

# A Diagnostic of Trade Competitiveness in Colombia<sup>1</sup>

## Key message:

By various measures, participation in international trade and global value chains is low in Colombia despite significant progress in opening its economy substantially via unilateral reforms and several bilateral trade agreements. Further, Colombia's participation in export markets is highly dependent on mineral and extractive industries, a situation that has not improved for several decades. Exported products by Colombia generally show little value-added, sophistication, and upgrading. Exporting firms offer some potential capacity to seek new markets, especially for mineral products in China and other rapidly growing economies. To a lesser extent, they also show some potential in regional partners, where fast-growing non-traditional exports also tend to seek nearby markets. Several hindrances should be addressed to position Colombia in a more competitive footing to allow firms to grow and enter and remain in export markets. This includes continuing to reduce frictions and distortions both at and beyond the border.

## Introduction

**Colombia still has much to gain from integrating into the world economy.** The country has a low trade-to-GDP ratio—a measure of trade openness—compared to other countries and to what would be expected for its income level alone (Figure 1). Relative to selected comparators used for this analysis, Colombia exhibits a lower level of openness than most peers in 2016, except for Brazil and Argentina.<sup>2</sup> Further, this measure has remained significantly stable over the last decade, despite policy attempts to increase integration with key trading partners.<sup>3</sup>

**Export performance has particularly experienced a deterioration in recent years.** The export basket of Colombia remains highly concentrated in a few products and diversification away from traditional exports has proved difficult. The heavy reliance on mineral and fuel products (which account for the majority of the country's exports) and lower international prices for these products have particularly affected the value of Colombia's exports, where nominal exports have fallen more rapidly than imports since 2014, significantly increasing the trade deficit (Figure 2). Among the comparator countries, Colombia shows the largest trade deficit, relative to GDP, by 2016 (Figure 3). The trade balance deficit is explained primarily by the fall of oil prices, which are Colombia's main exports. Indeed, combined with

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<sup>1</sup> This note has been authored by José Signoret and Jorge Tovar, as background note for the activity Colombia Trade Engagement (P174297). It benefited from comments from Donato De Rosa, Paolo Dudine, Alberto Portugal, Nadia Rocha, and Mariana Vijil.

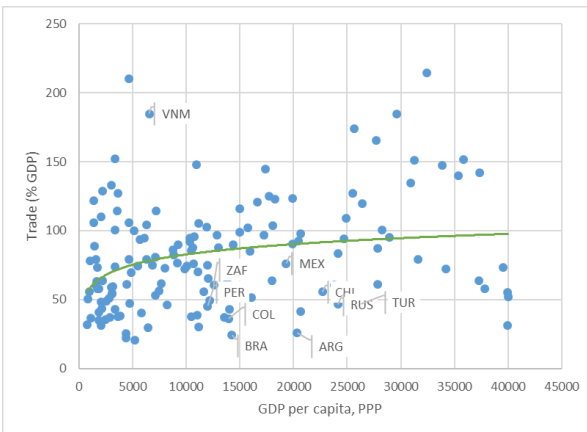
<sup>2</sup> Comparator countries used throughout this note include: other Pacific Alliance countries (Chile, Mexico, and Peru), other regional countries in LAC (Brazil and Argentina), global comparators (Russia, South Africa, Thailand, Turkey, and Vietnam), and high-income countries (Australia and Canada). These comparators were chosen based on a variety of criteria and upon discussions among the project team and counterparts in Colombia.

<sup>3</sup> Among these efforts are the entry into force of FTAs with the United States, the EU, and Canada, the participation in a regional integration effort with Chile, Mexico, and Peru (i.e., the Pacific Alliance), and unilateral, temporary reductions on tariff rates on certain capital goods since 2011.

coffee (whose prices also trended downwards since 2010) and coal, these products are defined as the country's traditional exports.

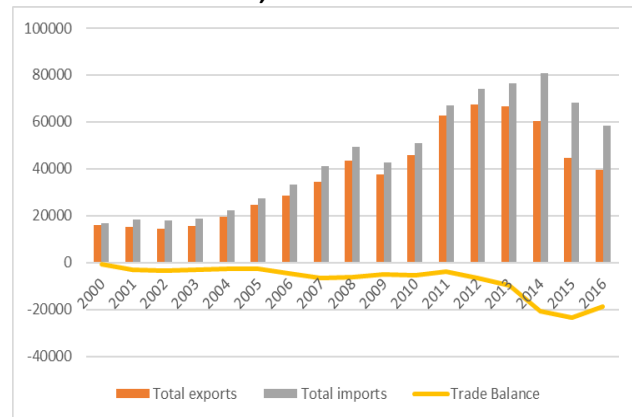
**This note highlights main trade outcomes of Colombia, with emphasis on its exports.** The analysis aims to provide a holistic view of Colombia's export performance to uncover general patterns that may suggest particular hindrances affecting such performance and to recommend possible policy actions. The analysis draws from both product- and firm-level data that permit to evaluate Colombia relative to peer countries, as well as to understand the micro-dynamics in place. The next sections outline the identified key challenges, followed by a discussion on policy formulation's primary considerations.

**Figure 1. Trade to GDP and income per capita, 2016**



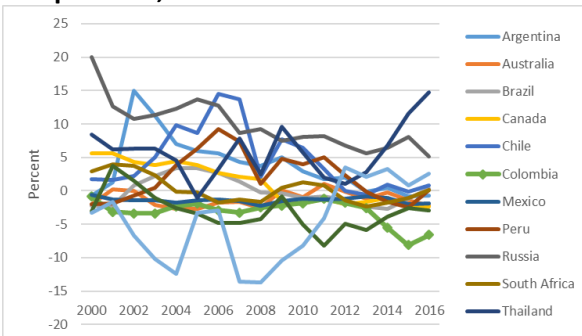
Source: Authors' estimates based on World Bank WDI.

**Figure 2. Total exports and imports and trade balance in Colombia, 2000–2016**



Source: World Bank WDI.

**Figure 3. Trade balance to GDP for Colombia and comparators, 2000–2016**



Source: Authors' estimates based on World Bank WDI.

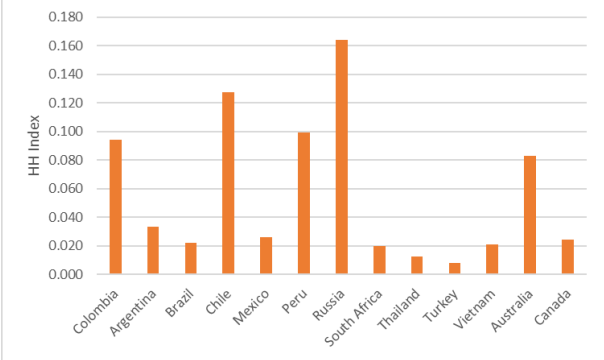
## Key challenges

Export diversification is lacking

**The concentration of export products in Colombia is high and it has just increased over time.** As measured by the Herfindahl–Hirschman (HH) Index, a measure of concentration (the higher the index

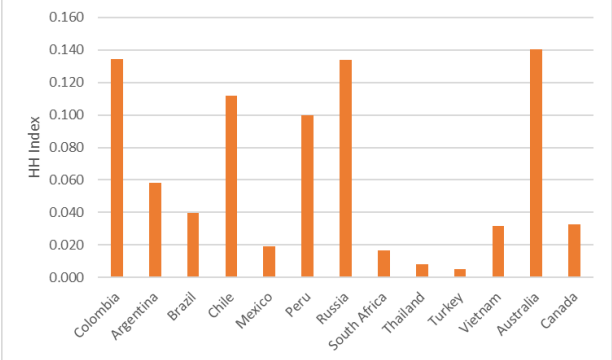
the higher the concentration), the composition of exports in Colombia is highly concentrated by comparison to most peer countries. In 2009, Colombia exhibited the third-highest concentration of export products, only after Russia and Chile (Figure 4).<sup>4</sup> By 2019, Colombia climbed to the second-highest country, relative to the selected peers, in terms of export-product concentration, only after Australia, which shows a high concentration due to its heavy reliance on exports of iron. Among the comparators, economies such as Turkey and Thailand show the lowest level of export-product concentration.

