

Covid-19 Crisis and Shifts in the Corporate Competitive Landscape: Comparisons with Previous Economic Crises

Sang-Ha Yoon Head of Team, Int'l Macroeconomics Team, Int'l Macroeconomics & Finance Dept (syoon@kiep.go.kr)

Yaein Baek Associate Research Fellow, Int'l Macroeconomics Team, Int'l Macroeconomics & Finance Dept (yibaek@kiep.go.kr)

Wontae Han Associate Research Fellow, Int'l Finance Team, Int'l Macroeconomics & Finance Dept. (hanwontae@kiep.go.kr)

Yoonsoo Lee Professor, College of Economics, Sogang University (ylee@sogang.ac.kr)

Daisoon Kim Assistant Professor, Department of Economics, NC State University (dkim29@ncsu.edu)

I. Introduction

In terms of economic fluctuations, it is well recognized that the effects of an economic crisis have a detrimental impact on the entry, growth, decline, and exit of firms. In addition, the magnitude of the impact varies both within and between industries depending on the size and other characteristics of the firm. The economy is going through significant changes due to the emergence of new industries and the decline or disappearance of current ones.

This study looks at how big economic events like the COVID-19 pandemic and the global financial crisis have affected businesses and industries. After completing a study at several levels of top international corporations, larger domestic enterprises, and domestic small and medium-sized businesses, it attempts to draw policy implications.

II. Global Top Firms and Business Cycles

First, we analyzed changes in the activities and characteristics of large global firms using Global Compustat: Fundamental Annual data. Specifically, we presented basic statistics on changes in concentration and profit margins in three regions (Asia, North America, and Europe) and then examined how the economic share of large firms has changed over time and across crises. We also looked at the data by industry to identify heterogeneity. To understand the impact of changes in the economic weight of top firms, we examined how the characteristics of top firms have changed over the past 20 years. We looked at cost-to-sales, investment-to-sales, and R&D-to-sales as firm characteristics. Cost-to-sales is closely related

to operating margins and markups, while investment and R&D expenditures as a percentage of sales have a significant impact on economic development, with differences between North American companies and those in other

regions. After reviewing the changes in the ranking of larger companies, we found that North American firms were more likely to move up and down, while those in Europe and East Asia were less likely to do so.

Table 1. Sensitivity to GDP Change

	(1)	(2)	(3)	(4)
	Real Revenue Growth (Domestic Currency)		Real Revenue Growth (US Dollars)	
Panel A. Top 500 Firms Dummy (Based on Revenue)				
β_H	0.465*** (0.078)	0.282*** (0.085)	0.073 (0.093)	0.081 (0.099)
β_L	0.697*** (0.051)	0.606*** (0.057)	0.151*** (0.058)	0.212*** (0.063)
Fixed Effects	Firm Yr-Ind	Firm Yr-Ind-Region	Firm Yr-Ind	Firm Yr-Ind-Region
R-Squared	0.163	0.173	0.151	0.167
$\beta_H - \beta_L$	-0.232*** (0.075)	-0.324*** (0.077)	-0.078 (0.086)	-0.131 (0.088)
Panel B. Top 500 Firms Dummy (Based on Cost-to-Revenue Ratio)				
β_H	0.476*** (0.099)	0.385*** (0.105)	-0.216* (0.123)	-0.063 (0.129)
β_L	0.716*** (0.052)	0.622*** (0.058)	0.196 (0.059)	0.245*** (0.064)
Fixed Effects	Firm Yr-Ind	Firm Yr-Ind-Region	Firm Yr-Ind	Firm Yr-Ind-Region
R-Squared	0.163	0.173	0.151	0.166
$\beta_H - \beta_L$	-0.240** (0.100)	-0.237*** (0.103)	-0.411*** (0.121)	-0.397*** (0.125)

Notes: ***, **, * denotes statistical significance at 1%, 5%, 10% respectively. Numbers in parentheses are robust (firm cluster) standard errors.

