

# One Year after COVID: The Challenges and Outlook of Chinese Micro and Small Enterprises

**Tao Kong, Xiaohan Yang, Ranran Wang, Zijun Cheng,  
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## Abstract

The Center for Enterprise Research and the Institute of Social Science Survey at Peking University, in collaboration with Ant Group Research Institute, conducted a new wave of Online Survey of Micro- and Small-Enterprises (OSOME) in March 2021. OSOME is a continuing effort to gain a better understanding of China's micro- and small- enterprises and self-employed businesses (MSEs) by conducting quarterly surveys on MSEs operating on the Alipay platform. The key findings of the first quarter 2021 survey are as follows:

1. After exposure to the COVID-19 pandemic for over a year, the operational status of micro-and-small enterprises has significantly improved. However, they still face serious cash flow constraints.
2. Cost increases, in some cases due to a price spike in raw materials, and weak demand remain two key challenges facing micro-and-small enterprises and self-employed businesses. In the residential sector, lack of demand is a general concern.
3. Compared with other forms of policy support, tax reduction is the most inclusive. The share of businesses that have received online loans has increased, while the average interest rate has slightly declined.
4. In general, respondents characterized the travel restrictions during Chinese New Year (February 2021) as harmful. In particular, businesses in the residential service sector and those located in smaller cities and rural areas seem to have been more negatively impacted.
5. In response to the COVID-19 shock, a higher percentage of newly established businesses adopted online sales and electronic information systems than those established earlier.
6. The confidence indices on market demand, production, and revenues for the next quarter have returned to positive territory, indicating an optimistic outlook. The employment index remained just below the normal level, suggesting subdued expectations of expanded employment in the next quarter.

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# 1. Introduction

The COVID-19 pandemic has struck a significant blow to small businesses worldwide. There have been some studies on the short-term impact of COVID-19 on business activities in developed countries,<sup>1</sup> but studies on the post-pandemic outlook are scarce since most countries are yet to emerge from the pandemic. China is one of the few major economies which have come out of the COVID-19 pandemic: production and commercial activities have largely resumed. As such, China offers a great opportunity for us to examine the mid-term and long-term impact of the COVID-19 shock on micro-and-small enterprises and self-employed businesses (MSEs), especially self-employed businesses.

There are nearly 100 million self-employed businesses in China which create around 230 million jobs, accounting for nearly 30% of total employment in 2019 (Huang et al., 2020). On average, they generate 230 million transactions per day with an annual turnover of 13.1 trillion yuan, which is about one third of total national retail sales of consumer goods in 2019. MSEs constitute the capillaries of the Chinese economy, and it is of great importance to understand how they fare in the wake of the COVID-19 pandemic.

A small number of studies have examined the short-term impact of COVID-related restrictions on small and medium enterprises in China. However, few of these studies are able to inform readers in a comprehensive manner due to their limitations in sample size, data coverage, and research focus. For example, Zhang (2020) surveyed 84 micro, small, and medium export companies, while Wang and Wang (2020), Zhang (2020), and Sun (2020) discussed the production, operation, and financing of MSEs in the cities of Wuxi, Shaoxing, and Datong respectively. Jin et al. (2020) analyzed the confidence level of the owners of micro, small, and medium enterprises based on the telephone survey in February 2020 from a larger scale Enterprise Survey for Innovation and Entrepreneurship in China (ESIEC). Using two waves of ESIEC phone surveys in February and May, Da et al. (2021) found that micro, small, and medium enterprises have shown a V-shaped recovery after the substantial initial shock, but they had not recovered to the pre-pandemic level by May 2020. Yet, the above studies are based on data pre-May 2020, leaving the interesting question as to whether the recovery has been sustained unaddressed. Moreover, the sample used in these studies include formally registered businesses only, whilst about 40% of self-employed businesses in China are not registered. In contrast, our paper uses an up-to-date and unique dataset based on the quarterly online survey of micro-and-small enterprises (OSOME) in China from the third quarter of 2020 to the first quarter of 2021, enabling us to study the mid-term impact

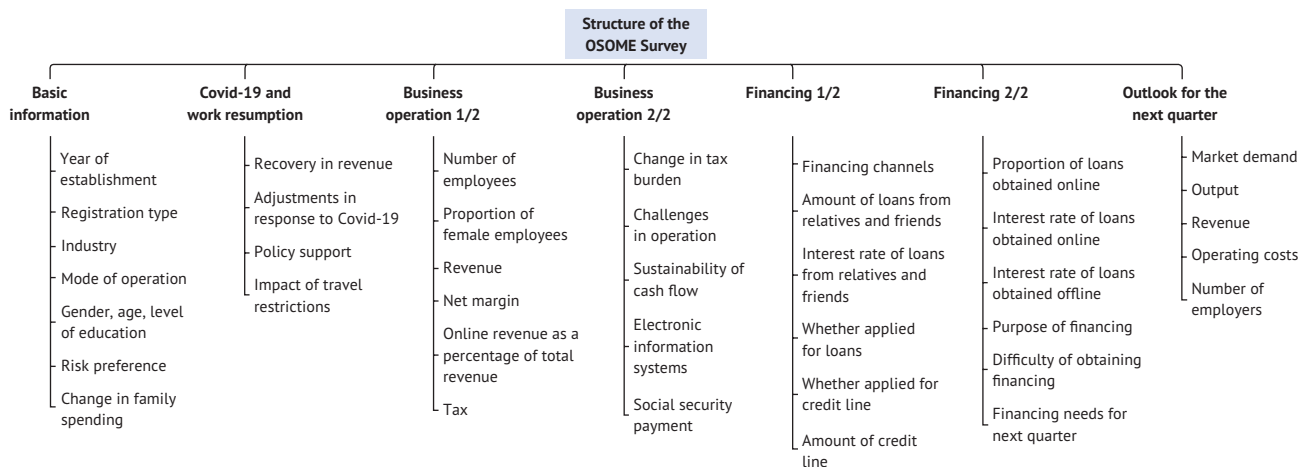
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<sup>1</sup> A survey conducted in April 2020 shows that 60.9% of individual businesses on Facebook were affected (Alekseev et al., 2020). On Alignable, a network of owners of small businesses, nearly 43% of MSEs in the United States have temporarily shut down since March 2020, and nearly half of them have insufficient cash flow for one month (Bartik et al., 2020). The number of active MSEs in the United States fell by almost 22% in April 2020 (Fairlie et al., 2020). By June 2020, the decision to resume work and production of MSEs still depended on the recovery of upstream suppliers and downstream customers in the industry chain (Balla-Elliott et al., 2020). By the end of 2020, despite the adoption of measures such as loans, grants, and tax rebates, the recovery of small businesses in the United States was still limited and this situation was predicted to persist in the following months.

after the COVID-19 restrictions were removed. Moreover, the OSOME survey covers both registered and unregistered MSEs.

In the third and fourth quarters of 2020 and the first quarter of 2021, the Center for Enterprise Research and the Institute of Social Science Survey of Peking University, the Ant Group Research Institute and MYbank randomly distributed questionnaires to active MSE operators<sup>2</sup> over two weeks through online research platforms such as Alipay and MYbank. 21,343, 18,453, and 10,923 valid responses were collected in the three quarterly waves. Data collected in this survey include the operations, financing needs, and expectations of MSEs.

The design of the OSOME questionnaire is, in part, inspired by the ESIEC surveys<sup>3</sup>, with a number of questions shared across these two surveys. With the newly available OSOME data, this allows for the possibility of comparative research.



Throughout the three waves of quarterly surveys since the third quarter of 2020, the sample respondents of OSOME have been consistent in terms of their basic characteristics.<sup>4</sup> For example, OSOME covered a large number of self-employed businesses. In the third-wave sample, 50.9% of respondents were registered self-employed businesses, 37.1% were unregistered self-employed businesses, and 12.0% were corporate enterprises. The majority of MSEs were self-employed or had 0–4 employees, and the average MSE was estimated to have created 5.9 jobs. Most MSEs surveyed were in the service industry (83.3%), and a small

<sup>2</sup> MSEs: businesses served by Alipay that are classified by the Measures for the Classification of Small, Large and Micro Enterprises (2017) as small and micro enterprises and whose annual revenue does not exceed 10 million yuan. Active MSEs are those that have, in the past twelve months, transactions in at least three months, more than 90 transactions, and a total transaction turnover of more than 2,000 yuan.

<sup>3</sup> <https://www.iss.pku.edu.cn/sjsj/zgqycxyciesiecxm/index.htm>.

<sup>4</sup> More information on the samples from the third and fourth quarters of 2020 in Online Survey of Micro-and-small Enterprises Quarterly Report (2020Q3) and Confidence Index (2020Q4) at <https://www.cer.pku.edu.cn/ztdc/zgxwjyzt/239804.htm> and Online Survey of Micro-and-small Enterprises Quarterly Report (2020Q4) and Confidence Index (2021Q1) at <https://www.cer.pku.edu.cn/ztdc/zgxwjyzt/239914.htm>.



number were in the construction and manufacturing industries (10.1%), and agriculture, forestry, husbandry, and fisheries (6.6%).

In terms of their basic characteristics, the interviewed MSEs were concentrated in the eastern and central regions, and the majority of sampled MSEs were in the business of providing services to residents living in the vicinity. More than 70% of business owners were born between 1980 and 1999, and nearly 80% had a high school degree or above. 50.8% had a quarterly revenue of less than 25,000 yuan, 27.5% had a negative net margin, and 18.9% were at the break-even level. The MSEs surveyed primarily generated revenue offline. Among the OSOME sample, 53.5% are completely dependent on offline revenue, and out of the remaining sample, 37.3% report the value of online revenue as less than half of the total revenue.

