The 2020 Trade Collapse: Exporters Amid the Pandemic

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June 4, 2021

Abstract

International trade collapsed sharply during the 2020 global recession. This paper provides the first evidence of the response of exporting firms to the 2020 trade collapse. Based on customs and balance sheet data on Colombian firms, I establish that despite a large and sudden drop in the number of exporters, most of the decline in exports is accounted for by an intensive margin adjustment. Multinational affiliates experienced a milder decline in exports, while producers of intermediate inputs and capital goods faced a stronger collapse in exports relative to producers of final consumer goods.

Keywords: Covid-19, Trade collapse, Exporters, Firms.

JEL classification: F1

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1. Introduction

Global trade contracted sharply during the first months of the 2020 global recession amid the Covid-19 pandemic. World exports were 26% lower at the trough in April 2020 relative to April 2019, and have only partially recovered thereafter. This trade collapse was almost as severe as the one seen during the 2008-2009 global financial crisis.[1] Reports on this episode have emphasized a deep decline in trade among durable goods with complex global supply chains, such as the automotive sector [World Trade Organization, 2020]. Based on Colombian customs transactions and balance sheet data, I study the behavior of exporting firms during this crisis to assess whether shocks to global supply chains and/or a shift in global demand away from durable goods contribute to explain the export slowdown.

I first document the adjustment margins of the trade collapse. The collapse in Colombia's exports was characterized by a large decline in the number of exporting firms. Larger firms faced a higher probability of survival in export markets, but lower export growth. Between the first half of 2019 and the first half of 2020, the intensive margin (export growth among continuing exporters and varieties) accounts for 94.8% of the trade collapse. The extensive margin (net firm entry) explains -3.2%, and the subextensive margin (the addition or removal of varieties by continuing firms) accounts for 8.4% of the trade collapse. Changes in prices account for 82.8% of the intensive margin adjustment.[2]

Next, I ask which firm characteristics were associated with better performance in export markets during the crisis. A better performance by multinational affiliates (which have more stable supply chain links) and the relative decline in exports by intermediate goods producers (relative to producers of final consumer goods) indeed suggest that shocks to global supply chains could have been a determinant factor behind the global trade collapse of 2020. The relative decline in exports of capital goods points to a stronger contraction in the global demand for durables. Firm size and indebtedness were not significant predictors of export performance during the crisis.

Most of the literature documenting the response of economic activity to the Covid-19 crisis and associated global recession is focused on domestic activity.[3] This paper is among the first to study the response of international trade flows during this global crisis and the first firm-level study. In particular, Espitia et al. [2021] use monthly bilateral trade flows for 28 countries during the initial months of the pandemic, finding that trade in sectors prone to remote work contract less. This paper is also related to the literature studying the response of trade flows to global crises. Most of this literature has studied

[1] See Appendix A.2 for a comparison between the 2008-2009 and the 2020 trade collapses.

[2] The share of the intensive margin explained by changes in prices is larger among all exports (82.8%) than among manufacturing exports (58.2%), due to the severe collapse in commodity prices during the crisis.

[3] Firm-level studies of the impact of the pandemic include Bartik et al. [2020], Gourinchas et al. [2020] and Bloom et al. [2021] among others.

the 2008-2009 trade collapse, [Levchenko et al., 2010, Eaton et al., 2016, Alessandria et al., 2010, Chor and Manova, 2012, Bems et al., 2011, Behrens et al., 2013, Bricongne et al., 2012] while other papers have studied the historical relationship between crises and trade [Benguria and Taylor, 2020, Freund, 2009, Iacovone et al., 2019].

2. Exporters Amid the Pandemic

Data sources I combine two data sources: administrative customs data on the universe of export transactions of Colombian firms and balance sheet data on a majority of these exporters.[4] The customs transactions data spans January 2017 through December 2020 and includes the tax identification number of each exporter, the HS10 code for each product, the destination country, the value in US dollars and the quantity shipped. For part of the analysis I use annual balance sheet data registered by Colombia's *Superintendencia de Sociedades*, which covers medium-sized and large firms. I use data from 2018, which is the latest year available. The variables used in the analysis are firm revenue, debt, equity, and multinational affiliate status. I match both datasets using tax IDs. Balance sheet data is available for 26.0% of the exporting firms active in 2019, and 64.8% of the exporters with sales above 1 million USD. The matched exporters account for 66.0% of the exported value and 66.5% of the export transactions in that year. Appendix Table A.1 reports summary statistics.

An overview of the trade collapse Despite the different nature of the two events, the 2020 trade collapse was almost as deep as the decline in trade following the 2008-2009 global financial crisis. Appendix Figure A.1 plots world exports as well as exports by major world economies including the US, China and the EU. World exports fell by 25.8% between February and April 2020, and by 26.0% between April 2019 and April 2020. Exports for most countries, including the US and the EU collapsed simultaneously in those months, and recovered partially thereafter. As China faced the pandemic and the associated lockdown earlier, Chinese exports declined strongly in January and recovered swiftly in the following months.

