El futuro es de todos

Gobierno de Colombia

# INTERNATIONALIZATION MISSION

## FINAL REPORT

# INTERNATIONALIZATION MISSION

**Colombia 2021**

*https://www.dnp.gov.co/DNPN/internationalization-mission*

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# Foreword

This year we celebrate the 30th anniversary of the dream we set out for ourselves at the end of the 20th century: trade liberalization. Through the creation of the Ministry of Foreign Trade in 1991, we began to open up our economy, a turning point in which the entire Colombian State was embarked with the understanding that the modernization of the Colombian economy and its internationalization went indelibly hand in hand.

Today we have irrefutable proof that we were right at the time. The global market has shown great interest in Colombian goods, services, and in investments in Colombia, noting their quality and commitment towards sustainable practices. It is important to remember that Colombia is the second most biodiverse country in the world. We are located in a geostrategic position, being the gate of connection between the Northern and Southern countries in America, an extensive network of 17 trade agreements, which allow preferential access to more than 65 countries and 1,500 million consumers around the world.



Even though we have favourable competitive advantages, we have not specialized in improving our production processes. We struggle in fashion, food, mining, chemicals, pharmaceuticals, meat, and dairy. On the global stage, Colombian sectors do not stand out in the world rankings of production, investment, and exports. Furthermore, despite the established free trade agreements, our degree of openness toward the global market, measured as the participation of our international trade as a percentage of the Gross Domestic Product, continues to be below the continental average (38.1% Colombia vs. 45.7% from Latin America and the Caribbean).

This circumstance has provoked a considerable number of criticisms. The most radical ones have classified it as the failure of the economic model of development. This, however, ignores that globalization today is a phenomenon that permeates all layers of world development and that international insertion is no longer optional.

That is why, with the leadership of President Duque, the National Government of Colombia decided to convene the Internationalization Mission. First launched in June 2020, just a few days after the initiation of the Coronavirus pandemic which was the first in more than a century, it presented itself as a challenge of learning about its contagion and how to control it. COVID-19 made us reflect on the value of life, social development, and the well-being of our societies.

Fortunately, we have the support of a great team of national and international experts, led by Harvard University professor Ricardo Hausmann, who filled with determination, helped us identify opportunities and challenges to position Colombia in the world market.

Despite the prevailing uncertainty the start of the pandemic brought, we have been thinking not only about a rapid economic recovery but on an ambitious repowering plan to follow for the next 10 or more years. A plan that will allow internationalization to lead us to measurable and achievable goals to reach

growth above 6%, reduce unemployment to 6% and monetary poverty to 18%, and eliminate extreme poverty, in line with the 2030 Sustainable Development Goals.

We work to make our productive sectors more competitive. Colombia suffers from a shortage of technology, productivity, and innovation in its processes, which makes our exports unsophisticated and out of date with current global needs. Internationalization is the way to access the technology and knowledge that we require to become more competitive in the face of the global economic rhythm.

The Mission built a body of knowledge discussed in 30 meetings of the Steering Committee, which will contribute to the policy discussions of the coming years outlined in this final report. In addition, 17 more studies, 12 policy notes, and 9 annexes were added to support the Steering Committee sessions.

It is a privilege for me to write this preface with the full conviction that the Mission must be a national purpose that allows us to establish sectoral export goals in the short, medium, and long term, integrate into the value chains that stimulate production as well as incorporate the talent of the diaspora so that with their specialized knowledge, we may move towards the production of science and technology.



These commitments aim to accelerate the country's economic growth through the dynamization of a set of entities and economic sectors that, due to their supply conditions, demand potential, capacity to add value, and positive externalities, can generate relevant changes in the structure of productive international exchange.

We face the historic opportunity to build a destination in our foreign policy within a framework of economic diplomacy with impact results on investments, exports and talent to diversify, and repower our economy. We have to think of Colombia as a country with the ideal value-added productive capacity to conquer international markets as a benchmark for exports that generate employment and economic growth.

Vice President and Minister of Foreign Affairs, Marta Lucía Ramírez.

# Motivation

**Colombia's internationalization is limited and has remained stagnant for decades.** The Internationalization mission is an initiative that was born as an opportunity to solve the puzzle of the low internationalization of Colombian economy. The objective of the mission was to generate new insights and provide implementable policy recommendations for an effective integration of Colombia's economy into the world, maximizing the economic and social benefits of trade for the country and its population.

**As a result of the discussions and different dimensions that were analyzed, the mission approach is that the internationalization should not be considered a goal in itself, but a means to close the "technological gap", in a broad sense, and become a long-term strategy that contributes to growth**. Internationalization contributes to the closing of this gap in different ways that promote transference, adaptation and creation of technology. Some of those are the international movement of people's talent, the connection of national and foreign firms to the world and their insertion into Global Value Chains, embedded knowledge and trade technology, the learning derived from it, the institutional framework required to promote integration, and the development of an ecosystem that allows for the transference, adaptation and creation of technology.



**The mission was proposed by the Ministry of Commerce, Industry and Tourism (MinCIT), under the leadership of the Vice Presidency of the Republic, which established a Steering Committee led by Professor Ricardo Haussmann from Harvard University.** The Mission was supported by a technical secretariat, co-led by the National Planning Department (DNP) and the MinCIT, with the support of the World Bank and the guidance of a Steering Committee. The Steering Committee was made up of several internationally recognized experts from academia and the private sector.

**Having categorized it by groups, the Steering Committee built this final report after several deliberations that brought by a consensus over the different topics and recommendations to be included in it.** In addition to this document, the mission includes a comprehensive body of knowledge, which will contribute to the policy discussions in the coming years; this body is made up of 17 studies, 12 policy notes and their respective annexes that supported steering committee sessions, as well as the preparation of this final report. These studies, some of which were laid out by members of the commission, include deeper appraisals and recommendations that do not necessarily reflect the commission's consensus, but solely the opinions of the respective authors. This content can be found on the mission's website1, in both English and Spanish, and it addresses the different dimensions of internationalization: trade policy, investment, modern services, migration, diaspora, trade in tasks, telemigration, competition, quality standards, institutional arrangements, logistics and trade facilitation,

1 *https://www.dnp.gov.co/DNPN/mision-internacionalizacion/Paginas/que-es-la-mision-de-internacionalizacion.aspx*

among others. In addition, the Steering Committee held 30 meetings, four seminars2, and four sessions with the private sector3.

## Introduction and context

**The context under which this Mission took place was very complex.** It started in June 2020, in the midst of the Covid-19 pandemic, which caused one of the worst economic recessions in Colombia's history. Quarantine restrictions in this country were some of the most stringent around the world, making GDP plummet and leading to a rise in unemployment over 20% of Colombia's labor force. Poverty levels rose from 35,7% in 2019 to 42,5% in 2020. All these conditions led to an increase in the levels of social unrest, which later resulted in social revolts and strikes all around the country in May 2021.

**Backing off from the specific juncture, the Mission also took place at a moment in time where new trends in the world economy had emerged, which could open new opportunities for developing countries like Colombia**. **On the one hand, there is climate change**, which will force the world to produce things with the use of clean energies. Given that these types of energies are much more difficult to transport than fossil-based ones, relocation of activities close to clean energy sources will be favored. This represents a great opportunity for a country like Colombia, with such great potential in terms of clean energy production and its already clean energy matrix, largely based on hydro power; this opportunity can well attract foreign direct investment (FDI) seeking efficiency, and use this country as its production base to cater world markets.



**On the other hand, there is digitization.** Even though this trend had been going on for quite some time, there is no doubt that the Covid-19 pandemic has altered it. The sanitary crisis, in particular, has shown that a lot of the work can be done from home, and what can be done from home could be done from anywhere in the world. Thus, by enabling remote work, digitization paves the way for an increase in the trade of tasks, not just in the trade of goods and services. Once again, this represents a great opportunity for a country like Colombia, especially given its pool of human capital and the still great wage differential with developed countries.

**A third trend worth mentioning is the increase of trade polarization.** The China-US polarization, in particular, is leading to changes in the architecture of global value chains (GVCs), favoring what is known as nearshoring, which involves shortening supply chains by relocating production of both intermediate and final goods near consumer sites, including nearby countries with political affinity.

**A final trend is determined by the growing demand for food, water, and land.** The world market shows a growing demand for food and agriculture intermediate goods, given the growth of world population and the increase of per capita income in several emerging economies (particularly Asian emerging economies like China). At the same time, Colombia has a competitive advantage in the production of agricultural

2 Non-Tariff Measures (NTM) - BanRep study; Global Value Chains (GVCs) - World Bank; MNA - BanRep study update; and Trade and Gender World Bank-Vice Presidency.
3 Agriculture, agroindustry, manufacturing, and services.