## **2. Recovery and performance**

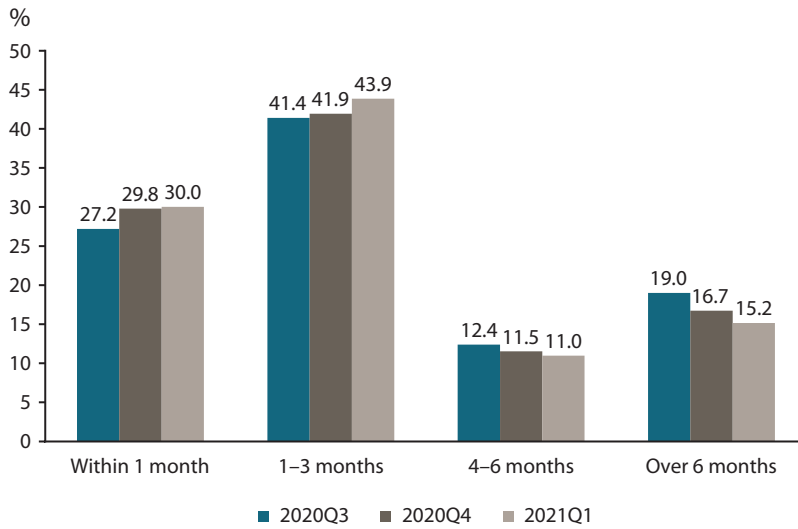
### **Operation and state of recovery**

In the first quarter of 2021, the average turnover of MSEs was 109,000 yuan, which is on par with the two preceding quarters (105,000 yuan and 124,000 yuan in the third and fourth quarters of 2020, respectively). Around half (50.8%) of MSEs had a turnover of less than 25,000 yuan, highlighting small-scale businesses' distinctively subsistence-level nature. The average net margin in this quarter was 2.3%, which lies in between the observation from the two previous quarters (2020 Q3: 2.5% and 2020 Q4: 1.5%, respectively). However, it is worth noting that the operation of MSEs has dropped slightly relative to the same pre-COVID-19 period in 2019: the recovery rate has decreased from 33.9% and 34.8% in the last two quarters of 2020 to 32.5%, likely due to the emergence of recent new COVID-19 cases in China.

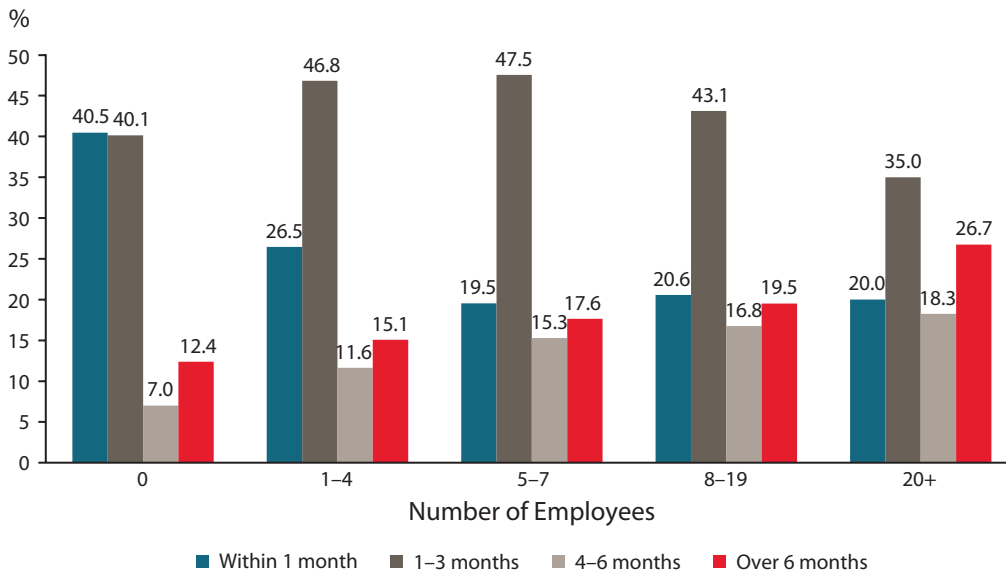
### **Sustainability of cash flow**

The overall sustainability of cash flow of MSEs saw a slight reduction in the first quarter of 2021, from an average of 2.9 and 2.7 months in the third and fourth quarters of 2020 down to 2.6 months. The proportion of MSEs whose cash flow could only sustain operations for up to three months increased (Figure 1). In particular, smaller businesses had noticeably poorer cash flow sustainability: 80% of MSEs with no additional employees would not be able to sustain operation for 3 months (Figure 2). The low level of cash flow sustainability of MSEs has been found as a general feature across cities and industries.

**Figure 1. Cash flow sustainability, by quarter**



**Figure 2. Cash flow sustainability in 2021Q1, by enterprise size**



## Heterogeneity in performance of MSEs

To examine the regional variation in the performance of MSEs, businesses are first categorized based on their geographical location, north and south. Secondly, five northern provinces that were recently hit by COVID-19<sup>5</sup> were examined separately. Lastly, businesses

<sup>5</sup> In this study, northern provinces (including provinces, autonomous regions, and centrally-administered municipalities) are Beijing, Gansu, Hebei, Henan, Heilongjiang, Jilin, Liaoning, Inner Mongolia, Ningxia, Qinghai, Shandong, Shanxi, Shaanxi, Tianjin, and Xinjiang; southern provinces (including provinces, autonomous regions, and centrally-administered municipalities) are Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei,

were compared across the cities where they are located or associated with in terms of scale, namely first-tier cities, second-tier cities, and third-tier cities and rural areas.<sup>6</sup>

Firstly, MSEs located in the northern provinces experienced slightly lower market demand, output (business volume), revenue, operating costs, and number of employees than those in the southern provinces. In addition, the five northern provinces that were recently hit by COVID-19 outbreaks exhibited the poorest performance, which indicates that COVID-19 has resulted in a significant negative impact on MSEs (Table 1).

**Table 1. Performance in 2021Q1, by region**

	Performance (% , 50% as the normal level)				
	Market demand	Output (business volume)	Revenue	Operating costs	Number of employees
Northern	34.4	36.1	34.3	34.2	45.5
Recently hit by Covid-19	32.6	33.3	32.1	34.0	44.5
Not recently hit by Covid-19	34.9	37.0	35.0	34.3	45.8
Southern	35.2	36.9	36.1	34.9	45.9

Secondly, in the first quarter of 2021, MSEs in larger cities (first- and second-tier) had experienced significantly weaker market demand, lower output, less revenue, and marginally smaller number of employees than those in smaller cities and other rural villages. That suggests that cities of smaller scale and rural areas have shown greater resilience and stronger growth during the post-COVID-19 economic recovery (Table 2).

**Table 2. Performance in 2021Q1, by tier**

	Performance (% , 50% as the normal level)				
	Market demand	Output (business volume)	Revenue	Operating costs	Number of employees
First-tier	32.2	33.9	31.7	35.6	44.7
Second-tier	33.4	34.5	33.8	34.8	45.6
Third- tier	36.3	37.4	35.9	33.6	45.3
Others	35.3	37.6	36.4	34.9	46.2

Hunan, Jiangsu, Jiangxi, Shanghai, Sichuan, Tibet, Yunnan, Zhejiang, and Chongqing. The five northern provinces that were recently hit by Covid-19 are Beijing, Hebei, Liaoning, Jilin, and Heilongjiang.

<sup>6</sup> For the city category by Yicai, please refer to <https://www.yicai.com/news/100648666.html>. For example, the “first-tier” city category includes Beijing, Shanghai, Guangzhou, and Shenzhen, and the “second-tier” city category includes Chengdu, Dongguan, Foshan, Hangzhou, Hefei, Nanjing, Qingdao, Shenyang, Suzhou, Tianjin, Wuhan, Xi’an, Changsha, Zhengzhou, and Chongqing. Note that we define the “New First-tier” by Yicai as “Second-tier” in our data.

### 3. Major challenges

#### The greatest challenge facing MSEs in 2021 Q1 is cost escalation, followed by weak market demand

To gain a deeper insight into the operational challenges facing MSEs, OSOME asked respondents to identify the one to two most significant sources of pressure from options including market demand, operating costs, environmental protection policies, taxation, and loan repayment. Cost escalation and weak market demand were identified as the top two sources of pressure over the last two quarters of 2020. The recent survey results show that cost escalation has moved to the top and become the No. 1 operational challenge facing Chinese MSEs in the first quarter of 2021 (Table 3). In particular, 59.7% of MSEs in the manufacturing industry listed escalating operating costs as the main source of operating pressure, including raw material costs, water and electricity costs, and labor costs. Similarly, 56.2% of MSEs in the consumer services industry identified high costs as the biggest challenge they faced.

After cost escalation, weak demand and intense market competition were identified as the second greatest challenge faced by MSEs in 2021 Q1. To a lesser extent, loan payment was also considered by 20.8% of MSEs as a major source of operational pressure. In contrast, taxation and administrative costs were the least common challenge, with only 3.4% of the sample claiming them as a source of pressure. Across different industries, the sources of pressure perceived by businesses also vary. For example, manufacturing and agricultural sectors considered environmental protection policies a source of pressure whilst those in the service industry indicated otherwise; compared to other industries, the business services industry faced greater pressure from policy uncertainty.

**Table 3. Main challenges facing MSEs in 2021Q1, by industry**

	Challenge facing each industry (%)				
	Agriculture, forestry, husbandry, fisheries	Construction and manufacturing	Business services	Consumer services	All
Operating costs escalation	48.6	59.7	46.0	56.2	55.1
Weak market demand	48.0	42.0	47.2	49.8	48.6
Loan repayment	21.1	23.6	22.2	20.2	20.8
Environmental protection policies	14.7	14.1	7.3	8.2	9.2
Uncertainty in policies	8.9	6.2	15.4	8.2	8.7
Taxation	4.5	4.6	5.9	2.8	3.4
Others	4.2	2.7	5.5	5.0	4.8

Compared with previous two quarters of 2020 (Table 4), in the first quarter of 2021, MSEs experienced rising pressure due to cost escalation, loan repayment, and uncertainty in policies, while the pressure brought about by weak market demand has been reducing over time.

**Table 4. Main challenges facing MSEs, by quarter**

	Challenge facing each industry (%)		
	2020Q3	2020Q4	2021Q1
Operating costs escalation	46.6	50.4	55.1
Weak market demand	61.1	59.9	48.6
Loan repayment	18.3	16.8	20.8
Environmental protection policies	11.6	10.7	9.2
Uncertainty in policies	5.5	6.2	8.7
Taxation	3.7	3.0	3.4

**The main cause for cost escalation is the rise in raw material costs, rent, and labor costs**

A number of underlying factors seem to drive the escalation in operational costs, including increase in raw material costs, rent, and labor costs. Comparing across different industries, rising raw material costs and labor costs are the primary concern for the construction and manufacturing industries; rising raw material costs, rent, and labor costs are the sources of cost increase for the consumer services industry; while rising labor costs, rent, and marketing costs seem to be the main causes for the business services industry (Table 5).