Colombia's exports (shown in Figure 1a) collapsed in line with world exports. As for many emerging markets, Colombia's largest export destinations are the US (accounting for 29% of exports in 2019) and China (12%). Colombia's exports to China fell starting in January, while exports to the rest of the world collapsed simultaneously between February and April. Up to the end of 2020, the recovery in exports has only been partial, with December 2020 exports being 9% lower relative to the December 2019 value. Figure 1b shows the evolution of the number of exporting firms, which fell by 36.4% between April

[4] These data have been used by Benguria [2021].

2019 and April 2020. The number of varieties (i.e. HS6 product-destination pairs), in Figure 1c, also plummeted during this period. As Appendix Table A.2 indicates, the sector with the largest decline in exports was automotive vehicles and parts. As mentioned earlier, this suggests a shift in global demand away from durables, and it is a sector that relies on global supply chains.

Figure 2a indicates that, among firms exporting in both 2019 and 2020, larger firms faced a larger decline in exports. The horizontal axis ranks firms according to percentiles of exports in 2019, and the vertical axis shows the change in exports by firms in each percentile between both years. In contrast, smaller firms were less likely to survive. The vertical axis in Figure 2b shows the probability of survival (exporting in 2020) for firms that exported in 2019, and the horizontal axis again bins firms into percentiles by 2019 exports.

Decomposing the trade collapse To understand more deeply the adjustment margins during the 2020 trade collapse, I decompose the change in exports between 2019 and 2020 into intensive, extensive (i.e. exporter entry and exit) and subextensive (i.e. the addition or removal of varieties by continuing firms) margins.[5] Further, I separate the intensive margin (i.e. export growth by continuing varieties within continuing firms) into growth in prices and growth in quantities. To assess the contribution of each of these margins, I use the following decomposition:[6]

$$\frac{\Delta v_t}{v_{t-1}} = \left(\sum_{fi \in \text{Cont.}} \frac{\left(\frac{p_{fi,t}+p_{fi,t-1}}{2}\right)\Delta q_{fi,t}}{v_{t-1}} + \frac{\left(\frac{q_{fi,t}+q_{fi,t-1}}{2}\right)\Delta p_{fi,t}}{v_{t-1}} \right) + \left(\sum_{f \in \text{Enter}} \frac{v_{f,t}}{v_{t-1}} - \sum_{f \in \text{Exit}} \frac{v_{f,t-1}}{v_{t-1}} \right) + \left(\sum_{fi \in \text{Enter}} \frac{v_{fi,t}}{v_{t-1}} - \sum_{fi \in \text{Exit}} \frac{v_{fi,t-1}}{v_{t-1}} \right). \quad (1)$$

In this expression f denotes a firm, i denotes a variety, and t denotes a time period. The first, second, and third terms in the right hand side correspond to the intensive, extensive and subextensive margins respectively. The results, in Table 1, are reported separately for all exports and for manufacturing exports. I consider two different timing assumptions: between the entire 2019 and 2020, and between the first halves in each of these years (given that the collapse in exports occured during the first half of 2020). Considering all exports and the decomposition between the first half of each year, the results indicate that the 25% drop in trade between 2019 and 2020 was explained almost entirely by the intensive margin (94.8% of the decline). The contribution of net firm entry accounts for -3.2%, as entry and exit

[5] I denote varieties as HS6 product-destination pairs.

[6] Equation (1) builds on Gopinath and Neiman [2014]'s decomposition of trade growth into an intensive, extensive, and subextensive margin. The decomposition of the intensive margin into prices and quantities follows Haddad et al. [2011].

partially cancel out.[7] The subextensive margin accounts for 8.4% of the overall fall in exports, despite large magnitudes of gross entry (-31.1%) and exit (39.5%). In other words, while much lost trade was explained by firms dropping varieties (products and/or destinations), there was an also robust addition of varieties, which is perhaps surprising given the global recession.[8] The contribution of the intensive margin to this trade collapse was driven mostly by prices (changes in prices and quantities among continuing firms and varieties account for 78.5% and 16.3% of the total decline in exports respectively). However, among manufacturing exports, the decline in quantities within the intensive margin plays a more important role (changes in prices and quantities explain 60.8% and 43.6% of the decline in exports).[9] This is probably due to the fact that commodities (excluded from the manufacturing sample) faced a sharp decline in prices during 2020.[10] The decomposition based on the full year yields very similar results.

How did the adjustment margins of the 2020 trade collapse compare to the 2008-2009 collapse in world trade during the global financial crisis? While there is no work in the literature using Colombian data, Behrens et al. [2013] report that among exporters in Belgium, the intensive margin explained 97% of the decline in exports during the 2008-2009 global financial crisis, which is in line with the findings in the episode studied here.

Which exporters are more resilient during the crisis? To examine what characteristics of exporting firms were associated with a better performance during the crisis, I estimate the following regression of export growth:[11]

$$\Delta V_{fpct} = \gamma_{fpd} + \delta_{pt} + \eta_{ft} + \beta \cdot \text{Post}_t \cdot X_f + \epsilon_{fpct} \,. \tag{2}$$

Each observation corresponds to a firm f, HS6 product p, destination country d in period t. I consider two periods: January to June 2019 and January to June 2020. The January to June 2020 period captures the severe trade collapse during the initial phase of the pandemic. I compare it to the same months in the previous years to account for seasonality. The depedent variable ΔV_{fpct} is the log change in exports between periods t and $t-1$ (either 2018S1-2019S1 or 2019S1-2020S1). The right hand side includes a $Post_t$ dummy variable interacted with firm characteristics (X_f) measured using balance sheet data in 2018 (the latest year available). $Post_t$ captures the effect of the global crisis and is equal to one in 2020

[7] The fact that the entry margin dominates the exit margin in absolute terms at a time when the number of exporters falls indicates that firms that enter are larger on average than those that exit.

