	0.1256	0.1730	0.1332

Note: N = observation; SD = standard deviation; and B/D = beverages/drinks. Source: authors' calculation.

Shifting the focus to geographic regions, the Americas exhibit the lowest mean ROA (-0.0707), indicating comparatively weaker profitability. Conversely, Asia-Pacific stand out with the highest mean ROA (0.0325), suggesting better financial performance on average. In terms of company size (SIZE), Europe boasts the highest mean SIZE (10.175), implying the presence of larger companies, while the Middle East displays the lowest mean SIZE (9.7695). Europe stands out with the lowest mean cash reserves (CASH) at 8.8022, indicating a lower average cash position, whereas Asia-Pacific have the highest mean CASH (11.900), suggesting relatively healthier cash reserves. Regarding liquidity (LIQ), the Americas exhibit the highest mean LIQ (1.5739), indicating relatively higher liquidity levels. In contrast, Europe has the lowest mean LIQ (1.3091), implying lower liquidity. When considering leverage (LEV), the Americas have the highest mean LEV (1.2462), indicating a

greater reliance on debt financing, while the Middle East has the lowest mean LEV (0.7548), suggesting a more conservative debt approach. Finally, in terms of the tangibility of assets (TANG), the Middle East stands out with the highest mean TANG (0.1834), indicating a larger proportion of tangible assets, while Europe has the lowest mean TANG (0.1708), implying a smaller proportion of tangible assets.

Table 4 presents a correlation matrix for the variables in the study, including COVID, SIZE, CASH, LIQ, LEV, and TANG, as well as the variance inflation factor (VIF). The correlation coefficients displayed in the upper portion of the table provide insights into the degree of linear association between these variables. Notably, no correlation coefficient exceeds the critical threshold of 0.80 as suggested by (Field 2009), indicating the absence of strong multicollinearity among the variables. The VIF values shown in the last column further confirm this, with all VIFs well below the threshold of 10, as indicated by (Myers 1990). This suggests that multicollinearity concerns are not compromising the validity of the study's findings. Overall, the low correlation coefficients and VIF values indicate that the variables are relatively independent of each other, and that multicollinearity is not a significant issue in this analysis, reinforcing the robustness of the study's results.

Table 4. Correlation matrix.

Variables	COVID	SIZE	CASH	LIQ	LEV	TANG	VIF
COVID	1.00000						1.17
SIZE	0.04230	1.00000					1.02
CASH	0.31490	−0.02600	1.00000				1.26
LIQ	−0.01050	0.06230	0.31730	1.00000			1.29
LEV	0.19430	−0.06230	−0.02080	−0.26800	1.00000		1.13
TANG	0.01420	−0.07940	−0.10110	−0.28110	0.09490	1.00000	1.09

Source: authors' calculation.

The present study employs regression analysis to investigate the correlation between COVID-19 and firm performance, with a particular focus on return on assets (ROA). Interaction variables between COVID-19 and firm characteristics were examined across industry and region in order to investigate this relationship in more detail. The results, which are shown in Table 5, provide insight into the relationship between COVID-19, firm attributes, and firm performance. The findings support earlier research studies (Grimmer 2022; Hung et al. 2021; Kao et al. 2023; Klöckner et al. 2023; Li et al. 2022; Lukman 2022; and Rapaccini et al. 2020) that also looked into the pandemic's effects on firm performance. The results show that the COVID-19 pandemic had a negative impact on the performance of companies in the consumer goods sector. However, different results were shown for companies in the non-alcoholic beverages/drinks industry. Differences in results were observed in non-alcoholic beverages/drinks companies, where COVID-19 did not have a significant impact on company performance. Health reasons may be one factor that explains why non-alcoholic beverages/drinks companies may be less affected by the COVID-19 pandemic. During the pandemic, many individuals may be paying more attention to their health and trying to consume products that are considered healthier. Non-alcoholic drinks are often considered a healthier option than alcoholic drinks, and this can increase demand for these products. When examining the interaction between COVID-19 and firm characteristics such as firm size (SIZE), cash holding (CASH), liquidity (LIQ), leverage (LEV), and tangibility (TANG), this study identifies positive and statistically significant coefficients on firm performance, particularly with regard to SIZE and LIQ (Column 1, 3, and 5). These results are in line with previous studies such as (Dietrich and Wanzenried 2011; Lee et al. 2016; and Yudaruddin 2017, 2023a) who found a positive and significant impact on company performance. Meanwhile, leverage shows positive and significant results on tobacco company performance (Column 9).

