





Tougher than the rest? The impact of COVID-19 on South African exporters



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Background: This article examined the performance of South African export-oriented firms during the coronavirus disease 2019 (COVID-19) pandemic. The study is conducted against the backdrop of an export sector which has grown in importance since South Africa came out of economic isolation in the early 1990s, an effect which has been amplified in the last decade given that the world economy has grown meaningfully faster than the domestic sector of the South African economy.

Objectives: Given the importance of the rising importance of the export sector, the performance of South African exporting firms is considered, given the observed resilience of export-oriented firms in developed and developing markets. Notably, the impacts of the COVID-19 pandemic challenged this resilience by disrupting export-oriented firms on the demand side and supply side in their home and foreign markets, potentially threatening network effects and diversification benefits, which have been traditional sources of resilience.

Method: Drawing on data for 1023 South African firms, regression analysis was used to assess the impacts of the pandemic on exporting firms relative to non-exporting firms. The study also considered various heterogeneous aspects of exporting firms to provide further insight on their resilience, including firm size, firm age, industry of operation and the nature of export relationships.

Results: Incorporating the above various factors, the study results show that export-oriented firms were significantly more vulnerable than non-exporting firms to the impacts of the COVID-19 pandemic.

Conclusion: The findings have important implications for policy. First, export-oriented firms are found to be more vulnerable to disruption than non-exporting firms. This is contrary to expectations and different to experiences in other markets. This finding highlights the importance of policy support to the export sector during periods of uncertainty. Second, the export sector's contribution to the South African economy has grown meaningfully over the past three decades, underlining the importance of supporting a sector that experiences heightened vulnerability when crises strike.

Keywords: exporters; non-exporters; firm-level data; COVID-19; exporter heterogeneity.

Introduction

The export sector is vital to the performance of the South African economy given its structure as a small, open economy. The contribution of the export sector to the gross domestic product (GDP) rose from 19.5% in the early 1990s to 24.4% by the end of that decade, as trade sanctions imposed on South Africa's apartheid regime were removed and the economy emerged to increasingly participate in global trade (World Bank 2022a). The contribution of exports to the economy has continued to grow over the past two decades, reaching 27.8% of the GDP in 2020. The rising contribution of the export sector to the South African economy is explained by the fact that the domestic components of the South African economy – including household consumption, investment spending, and government expenditure – have grown slower than the world economy, while South Africa's export sector has participated in the higher growth rate enjoyed by the world economy. Thus, the export sector has grown faster than the domestic sector, which explains the growing importance of the foreign sector to the South African economy (World Bank 2022b).

South Africa's economic growth has been slowing since the 2008 global financial crisis. After increasing on average by 4.0% per year between 1999 and 2008, which was meaningfully faster than world economic growth of 3.4% per annum, annual growth in the GDP decelerated to 1.7%

Note: Special Collection: Impact of COVID-19 on the transport and logistics management.

over the 10 years from 2010 to 2019. With the population increasing by about 1.5% a year, per capita GDP has contracted in real terms since 2015. This contraction means that real per capita income is now back to its 2005 level. This contrasts with South Africa's middle-income peers – although they had also been affected by the global financial crisis, most have recovered and continued to see growth in real income per person in the past decade (World Bank 2021a).

The coronavirus disease 2019 (COVID-19) pandemic widened this gap, with the South African economy shrinking by 6.4% – 3% points more than the world economy's decline of 3.4% (World Bank 2021a). Notably, with the rising importance of the foreign sector to the structurally weak South African economy, exports declined by 10.3% in 2020 (World Bank 2021a) – a contraction that is almost twice as great as the decline in GDP.

On this score, notwithstanding firm policy action, including extensive lockdown periods, South Africa has been particularly severely affected by the COVID-19 pandemic. Between the first confirmed case in early March 2020 and the end of 2021, the country recorded 3.5 million cases of people infected with COVID-19, and over 91 000 people lost their lives, equal to 0.15% of the country's population of 59.3 million (World Health Organization 2022). As noted, the economy contracted by 6.4% in 2020 (World Bank 2022c), and over the course of 2020 and 2021, the country's unemployment rate rose from an already harrowing 29.1% to 34.9% – ranking among the worst rates of unemployment in the world (Statistics South Africa 2022). Coupling the demand and supply shocks from the pandemic with domestic challenges, such as recurring electricity outages and fiscal constraints, the South African economy and domestic firms were materially impacted by the COVID-19 pandemic.

