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2023 China Business Report

On Business Performance and Operations of Companies in China in the New Business Environment

Howei Wu │ Bin Xu │ Feida Zhang │ Ruoshi Li │ Wei Wu

China Europe International Business School CEIBS China and the World Research Area

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ACKNOWLEDGEMENT

Preface

1.1. INTRODUCTION OF RESEARCH PROJECT

The China and Europe International Business School (CEIBS) Research Team with three professors and two research assistants conducted an online survey from November 18th to November 27th 2022, receiving 1,474 unique responses in total. 1,181 (80.2%) survey participants work for Chinese-owned firms or firms with 50% or more Chinese ownership, and 291 (19.8%) participants work for foreign-owned firms in China or firms with more than 50% foreign ownership.[1]

According to Figure 1.1, 95% of participants are CEIBS alumni or students, and 55.6% are alumni or students of EMBA programme. Figure 1.2 shows that 42.1% of participants are principal decision makers (such as CEOs/GMs/Main Owners/Main Partners/Chief Representatives), 35.5% are deputy decision makers (such as VPs/Vice GMs/Directors/Assistants of GM), and the other 18.3% are senior executives of their divisions. 77.1% of the participants have at least 10 years of managing experience (Figure 1.3). Moreover, we have a gender-balanced survey with 31.82% female and 67.64% male.

FIGURE 1. 1. CEIBS ALUMNI

Legend:
- Open program or CSP
- DBA
- EMBA
- FMBA
- GEMBA
- HEMBA
- MBA
- Not yet

Values shown: 14.4%, 2.5%, 55.6%, 9.0%, 1.0%, 10.6%, 2.5%, 4.4%

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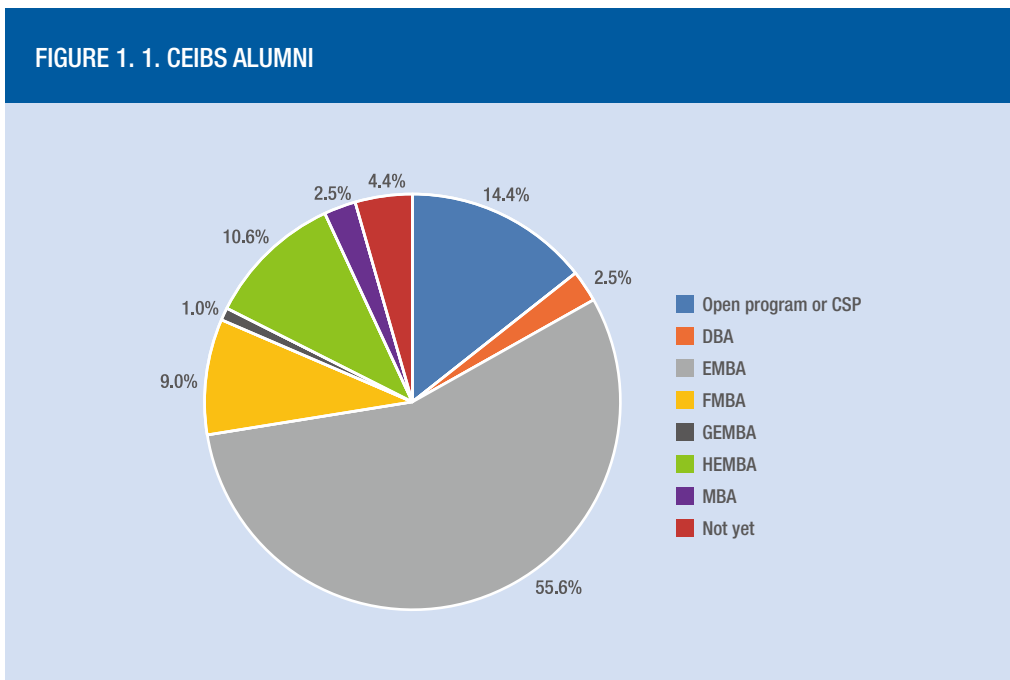
[1] Foreign-owned firms include Hong Kong (China), Macao (China) and Taiwan (China) companies. Chinese-owned firms refer to mainland China companies. Hereinafter we will refer to them as "foreign-owned firms" or "Chinese-owned firms".

FIGURE 1. 2. POSITION IN THE COMPANY

Position	Percentage
Principal decision-making role	42.1%
Deputy decision making role	35.5%
Project Manager/Business Development Manager/Product Manager	4.7%
Marketing/Sales Executive	4.3%
Other	4.1%
HR executive	3.3%
Finance Executive	3.3%
Manufacturing, Operations, Logistics or Engineering Executive	2.0%
R&D Executive	0.5%
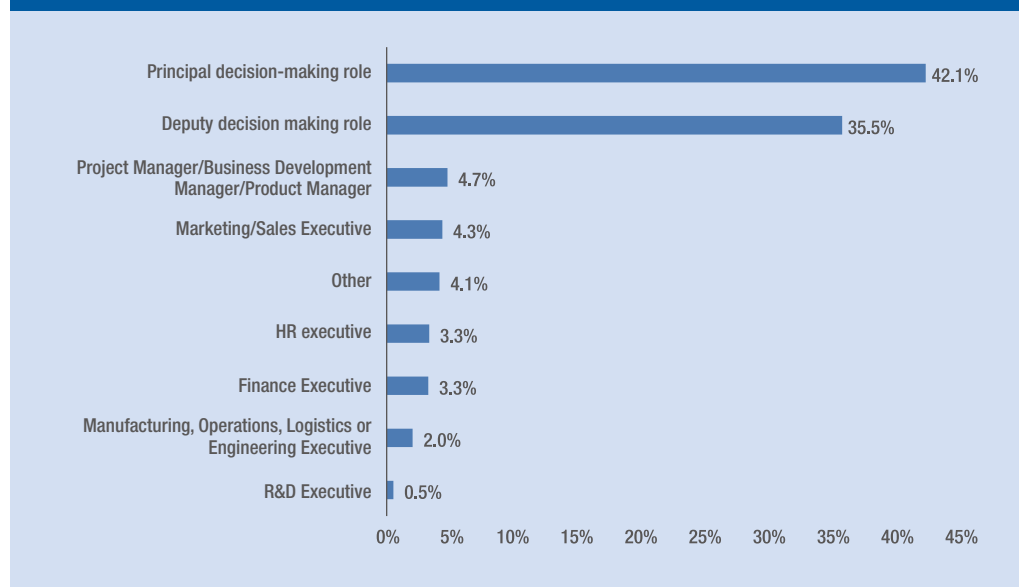
FIGURE 1. 3. YEARS OF MANAGING EXPERIENCE

Years	Percentage
More than 20 years	19.0%
10-19 years	58.1%
5-9 years	18.8%
less than 5 years	4.1%
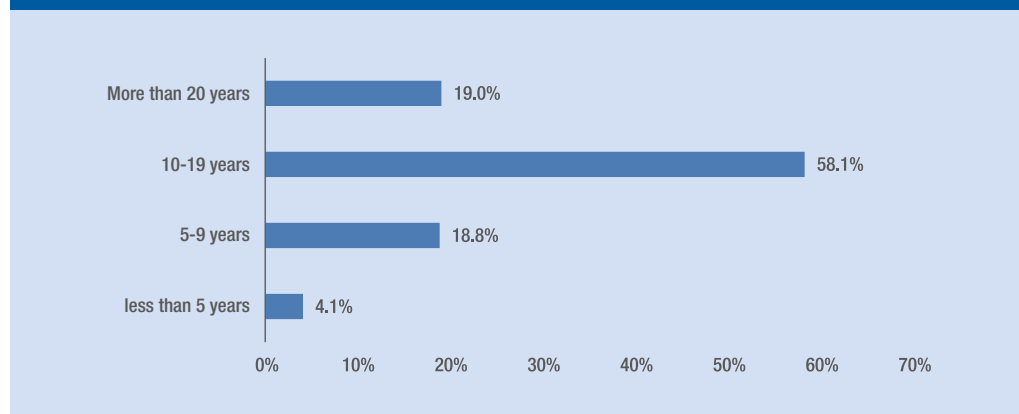
The professional distributions show that the survey sample is not a typical sample of enterprises operating in China, but rather reflects the situation of the enterprises of the senior executives who have study experiences in CEIBS, especially that of enterprises of more than half of the EMBA alumni and students. According to the class profile of CEIBS EMBA programme, the average age of participants is 41, average years of working experience is 17, and their average years of managing experience is 12. More than 95% of the participants are senior managers. CEIBS has more than 20,000 alumni, including EMBA alumni who participated the most in this survey among all alumni or students. Based on the above information, we conclude that the survey result has reference value in the sense that it largely reflects how "head companies" (the leading companies and most active ones in their respective industries) in China assessed and judged the impacts of business environment and innovation on business operations. This is also confirmed by the survey results of the reported market positioning of their products and services (in Section 2.5).

1.2. MACROECONOMIC BACKGROUND

The macroeconomic context of this survey can be summarized by the preliminary accounting results of the Chinese economy for the fourth quarter of 2022 released by the National Bureau of Statistics. Figure 1.4 shows the year-on-year growth rates of value added and gross domestic product (GDP) of the Chinese economy by industries in the fourth quarter of 2022, measured using 2020 as the constant price base year, i.e., the growth rate of the fourth quarter of 2022 values over the fourth quarter of 2021 values. The data shows that the Chinese economy was negatively impacted to some extent by the restriction of movement of people and the shutdown of some industries due to the COVID-19 epidemic, with a year-over-year growth rate of only 2.9%. The Real Estate industry experienced the largest decline (-7.2%) due to both the epidemic and policy, with the sector having a significant increase of 21.4% in Q1 2021. The Accommodation and Restaurants industry had the next largest decline (-5.8%).

The primary industry (Agriculture, Forestry, Animal Husbandry and Fishery) rose slightly, shows a year-on-year growth rate of 4.1%. Construction and Industrial sector in the secondary industry also showed the same trend of small growth, with year-on-year growth rates of 7.0% and 2.5%, respectively. The tertiary industry (service sector), which showed signs of rebound in 2021, experienced another winter of performance, with the Real Estate industry experiencing the largest decline, turning negative from a 21.4% year-over-year growth rate in the first quarter of 2021. In the service sector, the year-on-year growth rates of the Accommodation & Restaurants industry and Transport, Storage and Post industry also turned from positive to negative, with growth rates of -5.8% and -3.9%, respectively. The Finance and Information Transmission, Software & Information Technology Services industries have continued to grow since the first quarter of 2020, with growth rates of 5.9% and 10.0%, respectively.

FIGURE 1. 4. INDUSTRY GROWTH RATE OF CHINESE ECONOMY IN 4TH QUATER OF 2022 (Y-O-Y)
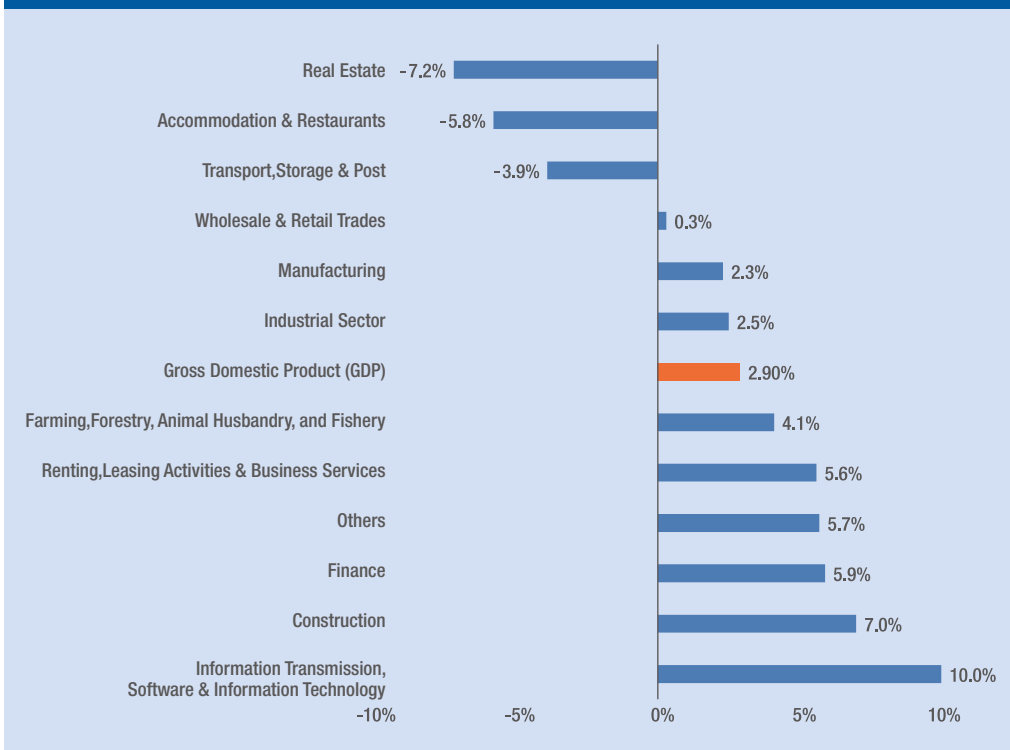
DATA DISPLAY: THE PRELIMINARY ACCOUNTING RESULTS OF CHINA'S 4TH QUARTER GDP RELEASED BY NATIONAL BUREAU OF STATISTICS (NBS) OF 2022					
Industry	**Share of GDP**	**Broad Classification**	**Current Value (Trillion yuan)**	**Share of GDP**	**Year-on-Year Change**
Primary Industry	13.9%	Farming, Forestry, Animal Husbandry, and Fishery	3.51	10.4%	4.1%
Secondary Industry	44.9%	Construction	2.64	7.9%	7.0%
		Industrial Sector (Include Manufacturing)	10.68	31.8%	2.5%
Tertiary Industry	41.2%	Accommodation & Restaurants	0.52	1.6%	-5.8%
		Wholesale & Retail Trades	3.19	9.5%	0.3%
		Transport, Storage & Post	1.28	3.8%	-3.9%
		Renting, Leasing Activities & Business Services	1.19	3.5%	5.6%
		Real Estate	1.85	5.5%	-7.2%
		Others	5.11	15.2%	5.7%
		Finance	2.38	7.1%	5.9%
		Information Transmission, Software & Information Technology	1.21	3.6%	10.0%
Total	**100.0%**	**Gross Domestic Product (GDP)**	**33.55**	**100.0%**	**2.90%**

It has been more than three years since the COVID-19 epidemic spread globally in early 2020, and the development of major economies around the world, including China, has been impacted in multiple dimensions. With the full liberalization of China's epidemic quarantine policy by the end of 2022, the overall recovery of the Chinese economy is expected to be imminent and international trade will continue to pick up, but the recovery trajectory is heterogeneous among different industries and firms, with small and medium-sized companies in service sector having a more difficult road to recovery.

SECTION 2

Description of Sample Enterprises

2.1. REGISTRATION TYPES

The companies in our survey sample are divided into 8 categories according to their ownership structures (see Figure 2.1). More than half of companies, specifically 54.9%, are wholly private-owned Chinese enterprises. The second-largest number is wholly foreign-owned enterprise which accounts for 16.0%. Chinese State-Owned Enterprises (SOEs), which is defined as majority state-owned enterprises plus wholly state-owned enterprises, account for 9.2% (135 firms) of the whole sample. Chinese private-owned enterprise, which contains wholly private-owned enterprises and majority private-owned companies, takes up 65.5% (966 firms). Foreign firms including wholly foreign-owned and majority foreign-owned joint ventures account for 19.7% (291 firms).

Among the firms with foreign ownership, top 3 regions are European Union (29.7%), United States (28.6%), and Hong Kong China (19.3%). The exact ranking is reported in Figure 2.2.

FIGURE 2. 1. SAMPLE BY REGISTRATION TYPE
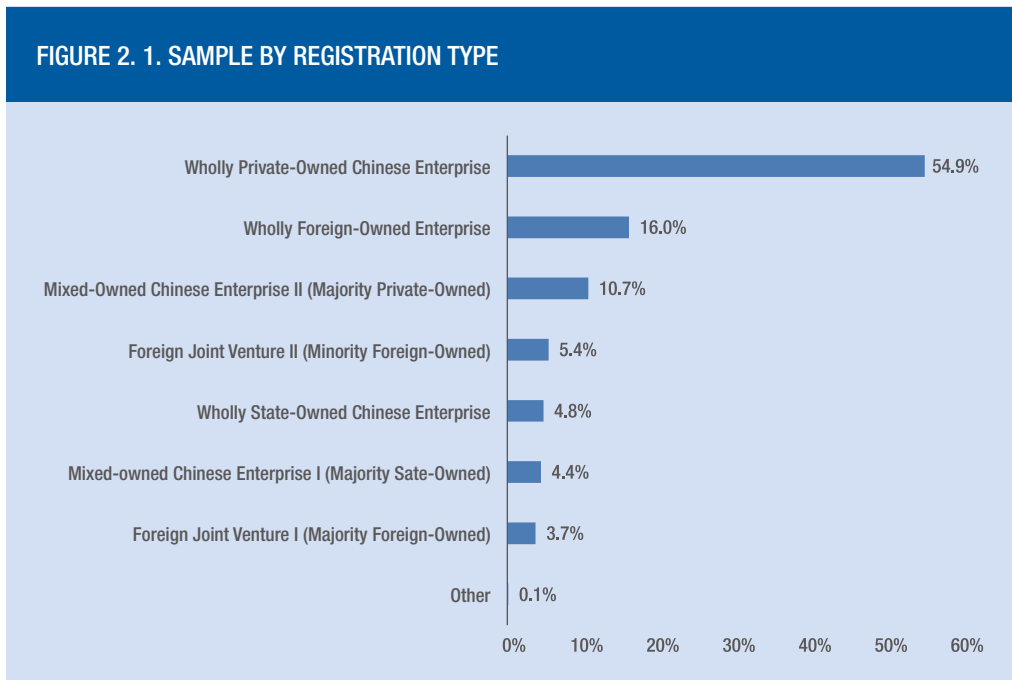
DATA DISPLAY: REGISTRATION TYPES		
	Number	**Percent**
Wholly Private-Owned Chinese Enterprise	809	54.90%
Wholly Foreign-Owned Enterprise	236	16.00%
Mixed-Owned Chinese Enterprise II (Majority Private-Owned)	157	10.70%
Foreign Joint Venture II (Minority Foreign-Owned)	80	5.40%
Wholly State-Owned Chinese Enterprise	70	4.80%
Mixed-owned Chinese Enterprise I (Majority Sate-Owned)	65	4.40%
Foreign Joint Venture I (Majority Foreign-Owned)	55	3.70%
Other	2	0.10%
Total	**1,474**	**100.0%**

FIGURE 2. 2. SOURCE OF BIGGEST OWNERSHIP

European Union	29.7%
USA	28.6%
Hong Kong (China)	19.3%
Other	6.8%
Japan	5.5%
ASEAN	4.4%
South Korea	1.8%
Taiwan (China)	1.8%
Latin America	0.5%
Africa	0.5%
Australia and New Zealand	0.5%
Russia	0.3%
India	0.3%
Central Asia	0.0%
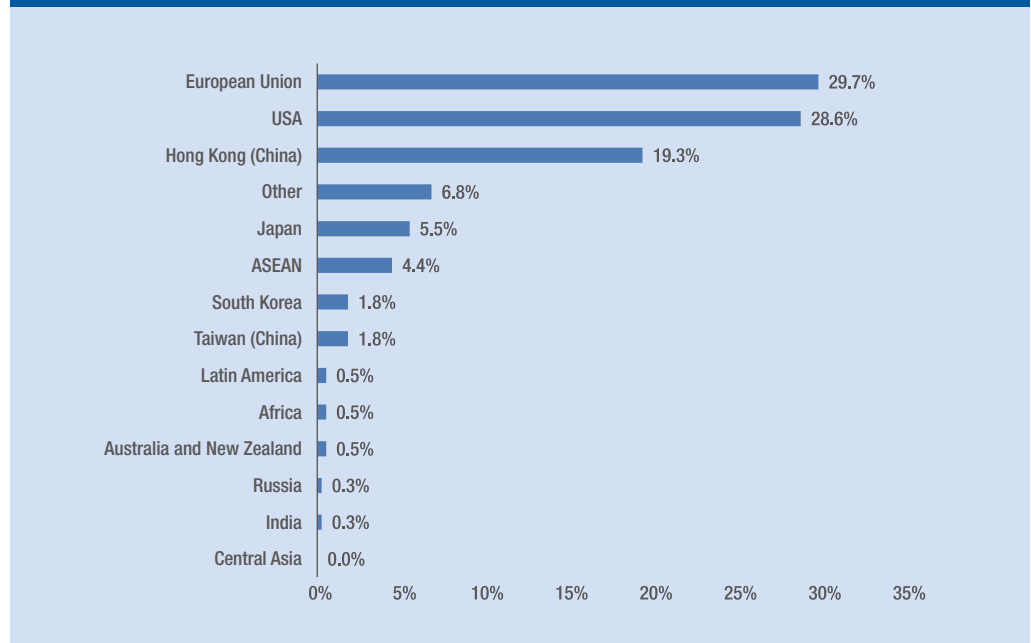
2.2. REVENUE CONTRIBUTION OF BUSINESS IN CHINA

Figure 2.3 presents the revenue contribution of business-in-China. 1,149 firms report 50% or more revenue from business-in-China (78%), we define them as "introverted". Firms with 50% or more revenue from overseas business are defined as "extroverted" (323 firms with a share of 22%). Among extroverted firms, there are 24 extreme cases (1.6%) where those firms only have overseas businesses and receive zero revenue from business-in-China.

