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Dialogue, Debate, and Discussion

Resilience under *Weiji:* Evidence from Chinese Listed Companies

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> *Any circumstance hitting a limit will begin to change. Change will in turn lead to an unimpeded state, and then lead to continuity.*
>
> — *I Ching*

The Chinese word for crisis, *weiji*, appears to bear two opposite but complementary meanings: danger and opportunity. The worldwide outbreak of the COVID-19 pandemic has largely frozen the Chinese economy and undermined investors' confidence, leading to hardship for many businesses. On January 29, 2020, shortly after the Wuhan shutdown, the General Office of the State Council of China issued an urgent notice regarding the resumption of operations, which encouraged Chinese companies to produce key anti-epidemic supplies such as masks and medical devices. Some 'lucky' ones – e.g., companies in the pharmaceutical industry or in relevant anti-epidemic businesses – could, thus, take advantage of the opportunity side of *weiji*. However, what's remarkable is that thousands of Chinese companies, since the beginning of 2020, have proactively adjusted their businesses or transformed their production to anti-epidemic supplies. Though hit by the crisis, these companies have managed to turn the threat of an unexpected, disruptive event into renewal opportunities by demonstrating the organizational resilience needed to survive and recover from the crisis (Ortiz-De-Mandojana & Bansal, 2016; Rao & Greve, 2018; Vogus & Sutcliffe, 2007). Note, also, that among the resilient companies, some have exhibited drastic changes in the scope of their businesses, while others have engaged in relatively moderate shifts. Responding to the crisis in a more moderate manner is in line with the Chinese philosophy of *zhongyong*, which suggests that one should balance opposing forces and avoid going to extremes in all situations, perhaps more so in the context of crisis (Li, Leung, Chen, & Luo, 2012; Zhou, Li, Zhou, &

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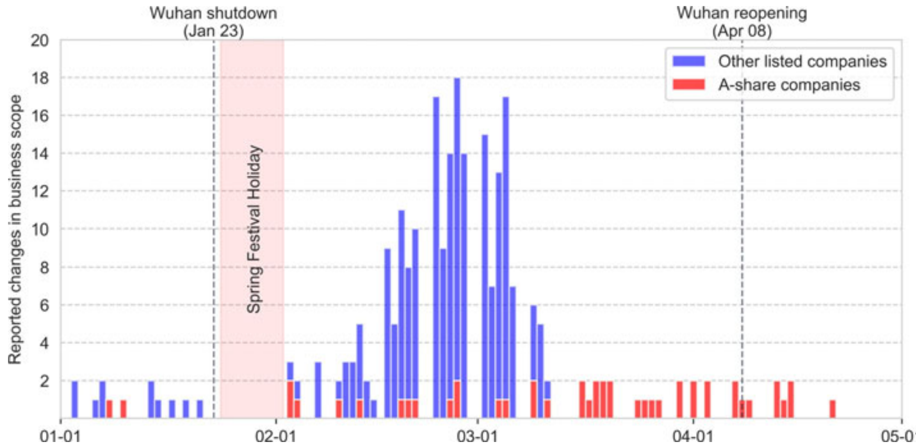

Figure 1. Reported addition of anti-epidemic businesses between Jan 1 and May 1, 2020

Prashantham, 2019). In this commentary, we explore the following questions: What are the characteristics of these resilient companies? Have they performed better during the COVID-19 crisis? Has a strategy of moderation helped companies to seize opportunities presented by the crisis?

To identify the resilient organizations, we investigate all companies listed in the Chinese equity market with businesses involving masks, medical devices, thermometers, disinfectants, and medical protective clothing. We identify 2,195 companies from the *TianYanCha* database (www.tianyancha.com), 314 of which are listed on the A-share stock market.[1] More than 10% of these companies (259 of the 2,194 companies and 47 of the 314 A-share companies) added anti-epidemic businesses during the period of January 1 to May 1, 2020 (see Figure 1). Therefore, a considerable number of companies demonstrated resilience and dynamic capabilities after the outbreak of COVID-19.

Figure 2 shows the distributions of A-share companies with anti-epidemic businesses across the three boards.[2] Companies with adjusted business scopes account for a larger share on the SME and GEM markets than on the Main Board. This distribution implies that smaller companies are more likely to adjust their business scope due to their flexibility and sensitivity to the external business environment. The majority of resilient organizations (43 out of 47) belong to the manufacturing sector, indicating manufacturing capability as fundamental for organizational resilience. Their 2019 financial statements show that companies that added anti-epidemic businesses had higher free cash flow before the crisis compared to those with existing anti-epidemic businesses, indicating that slack resources may be an enabler of organizational resilience (Vogus & Sutcliffe, 2007).