Table 5. COVID-19 and firm performance by industry.

Explanatory Variables	Dependent Variables: ROA									
	All Industries		Alcoholic Beverages/Drinks		Food Products		Non-Alcoholic Beverages/Drinks		Tobacco	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
COVID	−0.01689 *** (0.0031)	−0.11446 *** (0.0189)	−0.0240 ** (0.0095)	−0.1916 *** (0.0575)	−0.0156 *** (0.0035)	−0.1162 *** (0.0211)	−0.0054 (0.0114)	−0.0270 (0.0489)	−0.0344 ** (0.0156)	−0.1771 (0.1130)
SIZE	0.01368 ** (0.0053)	0.01015 * (0.0053)	0.0199 ** (0.0093)	0.0158 * (0.0092)	0.0174 *** (0.0065)	0.0139 ** (0.0065)	0.0117 (0.0201)	0.0091 (0.0211)	−0.0084 (0.0321)	−0.0111 (0.0295)
CASH	−0.00024 (0.0001)	0.00002 (0.0002)	−0.0003 (0.0005)	−0.0008 (0.0007)	−0.0005 ** (0.0002)	−0.00003 (0.0003)	0.0001 (0.0004)	0.0007 (0.0006)	0.0014 (0.0008)	0.0015 (0.0010)
LIQ	0.00543 *** (0.0016)	0.00620 *** (0.0021)	0.0031 (0.0033)	0.0025 (0.0044)	0.0029 (0.0019)	0.0031 (0.0025)	0.0141 * (0.0072)	0.0138 * (0.0074)	0.0164 (0.0064)	0.0225 ** (0.0089)
LEV	0.00009 (0.0008)	−0.03829 *** (0.0097)	−0.0011 (0.0025)	−0.0421 * (0.0234)	−0.0013 (0.0009)	−0.0440 *** (0.0120)	0.0030 (0.0028)	−0.0165 (0.0291)	0.0089 * (0.0050)	0.00007 (0.0330)
TANG	0.04839 (0.0333)	0.05610 (0.0356)	−0.0576 (0.0765)	−0.0505 (0.0881)	0.0491 (0.0388)	0.0569 (0.0409)	−0.1771 * (0.1055)	−0.1797 (0.1146)	0.1948 (0.1662)	0.1828 (0.1898)
COVID*SIZE		0.00801 *** (0.0013)		0.0136 ** (0.0044)		0.0081 *** (0.0015)		0.0015 (0.0037)		0.0124 (0.0085)
COVID*CASH		−0.00005 (0.0002)		0.0007 (0.0007)		−0.0002 (0.0003)		−0.0005 (0.0008)		0.0001 (0.0009)
COVID*LIQ		−0.0029 (0.0022)		−0.0004 (0.0053)		−0.0022 (0.0027)		−0.0006 (0.00063)		−0.0088 (0.0074)
COVID*LEV		0.03746 *** (0.0095)		0.0406 * (0.0232)		0.0417 *** (0.0118)		0.0186 (0.0278)		0.0086 (0.0326)
COVID*TANG		−0.00301 (0.0205)		−0.0118 (0.0589)		−0.0041 (0.0225)		0.0100 (0.0787)		0.0619 (0.1020)
CONS.	−0.12578 ** (0.0530)	−0.07350 (0.0536)	−0.1638 * (0.0923)	−0.0972 (0.0902)	−0.1532 ** (0.0654)	−0.0995 (0.0663)	−0.1399 (0.1837)	−0.1066 (0.1993)	0.0758 (0.3716)	0.1033 (0.3478)
R-squared	0.0214	0.0419	0.0408	0.0769	0.0264	0.0507	0.0442	0.0473	0.2068	0.2517
F Statistic	10.11	7.93	2.77	2.10	9.10	7.66	2.42	2.34	16.83	13.38
Prob > F	0.0000	0.0000	0.0131	0.0217	0.0000	0.0000	0.0293	0.0081	0.0000	0.0000
Number of obs	7046	7046	935	935	5154	5154	672	672	285	285

Note: ***, **, and * are significant at 1%, 5%, and 10% confidence levels, respectively. Source: authors' calculation.

