Impact of COVID-19 on MSMEs
Evidence from a Primary Firm Survey in India

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Micro, small, and medium enterprises contribute a third of India's gross domestic product and provide employment to over 110 million workers. Using a mixed methods design to ascertain the level of sectoral distress at the peak of the nationwide lockdown in May 2020, we found production falling from an average of 75% of capacity to just 13%. On an average, firms retained only 44% of their workforce, and 69% of firms reported inability to survive longer than three months. Distress measures were more severe for smaller firms by employment size.

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> Before the lockdown, my industrial area used to be full of people. Today, the only people you see here are the owners. Invoices I raised two months ago are still pending but raw material cost in this period is up by 10% and demand has reduced by 75%. I am, however, still paying monthly interest payments and (fixed) electricity charges. I don't think my business will survive more than a month, if things continue like this.
>
> — 27 May 2020, owner of a faucet producing enterprise in north-west Delhi

National governments across the world have responded to the novel coronavirus (SARS-CoV-2)—hereafter COVID-19—challenge in a multitude of ways. The costs and benefits of these policies are still being studied and quantified by academics across disciplines on an ongoing basis. India's response to the crisis involved, what arguably was, the most stringent lockdown imposed by any major nation, beginning on 25 March 2020 and lasting until 31 May 2020 (Blavatnik School of Government 2020).[1] Though the announcement may have curtailed the immediate spread of infection, it did so at a grave economic cost.

MSMEs

For the quarter ending June 2020, India's economic output contracted by about 24%, the sharpest decline amongst all major economies across the globe (Slater 2020). The collapse of production and demand translated into the loss of employment, which, without adequate social protection, abetted a painful exodus of migrants from cities (World Bank 2020). The distress was acutely felt in micro, small, and medium enterprises (MSMEs; for a definition, see Appendix 1, p 37), a major source of employment in the non-farm sector. Existing evidence for developing economies suggests that the performance of small firms is deeply intertwined with employment growth (Ayyagari et al 2014). Even in terms of productivity, De and Nagaraj (2014) show that smaller firms (by asset size) are more productive in India's context.

These factors would imply that the survival of MSMEs is critical for the Indian economy. In terms of contribution to the overall economy, they employ over 110 million workers, account for about a third of the country's gross domestic product, 45% of manufacturing output, and 48% of exports (GoI 2017–18). Given the importance of the sector, the National Sample Survey Office (NSSO) in India conducts a periodic survey of unincorporated, non-agricultural enterprises,[2] the last of which was held in 2015–16 (NSSO 2017).[3] Since this survey, the economy and the MSME sector have witnessed multiple shocks. These include the demonetisation of currency notes in November 2016 that rendered 86% of the Indian currency invalid overnight, a difficult transition to a new goods and services tax (GST) regime in 2017, and a crisis in the non-banking financial companies sector in 2018, all of which had an adverse effect on the MSME sector (Dev and Sengupta 2020).

There exist no recent surveys of MSMEs in India to assess their performance before the COVID-19 crisis or to gauge the levels of distress in the aftermath of the lockdown. The mobility restrictions put in place during the lockdown further constrained the ability to conduct in-person surveys. Thus, little is known about the experienced realities of small businesses in this period. Our article aims to fill this lacuna by documenting these conditions through a mixed methods approach.

Here, we chose a purposive design under which we first conducted phone-based qualitative interviews with various representatives and stakeholders of small businesses in the states of Uttar Pradesh (UP), Rajasthan, and the union territory of New Delhi in India. This was followed up with an online quantitative survey that was disseminated among the members of these associations through the above representatives. Our final sample covers 388 firms, mainly from North and Central India. We study the health of these small

businesses along multiple dimensions and document the evolving impact of the COVID-19 crisis on their well-being. In doing so, we highlight particular areas of concern that inform policy.

Our findings suggest that there was significant underutilisation of capacity (75%) amongst these firms immediately prior to the lockdown. During the lockdown, our results present a picture of distress among these enterprises who had reported losses amounting to 17% of their past year sales and retained only 44% of the pre-COVID-19 workforce, barely two months into the new financial year. In absolute numbers, our survey alone represents job losses for over 14,911 workers out of a total of 28,529 that were employed before the lockdown. The situation is significantly worse for smaller firms who account for the predominant share in the Indian MSME sector. At least 69% of businesses reported that they will not be able to survive for longer than three more months, while 30% suspected survival beyond one month, under the status quo.

A text analysis of recommendations provided by the enterprises suggests extending interest-free loans, reducing GST rates to stimulate demand, expediting tax refunds, and providing assistance in the payment of wages to staff until production resumes, as some measures for easing distress in the sector. In contrast with measures undertaken by most major economies, the Indian government's response was mainly restricted to liquidity provisions to businesses within the formal banking system. Little effort was made to stimulate demand through any fiscal measures.

A few papers have examined the economic consequences of COVID-19 on small business, albeit in the context of advanced economies. In a survey of small businesses in the United States (US), Bartik et al (2020) find that employee counts have reduced by 40% from previous levels. Consistent with our findings, smaller firms are more likely to be closed than larger ones. Humphries et al (2020) also find considerable distress among small businesses through a primary survey of firms in the US. Fairlie (2020) finds that the number of small businesses in the US declined by about 22% between February and April 2020. Unlike most developed nations, weaker social safety nets in India and reliance on the MSME sector for non-farm employment means that the survival of these businesses is critical for sustaining livelihoods and preventing larger fallouts of the COVID-19 crisis.

The structure of this article is thus: the following section describes the survey design and data. We then present the main results on the levels of financial distress, implications for livelihood, supply linkages, and sentiments on survival. We then go on to make policy suggestions based on recommendations from these enterprises integrated with our findings. In the final section, we present conclusions.

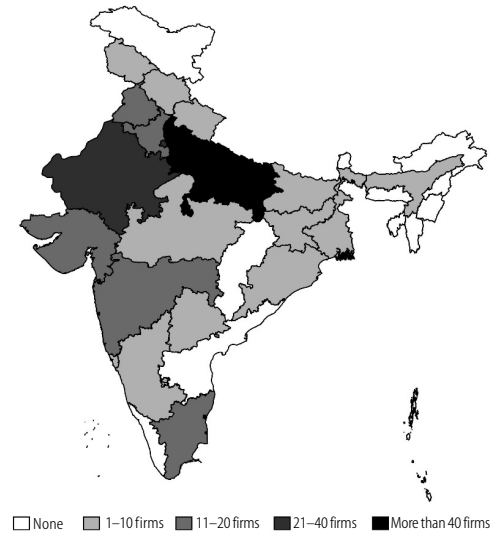
Survey Design and Data

Unlike the case of developed economies where high-quality data on small businesses is available at regular intervals, information on small businesses in India is quite scarce. Due to the lack of any rigorous institutional surveys during the lockdown, a primary survey of small businesses was the only avenue to answer the questions that motivated this article. Mobility restrictions during the crisis impeded our ability to conduct face-to-face primary interviews.