**Table 5. Causes of escalation of operating costs in 2021Q1, by industry**

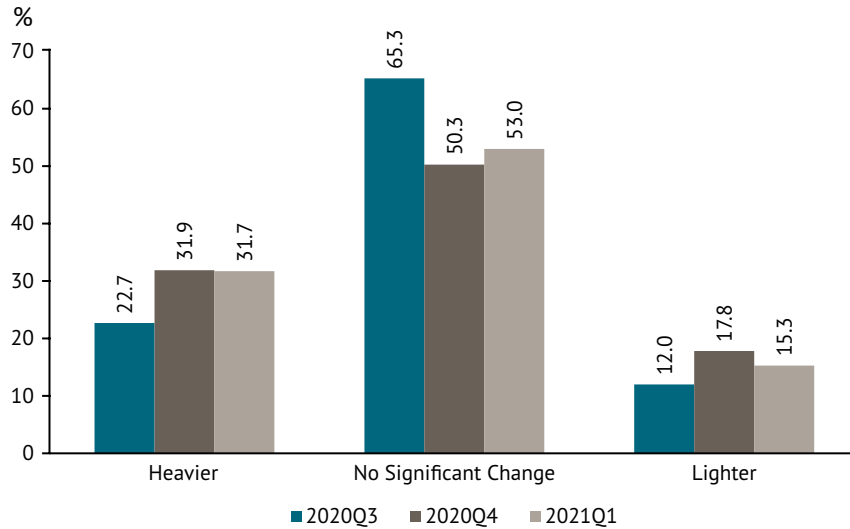
	Operating costs facing each industry (%)				
	Agriculture, forestry, husbandry, fisheries	Construction and manufacturing	Business services	Consumer services	All
Raw material costs	27.9	39.8	11.7	30.2	29.3
Rent	15.9	15.9	15.2	24.9	22.5
Labor costs	12.9	23.5	20.5	17.8	18.3
Marketing costs	5.2	10.0	14.1	7.3	8.1
Transportation costs	7.7	6.1	7.3	4.8	5.3
Pandemic prevention costs	5.6	2.5	4.3	5.2	4.9
Water, electricity, gas, heating	3.5	2.4	3.0	4.3	3.9
Taxes	0.8	2.3	2.6	1.2	1.4
Environmental protection and treatment costs	1.0	1.8	0.8	1.0	1.1

**The tax burden facing MSEs increased slightly compared with the previous quarter**

As shown in Figure 3, the proportion of respondents who indicated that their tax burden decreased declined from 17.8% in the fourth quarter of 2020 to 15.3% in the first quarter of 2021, and the proportion of those indicating that their tax burden increased remains essentially unchanged. A weighted average was calculated to characterize the trend in tax

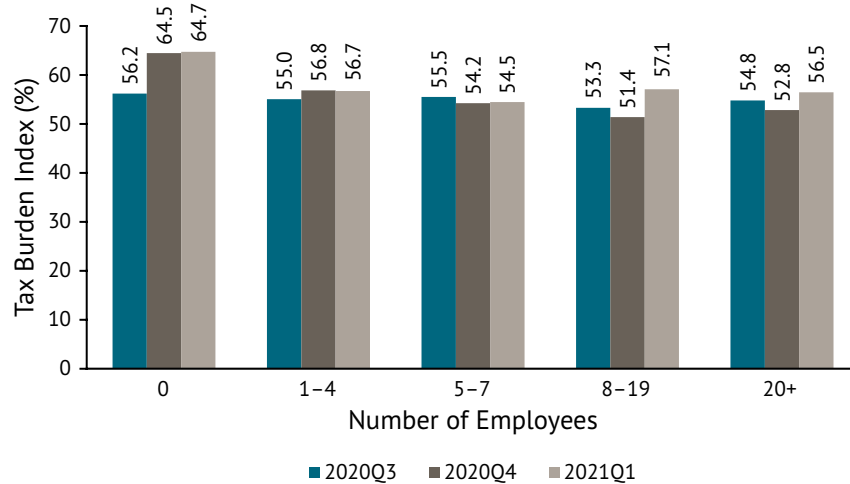
burden by assigning values of 1, 0.5, and 0 to the responses of “increased”, “no significant change”, and “decreased” respectively. Overall, the tax burden has been rising over time, from 55.3% in the third quarter of 2020, to 57.0% in the following quarter, and then to 58.2% in the first quarter of 2021.

**Figure 3. Change in tax burden, by quarter**



Furthermore, the tax burden facing MSEs declines with business scale. As shown in Figure 4, those businesses with no additional employees still report the highest tax burden. For larger-scale businesses (those with more than 7 employees), the tax burden index increased relative to the previous quarter.

**Figure 4. Change in tax burden, by business scale**

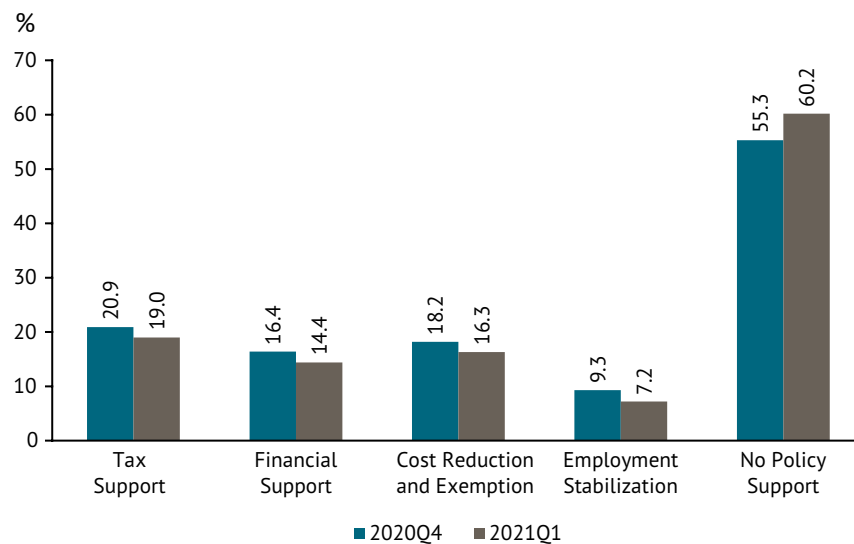


## 4. Role of policies

### General policy impact on MSEs

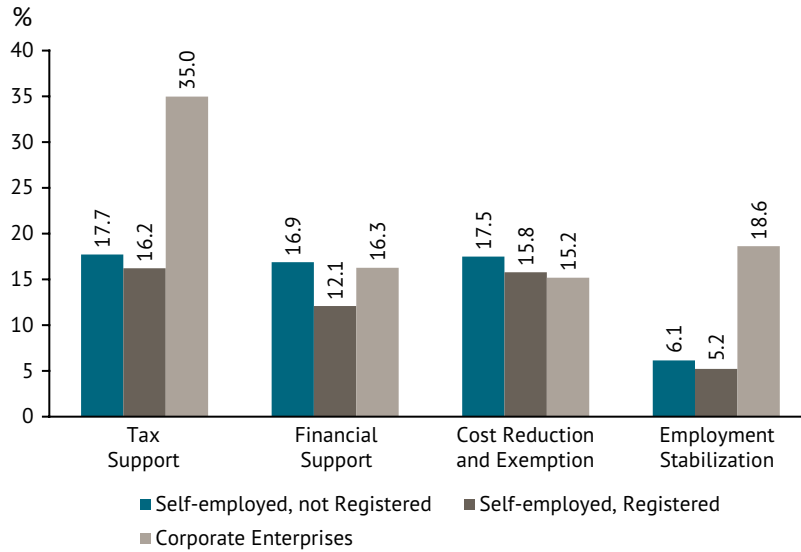
The percentage of respondents that “did not receive any support” from the government ranged between 55.3% and 60.3% in the past two quarters (Figure 5). Each of the four types of MSE-supportive policies—tax support, financial support, cost reduction and exemption, and employment stabilization—covered between 7% and 21% of small businesses.

**Figure 5. Proportion of MSEs receiving policy support, by quarter**

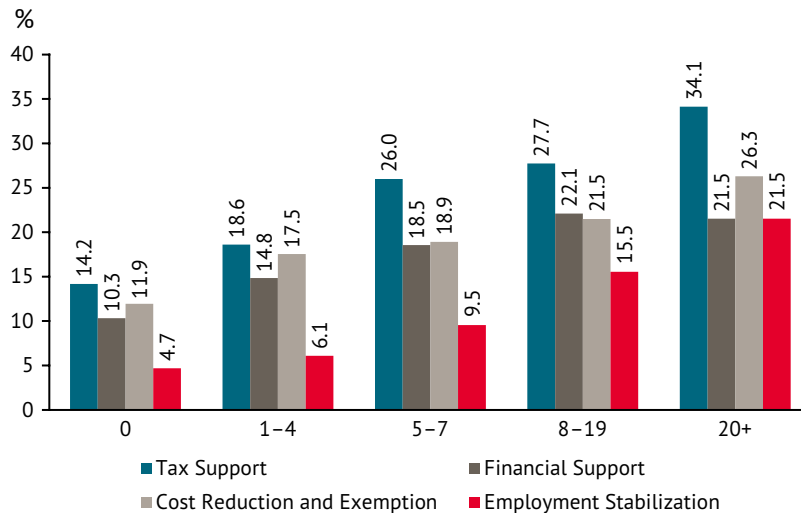


Examining the different types of businesses reveals noticeable variation in terms of policy effects. Formally registered corporate enterprises seem to have enjoyed greater policy support than MSEs of other registration types. Self-employed businesses, regardless of their registration status, seem to have felt little impact from various supportive policies (Figure 6). This is consistent with the previous observation that businesses of larger scale benefit more than their counterparts of smaller scale MSEs (Figure 7). Among all types of supportive policies, “tax reduction and exemption” policies have the largest coverage on MSEs across all scales, while “employment stabilization” policies have a relatively low coverage rate, especially among self-employed business. This might be due to fact that many self-employment businesses have few or no employees, so employment-related policies are not very applicable to them.