**Figure 4. Index of export product concentration by Colombia and peers, 2009**



Source: Authors’ estimates based on UN Comtrade.

**Figure 5. Index of export product concentration by Colombia and peers, 2019**



Source: Authors’ estimates based on UN Comtrade.

**Crude oil, and other traditional exports, has dominated Colombia’s export composition over time.**

Driving the higher concentration of its export offer is crude oil, the highest export product whose contribution to the export basket has only increased (Table 1). In 2009, with about US\$ 8 billion of export revenues, crude oil accounted for about a quarter of Colombia’s exports. By 2019, this sector represented about a third of exports at nominal values (i.e., even with its lower prices). In addition to crude oil, coal, petroleum oils, and coal coke (all products in the fuel area) show as prominent export goods, accounting combined for the majority of the export basket (about 55 percent) in 2019. Other top exports include coffee, which accounts for about 6 percent of exports in 2019, a traditional export with still annual growth rates of more than 4 percent

<sup>4</sup> For a large part this is driven by the heavy reliance of oil in the Colombian export basket. As discussed below, exports of the country are highly concentrated in a few traditional goods, even after excluding oil (see Table 1).

**Table 1. Top Colombian exports by HS heading, by value, 2009 and 2019**

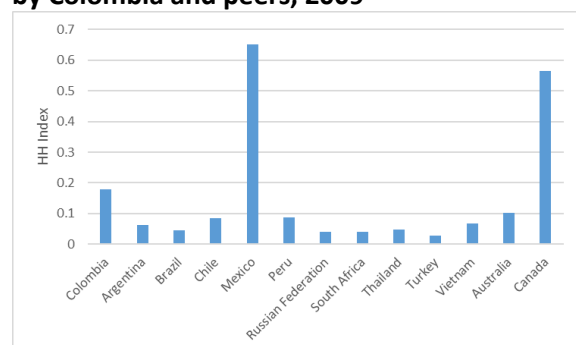
	2009				2019			
	HS code	Value (USD million)	Share (%)		Value (USD million)	Share (%)	Cum. Share (%)	CAGR (%)
<b>Crude oil</b>	2709	8053	24.51		12980	32.9	32.9	4.9
<b>Coal</b>	2701	5257	16		4884	12.4	45.3	-0.7
<b>Petroleum oils</b>	2710	1912	5.82		2912	7.4	52.7	4.3
<b>Coffee</b>	0901	1575	4.79		2363	6.0	58.7	4.1
<b>Gold</b>	7108	1537	4.68		1747	4.4	63.1	1.3
<b>Cut flowers</b>	0603	1049	3.19		1475	3.7	66.8	3.5
<b>Bananas/plantains</b>	0803	837	2.55		934	2.4	69.2	1.1
<b>Coal coke</b>	2704	159	0.49		784	2.0	71.2	17.3
<b>Ferroalloys</b>	7202	726	2.21		545	1.4	72.6	-2.8
<b>Cars</b>	8703	24	0.07		432	1.1	73.7	33.5

Source: UN Comtrade.

Even when considering non-traditional firms relative to non-traditional exports, the country has significant levels of concentration. While the top 10% of all exporters represent around 90% of total exports, for non-traditional firms' the concentration level is about ten percentage points lower, i.e., 80% of non-traditional exports are done by 10% of firms that export non-traditional products.

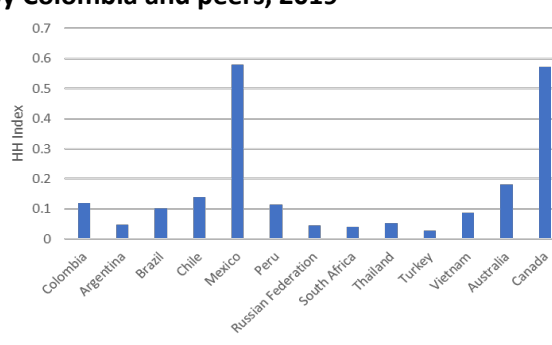
**Exports by destination also show considerable concentration.** Export markets for Colombia are highly concentrated in comparison to most peers. In 2009, Colombia exhibited one of the highest levels of export concentration by destination (Figure 6), trailing Mexico and Canada, two countries that have high export concentration, given their integration with the NAFTA bloc. By 2019, as Colombia has been increasing its exports to Asia, this concentration fell (Figure 7).

**Figure 6. Index of export market concentration by Colombia and peers, 2009**



Source: Authors' estimates based on UN Comtrade.

**Figure 7. Index of export market concentration by Colombia and peers, 2019**



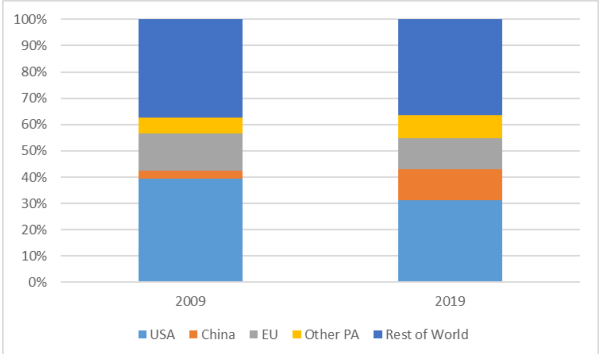
Source: Authors' estimates based on UN Comtrade.

**China has been gaining a more prominent position for Colombia's exports, but mostly driven by mineral products.** Export to the United States and the EU, the top two destinations in 2009, have been losing prominence in export shares by 2019 (Figure 7). Against this reduction in shares, exports to China

have become relatively more important, where the export share fourfold between 2009 and 2019. These exports to China, however, mostly represent exports of mineral products (Figure 8).<sup>5</sup> While a significant share of exports to the EU, the United States, and the rest of the world relates to agricultural and food products, these exports are remarkably low when China is the trading partner. Indeed, Colombia has been gaining export market shares relative to global exports in coal coke and petroleum oils. However, regarding the latter, it remains far from being a significant player in the world scenario (see annexes). The largest growth in global market shares is still in very small sectors in the Colombian export basket, including cars and aluminum windows.

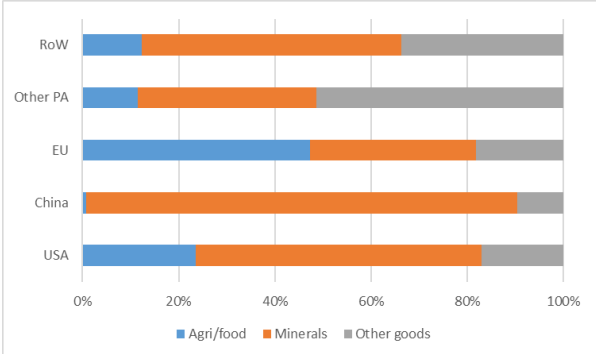
Indeed, considering the top 50 export products during 2019 and the first half of 2020 (but excluding traditional ones), 15 grow above average. Six of these are related to the agro-industrial sector; the rest belong to other manufacturing sectors. Among these are aluminum windows and palm oil, with a worthy mention of soy oil, avocados, pipe threads, smart cards, and vehicles. A closer look at these products reveals a relevant message in terms of the destination of non-traditional products. Ecuador is a significant trade partner for vehicles, soy oil, palm oil, freezers, truck tires, and trucks, while Peru is a top destination for smart cards. The pattern suggests that for non-typical products such as these, southern markets, geographically close, are an essential destination and could be the door that opens the export market to novel exports.