Moreover, the favorable results concerning the interaction with SIZE imply that bigger businesses are comparatively better equipped to endure performance reductions throughout the COVID-19 period in contrast to smaller businesses. In other words, the positive interaction between SIZE and COVID-19 indicates that larger businesses appear to be better equipped to withstand performance reductions during the COVID-19 period compared to their smaller counterparts. This implies that larger companies might possess greater resources and flexibility to navigate the challenges posed by the pandemic, such as demand fluctuations and market uncertainty. In a similar vein, the COVID-19 and LEV interaction shows positive and noteworthy outcomes, suggesting that using the right amount of leverage can support business performance in the face of the COVID-19 pandemic's challenges. This underscores the importance of prudent financial management and a nuanced understanding of the optimal level of debt during crisis situations. Striking the right balance in leveraging can be instrumental in helping companies' weather economic uncertainties triggered by the pandemic. Overall, these findings highlight how important it is for firm attributes—size and leverage in particular—to play a role in reducing the detrimental effects of COVID-19 on firm performance in the consumer goods industry. As a result, companies in the consumer goods sector may consider evaluating their size and debt management practices as integral components of their risk mitigation and performance enhancement strategies during times of economic uncertainty.

Regarding the impact of the COVID-19 pandemic on firm performance in the consumer goods industry by region, Table 6 offers detailed empirical insights into how the pandemic affected companies in various parts of the world. The negative results presented in the table underscore that the pandemic exerted an adverse influence on the performance of companies operating within the consumer goods sector. Specifically, the negative outcomes indicate a decline in return on assets (ROA) during the COVID-19 pandemic period, signifying the financial challenges that companies in this industry faced in maintaining

their profitability in the time of the crisis. However, it is essential to note that the impact of the pandemic exhibited regional variations. In countries within the Americas, the decline in ROA was particularly pronounced. This suggests that companies in these regions confronted substantial difficulties and market disruptions due to the pandemic's far-reaching effects. Similarly, the negative impact was also observed in Africa, highlighting the pandemic's global and widespread repercussions. Conversely, when examining companies located in countries within Europe and the Middle East, the findings reveal different results. While the impact of the pandemic was still evident, it appears to be less severe than in the Americas and Africa.

Table 6. COVID-19 and firm performance by regions.

Explanatory Variables	Dependent Variables: ROA									
	Americas		Europe		Middle East		Africa		Asia-Pacific	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
COVID	−0.0282 *** (0.0091)	−0.2043 *** (0.0489)	−0.0064 (0.0068)	−0.0730 (0.0472)	0.0014 (0.0130)	0.1393 * (0.0761)	−0.0259 ** (0.0098)	−0.1149 (0.0690)	−0.0152 *** (0.0039)	−0.1128 *** (0.0255)
SIZE	0.0355 *** (0.0109)	0.0267 ** (0.0111)	0.0099 (0.0133)	0.0070 (0.0136)	−0.0108 (0.0148)	−0.0087 (0.0186)	−0.0188 (0.0200)	−0.0215 (0.0209)	0.0039 (0.0064)	0.0014 (0.0067)
CASH	0.00002 (0.0005)	−0.0001 (0.0011)	−0.0004 (0.0004)	0.0004 (0.0006)	−0.0015 (0.0009)	0.0005 (0.0005)	0.0008 (0.0006)	0.0008 (0.0006)	−0.0002 (0.0002)	−0.0001 (0.0002)
LIQ	0.0110 ** (0.0044)	0.0106 ** (0.0045)	0.0034 (0.0036)	0.0026 (0.0055)	0.0155 (0.0104)	0.0104 (0.0071)	0.0012 (0.0062)	0.0059 (0.0082)	0.0028 (0.0021)	0.0039 (0.0029)
LEV	0.0030 * (0.0018)	−0.0619 *** (0.0211)	−0.0005 (0.0018)	−0.0141 (0.0197)	0.0004 (0.0022)	0.0560 (0.0420)	−0.0003 (0.0023)	−0.0002 (0.0263)	−0.0012 (0.0012)	−0.0430 *** (0.0157)
TANG	0.0379 (0.0629)	0.0254 (0.0734)	0.2675 *** (0.0852)	0.3187 *** (0.0971)	−0.3199 ** (0.1153)	−0.3380 ** (0.1442)	0.0844 (0.1077)	0.0201 (0.1490)	0.0159 (0.0460)	0.0190 (0.0467)
COVID*SIZE		0.0137 *** (0.0038)		0.0071 * (0.0037)		−0.0121 ** (0.0057)		0.0082 (0.0054)		0.0076 *** (0.017)
COVID*CASH		0.0005 (0.0010)		−0.0012 * (0.0007)		−0.0026 ** (0.0011)		0.00005 (0.0010)		0.0001 (0.0003)
COVID*LIQ		−0.0037 (0.0045)		0.0022 (0.0075)		0.0089 (0.0091)		−0.0081 (0.0081)		−0.0037 (0.0028)
COVID*LEV		0.0636 *** (0.0207)		0.0139 (0.0197)		−0.0552 (0.0411)		−0.0009 (0.0257)		0.0407 *** (0.0155)
COVID*TANG		0.0170 (0.0665)		−0.0562 (0.0435)		0.0688 (0.0891)		0.0815 (0.0999)		0.0039 (0.0252)
CONS.	−0.4216 *** (0.0987)	−0.2897 *** (0.1040)	−0.1121 (0.1366)	−0.0870 (0.1389)	0.1765 (0.1273)	0.1301 (0.1756)	0.2211 (0.2001)	0.2537 (0.2083)	−0.0010 (0.0664)	0.0414 (0.0697)
R-squared	0.0709	0.1025	0.0363	0.535	0.2452	0.3516	0.0798	0.1101	0.0173	0.0403
F Statistic	10.30	7.35	2.13	2.77	3.96	7.20	4.35	3.33	5.48	4.47
Prob > F	0.0000	0.0000	0.0513	0.0022	0.0054	0.0000	0.0003	0.0002	0.0000	0.0000
Number of obs	1088	1088	1048	1048	134	134	395	395	4381	4381