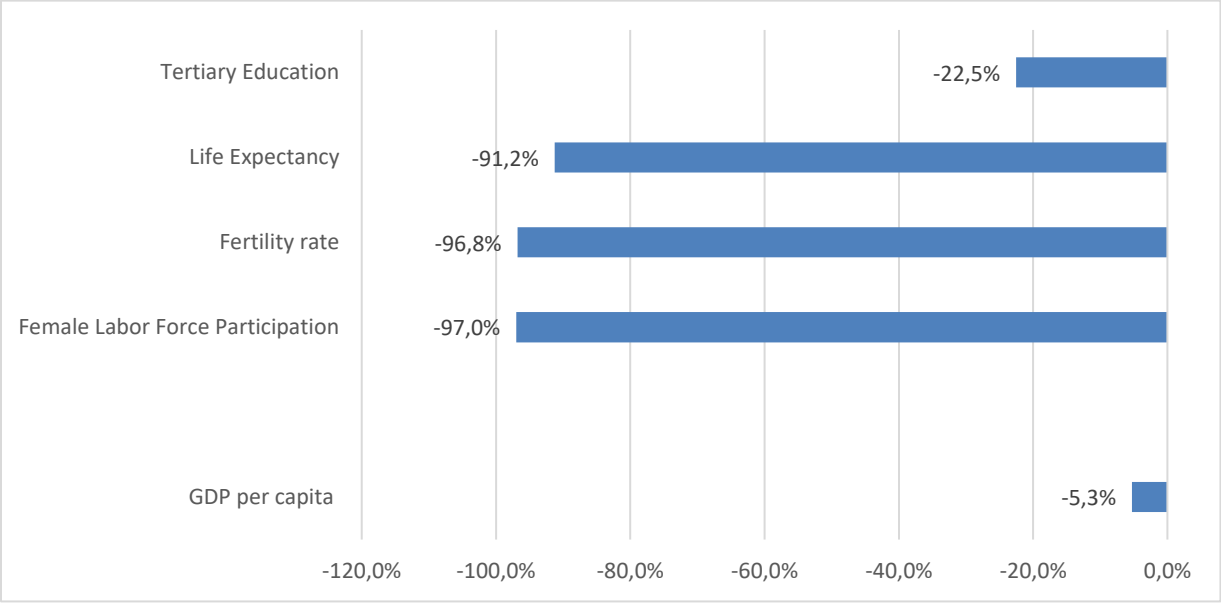
goods, given its endowment of two factors which are becoming increasingly scarce in the world: land and water.

**Now, the opportunities these trends represent require a strategy that considers other difficulties that Colombia has faced, which have prevented it from taking advantage of similar opportunities in the past.** In other words, profiting from these opportunities will not come naturally, it will not be the result of a hands-off stance. A strategy will be needed to address some structural issues that have hindered the country from breaching the existing gap with world leaders.

**For the past 60 years, Colombia has made a lot of social and economic progress.** It has educated its population, it has improved access to health, it has institutionalized its democracy, it has upgraded its use of technology and it has more than tripled its income per capita (Figure 1).

**Figure 1. Relative variation in different variables between Colombia and the US; 1960 vs. 2018**






Source: WDI, World Bank. DNP-DIDE calculations.

**However, the world has also made its fair share of progress, rendering Colombia unable to close this existing gap with leading countries.** On the technological front, say the United States, income has also grown by a similar amount, so that, while Colombia has definitely made some significant progress, as expressed in the tripling of its income per capita, the developmental gap (measured as the difference in GDP per capita) has not narrowed.

**Many factors might help explain this fact.** There are gaps in health, in education, in access to capital, in demographic dynamics and in gender parity, all of which are worthy of attention. However, while all of these gaps have narrowed, the income gap has not.

**We confirm previous findings that indicate that the unresolved problem is a widening technological gap with the rest of the world that expresses itself in a persistently low total factor productivity and a**

**widening gap with the technological frontier.** Studies have shown larger productivity differentials in Colombia compared to advanced economies, and even to other countries in the region4, implying that the overall growth of productivity is impacted by a slow diffusion of technology into Colombia and across firms within the country5; this reveals problems in the domestic diffusion of technology and in the allocation of resources across firms.

***Table.1***

| | Year | Colombia | USA | COL-USA | COL/USA |
|---|---|---|---|---|---|
| GDP per capita (USD) | 1960 | 2,339 | 17,563 | | 13.3 |
| | 2018 | 7,694 | 54,833 | | 14.0 |
| | 2018/1960 | 3.3 | 3.1 | | |
| Life Expectancy (%) | 1960 | 59.4 | 73.1 | 13.7 | |
| | 2018 | 79.9 | 81.1 | 1.2 | |
| | 2018-1960 | 20.5 | 8.0 | | |
| Fertility rate (%) | 1960 | 6.7 | 3.7 | 3.1 | 1.8 |
| | 2018 | 1.8 | 1.7 | 0.1 | 1.0 |
| | 2018-1960 | 4.9 | 1.9 | | |
| | 2018/1960 | 3.7 | 2.1 | | |
| Tertiary Education (%) | 1971 | 4.7 | 47.3 | 42.6 | 10.0 |
| | 2018 | 55.3 | 88.3 | 33.0 | 1.6 |
| | 2018-1960 | 11.7 | 1.9 | | |
| | 2018/1960 | 50.6 | 41.0 | | |
| Female Labor Force Participation (%) | 1990 | 50.6 | 56.2 | 5.6 | |
| | 2018 | 57.2 | 56.4 | -0.8 | |
| | 2018-1990 | 6.6 | 0.2 | | |

Source: WDI, World Bank. DNP-DIDE Calculations.

4 Agosín et al. 2010
5 Eslava and Haltiwanger, 2021

**Technology must be understood broadly: it is in essence the knowledge we use to transform the world to our liking.** This knowledge is embedded in the tools and materials, formulas, routines, algorithms, theories and instruction manuals we use, as well as in the knowhow our brains possess. While science answers questions about the nature of the world we live in, technology is the human answer to "how to" problems. How to grow fruit, how to preserve it, how to protect it from insects, how to transport it, how to pack it, how to market it, how to price it, how to hire the right workers, how to train and motivate them, how to get them to work, how to access and use energy, how to assure the security of people and materials, how to solve those contractual arrangements with customers, how to finance the operation in ways that adequately distribute and compensate for the risks involved, how to assure customers that the fruit does not contain dangerous chemicals, and that the environment was not inadequately harmed, how to identify, satisfy and even anticipate new consumers' needs and demands. There is technology in everything we do in the natural and social world. It really comes down to how we do everything we want to do as individuals, as firms, as organizations and as societies.



**Technology evolves at a global scale.** It advances every time somebody finds a new solution to a "how-to" problem. It is commendable that Colombia tries to come up with new technology of its own. However, the bulk of technological progress is occurring outside its borders, as it is for almost any country in the world.

**Therefore, the challenge for Colombia is to constantly adopt and adapt this technology. Unfortunately, the empirical evidence suggests that this process is too slowly.** Colombia lags in R&D investment with respect to other OCDE members and other Latin American countries. During the last decade, investment in R&D and STI only increased from 0.19% to 0.28% and from 0.48% to 0.74%, respectively. This level of R&D investment is below the Latin American average (0.35%) and is only a fraction of the OECD average (2.36%). Moreover, Colombia represents 0.7% of the world population and a much smaller 0.02% of the world's patents. Not only is Colombia lagging in terms of R&D and STI spending, but there is ample evidence that the bulk of Colombian firms do not adopt the most basic management best practices and quality standards, both of which fit into our understanding of technology. Many middle-income countries - whether in Asia or Eastern Europe - have been able to grow faster than the advanced countries, mainly because they have been able to adopt and adapt new technologies faster than the world is able to expand the technological frontier. The fact that Colombia is not narrowing its income gap in spite of the fact that it is narrowing other gaps suggests that the rate of adoption and adaptation of technology is much lower than in these other comparators.

**Colombia's trade performance is just another piece of evidence on how cumbersome it is for the country to adopt and adapt technology.** Colombia's exports and imports remain a very small part of the country's GDP, much smaller than in similar countries. In fact, taking into account the country's size and population, exports are about 70% below what would be expected. Moreover, these exports show very little technological progress. There are remarkably few new products in the export basket, and they remain

mostly products of low intensity in the technology sector. While fast growing countries are characterized by a rapid change in their export basket, Colombia's basket remains stagnant: concentrated in oil, mining, coffee, flowers and not much else. Close to 75 percent of exports from Colombia could be classified as primary products or resource-based products in 2009. Only about 25 percent of Colombia's exports showed some level of technology, with high-tech exports accounting for less than 2 percent of total exports. The complexity of the country's export basket is ranked as number 56 in the world, not having changed in the past 20 years6. However, on a more global scale, the complexity of Colombia's export basket is pretty mediocre. Even in the export of services the performance is below expectation.