**Figure 7. Export shares of Colombia by destination, 2009 and 2019**



Source: Authors' estimates based on UN Comtrade.

**Figure 8. Export composition of Colombia by broad sectors, 2019**



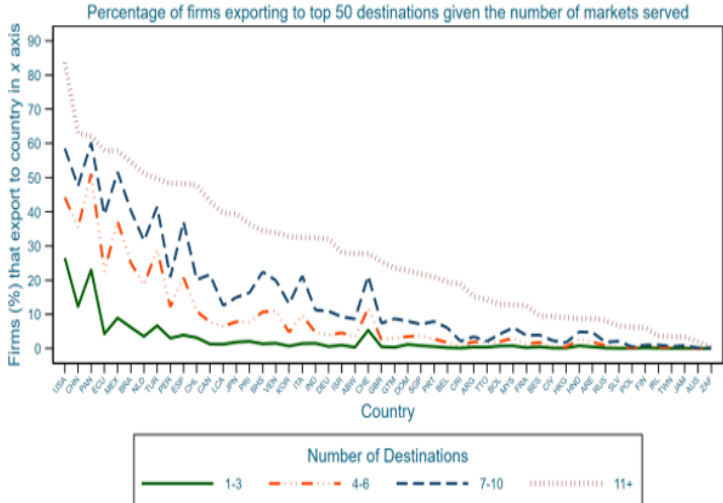
Source: Authors' estimates based on UN Comtrade.

**Colombia's exporters are concentrated toward large and nearby markets.** Figure 9 follows Lawless (2009) and considers the top-50 export destinations for all exporting firm as defined by export values between the first quarter of 2015 and the second quarter of 2020. To ease interpretation, first, note that the x-axis has the top-50 export destinations sorted from largest (United States) to the smallest (South Africa). Consider now the continuous green line, firms that export to between one and three countries. It states that just below 30 percent of firms that ship to one, two, or three countries export to the United States. However, a bit over 10 percent of firms that export to up to three countries export to China. Similarly, it reveals that around 20 percent of such firms have Panama as a destination. The Figure also reveals that around 45 percent of firms that export to four, five, or six destinations export to the United States, but over 50 percent of such firms export to Panama, while less than 30 percent export to China. In contrast, when firms ship to over 11 countries, over 85 percent of them have in their portfolio the United

<sup>5</sup> Principal non-mineral product exports to China include coffee, pesticides, and wood.

States, and just over 60 percent include China. In general, this suggest that the most common market for Colombian firms is the United States. Among the top-10 destinations are six countries in the Americas, plus Spain, always central given its historically strong ties with Latin America.

**Figure 9. Firm destinations by number of destination markets**



Source: Authors’ estimates based on DANE.

**Box 1. Colombian trade with Venezuela**

Colombia’s main trade partners have shifted in recent years. Venezuela, who shares a more than 2,000 km border, was once a significant trading partner (accounting, e.g., for 10 percent of Colombia exports in 2000, 15 percent in 2008). However, at least since a decade ago, its relative importance fell as the Venezuelan market shrunk and recession hit the country.

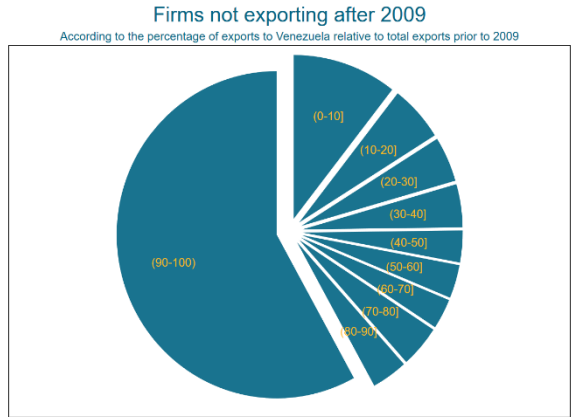
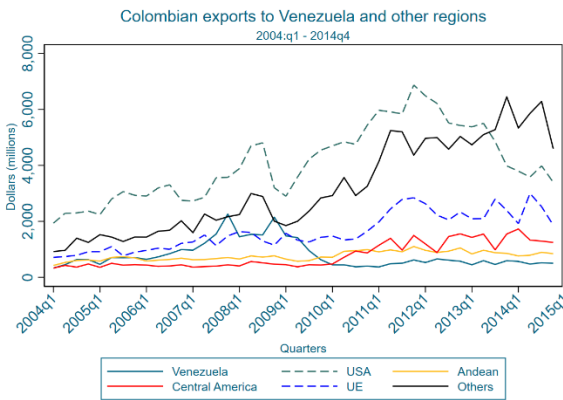
This box briefly explores firms’ ability to diversify exports after a significant shock, such as the Venezuelan market collapse. In July 2009, President Hugo Chavez announced his decision to ban Colombian products from the Venezuelan markets. The ban was relatively short-lived as it remained in place for just over a year. However, since this disruption, Colombian firms have not fully returned to the Venezuelan market.

The figure below, panel (a), depicts Colombian firms’ exports per their main destinations between 2004 and 2014. It is evident the lost in significance of Venezuela for Colombian exports after 2008. Given that it is not a discrete process, we define the period 2004–2008 as precrisis, and 2010–2014 as postcrisis. Panel (b) of the figure separates exporting firms by the relative importance that the Venezuelan markets played for them as a destination of their total exports during the precrisis period. These statistics show that most firms that exit the Venezuelan export market in the postcrisis period were heavily exposed to Venezuela. More than half of firms that left the export market sent between 90–100 percent of their products to the neighboring country.

**Figure B1.1. Exports by Colombian firms to Venezuela**

Panel (a)

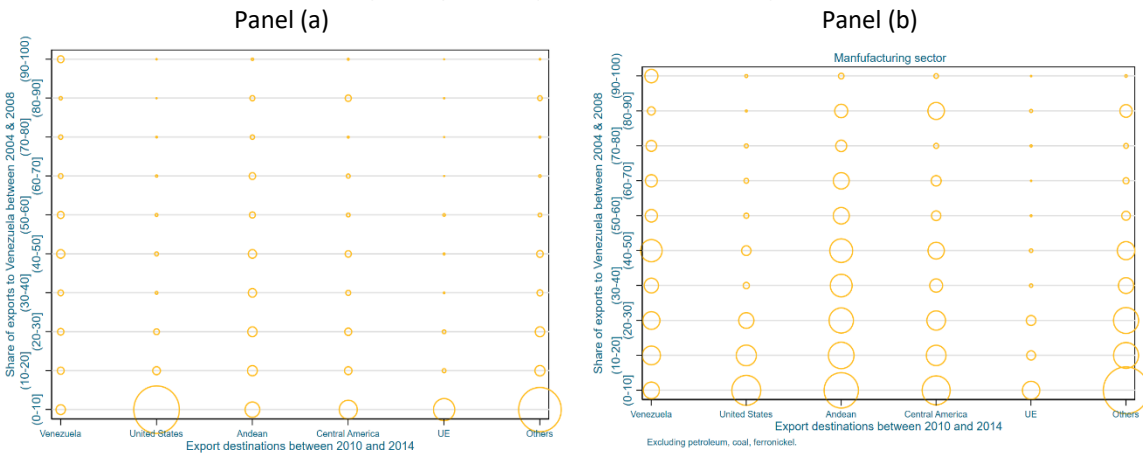
Panel (b)



Source: Authors' estimates based on DANE.