**Figure 6. Policy support enjoyed by MSEs, by registration type**



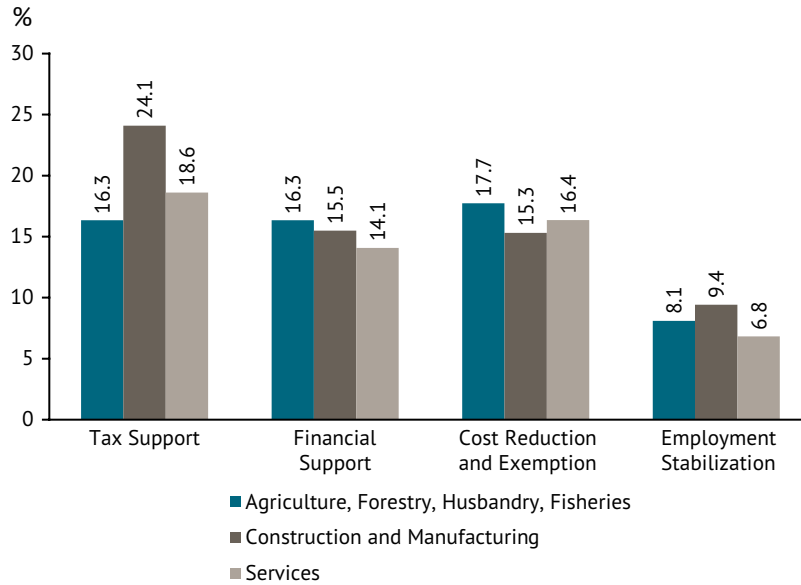
**Figure 7. Policy support enjoyed by MSEs, by size**



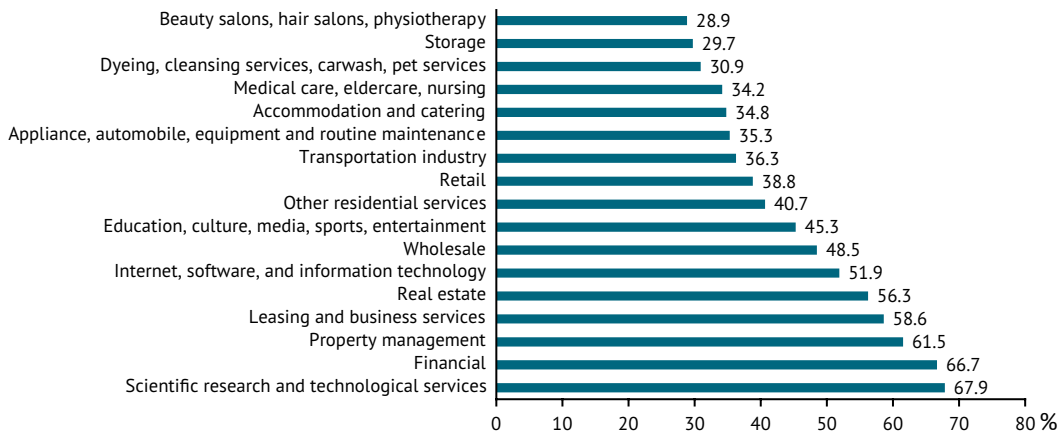
At a sectoral level, the implementation of relief policies does not seem to vary greatly across the three major industries. Furthermore, compared with the fourth quarter of 2020, the gap in policy implementation among industries narrowed, and the advantage enjoyed by the secondary sector diminished (Figure 8). Given that most MSEs are in the services industry, we subdivided the services sector and conduct further analysis. As shown in Figure 9, among all subsectors, policy coverage rates were highest in business services industries, especially the research and finance sectors. On the other hand, policy coverage rates were low among beauty and hair salons, physiotherapy, and dyeing and cleansing services.



**Figure 8. Policy support enjoyed by MSEs, by industry**

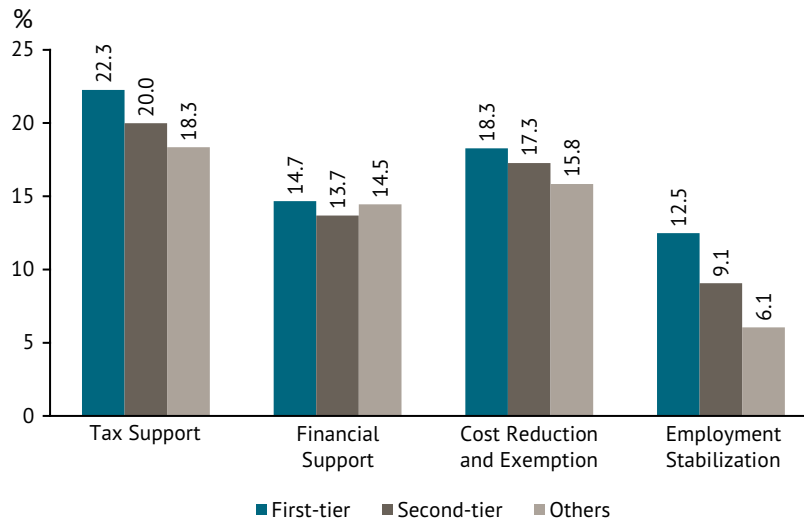


**Figure 9. Proportion of MSEs in services industry that benefited from at least one supportive policy**



Given that supportive policies could be closely related to a business’ location, this study first examines policy coverage by city tier. Overall, policy coverage in first- and second-tier cities is significantly better than that in third-tier (and below) cities and rural areas. The proportion of MSEs that benefited from at least one type of supportive policy was 43.6% in first-tier cities, 41.3% in second-tier cities, and only 38.9% in others. However, there is no significant difference in the coverage of financial support policies across cities of different scales (Figure 10).

**Figure 10. Policy support enjoyed by MSEs, by city tier**



### Impact of travel restrictions during Chinese New Year

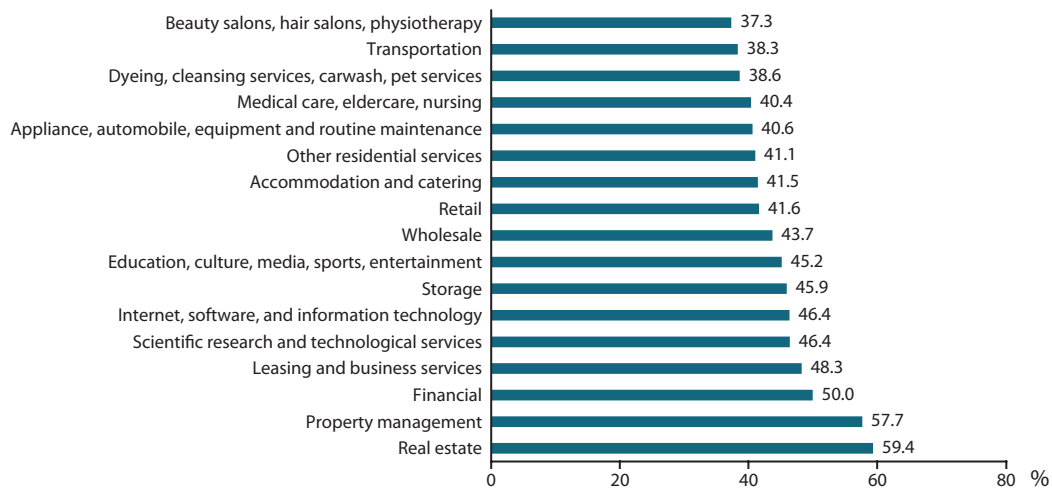
Travel restrictions were implemented nationwide during the Chinese New Year (February 2021) with the aim of controlling the spread of COVID-19. Some reports have found that these travel restrictions had positive impact on alleviating labor shortages after the Chinese New Year and promoting resumption of work and production, especially in the case of industrial production. However, these positive effects are mainly found in larger-scale enterprises, and few studies have investigated the impact of travel restrictions on MSEs. Our data show that the impact on MSEs deviates from that of the larger scale businesses: of the interviewed MSEs, 25.9% reported that travel restrictions worsened their business conditions, 62.8% claimed that they were indifferent to these policies, and only 11.3% reported to have benefited from the restrictions.

In order to characterize the effect of travel restrictions on MSEs more clearly, we calculate the weighted average by assigning values of 1, 0.5, and 0 to the options “positive impact”, “no impact”, and “negative impact”, respectively. A value greater than 50% implies that the travel restrictions are overall beneficial to MSEs, and conversely, a value less than 50% implies the opposite. When businesses were grouped based on city tier, geographical region, industry, or business scale, heterogeneity was observed both within and across groups.

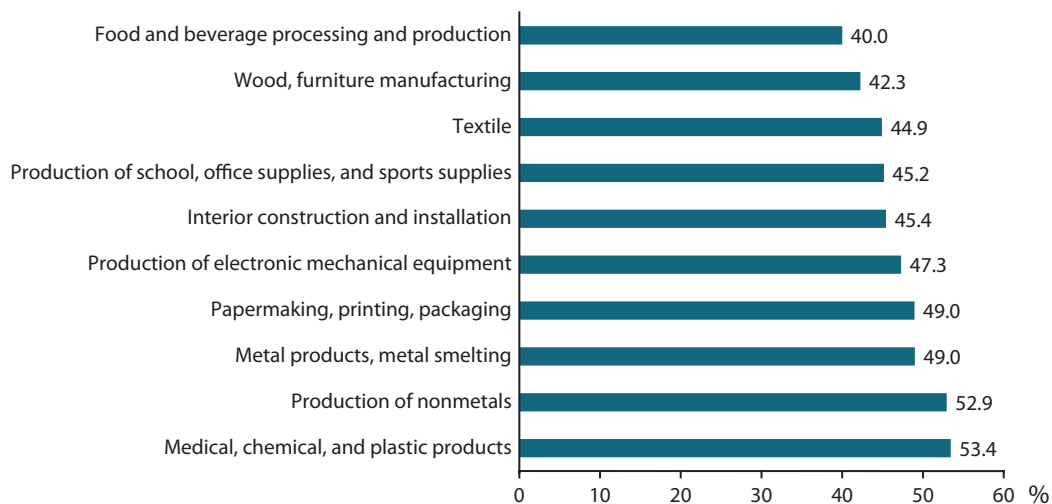
The analysis of OSOME data reveals that the impact of travel restrictions during the Chinese New Year on MSEs in cities of all sizes was negative. Businesses in third-tier and lower cities and rural areas were more disadvantaged (40.9%), while those in first- and second-tier cities were less affected (47.7% and 46.9%, respectively). At the regional level, even though travel restrictions had negative effects on MSEs in all regions, significant cross-region variation exists. The northeast (39.4%) and southwest regions (41.5%) suffered the most, which might be because these regions experienced large labor outflow and the travel ban restricted the returnees, whilst other regions were less affected, ranging from 42.7% to 43.1%. At the

industry level, primary industry (agriculture, forestry, animal husbandry and fisheries), and secondary industry (construction and manufacturing industries) were less negatively affected (46.3% and 45.8% respectively) while the services industry was the most negatively affected (42.1%). It is worth noting that when the manufacturing and services industries were examined more closely, a positive impact was observed on a small number of subsectors such as non-metal production; medical, chemical, and plastic products; the financial industry; and the real estate industry (Figures 11 and 12).