To evaluate these resilient companies' performance, we supplement our dataset with the stock prices and financial statements of A-share companies. Stock prices are a good indicator of market confidence and are highly correlated with companies' financial performance (Wright, Ferris, Hiller, & Kroll, 1995).

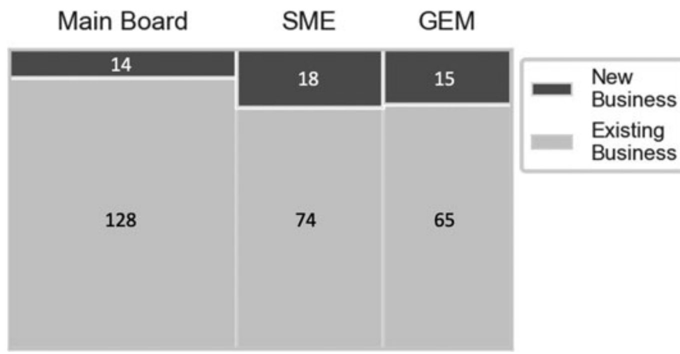

Figure 2. Distribution of A-share companies with anti-epidemic business (new vs. existing) across three markets: Main Board Market; Small and Medium-Sized Enterprise (SME) Market; and Growth Enterprise Market (GEM).

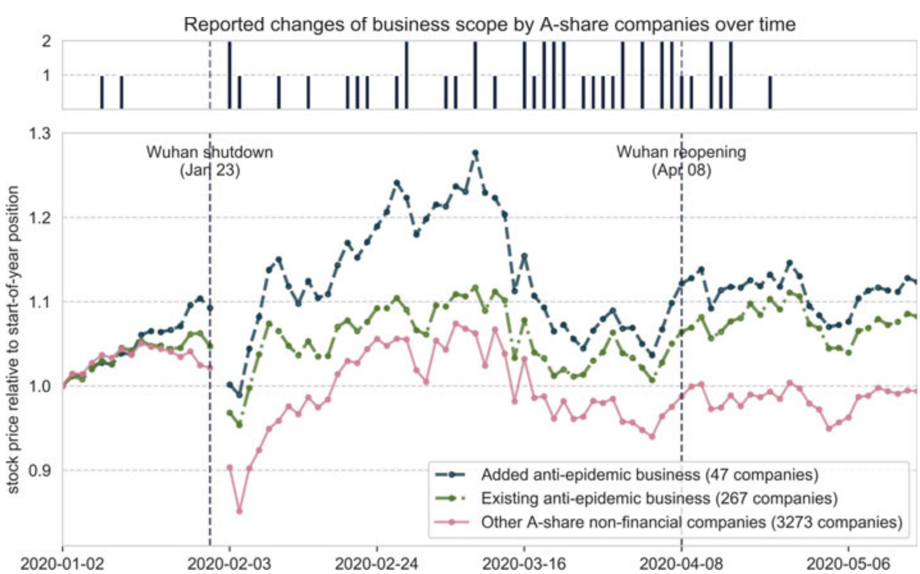

Figure 3. Average stock prices of resilient, lucky, and unchanged A-share companies.

Although limitations due to the observation period, data availability, and sample size make it hard to draw causal interpretations or make long-run predictions, we observe interesting patterns correlated with organizational resilience.

We divide all A-share companies into three groups: resilient companies with added anti-epidemic businesses (47 companies); 'lucky' companies with existing anti-epidemic businesses (267 companies); and other non-financial companies without anti-epidemic businesses (3273 companies). Figure 3 shows the average stock prices of the three groups from January 2 to mid-May relative to the start-of-year price.[3] After the Wuhan shutdown and the extended Spring Festival Holiday from January 24, the stock prices of all three groups fell drastically

Table 1. Coding of value chain strategies before and after business adjustment.

	Code	*Explanation*	*Number of Companies*
Ex-ante value chain strategy	1	specialized in certain parts of the value chain.	7
	2	vertically integrated from R&D to production and sales	40
Ex-post adjustment	1	new businesses covering the sales of anti-epidemic supplies	10
	2	new businesses covering the production and sales	25
Scope	3	new businesses covering the R&D, production and sales	12

Table 2. Comparison of business adjustment scope and ex-ante value chain strategies.