The following figures show a transition matrix to compare Venezuela's precrisis exposition relative to the export destinations in the postcrisis. The dots represent the intersection of firms exporting x% of their total export value to Venezuela before 2009 (y-axis) and the destination of its exports after 2009 (x-axis). Panel (a) depicts the results for all Colombian exporting firms. Consider in panel (a) firms having exported between 60-70% of their total exports to Venezuela. In the postcrisis, 48% of exports were shipped to the Andean Region, while only 23% to Venezuela. Overall, the graphs show that highly exposed firms to Venezuela export mostly to the Andean Region, Central America, and Venezuela in the postcrisis.<sup>6</sup> It is worth noting that the surviving firms exposed beyond 90 percent to Venezuela kept the neighboring country as its most important destination in the postcrisis period (although exposition fell to 90%), suggesting a little appetite for exploration beyond known markets. Firms exposed to Venezuela in the precrisis between 80 and 90% shifted radically, selling only 10% of their exports to Venezuela while focusing on Central America (40%) and the Andean Region (25%). On the other side, firms with little or no exposition (under 10 percent) kept Venezuela their least significant destination. The analysis for manufacturing firms follows a similar pattern (panel b).

**Table B1.2 Transition matrix for exporting firms by concentration of export to Venezuela**



Source: Authors' estimates based on DANE.

Note: Each circle represents the export value of firms exporting x% to Venezuela before 2009, and the destination after 2009. The size of the circle is proportional to the firms' average export value after 2009.

<sup>6</sup> During the precrisis, the main exports of highly exposed firms to Venezuela, were bovine meat, life bovine animals, leather (from bovines), and clothes (skirts, briefs, nightdresses, pajamas, gowns, bathrobes, robes and similar items, knitted, for women or girls).

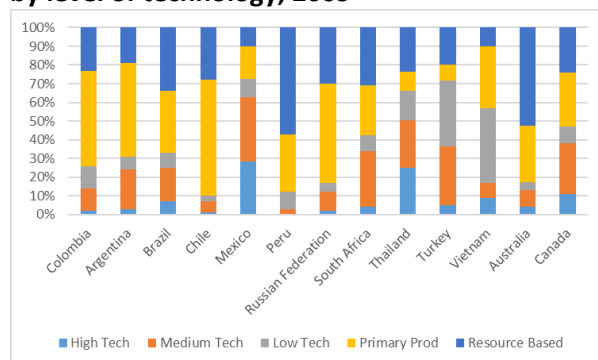
Shutting the Venezuelan market would have been unmanageable in the 1980s or even in the 1990s. By the 21<sup>st</sup> century, after almost two decades of the most important liberalization process in the country's history, the Venezuelan case suggests that surviving firms were resilient enough to successfully explore other markets. Even when exposure to Venezuela was high, contingent on survival, firms seem to have been able to reroute their exports to other markets, namely Central America and Andean countries.

### Export sophistication and upgrading is lacking

**Colombian top exports have relatively low value-added.** Indeed, as shown in Table 1 above, most top exports are commodities, which between oil and coal can account for the majority of exports. Other commodities or primary products include ferronickel, coffee, roses, bananas, and palm oil. A notable exception is vehicles, the tenth most exported product. This sector, mostly focused on assembly, has experienced a rapid increase in export values, although from a small base, representing a mere 1 percent of export sales in 2019.

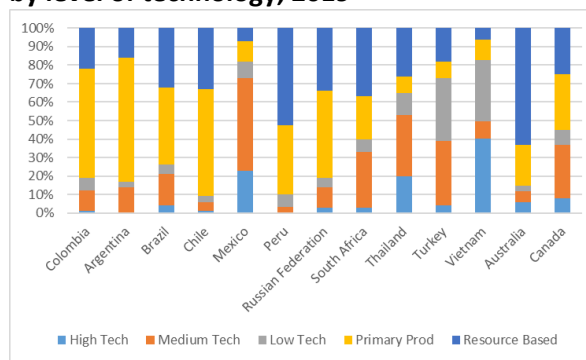
**Colombian exports generally lack technology, a condition that has not improved over time.** Close to 75 percent of exports from Colombia could be classified as primary products or resource-based products in 2009. Conversely, about 25 percent of Colombia's exports showed a level of technology, with high-tech exports accounting, by value, for less than 2 percent (Figure 10). This decomposition by level of technology did not improve over the decade post-2009 (Figure 11). Relative to comparators, Colombia is not the lowest exporter of technology products. For example, compared to regional peers, it is behind Brazil and especially Mexico, but Chile and Peru show an even higher reliance on primary and resource-based products. This is based on a Lall (2000) classification of product categories by level of level of technology. Similar conclusions can be drawn by looking at an alternative Economic Complexity Index, where Colombia falls somewhere in the middle of the export complexity scale among regional peers, below Mexico and Brazil, but above Chile and Peru (see annexes).

**Figure 10. Exports of Colombia and comparators by level of technology, 2009**



Source: Authors' estimates based on UN Comtrade and classification by Lall (2000).

**Figure 11. Exports of Colombia and comparators by level of technology, 2019**



Source: Authors' estimates based on UN Comtrade and classification by Lall (2000).



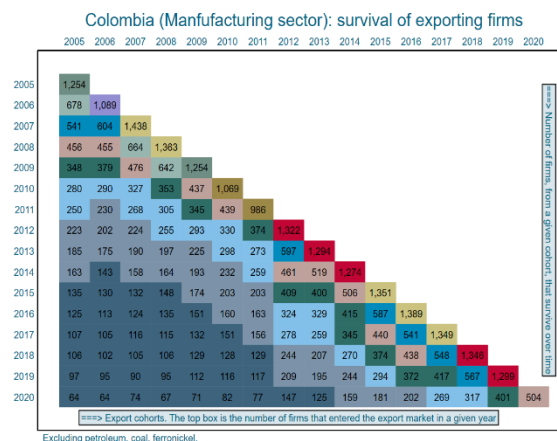
Surviving trade relationships are short

**The majority of exporting firms in Colombia do not continue to export beyond its first year.** Figure 12 presents the evolution of the number of firms from the year of entrance. In 2009, for instance, 1,485 firms entered the export market. Only 524 of these firms (35 percent) survived a year later; and only 126 of the firms in this “cohort” were still exporting in 2019 (9 percent). The agricultural sector (not depicted) had 146 firms entering the market in 2009, while the manufacturing sector had 1,254 (Figure 13). After a year, 75 agricultural exporting firms (51 percent) and 437 manufacturing exporters (35 percent) had survived. In 2019, there were just 14 survivors (10 percent) in the agricultural sector and 112 in the manufacturing sector (9 percent). The overall pattern suggests that firms’ mortality is higher in the earlier years, reducing overtime. While survival rates for exporters in Colombia is low, especially at the one-year transition, this is not a rare case. An international comparison of across 45 countries including Colombia, shows that these dynamics in Colombia are close to the average experience (Fernandes, Freund, and Pierola, 2016).

**Figure 12. The number of exporting firms**



**Figure 13. The number of exporting firms (manufacturing)**



Note: 2020 data available up to the second quarter. Real dollars deflated by 2019 = 100 US CPI.