[8] Appendix Table A.6 shows that these patterns regarding the subextensive margin are also observed in years prior to the trade collapse.

[9] In other words, changes in prices explain 82.8% (=78.5%/(78.5%+16.3%)) of the intensive margin in the full sample and 58.2% (=60.8%/(60.8%+43.6%)) within manufacturing.

[10] Colombia is a large exporter of coal and oil, both of which saw prices fall drastically during most of 2020.

[11] This regression is similar to the one used by Behrens et al. [2013] who study the 2008-2009 trade collapse.

and zero in 2019. I include firm-product destination fixed effects γ_{fpd} as well as product-time (δ_{pt}) and firm-time (η_{ft}) fixed effects that control for product and firm-specific shocks. Standard errors are clustered by firm, product and destination using multiway clustering. I report results for two alternative samples: one with all firms and one restricted to manufacturing firms.

Firm characteristics include total revenue, multinational affiliate status and indebtedness, defined as the ratio of total debt to equity. Revenue and indebtedness are split into terciles.[12]

The results are shown in Table 2. In columns 1 (all industries) and 4 (manufacturing) I report the results of estimating (2) including the $Post_t$ dummy variable without the interaction with firm characteristics X_f and removing product-time and firm-time fixed effects. This allows me to establish the overall effect of the 2020 global crisis within firm-product-destination cells, which is a 39.5% or 37.9% decline in exports among all industries or manufacturing respectively. Columns 2 and 5 indicate that multinational affiliates had a substantially better performance in 2020 relative to 2019, while firm size and indebtedness are not significant predictors. Multinational affiliates saw a 31.4% or 31.5% relative increase in exports from 2019S1 to 2020S1 compared to the other firms in columns 2 (all industries) or 5 (manufacturing) respectively. Appendix Tables A.3 and A.4 report equivalent results for quantities and prices, showing that quantities follow the same pattern as export values. Prices also fall during the crisis, but there are no statistically significant differences across firms.

Finally, I also explore the role of product characteristics, distinguishing between intermediate inputs, capital goods and final consumer goods. In this case I estimate:

$$\Delta V_{fpct} = \gamma_{fpd} + \rho_{ft} + \psi_{dt} + \beta \cdot \text{Post}_t \cdot Z_p + \epsilon_{fpct}\,, \tag{3}$$

in which Z_p includes dummy variables for intermediate inputs and for capital goods (final consumer goods are the ommited category). In this case, firm-time (ρ_{ft}) and destination-time (ψ_{dt}) fixed effects absorb firm and destination specific shocks. The results in columns 3 in Table 2 indicate that exports of intermediate inputs and capital goods fell by 10% and 15.9% respectively relative to exports of final consumer goods in the full sample.[13]

Overall, the relative decline in exports of intermediate inputs, and the relatively better performance by multinational affiliates (which have more stable supply chain links) suggest that shocks to global supply chains contribute to explain the export slowdown. The relative decline in exports of capital goods point to a shift in global demand away from durable goods.[14]

[12] Using continuous measures results in similar results.

[13] In the manufacturing sample (column 6), exports of intermediate inputs and capital goods also fell by 9.8% and 15.5% respectively relative to final consumer goods.

[14] Appendix Table A.5 provides further evidence of a shift in global demand away from durable goods by comparing the

3. Conclusions

This paper has provided the first firm-level analysis of the trade collapse amid the 2020 global crisis. Based on data from Colombia, while a large number of small exporters exit international markets, the intensive margin explains most of the decline in exports. Multinational affiliates experienced a better export performance, while firm size and indebtedness did not predict a differential growth in exports. Finally, producers of intermediate inputs and capital goods were more severely affected than producers of final consumer goods.

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response of durable vs. nondurable exports of consumption goods. Exports of durable consumption goods fall by 21.8% (in the full sample) or 23.3% (among manufacturing firms) relative to exports of nondurable consumption goods.

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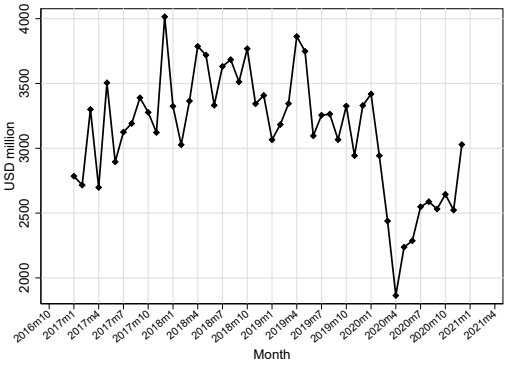
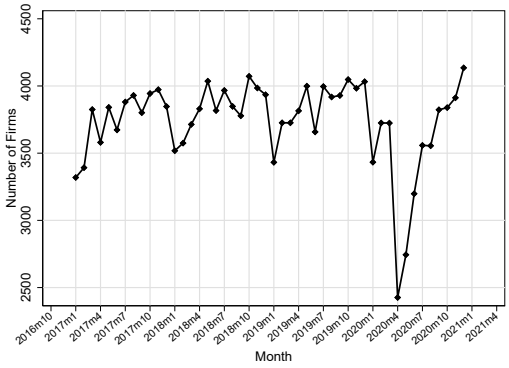
Figure 1: Colombia's Exports: January 2017 – December 2020