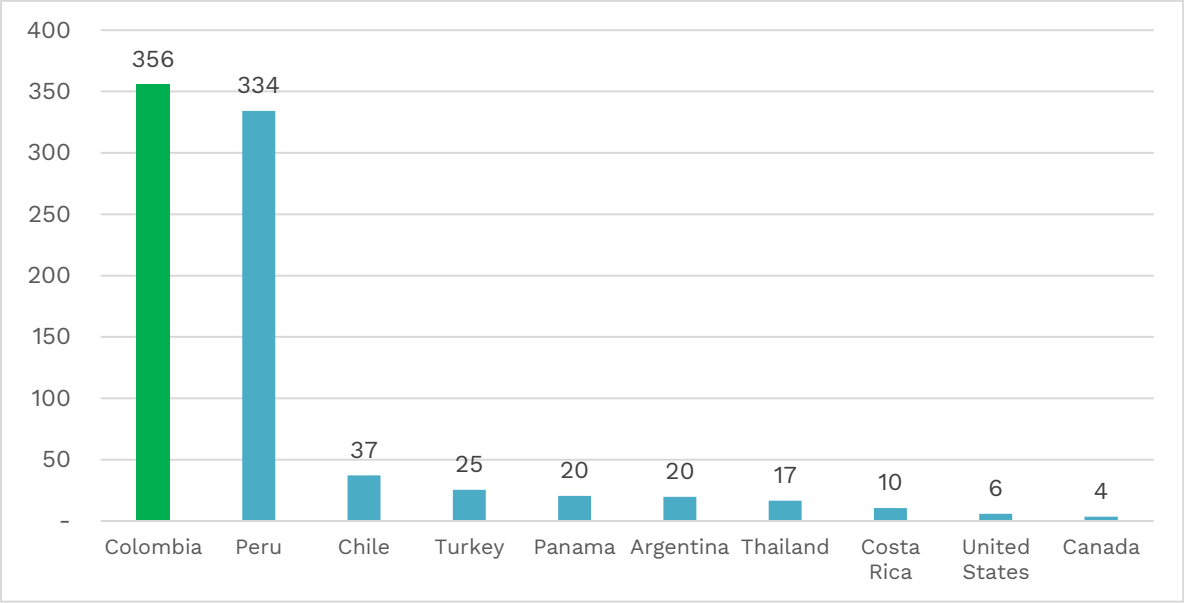
**A poor degree of internationalization, while not the only explanation, is clearly at the core of the problem of technological backwardness, through the slow pace at which existing or new firms and institutions in Colombia adopt and adapt the technology that is out in the world.** From knowing about the existence of technologies, whether new or not, to acquiring the tools, the codified knowledge, the routines, the organizational capabilities, and the knowhow needed to adopt and adapt, requires Colombia to be plugged into the world. While many countries aspire to expand the technological frontier of the world by creating innovations at a global level, the truth is that for middle income countries, like Colombia, gains will come mostly from moving closer toward the technological frontier, adopting and adapting technologies that are at work elsewhere in the world, but that have yet to make it into the country or spread across its many regions and firms.



**The evidence on Colombia's poor degree of internationalization is manifold.** Just to mention a few, Colombia has been an outlier in terms of its unusually low levels of immigration. While countries like Canada and the US have 4 and 6 nationals for each migrant respectively, Colombia has 356, which, in orders of magnitude, places it even behind more similar countries like Costa Rica and Chile with 10 and 37 nationals per migrant (Figure 2).

6 As calculated in the Atlas of Economic Complexity: *https://atlas.cid.harvard.edu/rankings*

**Figure 2. Nationals for each migrant (2015)**

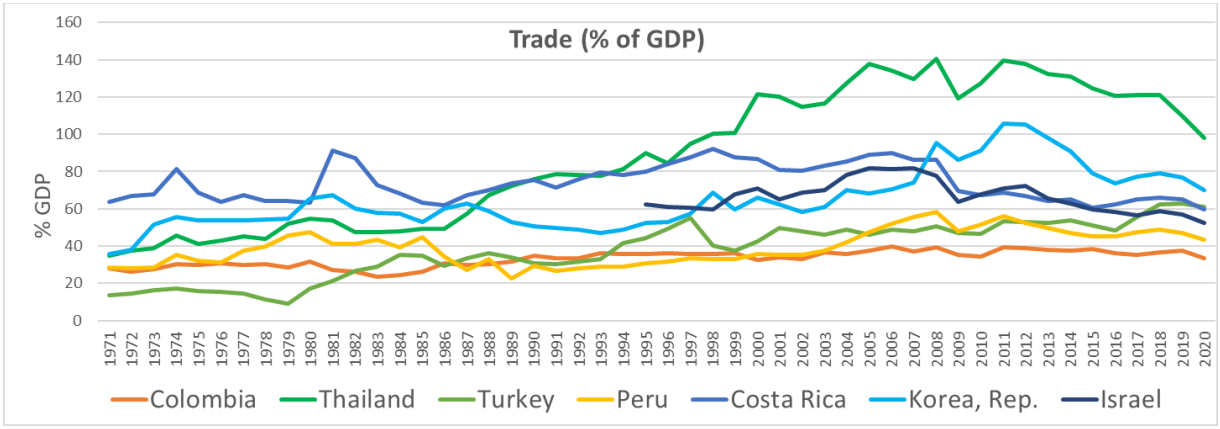



Source: WDI, World Bank.



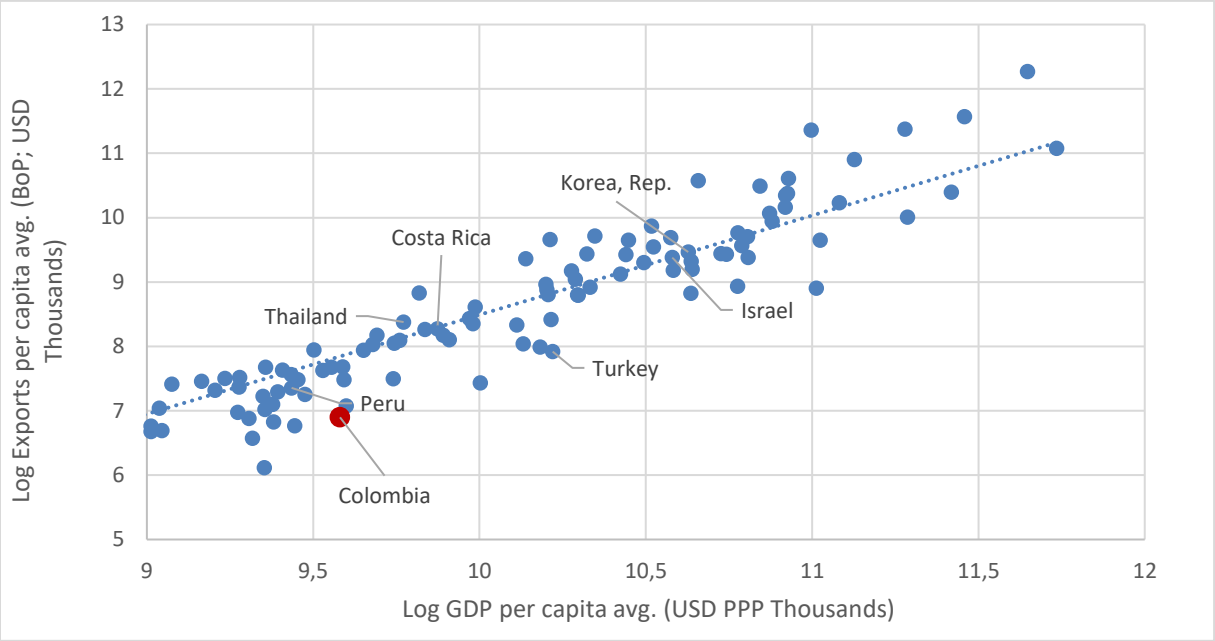
Trade is another dimension where Colombia shows very little integration with the rest of the world. Not only the country's openness to trade has remained practically stagnant for decades (Figure 3), but its exports are less than half of what they should be, given its size in terms of GDP (Figure 4 and 5).

**Figure 3. Trade as a percentage of GDP (1971-2019)**




Source: WDI, World Bank.

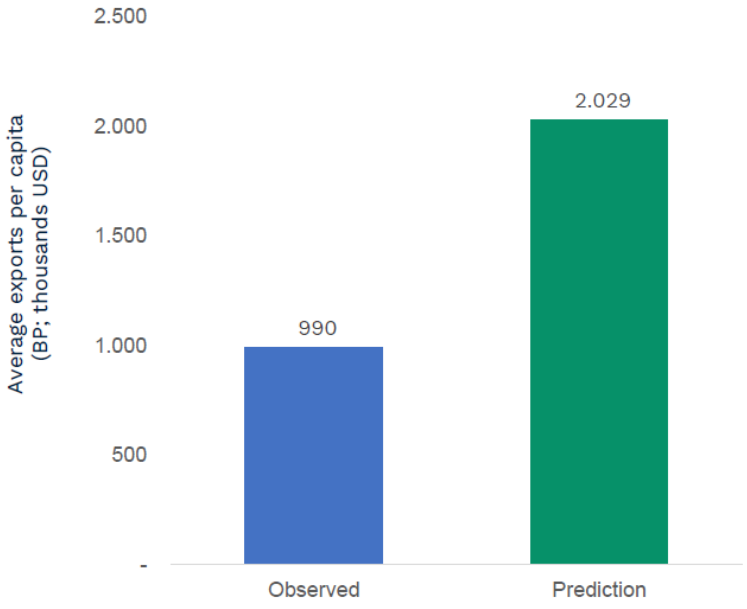
**Figure 4. Exports vs. GDP per capita, average 2015-2019**




Source: WDI, World Bank. DNP-DIDE Calculations.