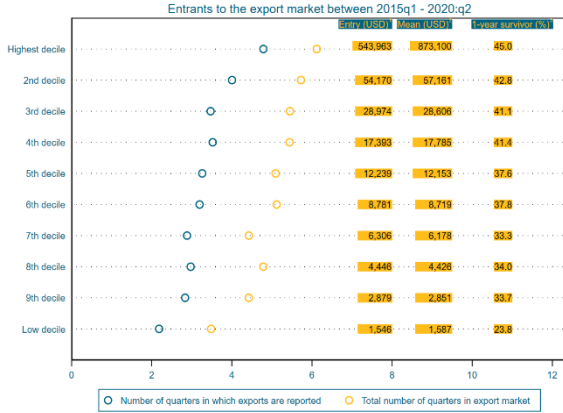
Source: Authors’ estimates based on DANE.

**Exporting strength, proxied by the value of exports at entry, correlates positively with survival.** A natural question to explore is determining how firms’ survival depends on their strength when entering the export market. Figure 14 sorts the firms by the mean export value of entrants during the period 2015 – 2020. The blue dots report the number of quarters during which the firm shows up in the export dataset, i.e., the effective number of months in which the firms exported. The yellow dots refer to the difference, in quarters, between the first entry date and the last date present in the export market, i.e., the length of time (number of quarters) in which firms were in the export market.<sup>7</sup> It suggests a positive correlation between exports’ value upon entering the export market and the one-year survival rate. Firms in the low decile, which only exported for around two quarters, are firms whose mean entry value to the export market was US\$1,540. Nearly 80 percent of those firms exit the export market within a year. Firms in the

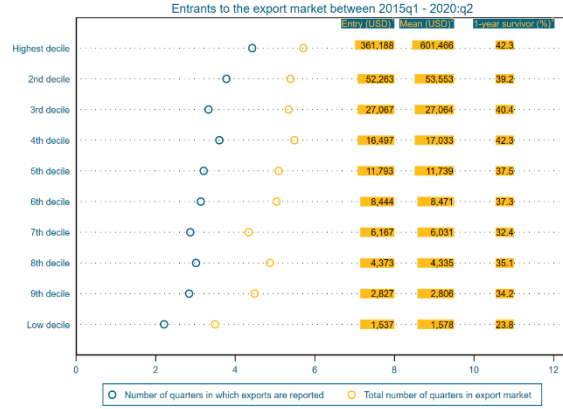
<sup>7</sup> By definition the data is truncated at the last observation period (2020q2), but it is meaningful given the exercise’s objective.

fifth decile had a mean entry value of US\$12,239, and around 38 percent survived the first year. Figure 15, analyzing only non-traditional export sectors, shows a similar pattern, although the higher decile's mean entry value is substantially lower.

**Figure 14. Firm survival and mean export entry value**



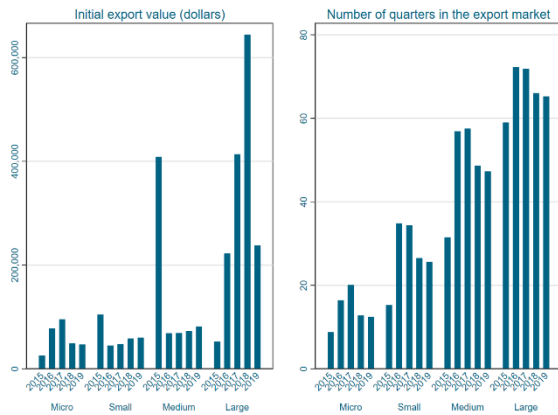
**Figure 15. Firm survival and mean export entry value (non-traditional exports)**



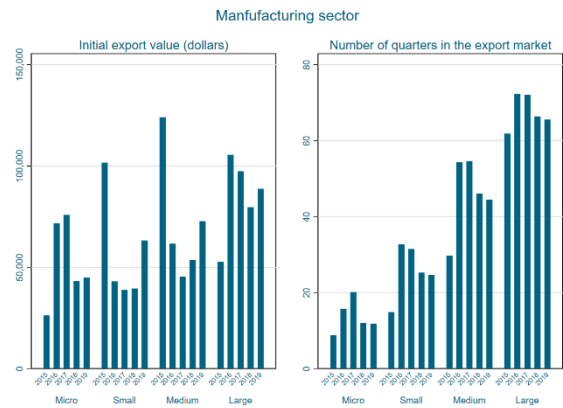
Source: Authors' estimates based on DANE.

Notes: Deciles defined over the export value during period 2015:q1 - 2020q2. Non-Traditional exports exclude coffee, coal, petroleum and derivatives, and ferronickel. Entry (USD) refers to the export value upon entering the export market. Mean (USD) refers to the average export value while in the export market. Percentage of firms that survived for over a year in the export market.

**Figure 16. Size and initial export value upon entering the export market**



**Figure 17. Size and initial export value upon entering the export market (manufacturing)**



Source: Authors' estimates based on DANE and DNP data.

Note: Size is defined by asset value in terms of the monthly minimum wage (MMW). Micro: up to 500 MMW; Small: 500<MMW≤5,000; Medium: 5000<MMW ≤30,000; Large: larger than 30,000 MMW; Manufacturing sector excludes petroleum, coal, and ferronickel.

**Similarly, firm's size, by the value of its assets, tend to survive longer in the exporting market.**<sup>8</sup> Figure 16 explores how the initial export value correlates with size as defined by the firms' asset value (micro, small, medium, and large). Noticeably, micro, small, and medium firms have similar initial export values, unlike large firms, which tend to have higher initial export value.<sup>9</sup> The right-side panels of Figure 16 and Figure 17 illustrates the number of quarters in which firms survive in the export market and shows that the correlation between size and survival holds for all firms as well as for manufacturing firms only. This association can also be seen, even when excluding traditional exports, by destinations; e.g., when focusing only on firms selling to other Andean countries and Central America.

Trade barriers remain that could have an anti-export bias

**Despite progress in lowering tariffs barriers in the country, there still remain sectors behind tariff peaks, and tariff dispersion is large.** Colombia has unilaterally lowered its tariff burden on an MFN basis, especially given a series of actions starting in 2011. From an average MFN rate of close to 12 percent before then, by 2019 the average MFN tariff stands at about 6 percent in 2019 (see Annex). This is just slightly higher than the average MFN rate for OECD countries of about 5 percent.<sup>10</sup> Also, given a relatively large number of FTAs with key trading partners, the effectively applied tariff rate (i.e., once taking into account preferential rates) has further reduced the tariff burden by about half, with an effective tariff rate of about 3 percent.<sup>11</sup> These average tariffs, however, hide a relatively sizable number of tariff peaks that are prominent in certain manufacturing and agricultural goods.<sup>12</sup> The average MFN tariff is particularly higher for agricultural and food sectors (14.3 percent).<sup>13</sup> Tariff protection can implicitly act as an export tax (yielding higher export revenues in the domestic market) that discourages firms to have an outward orientation.

**Similarly, the majority of import products in Colombia are subject to NTMs that can add significant trade costs.** According to a collection of data from UNCTAD, more than half of imported goods in Colombia are subject to technical measures (such as SPS and TBT), with about 57 percent of products affected by these requirements (Figure 18). This is a frequency ratio not atypical for a middle-income

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<sup>8</sup> There is ample consensus that exporting firms are more productive than their non-exporting counterparts. The link between tariff reductions and productivity has been widely explored for Colombian firms. Exploiting the 1991 Colombian trade liberalization reform, Eslava et al. (2013) find that physical productivity relates to survival, particularly in sectors with large tariff reductions, and that tariff reduction increased within-establishment physical productivity. More recently, focusing on within-plant gains García-Martín and Voigtländer (2019) shows for Colombia (and Chile and Mexico) that after export entry, prices and marginal costs fall, leading to a constant markup.