FIGURE 2. 3. REVENUE CONTRIBUTION OF BUSINESS-IN-CHINA
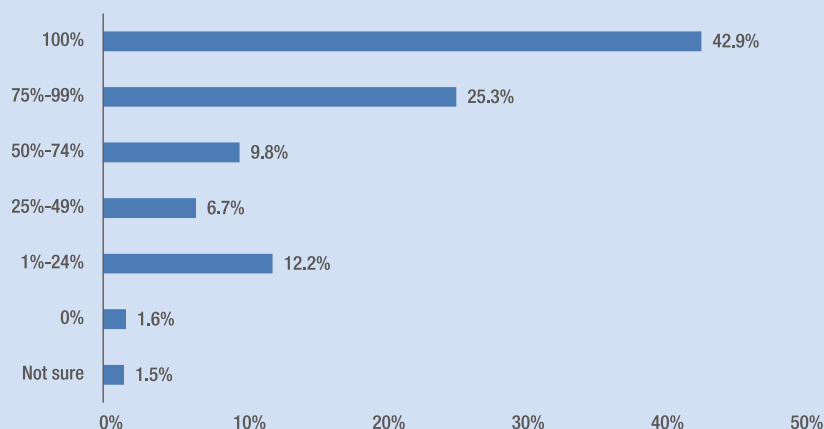
DATA DISPLAY: REVENUE CONTRIBUTION OF BUSINESS-IN-CHINA			
		Number	Percent
Introverted: Business in China accounts for more than 50% of the total revenue (N=1,149; Share=78%)	100%	632	42.9%
	75%-99%	373	25.3%
	50%-74%	144	9.8%
Extroverted: Overseas Business accounts for more than 50% of the total revenue (N=323; Share=22%)	25%-49%	98	6.7%
	1%-24%	179	12.2%
	0%	24	1.6%
	Not sure	22	1.5%
	Total	1,472	100.0%

Figure 2.4 presents firm' main locations of business-in-China. The top 3 locations are Shanghai (19.1%), Guangdong Province (13.6%) and Beijing (12.8%). Of the firms that chose the "other" option when they were asked about where the main locations of their business in China are, a large portion of firms (217 firms) reported that they operate nationwide, while another major portion of firms (123 firms) mainly operate in eastern China.

FIGURE 2. 4. MAIN LOCATIONS OF BUSINESS-IN-CHINA

DATA DISPLAY: MAIN LOCATIONS OF BUSINESS-IN-CHINA		
	Number	**Percent**
Shanghai	855	19.10%
Guangdong Province	611	13.60%
Jiangsu Province	585	13.10%
Beijing	573	12.80%
Other	567	12.70%
Zhejiang Province	562	12.60%
Shenzhen	473	10.60%
Tianjin	252	5.60%
Total	**4,478**	**100%**

2.3. INDUSTRY DISTRIBUTION

Figure 2.5 displays the companies in our survey sample divided into three categories based on the industries they operate in. Nearly half (49.6% or 742 companies) of our sample companies operate in the service industry, while 510 companies (34.1% of our total sample) operate in the manufacturing industry. The smallest group of companies (243 companies or 16.3% of our sample) operate in both the service and manufacturing industries.

FIGURE 2. 5. INDUSTRY DISTRIBUTION
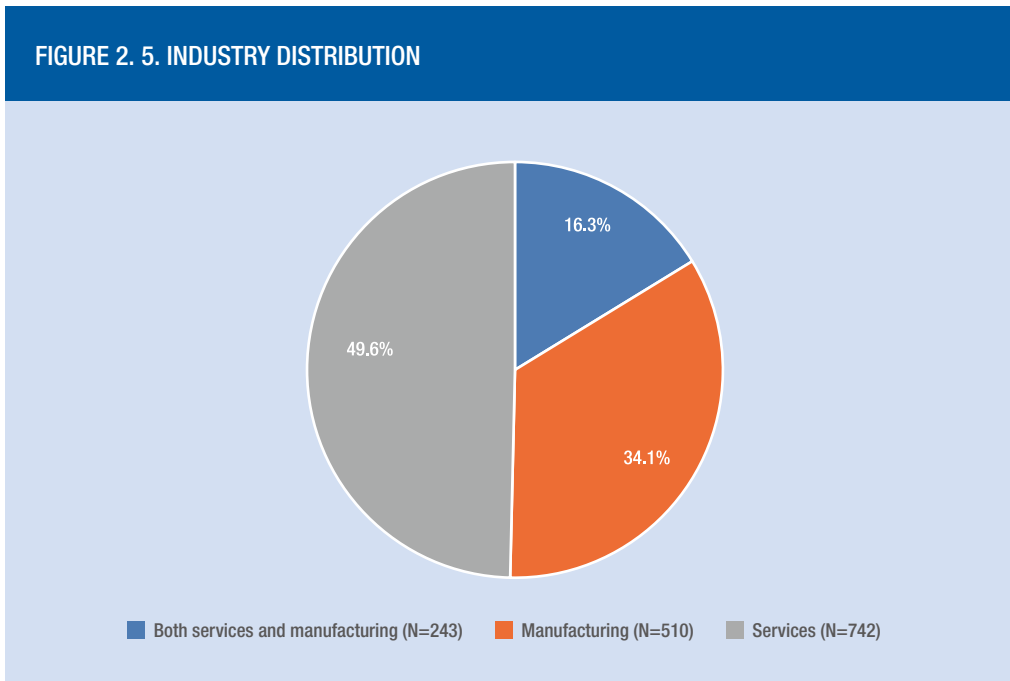
Figure 2.6 illustrates the distribution of sub-industries within the service sector of our sample companies. We have categorized the entire service industry into 11 sub-industries. The top three sub-industries are Financial Services, Professional Services & Business Services, and Wholesale & Retail. Specifically, there are 176 Financial Services companies, representing 17.9% of our entire sample, followed closely by 175 Professional Services & Business Services companies, which make up 17.8% of our sample. In the Wholesale & Retail sub-industry, there are 115 companies accounting for 11.7% of our sample. The fewest companies in our sample (35 companies) belong to the Catering, Accommodation & Travel sub-industry, accounting for only 3.6% of the total companies in our sample.

FIGURE 2. 6. INDUSTRY DISTRIBUTION OF SERVICE SECTOR

Industry	Percent
Financial Services (N=176)	17.9%
Professional Services & Business Services (N=175)	17.8%
Wholesale & Retail (N=115)	11.7%
Other services (please specify): (N=110)	11.2%
Health Care, Medical & Sanitation (N=100)	10.2%
Telecommunications & Information Services (N=81)	8.2%
Real Estate Services (Note: Real estate construction belongs to manufacturing) (N=68)	6.9%
Logistics, Transportation & Storage (N=46)	4.7%
Culture, Entertainment & Recreation (N=43)	4.4%
Education (N=36)	3.7%
Catering, Accommodation & Travel (N=35)	3.6%

DATA DISPLAY: SERVICE SUB-INDUSTRY DISTRIBUTION

	Number	Percent
Financial Services	176	17.9%
Professional Services & Business Services	175	17.8%
Wholesale & Retail	115	11.7%
Other services (please specify)	110	11.2%
Health Care, Medical & Sanitation	100	10.2%
Telecommunications & Information Services	81	8.2%
Real Estate Services (Note: Real estate construction belongs to manufacturing)	68	6.9%
Logistics, Transportation & Storage	46	4.7%
Culture, Entertainment & Recreation	43	4.4%
Education	36	3.7%
Catering, Accommodation & Travel	35	3.6%
Total	**985**	**100.0%**

Figure 2.7 illustrates the distribution of sub-industries within the manufacturing sector of the surveyed companies. There are 12 sub-industries in total in the manufacturing industry, with the top three sub-industries being Pharmaceutical Products & Medical Devices, Machinery & Equipment, and Consumer Products. Specifically, there are 129 companies operating in the Pharmaceutical Products and Medical Devices sub-industry, representing 17.1% of our sample companies. The second largest group of manufacturing companies (105 companies) operate in the Machinery and Equipment sub-industry, accounting for 13.9% of our entire sample. A similar 13.7% of our surveyed companies are Consumer Products companies, with 103 of them. The fewest sample companies run their businesses in the Paper-making & Printing sub-industry, with only 8 of them, making up just 1.1% of our surveyed sample.

FIGURE 2. 7. INDUSTRY DISTRIBUTION OF MANUFACTURING SECTOR

Sub-industry	Percentage
Pharmaceutical Products & Medical Devices (N=129)	17.1%
Machinery & Equipment (N-105)	13.9%
Consumer Products (N=103)	13.7%
Communications & Electronic Products (N=89)	11.8%
Civil Engineering and Construction (N=80)	10.6%
Chemical & Energy Products (N=71)	9.4%
Automobile & Transportation Vehicles (N=59)	7.8%
Other manufacturing (please specify): (N=49)	6.5%
Agriculture, Forestry, Husbandry, Fishing & Mining (N=25)	3.3%
Metal & Non-Metallic Products (N=20)	2.7%
Public Utilities (such as water, electricity and gas supply) (N=15)	2.0%
Papermaking & Printing (N=8)	1.1%

DATA DISPLAY: INDUSTRY DISTRIBUTION OF MANUFACTURING SECTOR		
	Number	**Percent**
Pharmaceutical Products & Medical Devices	129	17.1%
Machinery & Equipment	105	13.9%
Consumer Products	103	13.7%
Communications & Electronic Products	89	11.8%
Civil Engineering and Construction	80	10.6%
Chemical & Energy Products	71	9.4%
Automobile & Transportation Vehicles	59	7.8%
Other manufacturing (please specify):	49	6.5%
Agriculture, Forestry, Husbandry, Fishing & Mining	25	3.3%
Metal & Non-Metallic Products	20	2.7%
Public Utilities (such as water, electricity and gas supply)	15	2.0%
Paper-making & Printing	8	1.1%
Total	**753**	**100.0%**

2.4. BUSINESS SIZES

Figure 2.8 presents the distribution of firm size. We measure firm size by number of employees in China, and divided firms into 9 subgroups.


FIGURE 2. 8. NUMBER OF EMPLOYEES IN CHINA

	Number of Employees	Number	Percent
Giant	50,000 or above	71	4.8%
Extra-Large	10,000 to 49,999	145	9.8%
Large	5,000 to 9,999	110	7.5%
Medium-to-Large	2,000 to 4,999	145	9.8%
Medium	1,000 to 1,999	130	8.8%
Small-to-Medium	300 to 999	339	23.0%
Small	50 to 299	355	24.1%
Extra-Small	10 to 49	148	10.0%
Micro	0 to 9	31	2.1%
	Total	**1,474**	**100.0%**

DATA DISPLAY: FIRM SIZE (NUMBER OF EMPLOYEES IN CHINA)

2.5. PRODUCT/SERVICE POSITIONING

Figure 2.9 displays the distribution of our sample companies' target positions. Our sample is distributed across 8 different types of target positions. The top three target positions are high-end & mid-end, high-end, and all ranges from low, middle to high target positions. Specifically, 503 companies consider themselves targeting both high-end & mid-end markets, representing 33.6% of our surveyed sample. The next biggest group consists of 380 high-end companies, which represent 25.4% of our sample. 291 companies position themselves in all market segments from low-, middle- to high-end markets, accounting for 19.5% of our sample companies.


FIGURE 2. 9. TARGET POSITION DISTRIBUTION
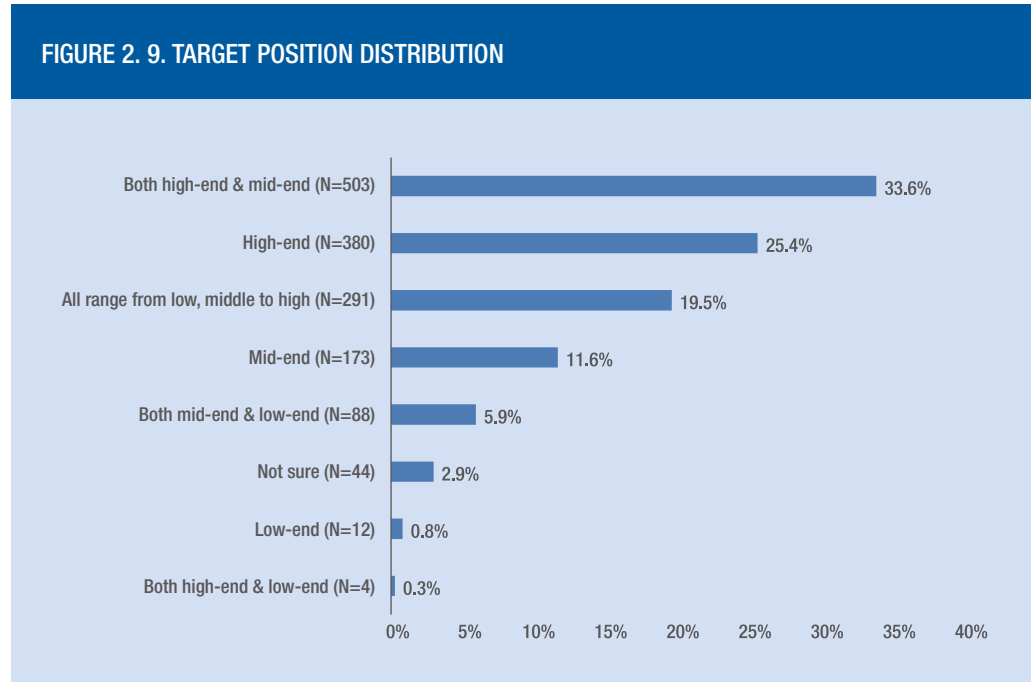
DATA DISPLAY: TARGET POSITION DISTRIBUTION		
	Number	**Percent**
Both high-end & mid-end	503	33.60%
High-end	380	25.40%
All range from low, middle to high	291	19.50%
Mid-end	173	11.60%
Both mid-end & low-end	88	5.90%
Not sure	44	2.90%
Low-end	12	0.80%
Both high-end & low-end	4	0.30%
Total	**1,495**	**100.0%**

2.6. CLIENT TYPES IN CHINA

Figure 2.10 presents the companies in our survey sample categorized into 5 groups based on the types of customers they serve. The top three customer types are companies/organizations (B2B), both individual (B2C) and companies/organizations (B2B), and individual (B2C) customers. Among our survey sample, 790 companies, accounting for more than half (52.1%) of the sample, serve companies/organizations (B2B) customers. The second largest group of companies (486 companies, representing 32.0% of the entire sample) serve both individual (B2C) and companies/ organizations (B2B) customers. The third largest group (199 companies, about 13.1% of the sample) serve individual (B2C) customers.

FIGURE 2. 10. CUSTOMER TYPE DISTRIBUTION
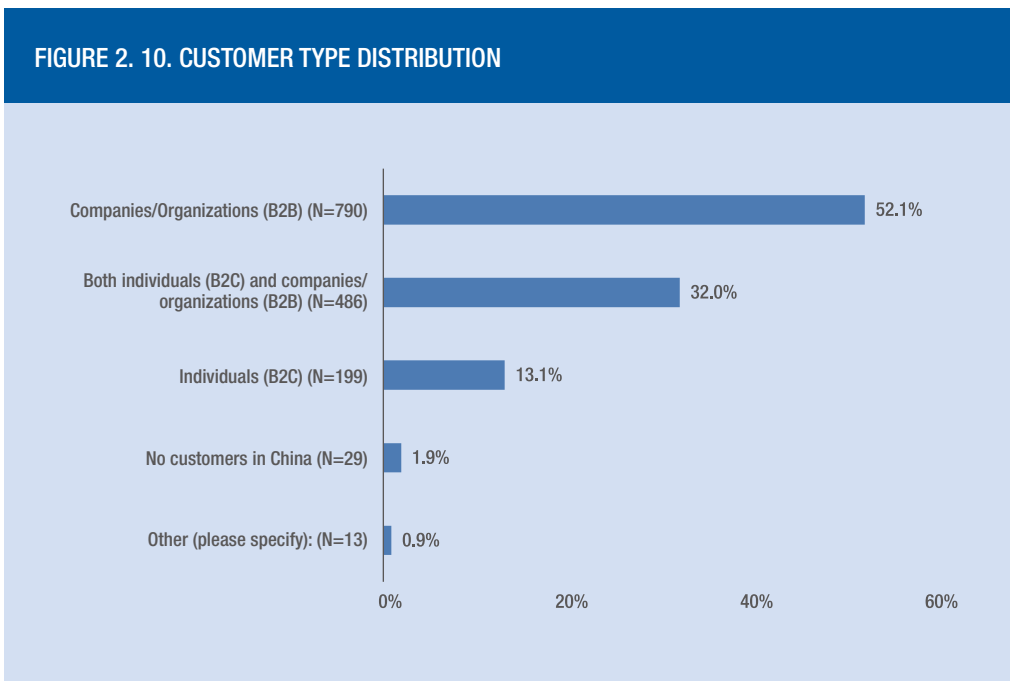
| DATA DISPLAY: CUSTOMER TYPE DISTRIBUTION		
	Number	**Percent**
Companies/Organizations (B2B)	790	52.1%
Both individuals (B2C) and companies/ organizations (B2B)	486	32.0%
Individuals (B2C)	199	13.1%
No customers in China	29	1.9%
Other (please specify):	13	0.9%
Total	**1,517**	**100.0%**

Analysis of Company Financial Performance

In November 2022, China Europe International Business School (CEIBS) conducted an online survey regarding the performance and operation of companies in China under the new business environment. Most of our survey participants are CEIBS alumni working in different industries, and we received 1,474 valid responses. Hence, we believe that the results of this survey have valuable implications to the Chinese economy in 2023. This report is going to analyze the 2022 financial performance of our sample firms, with more attention paid to those experiencing significant revenue declines.

3.1. OVERVIEW OF CORPORATE REVENUE

The revenue of a company paints a full picture of its production activities, market demand, and business environment during a year. Thus, using company revenue as a basis for analysis helps to conduct further investigation.

Figure 3.1 shows the respondents' changes in revenue in 2022 compared with 2021. The strict COVID-19 pandemic prevention and control policies implemented in Q2 2022 gave rise to a widespread negative market sentiment in China, but our survey shows that this negativity did not spread to all areas of the market. The proportion of companies with a revenue decrease is not overwhelmingly higher than that of those with a revenue increase (40.6% vs. 35.8%). The proportion of respondents in each revenue-change range does not monotonically change with the range in either the revenue-increasing group or the revenue-decreasing group. Therefore, we believe that the proportion of respondents in each range is random. In this survey, 286 respondents (20.3% of the total) reported their company's revenue as unchanged from the previous year; 230 respondents (16.3% of the total) reported a revenue decline of 10%-24% (the largest group of revenue-decreasing companies); and 190 respondents (13.5% of the total) reported a revenue increase of 10%-24% (the largest group of revenue-increasing companies). It is worth noting that a whopping 20% of companies experienced a revenue decline of 25% or more, and 7.2% reported a decline of 50% or more. In view of public concerns about the risk of economic downturn and resilience, the following analyses will focus on the companies whose revenue has declined by 25% or more.