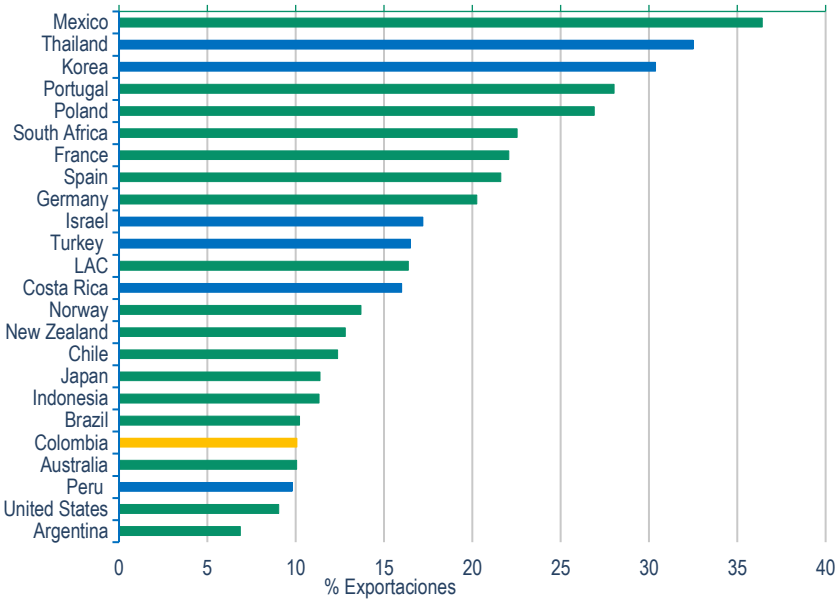
**Figure 5. Per capita exports vs. prediction of exports given GDP and population, avg. 2015-2019**




Source: DNP-DIDE calculation based on WDI, World Bank.

Moreover, Colombia's participation in GVCs is comparatively low, as it is evidenced by the low level of foreign value added in Colombian exports (Figure 6).

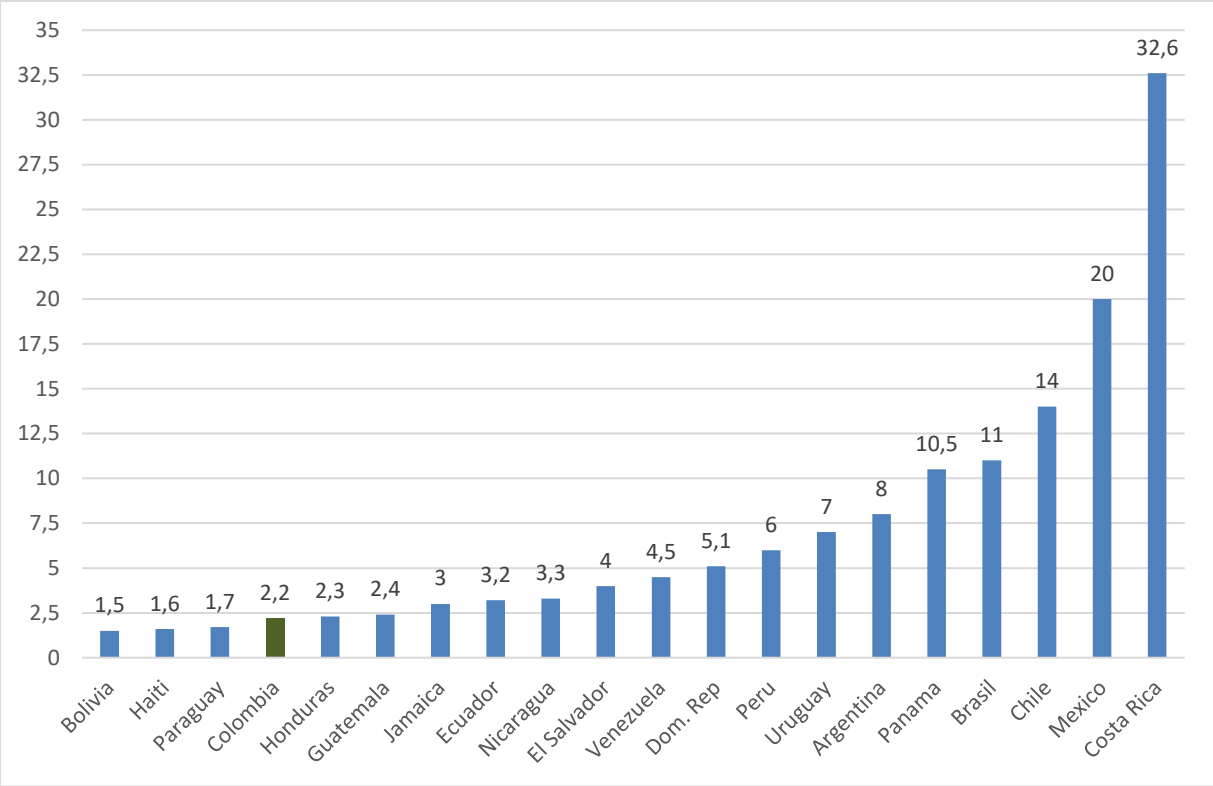
**Figure 6. Share of foreign value added in exports**




Source: elaborated by DNP based on OECD – TIVA data.

Regarding FDI, despite having relatively good levels of FDI as a percentage of GDP, this investment has traditionally focused on extractive industries, which are not very labor intensive, leading to a very low level of employment share generated by multinationals as a percentage of total employment (Figure 7).

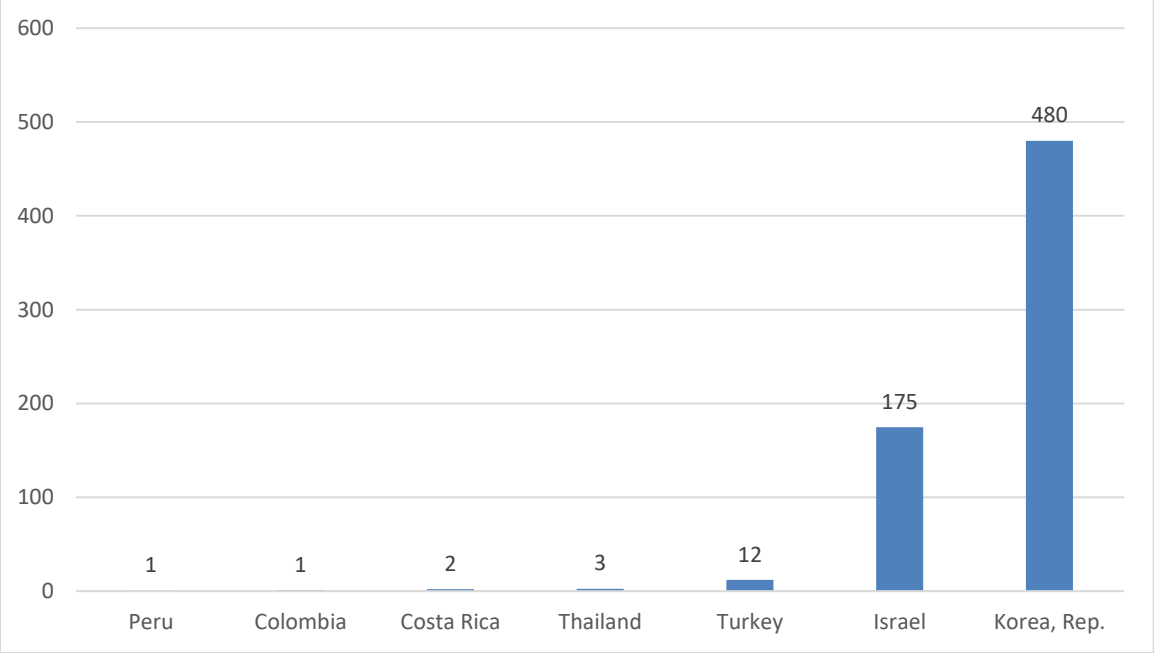
**Figure 7. Employment by FDI as a share of total employment**




Source: CID-Harvard calculations with multinational employment data from Dun & Bradstreet and total employment from WDI, World Bank.

Colombia's isolation of the rest of the world also reflects in its little incidence on the world's technological frontier. While the country represents 0,6% of the world's total population, it just accounts for 0,02% of the world's patents (Figure 8).

**Figure 8. Patents per 100,000 inhabitants, 2019**




Source: WIPO IP and WDI, World Bank.



**In order for Colombia to adopt and adapt existing technologies, it needs to be connected to the places, people and organizations that currently implement or demand those technologies, as well as to its peers and clients. The same would apply if it wished to move out into the world's technological frontier in any particular area.** Colombia's society needs to be sufficiently connected to that world - sufficiently internationalized - so the channels through which this knowledge flows, may expand and reach more firms and institutions. It also needs to want to adopt and adapt technology, either because firms see opportunities of growth from doing so, or because they fear bad outcomes if competitors were to beat them to the punch by using those same innovations. This is precisely what took place in the so-called East Asian Miracle countries over the past six decades, and in Eastern Europe over the last three.

**For this reason, we see internationalization as a growth strategy for Colombia. We do not see it as a goal, but as a means to accelerate progress.** It is about driving the country in deeper into the knowledge flows that underpin modern technology, as well as in the flows of production of goods and services that embed them. It is about enhancing, coordinating, and empowering agents of change in Colombia that can develop the capabilities to more deeply connect the firms and institutions of the country to the rapidly

evolving global opportunities, which will in turn generate and capture value for the country. It is also about a call to action to implement the necessary reforms and measures for this process to take place more rapidly and effectively.