As was the case in other countries, the South African government stepped in to provide financial support to people and companies (National Treasury 2020a). This support included the introduction of a social relief of distress grant and a business support package announced in April 2020. The fiscal package for business added up to an announced R500 billion stimulus, equal to roughly 10% of GDP (Baskaran, Borat & Köhler 2020; Borat, Oosthuizen & Stanwix 2020). The biggest part of the R500 billion took the form of a R200 billion loan guarantee scheme, in partnership with major banks, National Treasury and the South African Reserve Bank. The scheme was opened to companies with a turnover of less than R300 million a year, and as such, it was designed to support about 700 000 firms and 3 million employees. R100 billion was set aside for the protection of jobs and to create jobs, and a further R70 billion took the form of tax-related cash flow relief or direct payments to businesses and individuals (National Treasury 2020a).

However, while the stimulus package made for impressive reading, the reality is that much of the package was overstated. For instance, the R200 billion scheme was not a grant or soft lending to firms in troubled times, but rather required

collateral from borrowers and demanded repayment of the loan at market-related rates; R70 billion in tax relief was a relief on payment date and not on payment, and an announced R130 billion in spending was chiefly reprioritisation of existing spending (National Treasury 2020b). For all intents and purposes, South African firms received little support from government and substantially less than the support provided in many trading partners. Export-oriented firms arguably were even more vulnerable given the sharp slowdown in global trade, the restrictions on travel, the collapse in supply chains and the nature and size of support received by firms in other markets (National Treasury 2020a).

The aim of the study is to contribute to an emerging stream of literature detailing the impact of COVID-19 on international firms. Specifically, given the extent and structural importance of the export sector to the South African economy, this article sets out to understand the effect of COVID-19 on exporting firms relative to other firms in the South African economy. Along with the social and economic importance of the exporting sector as an employer and contributor to GDP, this article also explores the performance of export-oriented firms against the backdrop of a literature that identifies exporters as a source of resilience and portfolio defensiveness.

All else equal, based on their ability to compete in foreign markets, exporting firms should be better positioned to weather shocks and navigate economic challenges because of their inferred competitiveness. However, the economic shock of COVID-19 was global, deep and synchronised. Given that South Africa has a small, open economy with a high degree of vulnerability, combined with inadequate government support for firms in comparison to global firms, the country setting offers fertile ground for the investigation of the impact of COVID-19 on exporter resilience.

Rather than just compare export-oriented firms to domestic firms in a developing country context, the contribution of this study is to expand the literature by exploring the heterogeneity of exporters. It is well established that exporters themselves are heterogeneous. Therefore, exporter heterogeneity should be considered when supporting such international firms during crises or making recommendations in terms of outlining the resilience strategies of international firms.

Literature review

The importance of exports as an engine for economic growth has been firmly established through a vast set of empirical literature. Conclusive results have shown that countries which enjoy higher growth in per capita income levels, and *ceteris paribus* higher per capita incomes, are also those with higher shares of exports in GDP and higher share of export sector contribution to growth in GDP, with the latter driving the former (see, for example, the seminal work of Alcalá & Ciccone 2004; Frankel & Romer 1999).

Emanating from the above is an equally established literature that highlights the superiority of exporting firms compared

to their domestic counterparts (or non-exporting firms), as theorised by Melitz (2003) through his modelling of heterogeneous firms. Bernard, Jensen and Lawrence (1995), in their seminal work on identifying plant-level differences in manufacturing firms in the United States of America (USA), found that exporters employed more workers (indicative of exporters creating more jobs), paid higher wages, had a higher capital intensity and were more productive than non-exporting firms (Bernard et al. 1995). Since then, the methodology employed by Bernard et al. (1995) has been replicated in developed and developing countries, which has led to the emergence of now stylised facts that exporters produce superior results relative to non-exporting firms measured across a wide range of performance metrics (Wagner 2007). South Africa is no exception.

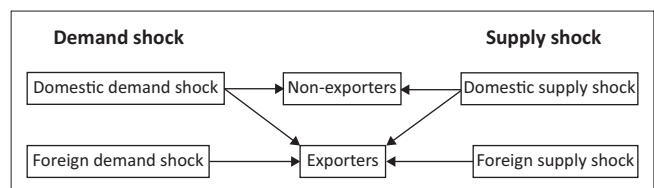
However, similar to what is found internationally, and notwithstanding the firm benefits and advantages that flow from export activities, exporting is a relatively rare attribute amongst South African firms. In any given year, less than a fifth of firms export and very few specialist exporters exist (i.e. firms who export more than half of the value of their total output). However, as shown by Matthee et al. (2018) the firms that do export display the same superior characteristics observed by Bernard et al. (1995). Moreover, exporter heterogeneity has also been recognised, where some exporters are 'more superior' than others, with traits that include exporting multiple products to multiple destinations (Arkolakis & Muendler 2010, 2013; Bernard, Jensen & Schott 2009; Boermans 2013; Matthee et al. 2018). This underscores the importance of understanding that as much as exporters differ from non-exporters, exporters themselves also differ. This provides key insights and valuable guidance for policy makers. For instance, taking firm-level heterogeneity into account allows policy makers to understand the impact of firm-level behaviour and performance on aggregate trade (Melitz & Redding 2014).