In April 2020, we conducted phone-based semi-structured interviews with the leadership and members of multiple small business associations in UP, New Delhi, and Rajasthan. Our objective was to understand the firms' perspectives on the COVID-19 crisis and the implications of the nationwide lockdown on their businesses. We found that small businesses in India were often sceptical of sharing operational details due to a variety of regulatory and safety concerns. This was evident from an interview with a small business owner from Bihar.

> Small businesses in India, especially in states like UP and Bihar, are unwilling to share financial details. They fear that leaking or overstating of this information may lead to them being harassed by the administration or targeted by criminals (latter are known to commit crimes like kidnappings of family members, extortion, and the demand of ransom).
>
> — 30 April 2020, owner of a textile unit in Gaya, Bihar

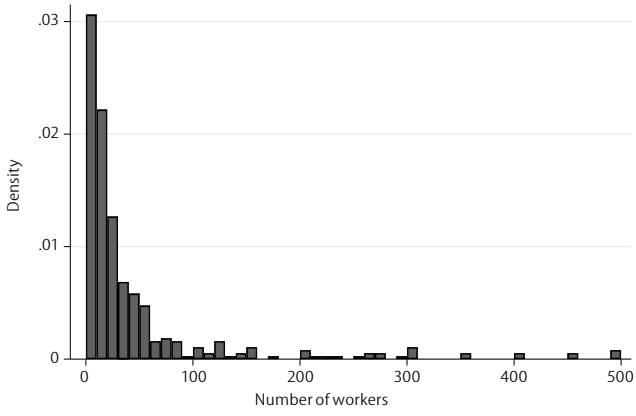
Figure 1: Distribution of Firms across Indian States



To address these concerns, we were careful to outline our commitment to confidentiality and anonymity, explicitly stated in the consent forms for both the qualitative and quantitative interviews. Further, we chose to approach member firms through the leadership of their respective small business associations or via members within their own networks. A link to our online survey was shared by association representatives to the members through email lists or groups on other social media platforms.[4] To encourage honest participation and assuage any fears of identification, we did not collect any personal information from survey respondents (except entering any valid email address) and made some questions, such as annual sales, optional. The business associations approached were diverse in nature, with membership ranging from a few hundred to a few thousand. A small fraction (8%) of our sample also came from small business owners on Facebook, who were targeted through an advertisement campaign with the same survey link.[5]

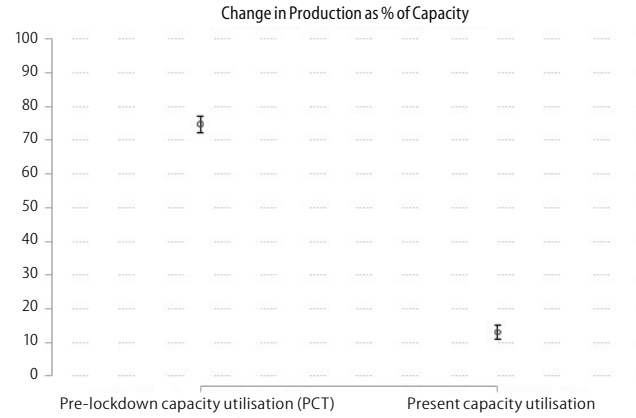
Most associations we approached were based in India's largest state, UP, accounting for about 56% of our sample. UP also accounts for the highest share (14.2%) of MSMEs in India (GOI 2017–18). Overall, we have respondents from 20 states across India (Figure 1).[6] We also mapped the activities of these enterprises to the National Industrial Classification (NIC 2008) division codes that broadly follow the United Nations International Standard

Figure 2: Firm Size Distribution



Restriction: Employment<=500 (over 98% of firms meet this).
Bin width of 10 workers.

Figure 3: Capacity Utilisation before and during the Lockdown



Capped bars represent 95% confidence intervals.

Industrial Classification codes. Our sample covers 40 NIC 2008 two-digit division codes, with the largest representation coming from manufacturing of paper and paper products (16%), electrical equipment (10%), and fabricated metal excluding machinery and equipment (9%).[7] For ease of interpretation, these division codes were collapsed into three broad industrial classifications, namely manufacturing, services, and others.[8] The share for each of these categories was 77%, 12%, and 11%, respectively. The questionnaire was divided into six modules and its details are available in Appendix 2A (p 37).

Table 1 presents descriptive statistics for the firms in our sample. The 388 firms covered in our survey comprise of micro, small, and medium enterprises, whose contribution to the overall sample is about 40%, 49% and 10%, respectively.[9] It is important to note that microenterprises account for the largest share (more than 89%) of the MSME sector in India as per the Indian government's own online filing system (GoI 2017–18). Since our respondents are members of business associations that often have an entry fee, our sample is likely skewed towards larger firms in terms of employment. Having said this, Figure 2 shows that our sample is consistent with firm size distributions across contexts that follow Zipf's law and is dominated by a lot of very small firms, with only a few very large firms (Axtell 2001). This is also reflected in the large difference between median employment (annual sales) of 19 (₹20 million) and mean of 74 (₹100 million) in Table 1.

Table 1: Descriptive Statistics for Firms in Study Sample

		Mean	Standard Deviation	Median
(a)	General firm characteristics			
	No of workers employed	73.72	240.49	19.00
	Age of enterprise (years)	18.81	14.87	15.50
	Annual sales (₹ millions)	98.97	302.89	20.00
	Share of export in production (%)	12.54	24.70	
	Reliance on formal sources of credit (%)	54.78	4.98	
(b)	Orientation of sales (%)			
	Business to business (B2B)	61.34	4.87	
	Business to consumers (B2C)	25.77	4.37	
	Business to admin/government (B2G)	12.89	3.35	
(c)	Owner characteristics			
	Age (years)	51.24	12.34	52.00
	Male ownership of firm (%)	87.89	32.67	
	Sample size		388^	

^ Annual sales recorded for only 288 firms, since this question was optional.