**Unfortunately, technology is not something in the air that permeates everything and reaches everywhere at once just like that. Technology flows through very narrow and specific channels, and these need to be enhanced if Colombia is to catch up.** Technology is embedded in machinery and equipment, and in intermediate inputs and final goods and services the world makes. The country could import these, but it may be subject to tariffs, non-tariff barriers and other obstacles that limit the access Colombians have to these innovations. It is also embedded in the goods and services that Colombia could export, not only as a reflection of already adopted technology by Colombian firms, but as a way to continue learning from contact with clients and the access to new markets and GVCs. It is learning about new business opportunities, about foreign regulatory and standards compliance, about new marketing channels and strategies, about new technologies. In other words, learning by trading.



**Technology is also knowledge that is codified in universities and research centers, then shared through educational and training activities, but it is also the tacit knowledge contained within brains that is acquired mostly unconsciously through a long process of learning by doing, repetition, imitation and feedback; therefore, it moves with great difficulty from brain to brain**. Technology is a team sport: it requires that people with different but complementary skills work together to implement it, just like a surgeon needs to work with an anesthesiologist and an operating team. In fact, the more intensive a product is in terms of its knowledge content, the larger the team of complementary experts that need to cooperate to make it. Therefore, team knowledge is embedded in those firms and value chains that know how to do things and use that knowledge. Unfortunately, they are not in the business of selling that knowledge, which is often very difficult to do.

**In addition to the narrow and specific nature of the channels that allow it, technological diffusion is difficult in its own right, by the fact that it is not composed of stand-alone solutions. Every technology operates in an ecosystem of complementary elements.** Cars are only useful in the presence of roads, traffic lights and driving rules. Credit cards presume the presence of point-of-sale devices, electricity, telecommunications, and payment systems. In other words, technology is full of complementarities, both among private goods and between private and public goods. Among private goods, markets may lead to inefficient equilibria: at the beginning of the personal computer age, there was not much software because few people had the PCs that would use them, making the market too small for programmers. But without software, PCs were not very useful to people. In this example, the PC and the software are both private goods and the interconnectedness of the two markets may lead to good or bad outcomes for both industries. But sometimes, technology is not diffused because of missing complementary public goods: there may be no tourist hotels because there is no airport, or no broadcast TV because households do not have access to electricity. Whereas vertical integration and guarantees may overcome coordination failures in private markets, public goods, by definition, are not provided by the market and, therefore, their supply involves an explicit public action.

**Thus, just letting markets work is never enough to assure technological adoption and adaptation: there is a need to address private coordination failures and the identification and provision of requisite public goods.** This coordination needs to take place among different actors at different levels: among private sector agents, between the private sector and academia, technology, and R&D centers, between the private and public sectors, between national ministries and agencies (public-public coordination), between national and local level actors, and between national and international agents and institutions. Therefore, institutional arrangements that align incentives are key to facilitate the coordination that markets are unable to provide by themselves.

**Interventions and instruments to enhance these channels and provide these complementarities can be of two types: horizontal and vertical.** Horizontal ones are those that are not related to any particular sector or economic activity, whereas vertical ones are those that are. A general rule of thumb suggests that government should be "as horizontal as possible and as vertical as necessary". While horizontal interventions and instruments generally do not require much coordination, vertical ones are much more intensive in that regard. Alas, in most cases, horizontal and vertical interventions are complements, so you need both7.



**A virtuous internationalization not only fosters technological advancement but also benefits from it:** high productive firms are able to compete in international markets and learn about new ideas, methods and solutions, through those interactions, as well as figure out problems that would not have come up without those experiences. More generally speaking, technology is advanced and diffused through a complex web of channels, each specific and narrow. We focus on the specific role played by internationalization, because Colombia represents less than 0.7% of the world's population and less than 0.02% of the world's patents, meaning that the bulk of technological knowledge and ideas in the world resides outside of the country. Therefore, the strategy of internationalization must assure that we connect to it.

**Nevertheless, it is important to point out that there are profound interactions between other barriers to technological adoption and internationalization, which are not addressed by this report.** This is the case, for instance, of distortions to productivity growth stemming from national labor institutions, which will be addressed by the Employment Mission that runs parallel to this Internationalization Mission.

**What are the specific channels through which technology flows that could be enhanced through Colombia's internationalization? There are at least four different channels through which internationalization happens: individuals, firms, trade in goods and services, and institutions.** Individuals migrate in both directions: there are foreigners in Colombia and Colombians abroad. Both are avenues for connecting Colombia to the world. The same is true about firms: there are foreign firms that might be attracted to Colombia and Colombian firms abroad that can connect opportunities at home with those abroad. As it was mentioned before, trade in goods and services – to-and-fro – is also a crucial channel for the diffusion of technology. And then there are institutions. On one hand, the institutions that are closely related to the acquisition, creation, and diffusion of knowledge (e.g., universities, research

7 DNP (2016), CONPES document 3866, Colombia's Productive Development Policy.

centers, and technology extension services). On the other hand, institutions in a more general sense, which help to reduce transaction costs through coordination of multiple actors and efforts under an internationalization strategy, including, but no limited to, those related to the international movement of goods, services, capital and people. In the case of Colombia, for instance, both at the national and subnational levels, there are institutions, such as public-private partnerships, cluster initiatives, joint ventures, and other types of multi-party institutional arrangements, that have a pivotal role as coordination bodies to guarantee the provision of complementarities that underpin internationalization efforts. In the international arena, governments, in their economic diplomacy activities, also play a crucial role in a technology catchup strategy, by participating in multilateral, regional and bilateral agreements, and in institutions such as the Organization for Economic Cooperation and Development (OECD); also by allowing for the adoption of better government technologies and by generating more predictable and less costly, transactions and opportunities.

**The document will be organized according to these four levels of channels** through which Colombia could deepen its internationalization as a way of accelerating its catching-up with the world's technological frontier and, therefore, achieving higher levels of prosperity for its entire population.



**Ricardo Hausmann**

# I. Attracting knowhow through individuals and their networks

As mentioned above, technology is composed of embodied knowledge in tools and materials, codified knowledge in formulas, recipes and algorithms, as well as tacit knowledge or the knowhow within our brains. Getting that tacit knowledge into brains is a slow process that can take years of learning by doing. Moving the brains that contain the knowhow, or connecting to them, is a much faster and less costly process. So, the knowhow Colombia lacks is out there, lodged in the brains of people around the world. That is why human mobility plays an outsized role in the international movement of knowledge.

There is ample evidence for this proposition. Human mobility is key for the diffusion of technology between firms (Klepper et al), between regions (Boschma et al, Hausmann and Neffke) and between countries (Bahar and Rapoport, Moser et al). Evidence also shows that migrants can be important agents of change for both their host and origin countries. Closing Colombia's technological gap with the world involves connecting Colombian society more deeply and thoroughly to that knowledge that resides in brains that are abroad. This can be done by attracting more skilled foreign talent into Colombia and leveraging the considerable Colombian diaspora throughout the world, as well as by facilitating the international mobility of the talent used in Colombian institutions.



The two sections below explore these avenues for the internationalization of Colombia. A new third avenue - telemigration - i.e. the ability of Colombians to remotely work abroad through digital means will be explored in Chapter 3.

## A. Migration

**Immigration is an important channel for technology diffusion and economic growth.** Research suggests that skilled immigrants are disproportionately entrepreneurial and innovative. In the US, 29% of all entrepreneurs are foreign-born, which is more than double the ratio of migrants in the population, which is 14%; also, 54% of the STEM workers in Silicon Valley are foreign-born. (Gordon, Kerr, & Turner, 2018). Interestingly, of the non-foreign STEM workers in Silicon Valley, only 18% were born in California, a state with a population equivalent to some 80% of the Colombian population. Since 1990, 53% of Nobel prize winners affiliated with US universities were foreign-born. Recent research on the US indicates that the foreign-born population is 80% more likely than the local population to engage in entrepreneurship at all scales, including firms that grow rapidly over the first 5 years. In addition to that, they often partner with local entrepreneurs. This means that while it is important to focus on creating talent, it is also critical to attract talent from elsewhere.

**Immigrants, especially the highly skilled, tend to complement the locals, not substitute them, meaning that an increase in their supply raises the demand for local workers.** Research on Panama suggests that industry location cells that hire more foreigners tend to expand the employment and wages of the locals, relative to industry-locations with fewer foreigners. Recent research on the Venezuelan migration to Colombia indicates that foreign talent does not displace local talent in this case neither (Bahar, Ibañez and Rozo, 2021).

**Immigration has the potential to increase GDP per capita.** Immigration can increase the value added in goods and services in the host country through an inflow of knowledge and knowhow (OECD, 2014). Economists have documented positive links between skilled immigration, trade, and investment (Clemens, 2013; Yu 2002). Moreover, as was implied in the introduction, it is faster and easier to import brains than to get tacit knowledge into brains. (Nedelkoska, O'brien, Frasheri, & Stock, 2017).