FIGURE 3. 1. CHANGES IN REVENUE IN 2022
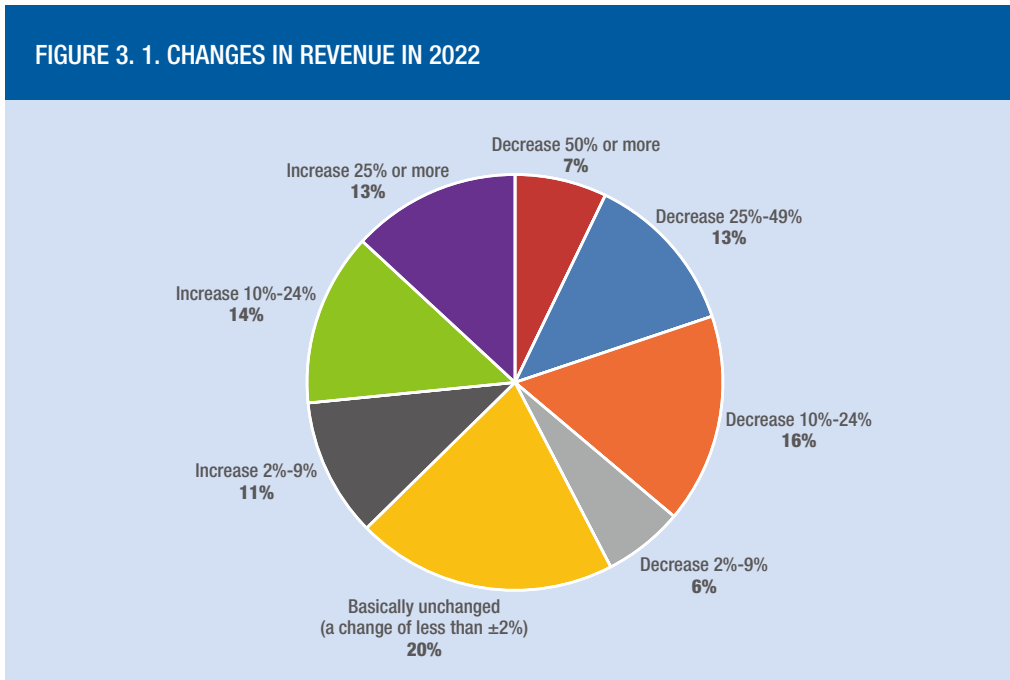
3.2. ANALYSIS OF COMPANIES WITH SIGNIFICANT DECLINES IN REVENUE

This section focuses on the companies that reported a significant decline in revenue. As revenue can be volatile, it is possible for a company's revenue to decline during a good economic year, which introduces bias to our analysis. To alleviate the impact of bias, we focus on the companies that report a significant decline in revenue, namely the companies whose revenue declined by 25% or more from 2021 to 2022. These companies consist of those who chose "Fell by 25%-49%" or "Fell by 50% or more" when answering Q11 in the survey, which asked about their 2022 revenue compared with 2021.

Figure 3.2 shows the proportion of companies with a significant revenue decline in each category. To facilitate comparison, the five classification criteria (industry, ownership, product/service positioning, customer type, and corporate size) are shown on the horizontal axis, with a shared vertical axis. The companies are classified in terms of industry type (service, manufacturing, and dual-industry companies (those involved in both service and manufacturing)); ownership (foreign-owned, private, and state-owned companies); product/service positioning (high-end, mid-range, low-end, and mixed-strategy companies (those servicing high-end, mid-range, and low-end markets simultaneously)); customer type (B2C companies (those servicing individual customers) and B2B companies (those servicing business customers)); and size (small, medium-sized, and large companies). The number of companies in each category is indicated in parentheses (N = x). There are variations in the total numbers of companies across different categories because some respondents chose "Other (please specify)" and "Not sure" options. The vertical axis displays the percentage of companies whose revenue declined by 25% or more, calculated by dividing the number of such companies in a category by the total number of companies in that category and multiplying the result by 100%. The largest proportion of companies in each group is marked in orange, the middle proportion in blue, and the smallest proportion in gray.

In terms of industry type, the service industry has the highest proportion of companies with a significant decline in revenue (21.7%), followed by the dual-industry category (19.6%). The manufacturing industry has the lowest proportion (14.9%). If we consider all revenue change ranges (not just revenue decline ranges), the service industry shows negative revenue growth (-6.2%), while the manufacturing and dual-industry categories show positive growth, with manufacturing exhibiting higher growth (2.6%) and the dual-industry category exhibiting lower growth (0.3%). This reflects the widespread impact of pandemic prevention and control policies on China's economy in Q2 2022, as the impact of the strict control measures in Shanghai spread gradually throughout East China and thereafter throughout the entire economy. The restrictions on the movement of people crippled the service industry but had only limited impact on the manufacturing industry. The Shanghai Municipal People's Government promptly established a Work Resumption Whitelist system for the resumption of work and production after SARS-CoV-2 was brought under control in Q2. The first batch of companies on the list were mostly manufacturers, comprising those involved in manufacturing integrated circuits, automobiles, and equipment. This stopped the revenue declines in the manufacturing industry and kickstarted an early recovery. The recovery of the service industry came later, as it received less policy support. However, the decline in the revenue of service companies that are also involved in manufacturing may have been mitigated by the overall rebound in the revenues of manufacturing companies.

In terms of ownership structure, the proportion of companies with a significant revenue decline is the highest among private companies (21.5%), followed by state-owned companies who have a similar percentage (19.3%). Foreign-owned companies comprise the lowest proportion of revenue-declined companies (9.7%). Such pattern clearly presents foreign-owned companies' resistance against the impact of COVID-19. Due to the scattered distribution of business throughout the world, foreign-owned enterprises managed to survive the pandemic smoothly. However, for the private and state-owned enterprises who mainly operate in the domestic market, their reactions to the pandemic are more obvious. For state-owned companies, although the percentage of revenue-declined companies is in the middle across three types of companies, it is not significantly smaller than that of private companies (19.3% against 21.5%, respectively)[2]. As for how well the three types of companies can recover in the post-pandemic era, further investigations are needed.

In terms of service/product positioning, when companies target higher market segments, the proportion of revenue-declined companies is lower. That is, the higher a company's positioning, the lower the probability of a significant decline in revenue. Our data show that the biggest proportion of revenue-declined companies lies with low-end companies (30.1%); that of mid-range companies follows (20.4%); and the smallest proportion comes from high-end companies (16.0%). Among the companies executing the mixed-strategy, namely servicing high-end, mid-range and low-end markets simultaneously, the proportion of significant revenue-declined companies is 18.0%. This pattern is attention-worthy – companies servicing mid-range and low-end customers were highly likely to experience revenue declines due to the pandemic, whilst those servicing high-end customers were less likely to experience revenue declines. This trend is also identified in the average revenue of these three types of companies: companies servicing mid-range and low-end customers showed negative growth in their average revenue. The data show that the companies servicing low-end and mid-range customers experienced negative average revenue growth of -5.9% and -3.4%, respectively. However, the companies servicing high-end customers achieved positive growth, with an average revenue increase of 3.2%. This reflects differences in the behaviors of high-end, mid-range, and low-end consumers. In 2022, the lackluster economy impacted both the income and expectations of consumers in the mid-range and low-end markets, causing increasing numbers of them to spend less or even cease spending for a period. This intensified competition between companies servicing these customers, adding to the downward pressure. Companies serving the high-end market, however, often have a smaller target audience but higher customer loyalty than those servicing the mid-range and low-end markets. Moreover, Veblen goods are part of the high-end market; these are highly conspicuous good, such as luxury products and luxury cars, whose sales increase as their prices rise, in contradiction with the law of demand. For example, the 2022 spring/summer runway show of a luxury fashion brand broke records, with over 130 million livestream views. Another luxury brand witnessed strong growth in the Chinese market during Q3 2022. These examples highlight the stark differences between the high-end market and the mid-range to low-end market. Compared with companies servicing mid-range to low-end customers, those servicing high-end customers have a smaller and less diverse audience, so they can better understand their customers' preferences and make timely innovations. All these aspects contribute to the resilience of companies servicing high-end customers to shocks that pose greater challenges to companies servicing mid-range to low-end customers.

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[2] However, the difference between state-owned and private companies' average revenues is relatively material. It is calculated that the change in the average revenue of state-owned companies is -1.9%, while it is -8.5% for private companies. Such difference is also significant from a statistical perspective (the p-value of the student t-test is 0.000).

In terms of customer category, companies that serve individual customers (B2C companies) have a bigger percentage of companies with a significant decline in revenue (31.8%); companies that serve corporate/institutional customers (B2B companies), on the other hand, have a smaller percentage of companies with a significant decline in revenue (15.1%). For companies that engage in both B2C and B2B operations (dual-customer companies), the proportion of companies with a significant decline in revenue is in between (21.7%). Meanwhile, the records of average revenue indicate a similar pattern – B2C companies experienced more material negative growth, and the rate of negative growth is -11.0%. For dual-customer companies, although they also experienced negative growth, the rate of negative growth is smaller (-4.4%). In comparison, B2B companies obtained a minor growth, and the growth rate is 1.6%. Such pattern verifies the situation of the pandemic control measures implemented in 2022 – some economically developed regions imposed rigorous pandemic control policies and strictly prohibited travel, which greatly impacted the retail sector of the economy. Hence, many B2C companies experienced a material economic shock. Local governments prioritized their attention and policy support on B2B companies both during and after pandemic control. For example, many local governments established production bubbles, in which factory employees were isolated from the outside world to prevent and curb infections, thereby enabling B2B companies to quickly resume operations when the pandemic situation improved slightly. In contrast, B2C companies had to wait until the pandemic was mostly under control to resume their operations. This resulted in performance differences between companies servicing different types of customers. In particular, the data show that when a B2C company also engaged in B2B business, the significant decline in their B2C business would be offset by the growth in the revenue of their B2B businesses.

In terms of firm size, the proportion of significant revenue-declined companies is the biggest for small companies (26.8%), followed by medium companies (15.4%) and big companies (13.8%). Such pattern indicates that there is a negative relationship between firm size and revenue decline – the bigger the firm is, the less likely it is that its revenue will decline, and vice versa. This pattern carries over to the average revenue perspective - small companies saw negative revenue growth. Medium and large-sized companies, however, witnessed positive growth, with no significant differences in their growth rates[3]. Specifically, the small companies' average revenue declined by 7.8%, while the medium and large-sized companies' average revenue increased by 0.8% and 1.2%, respectively. Overall, the medium and large-sized enterprises had better revenue performance, while the small-sized enterprises faced greater challenges. Section 4.5 draws association between firm size and corporate confidence level, and it notes that corporate size is positively correlated with enterprise confidence in the short term. This is aligned with our analysis, i.e., compared with small companies, large companies were less likely to experience a significant decline in revenue during the pandemic and had higher confidence in the short term. Accordingly, we believe that companies are more resilient to unexpected risks and have a higher confidence index in the short term as they grow larger, and vice versa. This can be attributed to various factors, such as favorable government policies, lower financing costs, and greater brand awareness enjoyed by large companies compared with smaller companies.

In summary, a typical company with a significant revenue decline in 2022 is a small private company in the service sector that caters to individual customers in the low-end market.

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[3] *There is no statistically significant difference between the average revenue of medium-sized and large companies (p-value is 0.540 in the student t-test).*

FIGURE 3. 2. PROPORTION OF COMPANIES WITH A SIGNIFICANT REVENUE DECLINE IN EACH CATEGORY
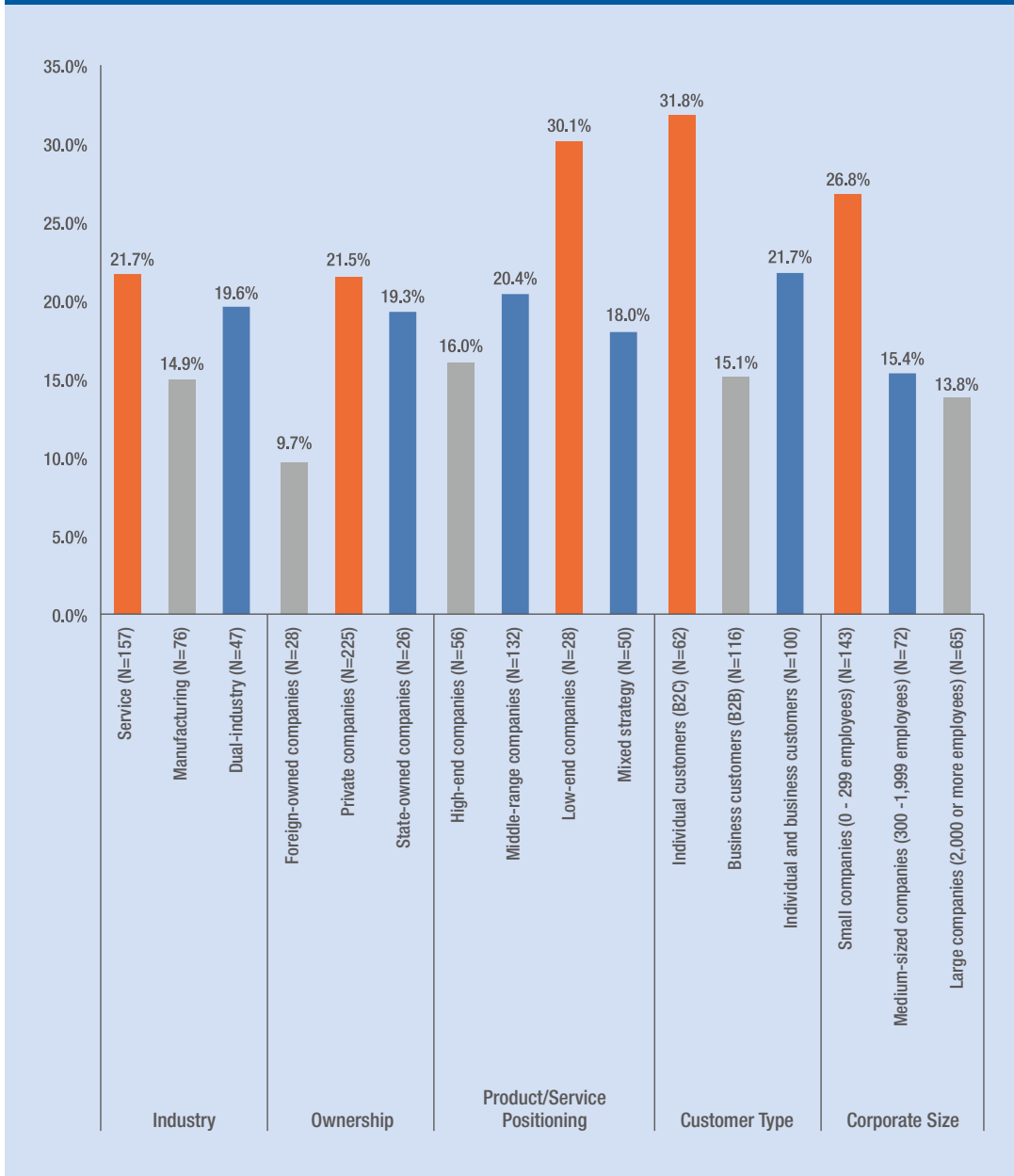
3.3. PANDEMIC PREVENTION AND REVENUE DECLINE

The pandemic prevention and control policies implemented in Q2 2022 were one of the most significant factors influencing the Chinese economy and corporate revenue. To analyze whether the measures had an impact on the decline in the revenue of different types of business and, if so, to what extent, Q13 in our questionnaire asked respondents to indicate what percentage of their company's revenue decline in China in 2022 could be attributed to pandemic prevention and control policies. The options included 0% (indicating that the revenue decline had no relation to pandemic prevention and control policies), 100% (indicating that the revenue decline was wholly due to pandemic prevention and control policies), and four ranges, namely, 1%-24%, 25%-49%, 50%-74%, and 75%-99%. This is dedicated to describing whether and to what extent the pandemic prevention and control policies affected the decline in revenue of each type of business.

In Figures 3.3–3.7, the vertical axes indicate the percentage of revenue decline attributable to pandemic prevention and control policies (options in Q13), with the number of respondents who chose each option in Q13 shown in parentheses (N=x). The horizontal axes represent the percentage of companies within a category that selected the stated option in Q13.

Across all of these figures, the bars for the "0%" option, indicating no correlation between revenue decline and pandemic prevention and control policies, are consistently the shortest. This indicates that very few companies, regardless of category, believe that there was no correlation between revenue decline and pandemic prevention and control policies. That is, the majority of all types of companies attribute their revenue declines to pandemic prevention and control policies to some degree, ranging from 1% to 100%. Therefore, as this section focuses on the impact of pandemic prevention and control policies on revenue, we only analyze the options other than "0%", to ensure that we obtain an informative conclusion.

Figure 3.3 shows the percentage of revenue decline attributed to pandemic prevention and control policies across different industries. In the manufacturing industry, the majority of the companies (32.9% of the companies in this category) believe that pandemic prevention and control policies contributed to a revenue decline of 1%–24%. As the percentage of revenue decline attributed to pandemic prevention and control policies increases, the proportion of companies in this range decreases monotonically, reaching the minimum when the percentage rises to 100%. Over half of the companies (approximately 64.7% of the total) in the manufacturing industry attribute less than half of their revenue decline to pandemic prevention and control policies. Only approximately 4.0% of the manufacturing companies attribute their entire revenue decline to pandemic prevention and control policies. In the service sector, 24.7% of the companies attribute 25%–49% of their revenue decline to pandemic prevention and control policies, and another 24.7% of the companies attribute 50%–74% of their revenue decline to pandemic prevention and control policies. Moreover, 20.55% of the companies attribute 75%–99% of their revenue decline to pandemic prevention and control policies, and 19.9% attribute 1%–24% of their revenue decline to pandemic prevention and control policies. Only 9.0% of the service companies attribute their revenue decline in 2022 solely to pandemic prevention and control policies. The majority (29.5%) of the dual-industry companies believe that pandemic prevention and control policies caused 25%–49% of their revenue decline, while 27.3%, 18.2%, and 17.0% of the dual-industry companies believe that pandemic prevention and control policies caused 50%–74%, 75%–99%, and 1%–24% of their revenue decline, respectively. Only approximately 8.0% of the dual-industry companies attribute their revenue decline solely to pandemic prevention and control policies. Overall, the service industry has the largest number of companies that consider pandemic prevention and control policies to be the predominant cause of their revenue decline (75% or more of the total), while the manufacturing industry has the smallest number of such companies. In contrast, the manufacturing industry has the greatest number of companies that believe pandemic prevention and control policies only caused a slight decline in their revenue (24% or less of the total), while the dual-industry has the smallest percentage of such companies.

FIGURE 3. 3. PERCENTAGE OF REVENUE DECLINE ATTRIBUTED TO COVID-19 PANDEMIC PREVENTION AND CONTROL POLICIES (BY INDUSTRY)
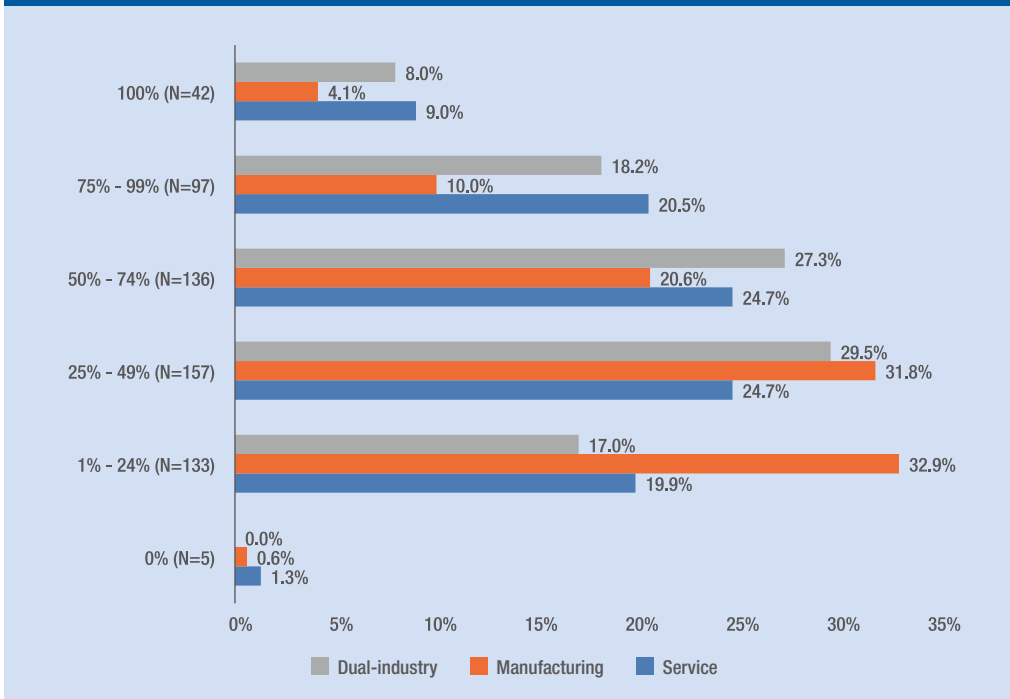
Figure 3.4 presents the rate of revenue decline that companies with different types of ownership attribute to pandemic prevention and control policies. Among state-owned companies, the biggest proportion of companies (32.7%) believe that pandemic prevention and control policies caused 1%-24% of revenue decline. This proportion decreases as the rate of decline caused by pandemic control increases, and it hits the bottom when the rate of decline caused by pandemic control reaches 100%. Only 4.0% state-owned companies completely attributed their revenue decline to pandemic prevention and control policies. As for private companies, the biggest proportion of them believe that the revenue decline caused by pandemic control takes up 25%-49% (28.1% of private companies); next revenue decline range is 50%-74%, and the proportion of companies in this range is 24.7%. Another 21.3% private companies attribute 1%-24% revenue decline to pandemic control and prevention policies, and 17.7% private companies attribute 75%-99% of their revenue decline to pandemic prevention and control policies. Around 7.9% private companies attribute their revenue decline entirely to pandemic control and prevention policies, which is the highest among the three different ownership types. Foreign-owned companies display a similar pattern as state-owned companies – the proportion of companies in the range decreases as the revenue decline range moves up. The biggest percentage of foreign-owned companies (27.2) believe that 1%-24% of their revenue decline was attributable to pandemic control and prevention policies, whilst 26.2%, 23.3% and 14.6% and 6.8% foreign-owned companies believe that pandemic control and prevention policies resulted in 25%-29%, 50%-74%, 75%-99% and 100% of their revenue decline, respectively. In summary, most private companies believe pandemic control and prevention policies are the predominant cause of their revenue decline (causing 75% or more revenue decline), whereas fewest state-owned companies believe so. Among those who believe pandemic control and prevention policies are only the minor cause of their revenue decline (causing 25% or less revenue decline), state-owned companies are the most, whilst private companies are the fewest.