There are limitations regarding the generalisability of the results presented in this article, since the nature of the pandemic and the lockdown necessitated a convenience-based non-probabilistic sampling strategy. First, our firms are located disproportionately in North and Central India, and as such are not representative of MSMEs in the country as a whole. Second, all these firms are members of industry associations (or were listed as small business owners on Facebook). As the previous statistics show, while our sample follows general "laws" of firm size distribution, it is certainly underrepresenting the smallest and most vulnerable firms, which often are not part of these associations and are less likely to respond to online surveys. Finally, note that even among the firms that received our survey link, the final respondents represent a self-selected group.[10]

While it could be argued that the most distressed firms were the likeliest to respond to our survey, qualitative interviews at the time suggested that response rates could be low precisely because the most vulnerable firms were scrambling for survival and had very little bandwidth to complete even short surveys. Therefore, we believe that we are likely underestimating the true levels of distress in the MSME sector at the time. We also believe that in India's context, the benefits of the separation between us (the researchers) and the respondents (by relying on association leaders as intermediaries and by ensuring confidentiality and anonymity) far outweighed the costs of such an approach.

Changes in Production and Losses

Before the lockdown, firms reported operating at an average of 75% of their installed capacity (Figure 3). During the lockdown, as on the date of the survey, this figure was down to just 13%, with 54% of the firms producing nothing at all. These differences are statistically significant (p-value<0.001) using the paired t-test.[11] Non-parametric (Wilcoxon signed) tests for equality of the matched pair's distribution and their medians confirm this result.[12] This sharp decline is statistically significant (p-value <0.001) for all types of enterprises (micro, small or medium), across geographic zones,

indicating both the severity of the lockdown and its universality.

Given that 54% of the firms in our sample had no production on the date of the survey, we look at factors correlated with positive production after the lockdown. In Table 2, we present the findings from a linear probability model (LPM), where the dependent variable takes a value of one if the firm reported positive production after the lockdown, and zero otherwise. In model 1, we regress this outcome on firm size (by including employment quartile dummies), and pre-lockdown production levels to control for baseline health of the firm. Model 2 additionally controls for firm and owner characteristics. Model 3 adds controls for the geographical region fixed effects to account for any regional, time invariant heterogeneity across firms. The list of controls in these three models are applicable to all regression results hereafter.

Table 2: Any Post-lockdown Production (=1) and Its Correlates (Linear probability model)

	(1)	(2)	(3)
Pre-lockdown capacity utilisation (%)	0.004***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)
Firm size by employment quartile (base: Q1, less than 10):			
Q2 (10–19)	0.069	0.083	0.077
	(0.070)	(0.071)	(0.072)
Q3 (20–45)	0.135**	0.126*	0.117*
	(0.068)	(0.070)	(0.071)
Q4 (>45)	0.223***	0.222***	0.224***
	(0.069)	(0.072)	(0.072)
Age of enterprise (years)		0.003	0.003
		(0.002)	(0.002)
Major sale to (base: business [B2B]) consumers (B2C)		0.007	-0.001
		(0.058)	(0.059)
Admin/government (B2G)		0.010	0.016
		(0.079)	(0.080)
Industry control (base: manufacturing) others		-0.056	-0.058
		(0.081)	(0.082)
Services		0.210***	0.216***
		(0.078)	(0.079)
Owner characteristics	No	Yes	Yes
Geographical zone fixed effects	No	No	Yes
Constant	0.072	-0.054	-0.045
	(0.083)	(0.146)	(0.151)
Observations	387	386	386
R^2	0.078	0.107	0.118

Standard errors in parenthesis.

Table 3: Losses as a Share of Past Year Sales and Its Correlates

	(1)	(2)	(3)
Pre-lockdown capacity utilisation (%)	-0.132**	-0.122**	-0.116**
	(0.053)	(0.054)	(0.055)
Firm size by employment quartile (base: Q1, <= 8)			
Q2 (9–19)	-6.752**	-6.127*	-7.080*
	(3.314)	(3.541)	(3.667)
Q3 (20-48)	-6.480*	-6.448*	-7.097*
	(3.407)	(3.628)	(3.758)
Q4 (>48)	-12.013***	-10.941***	-11.140***
	(3.378)	(3.666)	(3.742)
Age of enterprise (in years)		-0.118	-0.132
		(0.098)	(0.099)
Major sale to (base: business [B2B]) consumers (B2C)		0.822	1.419
		(2.841)	(2.896)
Admin/government (B2G)		4.913	4.916
		(3.971)	(3.998)
Industry control (base: manufacturing) others		-2.188	-3.391
		(3.970)	(4.058)
Services		1.867	1.633
		(4.102)	(4.173)
Owner characteristics	No	Yes	Yes
Geographical zone fixed effects	No	No	Yes
Constant	33.312***	35.014***	38.501***
	(4.447)	(7.334)	(7.753)
Observations	275	274	274
R^2	0.075	0.090	0.101

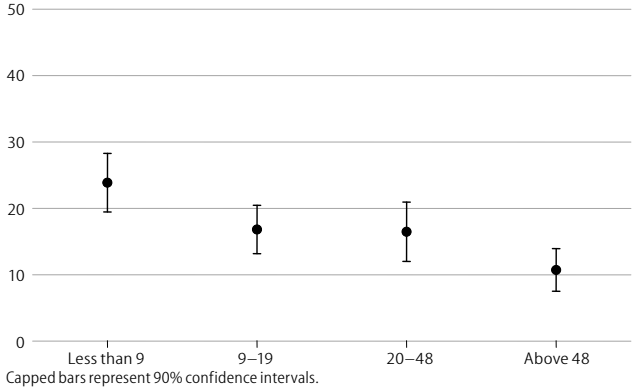
Standard errors in parenthesis.

Results of the LPM in Table 2 show that the larger firms in the top quartile (greater than 45 employees) are on an average 22 percentage points more likely to produce something in comparison to the firms in the first quartile. Moreover, the probability of producing something after lockdown is higher for firms that were producing more prior to the lockdown. These coefficients are quite stable across specifications. Also note that the chances of producing something is, on an average, 22 percentage points higher for the service sector relative to manufacturing. This suggests that the effects on manufacturing firms have been more debilitating than on others.

We also asked owners to estimate the total losses they have suffered due to the lockdown. To put these in context, we computed these as a share of past year's annual sales for different firm sizes, binned by quartiles of employment.[13] On an average, firms had already lost about 17% of their annual sales due to the lockdown, but the smallest firms experienced the biggest losses. Firms with less than nine employees lost 24% of their annual sales, whereas those with over 48 employees lost about 11%, which is significantly lower (Figure 4, p 32).