**Figure 11. Impact of travel restrictions during Chinese New Year on subsectors in the service industry**

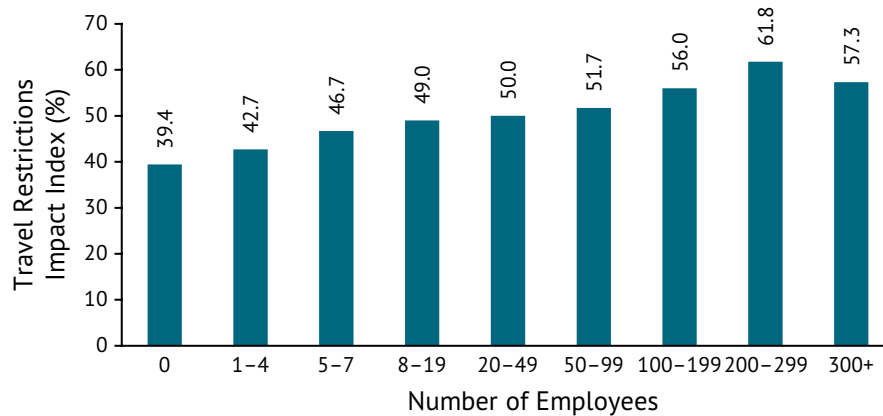


**Figure 12. Impact of travel restrictions during Chinese New Year on subsectors in the manufacturing industry**



Lastly, a possible channel through which travel restrictions may have positively affected business operation was promoting the resumption of work and production. For MSEs, such effect may have been more relevant to businesses of a larger scale. Put differently, the more employees a business has, the more likely it was to benefit from the travel restrictions (Figure 13). For businesses with more than 20 employees, the restrictions' positive impacts outweighed their harm.

**Figure 13. Impact of travel restrictions during Chinese New Year on MSEs, by business scale**

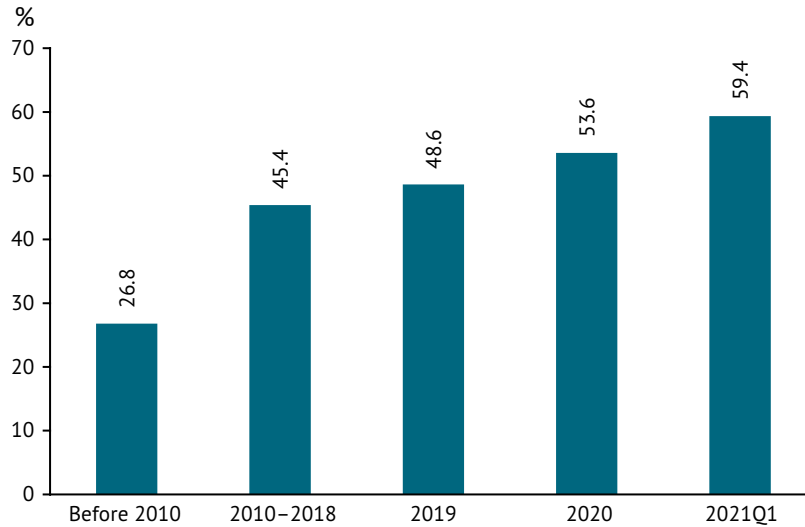


## 5. Digitalization

### Entrepreneurship and online operation

OSOME data from the first quarter of 2021 shows that a higher percentage of newly established businesses adopted online sales and electronic information systems than those established earlier. For example, less than 50% of businesses established in 2019 adopted online operations, while 53.6% of businesses established in 2020 did. This suggests newer businesses were more likely to move their operations online in response to the COVID-19 shock (Figure 14).

**Figure 14. Proportion of newly established MSEs that adopted online operations**



Further analysis reveals that COVID-19 seems to have spawned a higher proportion of online MSEs. Figure 15 below shows the proportion of newly established MSEs that adopted online operations for both the northern provinces that were hit by the recent surge of COVID-19 and those that were not. Prior to the pandemic, the proportion of businesses with online sales climbed relatively slowly (from 20% in 2010 to 45% in 2019<sup>7</sup>). In contrast, the northern provinces that were recently hit by COVID saw a spike in the proportion of new businesses with online operations that was not seen in the other northern provinces (Figure 15).

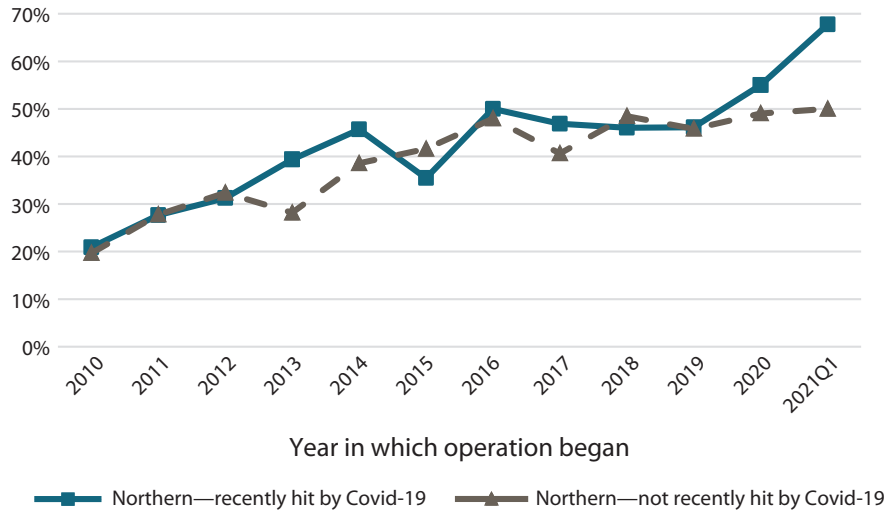
As additional evidence, the proportion of MSEs established after 2015 that adopted online operations is similar in southern provinces hit by COVID-19 and those that were not. Even after the outbreak of COVID-19, digitalization of business in the south remained stable at 50%, and the digitalization differential is smaller than that in northern provinces (the outbreak in southern provinces mainly took place in the first half of 2020).<sup>8</sup> This observation offers a potential explanation for the better economic recovery in the south: since MSEs in southern provinces and their local customers are more accustomed to online operation, the shock of COVID-19 on demand and the industrial supply chain was better accommodated. As a result, the recovery of the business environment was more rapid in the south (Figure 16).

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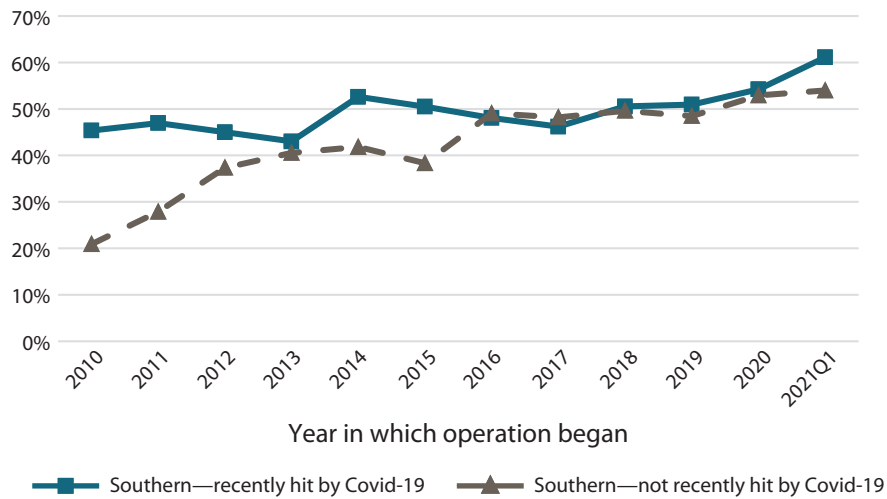
<sup>7</sup> Northern provinces that were hit by COVID-19 are Hebei, Henan, Heilongjiang, Jilin, Liaoning and Xinjiang. Other northern provinces include Gansu, Inner Mongolia, Ningxia, Qinghai, Shandong, Shanxi and Shaanxi. Municipalities directly under the Central Government such as Beijing and Tianjin are not included in the analysis.

<sup>8</sup> Southern provinces that were hit by COVID-19 are Hubei, Guangdong, Hunan and Zhejiang. Other southern provinces include Anhui, Fujian, Guangxi, Guizhou, Hainan, Jiangsu, Jiangxi, Sichuan, Tibet and Yunnan. Municipalities directly under the Central Government such as Shanghai and Chongqing, Hong Kong SAR and Macau SAR are not included in the analysis.

**Figure 15. Proportion of newly established MSEs that adopted online operation, northern provinces**

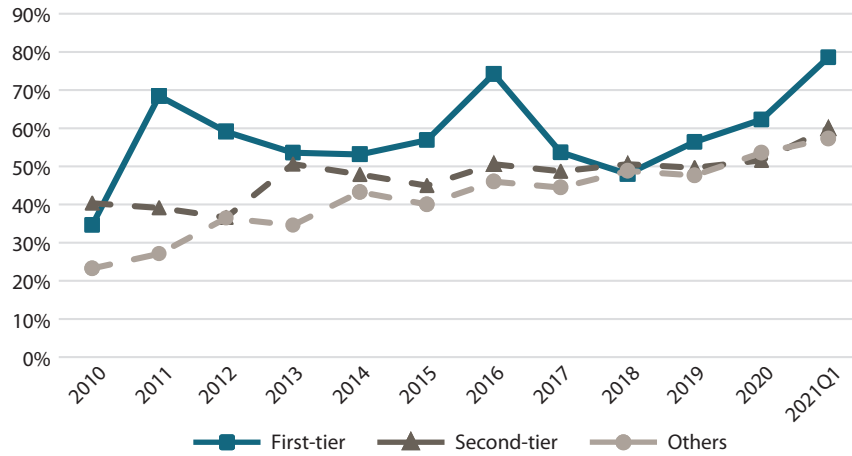


**Figure 16. Proportion of newly established MSEs that adopted online operation, southern provinces**



The level of digitalization also varies by the scale of cities. The proportion of MSEs that adopted online operations was 55.3% in first-tier cities and 46.7% in second-tier cities, which were significantly higher than that in regions below the second tier at only 42.9%. Due to COVID-19, MSEs established in 2020, regardless of city tier, were more inclined to adopt online operations. Meanwhile, the proportion of businesses that operate online in second-tier cities and regions below the second tier has converged since 2018, while significant gaps remain between first- and second-tier cities (Figure 17).

**Figure 17. Proportion of newly established MSEs that adopted online operation, by city tier**



### Introduction of electronic information systems

Despite the increasing use of electronic information systems over time, the survey in the first quarter of 2021 shows that there is still much room for improvement in the level of digitalization among MSEs. More than half (53.0%) of the surveyed businesses did not employ any electronic information system. MSEs which are larger scale, corporate enterprises, and in the south were more likely to use electronic information systems compared to those that are smaller, self-employed businesses, and in the north. No significant digitalization differential is observed across cities of different tiers.