<sup>9</sup> The correspondence between the initial export value and firm size is less marked when one excludes non-traditional exports.

<sup>10</sup> With a tariff schedule organized around about 13 tariffs band, however, the level of tariff dispersion still is high, and reducing such relative distortions across product groups should be considered as a policy action going forward (e.g., by collapsing some of these bands). Among the comparators used in this note, Colombia shows the largest dispersion in MFN tariffs, with the exception of Canada and South Africa.

<sup>11</sup> FTA partners of Colombia include, inter alia, the United States, the EU, EFTA, Canada, the Pacific Alliance, and Korea. The country is also a member of the Andean Community and has partial-scope agreement with other regional countries, such as those in the Mercosur.

<sup>12</sup> WTO (2020).

<sup>13</sup> High tariff levels in the agricultural and food sector include the use of the Andean Price Band System, which introduces a variable tariff determined on a reference price and is applied to over 100 agricultural tariff lines.

country (and in high-income countries it could even be higher). While these technical regulations may impact trade flows, their stated intent often is to protect human or animal health, workplace safety, or the environment, or consumers. On the other hand, NTMs such as quantity and price controls could interfere with the market pattern of trade more directly. These types of NTMs are typically more common for low-income countries and less so for high-income ones; and it is in these types of NTMs where Colombia shows an unusually high ratio. Figure 19 highlights the contrast between Colombia and the rest of the Pacific Alliance. The high ratio on quantity measures in large part reflects the registration and licensing requirements in Colombia, which should be assessed, streamlined, and rationalized as much as possible.

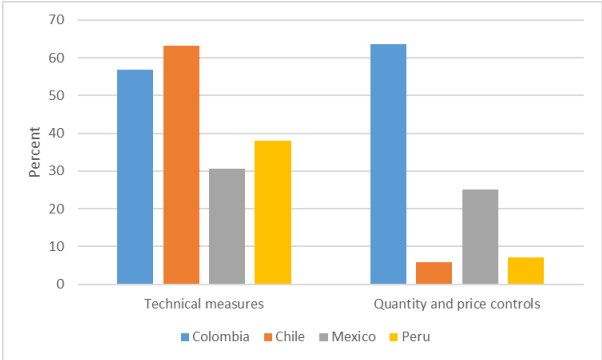
**Estimates suggest that NTMs are not just prevalent, but significantly restrictive to trade in Colombia.** Businesses in Colombia identify NTMs such as additional sanitary requirements and certificates as an impediment to trade.<sup>14</sup> This was identified as resulting in a higher cost to import inputs. In a recent working paper for Colombia, Echavarría et al. (2019) estimate the tariff-equivalent levels for NTMs in Colombia at the tariff line level over 1990–2012. Despite tariffs levels coming down and remaining low since the early 1990s, the average tariff-equivalent of NTMs increased dramatically and has hovered around 120 percent since 2000. As a result, NTMs account for the vast majority of Colombia's total protection (Figure 20). Similarly, the trade restrictiveness index (TRI) representing the uniform ad-valorem rate consistent with the total level of protection has been increasing and in 2012 was estimated at around 75 percent (Figure 21). Echavarría et al. find that NTMs are particularly restrictive to trade in agriculture and food products, textiles and apparel, wood, chemical goods, and footwear. The NTMs are more prevalent for consumer and intermediate goods than for capital goods by type of goods.

**Figure 18. Share of products subject to NTMs in Colombia by type of NTM**



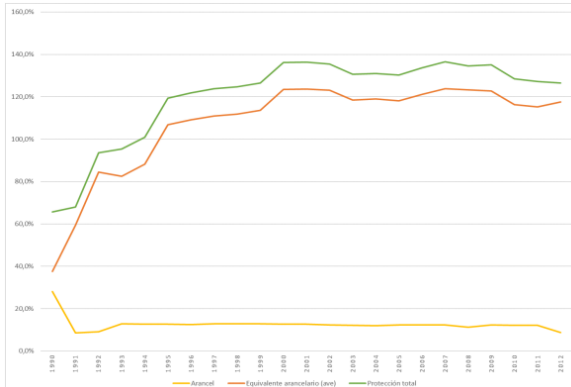
Source: Authors’ estimates based on UNCTAD TRAINS.

**Figure 19. Share of products subject to NTMs in Pacific Alliance countries by type of NTM, 2016**



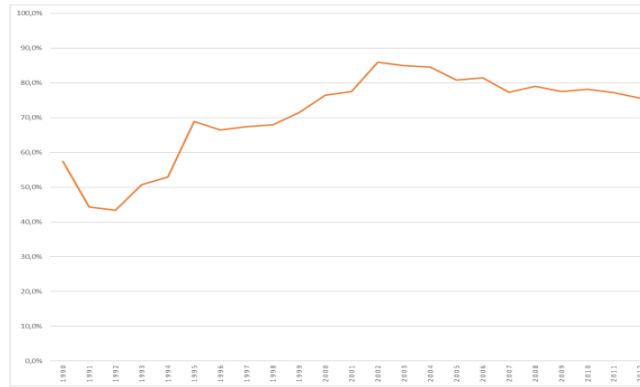
Source: Authors’ estimates based on UNCTAD TRAINS.

**Figure 20. Average tariff rate and NTM ad-valorem equivalent in Colombia, 1990–2012**



Source: Echavarría, Giraldo, and Jaramillo (2019).

**Figure 21. Trade restrictiveness index (TRI) for Colombia, 1990–2012**



Source: Echavarría, Giraldo, and Jaramillo (2019).

**Other factors that can affect trade in the country include infrastructure gaps, security inspections, and information frictions.** The current infrastructure level leads to higher costs and times to move products in and out of the country (including internal connectivity).<sup>14</sup> Security inspections are reportedly a frequent hindrance.<sup>15</sup> Oftenly performed by the antinarcotic authorities, such checks increase costs in delays and sometimes damage to the cargo. In this regard, programs such as the Authorized Economic Operator (Operador Económico Autorizado and previous programs such as Usuarios Aduaneros Permanentes and Usuarios Altamente Exportadores) are seen by firms as facilitating trade operations and the utilization of tax benefit programs such as the Plan Vallejo and in simplifying customs controls. Finally, market information may be limited or costly to firms. Yet this may be key in determining their trading status (entering or remaining in export markets).<sup>16</sup>

## Policy options

For faster export growth and diversification, successful entry and survival in export markets are important. Large exporters disproportionately account for a large share of exports. They are also more likely to sustained trading relationships. Thus, faster and sustained trade growth would likely hinge on the capacity of firms to enter with strength, highlighting a private sector agenda that focuses on helping domestic firms become big exporters, as well as in attracting large exporting firms via FDI.

Rapidly growing economies like China present opportunities for new exports, but to date this market has been exploited only by fuel products. A diversification from these types of exports would involve expanding market access opportunities for non-traditional exports both on markets such as China and neighboring countries in Central America and the Andean region.

Both market and product diversification may be achieved by integrating into global value chains, which at present is rather limited in the country. This could also reap additional dynamic gains in terms of know-how and technology upgrading.