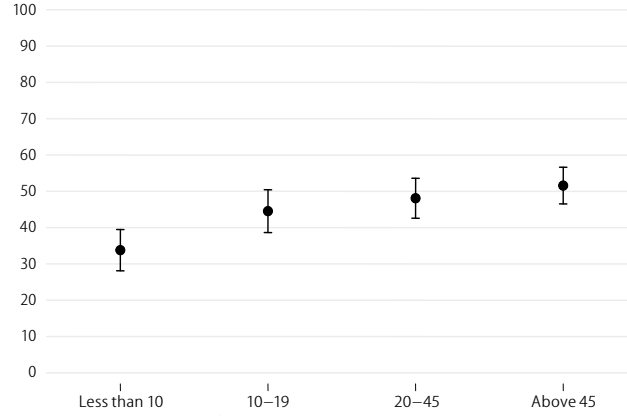
Table 3 tests whether these results hold in a regression framework with the inclusion of additional controls. Here, we find that the average loss shares of larger firms when compared with the smallest ones are lower by anywhere between 6 percentage points and 12 percentage points, depending on the employment size quartile. This suggests that the negative impact on the smallest firms is disproportionately higher than the larger ones. As argued earlier, our sample is likely to be skewed towards larger firms by virtue of being drawn from members of business associations, representing relatively better off firms. This would indicate that if anything, the levels of loss shares presented below are an underestimate of the

Figure 4: Losses as a Share of Sales, by Firm Size



Capped bars represent 90% confidence intervals.
Bins are based on quartiles of firm (employment) size.
288 firms reported sales, since this was optional.
Outliers with total loss exceeding annual sales were dropped from this analysis (12 firms).

Figure 5: Share of Workers Retained, by Firm Size



Capped bars represent 90% confidence intervals.
Bins are based on quartiles of firm (employment) size.

population parameter, which in India's context would be driven disproportionately by microenterprises.

Impact on Livelihoods

Overall, we find that firms had retained only 44% of their total workforce as on the date of the survey, indicating enormous job losses for workers. Our survey alone represents job losses for over 14,911 workers out of a total of 28,529 that were employed before the lockdown. Figure 5 shows the share of employees retained for different firm sizes. Firms in the first quartile (with fewer than 10 employees) were only able to retain 34% of their employees, whereas firms in the highest quartile (45 workers or more) retained 52% of their workforce. This difference is significant at the 5% level, with the medium-sized firms lying in the middle of these extremes. This difference is also robust to accounting for geographic and establishment-level covariates (Table 4). We find that on an average, smaller firms were able to retain a lower proportion of their existing workforce. Specifically, firms in the lowest employment quartile retained 10 percentage points fewer workers when compared to firms in the second quartile and retained 13 percentage points fewer workers compared to those in the third or fourth quartiles. In addition, pre-lockdown health of the business appears to be an important determinant of the share of workers retained. A 10% increase in pre-lockdown capacity utilisation is associated with about 1.7 percentage point high worker retention.

Given that delays in wage payment were also a prominent theme, we asked firms about the chances (on a scale of 1–10) that they would be able to pay wages to their workers for May 2020 in case the lockdown continued. The average score was 3.3 out of 10. Thus, the crisis deepened for workers, since our interviews indicated that firms were continuing to pay workers even as production had halted in April but were less likely to do so when the lockdown was extended through next month. This is likely to have contributed to the painful urban–rural migration of millions that India witnessed during the lockdown. As a result, firms also expected significant labour shortages. On an average, firms reported that they expect labour shortages for five and a half months, even under the assumption that the lockdown would be lifted by end of May 2020.

Table 4: Share of Employees Retained Post-lockdown and Its Correlates (OLS regression)

	(1)	(2)	(3)
Pre-lockdown capacity utilisation (%)	0.207***	0.180**	0.169**
	(0.073)	(0.073)	(0.073)
Firm size by employment quartile (base: Q1, <= 9)			
Q2 (10–19)	8.427*	9.532**	9.878**
	(4.800)	(4.824)	(4.948)
Q3 (20–45)	11.502**	12.083**	12.505**
	(4.674)	(4.774)	(4.844)
Q4 (>45)	14.676***	13.260***	13.094***
	(4.737)	(4.875)	(4.927)
Age of enterprise (in years)		0.298**	0.312**
		(0.135)	(0.136)
Major sale to (base: business [B2B]) consumers (B2C)		-3.411	-3.123
		(3.947)	(4.006)
Admin/government (B2G)		-8.856	-9.196*
		(5.385)	(5.430)
Industry control (base: manufacturing) others		1.690	2.067
		(5.543)	(5.605)
Services		6.765	6.503
		(5.311)	(5.394)
Owner characteristics	No	Yes	Yes
Geographical zone fixed effects	No	No	Yes
Constant	20.271***	7.349	6.085
	(5.681)	(9.920)	(10.326)
Observations	387	386	386
R^2	0.062	0.100	0.107

Standard errors in parenthesis.

Backward and Forward Linkages

We asked firm owners about delays vis-à-vis raw materials that they were contracted to receive, the inability to deliver or sell existing produce from the inventory, and the cancellation of orders. Our findings reveal that as on the date of the survey, about seven in 10 firms were yet to receive previously

contracted raw material, about eight in 10 firms had unsold produce in the inventory, and six in 10 had experienced cancellation of orders since the lockdown.

Further analysis of the correlates of the supply chain problems reveals that during the lockdown, firms that predominantly sold to consumers (business to consumers [B2C]) were 14 percentage points more likely to report not being able to deliver or sell produce in their inventory, relative to (business to business [B2B]) firms (see column 2 of Table 5). Firms from the service sector were about 31 and 26 percentage points less likely to report non-delivery of any previously contracted raw material or problems with any sales from the inventory, respectively (columns 1 and 2 of Table 5). This could be because the concept of raw materials and inventory in the services sector is fundamentally different as compared to manufacturing.