Firm-level impact of COVID-19 on trade

Globally, the COVID-19 pandemic had a tremendous impact on trade. In fact, the World Trade Organisation (2021) explains that:

[T]he health and economic crisis caused by the COVID-19 pandemic has been a massive stress test of the world trading system, delivering unprecedented shocks to global supply chains and trade relations among countries. In 2020, the value of global trade in goods and services in nominal dollar terms fell by 9.6%, whilst global GDP fell by 3.3%, in the most severe recession since World War II. (p. 6)

The collapse in trade was due to unparalleled shocks to global supply chains and material disruptions to trading systems. A result of the pandemic and consequent worldwide lockdowns was a toxic cocktail of both demand and supply shocks for firms (Baldwin & Freeman 2020). Borino et al. (2021) provide a conceptual framework illustrating these shocks at a firm level. From their model, it is evident that the



Source: Adapted from Borino, F., Carlson, E., Rollo, V. & Solleder, O., 2021, 'International firms and COVID-19: Evidence from a global survey', *Covid Economics* 75, 30–59

FIGURE 1: Demand and supply shocks resulting from the COVID-19 pandemic.

severity was much more pronounced on international firms (i.e. exporters) compared to domestic firms (i.e. non-exporters). Demand and supply shocks resulting from the COVID-19 pandemic are presented in Figure 1.

This framework has led to an evolving literature that considers the extent of exporting firms' vulnerability caused by the dual shocks relative to non-exporting firms. According to Borino et al. (2021), exporters were more severely affected because of their international exposure. Using a relatively large firm-level data set that covers 4433 firms across 133 countries, Borino et al. (2021) estimate that international firms were 13 percentage points more likely to experience difficulties in accessing inputs and selling outputs. In a similar vein, Waldkirch (2021), in his study of firm-level World Bank Enterprise data for 21 countries, found that whilst most firms experienced a drop in sales, the effect was much more pronounced in exporting firms.

Surprising from the results of Borino et al. (2021) is that even though exporters experienced heightened vulnerability during the COVID-19 pandemic, export-oriented firms were much more resilient in terms of losses. Borino et al. (2021) postulate the reasons for exporters' resilience, which draw on the superior characteristics that exporters display relative to non-exporters. These include the fact that exporters tend to be more productive, have higher skill and capital intensity levels, be more connected and be more financially sophisticated. Whilst this article does not delve into the characteristics that make exporters more resilient, it provides evidence of the impact of the COVID-19 pandemic on firms in a small, open, developing country economy where firm-level government support has been constrained. It is necessary to disentangle the impact to provide a foundation for managerial mitigation strategies in building resilience to overcome vulnerabilities. Given the importance of exporters, and the fact that exporters are heterogeneous, this article additionally builds on newly emerging firm-level work such as Buchheim et al. (2020) (which is focused on German firms) and Stojic (2020) (which is focused on Croatian firms) that is aimed at understanding COVID-19 crisis-related vulnerabilities within exporting firms.

Empirical analysis

Data

To explore the impact of the COVID-19 pandemic on exporters and non-exporters in South Africa, this study made use of the 2020 South African Enterprise Survey (ES)

(the World Bank 2021b). The ES, which has been collected by the World Bank Group for most countries since the 1990s, follows a methodical process that ensures both internal and external validity (for more information, see <https://www.enterprisesurveys.org/en/methodology>).

The ES measures various aspects of the business environment. The surveys are administered to a representative sample of firms in the nonagricultural, formal, private economy. Sector coverage is defined consistently across all economies and includes the entire manufacturing sector and most services sectors, namely retail, wholesale, automotive repair, hotels and restaurants, transportation, storage, communications, construction and information technology. The information is collected based on four-digit ISIC Rev 3.1 codes. Public utilities, government services, health care and financial services sectors are not included in the sample. The ES interview takes place with top managers and business owners.

The ES for South Africa covers four provinces, namely Gauteng, KwaZulu-Natal, the Eastern Cape and the Western Cape, with a combined population of 39.7 million people, making up 67.0% of South Africa's population of 59.3 million people. Business owners and top managers of 1097 firms were interviewed between December 2019 and February 2021 as part of the standard ES, with an additional component added to the survey instrument to focus on the effects of COVID-19 – providing the study with data that allowed the researchers to measure the consequences COVID-19 has had on firms relative to their exporter status.