To advance in this direction, several policy areas should be considered:

- Trade policy in the country has been moving in the right direction over the recent years, especially on the tariff front. This paper has shown that NTMs has increased over the years and represent the majority of current protection. This is not an unusual situation across countries. However, the situation calls for identifying sectors and products where NTMs can be reduced to ease obstacles to trade and to gain economic efficiency. A detailed assessment of regulatory aspects to trade should be embarked on to streamline NTMs and their trade-distorting effect while keeping other objectives in mind. In particular, there is a need to identify sectors where NTMs and other procedural obstacles can be reduced, such that the reductions of tariffs observed over the past decades can be fully exploited.
- Infrastructure gaps remain (such as for ports and roads). Improving trade competitiveness in the country should look at these frictions related to trade facilitation and connectivity issues, including transport aspects internal to the country.
- Our findings show a correlation between export survival and the mean entry value to export markets. However, the mean entry value has little correlation with the firm's assets size (particularly when considering non-traditional exports). Consequently, support for exporters can be focused on firms that have the potential to export significant initial values as a proxy of the business plan's strength. Even small firms can succeed longer in the export market if their initial export value is large enough. Another crucial point is that support should move beyond the initial stages. Assisting firms with four or more years in the export market can help them remain in the export market while using their experience and knowledge to aid new entrants.
- Despite ongoing efforts by the Colombian government, trade promotion actions could address externalities, such as coordination failures and information frictions, which the private sector still identifies as a critical service required. Efforts to evaluate the impact of ongoing efforts and relate them to the survival over time of firms accessing such services can improve the selection criteria.

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## Annexes

### Annex 1: Principal data sources

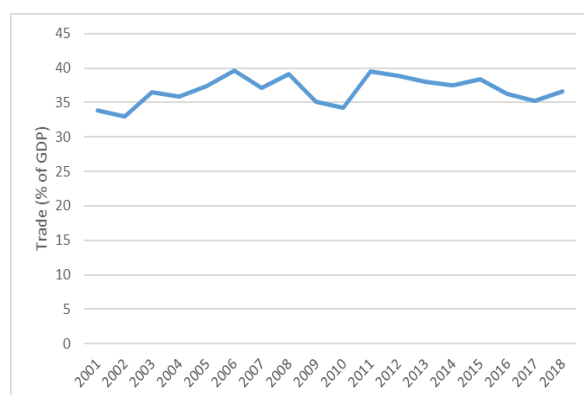
This note relies on a combination of datasets, with national and cross-country coverages. Most cross-country comparisons are based on product-level data with international coverage from the UN Comtrade and UNCTAD TRAINS (accessed via the WITS platform), which are consistently reported up to the six-digit level of the Harmonized System (HS) from the World Customs Organization. Additional international country-level data is also drawn from the World Bank World Development indicators (WDI), and other available databases.

The firm-level data stem from the *Dirección de Impuestos y Aduanas Nacionales* (DIAN), the Colombian authority on customs and tax revenues, which reports each international legal transaction done in the country, both for imports and exports. The data is available monthly between January 2000 until June 2020. The data between January 2012 onwards has been processed by the Colombian Statistical Agency (DANE), and in that sense, it is official data. Before that, DIAN reported the data but did not, and it still does not support its quality. The export dataset over these years includes over 12.4 million observations, while the import dataset has more than 47 million observations. Depending on the analysis, for ease of computation, the dataset has been aggregated at either quarterly or yearly figures. Information available includes the transaction value (for either exports or imports), the destination or origin, the transaction date, and the transacted product at the ten digit-level of Andean countries' Common Tariff Nomenclature. However, product definitions used in the current analysis refer to their six-digit level, corresponding to the HS codes.

### Annex 2: Additional charts

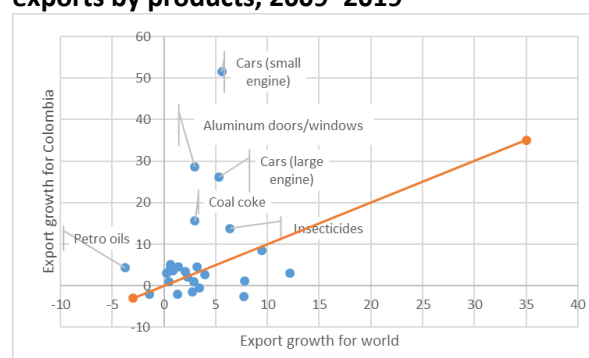
This annex includes additional charts relevant to the discussion on the main text.

**Figure A1. Trade to GDP in Colombia, 2001–2018**



Source: World Bank WDI.

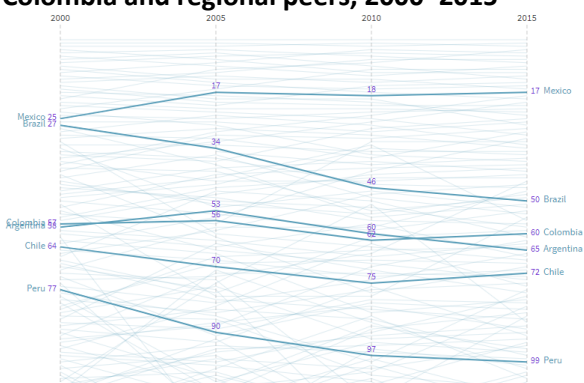
**Figure A2. Growth of Colombia and world exports by products, 2009–2019**



Source: Authors' estimates from UN Comtrade.

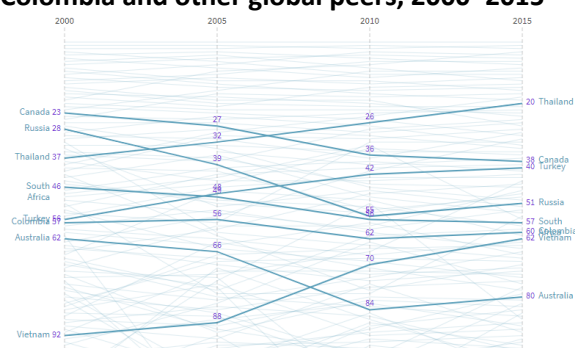


**Figure A3. Economic Complexity Index for Colombia and regional peers, 2000–2015**



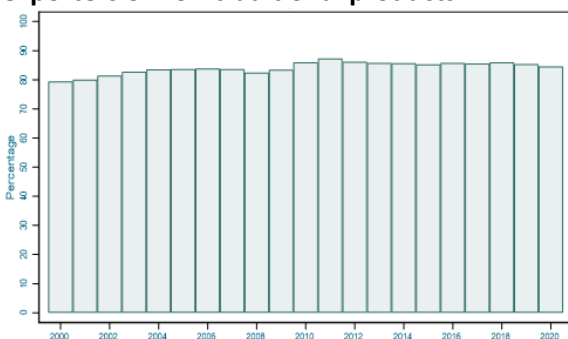
Source: Atlas of Economic Complexity.

**Figure A4. Economic Complexity Index for Colombia and other global peers, 2000–2015**



Source: Atlas of Economic Complexity.

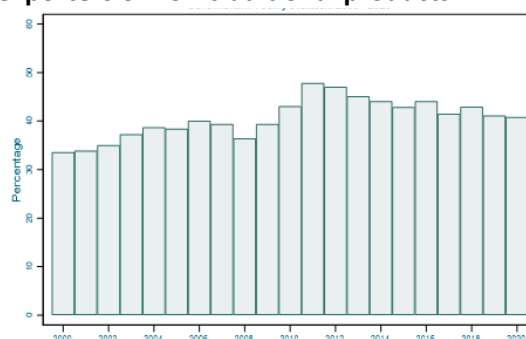
**Figure A5. Share of exports by top 10 percent exporters of non-traditional products**



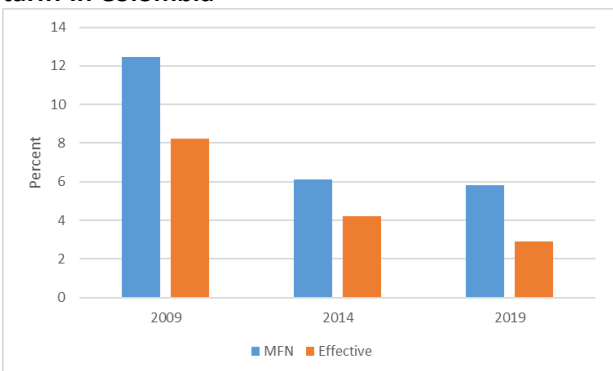
Source: Authors' estimates based on DANE.