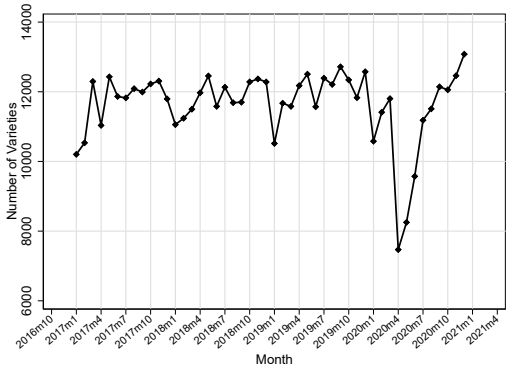
a) Total exports



b) Number of exporting firms

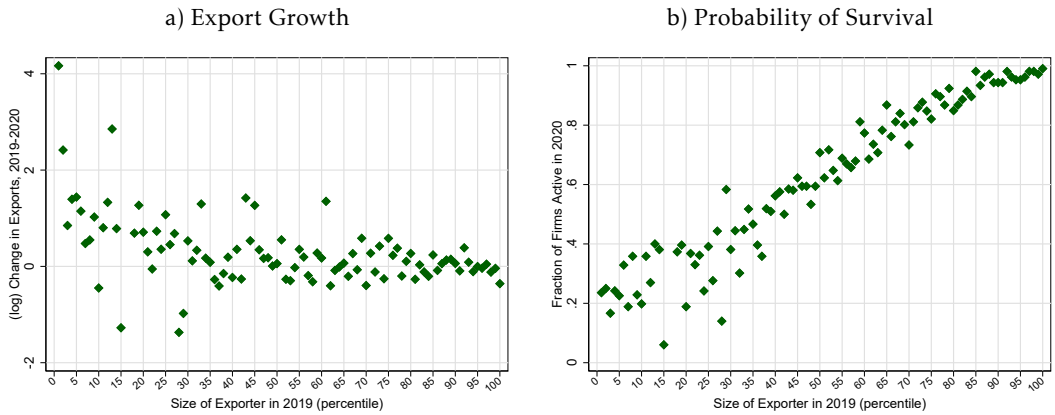


c) Number of exported varieties (product (HS6) - destination pairs)



Notes: Source: Colombian customs export transactions data.

Figure 2: Export Growth and Survival Probability by Firm Size



Notes: In both panels, firms are assigned to percentiles based on total exports in 2019. In panel A, the vertical axis plots the average across firms in each percentile of the 2019-2020 (log) change in exports. In panel B, the vertical axis plots the share of firms in each percentile that export in 2020.

Table 1: Sources of Export Growth in Colombian Exports

	Total	Intensive			Extensive			Subextensive		
		Total	Δq	Δp	Net	Entry	Exit	Net	Entry	Exit
2019-2020										
All	-0.21	-0.20	-0.06	-0.14	0.01	0.02	-0.01	-0.02	0.05	-0.08
		(93.6%)	(29.5%)	(64.1%)	(-3.9%)	(-8.9%)	(5.0%)	(10.3%)	(-25.6%)	(35.9%)
Manufacturing	-0.09	-0.11	-0.10	-0.02	0.01	0.03	-0.02	0.01	0.09	-0.08
		(120.9%)	(103.7%)	(17.2%)	(-13.3%)	(-29.9%)	(16.6%)	(-7.7%)	(-97.0%)	(89.3%)
2019S1-2020S1										
All	-0.25	-0.24	-0.04	-0.20	0.01	0.02	-0.01	-0.02	0.08	-0.10
		(94.8%)	(16.3%)	(78.5%)	(-3.2%)	(-8.8%)	(5.6%)	(8.4%)	(-31.1%)	(39.5%)
Manufacturing	-0.17	-0.18	-0.07	-0.10	0.01	0.04	-0.02	-0.01	0.11	-0.12
		(104.4%)	(43.6%)	(60.8%)	(-7.6%)	(-21.0%)	(13.4%)	(3.1%)	(-65.8%)	(69.0%)

Notes: This table reports the decomposition of export growth in equation (1) between 2019 and 2020 (first two rows) and between the first half of 2019 and the first half of 2020 (last two rows).