The ES covers small, medium, and large firms. The size of the firm is determined by the number of employees. Firms with 5–19 employees are ranked as small, 20–99 employees ranked as medium and 100 employees or more are ranked as large. Firms with less than five employees were deemed ineligible for the survey. Firms that are 100% state-owned are also regarded as ineligible.

This article does not explicitly deal with the direction of causality between exporting and outcomes because it is primarily descriptive in nature. Instead, it focuses on correlations and associations, as controlling for extraneous factors in the context of a pandemic is near impossible.

Method

To better measure the consequences COVID-19 has had on firms relative to their exporter status, this study investigates the relationships between the change in revenue (pre- and post-COVID-19) in South Africa. To conduct these regressions, this study makes use of the accepted methodology of Bernard et al. (1995):

$$(X)_i = \alpha + \beta_1 \text{Exporter}_i + \beta_2 \text{Firmsize}_i + \beta_3 \text{Industry}_i + \beta_4 X_{ki} + \mu_i \quad [\text{Eqn 1}]$$

where X_i is the measured outcome of the reported percentage change in turnover, that is, survey respondents were asked

to indicate by what percentage their turnover had changed from the year before (prior to COVID-19); Exporter_i is a dummy variable of exporter status, where exporter = 1 and non-exporter = 0; Firmsize_i is a categorical variable accounting for firm size, delineated by small, medium and large as discussed before under the heading 'Data' to control for heterogeneity; Industry_i is a control variable based on the four-digit ISIC Rev 3.1 codes to control for heterogeneity; X_{ki} is a vector variable containing additional control variables for additional models of regression (for example to control for direct and indirect exports and export experience in terms of the number of years a firm is exporting); and μ_i is an error term.

Descriptive statistics

General insights of South African exporting and non-exporting firms

The ES interview set was made up of 1097 firms. A total of 74 firms were removed from the data set because information that is crucial for the analysis was not provided by these firms as they had not completed certain parts of the survey. This resulted in a sample set of 1023 firms. Non-exporting firms represented 88.2% of the sample, and exporters represented 11.8% of the sample. Measured by size, 51.0% of the sample was made up of small firms, 36.3% was made up of medium firms and 12.7% of the sample was regarded as large.

On these measures of size and orientation, the largest subset of the sample was made up of small, non-exporting firms, which made up 47.2% of the sample. Effectively, one in two firms that made up the South African survey set was small and domestically focused. Notably, 3.2% of the sample were large, export-oriented firms. The size and orientation data offered an interesting sidenote on South Africa's industrial structure and firm competitiveness.

The sample contained a broad set of industries. Retail services and other services constituted half of the sample, contributing 20.7% and 35.8% to the sample size, respectively. Firms involved in manufacturing, including food and beverages, textiles and garments, fabricated metal products, motor vehicles and other manufacturing made up 31.7% of the sample. Construction firms constituted the balancing 11.9% of the data set.

The average age of exporting firms was 37 years, and the average age of non-exporting firms was 26 years. This hints at a resilience in exporting firms that manifests in business longevity. Exporting firms had an average of 102 full-time employees, almost double the average of 59 full-time employees in non-exporting firms. Although this figure sympathised with the higher number of employees that corresponded with exporting firms globally, large firms made up 27.3% of the exporting firm set and 10.8% of the non-exporting set. The higher representation of large firms in the exporting set could contribute to the difference observed

TABLE 1: World Bank Enterprise Survey firms' descriptive insights.

Variable	Subvariable	Exporter	Non-exporter	Total
Total number of firms		121	902	1023
Firm size	Small	39	483	522
	Medium	49	322	371
	Large	33	97	130
Industry	Food and beverages	10	36	46
	Textiles and garments	6	46	52
	Fabricated metal products	6	23	29
	Motor vehicles	6	9	15
	Other manufacturing	46	138	184
	Construction	6	115	121
	Retail services	26	185	211
	Other services	15	350	365
Average firm age (years)		37	26	-
Average number of full-time employees		102	59	-

Source: Adapted from World Bank, 2020, *Enterprise surveys South Africa*, viewed 10 January 2021, from <https://www.enterprisesurveys.org/en/data/exploreeconomies/2020/south-africa> ES, Enterprise Survey.

TABLE 2: Heterogeneity of exporters from a global perspective.