**In this context, Colombia is an outlier with its unusually low level of immigration.** According to the United Nations, the stock of immigrants in Colombia in 2015 was barely 0.28% of the population, meaning that the foreign-born were fewer than 1 in 350. This ratio is 17 times smaller than in Panama, 32 times smaller than in Costa Rica, 44 times smaller than in the Euro area, 53 times smaller than in the US and 164 times smaller than in Singapore. This number was also 35 times smaller than the estimated size of the Colombian diaspora abroad. This means that historically, the country has had scant benefits from attracting foreign talent, while it was contributing to the talent of other destinations abroad.



**This can be a two-way street, as increased travel by Colombians to interact with their international counterparts also promises benefits in terms of learning and network building.** Managers and workers benefit from international travel to learn about foreign demand, business opportunities, and new technologies. Colombian students, professors, and researchers should be encouraged to travel to enhance international cooperation. Colombian public servants would benefit from travelling to learn about global best practices.

**Since 2015, Colombia has received a massive influx of Venezuelan immigrants, as consequence of the crisis in that country**. By 2020, according to Migración Colombia, there were 1,788,380 Venezuelan immigrants, of which 57.3% were irregular. This represents an amount 13 times larger than the total number of immigrants in 2015. On average, Venezuelan immigrants are relatively more educated than Colombians, although this difference has decreased over time, as the crisis has encouraged poorer Venezuelans to migrate (Farné and Sanín, 2020).

**Colombia's Government has responded with ambitious and comprehensive strategies focused on facilitating and promoting Venezuelans' socioeconomic integration.** The "Estatuto Temporal de Protección" (ETP) will give Venezuelans resident status and work permits for 10 years, as well as access to the different social protection services provided by Colombia´s Government. The ETP builds upon the "Permisos Especiales de Permanencia" (PEP), which has had important positive impacts on formalization, access to public and private services, job quality and the well-being of Venezuelans (Ibáñez et al.). The central government has also coordinated actions through different government agencies to design and implement a wide range of policy instruments, either directed specifically for migrants or for which migrants are eligible (Conpes 3950). A major immigration reform bill[8], currently underway in Congress, looks to further adapt legal and institutional frameworks to meet the challenges posed by Venezuelan migration.

[8] Bill project No. 459 of 2020, by which is established a comprehensive migratory policy.

**While Venezuelan migration is predominantly determined by events in that country, this experience highlights problems in how current policy limits the ability of Colombia to use and absorb foreign-born talent and skills.** While ETP and PEP may allow immigrants to work in the formal sector, accreditation rules may prevent them from legally practicing their profession. Venezuelan medical doctors prefer destinations such as Chile and Spain, because they offer a clear path to revalidation or recognition of their university degrees.

**Many lessons from the efforts to absorb the Venezuelan migration can be directed towards establishing strategic immigration policies for Colombia's internationalization.** The interagency approach to facilitate the integration of Venezuelans can be applied to conceive and implement a comprehensive strategy to attract and retain highly skilled international talent. Many ministries are already much more aware now than a few years ago of obstacles and catch-22 situations in the institutional and regulatory framework as they apply to migrants.



**The immigration regime in Colombia involves cumbersome and costly processes, designed around three types of visas.** Citizens from 97 countries are not required to get a visa to visit and stay for up to 180 days in a single year. People from countries not on that list must obtain a *Visitor Visa,* usually issued for a maximum of one year. The *Migrant Visa* is intended for long-term purposes such as undergraduate and graduate studies or permanent work. Finally, there is a *Resident Visa*, which requires the recipient to have already lived in Colombia for at least five consecutive years under a Migrant Visa. Resident visas are permanent and only expire if the person leaves Colombia for more than two years. After five years as resident people can apply for citizenship, although the time requirement can be much lower in certain cases, for instance immigrants of Latin American or Spanish origin or those married to a Colombian citizen.

**This regime, coupled with regulations and de facto practices, inhibits dynamic migration and the short-term movement of people.** Within the apparently simple visa scheme there is enormous complexity, as there are a large number of rigid visa categories within the Visitor and Migrant visa types, based on the intent of each migrant, all of them with different prerequisites, terms and conditions. There are also numerous regulations and practices that act as barriers for migration, briefly summarized below.

**Long-term movement of people**

**On the bright side, the 2020 OECD's Services Trade Restrictiveness Index (STRI) reduced regulation for the entry of professional service providers into Colombia**. Colombia does not require quotas or labor market tests for foreign providers (OECD, 2020). This openness is also reflected in the different market access commitments services have made within the free trade agreements that Colombia has signed with services chapters.

**Colombia has well-ranked and prestigious universities, but their attractiveness to international students is diminished by barriers to working, either while studying or after graduation.** This is unfortunate, since graduates who choose to stay in Colombia have the potential to contribute to the economy in multiple ways. The application process for international students is complicated and applicants must complete additional paperwork if they want family members to accompany them. More importantly, foreigners with a Student Migrant Visa are not allowed to work; their visas usually end soon

after they graduate, and they are given no special consideration to obtain a new Migrant Visa for working. Likewise, foreign students who graduate from Colombian universities, just as any other foreigner, need prospective employers to sponsor them for a Worker Migrant Visa, and even in such cases, many face slow and cumbersome processes that deter employers.

**Although some investors enjoy streamlined visa processing, detailed regulations for many professions create significant challenges for prospective migrants.** Migrants who intend to invest at least USD 162.000 in Colombia can apply directly for a Resident Visa. Likewise, foreigners buying real estate in Colombia of at least USD 90.000 are eligible for a Migrant Visa. Most other applicants for Migrant Visas must be sponsored by an employer. In addition, being able to work usually requires recognition of foreign degrees by the Ministry of Education, which can take between 20 and 1205 days. Finally, certain professionals such as lawyers, health professionals, architects or engineers must be granted professional accreditation, which can be especially burdensome in some cases, and virtually impossible in others. In the case of accountants, for instance, professional accreditation famously requires foreign professionals to demonstrate at least one year of accounting experience in Colombia.



**Simplification of immigration policies and removal of de facto barriers would create a friendlier environment for immigrant contributions to Colombia's economic development.** The government lacks any sort of strategy to attract and retain highly skilled international talent. The 2010 Mission on Foreign Policy recommended a long-term policy to be designed and implemented, but such policy was never drafted. This lack of a common vision prevents agencies, businesses and other institutions from prioritizing or even considering attracting international talent to contribute to their activities, policies, and regulations, let alone coordinating with other institutions to act cohesively. Many public programs, for instance those that support entrepreneurship and start-ups, require founders to have Colombian citizenship. Universities report difficulties in recruiting and retaining even highly qualified foreign professors to join their faculty because of cumbersome regulations. Moreover, opening a bank account can be a long and tedious task for any foreigner due to internal vetting processes carried out by financial institutions. Getting approval to send or receive international money transfers can also be challenging.

**Short term movement of people**

**While most foreigners do not need visas for short stays, regulations complicate activities related to working or providing professional services in the country.** Foreigners who want to work for a few days or months in Colombia have two options, each with their own complications. On the one hand, if they come from an eligible country, they can enter the country with no visa but cannot formally be paid in Colombia for any services. In this case, their Colombian client would have to pay them through an international transfer subject to a 20% income tax. Additionally, if their activities extend beyond 180 days, they will need to get a Visitor Visa which can take up to 30 days to be approved and costs USD 220. On the other hand, if the person comes from a non-eligible country, they are required to obtain a Visitor Visa. In this context, the film industry reported difficulties in bringing in international actors and crew to the country for short-term projects. Similarly, Universities complain about difficulties in bringing foreign professors into Colombia for short-term or one-time lectures or conferences.

**Colombia can also benefit from greater international mobility of professionals and workers into the country, particularly as speed is an advantage for innovators.** Visas were historically required for Colombians to travel abroad. Recent improvements in access to Schengen countries and greater connectivity have improved this situation, but more can be done. Facilitating international travel will allow Colombian managers and workers to quickly learn about foreign demand, new business opportunities, and new products. Colombian students and professors will learn about the latest theoretical and research advances, and engage in higher international collaborations. Colombian public servants will be exposed to current best practices and become part of international policy networks.

Colombia has double taxation treaties with many countries around the world, but these do not seem to include some of the major destination countries for Colombians: U.S.A, Argentina, Australia, Germany, and the Scandinavian countries. This may gain more relevance after this pandemic that has taught many people to work remotely at an institution or firm located on one side of the world, while residing on the other. Likewise, it would be beneficial to negotiate more treaties that enable transfer of pensions from/to Colombia. Some treaties exist (Uruguay, Argentina, Chile, Ecuador, and Spain), but treaties with major host countries such as Canada, U.S.A. and the U.K., still need to be negotiated.



### *Policy Recommendations*

Three issues need to be addressed in order to improve Colombia's capacity to attract talent. First, the rules for short-term movement of people should be simplified. Second, pathways to residency and citizenship should be clarified and simplified. Finally, regulatory and de facto barriers for foreigners to succeed in Colombia should be removed, and professional accreditation of persons with foreign degrees should be simplified.

**Colombia should launch and implement a comprehensive long-term policy to attract and retain international talent, as well as support greater professional mobility of Colombians, including the following:**

**Reduce obstacles to attract global talent:**

- Eliminate visa requirements for all visitors, except for a list of countries where significant risks have been identified.
- Allow visitors without visas to engage in a wider range of activities, including being formally paid for professional services.
- Let short term visitors (with or without visas) to participate in a wider range of activities, including formal payment of professional services.
- Create cases and tools in which the 180 days exemption can be extended.
- Create an inter-institutional public-private working group, in charge of identifying and addressing other regulatory and de facto barriers that affect the environment of foreign entrepreneurs and professionals seeking to work or do business in Colombia.