FIGURE 3. 4. PERCENTAGE OF REVENUE DECLINE ATTRIBUTED TO COVID-19 PANDEMIC PREVENTION AND CONTROL POLICIES (BY OWNERSHIP STRUCTURE)
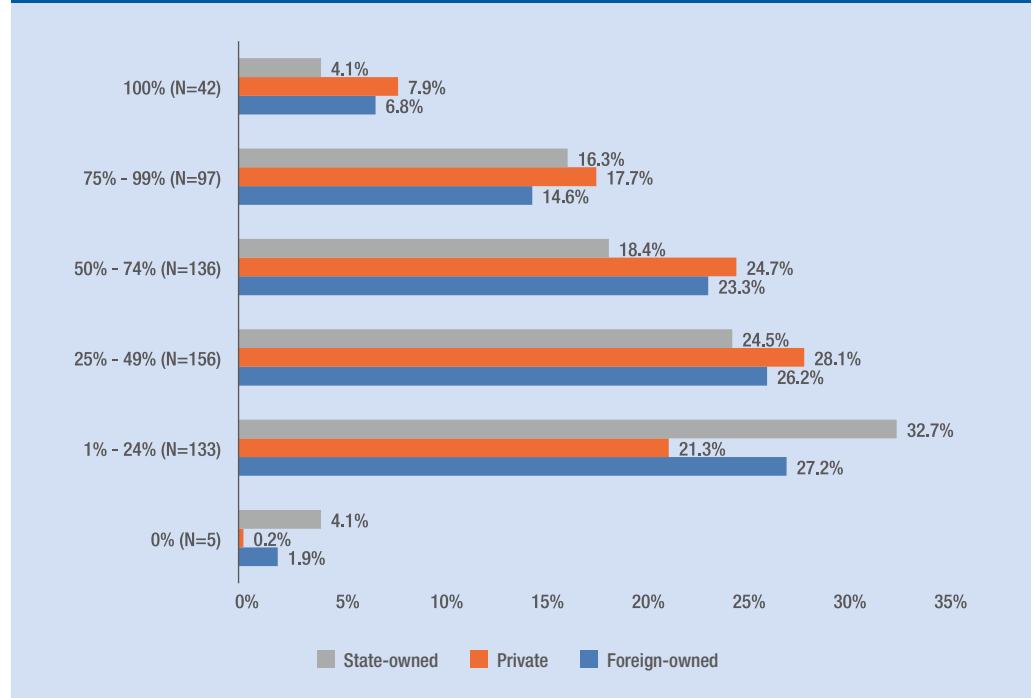
Figure 3.5 shows the percentage of revenue decline that companies servicing different markets attribute to pandemic prevention and control policies. Firstly, for the companies that target the low-end market, the highest proportion (36.4%) of companies attribute 50%-74% of their revenue decline to pandemic control and prevention policies. Around 25.0% companies attribute 1%-24% revenue decline to pandemic control. The smallest percentage of companies believe they should attribute 100% of their revenue decline to pandemic control (meaning that they entirely attribute the revenue decline to pandemic control and prevention policies), and this percentage is 6.8%. The second smallest group (9.1% of total low-end companies) attributes 75%-99% of their revenue decline to pandemic control and prevention policies. Next, for mid-range companies, most of them (26.1% of total mid-range companies) attribute 25%-49% of their revenue decline to pandemic control, while 24.0% of them attribute 1%-24% of the revenue decline to pandemic control. The smallest proportion (7.8%) of mid-range firms attribute 100% of their revenue decline to pandemic control, meaning that they entirely attribute their revenue decline to pandemic control and prevention policies. The second smallest group (19.1% of total mid-range companies) attributes 75%-99% of the total revenue decline to pandemic control and prevention policies. As for high-end companies, they present a similar pattern as mid-range companies in terms of the proportion of revenue decline caused by pandemic control and prevention policies. The biggest proportion (26.3%) of high-end companies attribute 25%-49% revenue decline to pandemic control, while 24.6% of high-end companies attribute 1%-24% of their revenue decline to pandemic control and prevention policies. The smallest proportion (11.9%) of high-end companies attribute 100% of their revenue decline to pandemic control, meaning that they attribute the entirety of their revenue decline to pandemic control), and the second smallest proportion (12.7%) of high-end companies attribute 75%-99% of their revenue decline to pandemic control. Lastly, for those companies that execute a mixed strategy (meaning that they simultaneously service high-end, mid-range and low-end markets), 32.1% of these companies attribute 25%-49% of their revenue decline to pandemic control, and this is the biggest group. 24.8% of them attribute 50%-74% of their revenue decline to pandemic control. The smallest group (1.8%) of companies attribute 100% of their revenue decline to pandemic control (meaning that they attribute the entirety of the revenue decline to pandemic control). A 18.3% of these companies attribute 75%-99% of their revenue decline to pandemic control. Overall, among the companies who believe pandemic control to be the predominant cause of their revenue decline (it causes 75% revenue decline or more), most are mid-range companies, and fewest are low-end companies. Among those who believe pandemic control to be only a minor cause of their revenue decline (causing 25% revenue decline or less), high-end companies are the most, and mix-strategy companies are the fewest.

FIGURE 3. 5. PERCENTAGE OF REVENUE DECLINE ATTRIBUTED TO COVID-19 PANDEMIC PREVENTION AND CONTROL POLICIES (BY MARKET)
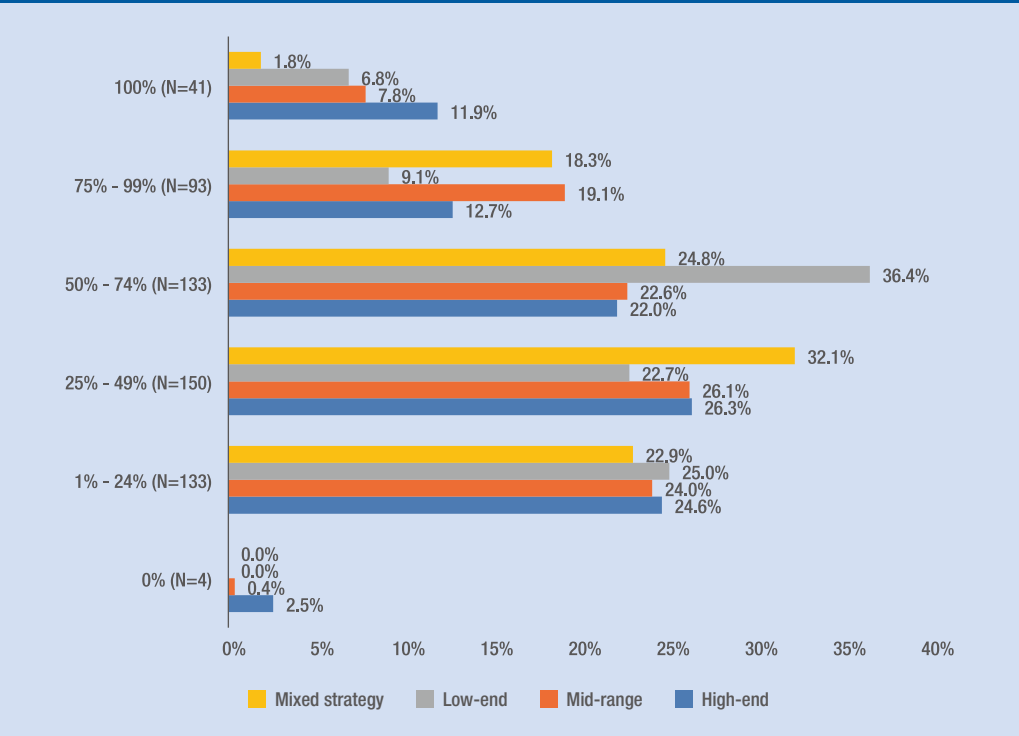
Figure 3.6 shows the impact of pandemic control and prevention policies on companies servicing different categories of customers. For B2B companies, the biggest percentage (26.5%) of them believe that the pandemic control caused 50%-74% of revenue decline, followed by 26.1% of them believing that the pandemic control caused 25%-49% of their revenue decline. Another 25.0% of companies believe pandemic control and prevention policies caused 1%-24% revenue decline. There are 6.0% of total B2B companies claiming that pandemic control and prevention policies resulted in all their revenue decline. For B2C companies, the biggest proportion (32.7%) of them believe that pandemic control and prevention policies caused 25%-49% of their total revenue decline. The second biggest proportion (20.2%) of B2C companies attribute 50%-74% of their revenue decline to pandemic control, followed by 19.2% of B2C companies attributing 1%-24% of their revenue decline to pandemic control, and 15.4% of B2C companies attributing 75%-99% revenue decline to pandemic control. Fewest B2C companies (11.5% of total B2C companies) attribute the entirety of their revenue decline to pandemic control. For dual-customer companies, their revenue decline distribution is similar to B2C companies. The biggest proportion (26.7%) of dual-customer companies attribute 25%-49% of their revenue decline to pandemic control and prevention policies, whilst the smallest proportion (7.3%) of dual-customer companies attribute all of their revenue decline to pandemic control and prevention policies. In general, among those companies who consider pandemic control and prevention policies to be the predominant cause of their revenue decline (causing 75% or more revenue decline), B2C companies are the most, and B2B companies are the fewest; among those companies that consider pandemic control and prevention policies to be only a minor cause of their revenue decline (causing 25% or less revenue decline), B2B companies are the most, and B2C companies are the fewest.

FIGURE 3. 6. PERCENTAGE OF REVENUE DECLINE ATTRIBUTED TO COVID-19 PANDEMIC PREVENTION AND CONTROL POLICIES (BY CUSTOMER CATEGORY)
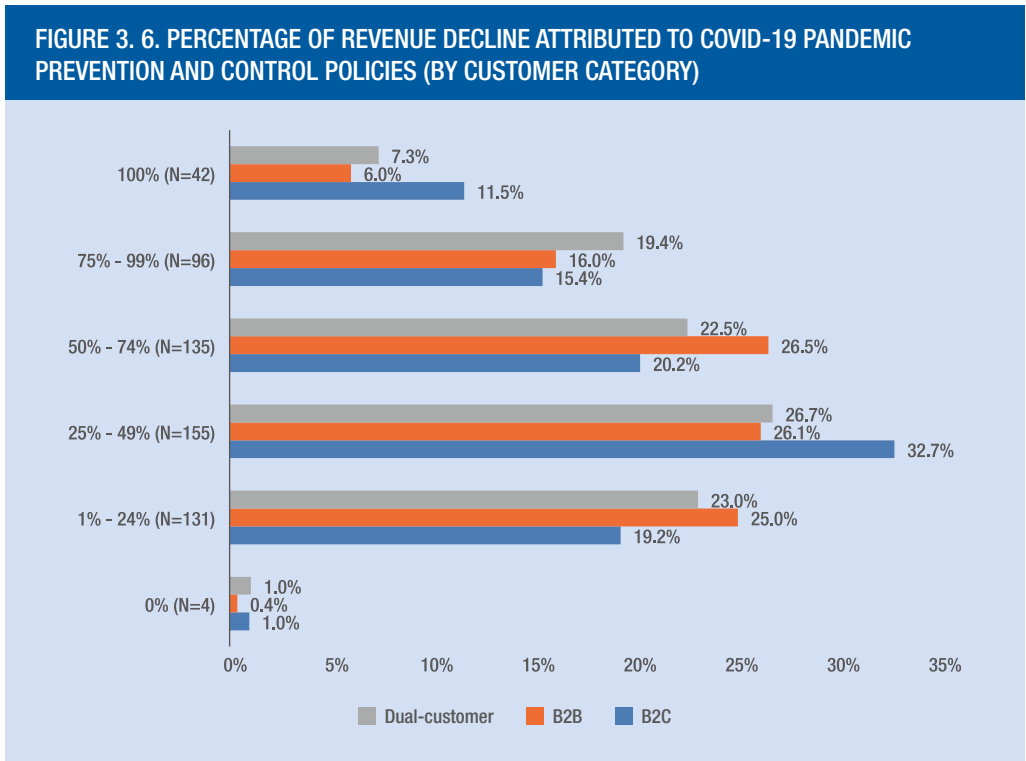
Figure 3.7 shows the impact of pandemic control and prevention policies on companies of different sizes. Overall, in every size category, those who consider pandemic control irrelevant to revenue decline are the fewest (0.7% of total big companies, 0.5% of total mid-sized companies and 1.3% of total small companies); and the second fewest groups are the companies that attribute the entirety of revenue decline to pandemic control and prevention policies (3.9% of total big companies, 4.9% of total mid-sized companies and 11.4% of total small companies). In addition, the biggest proportion (30.9%) of big companies attribute 1%-24% of their revenue decline to pandemic control. 28.0% of big companies attribute 25%-49% of their revenue decline to pandemic control. Another 23.0% of big companies attribute 50%-74% of their revenue decline to pandemic control, followed by 12.5% of big companies attributing 75%-99% of their revenue decline to pandemic control. For mid-sized companies, the biggest proportion (30.8%) of companies believe that pandemic control and prevention policies resulted in 25%-49% revenue decline; the second biggest percentage (24.7%) of mid-sized companies consider that pandemic control caused 50%-74% revenue decline. Another 24.2% mid-sized companies attribute 1%-24% revenue decline to pandemic control, and 14.8% of mid-sized companies attribute 75%-99% revenue decline to pandemic control. With small companies, the biggest percentage (24.2%) of them believe that pandemic control caused 25%-49% of their revenue decline, followed by 23.7% of small companies attributing 50%-74% of their revenue decline to pandemic control. 21.6% of small companies believe that 75%-99% of their revenue decline are the result of pandemic control; and 17.8% of them believe that 1%-24% of revenue decline are caused by pandemic control. In a nutshell, among those who consider pandemic control and prevention policies are the predominant cause of their revenue decline (causing 75% or more revenue decline), small companies are the most, and big companies are the fewest; among those who consider pandemic control and prevention policies are only a minor cause of their revenue decline (causing 25% or less of their revenue decline), big companies are the most, and small companies are the fewest.


FIGURE 3. 7. PERCENTAGE OF REVENUE DECLINE ATTRIBUTED TO COVID-19 PANDEMIC PREVENTION AND CONTROL POLICIES (BY COMPANY SIZE)
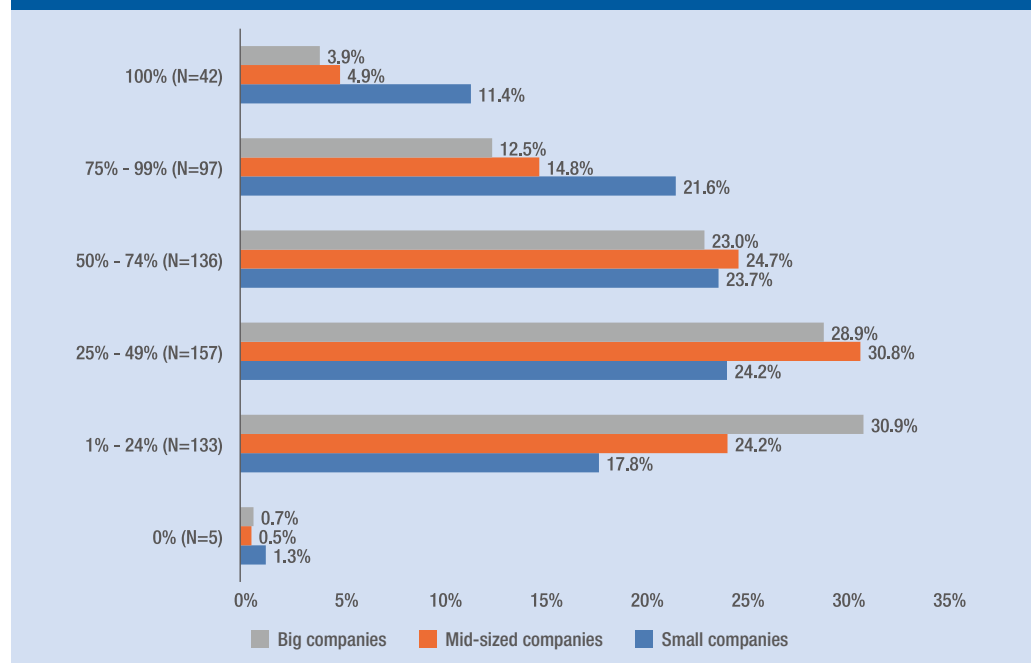
Although the strict pandemic prevention and control policies were implemented in some regions in Q2 2022, no immediate impacts of such measures were observed. In fact, our results do not indicate significant revenue declines in any of the loss ranges. To further analyze the revenue declines, we examine the impact of pandemic prevention and control policies in each quarter, as shown in Figure 3.8. This figure has the same axes as Figures 3.3–3.7, but instead of different company types, the bars in Figure 3.8 represent different quarters.

Figure 3.8 shows the percentage of corporate revenue declines in each quarter attributed to pandemic prevention and control policies. The shortest bars in each color appear for the 100% option, indicating that the lowest percentage of the companies attribute their revenue decline solely to pandemic prevention and control policies in all four quarters (11.4% in Q1, 9.9% in Q2, 7.4% in Q3, and 7.0% in Q4). Most companies (29.3%) attribute 25%–49% of their revenue decline in Q1 to pandemic prevention and control policies, while fewest companies (16.4%) attribute 50%-74% of their revenue decline in Q1 to pandemic prevention and control policies. For Q2, the biggest percentage (26.7%) of companies attribute 25%-49% of their revenue decline to pandemic control, while the smallest percentage (18.6%) of companies attribute 75%-99% of their revenue decline to pandemic control. As for Q3, the biggest proportion (28.6%) of companies attribute 25%-49% of their revenue decline to pandemic control, whereas the smallest proportion (16.7%) of companies attribute 75%-99% of their revenue decline to pandemic control. To Q4, the biggest group (31.5%) of companies attribute 50%-74% of their revenue decline to pandemic control, whilst the smallest group (16.1%) of companies attribute 75%-99% of their revenue decline to pandemic control. Looking at each revenue decline range, 11.4% of the companies attribute 100% of their revenue decline in Q1 to pandemic prevention and control policies, which is the highest proportion that do so among all four quarters. In contrast, 7.0% of the companies attribute 100% of their revenue decline in Q4 to pandemic prevention and control policies, which is the lowest proportion that do so among all four quarters. Companies in the range 75%–99% believe that pandemic prevention and control policies were the predominant cause for their revenue decline; this range was selected by 21.4% of companies for Q1, which is the highest proportion in this range across all four quarters, whereas it was selected by 16.1% of companies for Q4, which is the lowest proportion in this range across all four quarters. Companies in the revenue range 1%–24% believe that pandemic prevention and control policies were a minor contributor to their revenue decline; this range was selected by 23.1% of the companies for Q4, which is the highest proportion that do so across all four quarters, whereas it was selected by only 20.0% of the companies for Q1, which is the lowest proportion that do so across all four quarters. Companies in the revenue decline ranges 25%–49% and 50%–74% believe that pandemic prevention and control policies were neither a predominant nor a minor contributor to their revenue decline. The range 50%–74% contained 31.5% of the companies for Q4, which is the highest proportion across all four quarters, whereas it contained only 16.4% of the companies for Q1, which is the lowest proportion across all four quarters. Moreover, 29.3% of the companies attributed 25%–49% of the decline in their revenue in Q1 to pandemic prevention and control policies, indicating that these policies had a significant negative effect on revenue in this quarter, as this is the highest proportion of companies in this range across the four quarters. However, only 21% of the companies are in this range in Q4, which is the lowest proportion across the four quarters.