In addition, businesses which sold most of their produce to the government were 23 percentage points less likely to report any cancellation of orders (see column 3 of Table 5). In India, government contracts are often thought of as safe bets, a sentiment echoed by a B2G firm owner in one of our interviews:

> I am relatively better off compared to my friends who run small businesses. I have had no cancellation of orders yet from the government.
>
> — 10 May 2020, owner of a paint unit supplying mainly to the government in UP

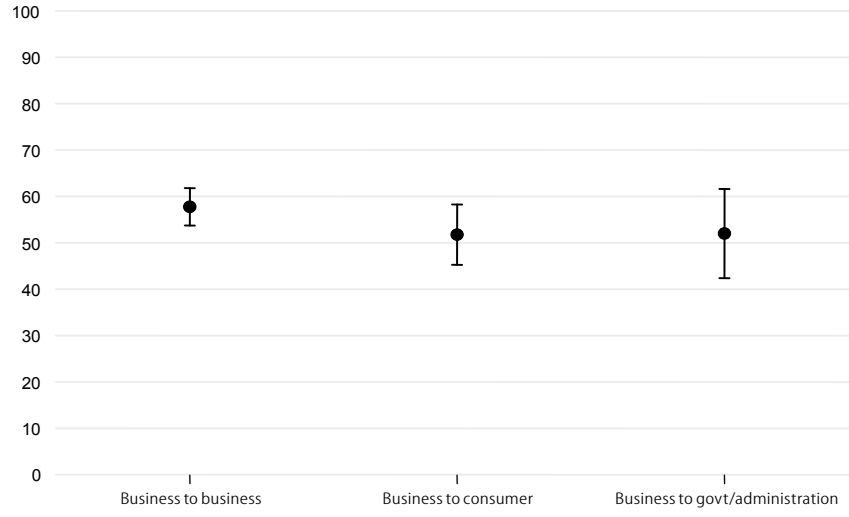
As the migrant crisis unfolded, our qualitative interviews also revealed a growing concern about workers' well-being, and the potential consequences for long-term unemployment and labour shortages. One of our respondents on this discussion revealed the following:

> I care about my workers. I paid him in good times, and I can pay him now. It is not only about the money. My employees are scared about a possible infection. If infected, will they ever get to see their families again? The government could have planned better to handle this situation. Had they coordinated on a safe passage for workers, this crisis could have been averted and it would have given workers some confidence to return once the crisis was over and recovery of the sector begun. Now, there will be a labour shortage at least until Diwali (November 2020) and this will hamper the recovery of business.
>
> — 10 May 2020, an MSME producer of glass in UP

Our findings reveal that firms on an average expected a labour shortage to last for about five and a half months. This expectation is significantly higher for firms in the top quartile of employment distribution (see column 4 of Table 5). This may be because firms in the first quartile are much more likely to rely on family or local labour compared to firms with more than 45 workers.

Further, we asked firms what share of their pending payments was expected to be delayed by at least three months. On an average, firms expected 56% of their receivables to be delayed by at least a quarter. Although orders to the government are less likely to be cancelled on an average, this still does not constitute

Figure 6: Share of Firms' Expecting a Delay of at Least Three Months in Payments, by Position in Supply Chain



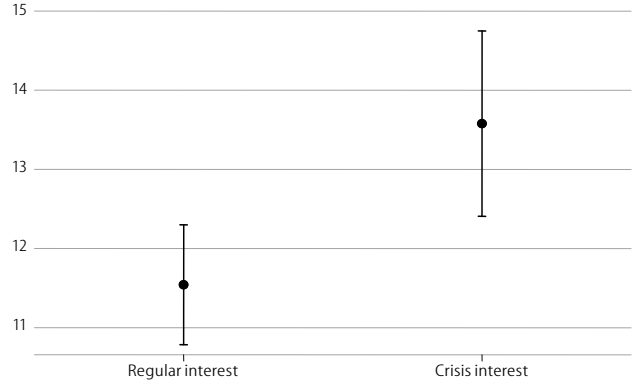
Capped bars represent 95% confidence intervals.

Table 5: Supply Chain Problems Post-lockdown and Its Correlates (OLS regressions)

	Not Received Some Raw Materials (=1) (1)	Problems in Selling from Inventory (=1) (2)	Order Cancelled (=1) (3)	Anticipated Labour Shortage (Months) (4)
Pre-lockdown capacity utilisation (%)	0.003***	0.002**	0.000	-0.049**
	(0.001)	(0.001)	(0.001)	(0.020)
Firm size by employment quartile (base: Q1, <=9)				
Q2 (10–19)	0.061	0.161***	0.037	1.150
	(0.068)	(0.058)	(0.072)	(1.319)
Q3 (20–45)	0.155**	0.163***	0.077	2.027
	(0.066)	(0.057)	(0.071)	(1.291)
Q4 (>45)	0.037	0.094	0.043	2.487*
	(0.067)	(0.058)	(0.072)	(1.313)
Age of enterprise (in years)	0.004*	-0.001	-0.000	-0.004
	(0.002)	(0.002)	(0.002)	(0.036)
Major sale to (base: business [B2B]) consumers (B2C)	0.114**	0.140***	-0.036	0.364
	(0.055)	(0.047)	(0.059)	(1.068)
Admin/government (B2G)	0.102	0.024	-0.229***	1.189
	(0.074)	(0.064)	(0.080)	(1.448)
Industry control (base: manufacturing) others	-0.068	-0.088	-0.098	2.277
	(0.077)	(0.066)	(0.082)	(1.494)
Services	-0.305***	-0.261***	-0.093	0.036
	(0.074)	(0.063)	(0.079)	(1.438)
Owner characteristics	Yes	Yes	Yes	Yes
Geographical zone fixed effects	Yes	Yes	Yes	Yes
Constant	0.429***	0.483***	0.947***	8.477***
	(0.141)	(0.121)	(0.151)	(2.753)
Observations	386	386	386	386
R^2	0.135	0.117	0.065	0.035

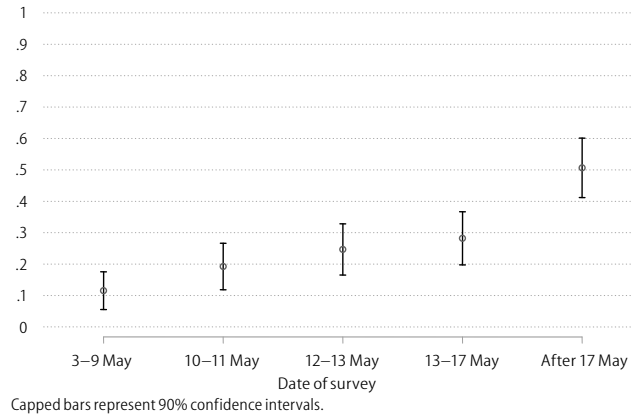
Standard errors in parenthesis.

Figure 7: Interest Rate Differential



Capped bars represent 90% confidence intervals.
Based on the 105 firms that borrowed during the crisis.

Figure 8: Awareness of Relief Measures over Time



Capped bars represent 90% confidence intervals.

sufficient protection against the adverse effects of the COVID-19 crisis as supplying to the government is often associated with payment delays. Our results below show firms supplying mainly to the government also expect 52% of their payments to be delayed by at least a quarter (Figure 6, p 33). Recent reports in media suggest that the government owes the MSME sector ₹413.4 billion in dues (Khan 2020). All results presented in this section until now remain robust to the use of (i) state-fixed effects (as against administrative region-fixed effects); (ii) replacing section codes with two-digit NIC division codes; and (iii) replacing LPM with a logit model.