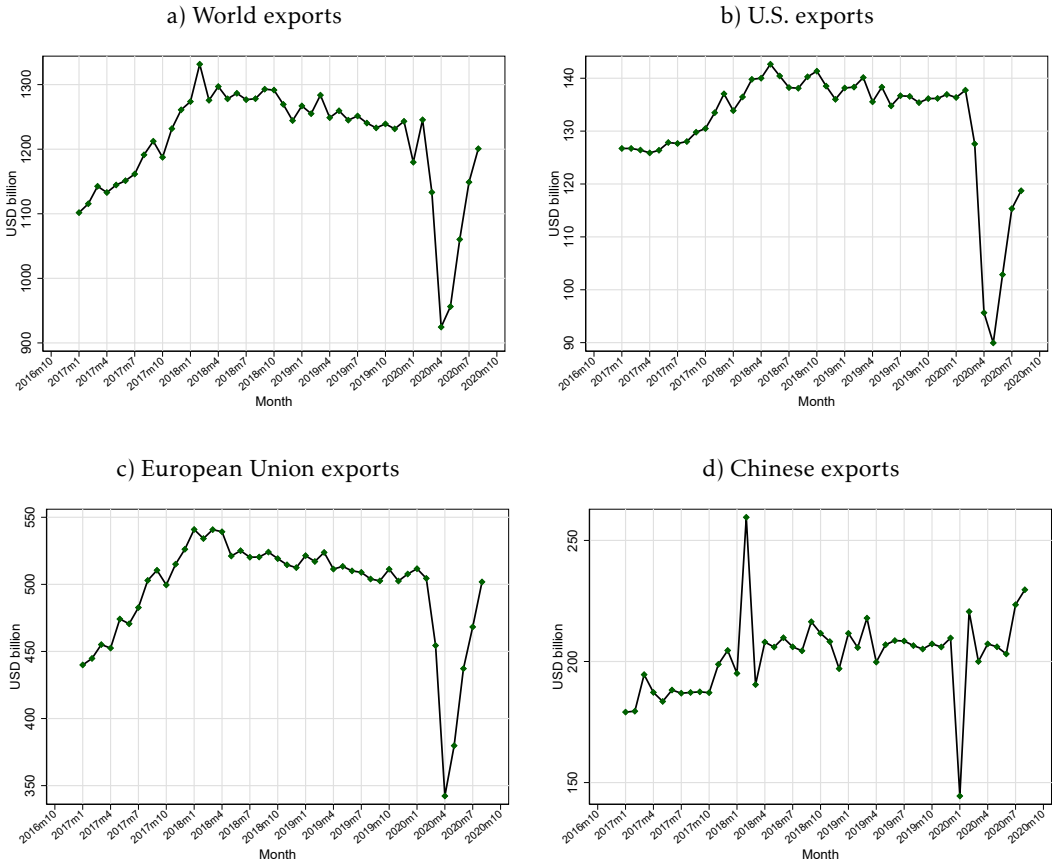
Table 2: Determinants of Firm-level Export Growth

	All Firms			Manufacturing Firms		
	(1)	(2)	(3)	(4)	(5)	(6)
$\mathbf{1}[\![2020]\!]_t$	-0.395***			-0.379***		
	(0.035)			(0.040)		
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Mn. Affiliate}]\!]_f$		0.314***			0.315***	
		(0.066)			(0.055)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Top Tercile Revenue}]\!]_f$		0.034			0.014	
		(0.078)			(0.084)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Second Tercile Revenue}]\!]_f$		-0.042			-0.099	
		(0.104)			(0.108)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Top Tercile Debt/Equity}]\!]_f$		0.049			0.067	
		(0.052)			(0.058)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Second Tercile Debt/Equity}]\!]_f$		0.020			0.032	
		(0.066)			(0.074)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Intermediate Input}]\!]_p$			-0.100*			-0.098*
			(0.053)			(0.056)
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Capital Good}]\!]_p$			-0.159*			-0.155*
			(0.085)			(0.081)
Firm × Product × Destination F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Firm × Year F.E.			Yes			Yes
Product × Year F.E.		Yes			Yes	
Destination × Year F.E.		Yes	Yes		Yes	Yes
N	45906	32606	43742	38406	28632	36614

Notes: Columns 1 and 4 report the results of the estimation of equation (2) excluding the product-time and destination-time fixed effects and including the *Post* dummy without the interaction with firm characteristics X_f. Columns 2 and 5 report the results of the estimation of equation (2). Columns 3 and 6 report the results of the estimation of equation (3). Standard errors are clustered by firm, product and destination using multiway clustering. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level.

A. Appendix (For Online Publication)

Figure A.1: World Trade during the 2020 Trade Collapse



Notes: Source: OECD. World exports, in panel A, refers to exports by 46 countries that account for more than 95% of world trade in 2019.

Table A.1: Summary statistics

	2019	2020
Number of firms	10577	9618
Exports, total (million USD)	39486.9	31053.2
Exports per firm, p25 (thousand USD)	8.6	9.5
Exports per firm, p50 (thousand USD)	38.8	46.9
Exports per firm, p75 (thousand USD)	243.7	310.7
Exports per firm, mean (thousand USD)	3733.3	3228.7
Number of destinations		
Economy-wide	194	193
Per firm, p25	1	1
Per firm, p50	1	1
Per firm, p75	3	3
Per firm, mean	2.8	2.9
Number of HS6 products		
Economy-wide	3653	3698
Per firm, p25	1	1
Per firm, p50	2	2
Per firm, p75	4	4
Per firm, mean	5.0	5.3

Notes: Source: Colombian customs export transactions data.