FIGURE 3. 8. PERCENTAGE OF REVENUE DECLINE ATTRIBUTED TO COVID-19 PANDEMIC PREVENTION AND CONTROL POLICIES (BY QUARTER)
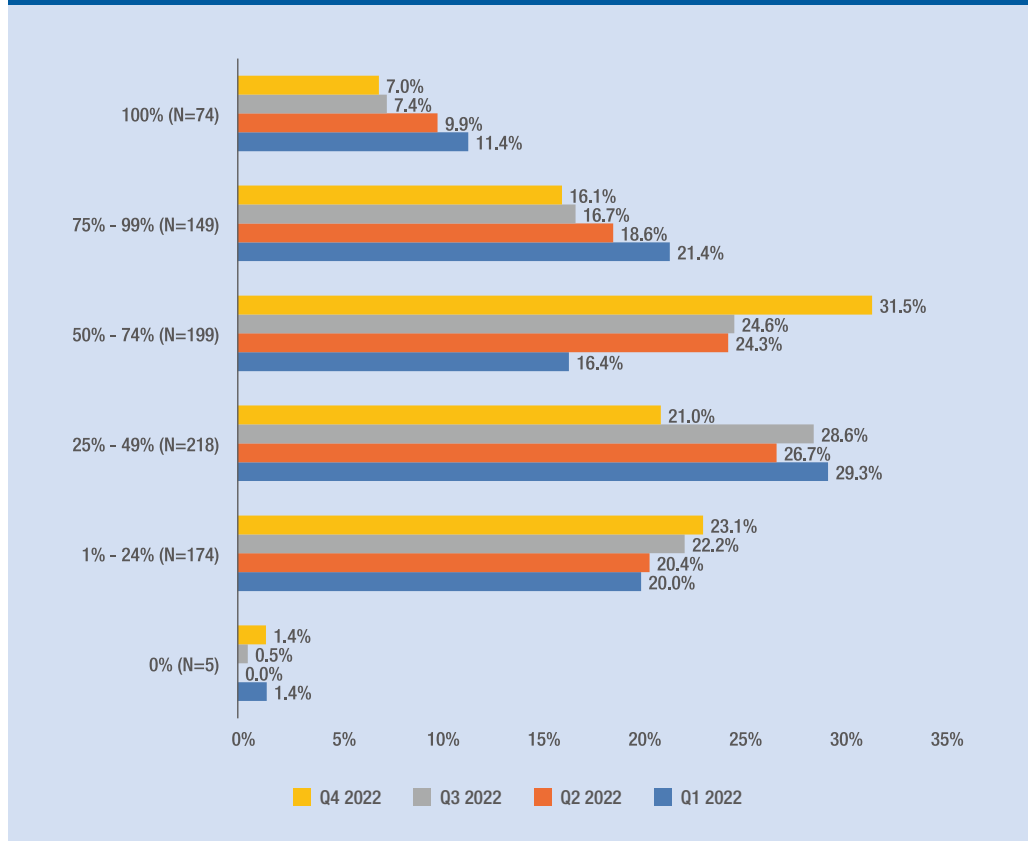
3.4. CONCLUSIONS AND RECOMMENDATIONS

Based upon our analyses, we yield the following conclusions and recommendations.

First, we can profile a typical enterprise that experienced a significant decline in revenue under pandemic prevention and control policies in 2022 as follows - a small private company in the service sector that mainly targets individual customers in the low-end market. Companies such as this comprise a major part of the Chinese economy and rely heavily on a sound business environment. However, they did not receive adequate policy support amid the COVID-19 outbreaks. To facilitate their recovery, the government should prioritize these companies and provide them with dedicated support.

Second, the COVID-19 outbreaks in 2022 and the pandemic prevention and control policies posed a severe test for China's economy, as evidenced by general market pessimism. Surprisingly, our data do not show a substantial gap between the percentage of companies facing declining revenues and that of companies enjoying revenue growth. For example, high-end enterprises in some niche markets exhibited great resilience and even increasing revenues amid the pandemic. This suggests that precision policies will be more effective than one-size-fits-all policies to stimulate economic recovery in 2023.

Third, enterprises that "put all of their eggs in one basket" are less resilient than more diversely oriented enterprise when a crisis strikes, as was especially evident during the COVID-19 outbreaks in 2022. Thus, compared with manufacturing companies, service businesses faced more material revenue declines during the periods of tight restrictions on the population's movement. Therefore, investing or engaging in manufacturing would help service-based companies mitigate their losses. Although manufacturing companies profited from their non-service business and avoided massive losses by not engaging in the service sector in 2022, they may benefit from a more diverse spread of business when facing other types of challenges that may arise in the future, such as shortages of raw materials and embargoes on spare parts caused by geopolitical conflicts.

Fourth, section 4.5 notes that corporate size is positively correlated with enterprise confidence; i.e., the bigger (smaller) a company is, the higher (lower) is its confidence. This research report draws a similar conclusion that is in favor of large companies from another perspective: corporate size is negatively correlated with revenue decline, i.e., the bigger (smaller) a company is, the less (more) likely it is that its revenue will decline. This shows that compared with small companies, big companies have more room to maneuver and thus are able to remain resilient when pandemics or similar crises hit. Many factors contribute to this phenomenon, such as favorable government policies, lower financing costs, and higher brand awareness enjoyed by big companies compared with small companies. However, although the two conclusions above mentioned are consistent, we have not yet established any causal relationship between them. It remains unclear whether big companies' short-term business confidence is a result of their resilience, or vice versa. More in-depth and targeted research is needed to determine the relationship between companies' short-term business confidence and resilience.

Fifth, the strict pandemic prevention and control policies implemented in Q2 2022 had an enormous negative impact on China's economy, and our data indicate that this impact was highly complex. First, the impact was not solely caused by the pandemic prevention and control policies, because most enterprises had already reported drastic revenue declines in Q1 2022. We believe that some underlying factors that emerged prior to 2022 contributed to the downward pressure on China's economy and that the pandemic prevention and control policies implemented in Q2 2022 only worsened the situation. Second, the impact of the pandemic prevention and control policies implemented in Q2 2022 on corporate revenue was not immediate. Despite an overall pessimism about China's economic performance in Q2 2022, the market anticipated a rapid rebound fueled by revenge spending after the pandemic prevention and control policies were eased. Our data show a time lag between the pandemic prevention and control policies and revenue declines, as some groups of companies reported more significant revenue declines in Q3 and Q4 than in Q2. We believe similar time lags may extend beyond quarters to years, such that the negative impact on the economy in 2022 is likely to manifest in the coming years. As of early February 2023, when this research report was produced, China had fully lifted its pandemic prevention and control policies, shifted the focus from infection prevention to health protection, and downgraded COVID-19 to a Class B infectious disease, meaning that control policies have eased. This situation is strikingly similar to Q3 2022, when East China returned to business after the lifting of lockdowns. Based on our observations for Q2 2022, we posit that the anticipated rapid and robust recovery in 2023 may not materialize immediately after the full lifting of pandemic prevention and control policies.

Therefore, we recommend that enterprises take a conservative approach to business planning rather than being overly optimistic, such that they can effectively navigate a possible "darkest hour before the dawn" period. Moreover, although COVID-19 pandemic has been downgraded to a Class B infectious disease, we recommend that the government conduct a systematic analysis of economic performance in 2022, especially that during the lockdown period, and formulate corresponding policies. We also suggest that the government examine the economy over previous years to identify the underlying factors that may have inhibited business revenue growth. These factors may have existed before 2022 and been amplified in Q2, Q3, and Q4 of 2022. Further study is needed to determine these factors.

Analysis on the Confidence of Companies Operating in China in the New Business Environment

The China Europe International Business School (CEIBS) research team conducted an online survey on the performance and operations of companies in China in the new business environment between November 18th and 27th, 2022, and received a total of 1,474 valid questionnaires. This research report provides some preliminary analysis of the data collected from the survey on the short-term confidence (next 1 year) and medium-term confidence (next 5 years) of the sample companies in operating in China.

4.1. TIME SERIES ANALYSIS OF CONFIDENCE INDEX

Firstly, we report the results of the time series analysis. The CEIBS Research team's survey on the business situation of companies in China started in 2011 and has been conducted for 12 years (all years' reports are available for free download at https://cn.ceibs.edu/faculty/research/research-reports/china-business-survey) Although the sample varies from year to year, the sample size is sufficiently large each year and the vast majority of the responses come from a highly homogeneous group of CEIBS students and alumni, so the sample means are comparable and it reflects the assessment of CEIBS student and alumni as a group on the business conditions of their companies.

The surveys for these 12 years were done at the end of the year for all years except 2020 and 2021. 2020 and 2021 surveys were done in April because the Corona Virus epidemic hit the Chinese economy hard in the first quarter of 2020, so the survey for that year was brought forward to April in order to do a timely study of the impact of the epidemic shock. The 2021 survey is also placed in April of the year, with the intention of making a comparison with the April 2020 survey results. The data for certain variables in both annual surveys, such as the confidence index, do not match the data for other years. In light of this, we have excluded two particular years, 2020 and 2021, from the time series study.

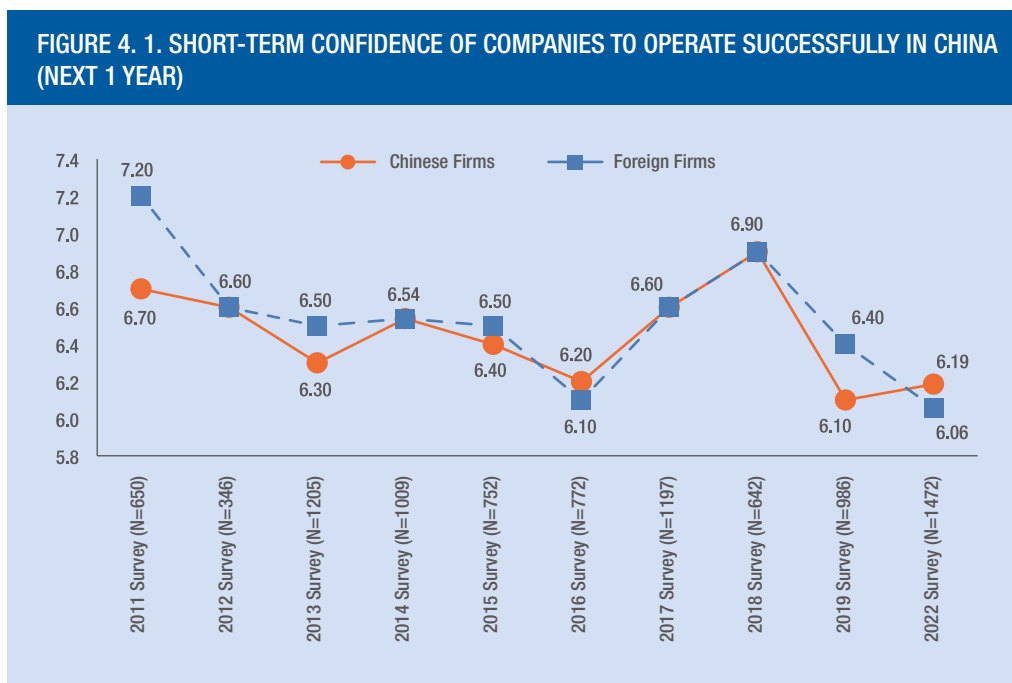FIGURE 4. 1. SHORT-TERM CONFIDENCE OF COMPANIES TO OPERATE SUCCESSFULLY IN CHINA (NEXT 1 YEAR)

Figure 4.1 shows the short-term (next 1 year) confidence of companies to operate successfully in China. We observe a fluctuating trend in the short-term confidence index, with a downward trend in the 2011-2016 survey interval, following an upward trend in the 2016-2018 survey interval, and a downward trend again in the 2018-2022 survey interval. Except for the two years with the lowest short-term confidence indices (2016 and 2022), the short-term confidence of the sample foreign firms (foreign ownership ≥ 50%) is slightly higher than that of the sample Chinese firms (Chinese ownership ≥ 50%). 2011 survey shows that the confidence of the sample foreign firms in 2012

is as high as 7.20, which is significantly higher than the confidence of the sample Chinese firms in 2012's survey (7.00). Confidence indices from the 2016 survey bottomed out (6.20 for sample Chinese firms and 6.10 for sample foreign firms), which is consistent with China's economic growth rate hitting a 26-year low of 6.7% in 2016. 2017 saw China's economic growth rebound for the first time in seven years, although the official economic growth rate for 2017 was given as 6.8%, with most economists estimating GDP growth above 7% for the year. Reflecting this, the confidence index shown in the 2016-2018 surveys rebounded to a high level of 6.90 (6.90 for both sample Chinese firms and sample foreign firms). Notably, COVID-19 epidemic has not yet occurred in China at the end of 2019, but the short-term confidence index of sample firms has fallen to a low point, slipping to a low of 6.10 and 6.40 for sample Chinese firms and sample foreign firms respectively. This shows that the decline in confidence of companies in China to operate successfully was already evident in 2019, and the impact of the epidemic in 2020-2022 is further crystallizing this lack of confidence.

FIGURE 4. 2. MEDIUM-TERM CONFIDENCE OF COMPANIES TO OPERATE SUCCESSFULLY IN CHINA (NEXT 5 YEARS)
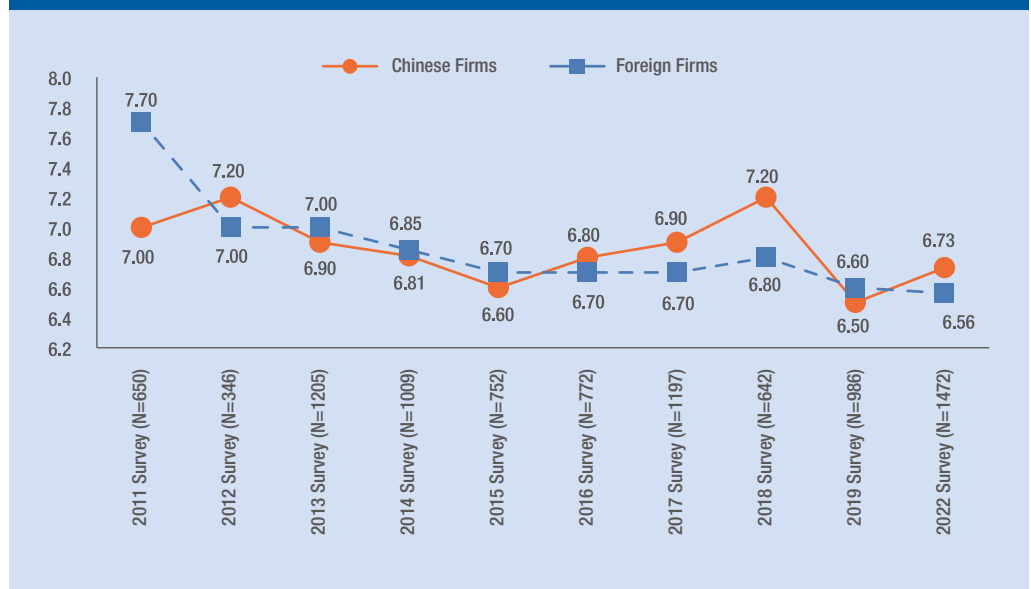

Figure 4.2 shows the medium-term (next 5 years) confidence of companies to operate successfully in China. We observe that the medium-term confidence index shows the same fluctuating trend as the short-term confidence index, but the first low of the medium-term confidence index appears in the 2015 survey, which is one year earlier than the first low of the short-term confidence index (2016 survey year). In almost all years, the value of the medium-term confidence index is higher than the value of the short-term confidence index, indicating that companies in China have a positive vision of successful business in China over a longer period of time, and are bullish on the prospects for the Chinese economy to rebound when it is at a low point. Figure 4.2 shows that the medium-term confidence of Chinese companies is more volatile, with two highs in 2012 and 2018 (both at 7.20); while the medium-term confidence of foreign companies shows a one-sided downward trend, from 7.70 in 2011, to 7.00 in 2012 and 2013, then to 6.60 in 2019, and to 6.56 in 2022.

4.2. THE RELATIONSHIP BETWEEN REVENUE PERFORMANCE AND CONFIDENCE INDEX

Figure 4.3 shows the confidence index corresponding to the 2022 revenue performance in China of the sample companies. The horizontal axis of Figure 4.3 divides the revenue performance in China of the sample firms into nine groups, ranging from the worst performance (≥50% revenue decline in China in 2022) to the best performance (≥25% revenue growth in China in 2022). The sample size of each group shows a fairly even distribution of revenue growth rates in 2022, with a total of 598 (42%) sample companies with negative revenue growth in China, 527 (37%) sample companies with positive growth, and 286 (20%) sample companies with flat growth.

Figure 4.3 shows that there is a positive relationship between confidence index and revenue performance, which is particularly evident in the short-term confidence index. 101 companies with the worst revenue performance in China in 2022 (decline rate ≥ 50%) have a short-term confidence index of only 4.32, while 185 companies with the best revenue performance in China in 2022 (growth rate ≥ 25%) have a short-term confidence index of 7.37. Figure 4.3 shows that for all groups, the medium-term confidence indices are higher than the short-term confidence indices, and the extent to which it is higher is negatively correlated with revenue performance in China in 2022, indicating that the sample companies attribute their revenue performance in 2022 mainly to short-term factors, with the poorer performing companies believing there will be more room for upward movement in the medium term, while the better performing companies believe there is relatively limited room for upward movement in the medium term. Figure 4.3 shows that the 185 companies with the best revenue performance in China in 2022 have similar short-term confidence (7.37) and medium-term confidence (7.48) in terms of value.

FIGURE 4. 3. THE RELATIONSHIP BETWEEN REVENUE PERFORMANCE IN CHINA AND CONFIDENCE IN 2022
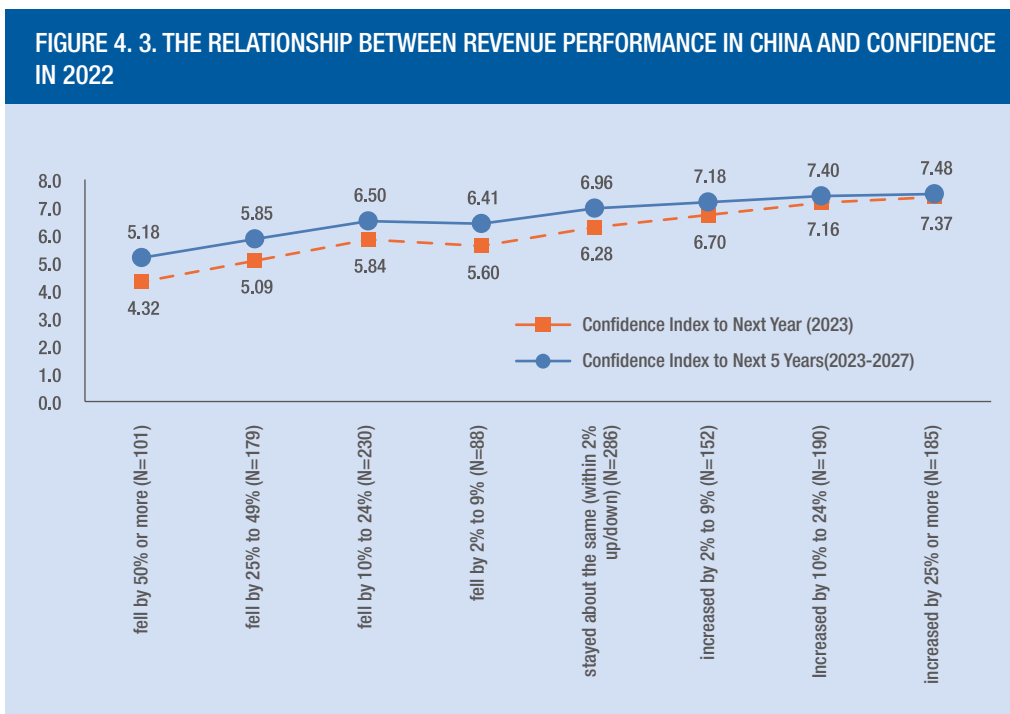
4.3. SHORT-TERM CONFIDENCE IN THE MANUFACTURING AND SERVICE SECTORS

The total sample of this survey is 1,474, of which the number of sample enterprises engaged in manufacturing sector is 749 and the number of sample enterprises engaged in service sector is 965, of which some enterprises are engaged in both manufacturing and service. After taking into account the overlap factors, the percentage of manufacturing sample enterprises is 44% and the percentage of service sample enterprises is 56%.