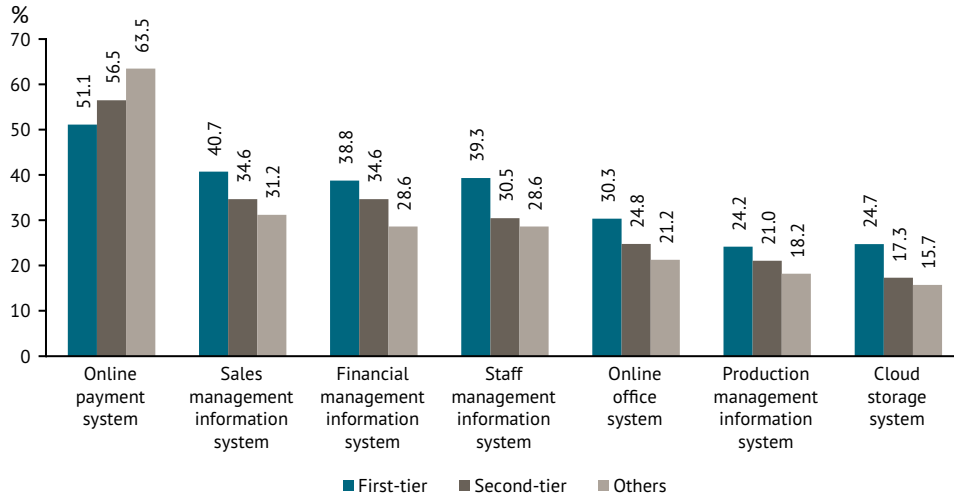
Furthermore, variation exists within MSEs which have adopted electronic information systems. Among those MSEs that have digitalized, 60.8% use online payment systems to pay for water, electricity, rent, and management fees (Table 6).

**Table 6. Digitalization in MSEs**

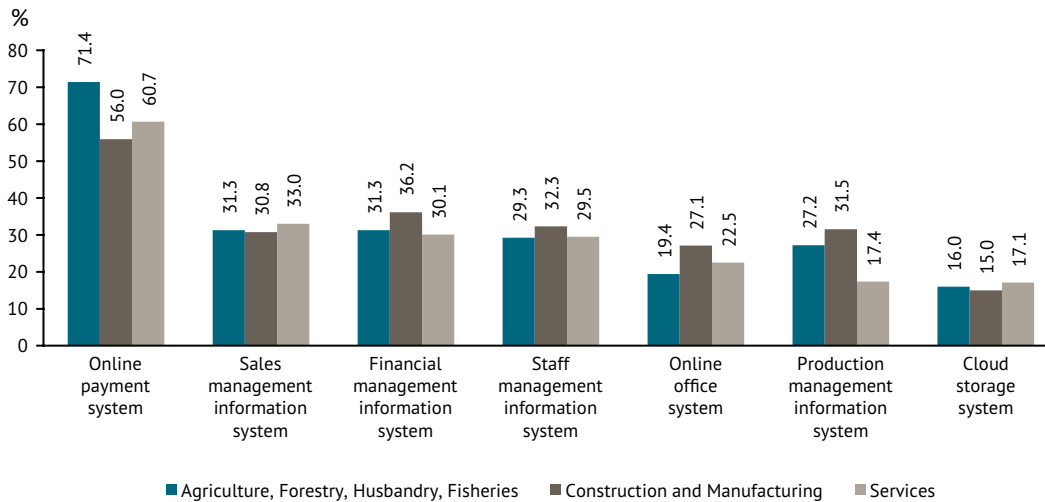
	Percentage
<b>Panel A: Introduction of electronic information systems</b>	
At least one type of system introduced	47.0
Not introduced	53.0
<b>Panel B: Use of different types of electronic information systems</b>	
Online payment system	60.8
Sales management information system	32.7
Financial management information system	30.8
Staff management information system	29.8
Online office system	22.8
Production management information system	19.4
Cloud storage system	16.8

Among businesses that have adopted electronic information systems, those in first- and second-tier cities more frequently introduced systems related to sales, production, and management, while others more frequently employed online payment systems (Figure 18). On the industry level, MSEs in the construction and manufacturing industries have a preference for financial management, staff management, online office, and production management systems (Figure 19).

**Figure 18. Percentage of digitalized MSEs that use a given type of information system, by city tier**



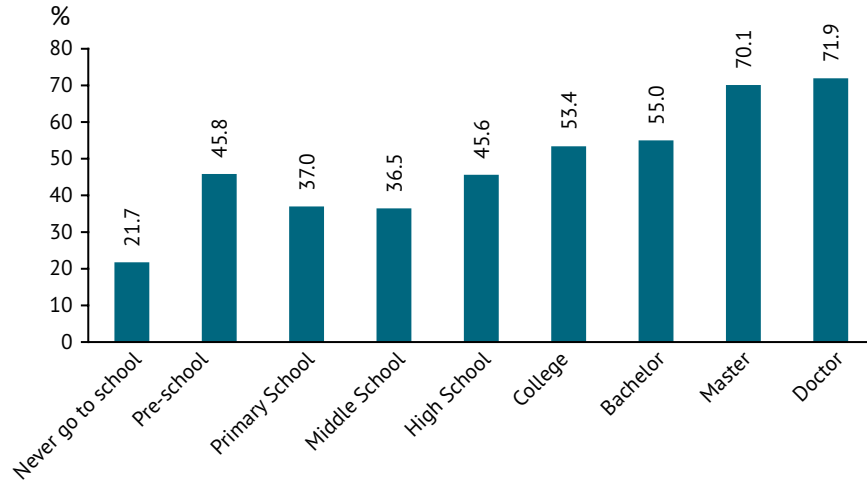
**Figure 19. Percentage of digitalized MSEs that use a given type of information system, by industry**



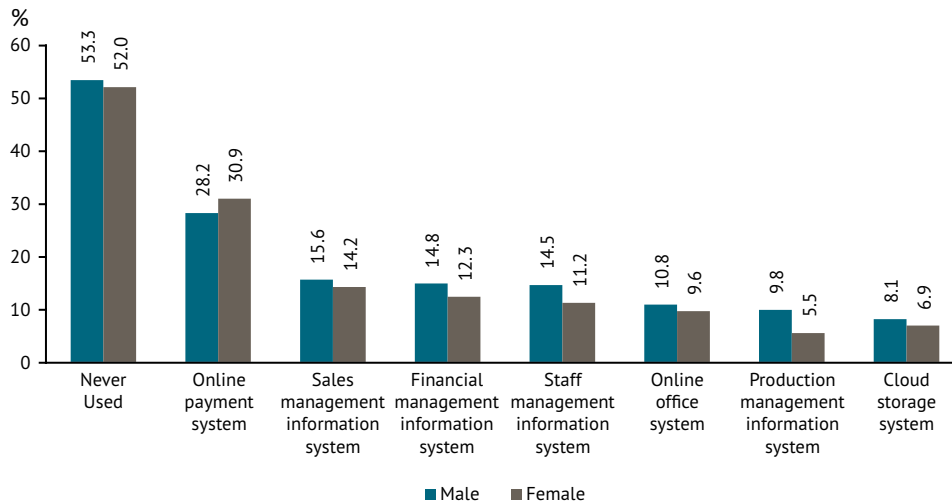


In terms of the characteristics of MSE owners, around half (46.7–48.1%) of business operators aged 18–69 employed electronic information systems; owners with a higher level of education were more likely to digitize (Figure 20); female owners were slightly more likely to digitize and tended to introduce online payment systems, while male operators were more inclined to introduce electronic systems related to management, production, and sales (Figure 21).

**Figure 20. Introduction of electronic information systems, by owner’s level of education**



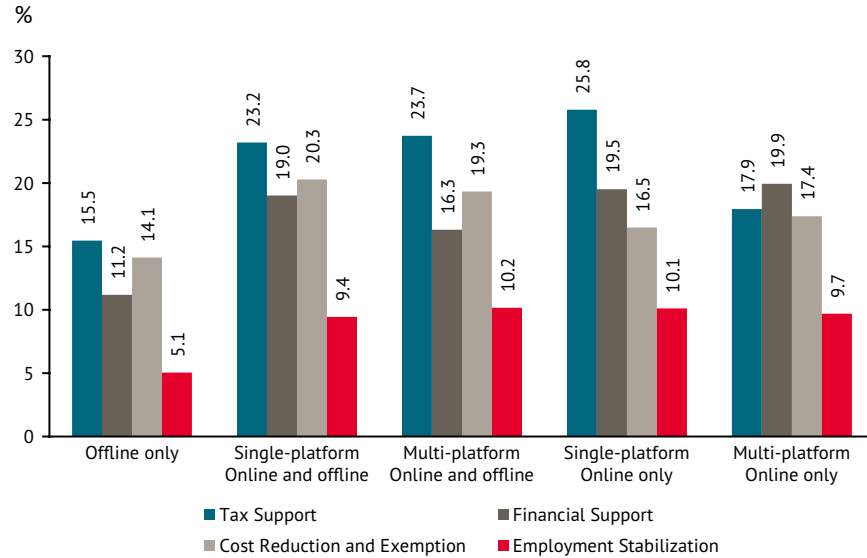
**Figure 21. Introduction of electronic information systems, by owner’s gender**



## Digitalization and policy impact

In general, MSEs that operate online were more likely to receive policy support. Only 33.0% of businesses operating offline received at least one type of policy support, while the coverage rate for online operators was 48.5% (Figure 22).

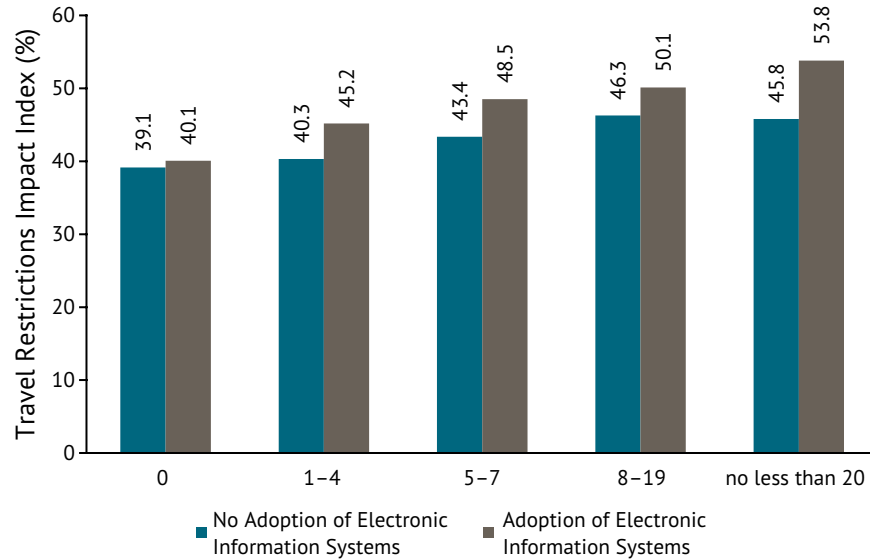
Figure 22. Online operation and policy coverage



In terms of the impact of travel restrictions during the Chinese New Year, MSEs that adopted online operation were more likely to benefit from this policy (14.6%) and less likely to be negatively impacted (21.9%) compared with businesses that operate entirely offline. The proportion of MSEs operating entirely offline that reported “business getting better”, “business worsened” and “unaffected” was 8.7%, 29.0%, and 62.3%, respectively. Based on the method of evaluating the impact of travel restriction described in the previous section (i.e., on a percentage scale, with lower numbers indicating a more negative impact), the effect of travel restrictions on MSEs that have online operations was 46.6%, which was better than that of businesses operating entirely offline (39.9%) but was still negative overall.