- Negotiate international social security portability agreements.
- This effort should pay special attention to simplifying the rules for professional accreditation and qualifications recognition to attract and retain talent in many disciplines.

**Proactively attract human capital with the skills the country needs in order to complement, enhance, and develop Colombian human talent.**

- Simplify categories of Migrant Visas, as well as the policies and procedures for medium- and long-term visits, for a more understandable and flexible system.
- Resident visas for people with postgraduate studies at top level universities and graduates of Colombian universities and their families.
- Resident visas for qualified people required by Colombian organizations (a multiple above the minimum wage).
- This strategy should take into account skill mismatch issues related to sector strategic bets, so that additional efforts can be exerted to recruit the most needed human capital.



**Negotiate more double taxation treaties, as well as treaties that allow for the transfer of pensions and other benefits**. **Improving the collection of information that documents immigration into Colombia will improve policy making**. More accurate information on immigrants, beyond Venezuelans, should be carried out to inform and improve policy decisions. Information on the place of birth, citizenship, age, gender, occupation, and other key attributes of immigrants will provide much needed understanding of trends in immigration over time.

**Diplomatic efforts to increase the international mobility of Colombian professionals should continue,** including negotiating reduced requirements for travel to destinations beyond Schengen, as well as improvements in air connectivity. ProColombia's infrastructure for the promotion of export, which includes business travel to trade fairs and connection with potential customers, could be expanded to include a wider range of exploration activities that allow for accelerated learning and the formation of international partnerships.

**Provision of funding to encourage international travel by academics would raise the quality and stature of Colombian universities.** Improving the exposure and research opportunities for Colombian academics contributes directly to the nation's technological capabilities. This should include expansion of sources of student travel funding by Colfuturo and other agencies. The allocation of funds to support the travel of academics to attend international conferences and to establish international research collaborations should be expanded in tandem.

## B. The Colombian Diaspora

**The diaspora can be an important lever of technological adoption and business development for its country of origin.**[9] The diaspora knows two worlds (origin and host countries) and can identify technological gaps and see them as business opportunities. While policymakers have historically viewed their nationals abroad as a loss, or even as "brain drain," improvements in communications and transportation technology have led to the recognition of both "brain circulation" and "reverse brain drain" as significant phenomena. (Saxenian, 2002) Recent research demonstrates that the diaspora can connect businesses across borders, promote trade and investment, create new businesses, and spur entrepreneurship, and transfer valuable new knowledge and skills. There are also case studies of the contributions diasporas have made to the economic development of a variety of countries, including Ireland, Israel, China, Taiwan, and India.[10] (Saxenian, 1996)



**Colombia should think about the economic potential of its diaspora beyond remittances**. The members of a diaspora are often motivated by more than just private returns, willing to take on higher risks or costs if it means contributing to the development of their countries of origin. Moreover, because they speak the language and understand the culture and institutions of their home countries, their contributions (from investments to entrepreneurship to education or policymaking) are typically well-informed.

**The diaspora can be particularly important to economies like Colombia that have yet to gain the confidence of foreign investors, due to a past history of economic isolation, violence, and war.** Early investments by the Indian diaspora in the 1980s played a central role in spurring subsequent investment and economic development in India, both by demonstrating the possibility of success, and by convincing government policymakers to reduce bureaucratic and other obstacles to investment. Similarly, Taiwanese diaspora members from Silicon Valley advised the Taiwanese government in the 1970s to invest in higher education, and to transfer cutting edge technology to support growth of the domestic semiconductor industry. Many also returned and invested in startups in Taiwan or built transnational businesses with offices in both Silicon Valley and Taiwan. Today Taiwan is the world's leading manufacturer of semiconductors. (Saxenian, 2016)

**The diaspora can be an important source of foreign direct investment (FDI).** As China developed its manufacturing capacity in the 1990s and 2000s, government representatives traveled regularly to Silicon Valley and elsewhere to recruit and connect diaspora members with business opportunities at home. As much as half of the foreign direct investment in China in the early 2000s originated within the Chinese diaspora. Political scientist Leblang (2010) tested the hypothesis that diaspora networks influence global investment by reducing information and transaction costs, and found that "even after controlling for a

[9] While a significant body of research shows a positive relationship between diasporas and economic development, the data needed to track diaspora contributions is not available consistently, broadly, and over long time periods. Most statistical evidence tracks correlations ex post facto. Correlations are, of course, highly suggestive but cannot demonstrate causality (Newland and Plaza, 2013.).

multitude of factors, diaspora networks have both a substantively significant effect and a statistically significant effect on cross-border investment."

**An analysis of the Colombian diaspora conducted for this project provides valuable insights into the characteristics and potential of Colombia's diaspora.** The project included a survey that attracted 10,000 responses from diaspora members in over 100 countries (Nedelkoska et. Al. The Diaspora's Potential for the Internationalization of Colombia, 2021). The following observations are drawn from the results of that project.

- **The Colombian diaspora is extensive: currently around five million Colombians, about 10% of the Colombian population, reside abroad.** Annual remittances from Colombians abroad represent 2,5% of the GDP. More importantly, as they live and work in host countries, they develop perspectives that are different from those of Colombians that never migrated. Some are learning to use more advanced technology at their jobs in foreign firms, some are learning cutting edge skills in foreign universities, some are immersed in a new language and a new cultural experience through relationships with non-Colombian partners, and some are even working on groundbreaking inventions and innovations involving international teams in the world's leading research hubs. While living abroad, many nurture affections for their families, friends, and the place they may still call home. They find meaning in getting involved at home, in making a positive impact and in being an agent of change for good in Colombia.

- **The Colombian diaspora is quickly evolving, and it is growing in ways that are hard to predict.** While a large diaspora already exists in the US and Spain, the Colombian community is growing fast in other destinations. In Chile, for instance, it grew from 4,000 people at the turn of the 21st century to 120,000 in 2017. In Europe, many Colombians who first arrived in Spain have migrated to the more developed E.U. countries and the U.K. Similarly, some Latin American countries are steppingstones for migration into Europe (e.g., Argentina, Chile, Venezuela, and Ecuador) and others for migration into the U.S. (e.g., Mexico).

- **The Colombian diaspora has significant human and social capital that can be mobilized in the process of internationalization of the Colombian economy**. The Colombian community in the U.S. is the most significant in terms of its breadth and the potential impact of engagement. Several factors contribute to this, one of them being the large size of the Colombian community in the U.S (1.5 million); others include the fact that they are geographically concentrated (mainly in the states of Florida, New York, New Jersey, and California), and well embedded in the American economy.

- **Colombians have found a place in the most competitive entrepreneurial circles of Silicon Valley and elsewhere, and they have achieved senior positions in foreign companies and corporations**. They are professionally engaged with Colombia in many ways, including the building of a new entrepreneurial class, the transfer of technology, the creation of remote work opportunities for Colombians, and the setting up of local business operations. A large second-generation of Colombians, better educated and better embedded than their parents, presents an opportunity for Colombia, but more effort may be required for their active engagement.

- **Colombians in the European Union and the U.K. also hold promise for the internationalization process**. The Colombian professional communities there are more dispersed. Colombians in Spain, although numerous (over a million), have a low rate of professional engagement with Colombia. Instead, Colombians in Switzerland, France, the U.K., Germany, Belgium, and Scandinavia, although representing smaller numbers, show much stronger engagement levels. Colombians in senior managerial positions are more common in the U.K. (18% of all Colombian senior managers in our global dataset) and Switzerland (12%), than in Spain (4%). Colombians in the U.K. are well positioned to deliver high impact engagements, and many are already involved in Colombia through investments, business startups and academic relations.

- **The engagement of the diaspora in Colombia is already extensive and there is a great desire to engage**. According to the findings of the diaspora survey, 1,860 Colombians (18% of all participants in the survey) were already engaged in activities such as long-distance professional support, investing in Colombia, starting a business in Colombia, humanitarian support or mentoring youth. The degree of interest for more engagement was overwhelming, both among those already engaged, and among those not yet active in Colombia. Close to 60% of those not yet engaged, expressed interest in becoming involved in activities that benefit the development of Colombia.



- **The more successful members of the diaspora express less interest in returning.** Diaspora members in more advanced economies, and those better employed and better educated, are less likely to think about returning to Colombia, than their less educated counterparts in less advanced economies and occupations, among other factors. This reflects complex complementarities between people's skills and experience, and the kinds of employment opportunities advanced economies can offer. These individuals can still contribute greatly to Colombia by staying where they are.

- **Colombian returnees (members of the diaspora who return to their home country) are frequently involved in startups.** Returnee-led startups can be extremely valuable as a way of diffusing technologies and new business models from abroad, even at low scales. Studies in Taiwan, India, Albania, and Mexico suggest that returnees have helped revitalize the sectors for which they accumulated experience abroad.

- **There are reasons to believe that the population of returnee migrants to Colombia during the COVID pandemic is substantial.** The survey found a significant number of respondents that had returned to Colombia because of COVID-19. This may represent a short-term opportunity to benefit from their experience, and learn about the challenges of using the more effective skills they acquired abroad.