Indebtedness and Borrowing Costs

In the wake of the collapse in production activity, job losses, and decline in demand, the recovery of the MSME sector was likely to be slow and protecting the sector necessitated access to credit or waiver of the existing fixed costs and interest obligations. However, the biggest challenge here is that a large section of MSMEs do not have access to formal finance (Dev and Sengupta 2020). In our sample, we find that 45% of the firms depend on own savings (31%) and informal channels (14%) for their primary credit requirements. For microenterprises, this is higher (56%).

Despite the crisis, 63% of the enterprises in our sample did not approach a bank for additional funding. Of the firms that did, only less than a third managed to get a loan. Reliance on moneylenders and family/friends for funds continues to be high, with 36% of the respondents having borrowed from these sources to meet their firm's expenses. Figure 7 shows that firms utilising these options appear to be paying a significant premium over their pre-crisis borrowing rates with the average premium being 2.03% (p-value<0.05).

Table 6: Correlates of Survival Expectations, Relief Awareness, Alternatives to Lockdown and Ability to Social Distance

(OLS regressions)

	Expected Survival of Own Business (Months)) (1)	Awareness of Any Relief Measures (=1) (2)	Alternatives of Lockdown (=1) (3)	Follow Social Distancing Perfectly (=1) (4)
Pre-lockdown capacity utilisation (%)	0.002	-0.002	0.001	0.000
	(0.011)	(0.001)	(0.001)	(0.001)
Firm size by employment quartile (base: Q1, <=9)				
Q2 (10–19)	-0.847	0.045	-0.067	-0.153**
	(0.750)	(0.067)	(0.075)	(0.075)
Q3 (20–45)	-0.726	0.034	-0.063	-0.095
	(0.734)	(0.065)	(0.074)	(0.073)
Q4 (>45)	0.368	0.030	0.005	-0.058
	(0.747)	(0.067)	(0.075)	(0.075)
Age of enterprise (in years)	0.018	0.000	0.001	-0.004*
	(0.021)	(0.002)	(0.002)	(0.002)
Major sale to (base: business [B2B]) consumers (B2C)	-0.080	0.038	0.132**	0.035
	(0.607)	(0.054)	(0.061)	(0.061)
Admin/government (B2G)	-0.838	0.138*	0.046	0.041
	(0.823)	(0.073)	(0.083)	(0.082)
Industry control (base: manufacturing) others	-0.810	-0.029	0.029	-0.031
	(0.850)	(0.076)	(0.085)	(0.085)
Services	2.103**	0.042	0.125	0.112
	(0.818)	(0.073)	(0.082)	(0.082)
Owner characteristics	Yes	Yes	Yes	Yes
Geographical zone fixed effects	Yes	Yes	Yes	Yes
Constant	5.439***	0.138	0.598***	0.691***
	(1.565)	(0.140)	(0.157)	(0.157)
Observations	386	386	386	386
R^2	0.055	0.045	0.042	0.043

Standard errors in parenthesis.

Firms' Expectations of Policy

The above findings suggest that the small businesses our survey captures are in very poor financial health and unlikely to survive in the absence of radical policy intervention. When surveyed about survival expectations,[14] over 69% of firms said that they would be able to survive only three months or less, with about a third saying they will only be able to survive less than a month. To put this in context of other recent studies, Zhang (2020) reports on China that 14% of small and medium enterprises will not be able to survive beyond a month on cash flow basis, whereas 50% are unlikely to survive beyond three months. After controlling for several covariates, we also find that service sector firms expected to survive two months longer than manufacturing firms (see column 1 of Table 6).

On 12 May 2020, the Prime Minister announced a rescue package of around $260 billion. A major component of this relief package was the Emergency Credit Line Guarantee Scheme (ECLGS), which primarily allowed small firms to seek credit on emergency basis worth 20% of their outstanding with the formal banking sector. Almost 51% of our sample was collected before this announcement. Figure 8 (p 34) presents results showing the proportion of respondents who said they were aware of relief measures. We use the timestamps of survey completion and divide responses into five equal time quintiles (of about 77 observations each).[15] Figure 8 suggests that awareness of any relief package among respondents improved gradually with time but remained quite low in absolute terms. Column 2 of Table 6 also indicates that firms that were selling to the government (business to government [B2G]) were 13 percentage points more likely to be aware of relief measures relative to the baseline category (B2B).

After the relief package was announced, we asked respondents for their views on these measures. Less than one-third of the respondents believed that this would aid the recovery of their businesses. About 55% of the firms reported that this was inadequate and would have no effect on them.

Our qualitative interviews shed some light on why the response to the rescue package, at least until the duration of our survey, was lukewarm. One, although the ECLGS allowed firms to raise additional credit up to 20% of their existing outstanding, only firms with access to formal sources of finance qualified for this benefit. In India, only about 7% of MSME firms borrow from the formal sector (Dev and Sengupta 2020; Ghosh 2020). Two, the demand in the Indian economy was already slowing down before the lockdown, a problem that has since exacerbated. In such a setting, businesses are likely to be risk-averse and cautious over raising fresh debts. This sentiment was echoed by one of the respondents in a qualitative interview.

> Why would I borrow to operate, when the demand in the economy is low and declining? I would rather shut my unit until the demand recovers and my labour force returns.
>
> — 20 May 2020, MSME producer of shoes in UP

Despite the distress levels in the businesses surveyed, 55% of respondents reported that there were no alternatives to the lockdown. Findings in Table 6 (column 3) reveal that such reporting was similar across firm size. However, 57% of firms reported that they would have followed social distancing norms perfectly had they been allowed to resume production. As column 4 of Table 6 shows, relative to the smallest firms, larger firms were somewhat less likely to have answered this question in the affirmative.

Policy Recommendations

In the survey, we asked respondents for their recommendations on policies that could be helpful for firms like theirs. We also conducted multiple qualitative interviews with various stakeholders on issues surrounding the sector.