Based on the discussion on the introduction of electronic information systems in the previous section, it can be inferred that digitalization helped alleviate the negative impact of travel restrictions on MSEs. To verify this conjecture, we categorized sampled businesses based on their scale and found that digital transformation reduced the negative impact of travel restrictions within each group, even for the smallest ones. In short, digitalization helped businesses cope with policy impact (Figure 23).

**Figure 23. Introduction of electronic information systems and impact of travel restrictions, by business scale**



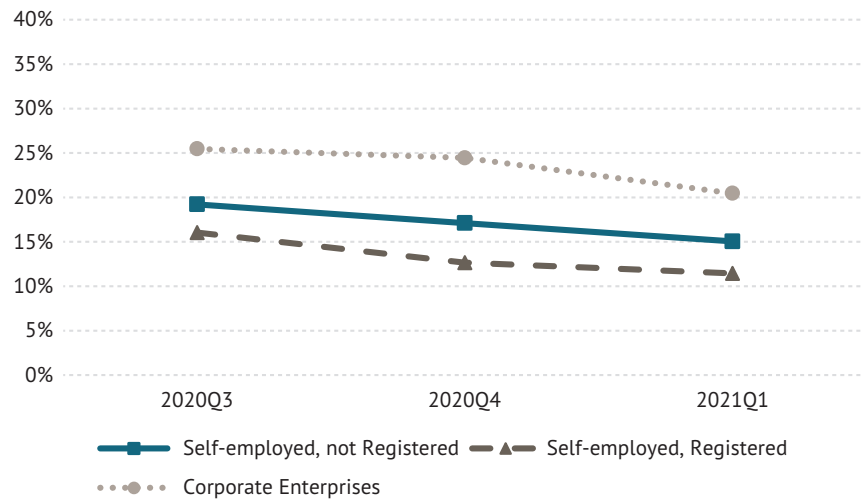
Survey data also shows that the average quarterly revenue of MSEs that have not introduced electronic information systems was 96,000 yuan, while the average quarterly revenue of businesses that have introduced such systems was 30% higher, at around 125,000 yuan.

### **Momentum of MSEs' digitization**

Whilst online business models and the introduction of digital systems have improved the operation of MSEs, adaptation of digital technology does not take place automatically. Data from the past three quarters show that digitization has stagnated. The ratio of online sales to total revenue has declined among MSEs of all three registration types, namely unregistered self-employed businesses, registered self-employed businesses and corporate enterprises (Figure 24). Only 47.0% of the sample have adopted electronic information systems, and the systems they employed were mainly online sales and payment platforms. A possible explanation is that offline consumption and physical store operations recovered well after COVID-19 has been effectively contained.<sup>9</sup> However, the stagnation or decline in several relevant indicators reflects that MSEs still lack motivation to digitalize.

<sup>9</sup> [http://www.stats.gov.cn/tjsj/sjjd/202103/t20210315\\_1814856.html](http://www.stats.gov.cn/tjsj/sjjd/202103/t20210315_1814856.html).

**Figure 24. Ratio of online sales to total revenue, by quarter**



Though data from a longer time span is still needed to derive the long-term trend of digitalization of MSEs, findings of this survey indicate that digital transformation is of great significance to the survival and growth of these businesses. On the one hand, the introduction of online business models and electronic information systems helps businesses cope with shocks, resume production and increase profitability. For example, among MSEs established in 2020, the average quarterly revenue of those that adopted digital technology is 84,000 yuan, 15% higher than the average quarterly revenue of businesses that did not digitalize, at 73,000 yuan. On the other hand, organizations such as government offices and large and medium-sized enterprises have accelerated their pace of digital transformation and adoption of online service models due to the pandemic, and consumers have become more used to online consumption. Falling behind in the wave of digital transformation is likely to undermine the future growth of MSEs. Therefore, greater and more persistent incentives are needed to promote digital transformation among MSEs, and relevant policies should be implemented to facilitate this process.

### **Financing and online loan applications**

In the first quarter of 2021, 62.2% of the surveyed businesses indicated that they have financing needs. The main purposes of their financing were to meet the working capital requirement for day-to-day operation (42%) and to expand scale and purchase fixed assets (34%). The amount of financing required increased slightly compared with the past two quarters. Using the midpoint method, the amount of financing needed in the third and fourth quarters of 2020 and the first quarter of 2021 was 164,000 yuan, 176,000 yuan, and 178,000 yuan respectively. MSEs in first-tier cities had greater financing needs than those in a lower tier. MSEs in manufacturing had financing needs roughly twice as high as those of businesses in agriculture, forestry, husbandry, fisheries, and the services industry.

As shown in Table 7, the overall pattern in the main financing channels used by MSEs in the first quarter of 2021 was similar to that in the last quarter. However, the percentage of loan applications made online increased from 19.1% in the previous quarter to 20.9% in the first quarter of 2021, surpassing loans from relatives and friends (19.1%) to become the most common financing channel. The percentage of financing obtained by personal consumption loans from traditional banks and credit card usage declined slightly from 20.0% in the fourth quarter of 2020 to 19.1% in the first quarter of 2021.

**Table 7. Usage of financing channels by businesses with financing needs in 2021Q1**

Financing channel	Percentage among businesses with financial needs (%)
Borrowing from online non-traditional financial institutions	20.9
Loans from relatives and friends	19.1
Personal consumption loans from traditional banks or using credit cards	19.1
Business loans from traditional banks	10.2
Company's own funds or retained earnings	9.8
Purchasing on credit from suppliers or using customers' advance payment	5.9
Borrowing from offline non-traditional financial institutions	4.3
Additional investment by owners	3.3
Investment by external investors	2.6
Private lending from persons other than relatives and friends	2.0
Investment by employees	1.8
Other	0.8

An analysis of the online and offline modality of financing channels reveals that it has gradually become a mainstream practice for MSEs to apply for loans online. Table 8 shows that the proportion of businesses that have applied for financing online consistently exceeds 80%. Among the MSEs that applied for loans, the proportion that applied only through online channels has continued to increase in the past three quarters, from 53.4% in the third quarter of 2020 to 59.6% in the first quarter of 2021.<sup>10</sup>

In addition, online channels have been effective in meeting businesses' financing needs. As shown in Table 8, even when the overall proportion of loans obtained declined slightly, the proportion of loans obtained through online channels remained stable at 80%, and the ratio of loans obtained only through online channels to all businesses that obtained loans increased consistently from 54.0% in the third quarter of 2020 to 59.1% in the first quarter of 2021.

<sup>10</sup> 53.4% = 30.6%/(1 - 42.8%); 59.6% = 32.1%/(1 - 46.1%).

In terms of the amount of loans obtained (Table 8), calculation by the midpoint method yields that the average amount of loans received by MSEs in the third and fourth quarters of 2020 and the first quarter of 2021 is 159,000 yuan, 194,000 yuan, and 184,000 yuan, respectively.

**Table 8. Application of loans and loans obtained, by quarter**

	2020Q3	2020Q4	2021Q1
<b>Panel A: Financing application channel</b>			
No, did not apply (%)	42.8	41.6	46.1
Yes, only applied online (%)	30.6	32.4	32.1
Yes, only applied offline (%)	11.3	10.1	9.7
Yes, applied both online and offline	15.4	15.8	12.1
<b>Panel B: Channels through which loans were obtained</b>			
No, did not obtain loans (%)	46.3	43.9	49.4
Yes, obtained only through online channels (%)	29.0	31.6	29.9
Yes, obtained only through offline channels (%)	11.5	10.6	10.2
Yes, obtained only through both online and offline channels (%)	13.2	13.9	10.6
<b>Panel C: Amount of loans obtained</b>			
Loans obtained from financial institutions (in 10,000 yuan)	15.9	19.4	18.4

Table 9 demonstrates the differential in amount of loans obtained across city tiers and industries. The average size of loans obtained by MSEs in first- and second-tier cities (224,000 yuan and 243,000 yuan) was much greater than that in lower-tier regions (167,000 yuan). The loans obtained by businesses in manufacturing (341,000 yuan) were also larger than those obtained by businesses in agriculture, forestry, husbandry, fisheries (246,000 yuan) and the services industry (157,000 yuan). In addition, the proportion of MSEs that obtained loans online was higher in big cities and in the services industry.

**Table 9. Amount of loans obtained in 2021Q1, by city tier and industry**

<b>Panel A: By city tier</b>		First-tier	Second-tier	Other
Loans obtained from financial institutions (in 10,000 yuan)		24.3	22.4	16.7
<b>Panel B: By industry</b>		Agriculture	Manufacturing	Services
Loans obtained from financial institutions (in 10,000 yuan)		24.6	34.1	15.7

The interest rates of loans obtained both online and offline have been declining, with the former falling from 7.8% in the fourth quarter of 2020 to 7.4% in the first quarter of 2021, and the latter from 6.1% to 5.9%. This shows that interest-free and interest-reduction policies targeting MSEs have been effective. Nevertheless, interest rates of loans obtained online were consistently higher than the interest rates of loans obtained offline (Table 10), even after accounting for the effect of city tier and industry. It is worth noting that, among all MSEs with financing needs, the 32.6% that borrowed from relatives and friends did so in relatively small amounts, with 60% of such loans being less than 50,000 yuan. The advantage of borrowing from relatives and friends, however, is lower interest rates, which averaged

(calculated by the midpoint method) 3.2%, and almost half (49.21%) of such loans were interest-free. This proportion is significantly higher than loans obtained from any financial institution.