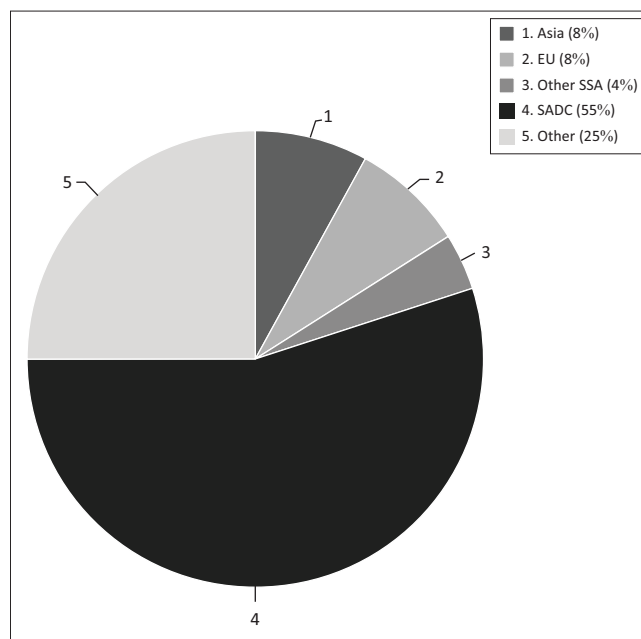
Variable	Exporters
Average years of export experience	24
Average sales percentage of direct exports	17
Average sales percentage of indirect exports	20
Average export intensity (percentage) of sales	38
Average percentage of exporters with a regional network (foreign affiliates in SADC)	19

Source: Adapted from World Bank, 2020, *Enterprise surveys South Africa*, viewed 10 January 2021, from <https://www.enterprisesurveys.org/en/data/exploreeconomies/2020/south-africa> SADC, Southern African Development Community, ES, Enterprise Survey.

in average headcount, rather than the competitiveness of exporting firms, although this observation is speculative and demands more data to arrive at a statistically meaningful conclusion. A summary of the descriptive statistics discussed above is presented in Table 1.

Table 2 sets out descriptive statistics of the 121 exporting firms that made up the sample and, sympathetic with Bernard et al. (2009), Arkolakis and Muendler (2010, 2013), Boermans (2013) and Matthee et al. (2018), the data provided evidence of exporter heterogeneity. Exporting firms had an average of 24 years of exporting experience, although the average age of exporting firms was 37 years (see Table 1). Direct exports amounted to an average of 17% of sales, and indirect exports amounted to an average of 20% of sales, contributing to a total export intensity average of 38%, which indicated the relative importance of international markets for firms' sales. Exporter heterogeneity is presented in Table 2.

In terms of geographic contribution, Asia and Europe each constituted 8% of total export sales. Africa accounted for 59% of export destinations, of which 55% was accounted for by countries in the Southern African Development Community (SADC). As shown in Table 2, one in five exporters had a regional network with foreign affiliates in the SADC, emphasising the region's importance to South African exporting firms. The next largest market by destination was made up of a diverse basket of countries that constituted the



Source: Adapted from World Bank, 2020, *Enterprise surveys South Africa*, viewed 10 January 2021, from <https://www.enterprisesurveys.org/en/data/exploreeconomies/2020/south-africa>

EU, European Union; SSA, sub-Saharan Africa; SADC, Southern African Development Community, ES, Enterprise Survey.

FIGURE 2: Principal export destinations (percentage) in terms of sales.

category 'Other', indicating that, after addressing their principal SADC market, South African exporting firms produced for a wide range of destinations. The geographic distribution of export sales is illustrated in Figure 2.

COVID-19 pandemic-related descriptive insights in South Africa

Table 3 provides a description of the responses of firms in the ES that captures the extent to which South Africa's protracted lockdown because of COVID-19 impacted them. Only firms deemed 'essential' were able to operate. Because of this lockdown procedure, 78.1% of firms in the sample were forced to temporarily close because of the pandemic. This effect was most noticeable in non-exporters (79.5%) when contrasted with exporting firms (69.8%).

On average, the temporary closure experienced by firms lasted approximately 11 weeks. Again, this was more severe for non-exporters (12 weeks) when contrasted with exporting firms (9 weeks). The intensive margin of the effects following the outbreak can be measured by changes in firms' monthly sales compared with the same period 1 year ago. On aggregate, South African firms reported a drop of 46.8% in sales, when compared with the same month in the year before the pandemic. Again, the losses were felt more in non-exporters (47.3%) when contrasted with exporting firms (43.7%).

The total number differed from the 1097 as surveyed by the ES, due to some firms not having completed parts of the survey that were crucial for analysis.

The pandemic had direct and indirect effects on the workforce. Beyond the effects on health and family needs, restrictions on

TABLE 3: COVID-19 responses by exporter status (percentages) in South Africa.