		Adjustment scope			
		1	*2*	*3*	*Total*
Ex-ante value chain	**1**	2	5	0	7
	2	8	20	12	40
Total		10	25	12	47

immediately after the reopening of the stock market on February 3 and reached bottom on February 4. Enjoying the benefit of anti-epidemic businesses, the 'lucky' group quickly recovered, while in mid-May, most of the others still had lower stock prices than they had at the start of the year. In contrast, the resilient group's performance has not only been superior to the performance of the companies with no anti-epidemic businesses, but has also been slightly better than that of the lucky group. Therefore, we find strong evidence that companies that made business scope adjustments during the crisis have outperformed those that did not.

Do the resilient organizations demonstrate variations in their position in the market and their scopes of adjustment? To answer that question, we look into the 47 resilient companies' value chain strategies by coding their business scope descriptions before and after adding the anti-epidemic businesses (see Tables 1 and 2). The majority of the resilient companies (40 out of 47) are vertically integrated from R&D to production and sales (see Table 2). To cope with the COVID-19 challenge, the vertically integrated companies were more likely to add new anti-epidemic businesses covering both upstream R&D activities and downstream marketing and sales. In contrast, for companies specializing in downstream sales or lower-value-added production, the added businesses are constrained to relatively simple activities, such as sales of anti-epidemic supplies.

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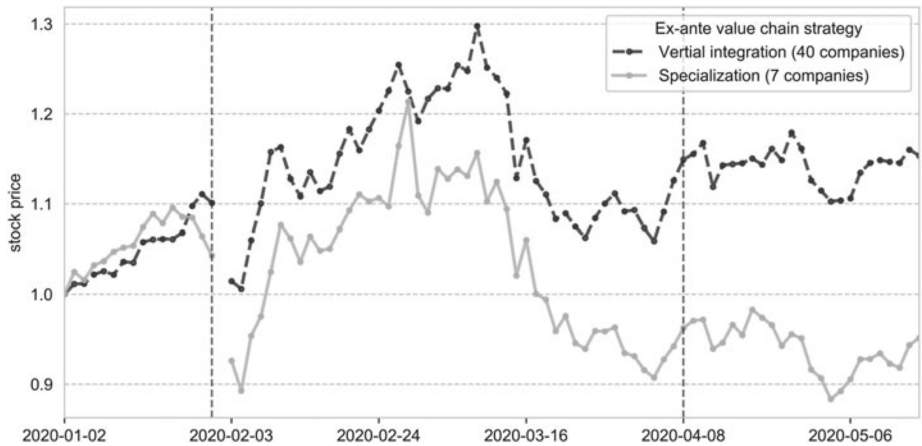

Figure 4. Average stock prices of resilient companies with different ex-ante value chain strategy (vertically integrated vs. specialized).

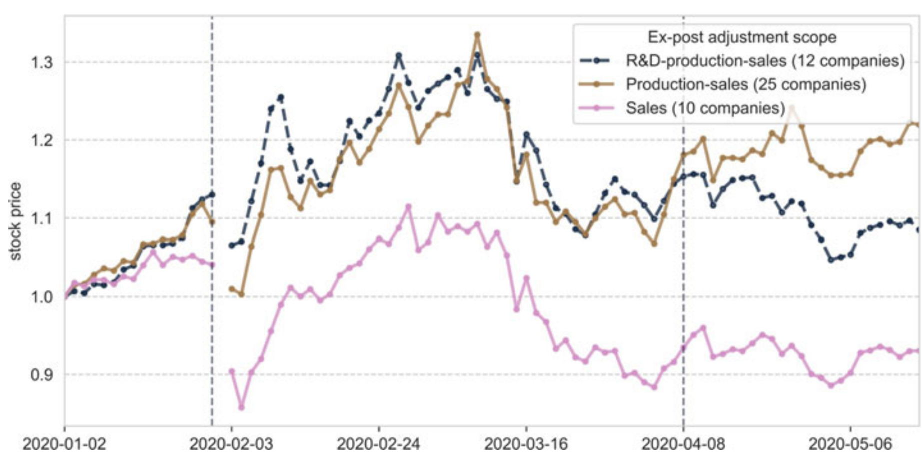

Figure 5. Average stock prices of resilient companies with different business adjustment scope.