Source: Authors' calculation

Also, we found that firms with larger revenue and higher cost-to-revenue ratios were less sensitive to economic fluctuations. Our findings suggest that changes in the concentration

and profitability of global firms vary significantly across regions. Panel A in Table 1 uses a dummy of the top 500 firms by revenue. As shown in Crouzet and Mehrotra (2022)¹,

¹ Crouzet, N. and H. R. Mehrotra. 2020. "Small and

Large Firms over the Business Cycle." *American Economic Review*, 110(11), pp. 3549-3601.

larger firms are less sensitive to changes in GDP than smaller firms. When using growth rates in local currency terms, this implies that firms with a size of 500 in these three regions are 20-30% less sensitive to increases in GDP than those without. In Panel B, we split the analysis between firms with large cost-to-revenue ratios (top 500 in the region) and small firms (other). As shown in Kim and Savagar (2022)², cost-to-revenue is the inverse of sales elasticity, meaning that the higher the cost-to-revenue ratio, the lower the sensitivity to economic shocks. Our results are consistent with this. The coefficient on GDP is always significantly lower for firms with higher cost-to-revenue (markup, operating margin) than for other firms. This means that firms with higher cost-to-revenue ratios experience a smaller decrease in revenue for a decrease in GDP, by about 20-40%, than other firms.

III. Korean Firms and Business Cycles

1. Korean Listed Firms

Subsequently, we compared and analyzed the negative impacts of each industry in the 2008 global financial crisis and the COVID-19 crisis based on corporate sales, and diagnosed the asymmetrical impact on face-to-face and non-face-to-face industries during the pandemic for Korean listed firms. As a result, first, real sales of all companies fell by an average of 4.28 percent year-on-year in 2020, whereas

real sales fell by 20.08 percent in 2009, shortly after the 2008 global financial crisis. This indicates that the intensity of the recession was greater during the 2008 global financial crisis than in the 2020 pandemic for listed firms. In other words, during the 2008 global financial crisis, corporate management activities shrank more significantly than during the 2020 pandemic crisis, and the economic recession lasted longer.

Second, immediately after the 2008 financial crisis, all industries except mining, agriculture, forestry, and fisheries shrank. 2009 was particularly hard-hit with real estate and rental sales falling 87.73% compared to the 2008 average. In contrast, immediately after the 2020 pandemic outbreak, there was no significant decline in sales in other industries except for arts, sports and leisure services, transportation, agriculture, construction, wholesale and retail, accommodation and restaurant, facility management and business support services. Sales in real estate and rental actually increased by 52.25% compared to the 2019 average.

Third, industries that were more affected by the 2020 pandemic crisis than the 2008 global financial crisis included (i) agriculture, forestry, and fishing, (ii) mining, and (iii) arts, sports, and leisure-related services. Whereas, all 12 other industries experienced a greater impact from the 2008 global financial crisis.

Fourth, the impact of COVID-19 was asymmetric in the face-to-face and non-face-to-face

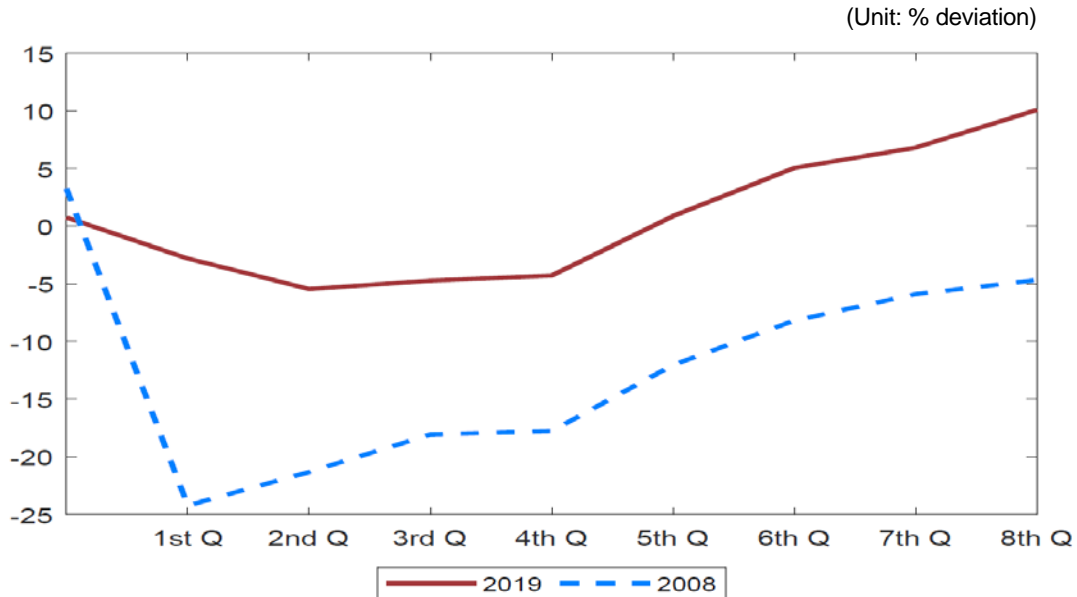
² Kim, D. and A. Savagar. 2022. "Firm Revenue Elastic