Note: ***, **, and * are significant at 1%, 5%, and 10% confidence levels, respectively. Source: authors' calculation.

Furthermore, examining the interaction between the COVID-19 variable and various company characteristics unveils intriguing insights with various implications across different regions. Notably, the positive and statistically significant results from the COVID*SIZE variable (Columns 2, 4, and 10) indicate a compelling trend. In these regions, such as the Americas, Europe, and the Asia-Pacific, larger companies demonstrated higher performance than their smaller counterparts, especially amidst the challenges posed by the COVID-19 pandemic. This suggests that economies of scale, stronger market presence, or enhanced resource capabilities conferred an advantage to larger firms in weathering the pandemic's impact. However, a contrasting picture emerges when examining companies situated in the Middle East region. Here, the impact of the COVID*SIZE variable is notably negative and statistically significant, implying that larger companies experienced lower performance, particularly during the COVID-19 period, in contrast to trends observed in other regions. The implications of this peculiar finding may point to regional-specific factors, such as market dynamics or regulatory influences, shaping this distinct outcome. Furthermore, the results related to the interaction of COVID-19 and cash holding (COVID*CASH) on return on assets (ROA) reveal negative and significant effects, particularly for companies in Europe and the Middle East (Columns 4 and 6). Surprisingly, these outcomes suggest that increasing a company's cash reserves during the pandemic might actually reduce its performance. This intriguing result underscores the importance of deploying financial

resources strategically and aligning cash management with the unique challenges presented by the pandemic.

Lastly, the positive and statistically significant results arising from the interaction between COVID-19 and leverage (COVID*LEV) on company performance suggest that an increase in debt levels corresponded to improved company performance during the COVID-19 pandemic period (Columns 2 and 10). This trend is notably prominent in the Americas and Asia-Pacific regions. The implications here highlight the strategic role of leveraging in enhancing financial resilience during times of crisis, but also underscore the necessity of careful debt management to strike the right balance. These findings underscore the nuanced relationship between company characteristics, regional dynamics, and the impact of the COVID-19 pandemic on performance. Stress the importance of tailoring strategies to specific conditions and regions and invite further research into the underlying factors driving these diverse outcomes. Ultimately, these insights can guide companies in crafting more targeted and effective approaches to navigate the challenges posed by global crises while optimizing their performance.

In this investigation, we carried out several robustness checks to show that the analysis results are robust. First, we involve the year dummy variable to capture any time-related effects that are not already in the model and address “unobservable effects” (Table 7). Second, we replace the dependent variable with alternative firm performance (ROA) by measuring return on equity (ROE), as reported in Table 8. Finally, the impact of the COVID-19 pandemic on firm performance was re-estimated using an alternative econometric methodology, such as fixed-effects and two-step system GMM estimations, shown in Table 9.