Figures 4.4 and 4.5 show the short-term (1 year ahead) confidence indices for the manufacturing and service sectors, respectively. The short-term confidence index for the whole sample of manufacturing sector is 6.38 (Figure 4.4), which is higher than the short-term confidence index of 6.07 (Figure 4.5) for the whole sample of service sector. Among the manufacturing industries, Civil Engineering and Construction (sample size 86, accounting for 11% of the total manufacturing sample) has the lowest short-term confidence index at 5.14. The next lowest short-term confidence index is in Consumer Products (sample size 112, accounting for 15% of the total manufacturing sample) at 5.90. Among the manufacturing industries, Paper-making and Printing (sample size 8, accounting for 1% of the total manufacturing sample) has the highest short-term confidence index at 7.38. The next highest is 6.97 for the Pharmaceutical Products and Medical Devices industry (sample size 127, or 17% of the total manufacturing sample). The distribution of confidence in the manufacturing sector reflects its business opportunities in the context of the COVID-19 epidemic; not surprisingly, the Pharmaceutical Products and Medical Devices industry (as well as the Paper-making and Printing industry) has the highest short-term confidence index among manufacturing industries; while the real estate related industry has the lowest short-term confidence index among manufacturing industries due to the dual impacts of the epidemic and policies.

FIGURE 4. 4. SHORT-TERM (NEXT 1 YEAR) CONFIDENCE INDEX FOR THE MANUFACTURING SECTOR
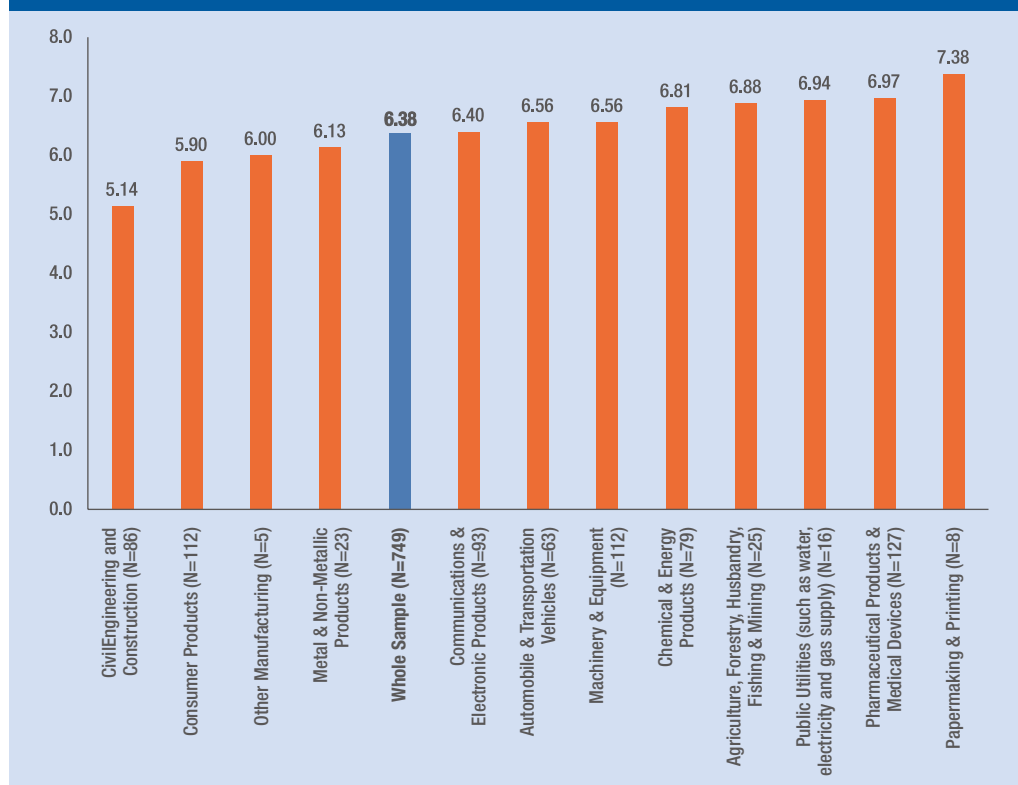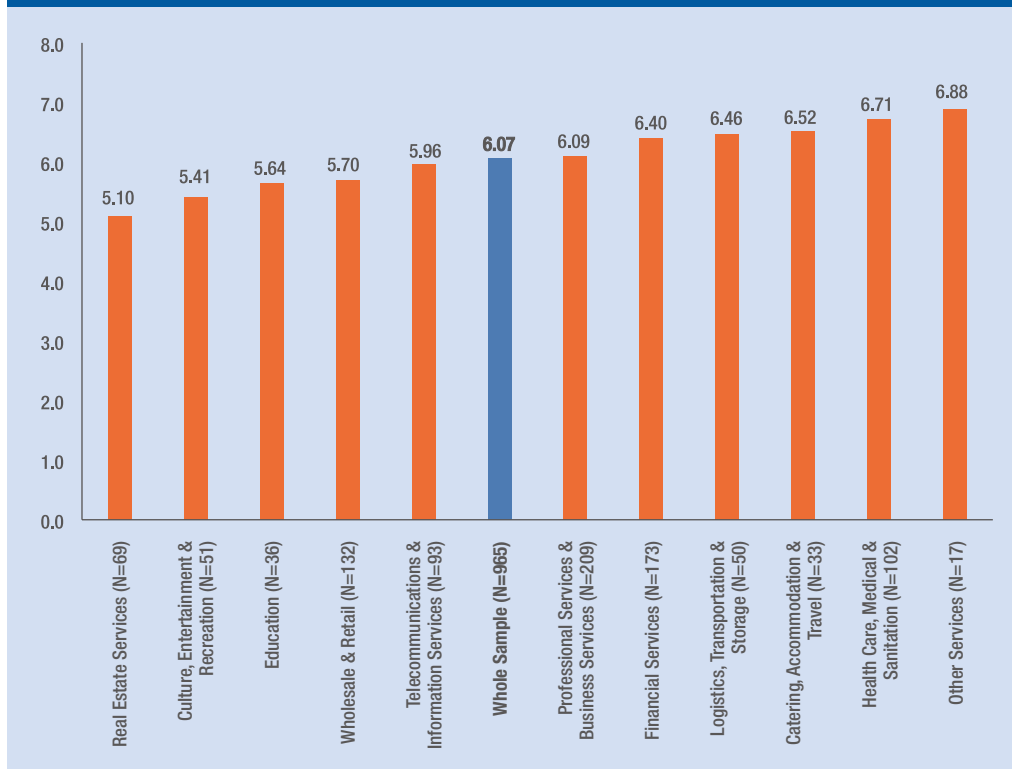
FIGURE 4. 5. SHORT-TERM (NEXT 1 YEAR) CONFIDENCE INDEX FOR THE SERVICE SECTOR

Among the service sector, Real Estate Services (sample size is 69, accounting for 7% of the total service sector sample) has the lowest short-term confidence index at 5.10, which is in line with the short-term confidence index for Civil Engineering and Construction at 5.14, reflecting the perception of a sluggish outlook for the real estate sector. The service sector with the next lowest short-term confidence index is Culture, Entertainment and Recreation industry (sample size 51, 5% of the total service sector sample) at 5.41, followed by Education industry (sample size 36, 4% of the total service sector sample) at 5.64. The Culture, Entertainment and Recreation industry and the Education industry are the hardest hit by the epidemic, and some of them are also deeply affected by the policy, so it is expected that their short-term confidence is at a low level. Among the service industries, apart from "other services", the Healthcare, Medical and Sanitation industry (sample size 102, accounting for 11% of the total service sector sample) has a relatively higher short-term confidence index (6.71), which is consistent with the short-term confidence index of the pharmaceutical products and medical devices industry (6.97), reflecting that medical-related industries are relatively favorable under the epidemic.

4.4. MEDIUM-TERM CONFIDENCE IN THE MANUFACTURING AND SERVICE SECTORS

Figures 4.6 and 4.7 show the medium-term (next 5 years) confidence indices for the manufacturing and service sectors, respectively. The medium-term confidence index for the whole sample of manufacturing sector is 6.93 (Figure 4.6), which is higher than the medium-term confidence index of 6.61 (Figure 4.7) for the whole sample of service sector. Among manufacturing sector, Civil Engineering and Construction (sample size is 86, 11% of the total manufacturing sample) has the lowest medium-term confidence index at 5.88. Excluding "other manufacturing", which has only 5 samples, the next lowest medium-term confidence index is in Consumer Products (sample size is 112, 15% of the total manufacturing sample) at 6.72. These two manufacturing industries with the lowest medium-term confidence indices are also the two industries with the lowest short-term confidence indices, which show that their low outlook is not mainly caused by short-term factors such as the epidemic, but by deeper reasons, which determine the lack of optimism about the medium-term outlook for the recovery of the real estate industry and the improvement of consumption momentum.

Among the manufacturing industries, Paper-making and Printing (sample size 8, accounting for 1% of the total manufacturing sample) and Agriculture, Forestry, Husbandry, Fishing and Mining (sample size 25, accounting for 3% of the total manufacturing sample) are the top two industries with the highest medium-term confidence indices, at 8.13 and 7.68 respectively. The Pharmaceutical Products and Medical Devices industry (sample size 127, accounting for 17% of the total manufacturing sample) has the third highest medium-term confidence index, at 7.30. For all manufacturing industries, the medium-term confidence index is higher than the short-term confidence index; the industry distribution of the medium-term confidence index basically continues the industry distribution of the short-term confidence index, indicating that the medium-term outlook of their manufacturing industries is relatively stable in the eyes of corporate executives.

FIGURE 4. 6. MEDIUM-TERM (NEXT 5 YEARS) CONFIDENCE INDEX FOR THE MANUFACTURING SECTOR
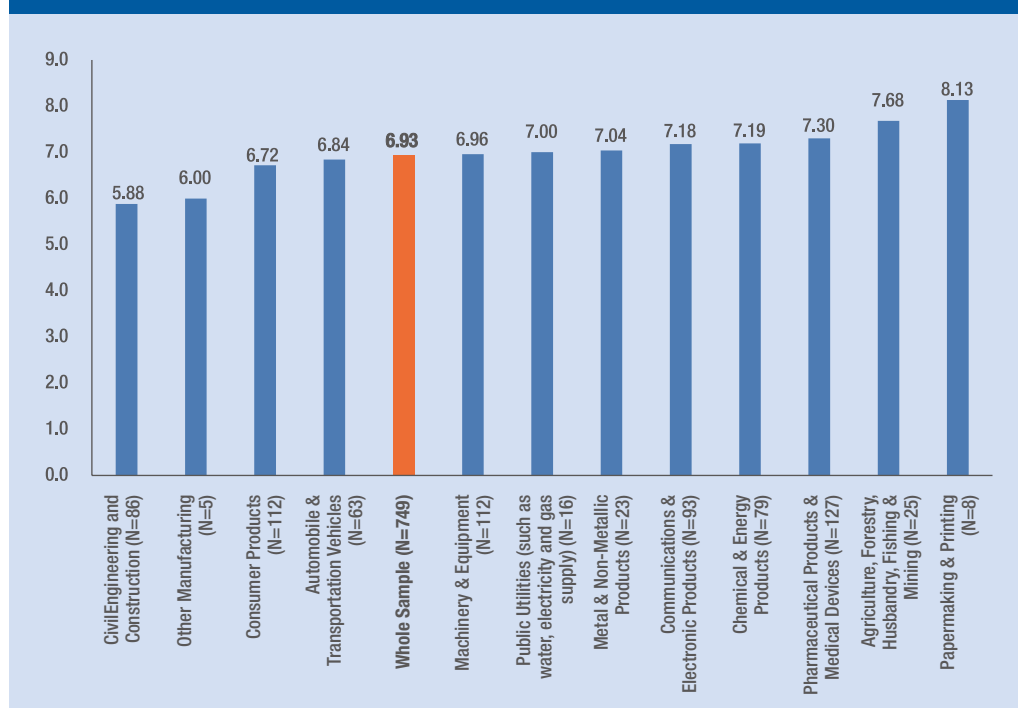
FIGURE 4. 7. MEDIUM-TERM (NEXT 5 YEARS) CONFIDENCE INDEX FOR THE SERVICE SECTOR


Among the service industries, the Real Estate Service industry (sample size 69, 7% of the total service industry sample) has the lowest medium-term confidence index at 5.80, which is in line with the medium-term confidence index for the Civil Engineering and Construction industry (5.88), reflecting the perception that the medium-term outlook for the real estate sector is not optimistic. The next lowest medium-term confidence index is in the Culture, Entertainment and Recreation industry (sample size 51, 5% of the total service sector sample) at 6.02, followed by the Education industry (sample size 36, 4% of the total service sector sample) at 6.33. These figures reflect low confidence in the medium-term business outlook for the Culture, Entertainment and Recreation industry and the Education industry in China. Among the service sector, the highest medium-term confidence index (7.55) was recorded in the Catering, Accommodation and Travel industry (sample size 33, accounting for 3% of the total service sector sample), indicating that the impact of the epidemic is a short-term shock to this industry and that the medium-term outlook is more optimistic.

4.5. THE RELATIONSHIP BETWEEN FIRM SIZE AND CONFIDENCE INDEX

Based on the answers to the question "How many employees in China does your company hire at present?" in the survey questionnaire, the size of the companies were divided into 9 categories as follows: (1) 0 to 9 (Micro); (2) 10 to 49 (Extra-Small); (3) 50 to 299 (Small); (4) 300 to 999 (Small-to-Medium); (5) 1,000 to 1,999 (Medium); (6) 2,000 to 4,999 (Medium-to-Large); (7) 5,000 to 9,999 (Large); (8) 10,000 to 49,999 (Extra-Large); (9) 50,000 or above (Giant).

Figure 4.8 shows the relationship between firm size and confidence index. We find that in the range of micro to medium sized firms, both short-term and medium-term confidence indices are positively correlated with firm size, i.e., the larger the firm size, the higher the confidence; the short-term confidence index of micro enterprises is 5.77, while that of medium enterprises is 6.41; the medium-term confidence index of micro enterprises is 6.42, while that of medium enterprises is 7.03. In the range of medium to large sized firms, the short-term confidence index is relatively stable at around 6.40, while the medium-term confidence index is negatively correlated with the size of firms, i.e., the larger the size of firms, the lower the confidence; the medium-term confidence index of medium-sized enterprises is 7.03, and the medium-term confidence index of large enterprises is 6.75. In the range of large to giant sized firms, the medium-term confidence index is positively correlated with firm size, i.e. the larger the firm size, the higher the confidence; the medium-term confidence index for large firms is 6.75 and for giant firms is 7.06. We also find that in the range of large to giant, the increase in short-term confidence index to medium-term confidence index is positively correlated with firm size, i.e. the larger the firm size, the greater the increase in short-term confidence index to medium-term confidence index; the short-term confidence index of extra-large enterprises is 6.22 and medium-term confidence index is 6.78, an increase of 9%; the short-term confidence index of giant enterprises is 6.27 and medium-term confidence index is 7.06, an increase of 13%. As to why the relationship between enterprise size and confidence index is like this, further research is needed.

FIGURE 4. 8. THE RELATIONSHIP BETWEEN FIRM SIZE AND CONFIDENCE INDEX
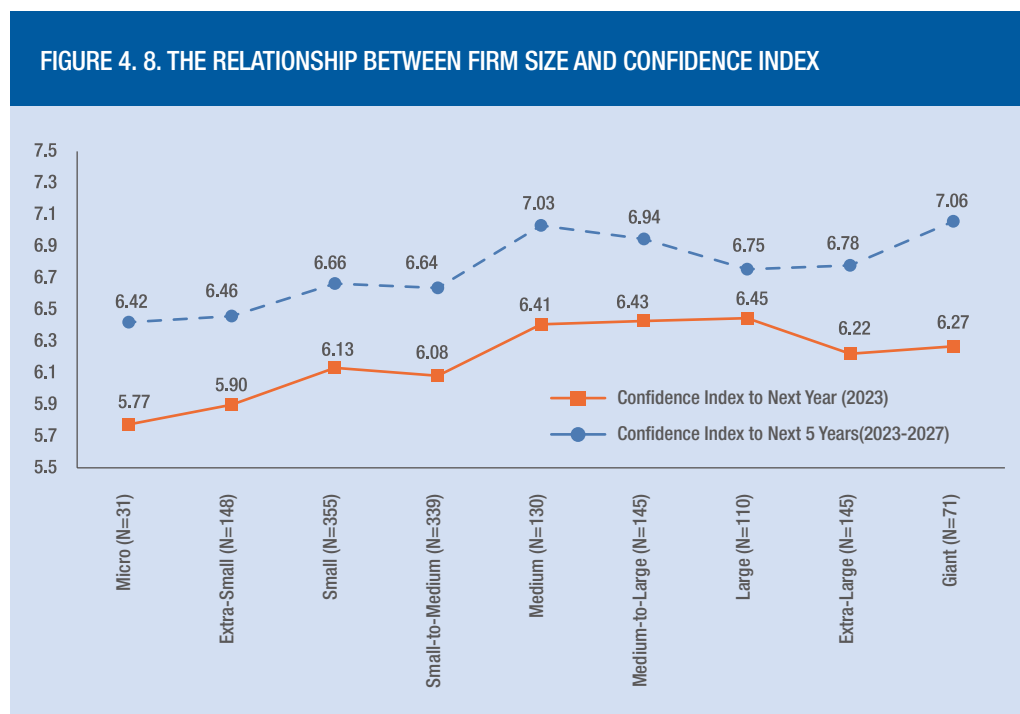
4.6. CONCLUSION

In late November 2022, the CEIBS research team conducted an online survey on the performance and operations of companies in China in the new business environment, and received in total of 1,474 valid questionnaires. Since 2011, the CEIBS research team has conducted this online survey every year, thus accumulating 12 years of data. In all years, the questionnaires include the sample companies' assessment of their short-term confidence (next 1 year) and medium-term confidence (next 5 years) in doing business in China. Based on these data, we have done some analysis of the short and medium term confidence indices and the results are as follows.

First, in the two years with the lowest short-term confidence indices (2016 and 2022), the short-term confidence indices of the sample foreign firms are lower than those of the sample Chinese firms; in all other years, the short-term confidence indices of the sample foreign firms are slightly higher than those of the sample Chinese firms. It is thus inferred that the short-term outlook of the sample foreign firms is more positive than that of the sample Chinese firms, but their sensitivity to the short-term impact of negative shocks is higher than that of the sample Chinese firms, and the negative shocks have a greater impact on the short-term confidence of the sample foreign firms than that of the sample Chinese firms.

Second, in all years, the medium-term confidence index is higher than the short-term confidence index, indicating that companies in China have a positive vision of successful business in China in the medium term and are bullish on the prospects of rebounding when the Chinese economy is at a low point. The medium-term confidence index for Chinese companies is more volatile, with two highs in 2012 and 2018; while the medium-term confidence index for foreign companies shows a one-sided downward trend from 2011-2022.

Third, in the survey at the end of 2019, when the COVID-19 epidemic has not yet occurred, the short-term confidence indices of the sample Chinese firms and foreign firms have fallen to a low level of 6.10 and 6.40, which shows that the lack of confidence of companies in operating successfully in China has already begun to emerge in 2019, and the epidemic shock in 2020-2022 is further curing this lack of confidence.

Fourth, the confidence index values obtained from the 2022 survey are positively correlated with revenue performance in 2022, especially in the short-term confidence index. 101 companies with the worst revenue performance in 2022 in China have a short-term confidence index of only 4.32, while 185 companies with the best revenue performance in 2022 have a short-term confidence index of 7.37. For all groups, the medium-term confidence index is higher than the short-term confidence index, but the degree of increase is negatively correlated with revenue performance in China in 2022, indicating that the sample companies attribute their revenue performance in China in 2022 mainly to short-term factors, with the poorer performing companies seeing more rising space in the medium term, while the better performing companies see more limited space to ascend in the medium term. This is evident from the little difference between the short-term confidence index (7.37) and the medium-term confidence index (7.48) of the group with the best revenues.