**Table 10. Interest rate of loans obtained by MSEs from financial institutions online and offline, by quarter**

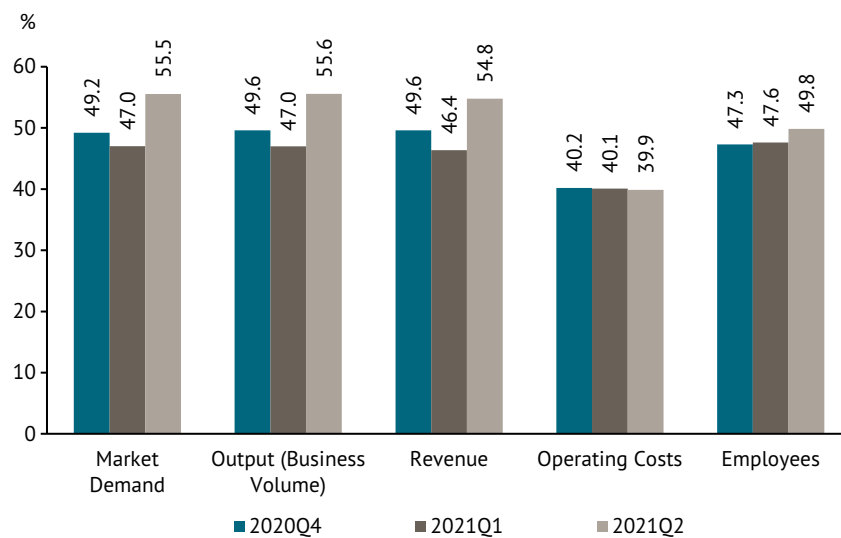
	2020Q4	2021Q1
Interest rate of loan obtained online	7.8%	7.4%
Interest rate of loan obtained offline	6.1%	5.9%

## 6. Outlook

### Improvement in confidence indices for the second quarter of 2021

Compared with the first quarter of 2021, there was a significant rebound in confidence indices in the second quarter of 2021, especially on market demand, production, and revenues. However, the confidence index for operating costs continued to decline, down to 39.9%. Although the employment confidence index is close to the normal level, businesses have no plans to expand employment (Figure 25).

**Figure 25. Confidence indices of MSEs, by quarter**



### Heterogeneity in confidence indices

Based on the performance of MSEs in the first quarter of 2021, all of the five sub-indices were lower in northern provinces than in southern provinces, and performance was worst in the five northern provinces recently hit by COVID-19 (Table 1). However, confidence indices for the second quarter of 2021 were generally higher in the north compared to the south (except for cost expectations). At the same time, confidence was higher in northern

provinces recently hit by COVID-19 compared to other northern provinces, which may be due to the lifting of lockdowns and economic rebound in the former group (Table 11).

**Table 11. Confidence index of MSEs for 2021Q2, by region**

	Confidence Index (% , 50% as the normal level)				
	Market demand	Output (business volume)	Revenue	Operating costs	Number of employees
Northern	56.6	56.6	55.6	39.4	50.1
Hit by Covid-19	57.0	57.0	56.4	38.5	50.7
Not hit by Covid-19	56.5	56.4	55.4	39.7	50.0
Southern	54.9	54.9	54.2	40.2	49.6

In terms of city tier, MSEs in first-, second- and third-tier cities had higher expectations for revenue and market demand and lower expectations for operating costs than businesses in other regions. In addition, the larger the city scale, the higher the expectations for employment scale. This shows that labor demand in larger cities was higher than that in small cities and towns (Table 12).

**Table 12. Confidence index of MSEs for 2021Q2, by city tier**

	Confidence Index (% , 50% as the normal level)				
	Market demand	Output (business volume)	Revenue	Operating costs	Number of employees
First-tier	56.5	56.8	56.3	38.5	51.3
Second-tier	56.2	55.4	55.2	39.0	50.3
Third-tier	56.7	57.1	56.0	38.8	49.8
Other	54.6	54.7	53.8	41.0	49.4

In terms of registration types, as shown in Figure 26, corporate enterprises had significantly higher confidence in market demand, production, revenue and number of employees and lower confidence in operating costs compared with self-employed businesses. Similar results are observed in terms of business scale: MSEs with more than five employees had higher expectations for market demand, production, revenue, and number of employees but lower expectations for operating costs compared with smaller businesses (Figure 27).



Figure 26. Confidence index of MSEs for 2021Q2, by registration type

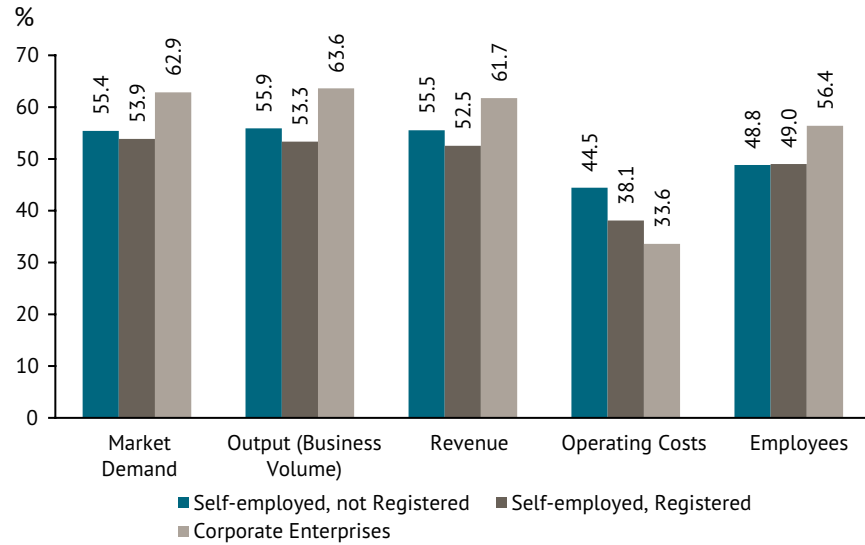
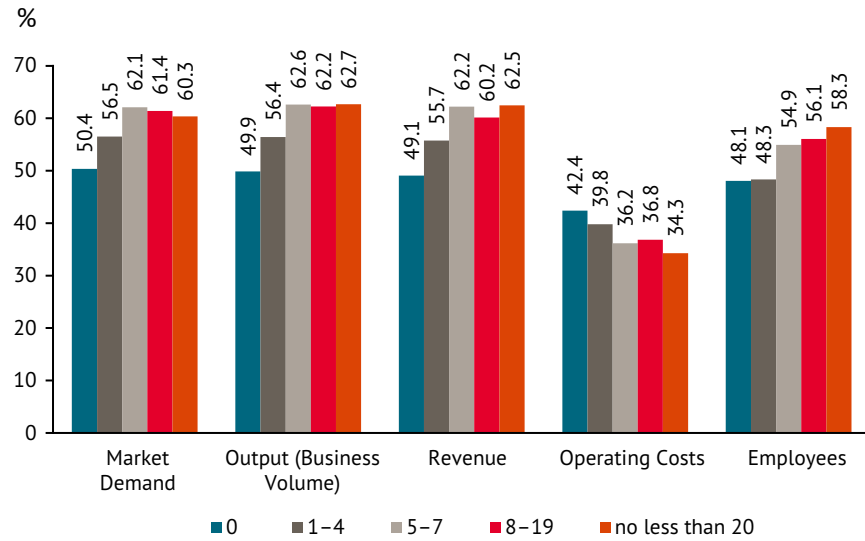
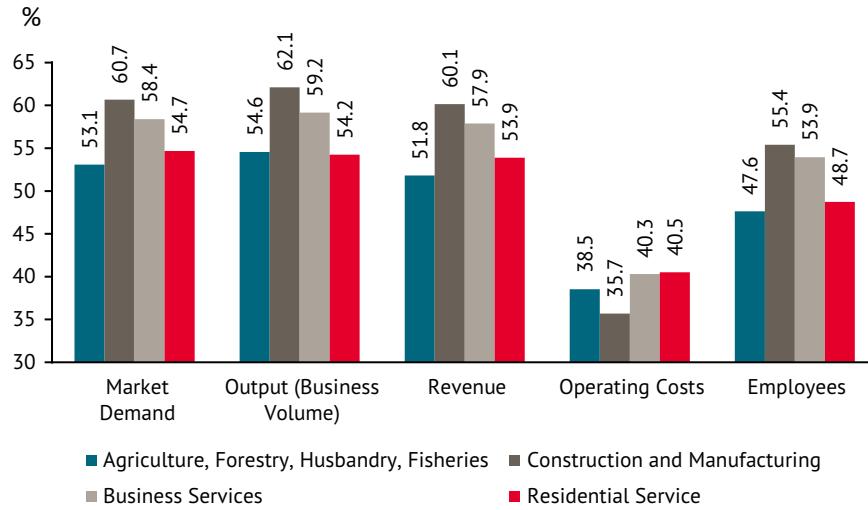


Figure 27. Confidence index of MSEs for 2021Q2, by business size



In terms of industry, MSEs in the construction, processing, and manufacturing industries had higher expectations than those in agriculture, forestry, husbandry, fisheries, and residential services, especially in terms of market demand, production, revenue, and the number of employees (Figure 28).

**Figure 28. Confidence index of MSEs for 2021Q2, by industry**



## 7. Conclusion

Most MSEs are still recovering from the shock of COVID-19. The recovery rate has decreased slightly to 32.5%, likely due to recent new outbreaks. At the same time, MSEs face serious cash flow constraints in all city tiers and industries. Escalation in operating costs, especially rising raw material costs, is the biggest challenge facing MSEs. Specifically, businesses in the residential services industry also suffer from weak market demand. Self-employed businesses have faced a worse recovery than corporate enterprises—in general, the smaller the scale, the worse the recovery. The overall performance of MSEs is better in the south than in the north.

In general, the inclusive tax reduction policy is relatively more effective than other types of policies. When it comes to policy support, the smaller the business, the less support it generally received. Travel restrictions during the Chinese New Year had an overall negative impact, and MSEs in the residential services industry and in small cities or rural areas were more negatively affected. The impact of travel restrictions on businesses with larger employment scale, however, was more positive overall.

Compared with the previous two quarters, inclusive financial policies continue to support MSEs, and online applications have gradually become the mainstream practice for loan application. Interest rates of loans obtained both online and offline have been declining.

A higher proportion of newly established MSEs adopted online operation than those established earlier, especially given that COVID-19 accelerated digital transformation. Businesses that operate online are also more likely to receive policy support, which reduced shock during COVID-19 and improved their operating conditions. Nevertheless, there is still much room for improvement in the digitalization of MSEs: more than half (53.0%) do not use any electronic information system, and the systems adopted have a rather limited application scope. Moreover, data from the past three quarters show stagnation in digital transformation. More digitalization-promoting policies should target MSEs to facilitate this process more consistently and comprehensively.

Compared with the first quarter of 2021, the confidence indices in the second quarter of 2021 rebounded significantly, especially in terms of market demand, production and revenues, which all exceeded the normal level. However, confidence in operating costs continues to decline, which was only 39.9% last quarter, indicating that cost escalation is still the main challenge facing MSEs. In addition, although the employment confidence index is close to the normal level, MSEs do not plan to expand employment scale.

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