Note: 2020 data until June. Non-traditional exports exclude coffee, coal, petroleum and derivatives, and ferronickel.

**Figure A6. Share of exports by top 1 percent exporters of non-traditional products**



**Figure A7. MFN and effectively applied import tariff in Colombia**

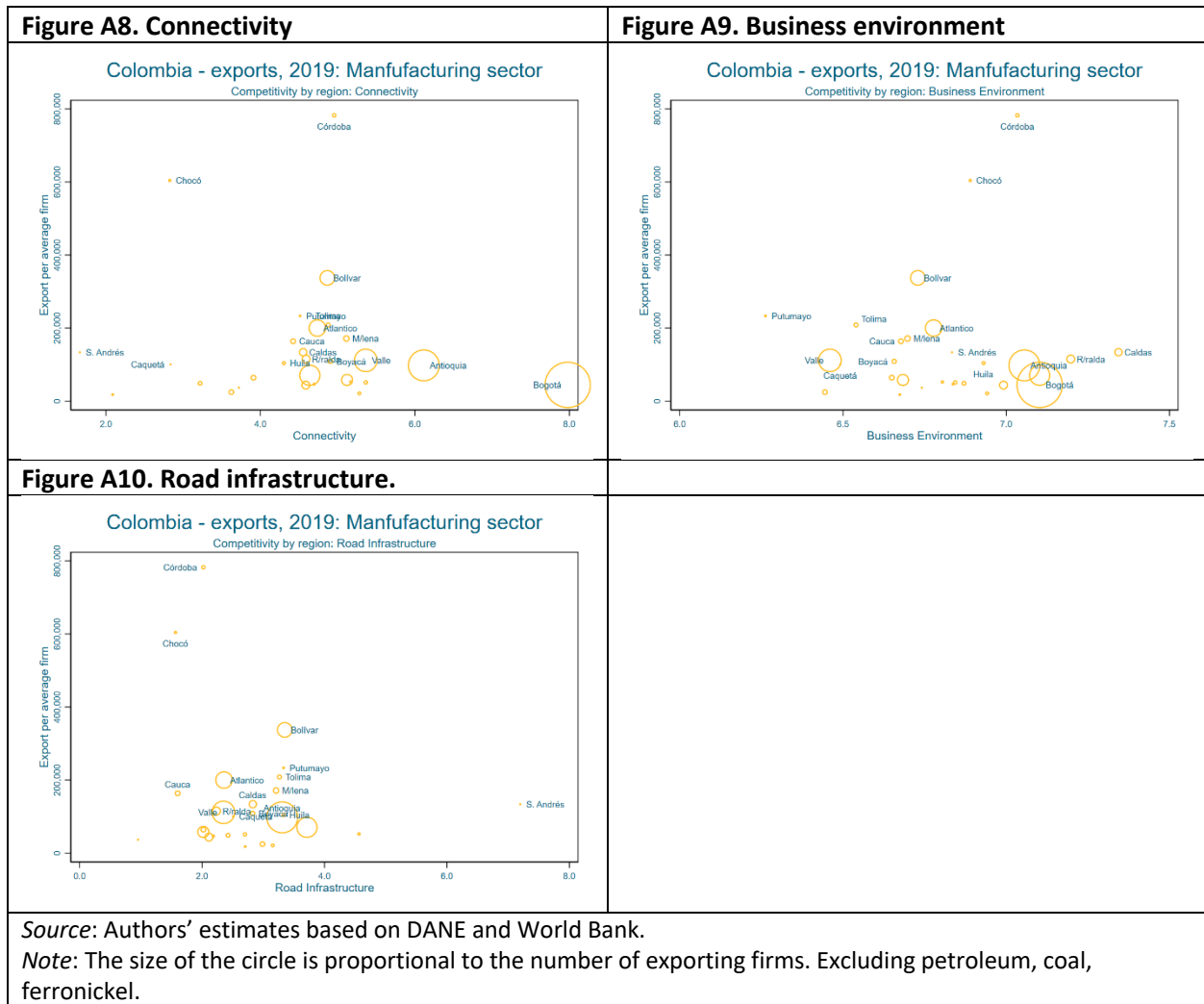


Source: Authors' estimates based on UNCTAD TRAINS.

### Annex 3: Competitiveness and regional analysis

Using data on the business environment, connectivity, and road infrastructure per Colombian region, one can explore any apparent competitiveness constraints in the country. Understanding that Bogota, Antioquia, and Valle represent, according to DANE, 50% of GDP, the following figure compares three competitiveness indicators with the firm’s average export value per department. The figures depict the manufacturing sector, excluding traditional sectors, because otherwise large oil and coal companies which tend to operate in smaller departments might bias any finding.

Competitivity per region. Manufacturing sector.



Cordoba and Choco tend to show up as outliers because they have some mineral firms located in those departments, although it is apparent that they have few export firms. When considering connectivity, Bogota and Antioquia are outliers being the most significant economic centers in the country. However, even when the four outliers are excluded (Cordoba, Choco, Bogota, and Antioquia), there is no significant correlation between connectivity and the trade intensity as measured by the average export size.

Departments close to seaports such as Bolivar and Atlantic have larger firms, although not significantly better connectivity.

Regarding the business environment, once taking out Cordoba and Choco, there is little relationship with the departmental average export value. A similar finding is true when considering road infrastructure where, excluding outliers, the correlation is 0.2, not significant.

One could argue that the lack of evidence suggesting any strong correlation between competitiveness indicators and export significance draws on historical reasons. The large population and economic centers, namely Bogota, Antioquia, and Valle, tend to attract more investment, including that oriented towards the export sector. It is worth noting that in terms of connectivity, Valle. One of the large economic centers of the country has a weak business environment.

#### Annex 4: Free Economic Zones

There are two types of free economic zones (FEZ) in Colombia: permanent and special FEZ. The former is a number of firms concentrated in a specific area of the country; the latter are composed of just one firm which has to satisfy given conditions of investment and employment. Currently there are 37 permanent FEZ and 70 special ones. Total exports from the FEZ tend to be around 8% of the country's total exports. The following table shows that the majority of exports and imports relate to special FEZ.

##### Free Economic Zones. Exports and Imports

Year	Permanent (exports)	Special (Exports)	Share of Permanent FEZ to Special FEZ (imports)	Permanent (imports)	Special (Imports)	Share of Permanent FEZ to Special FEZ (imports)
2018	882,703,136	1,966,709,894	30.98%	624,835,181	1,189,770,439	34,4%
2019	1,051,152,437	1,958,046,147	34.93%	677,152,719	711,831,513	48,8%

Source: DANE.

The following figure depicts the main type of products that are traded from and to these areas. It is apparent that there is no concentration in a small number of products. For the most part “other products” are the main export and imported goods. The FEZ export destinations trail those already described, being the main individual destinations the United States and China. Little can be said with the aggregate data availability on the effect that FEZ have on trade. However, given their relatively constant share of total exports, one might infer that the aggregate effect is limited.



Source: DANE.