Fifth, the short-term confidence index for the whole sample of manufacturing (6.38) is higher than the short-term confidence index for the whole sample of services (6.07). Among manufacturing sector, Civil Engineering and Construction has the lowest short-term confidence index (5.14), and Consumer Products industry has the next lowest (5.90). Among the service sector, Real Estate Services has the lowest short-term confidence (5.10), followed by Culture, Entertainment and Recreation (5.41), and then Education (5.64). The low level of short-term confidence in these industries confirms that they are more affected by the epidemic and policies. Among the manufacturing industries, the Pharmaceutical Products and Medical Devices sector has the highest short-term confidence index (6.97); among the service industries, the Healthcare, Medical and Sanitation industry has the highest short-term confidence index (6.71); this reflects the special period of the epidemic that favors the medical-related industries.

Sixth, the medium-term confidence index for the whole sample of manufacturing industries (6.93) is higher than the medium-term confidence index for the whole sample of service industries (6.61). Among manufacturing sector, Civil Engineering and Construction has the lowest medium-term confidence index (5.88); among service sector, Real Estate Services has the lowest medium-term confidence index (5.80); both reflect the perceived lack of optimism in the medium-term outlook for the real estate sector. The two manufacturing industries with the lowest medium-term confidence indices (Civil Engineering and Construction, and Consumer Products) are also the two manufacturing industries with the lowest short-term confidence indices; the service industries with low medium-term confidence indices (Culture, Entertainment and Recreation, and Education) are also the two service industries with low short-term confidence indices, suggesting that the sluggish outlook of these industries is not mainly caused by short-term factors such as the epidemic, but by deeper reasons. It is worth noting that the highest medium-term confidence index among service industries is in the Catering, Accommodation and Travel industry (7.55), suggesting that executives in this industry see the epidemic as a short-term impact and are optimistic about the medium-term outlook for the industry.

Seventh, there is a non-linear relationship between firm size and confidence index. In the range of micro to medium sized firms, both short-term and medium-term confidence indices are positively correlated with firm size, i.e., the larger the firm size, the higher the confidence. In the medium to large size range, the short-term confidence index is relatively stable, while the medium-term confidence index is negatively correlated with the size of enterprises. In the range of large to giant, the medium-term confidence index returns to a positive relationship with firm size, i.e., the larger the firm size, the higher the confidence. It is found that in the range of large to giant, the increase of short-term confidence index to medium-term confidence index is positively correlated with firm size; in other words, the larger the firm size is, the greater the increase from short-term confidence index to medium-term confidence index. Further research is needed to investigate why this relationship between firm size and confidence index is observed.
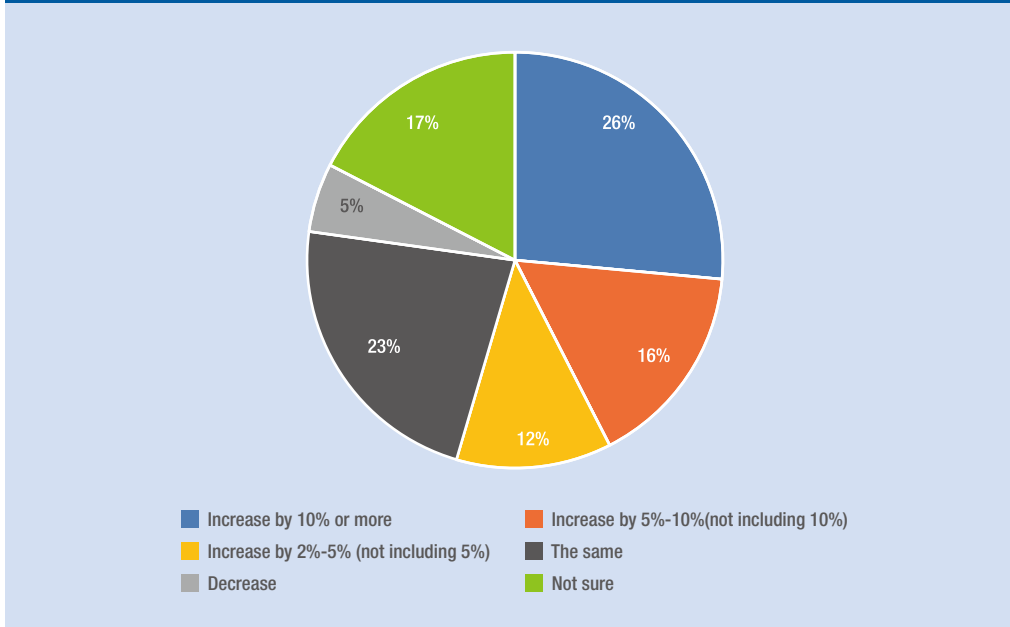
Implications From Innovation Under New Business Environment

As innovation, or research and development (R&D), is risky in nature, the commitment that firms are willing to engage its resources into nurturing innovation indicates the long-term outlook firms take. Their R&D efforts are indicative in understanding the future of China's innovation capacity and implications on long-term growth. We find that among the 1,474 survey responses, only 5.4% reported a definite plan to decrease R&D investments for the coming three years compared to 2022, whereas a striking share of 26.5% reported a plan to not only increase future R&D, but at a magnitude of more than 10% (Figure 5.1).
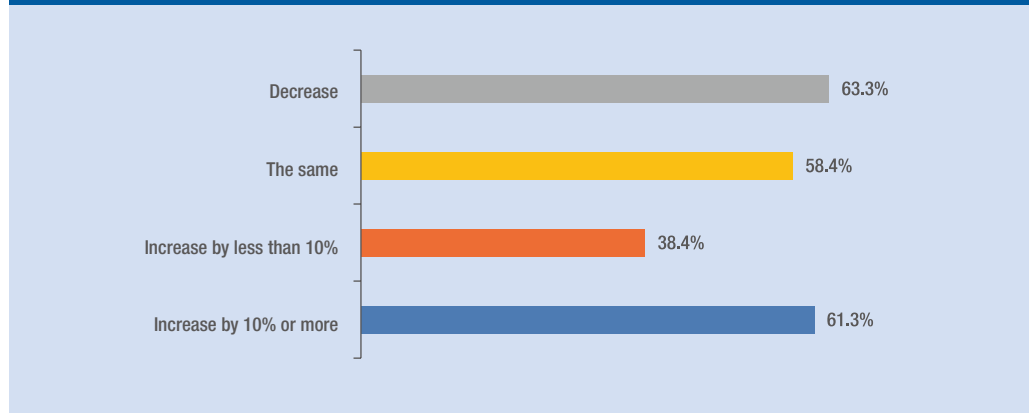
FIGURE 5. 1. FUTURE R&D SPENDING OUTLOOK

- Increase by 10% or more
- Increase by 5%-10%(not including 10%)
- Increase by 2%-5% (not including 5%)
- The same
- Decrease
- Not sure

Note: Summarized from responses of Q19 of the questionnaire:" In the coming 3 years (2023-2025), your company's R&D spending in China is expected to?".

There is usually high persistence in R&D spending decisions. We find that a major portion of the firms stick to the same investment decisions for 2022 and for the future 3 years (Figure 5.2). The remaining portion mainly adjust their investment decisions within the same direction (that is, increase or decrease at different magnitudes). However, we find that some firms that plan to increase future R&D by more than 10% held back on R&D investments recently (2.6% reported no R&D in both 2021 and 2022, and another 2.6% reported a decrease of more than 10% in 2022 compared to 2021). Likewise, many firms that plan to decrease future R&D had increased investments in 2022 (15.2%), while many of them have invested similar amounts in both 2021 and 2022 (17.7%).

FIGURE 5. 2. FUTURE R&D SPENDING DECISION THE SAME AS R&D SPENDING DECISION IN 2022

Category	Percentage
Decrease	63.3%
The same	58.4%
Increase by less than 10%	38.4%
Increase by 10% or more	61.3%

Note: Summarized from comparing responses of Q18 ("Compared to 2021, what is your company's estimated 2022 R&D spending in China?") and Q19 (" In the coming 3 years (2023-2025), your company's R&D spending in China is expected to?").

Firms mainly have some form of internal R&D (84.1%) and reported collaboration with either business partners or academic institutions as a dual force. A small share of firms also purchase externally. The innovation activities that firms engage in range from relatively easier ones (such as providing technical training for employees) to harder ones (such as adding new features to existing products and reducing production costs) to the most challenging ones (such as introducing new products or services).

Firms from the two spectrum of future R&D spending have both committed high share (above 10%) of their revenue in R&D— account for 30.3% of firms that wish to increase R&D investments in the coming 3 years and 34.2% of firms that wish to decrease future R&D investments— indicating the difficulty in R&D management, especially in a time of uncertainty. We are interested in the characteristics of those firms that are willing to increase their allocation of resources for R&D versus those that plan to draw back under the new business environment. The majority of our respondents are decision makers that are alumni of CEIBS, thus they represent mainly leading companies of different industries, which indicate that there should be less heterogeneity among the profitability and management of these firms. However, we observe versatile responses in future R&D expense. In the following sections, we explore the business and industrial characteristics firms belong to, resource constraint that firms face, and firms' expectations about the future together shape the R&D spending decisions.

5.1. BUSINESS AND INDUSTRIAL CHARACTERISTICS

No matter how future R&D spending is planned, Chinese private enterprises are the majority. However, we do find that the firms that plan to hold R&D spending constant for future years have more foreign ownership involved. Small (50 to 299 employees) and Small-to-Medium (300 to 999 employees) are also the majority for all firms. Extra-Large firms (10,000 to 49,999 employees) have the tendency to either hold constant or shrink the magnitude of future R&D spending, most possibly due to more operating expenses compared to smaller-sized firms. Firms that plan to increase future R&D by 10% or more mostly produce only high-end or both high-and-middle-end products, with no firms producing only low-end products. Firms that plan to decrease their future R&D spending also report no pure low-end products, however, a high share (6.3% compared to the whole sample mean of 3%) of these firms are not sure how the products they produced are positioned in the market.

We find that "Professional Services & Business Services" and "Pharmaceutical Products & Medical Devices" are two industries with wide variations in future R&D planning; a substantial share of firms among all categories of future R&D spending belong to these two industries. Other than that, the major industries for increased R&D spending are "Health Care, Medical & Sanitation" and "Machinery & Equipment". Firms that belong to "Financial Services" and "Consumer Products" tend to hold constant their future R&D expenditure, whereas firms in "Telecommunications & Information Services" and "Machinery & Equipment" report plans for future spending decline.

FIGURE 5. 3. MAIN BUSINESS LOCATIONS
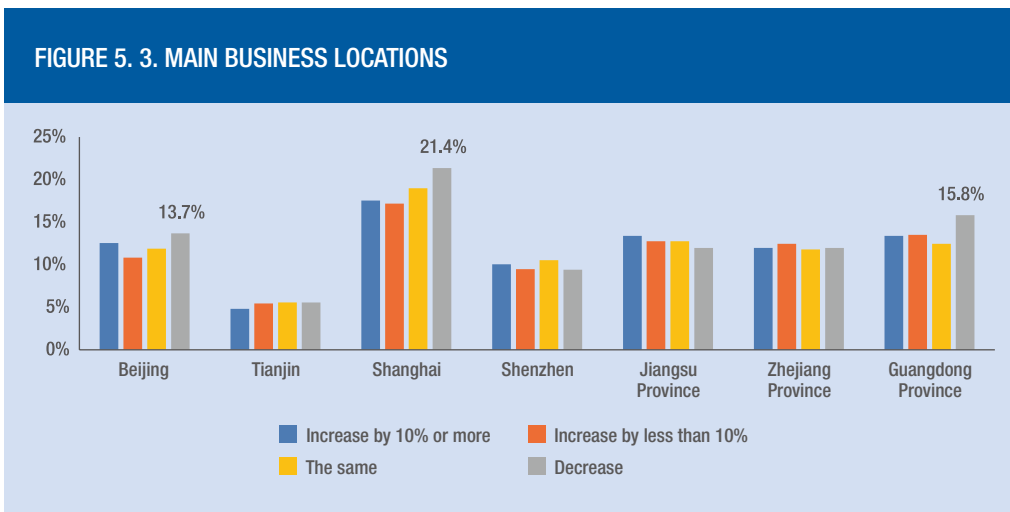
Note: Summarized from responses of Q4 of the questionnaire: "What is the main location of your company's China business? (Multiple Answers Possible)".

We observe from the whole sample that the top three locations for business operations are Shanghai (18.3%), Guangdong province (13.1%), and Jiangsu province (12.5%). The distribution is slightly different according to different R&D expense outlooks. Most notably are firms that plan to decrease future R&D. Among them, we find that 21.4% reported that Shanghai is a main location for business operations, 15.8% reported Guangdong province, and 13.7% reported Beijing (Figure 5.3).
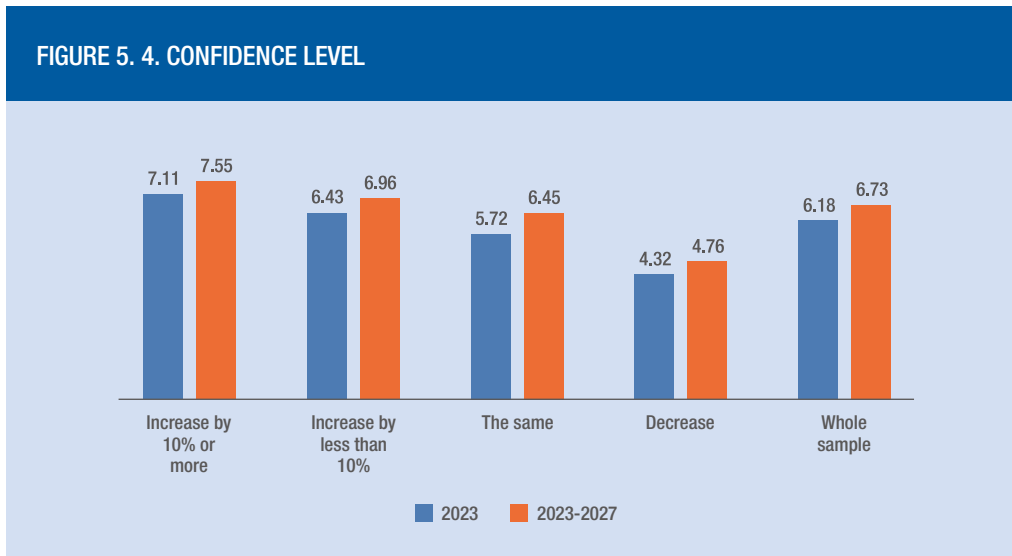
5.2. RESOURCE CONSTRAINTS

Firms that plan to decrease future R&D rely heavily on business-in-China for their revenue and most face a smaller revenue increase. Firms that plan to increase R&D spending not only have more diverse business operations, but also reported a higher share of revenue increase (both from operations in China and overseas operations).

46.8% of firms with declining future R&D spending rely entirely on businesses in China, whereas only 40.7% for firms that plan to increase R&D spending. 46.5% of the firms that plan to increase future R&D spending have reported an increase in revenue from business-in-China and while 73.4% of the firms that wish to decrease future R&D reported a decline in revenue from business-in-China. Firms that plan to increase future R&D rely more on innovation to generate their revenue. On average, 80% of these firms reported that their past revenue benefited from innovation.

Approximately half of all the firms (51.8%) receive no support from the government. The share of no government support is smaller among the firms that plan to increase future R&D spending (44.8%), whereas a higher share is observed among firms that plan to reduce future R&D (64.6%). In China, a lot of government support regarding R&D is related to the recognition of High-and-New-Technology-Enterprises (HNTE). This recognition is usually rewarded to firms that are competent in their respective technological fields. Those that show potential are considered as part of the cultivation pool, which also enjoy some benefits. 35.3% of the firms that plan to increase future R&D are either recognized as HNTE on the national or provincial level, or part of the national or provincial level cultivation pool. On the other hand, only 26.6% of the firms that are downsizing their R&D attained such a status in the past 3 years.

5.3. FUTURE EXPECTATIONS

Firms tend to have higher long-term confidence level (2023-2027) compared to the near future (2023). Most quote the evolution of pandemic-related policies as the most important factor when forming their beliefs. Firms that plan to increase future R&D by 10% or more have the highest confidence level going forward, whereas those that wish to decrease their spending have a much lower confidence level (Figure 5.4).

FIGURE 5. 4. CONFIDENCE LEVEL

	Increase by 10% or more	Increase by less than 10%	The same	Decrease	Whole sample
2023	7.11	6.43	5.72	4.32	6.18
2023-2027	7.55	6.96	6.45	4.76	6.73

■ 2023   ■ 2023-2027

Note: Summarized from responses of Q25 ("How confident are you that your company's business operations in China will be successful in the coming year (2023)? Please move the cursor or tap on the scale until the number you want appears in the box on the left.") and Q27 ("How confident are you that your company's business operations in China will be successful in the next 5 years (2023-2027)? Please move the cursor or tap on the scale until the number you want appears in the box on the left.") of the questionnaire.

As perceived risk (or uncertainty) is a crucial determinant in planning R&D, we find that firms that are more conservative going forward have faced a worsening of business environment both in the domestic market and the overseas market (Figure 5.5). We conjecture that the past experience and current revenue conditions together shaped the varying confidence levels among the firms we observe.

FIGURE 5. 5. PERCEPTION OF BUSINESS OPERATIONS OVER THE PAST 5 YEARS
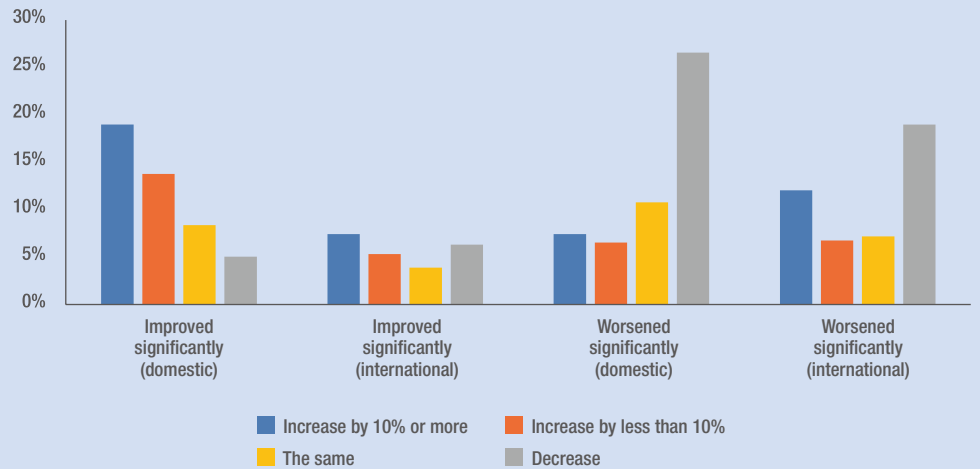
Note: Summarized from responses of Q29 ("Looking back, for the past 5 years (2018-2022), how would you describe China's domestic business environment for your company's operations in China?") and Q30 ("Looking back, for the past 5 years (2018-2022), how would you describe the international business environment for your company's operations in China?") of the questionnaire.

5.4. CONCLUSION

Managing R&D under changing business environment is a challenging and important issue. We find some firms choose to face the uncertainty by increasing their R&D, while some cut the losses and reduce future R&D. As R&D spending has the dual nature of both in need of long-term planning (high persistence) and risky (influenced by external shocks), we find that factors from both categories are crucial in understanding the phenomena we observe.

First of all, future R&D still relies heavily on current R&D spending pattern. Most firms stick to the same investment decisions for 2022 and for the future 3 years, with only a small portion changing investment decisions to compensate past decisions. Secondly, we find that firms with a healthy profit margin and core technological competence are in a better situation to expand R&D. These two factors are more important elements than firm characteristics such as firm size, product position, and industry. Lastly, the main locations for business operations and confidence for future outlook are important deciding factors in a changing business environment. We observe that firms than plan to decrease future R&D have a higher share that experienced a disruption in business operations. These firms also have the lowest confidence level for both 2023 and future 5 years, whereas firms that plan to expand R&D spending are the most optimistic.

SECTION 6
Conclusion

The CEIBS research team has been doing this online questionnaire every year since 2011, thus accumulating 12 years of data. Based on this online survey of company executives (95% CEIBS alumni and current students), conducted from November 18-27, 2022, with a total of 1,474 valid responses, we analyze the performance and operational adjustments companies are making in response to the new business environment.

The macroeconomic background of this survey can be summarized by the preliminary accounting results of the Chinese economy for the fourth quarter of 2022 released by the National Bureau of Statistics (overall year-on-year growth rate of 2.90%). The largest decline was recorded in the Real Estate industry (-7.2%), followed by the Accommodation and Restaurants industry (-5.8%). In contrast, the Finance industry and Information Transmission, Software & Information Technology industry have continued to grow since the first quarter of 2020, with growth rates of 5.9% and 10.0%, respectively. Almost half (49.6%) of the companies in our survey sample are in the service sector, while 34.1% are in manufacturing and another 16.3% are in both services and manufacturing sectors. 25.4% of the companies in our sample consider their target market positioning to be high-end, 33.6% consider their market positioning to be high-end and mid-to-high-end markets, while 19.5% cover all markets from low-end to high-end.