Table A.2: Decline in Exports by Sector

	Share of Exports (2019) (1)	Absolute Change (2)	Percent Change (3)
Foods, feeds, and beverages	14.0%	103.8	3.6%
Agricultural	13.6%	105.3	3.8%
Nonagricultural	0.5%	-1.4	-1.6%
Industrial supplies and materials	71.4%	-4569.5	-31.6%
Agricultural	0.4%	-22.3	-25.6%
Fuels and lubricants	57.2%	-4544.4	-39.2%
Nonagricultural, except fuels	13.2%	18.9	0.7%
Selected building materials, except metals	0.5%	-21.7	-21.0%
Capital goods, except automotive	2.1%	-48.6	-11.5%
Electric generating, and electric equipment and parts	0.6%	-19.0	-15.0%
Nonelectrical machinery, except consumer-type	1.3%	-21.7	-8.0%
Transportation equipment and spacecraft, except automotive	0.1%	-8.0	-29.7%
Automotive vehicles, parts, and engines	2.1%	-202.8	-47.2%
Consumer goods	10.3%	-384.7	-18.4%
Nondurables, manufactured	4.6%	-207.1	-22.1%
Durables, manufactured-except automotive	1.1%	-59.4	-26.0%
Consumer durables and nondurables-unmanufactured	4.6%	-118.2	-12.8%
Other goods	0.1%	-6.7	-36.4%

Notes: This table reports the change in Colombia's exports between January-June 2019 and January-June 2020. Sectors are defined according to 1-digit and 2-digit end-use categories. The absolute change in exports in the second column is in USD thousands.

Table A.3: Determinants of Firm-level Export Growth: Quantities

	All Firms			Manufacturing Firms		
	(1)	(2)	(3)	(4)	(5)	(6)
$\mathbf{1}[\![2020]\!]_t$	-0.364***			-0.347***		
	(0.032)			(0.037)		
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Mn. Affiliate}]\!]_f$		0.393***			0.365***	
		(0.082)			(0.086)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Top Tercile Revenue}]\!]_f$		0.077			0.086	
		(0.075)			(0.078)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Second Tercile Revenue}]\!]_f$		-0.030			-0.055	
		(0.104)			(0.107)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Top Tercile Debt/Equity}]\!]_f$		-0.014			0.022	
		(0.064)			(0.071)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Second Tercile Debt/Equity}]\!]_f$		0.013			0.031	
		(0.056)			(0.058)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Intermediate Input}]\!]_p$			-0.083			-0.080
			(0.080)			(0.081)
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Capital Good}]\!]_p$			-0.027			-0.022
			(0.109)			(0.108)
Firm × Product × Destination F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Firm × Year F.E.			Yes			Yes
Product × Year F.E.		Yes			Yes	
Destination × Year F.E.		Yes	Yes		Yes	Yes
N	45906	32606	43742	38406	28632	36614

Notes: Columns 1 and 4 report the results of the estimation of equation (2) excluding the product-time and destination-time fixed effects and including the *Post* dummy without the interaction with firm characteristics X_f. Columns 2 and 5 report the results of the estimation of equation (2). Columns 3 and 6 report the results of the estimation of equation (3). Standard errors are clustered by firm, product and destination using multiway clustering. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level.

Table A.4: Determinants of Firm-Level Export Growth: Unit Values

	All Firms			Manufacturing Firms		
	(1)	(2)	(3)	(4)	(5)	(6)
$\mathbf{1}[\![2020]\!]_t$	-0.031**			-0.032**		
	(0.013)			(0.014)		
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Mn. Affiliate}]\!]_f$		-0.079			-0.049	
		(0.066)			(0.087)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Top Tercile Revenue}]\!]_f$		-0.043			-0.072	
		(0.045)			(0.046)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Second Tercile Revenue}]\!]_f$		-0.011			-0.044	
		(0.040)			(0.040)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Top Tercile Debt/Equity}]\!]_f$		0.062			0.045	
		(0.044)			(0.056)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Second Tercile Debt/Equity}]\!]_f$		0.007			0.001	
		(0.045)			(0.054)	
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Intermediate Input}]\!]_p$			-0.016			-0.018
			(0.043)			(0.046)
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Capital Good}]\!]_p$			-0.131			-0.133
			(0.089)			(0.088)
Firm × Product × Destination F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Firm × Year F.E.			Yes			Yes
Product × Year F.E.		Yes			Yes	
Destination × Year F.E.		Yes	Yes		Yes	Yes
N	45906	32606	43742	38406	28632	36614

Notes: Columns 1 and 4 report the results of the estimation of equation (2) excluding the product-time and destination-time fixed effects and including the *Post* dummy without the interaction with firm characteristics X_f. Columns 2 and 5 report the results of the estimation of equation (2). Columns 3 and 6 report the results of the estimation of equation (3). Standard errors are clustered by firm, product and destination using multiway clustering. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level.

Table A.5: Determinants of Firm-level Export Growth: Durable vs. Nondurable Consumer Goods

	All Firms	Manufacturing Firms
	(1)	(2)
$\mathbf{1}[\![2020]\!]_t \times \mathbf{1}[\![\text{Durable}]\!]_p$	-0.218*	-0.233*
	(0.124)	(0.125)
Firm × Product × Destination F.E.	Yes	Yes
Firm × Year F.E.	Yes	Yes
Destination × Year F.E.	Yes	Yes
N	23240	18484

Notes: Columns 1 and 2 report the results of the estimation of equation (3), with the sample restricted to final consumer goods and in which Z_p is a dummy variable equal to one for durable consumer goods. Standard errors are clustered by firm, product and destination using multiway clustering. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level.