ity and Business Cycle Sensitivity," Working paper.

industries. In the case of non-face-to-face industry sales, the deviation rate was -3.37% in 2020 compared to the 2019 average, while

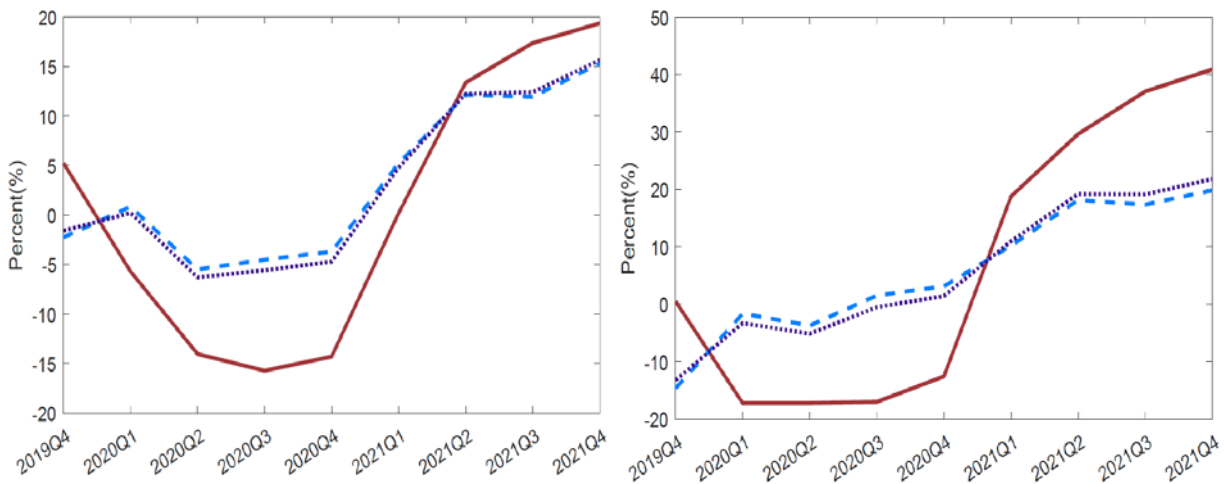
face-to-face industry sales were -12.50% in 2020, showing a greater decrease compared to the 2019 average.

Figure 1. Real Sales Change after GFC and COVID-19 for All Industries



Note: Percentage deviation from Korean Won-based average real sales in 2008 or 2019 after removing seasonality.
Source: Author's calculation.

Figure 2. Real Sales and Gross Profit on Sales Growth after COVID-19



Notes: 1. YoY growth rate of real sales and real gross profit on sales based on 2015 Korean Won.
2. (1) Red line: contact sector (2) Blue-dotted line: non-contact sector (3) Black-dotted line: all industries.
Source: Author's calculation.

Fifth, the gap between the non-face-to-face and face-to-face industries was even greater, recording an average of -16.12% and -0.12%, respectively, showing a much larger drop in the face-to-face industry.