Table 7. Robustness check: the year dummy variable.

Explanatory Variables	Dependen Variables: ROA	
	(1)	(2)
COVID	−0.01819 *** (0.0033)	−0.12948 *** (0.01235)
SIZE	0.01494 *** (0.0029)	0.01136 *** (0.0029)
CASH	−0.00003 (0.0001)	0.00003 (0.0002)
LIQ	0.0056 *** (0.0012)	0.0064 *** (0.0015)
LEV	0.00004 (0.0008)	−0.0393 *** (0.0060)
TANG	0.05422 *** (0.0195)	0.0627 *** (0.0219)
COVID*SIZE		0.00813 *** (0.0009)
COVID*CASH		0.00029 (0.0002)
COVID*LIQ		−0.0031 (0.0015)
COVID*LEV		0.03796 *** (0.0058)
COVID*TANG		−0.0011 (0.0164)
CONS.	−0.13302 *** (0.0298)	−0.0785 ** (0.0304)
Year Dummy	Yes	Yes
R-squared	0.0245	0.0451
F Statistic	15.45	18.69
Prob > F	0.0000	0.0000
Number of obs	7046	7046

Note: Analysis using all industries. *** and **, are significant at 1% and 5% confidence levels, respectively. Source: authors’ calculation.

Table 8. Robustness check: alternative measurement of performance.

Explanatory Variables	Dependen Variables: ROE	
	(1)	(2)
COVID	−0.05716 *** (0.0096)	−0.36883 *** (0.0565)
SIZE	0.01550 (0.0117)	0.00529 (0.0119)
CASH	−0.00027 (0.0004)	−0.00002 (0.0008)
LIQ	0.00603 (0.0046)	0.00610 (0.0058)
LEV	−0.00251 (0.0028)	−0.11703 *** (0.0271)
TANG	0.06079 (0.0765)	−0.00230 (0.0889)
COVID*SIZE		0.02248 *** (0.00042)
COVID*CASH		0.00049 (0.0009)
COVID*LIQ		−0.0051 (0.0060)
COVID*LEV		0.11183 *** (0.0265)
COVID*TANG		0.13304 ** (0.0636)
CONS.	−0.10620 (0.1205)	0.06801 (0.1239)
R-squared	0.0181	0.0387
F Statistic	9.29	8.11
Prob > F	0.0000	0.0000
Number of obs	7046	7046

Note: Analysis using all industries. *** and **, are significant at 1% and 5% confidence levels, respectively. Source: authors' calculation.

Table 9. Robustness check: fixed-effects and two-step system GMM estimations.

Explanatory Variables	Dependen Variables: ROA			
	Fixed Effects		GMM	
	(1)	(2)		
ROA (−1)			0.3231 ** (0.1434)	0.3202 ** (0.1442)
COVID	−0.05716 *** (0.0096)	−0.1920 *** (0.0196)	−0.0081 ** (0.0041)	−0.1303 *** (0.0262)
SIZE	0.01550 (0.0117)	0.0030 ** (0.0012)	0.0045 *** (0.0009)	−0.0009 (0.0015)
CASH	−0.00027 (0.0004)	−0.00001 (0.0003)	−0.00001 (0.0001)	−0.0012 (0.0011)
LIQ	0.00603 (0.0046)	0.0068 *** (0.0018)	0.0014 (0.0013)	−0.0003 (0.0027)
LEV	0.01559 *** (0.0012)	−0.0155 *** (0.0079)	−0.0035 ** (0.0202)	−0.0775 (0.0190)
TANG	0.0194 (0.0053)	0.0125 (0.0212)	−0.0043 (0.0115)	−0.0120 (0.0304)
COVID*SIZE		0.0097 *** (0.0016)		0.0071 *** (0.0018)

Table 9. Cont.