A.1. Sources of Export Growth: the 2020 trade collapse vs. "normal times"

Table A.6 compares the contribution of each margin of export growth during the 2020 trade collapse (decomposing export growth between 2019-2020) and during the previous years (decomposing export growth between 2015-2016, 2016-2017, 2017-2018 and 2018-2019).

Overall, the table shows a similar pattern during the trade collapse and the previous years. In all periods, the intensive margin accounts for a large fraction of the growth in exports. Also across all periods, the net subextensive margin masks large changes in export flows due to entry and exit of varieties among continuing firms.

Table A.6: Sources of Export Growth in Colombian Exports: the 2020 trade collapse vs. "normal times"

	Total	Intensive			Extensive			Subextensive		
		Total	Δq	Δp	Net	Entry	Exit	Net	Entry	Exit
2015 - 2016	-0.12	-0.12 (97.4%)	0.01 (-5.9%)	-0.13 (103.2%)	0.01 (-7.8%)	0.02 (-19.2%)	-0.01 (11.4%)	-0.01 (10.4%)	0.08 (-65.5%)	-0.09 (75.9%)
2016 - 2017	0.20	0.15 (72.6%)	-0.05 (-23.7%)	0.19 (96.3%)	0.01 (3.9%)	0.02 (10.2%)	-0.01 (-6.3%)	0.05 (23.5%)	0.12 (61.0%)	-0.08 (-37.5%)
2017 - 2018	0.10	0.13 (125.5%)	0.01 (14.3%)	0.11 (111.2%)	-0.02 (-20.5%)	0.01 (9.9%)	-0.03 (-30.3%)	-0.01 (-5.0%)	0.07 (69.1%)	-0.08 (-74.1%)
2018 - 2019	-0.06	-0.04 (62.2%)	0.08 (-132.8%)	-0.11 (195.0%)	0.00 (-5.6%)	0.01 (-21.3%)	-0.01 (15.6%)	-0.02 (43.4%)	0.07 (-115.2%)	-0.09 (158.6%)
2019 - 2020	-0.21	-0.20 (93.6%)	-0.06 (29.5%)	-0.14 (64.1%)	0.01 (-3.9%)	0.02 (-8.9%)	-0.01 (5.0%)	-0.02 (10.3%)	0.05 (-25.6%)	-0.08 (35.9%)

Notes: This table reports the decomposition of export growth in equation (1) between 2015-2016, 2016-2017, 2017-2018, 2018-2019, and 2019-2020. The sample includes all sectors. The last row in this table (corresponding to 2019-2020) is equivalent to the first row in Table 1.

A.2. Comparison between the 2008-2009 and the 2020 trade collapses

Figure A.2 compares the collapses in world trade during the 2008-2009 global financial crisis and the 2020 pandemic and associated global recession.

During the 2008-2009 global financial crisis, world exports declined by 35.0% between the peak in July 2008 and the trough in March 2009. During the 2020 trade collapse, they fell by 25.7% between the peak in February 2020 and the trough in April 2020. At a global scale, the 2008-2009 trade collapse was larger in terms of the decline, while the 2020 trade collapse was much more sudden, in the sense that trade fell sharply over a two-month period.

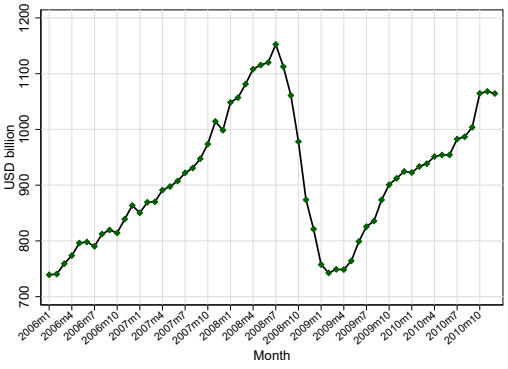
Figure A.3 compares Colombian exports during both episodes. During the 2008-2009 global financial crisis, Colombian exports declined by 41.5% between the peak in July 2008 and the trough in December 2008 (panel a)). In this interval, manufacturing exports declined by 37.9% between the peak in July 2008 and the trough in January 2009 (see panel c)). Nonmanufacturing exports fell by 62.1% between the peak in June 2008 and the trough in Decmber 2008 (see panel e)).

During the 2020 trade collapse, exports fell by 45.5% between the peak in January 2020 and the trough in April 2020 (see panel b)). Manufacturing exports declined by 19.6% between the peak in March and the trough in April (see panel d)). Nonmanufacturing exports declined by 61% between the peak in January and the trough in April (see panel f)).