2. Korean Small Firms and Social Distancing

Next, we focused on smaller companies and examined the characteristics of their regional and industry licensing rates and closing rates through local administrative licensing data. Amid significant patterns by industry and period, the trend was stronger than the economic fluctuation in the entire period after the Asian financial crisis, and the licensing rate was systematically higher than the closing rate. This suggests that the competitive strength of small and medium-sized businesses continued to

increase.

During the COVID-19 period, it was also possible to find a phenomenon in which the licensing rate rose, and the closing rate fell depending on the industry. The same was true for start-ups with less than the third year of establishment, but the level of closing rate remained quite high compared to the entire industry, consistent with the results of overseas literature studies.

As a result of panel regression analysis on how the social distancing policy introduced to prevent the spread of COVID-19 affected the closing rate of all industries and restaurant industries, it was confirmed that strengthening distancing in sectors for all industries and restaurant industries significantly increased the closing rate.

Table 2. Effect of Social Distancing on Firm Closing of Restaurant and Pub Industries

Dependent variable: Closing Rate	
Social Distancing	0.2303* (0.1242)
Industrial Production Index	0.0112* (0.0054)
Net Population Inflow	-0.0000 (0.0000)
Unemployment Rate	-0.0932 (0.0740)
Dishonored Bill Rate	-0.0156 (0.0315)
New Firm Ratio	-0.1765* (0.0969)
Region-Ind Fixed Effects	Yes
Time Trend	Yes
Adjusted R squared	0.261
N	110

Notes: ***, **, * denote statistical significance at 1%, 5%, 10% respectively. Numbers in parentheses are robust (region-industry cluster) standard errors.

Source: Authors' calculation.

IV. Size Distribution Change of Korean Industries during COVID-19

This section summarized the corporate support policies implemented during the COVID-19 period for major countries and analyzed the changes in the size distribution of Korean companies by industry. In particular, in order to examine the effect of the COVID-19 support policy, the inequality in the size distribution of companies such as automobile parts manufacturing, textile and clothing industries, and sports and entertainment-related service industries, which were eligible for support, was measured. The greater the industry inequality, the higher the proportion of sales or employment in the industry by a small number of companies.

As a result of the analysis, unlike the rapid increase in manufacturing sector inequality due to the impact of COVID-19, the textile and clothing industries increased relatively less, and the automobile parts manufacturing industry decreased, which can infer the support effect. In particular, in the automobile parts manufacturing industry, inequality was somewhat reduced, which shows that the effect of supporting SMEs in the industry would have been greater than those in the textile and clothing industry. The sports and entertainment-related service industry showed a sharp change in the distribution of corporate sizes during the COVID-19 period, indicating that there was government support, but the impact of social distancing was significant.

V. Policy Implications

Finally, we present policy implications based on the above research results. First, it is necessary to foster and support top-tier companies to defend against global economic fluctuations and strengthen international competitiveness. In particular, the institution in charge of competition policies domestically and the institution that helps companies improve their competitiveness are different and the focus of policies is distinctive, so comprehensive attention and perspective of policymakers are needed.

Second, it is urgent to respond to new issues related to competition policy in the domestic market. The behavior of emerging big tech and platform companies is different from monopoly companies in the past, so consumer welfare is not impaired, but it burdens nearby and other market participants. Therefore, a view that deviates from the focus on monopoly pricing is also essential for competition policy.

Third, measures to support global corporate growth and countermeasures against changes in the industrial landscape should be prepared. Investment and R&D expansion at the corporate level is essential for corporate growth, and measures are needed to boost investment in recently emerging intangible assets. In addition, it is important to revitalize the movement of economic resources to cope with changes in the inter-industry landscape accompanied by the crisis.

Fourth, policies to revitalize start-ups and clo-

asures are required. The decline in new companies' market entry and exit rates is a symptom of an aging economy contributing to the overall decrease in productivity. Therefore, enhancing the revitalization of the corporate ecosystem and expanding the size of enterprises are essential to enhance the dynamics of the economy.

Fifth, it is necessary to find an appropriate combination of government roles in times of crisis. In particular, it is important to grasp the detailed status of economic stabilization policies in relation to SMEs, and at the same time, clear judgments on the appropriate size of support measures, the period of support, and the timing of collection are urgently needed. **KIEP**