More than half (54.9%) of the sample enterprises in this survey were wholly privately owned, followed by wholly foreign-owned enterprises at 16.0%. Chinese state-owned enterprises (including state-dominated mixed-ownership enterprises and wholly state-owned enterprises) accounted for 9.2% of the sample, Chinese private enterprises (including wholly privately-owned enterprises and privately-owned mixed-ownership enterprises) accounted for 65.5%, and foreign enterprises (including wholly foreign-owned enterprises and foreign-funded joint ventures) accounted for 19.7%. The sample consisted of two main types of enterprises: 24.1% were small sized (50 to 299 employees) and 23.0% were small to medium-sized (300 to 999 employees). The majority (78%) of the sample companies were "introverted" (50% or more of their revenues came from operations in China). The top three locations of the sample companies' primary operations in China were Shanghai (19.1%), Guangdong Province (13.6%) and Beijing (12.8%). Many companies (217) indicated that they operate nationwide, while another large majority of companies (123) operate primarily in eastern China.

Based on these companies, we analyze in this report the impact of the new business environment on their operations and future development in three areas: revenue performance, short-term (1 year ahead) and medium-term (5 years ahead) confidence analysis, and R&D management options, with a focus on companies that have experienced significant revenue declines.

In the analysis of the revenue data of the sample firms, we found that the portrait of a typical firm affected by the 2022 COVID-19 epidemic is a small-scale private service firm whose target customers are individual customers at the low end of the industry. This type of enterprise is an important part of our economy and has a high dependence on a healthy business environment, yet it has not enjoyed sufficient policy support during the impact of the epidemic. Therefore, it is recommended that the government focus its attention and targeted support on such companies. 2022's epidemic was a severe challenge for our economy and the market generally reflected negative sentiment. However, the data show that the percentage of companies with declining revenue did not far exceed the percentage of companies with rising revenue, and certain segments even showed good resilience under the impact of the epidemic, and displayed revenue growth against the trend (e.g. high-end companies in the industry). Therefore, we believe that in the process of economic recovery, precise policy support can be more effective in helping the economy to get on the right track of recovery than adopting a carpeted policy support.

Analysis also find that a homogeneous industry layout is not conducive to firms' resilience under shocks, which is particularly evident in the impact of the COVID-19 epidemic in 2022. The revenue of companies in service sector is more negatively affected by the strict mobility restriction policy than manufacturing sector companies. For manufacturing companies, although they are spared from huge revenue declines because currently, they are not involved in the services sector, a decentralized industry layout will be more likely to bring them growing opportunity in other types of challenges that may arise in the future (such as raw material shortages or parts embargoes due to geopolitical conflicts).

In addition, the study shows a negative relationship between firm size and revenue decline, i.e., the larger (smaller) the firm, the lower (higher) the probability of its revenue decline. This finding reflects the fact that large-scale firms have more room to maneuver and thus remain resilient during epidemics and similar shocks. The reasons for this are manifold, including tilts of government policy due to the growth of firms' size, lower financing costs provided by capitalists, and market recognition of firms' popularity. However, it is not yet possible to determine whether the strong resilience of large-scale firms contributes to future short-term confidence or whether the stronger future short-term confidence of large-scale firms contributes to their stronger resilience. Therefore, the establishment of a causal relationship between the two deserves a more in-depth and focused study.

From the time series analysis of the confidence index, we find that the short-term confidence index shows a fluctuating trend, showing a downward trend during 2011-2016, turning upward during the survey interval of 2016-2018, and then showing a downward trend again during 2018-2022, with the two lowest short-term confidence index points occurring in 2016 and 2022. The confidence index obtained from the 2016 survey bottomed out (6.20 for sample Chinese firms and 6.10 for sample foreign firms), which coincided with a 26-year low in China's economic growth rate that year (6.7%). 2017 saw a rebound in China's economic growth, which was simultaneously reflected in the rebound in confidence indices shown in the 2016-2018 survey. In all years except 2016 and 2022, the short-term confidence index of the sample foreign firms is slightly higher than that of the sample Chinese firms. It is inferred that the short-term outlook of the sample foreign firms is more positive than that of the sample Chinese firms, but their sensitivity to the short-term impact of negative shocks is higher than that of the sample Chinese firms, and the short-term confidence of foreign firms is hit harder by negative shocks than that of the sample Chinese firms. The decline in the confidence of the sample firms to operate successfully in China was first revealed as early as 2019, which shows that the lack of confidence of the firms is not entirely affected by the epidemic shock, but the epidemic shock in 2020-2022 only further cements this lack of confidence.

The medium-term confidence index shows a similar trend to the short-term index, but the first low in the medium-term confidence index occurs one year earlier. The medium-term confidence index is higher than the short-term confidence index in all years, indicating that companies in China report a positive outlook on successful business in China and are optimistic that the Chinese economy will bottom out in the medium-term. The medium-term confidence index for Chinese companies is more volatile, with two highs in 2012 and 2018, while the medium-term confidence index for foreign companies shows a one-sided downward trend.

The report also finds a positive correlation between confidence and firm revenue performance, which is particularly evident in the short-term confidence index. We divide the China revenue performance of the sample companies into nine groups, ranging from the worst performance (≥50% decline in China revenue in 2022) to the best performance (≥25% growth in China revenue in 2022). The medium-term confidence index is higher than the short-term confidence index in all groups, and the degree of increase from short-term confidence index to medium-term index is negatively correlated with revenue performance in China in 2022, suggesting that the sample companies attribute their revenue performance mainly to short-term factors, and the divergence between companies with different revenue performance mainly lies in their perception of medium-term upside.

In terms of industry, both short-term and medium-term confidence indices are higher for the whole sample of manufacturing than for the whole sample of services (6.38 vs. 6.07 in the short-term and 6.93 vs. 6.61 in the medium-term). The two segments with the highest short-term confidence among manufacturing industries are "Paper-making and Printing" and "Pharmaceutical Products and Medical Devices", reflecting the business opportunities in the context of the COVID-19 epidemic, such as the high demand for masks and PCR testing reagents. The two manufacturing industries with the lowest short-term confidence indices are "Civil Engineering and Construction" and "Consumer Products", which are expectedly low due to the double impacts of the epidemic and related policies. Notably, within the manufacturing sector, the two industries with the lowest medium-term confidence scores are also the two with the lowest short-term confidence scores, namely, Civil Engineering and Construction and Consumer Products, suggesting that there are deeper reasons for their sluggish outlook than just the short-term impact of the epidemic.

The distribution of short-term confidence in the services sector is similar to that of the manufacturing sector, with a higher short-term confidence index (6.71) in the Healthcare, Medical and Sanitation industry reflecting the relative preference of medical-related industries in the face of the epidemic. The three industries with the lowest short-term confidence indices in the service sector are "Real Estate Services", "Culture, Entertainment and Recreation" and "Education". The latter two were the most affected by the epidemic. On average, medium-term confidence in the service sector is higher than their short-term confidence, again suggesting that the current downturn in several service industries is largely attributable to short-term effects.

The confidence index also has a non-linear relationship with firm size. In the micro to medium size range, both short-term and medium-term confidence indices are positively correlated with firm size, i.e., the larger the firm size, the higher the confidence. In the medium to large size range, the short-term confidence index is relatively stable, while the medium-term confidence index is negatively correlated with the size of enterprises. In the range of large to giant, the medium-term confidence index returns to a positive correlation with firm size, and the increase from short-term confidence index to medium-term confidence index is also positively correlated with firm size, i.e. the larger the firm size is, the greater the increase from short-term confidence index to medium-term confidence index. As for the reason why the relationship between firm size and confidence index is like this, further research is needed.

Finally, in this changing business environment, we also look at the challenging and important issue of how companies manage their R&D. Some firms choose to cope with uncertainty by increasing their R&D spending, while others choose to cut their losses and curtail future R&D. As R&D spending has the dual nature of both in need of long-term planning (high persistence) and risky (influenced by external shocks), both types of factors are crucial to explain the phenomena we observe. First, future R&D plans remain dependent on current investment decisions. Most firms decide to follow their investment decisions of 2022, and only a small fraction of firms will change their R&D investment decisions to compensate for past decisions. Second, with a healthy profit margin and core technology is more conducive to firms to expand R&D, and these two are more important factors than firm characteristics such as size, product positioning and industry. Finally, the primary locations of firms' business and confidence in their future prospects are also important determinants. We find a higher proportion of firms have experienced disruptions in business operations than those planning to reduce future R&D, and these firms also are the ones with the lowest levels of confidence in 2023 and in the five years ahead, whereas those planning to expand R&D spending are the most optimistic.

Questionnaire

2022 CEIBS China Business Survey

On Performance and Operations of Companies in China under New Business Environment

This survey should take around 10 minutes to complete, on your phone, tablet or computer.

You can interrupt the survey and complete it at a later time. The software will remember where you stopped as long as you use the same device and open the same link.

Thank you for your time! Please be assured that the confidentiality of responses will be respected. The research report publishes the overall results of the survey sample and does not reveal any information about individual companies.

Note: In this survey, **"China" refers to mainland China***;* **"Foreign" refers to all overseas economies***, including Taiwan (China), Hong Kong (China), and Macao (China).*

First, a few questions about your company:

Q1. What is the ownership structure of your company?
(1) Wholly State-Owned Chinese Enterprise
(2) Wholly Private-Owned Chinese Enterprise
(3) Mixed-owned Chinese Enterprise I (state ownership ≥ 50%; no foreign ownership)
(4) Mixed-Owned Chinese Enterprise II (private ownership >50%; no foreign ownership)
(5) Wholly Foreign-Owned Enterprise
(6) Foreign Joint Venture I (foreign ownership ≥ 50%)
(7) Foreign Joint Venture II (foreign ownership < 50%)
(8) Other (please specify): _____

Q2. Your company's biggest foreign ownership is from:
(1) USA
(2) European Union
(3) Hong Kong (China)
(4) Taiwan (China)
(5) Japan
(6) South Korea
(7) ASEAN (Indonesia, Malaysia, Philippines, Thailand, Singapore, Brunei, Cambodia, Laos, Myanmar, Vietnam)
(8) Australia and New Zealand
(9) India
(10) Russia
(11) Central Asia
(12) Africa
(13) Latin America
(14) Other (please specify): _____

Q3. How many employees in China does your company hire at present?
(1) 0 to 9
(2) 10 to 49
(3) 50 to 299
(4) 300 to 999
(5) 1,000 to 1,999
(6) 2,000 to 4,999
(7) 5,000 to 9,999
(8) 10,000 to 49,999
(9) 50,000 or above

Q4. Where is the main location of your company's China business? (Multiple Answers Possible):
(1) Beijing
(2) Tianjin
(3) Shanghai
(4) Shenzhen
(5) Jiangsu Province
(6) Zhejiang Province
(7) Guangdong Province
(8) Other (please specify): _____

Q5. Which sector is your company's main business? (Note: Construction belongs to manufacturing)
(1) Services
(2) Manufacturing
(3) Both services and manufacturing

Q6a. Mainly in which service industry? (Please choose one only)
(1) Health Care, Medical & Sanitation
(2) Logistics, Transportation & Storage
(3) Telecommunications & Information Services
(4) Wholesale & Retail
(5) Education
(6) Financial Services
(7) Catering, Accommodation & Travel
(8) Culture, Entertainment & Recreation
(9) Real Estate Services (Note: Real estate construction belongs to manufacturing)
(10) Professional Services & Business Services
(11) Other services (please specify): _____

Q6b. Mainly in which manufacturing industry? (Please choose one only)
(1) Consumer Products
(2) Pharmaceutical Products & Medical Devices
(3) Automobile & Transportation Vehicles
(4) Machinery & Equipment
(5) Communications & Electronic Products
(6) Agriculture, Forestry, Husbandry, Fishing & Mining
(7) Public Utilities (such as water, electricity and gas supply)
(8) Chemical & Energy Products
(9) Paper-making & Printing
(10) Metal & Non-Metallic Products
(11) Civil Engineering and Construction
(12) Other manufacturing (please specify): _____

Q7. Compared with other companies in the same industry, your company's main products/ services belong to:
(1) High-end
(2) Mid-end
(3) Low-end
(4) Both high-end & mid-end
(5) Both mid-end & low-end
(6) Both high-end & low-end
(7) All range from low, middle to high
(8) Not sure

Q8. Your company's main customers in China are:

(1) Individuals (B2C)

(2) Companies/Organizations (B2B)

(3) Both individuals (B2C) and companies/organizations (B2B)

(4) No customers in China

(5) Other (please specify): _____

Next, a few questions about your company's performance in 2022:

Q9. In your company's 2022 revenue, what is the contribution of business-in-China?

(1) 100% (my company's 2022 revenue comes entirely from China)

(2) 75%-99%

(3) 50%-74%

(4) 25%-49%

(5) 1%-24%

(6) 0%

(7) Not sure

Q10. Please name three major factors that negatively impacted your company's 2022 China business:

(1) Most important factor: _____

(2) Second most important factor: _____

(3) Third most important factor: _____

Q11. Compared to 2021, your company's 2022 revenue from business-in-China:

(1) Fell by 50% or more

(2) Fell by 25%-49%

(3) Fell by 10%-24%

(4) Fell by 2%-9%

(5) Stayed about the same (within 2% up/down)

(6) Increased by 2%-9%

(7) Increased by 10%-24%

(8) Increased by 25% or more

(9) Not sure

Q12. In which quarter did your company's China revenue in 2022 drop the most? (Multiple Answers Possible)

(1) 2022 Quarter 1

(2) 2022 Quarter 2

(3) 2022 Quarter 3

(4) 2022 Quarter 4 (Estimated)

Q13. In the drop of your company's revenue from China business in 2022, how much was related to China's pandemic prevention policy?

(1) 0%

(2) 1%-24%

(3) 25%-49%

(4) 50%-74%

(5) 75%-99%

(6) 100%

(7) Not sure

Q14. Compared to 2021, your company's 2022 revenue from business-outside-China:
(1) Fell by 50% or more
(2) Fell by 25%-49%
(3) Fell by 10%-24%
(4) Fell by 2%-9%
(5) Stayed about the same (within 2% up/down)
(6) Increased by 2%-9%
(7) Increased by 10%-24%
(8) Increased by 25% or more
(9) Not sure

Q15. In the drop of your company's revenue from business-outside-China in 2022, how much was related to China's pandemic prevention policy?
(1) 0%
(2) 1%-24%
(3) 25%-49%
(4) 50%-74%
(5) 75%-99%
(6) 100%
(7) Not sure

Next, a few questions about your company's innovation:

Q16. In your company's China business in 2022, what is the percentage of R&D employees in total employment?
(1) 0%
(2) Above 0% but less than 2%
(3) 2%-4.9%
(4) 5%-9.9%
(5) 10%-29.9%
(6) 30% or higher
(7) Not sure

Q17. In your company's China operation in 2022, what is the percentage of R&D spending in total revenue?
(1) 0%
(2) Above 0% but less than 2%
(3) 2%-4.9%
(4) 5%-9.9%
(5) 10%-29.9%
(6) 30% or higher
(7) Not sure

Q18. Compared to 2021, your company's R&D spending in China in 2022 is estimated to have
(1) No R&D in both 2021 and 2022
(2) increased by 10% or more
(3) increased by 5%-9.9%
(4) increased by 2%-4.9%
(5) stayed about the same (within 2% up/down)
(6) decreased by 2%-4.9%
(7) decreased by 5%-9.9%
(8) decreased by 10% or more
(9) Not sure

Q19. In the coming 3 years (2023-2025), your company's R&D spending in China is expected to
(1) increase by 10% or more
(2) increase by 5%-9.9%
(3) increase by 2%-4.9%
(4) stay about the same (within 2% up/down)
(5) decrease by 2%-4.9%
(6) decrease by 5%-9.9%
(7) decrease by 10% or more
(8) Not sure

Q20. In the past years (2020-2022), what percentage of your company's R&D spending in China was from Chinese government funds?
(1) 0%
(2) 1%-24%
(3) 25%-49%
(4) 50%-74%
(5) 75%-99%
(6) 100%
(7) Not sure

Q21. In the past 3 years (2020-2022), which status of your company was the reason for receiving Chinese government R&D funds?
(1) Status as national-level High and New Technology Enterprise (HNTE)
(2) Status as provincial-level High and New Technology Enterprise (HNTE)
(3) Part of the cultivation pool of the national-level High and New Technology Enterprise (HNTE)
(4) Part of the cultivation pool of the provincial-level High and New Technology Enterprise (HNTE)
(5) Other (please specify): _____

Q22. In the past 3 years (2020-2022), what activities below did your company engage? (Multiple Answers Possible)
(1) Added new features or functions to existing products or services
(2) Introduced new products or services
(3) Introduced new technologies to improve production processes or products
(4) Introduced new quality control processes in production
(5) Adopted new measures to reduce production costs
(6) Improved production flexibility
(7) Provided technical training to employees
(8) Introduced new management processes
(9) Other (please specify): _____

Q23. In the past 3 years (2020-2022), what was the main method for your company to achieve innovation in China? (Multiple Answers Possible)
(1) Internal R&D
(2) Collaborative R&D with business partners (e.g. suppliers, customers)
(3) Collaborative R&D with academic institutions (e.g. universities, research institutes)
(4) External introduction or purchase (e.g. patent licensing, technology transfer, commissioned development)
(5) Other (please specify): _____

Q24. In the past 3 years (2020-2022), what do you estimate as the contribution of your company's innovation to its China revenue?
(1) 0%
(2) 1%-24%
(3) 25%-49%
(4) 50%-74%
(5) 75%-99%
(6) 100%
(7) Not sure

Next, a few questions about prospects of doing business in China:

Q25. How confident are you that your company's business operations in China will be successful in the coming year (2023)? Please move the cursor or tap on the scale.

0=No confidence; 10=highest confidence

0 1 2 3 4 5 6 7 8 9 10

Confidence in successful operation of my company's China business in the coming year (2023)

Q26. Please list three major factors you considered in your confidence rating for 2023:
(1) Most important factor: _____
(2) Second most important factor: _____
(3) Third most important factor: _____

Q27. How confident are you that your company's business operations in China will be successful in the next 5 years (2023-2027)? Please move the cursor or tap on the scale.

0=No confidence; 10=highest confidence

0 1 2 3 4 5 6 7 8 9 10

Confidence in successful operation of my company's China business in the next 5 years (2023-2027)

Q28. Please list three major factors you considered in your confidence rating for the next 5 years (2023-2027):
(1) Most important factor: _____
(2) Second most important factor: _____
(3) Third most important factor: _____

Q29. Looking back, for the past 5 years (2018-2022), how would you describe China's domestic business environment for your company's operations in China?
(1) Improved significantly
(2) Improved moderately
(3) Improved slightly
(4) No change
(5) Worsened slightly
(6) Worsened moderately
(7) Worsened significantly
(8) Not sure

Q30. Looking back, for the past 5 years (2018-2022), how would you describe the international business environment for your company's operations in China?
(1) Improved significantly
(2) Improved moderately
(3) Improved slightly
(4) No change
(5) Worsened slightly
(6) Worsened moderately
(7) Worsened significantly
(8) My company operates in China only and is not affected by changes of international business environment
(9) Not sure

Q31. Do you have any additional comments on doing business in China? (Please be brief)

Finally, a few questions about yourself:

Q32. What is your position in the company? (Please choose the closest to your position)
(1) Principal decision-making role (CEO/GM/Main Owner/Main Partner/Chief Representative)
(2) Deputy decision making role (VP/Vice GM/Director/Assistant of GM)
(3) Project Manager/ Business Development Manager/Product Manager
(4) HR Executive
(5) Manufacturing, Operations, Logistics or Engineering Executive
(6) Marketing Executive/Sales Executive
(7) Finance Executive
(8) R&D Executive
(9) Other (please specify): _____

Q33. What's your gender?
(1) Female
(2) Male
(3) I do not want to disclose

Q34. How many years of management experience do you have?
(1) Less than 5 years
(2) 5-9 years
(3) 10-19 years
(4) More than 20 years

Q35. Which CEIBS Program have you attended before or are attending currently?
(1) Executive Education (Open Program such as AMP/CEO/CFO/CHO/CMO, and Company Specific Program or CSP)
(2) DBA
(3) EMBA
(4) FMBA
(5) GEMBA
(6) HEMBA
(7) MBA
(8) I have not yet attended any CEIBS program

Please click "Submit"! Thank you so much for your support to our survey program!
Please leave your email address below to receive a free electronic copy of the report as soon as it is produced.
Your email address: _____