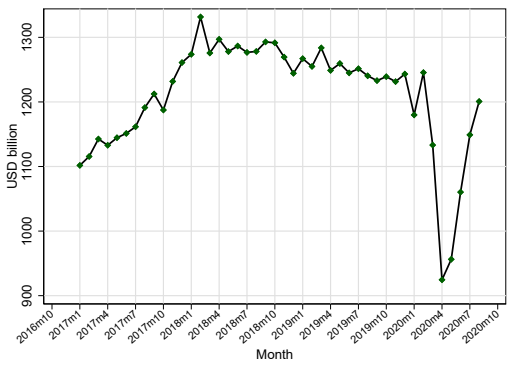
Overall, Colombian exports suffered a faster and somewhat deeper decline in 2020 compared to the global financial crisis of 2008-2009.

Figure A.2: The 2008-2009 and 2020 Trade Collapses

a) World exports: 2008-2009 trade collapse



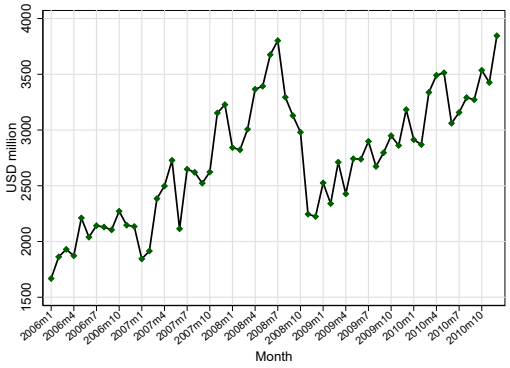
b) World exports: 2020 trade collapse



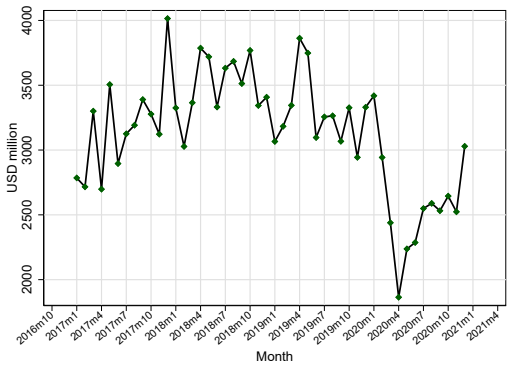
Notes: Source: OECD. World exports refers to exports by 46 countries that account for more than 95% of world trade in 2019.

Figure A.3: The 2008-2009 and 2020 Trade Collapses: Colombian Manufacturing and Nonmanufacturing Exports

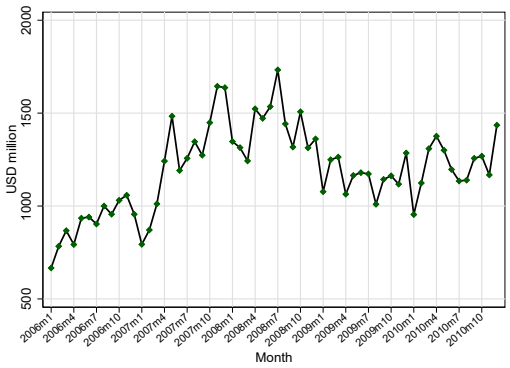
a) All sectors: 2008-2009 trade collapse



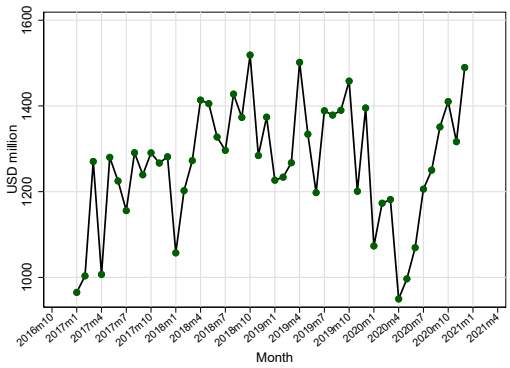
b) All sectors: 2020 trade collapse



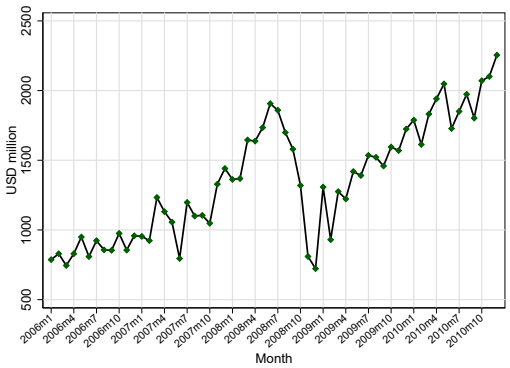
c) Manufacturing: 2008-2009 trade collapse



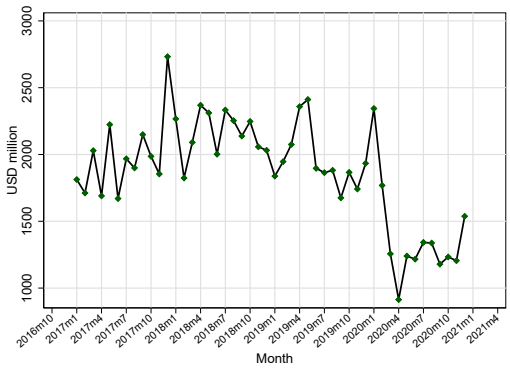
d) Manufacturing: 2020 trade collapse



e) Nonmanufacturing: 2008-2009 trade collapse



f) Nonmanufacturing: 2020 trade collapse



Notes: Source: Colombian customs export transactions data.