Explanatory Variables	Dependen Variables: ROA			
	Fixed Effects		GMM	
	(1)	(2)		
COVID*CASH		0.00005 (0.0004)		0.0013 (0.0011)
COVID*LIQ		−0.0021 (0.0024)		0.0003 (0.0031)
COVID*LEV		0.1422 *** (0.0080)		0.0735 *** (0.0182)
COVID*TANG		−0.0322 (0.0274)		0.0162 (0.0312)
CONS.	0.0053 (0.094)	0.1516 *** (0.0153)	−0.0308 *** (0.0115)	0.0737 *** (0.0229)
R-squared	0.0302	0.0742		
F Statistic	36.57	52.35		
Prob > F	0.0000	0.0000		
AR(2) test			0.502	0.440
Hansen-J test			0.590	0.599
Number of obs	7046	7046	7046	7046

Note: Analysis using all industries *** and ** are significant at 1% and 5% confidence levels, respectively. Source: authors' calculation.

5. Conclusions

This study aimed to investigate the impact of the COVID-19 pandemic on firm performance in the consumer goods industry using a dataset sourced from The Wall Street Journal database. Employing the ordinary least squares (OLS) technique with robust standard errors, the analysis focused on return on assets (ROA) as the key performance metric. Interaction variables were examined across industry and region to provide a nuanced understanding of this relationship. The findings align with earlier research, indicating that the COVID-19 pandemic had an overall negative impact on consumer goods companies' performance. However, significant variations emerged when differentiating between industries. Notably, non-alcoholic beverages/drinks companies appeared to be less affected, potentially due to health-conscious consumer preferences favoring non-alcoholic products during the pandemic. Furthermore, examining the interaction between COVID-19 and firm characteristics revealed intriguing insights. Larger companies exhibited better resilience, particularly in the Americas, Europe, and Asia-Pacific regions. This emphasized the advantages of size, resource capabilities, and adaptability in navigating crises. Surprisingly, increased cash holdings negatively impacted performance in Europe and the Middle East, highlighting the need for region-specific liquidity management. Effective leveraging, when balanced, supported performance, especially in the Americas and Asia-Pacific. Regionally, the pandemic's impact on ROA varied, with pronounced declines in the Americas, but milder effects in Europe and the Middle East. These regional disparities underscore the importance of tailoring strategies to local dynamics and market conditions. Additionally, several robustness checks were conducted in this investigation to demonstrate that the analysis results were robust.

The policy implications of this research are significant for consumer goods companies. Firstly, companies should consider their size, as larger firms demonstrated greater resilience during the COVID-19 pandemic. This suggests that growth strategies to increase operational scale may be beneficial. Secondly, liquidity management is crucial. While having cash reserves is important, excessive liquidity can negatively affect performance. Therefore, companies need to carefully manage their liquidity and allocate financial resources strategically. Thirdly, debt policies should be carefully considered. In some cases, increasing debt can support company performance during a crisis. However, companies must be cautious not to over leverage. Finding the right balance in debt management can

be instrumental in facing economic uncertainties caused by a pandemic. Lastly, regional differences in the pandemic's impact should be acknowledged. Effective strategies may vary based on a company's location. Therefore, companies need to adapt their approaches to local market dynamics and regulations.

In conclusion, this research provides critical insights into the complex relationship between company attributes, regional factors, and the COVID-19 pandemic's impact on performance. These findings underscore the need for strategic adaptation and encourage further research into underlying drivers to guide businesses in crafting effective crisis response strategies while optimizing performance. However, it is essential to acknowledge the limitations of this study, including data availability and regional specificity. Future research should explore these aspects in greater detail, enhancing our understanding of firm resilience during global crises and informing policy recommendations for the consumer goods industry.

Author Contributions: Conceptualization, I. and R.Y.; methodology, R.Y. and M.R. formal analysis, M.R., A.M.Y., M.H.Z.K.R. and S.R.S.; investigation, M.R., A.M.Y., M.H.Z.K.R. and S.R.S.; resources, R.Y.; data curation, R.Y.; writing—original draft preparation, M.R., A.M.Y., M.H.Z.K.R. and S.R.S.; writing—review and editing, I. and R.Y.; visualization, A.M.Y., M.H.Z.K.R. and S.R.S.; supervision, I. and R.Y.; project administration, A.M.Y., M.H.Z.K.R. and S.R.S.; funding acquisition, I. and R.Y. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Data Availability Statement: The Wall Street Journal Database (WSJ). Link: <https://www.wsj.com/market-data/quotes/company-list> (accessed on 9 June 2022).

Acknowledgments: We would like to thank two anonymous reviewers for their insightful comments, which have greatly contributed to the improvement of our paper.

Conflicts of Interest: The authors declare no conflict of interest.

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