We undertook a text analysis of these survey recommendations (free form responses) to explore if any common themes emerged. A common short-term recommendation was the waiving of the fixed electricity charges imposed by distribution companies, irrespective of the level of production.[16] In our qualitative interviews with business owners and association members, we found that a formal request for this was often presented to the administration. A manufacturing firm owner reported the following,

> It is difficult to be certain about what is happening these days. The Chief Minister of our state in a press conference mentioned that these (fixed electricity) charges would be waived to provide some relief. However, the electricity company tells us that these have only been deferred.
>
> — 31 May 2020, a corrugated box manufacturer in UP

Another common recommendation included requests for short-term interest-free loans for periods varying between two months to two years. The given policy stance of a moratorium on existing obligations in view of many respondents would only lead to higher cumulative interest payments and push them into a deeper crisis in the future. Some more suggestions to improve liquidity of the firms included deferring and reducing income tax and expediting tax refunds. Some of these businesses also proposed restructuring of the GST regime and how this has hampered the competitiveness of the sector. One of the respondents in our survey, for example, lamented:

> Ninety percent of my work does not pay me immediately and my payment cycle is about 45–50 days long. This is common and a recognised practice in the industry. But as per rules, I have to file my GST invoice by the 20th of every month. So, I am paying tax on money I have not received. I have no way to tell them (the government) that I have not received this payment yet. There is no provision for this.
>
> — 10 May 2020, owner of an embroidery unit in Gurugram, Haryana

Some businesses were also concerned about demand prospects and recommended reducing GST rates to stimulate demand and make their products more competitive. Owners also sought assistance in wage payments and requested relief in the payments of premiums to the Employees' State Insurance Corporation (ESIC). In some cases, it was also recommended that wages of workers linked to ESIC be paid by the government directly. Similar observations on the requirement of partial wage guarantees to break the vicious circle of unemployment and attenuation of effective demand have been made previously (Ghosh 2020).

Conclusions

The findings of this article suggest that small businesses in India are in a deep crisis. We find that the firms interviewed were already facing a challenging time as they were grappling with one shock after another since 2016. During the lockdown, we find that the mean capacity utilisation plummeted

from 75% to just 13%, with 54% of the units producing nothing at all. Whether we look at financial losses, production declines, or job losses, the levels of distress are worse for smaller firms. Also, the situation for manufacturing firms has been more acute—they are 24 percentage points less likely to be producing in comparison to the service sector.

Supply chain networks have also been affected differently depending on the nature of sales of these enterprises. Those selling directly to customers were found to be more prone to not being able to deliver or sell produce from existing inventories. Although firms selling a majority of their produce to the public sector were less likely to have their orders revoked, their expected payment delays are the same as others. Access to formal finance remains a major challenge for the MSME sector with a large segment of these firms relying on informal sources of finance and paying a premium over pre-crisis borrowing rates.

Alarmingly, about 69% of the businesses reported that they would not survive for another quarter while almost a third said they will not survive beyond a month. A large section of the respondents, despite increasing awareness of policy measures, believed that there was much left to be done. There is a continuing requirement for governments across the world to engage with the small business sector and consider their concerns and suggestions. Importantly, the revival of this sector is critical for the economic recovery of several nations, including India, where the livelihoods of millions rely on small businesses and need to be prioritised.

NOTES

1 After the end of the nationwide lockdown on 31 May 2020, the respective state governments were given more freedom to decide on restrictions (Jain 2020).

2 Unincorporated enterprises are those which are not registered under the Companies Act (1956).

3 Additionally, the Annual Survey of Industries conducts a yearly survey which covers only factories registered under Sections 2m(i) and 2m(ii) of the Factories Act (1948).

4 It was also explicitly mentioned to respondents that even though they may have received the survey link from association representatives, their data would not be seen by anyone except the researchers.

5 Omitting the Facebook sample from the analysis does not qualitatively alter the results of this article.

6 The exact distribution of firms across states is presented in Appendix 2B (p 37). Our results remain robust in restricting analysis only to states where such associations were approached (New Delhi, Rajasthan, UP which account for 72% of our overall sample).

7 For detailed figures, refer to Appendix 3 (p 38).

8 "Others" here comprised of agriculture, allied and construction sectors.

9 Seven large enterprises also responded to our survey, and our findings are robust to their exclusion from the sample.

10 Given that no identifying information was collected due to safety concerns and to promote honest participation, precise response rates were hard to ascertain. Back of the envelope calculations suggest that these ranged from 12% to 18% for the subset of members who were active on electronic and social media platforms of the surveyed business associations and are in line with other studies using similar sampling methods (Bartik et al 2020).

11 A paired t-test accounts for dependence of studying the same subject across two different scenarios or points of time.

12 For matched pairs, Wilcoxon sign-rank and sign-test check for the equality of distribution and medians, respectively.

13 For reasons discussed in the data section, this question was kept optional and only 288 firms reported sales. For this analysis, we also dropped 12 outliers in which the losses were reported to be greater than the annual sales.

14 In this question, we chose deliberately to simply use the word "survival," keeping the interpretation open-ended.

15 We use this approach for ease of presentation of Figure 8, since there were some days with much higher response rates than other days.

16 These are based on the installed capacity of the transformer in the firm's premises and have to be paid irrespective of the levels of power usage.

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Appendix 1: Definition of MSMEs in India

The categorisation of the MSMEs does not constitute a natural grouping and the characteristics of micro, small and medium enterprises are vastly different. Until July 2020, this categorisation was based on investment limits on plant, machinery or equipment, as mentioned under the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006. These limits for manufacturing enterprises stood at up to ₹2.5 million for micro, greater than ₹2.5 million but less than ₹50 million for small, and greater than ₹50 crore but not exceeding ₹100 crore for medium enterprises, respectively. The limits for services enterprises stood at up to ₹1,00,000 for micro, greater than ₹1,00,000 but less than ₹20 million for small, and greater than ₹20 crore but not exceeding ₹50 crore for medium enterprises, respectively. During the course of the pandemic, this classification was changed with the GoI notification dated 1 June 2020, which stated that the upper limits of investment in plant and machinery (for manufacturing) or equipment (for services) for each category was expanded and linked with a turnover component (GoI 2020b), as outlined in Table 1A below.

Table 1A: Updated Classification of MSMEs as per GoI Notification in June 2020

Category	Manufacturing (Services): Investment in Plant and Machinery (Equipment) (₹)	Turnover (Annual) (₹)
Micro	Not more than 10 million	Not more than 50 million
Small	Not more than 100 million	Not more than 500 million
Medium	Not more than 500 million	Not more than 2,500 million

Details based on official gazette published by GoI (2020a).

Appendix 2A: Details of Quantitative Survey

The questionnaire covered six modules and was made available in both English and Hindi. These are detailed below.