Strong value-chain capabilities and innovation potential have enabled organizations' resilience and facilitated better performances during the crisis. Our observations show that vertically integrated companies perform much better than specialized companies in terms of stock price (see Figure 4). This implies that these companies have not only survived the crisis, but have also seized the growth opportunities created by the crisis. According to the value chain theory and resource dependence theory, vertically integrated organizations are less dependent on external value chain actors and, thus, less impacted than specialized companies when an external disruptive crisis occurs. Further, companies undertaking upstream R&D activities show stronger innovation capabilities and are, therefore, more capable of sensing, analyzing, and leveraging external opportunities.

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The scope of business adjustment also proves to be relevant to an organization's performance and recovery. Figure 5 depicts the stock market performances for resilient companies with different business adjustment scopes. Companies with added R&D and production of anti-epidemic supplies after the outbreak of COVID-19 had their stock prices quickly bounce back and even increase during the crisis. However, the specialized companies, despite their demonstrated resilience, usually had their added anti-epidemic businesses restricted to downstream sales. Their average stock price shows that these companies were far from full recovery in mid-May. It's also interesting to see that after the Wuhan reopening, companies that added production and sales of anti-epidemic supplies still show a strong growth trend. We boldly interpret that adding new businesses that included R&D (an in-depth change) may possibly have demanded too many of the companies' resources during and after the crisis. Thus, companies with a moderate change in business scope may have quickly responded to the crisis and were also flexible enough to return to their normal operations when the demand for anti-epidemic supplies decreased.

In summary, some companies responded proactively to the crisis and to the government's need for supplies by adding anti-epidemic related businesses. These companies demonstrated superior performance in the stock market, driven mainly by those with a vertically integrated business scope. Instead of passively suffering from the crisis, their organizational resilience allowed them to leverage the opportunities inherent in the crisis. Among the resilient companies, those with innovation capabilities and leadership in the value chain were less dependent on the external network, had more slack resources, and showed better performance during the crisis. This is in line with the prediction of resource dependence theory. The empirical data show that when adding new businesses to cope with COVID-19, resilient organizations that made moderate changes not only adapted quickly and efficiently to the challenges presented by the crisis, but also flexibly reconfigured their resources after the crisis.

The COVID-19 crisis provides a timely context in which to investigate Chinese companies' organizational resilience. As the backbone of the national economy, the Chinese manufacturing sector has played a pioneering role in responding to the call of both the government and the market during the COVID-19 crisis, demonstrating its resilience and competence. Although limitations due to observation period, data availability, and sample size make it hard to draw a causal interpretation or make long-run predictions, our analysis provides strong evidence that organizational resilience results in better financial performance and strengthens the market's confidence in these companies. It is interesting to observe that companies with moderate business scope change (adding production and sales of anti-epidemic supplies) exhibited better performances compared to those with no change, slight change (adding sales only), or in-depth change (adding R&D, production and sales). While it is advisable for companies to respond proactively and demonstrate organizational resilience when facing a

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crisis, they should avoid going to extremes. Adjustment is essential in an uncertain environment, but a profound change of business scope may cost too many resources and exert a negative impact on current businesses. The findings are in line with the Chinese philosophy of *zhongyong*, which highlights the strategy and mindset of balanced moderation (Cheung et al. 2003, Zhou et al. 2019). Our findings hereby suggest that the *zhongyong* philosophy can guide firms to survive and recover when facing external turbulence. Reconfiguring and leveraging current resources and capabilities while avoiding extreme reaction is hereby a superior strategy to cope with disruptive circumstances. We hope that our initial findings will encourage case studies, as well as a more in-depth analysis of companies' long-run performance when more data become available.

NOTES

[1] The Chinese equity market consists of the Exchange Trading Market (A-share Market) and the Over-the-Counter (OTC) trading market. The A-share market (Exchanging Trading Market) consists of four boards. The Main Board serves mainly large enterprises; the SME (Small and Medium-Sized Enterprises) Board serves companies with tradable shares of less than 100 million; and the Growth Enterprises Market (GEM) Board is designed for high-tech SMEs. In mid-2019, the STAR board (Sci-Tech Innovation Board) was launched for small high-tech companies. The OTC market includes the New Third Board and the New Fourth Board, respectively.

[2] We focus on A-share companies because financial statements and real-time stock trading prices for companies listed on OTC market trading markets are not publicly available. The 77 companies listed on the new STAR board have no added anti-epidemic businesses, so they are not included in our analysis. Our analysis below also excludes companies in the financial industry (24 in the A-share market), as the dramatic differences in the business scope cannot support reasonable comparison. The stock prices and financial statements are obtained using Python Tushare package.

[3] We first calculate the daily opening stock price as a ratio to the start-of-year price for each company and then take the average for all companies in the same group.

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