Variable	Subvariable	Aggregate	Exporter	Non-exporter
Did this establishment close temporarily due to the COVID-19 outbreak?	Yes	78.1	69.8	79.5
	No	21.9	30.2	20.5
Number of weeks establishment has been closed (or was closed) due to the COVID-19		11.5	9.1	11.8
Compared to same month in 2019, did establishment's sales change?	Decrease	83.9	76.4	85.1
	Increase	5.1	8.3	4.6
	Stay the same	11.0	15.3	10.3
Per cent increase in sales (if reported an increase)		33.6	44.0	30.6
Per cent decrease in sales (if reported a decrease)		46.8	43.7	47.3
The demand for this establishment's products and services	Decrease	83.9	76.4	85.1
	Increase	4.5	7.6	4.1
	Stay the same	11.5	16.0	10.8
This establishment's supply of inputs, raw materials, or finished goods and materials	Decrease	83.2	76.9	84.2
	Increase	4.7	7.7	4.3
	Stay the same	12.1	15.4	11.5
Started or increased business activity online due to COVID-19 outbreak?	Yes	65.5	65.6	65.5
	No	34.5	34.4	34.5
Has the number of permanent workers changed since outbreak?	Decrease	23.5	22.1	23.7
	Increase	3.8	3.3	3.9
	Stay the same	72.7	74.6	72.4
Has the number of temporary workers changed since outbreak?	Decrease	26.0	22.2	26.6
	Increase	0.9	2.8	0.6
	Stay the same	73.1	75.0	72.8
Number of workers laid off due to the COVID-19 outbreak		16.5	27.4	14.9
Number of workers put on furlough due to the COVID-19 outbreak		4.4	4.7	4.4
Since the outbreak of COVID-19, has this establishment's liquidity or cash flow increased, remained the same, decreased?	Decrease	83.5	77.1	84.6
	Increase	4.6	7.6	4.2
	Stay the same	11.8	15.3	11.3
Main source used to deal with cash flow shortages	Loans from commercial banks	4.9	4.6	5.0
	Loans from non-banking financial institutions	0.3	0.9	0.3
	Equity finance	2.0	4.6	1.6
	Delaying payments to suppliers or workers	1.7	3.6	1.5
	Government grants	2.4	0.9	2.6
	None of the above	88.6	85.5	89.1
Has this establishment received any national or local government measures issued in response to the crisis?	Yes	44.0	38.5	44.9
	No	0.6	1.5	0.5
	No, but expect to receive it in the next 3 months	55.4	60.0	54.7
Did any of these measures involve any of the following? (% of firms that received these)	Cash transfers for businesses	1.2	0.0	1.4
	Deferral or suspension of payments	1.2	0.0	1.4
	Access to new credit	0.9	0.0	1.1
	Fiscal exemptions or reductions	0.7	3.7	0.3
	Wage subsidies	98.1	98.2	98.1
	Other	38.0	35.4	38.4

Table 3 continues on the next column →

TABLE 3 (continues...): COVID-19 responses by exporter status (percentages) in South Africa.

Variable	Subvariable	Aggregate	Exporter	Non-exporter
What would be the most needed policies to support this business over the COVID-19 crisis?	Deferral of rent, mortgage or utilities	10.7	6.1	11.5
	Deferral of credit payments, suspension of interest payments or rollover of debt	0.5	0.0	0.6
	Deferral of tax payments	14.2	13.6	14.3
	Access to new credit	9.4	12.1	9.0
	Loans with subsidised interest rates	1.1	0.8	1.2
	Fiscal exemptions or reductions	0.5	0.0	0.6
	Wage subsidies	61.3	61.4	61.3
	Cash transfers for business	0.7	1.5	0.6
	Other	1.5	4.6	1.1
	Number of weeks establishment would remain open if its sales stopped as of today		12.5	15.8

Source: Adapted from World Bank, 2020, *Enterprise surveys South Africa*, viewed 10 January 2021, from <https://www.enterprisesurveys.org/en/data/exploreeconomies/2020/south-africa> COVID-19, ES, Enterprise Survey.

mobility because of health risks or government's actions in their efforts to curtail the contagion, as well as unemployment or under-employment due to decreased economic activity, have reshaped the workforce. An overwhelming number of firms indicated that they kept their levels of permanent workers at the same level. These results are likely to have changed significantly as the pandemic has stretched on. However, these numbers were accurate at the time of data collection for the ES.

As economies were increasingly affected by the COVID-19 pandemic, the private sector experienced growing financial distress. Table 3 displays the share of establishments with decreased liquidity or cash flow due to the COVID-19 outbreak. This measure provides a sense of the magnitude of the liquidity and solvency crises induced by the pandemic.

Firms were then asked how they dealt with this decreased cashflow; 4.8% of firms indicated that they made use of loans from commercial banks; 2.0% made use of equity finance; 1.7% delayed payments to workers or suppliers; 2.5% used government grants; whilst 88.7% of firms indicated that they had used none of the above.