Module 1: Firm and Owner Characteristics

Firm characteristics include the year of establishment, state, and district in which the unit is located, and classification of the firm under micro, small, or medium enterprise as per The MSMED Act, 2006. We also asked the owners to state which COVID-19 zone (red, orange, or green) did the firm fall in. These zones were defined as per the notification of the Ministry of Health and Family Welfare on 30 April 2020. We also sought information on whether majority of the sales were directed to B2B, B2C, or B2G sectors. Owner characteristics include age and gender of owner, and their e-mail address. Given the considerations raised during our qualitative interviews, no other identifying information was sought.

Module 2: Production and Sales

This module covered questions on capacity utilisation immediately before and on the date of the survey. We also sought information on whether the unit had any produce in the inventory that they were scheduled but unable to sell or deliver after the announcement of the lockdown. Similarly, questions on contract for any inputs or raw materials that they were supposed to receive but did not since the lockdown were asked. Further, information on the cancellation of orders, estimated losses by the end of the month of interview if lockdown continued, past year sale value (optional), as well as expectations on delays in pending payment and recovery in demand was sought.

Module 3: Employment

This section covered information on total workers (permanent and contractual) that were employed in the unit before the lockdown on 25 March 2020 and those who were retained as on the date of the survey. We intentionally did not ask for a break-up between permanent and contractual staff as that is a contentious issue and raises reservations in the mind of the respondents. Despite stringent labour laws in India, for example, for any worker employed whose monthly wages exceed ₹21,000 in an establishment with more than 10 workers, the employer has to compulsorily make an ESIC contribution. In an effort to retain skilled humanpower who needs to be adequately remunerated, firms often offer higher salaries but show these workers as contractual staff to cut costs. Also, we asked about the firms' ability to pay salaries of retained staff if the lockdown continued as well as questions on expectation of shortfall in labour.

Module 4: Raw Material and Other Fixed Costs

Here we asked questions regarding cost of raw materials in the previous financial year, number of states from which these were procured (to capture diversity and associated risks), as well as expectations on price changes for these inputs in the coming months along with anticipated shortages. We also asked questions on monthly interest payments as well as other fixed charges that need to be paid irrespective of any production activity. This mainly included fixed electricity charges and rental costs.

Module 5: Loans and Borrowings

This included questions on major sources of finance (internal, formal, or informal), value of existing debt, as well as the annual rate of interest at which funds are borrowed from the major source. In the context of accessing emergency credit line that were initiated by the government, we also asked enterprises if they had applied to any banks or other financial institutions and if they had been able to gain access to fresh loans, overdrafts, or cash credit during the crisis.

Module 6: Perceptions and Recommendations of Owners

This section covered the expected date of end of lockdown, own survival expectations as well as anticipated survival of firms similar to theirs (in terms of nature of output). We asked for the degree of satisfaction with the government, both central and state, with respect to assistance provided to the sector. Additionally, we asked questions on awareness of announcements made by the government with respect to the MSME sector. Further, we asked questions on the alternatives to lockdowns as well as the ability to follow social distancing norms in premises, if production was allowed immediately. We also sought feedback on both short-term and long-term measures that may be considered by the government for the revival of the sector.

Appendix 2B: Representation of Firms across States

Table 2A: Distribution of MSME Firms Covered in the Survey across States

State	Number	Percent
Assam	2	0.52
Bihar	7	1.8
Goa	1	0.26
Gujarat	11	2.84
Haryana	17	4.38
Himachal Pradesh	1	0.26
Jammu and Kashmir	1	0.26
Jharkhand	4	1.03
Karnataka	3	0.77
Madhya Pradesh	6	1.55
Maharashtra	18	4.64
New Delhi	23	5.93
Odisha	1	0.26
Punjab	11	2.84
Rajasthan	37	9.54
Tamil Nadu	11	2.84
Telangana	3	0.77
Uttar Pradesh	219	56.44
Uttarakhand	6	1.55
West Bengal	6	1.55

Source: Authors' primary data on 388 businesses. Respondents from states with small samples were firms that were likely contacted through networks of members of small business associations in UP, Delhi, and Rajasthan.

Appendix 3: Representation of Firms across Two-digit Division Codes

Two-digit NIC Division Codes	Number	Percent
Crop and animal production, hunting and related service activities (1)	1	0.26
Forestry and logging (2)	1	0.26
Other mining and quarrying, non-metal ores (8)	2	0.52
Manufacture of food products (10)	23	5.94
Manufacture of beverages (11)	1	0.26
Manufacture of textiles (13)	2	0.52
Manufacture of leather and related products (15)	5	1.29
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (16)	7	1.81
Manufacture of paper and paper products (17)	62	16.02
Printing and reproduction of recorded media (18)	8	2.07
Manufacture of coke and refined petroleum products (19)	1	0.26
Manufacture of chemicals and chemical products (20)	22	5.68
Manufacture of pharmaceuticals, medicinal chemical, and botanical products (21)	6	1.55
Manufacture of rubber and plastics products (22)	19	4.91
Manufacture of other non-metallic mineral products (23)	12	3.1
Manufacture of basic metals (24)	11	2.84
Manufacture of fabricated metal products, except machinery and equipment (25)	35	9.04
Manufacture of computer, electronic, and optical products (26)	6	1.55
Manufacture of electrical equipment (27)	39	10.08
Manufacture of machinery and equipment (not elsewhere classified) (28)	19	4.91
Manufacture of motor vehicles, trailers, and semi-trailers (29)	12	3.1
Manufacture of other transport equipment (30)	4	1.03
Manufacture of furniture (31)	2	0.52
Other manufacturing (32)	3	0.78
Water collection, treatment and supply (36)	4	1.03
Construction of buildings (41)	10	2.58
Civil engineering (42)	1	0.26
Wholesale trade, except of motor vehicles and motorcycles (46)	7	1.81
Retail trade, except of motor vehicles and motorcycles (47)	12	3.1
Land transport and transport via pipelines (49)	1	0.26
Postal and courier activities (53)	1	0.26
Accommodation (55)	4	1.03
Motion picture, video and television programme production, sound recording and music publishing activities (59)	1	0.26
Computer programming, consultancy, and related activities (62)	15	3.88
Real estate activities (68)	2	0.52
Legal and accounting activities (69)	2	0.52
Activities of head offices; management consultancy activities (70)	6	1.55
Architecture and engineering activities; technical testing and analysis (71)	10	2.58
Other professional, scientific, and technical activities (74)	1	0.26
Security and investigation activities (80)	3	0.78
Office administrative, office support and other business support activities (82)	3	0.78
Education (85)	1	0.26

Source: Authors' primary data on 387 businesses. One firm from 388 did not report this.