Local, national and international institutions put in place different measures aimed at countering the economic effects of the pandemic. Table 3 evidences the share of firms that received national or local government assistance, including but not limited to cash transfers, deferral of payments, access to new credit, fiscal relief or wage subsidies. In terms of which were the most used forms of government assistance, 98.1% of firms that received government assistance claimed that this assistance came by way of wage subsidies.

When asked which measures for firms would be most needed from government to support the businesses through the pandemic, 61.3% of firms indicated that wage subsidies would be needed. A further 14.2% would prefer a deferral of tax payments, whilst 10.7% and 9.4% would like to see a deferral of payments for rent, mortgages and utilities, and access to new credit, respectively.

Based on the descriptive results, exporting firms have been able to weather the pandemic better than the average firm and certainly better than firms that are classified as non-exporters.

Ethical considerations

This article followed all ethical standards for research without direct contact with human or animal subjects.

Results and discussion

The section below sets out the results of the model specifications and discusses the findings. In the discussion, the association between reported turnover and firms' and exporters' characteristics is covered. The first set of regression results is presented in Table 4.

Regarding specification (1) it is clear that exporting firms were at an advantage once the pandemic hit, with the dummy variable indicating a lesser extent of financial decline than their non-exporting counterparts at a 1.0% significance level. In addition (in specification 2), firm size entered the regression as expected, with medium and large firms having a distinct advantage over smaller firms. However, once the researchers

TABLE 4: Reported percentage change in turnover associated with firm characteristics.

Variable	Reported percentage change in turnover	1	Reported percentage change in turnover	2	Reported percentage change in turnover	3
Exporter dummy	9.25***	0.001	6.800*	0.075	5.617	0.143
Firm size	-	-	4.858***	0.004	4.166**	0.015
Industry control	No	-	No	-	Yes	-
Observations	1023	-	1023	-	1023	-

Note: Robust standard errors in parentheses and ***, $p < 0.01$, **, $p < 0.05$ and *, $p < 0.1$ (significance at the 1.0%, 5.0% and 10.0% levels respectively). In terms of weighting provided by the ES dataset, the strict eligibility weighting was applied.

TABLE 5: Reported percentage change in turnover associated with exporter-only characteristics.

Variable	Reported percentage change in turnover	4	Reported percentage change in turnover	5	Reported percentage change in turnover	6
Exporter dummy	10.190*	0.096	18.464**	0.015	18.749**	0.023
Firm size	4.224**	0.013	4.420***	0.010	4.444***	0.009
Sales: indirect export (%)	-0.487***	0.005	-	-	-0.419***	0.010
Sales: direct export (%)	0.263*	0.092	-	-	0.267*	0.079
Export experience	-	-	-0.573**	0.049	-0.442*	0.090
Industry control	Yes	-	Yes	-	Yes	-
Observations	1018	-	1018	-	1018	-

Note: Robust standard errors in parentheses and ***, $p < 0.01$, **, $p < 0.05$ and *, $p < 0.1$ (significance at the 1.0%, 5.0% and 10.0% levels respectively). In terms of weighting provided by the ES dataset, the strict eligibility weighting was applied.

controlled for industry (specification 3), it was no longer evident that exporting firms experienced a lesser extent of financial decline relative to non-exporters.

Table 5 shows similar results for the initial specifications in terms of the exporting dummy and firm size (controlling for industry). Table 5 introduces other variables that further drive the heterogeneity of exporters within the sample.

Firstly, the percentage of annual sales going to direct and indirect exporters (specification 4) is introduced. The results show that firms reporting on their percentage of annual sales going towards indirect exports experienced a significant negative result. Whilst it cannot be said with certainty as to what the causal link might be, it is likely to be attributed to the fact that the COVID-19 pandemic disrupted not only South Africa but also global value chains, placing a negative burden on indirect exports – a finding that would be corroborated by Waldkirch (2021). Whilst Waldkirch's (2021) work applies here, it would also be worth noting that firms would also experience a negative effect on indirect exports if the third party vendors could not export. Because a large volume of the exports is through land-borders (which were closed or congested), whilst sea and air-freight were subjected to heightened scrutiny, it also makes sense for the negative effect to have come into play. Lastly, because only 'essential' services could operate for a portion of time, not all goods that are for export (direct or indirect) would have been manufactured or rendered, and thus they were not available to be exported.

Next, export experience (specification 5) is introduced as an indicator of exporter heterogeneity. The statistically significant negative result indicates that more experienced exporters were affected to a larger extent than relatively inexperienced exporters. The researchers argue that it might be that older exporters are likely to be more integrated into global value chains, highlighting the negative impact of the COVID-19 pandemic. It is surprising that more established firms that are likely to have more resilient relationships and stronger network effects, as well as greater learning by doing and/or cumulative experience, were more negatively affected. This is contrary to Stojcic (2020), who found that companies with higher level of robustness to external shocks have lower probability of decreasing export revenues.

The results of this current study echo those of Buchheim et al. (2020:11), who find that German export-oriented firms experienced higher levels of 'business uncertainty relative to firms that export small shares of their production'. The evident heightened vulnerability of exporting firms points to the need for substantially greater support from government relative to domestically-oriented firms in times of a coordinated global slowdown – or lockdown. While the events of COVID-19 are in many ways unprecedented – or at least extremely uncommon – the findings on impacts on non-exporting firms and exporting firms are instructive.

Conclusion

This study attempted to examine the impact of the COVID-19 pandemic on exporting firms and non-exporting firms. A survey of the literature on exporters in developed and developing countries noted that exporters produce superior results relative to non-exporting firms across a wide range of performance metrics, including employment, remuneration, capital intensity, productivity and profitability, to mention a few. South Africa is no exception in this regard. There are a number of reasons to support this observation, including that exporters *inter alia* enjoy greater resilience because of network effects and diversification benefits where firms export multiple products to multiple destinations. Apart from this, South Africa's export sector has grown considerably faster than the domestic sector over the past two and a half decades, considering the country's relative openness to the world.

In light of this, the COVID-19 pandemic presents an opportunity to examine the purported resilience of South African exporters in an unusual setting. In most economic shocks, exporters experience a demand or supply shock in some part of their market while the domestic firm experiences the shock in their entire market. However, in the pandemic, exporters experienced demand shocks and supply shocks in their home market and across all export markets, given the synchronised global shutdown. This allows the researchers to explore whether the resilience of exporters extends to the most severe settings. In studying the resilience of exporters versus non-exporting firms, it is also recognised that exporters gain competitive advantages in different ways, making it important to evaluate exporter performance that consider these differentiating factors.

To study the performance of firms, the researchers employed the World Bank's ES survey, which affords data covering 1023 large, medium and small-sized exporting and non-exporting firms operating in multiple sectors. Applying the widely accepted methodology of Bernard and Jensen (1995), the results suggest that exporting firms were at an advantage once the pandemic hit, experiencing smaller declines in performance indicators than non-exporting firms. The results also indicate that medium and large firms have a distinct advantage over smaller firms. However, once the researchers control for industry, these gains disappear. When variables that capture the heterogeneity of exporters within the sample are introduced (such as exporting experience or exporting directly or indirectly), it is found that, contrary to the established pattern of exporters outperforming non-exporting firms, some exporters experienced significant negative effects. This is most notably in firms that have a large percentage of annual sales going to indirect exports – again, this can be attributed to the reasoning laid out in the results section. It is also found that, contrary to the established pattern, more experienced exporters were affected to a larger extent than relatively inexperienced exporters.

As with any study, this study has its own limitations. The first one worth mentioning is the comprehensiveness and the

timeliness of the data. The ES is a large-scale project and thus cannot adequately unpack data at a granular level – this work would benefit from being repeated with a dataset that is more granular in the exporting space. However, such a dataset measuring the impacts of COVID-19 across the same firms does not exist. Furthermore, although the researchers make inferences about causality in some of the relationships identified in this study, the nature of the dataset does not allow them to explicitly test causality. The researchers also speculate on the impact of limited government support on South African exporting firms vis-à-vis their counterparts in countries that experienced more support in other markets. The observations of this study are based on inference, and more work needs to be done in this area to better understand the impact of government support on exporting firms. This study also affords insights into the coping mechanisms and sources of support for firms in the face of a synchronised global crisis. However, more work is needed in this area, especially understanding sources of resilience and the coping strategies of firms.

Whilst the results of this study are at odds with the observed superior performance of exporters, they correspond with the findings of Buchheim et al. (2020) who find that German export-oriented firms experienced higher levels of business uncertainty with greater negative effects than non-exporting firms. Given the rising importance of export sector and exporting firms to the South African economy, the researchers believe that this finding has important implications for policymakers in terms of the importance of the nature and extent of support afforded to exporting firms in times of crisis and especially – even if exceptionally unusual – instances of synchronised global crisis where exporting firms are evidently most vulnerable.

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Competing interests

The authors have declared that no competing interest exists.

Authors' contributions

M.M. contributed to the conceptualisation and writing of the article. A.S. was involved in the writing and editing of the article. W.F. performed data curation, formal analysis, software and investigation. C.B. was involved in methodology, formal analysis, software and investigation.

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Data availability

Data is publicly available at <https://www.enterprisesurveys.org/en/data>.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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