- **Travel to Colombia appears to be correlated with greater engagement**. 9% of survey respondents made an *additional temporary* trip to Colombia because of the pandemic, unrelated to their involvement in Colombia. That trip increased the probability to engage professionally by 3%, and the probability of business engagement by 4%.

- **Wage and technology gaps with more advanced economies are important drivers of transnational entrepreneurship in Colombia**. In the interviews to Colombian transnational entrepreneurs that were carried out for the study, the most frequently mentioned reasons for setting up operations in Colombia were arbitrage opportunities due to *wage differentials* between Colombia and developed economies, opportunities to bridge *technology gaps*, and mobilizing established *networks* of potential business partners and employees in Colombia.

- **There are important barriers to diaspora business engagement in Colombia that need to be addressed.** These include the lack of knowledge of English among working Colombians, a scarcity of managers with international experience, the difficulties associated with opening and closing businesses, and tax regulations.

**It must be noted that Colombia has already implemented several strategies to promote the engagement of the Diaspora**. Some of those initiatives, such as the foreign policy mission in 2010 and the implementation of CONPES 3603 (Migration Policy), led to the strengthening and formulation of specific initiatives to tend to Colombian diasporas, such as *Colombia Nos Une*, which caters the diaspora with different services, including assistance with accrediting degrees, connecting with fellow Colombians and even buying real estate in Colombia. Other programs to channel remittances, help returnee plans, and increase services targeted at Colombians abroad have been implemented. In addition, the migration reform bill underway in Congress looks to better characterize migrant and returnee populations, improve the inter institutional coordination framework, strengthen returnee policies, and raise the profile of *Colombia Nos Une.*



**Finally, the government has made efforts to encourage Colombians to study at the world's best universities.** About 70% of the annual budget of the STI Ministry (MinCiencias) is directed to promote scholarships and loans for students pursuing PhDs abroad, focused mainly on STEM, which has supported around 8.000 students since 2009. In addition, COLFUTURO issues about 2,000 loans every year to Colombians who have ensured a placement in a graduate program at a reputable foreign university, with values of up to $50,000. COLFUTURO has funded 17.103 students since 1992, including nearly 2000 PhDs.

### *Policy Recommendations*

**Strengthen links with the diaspora to facilitate the flow of technology, knowledge, and opportunities into the country. The Colombian government should invest in building a relationship of trust with members of the diaspora, providing opportunities to develop networks that promote the deepening of its relations with the country:**

**Diaspora policy has the character of *managed serendipity***. Investments in deepening the connections with the diaspora today will probably lead to future opportunities for Colombia, but it is uncertain when, and in what ways. The key is to have an overall strategy, including mechanisms that map diaspora locations and skills, foster relationships of trust with its members (for example, by maintaining channels of communication and interaction with them), as well as provide concrete opportunities -and the clearing of obstacles- for its members to contribute to national development.

**Establish and maintain a system to identify and monitor members of the diaspora, necessary to strengthen the "Colombia Nos Une" program.** With the help of its network of consulates and embassies, the government should effectively track the development of its diaspora and gather accurate and up-to-date statistics of its evolution, both geographically and in terms of its socioeconomic and demographic characteristics. In addition to such registry data, an annual survey of the diaspora could explore their interests, sentiments, level of engagement with Colombia, intentions to return, and possible areas of interest for collaboration.

**ProColombia is ideally positioned to lead diaspora efforts.** ProColombia already is in contact with members of the diaspora in some locations, and would ideally expand its role in systematically tracking and providing a channel for communication with the diaspora. They would have a dual role: serving members of the diaspora with information and networking opportunities and facilitating diaspora contributions to Colombia.



**Strengthen the diaspora network to build trust.** The Colombian government should invest in building a relationship of trust with the members of its diaspora, by providing networking opportunities that encourage the deepening of relationships between its members and Colombia. Examples of activities that ProColombia could oversee might include: providing forums for interaction and sharing of information about business and other relevant experiences, creating sectoral sub-groups among geographically separate diaspora members, supporting mentorships between well-seasoned and younger diaspora members, providing opportunities for interaction with Colombian government officials, universities, businesses, and so forth.

**Support activities that stimulate diaspora travel and investment with a focus on knowledge and technology transmission.** The evidence suggests that travel to Colombia drives professional engagement. Programs such as conferences, grants for professional travel, and travel budgets for universities to attract visits of foreign researchers, could increase the engagement for those categories of people. Some countries have also had success with fairs that connect diaspora entrepreneurs with financial institutions, potential business partners and the government (Obando, Homez, & González, 2020).

**Establish an international network of successful Colombians abroad in business and in the technology sector.** Chile, for instance, has worked with highly skilled Chileans abroad through ChileGlobal- a Talent Network for Innovation. ChileGlobal promotes and facilitates the development of key economic clusters in Chile by reinforcing their links with Chileans residing abroad who contribute their time, experience, contacts, knowledge and skills to help globalize Chilean companies. With a network of 400 influential Chilean members abroad, ChileGlobal designs and finances business projects that introduce innovations in both the manufacturing and the service sectors, boost human capital to increase productivity, and promote technology and knowledge transfers to and from Chile. By 2011 it had helped create 76 companies with over 50 domestic and international partners (including private corporations, universities, and institutes of technology), and retained partial ownership in 23 of them. This includes leading companies in biotech and information technology (Agunias and Newland, 2012).

**Develop initiatives to acknowledge the achievements of members of this successful diaspora to bring them closer to Colombia.** Domestic media coverage and events that acknowledge achievements can help with brand recognition and, most importantly, they can help grow the networks of diaspora businesses at home. Such acknowledgement can also create role models for the new generation of entrepreneurs in Colombia. A serial entrepreneur, who was interviewed for this project, explained how he earned an innovation award in the U.S. that caught the eye of the Colombian policymakers. They promoted his work and engaged him in programs like Innpulsa, which attracted media attention, and expanded his network in Colombia. He cited this network as the main reason his companies operate in Colombia. His remote work platform matches some 500,000 job seekers, mainly from Colombia, with companies based mainly in the U.S.

**Promote internships for Colombians with diaspora entrepreneurs abroad.** Few diaspora companies have internship programs that employ young Colombians. These programs are costly and do not always pay off for the companies: they have high recruitment costs, including visa support, intensive training periods and short periods to benefit from it. It is an altruistic act, and this may be the reason why it does not emerge organically on a larger scale. However, the survey indicates that there is a great deal of interest among the established Colombians abroad in helping young professionals develop skills. The survey identified hundreds of members of the diaspora who mentor youth in Colombia or provide long-distance professional support, and many more who would like to get involved in mentoring. The Colombian government could use its consulates, as well as Procolombia offices, to initiate conversations with Colombian-run companies abroad and gauge their interest in experimenting with internship programs. In this way, the government can better understand what it would take for companies to offer such opportunities to young Colombians.



**Reassess startup grant programs to meet the needs of returning migrants**. The COVID pandemic is making Colombians abroad reassess their location decisions. Nedelkoska & Muhaj (2021) found that a temporary return caused by the COVID pandemic doubled the odds of considering returning to Colombia more permanently sooner, rather than later. While Colombia has programs that support startups (e.g., Fondo Emprender), it would be important to understand how they apply to the needs of return migrants, and whether the increase in the population of returnees creates a need to reassess the scale of the available funding. Focus groups with return migrants could help understand their needs and assess their match with funding programs. This should also include addressing the difficulties of starting and closing a business in Colombia. Many countries have established one-stop shops for such services.

**Planning for luck**. The number of Colombians residing abroad will most likely grow significantly in the next ten to twenty years. As more Colombians seek education abroad, learn foreign languages, and follow the established networks of family and friends in foreign countries, more will find it attractive to stay abroad. At the same time, it is hard to tell how, where and at what pace these communities will grow. Local shocks, such as changes in immigration policies of host countries, or global shocks, such as the COVID pandemic, will sometimes create countervailing dynamics and force people to think more about their future in Colombia.

**Design startup scholarship programs for the returning diaspora.**

**Review tax treatment to facilitate the return of the diaspora.**

**Continue with the proactive elimination of visitor and short-term visas and other barriers for Colombians to facilitate their mobility abroad.**

Making it possible for foreign spouses to acquire residency status similar to that of Colombians is important for making return less costly. If paths to naturalization or permanent residency for foreign spouses do not yet exist in Colombia, the immigration systems of Singapore and Hong Kong can be taken as examples. These countries have immigration policies that are not only friendly to the person, but to the family. They have understood that migration decisions are seldom made by a single person, and that people plan to move along with their entire families. By enabling the foreign partners of Colombians to work and live in Colombia, the government would prepare the ground for more internationalization at home in the long run.



**References**

Agunias, D. R. and Newland, K. (2012) Developing a RoadMap for Engaging Diasporas in Development: A Handbook for Policymakers and Practitioners in Home and Host Countries Migration Policy Institute and International Organization for Migration Washington, D.C. and Geneva

Clemens, M. A. (2013) "What do We Know about Skilled Migration and Economic Development" Policy Brief No. 3, Migration Policy Institute, Washington, D.C.

Constant, A. and Zimmerman, K., eds. (2013) The International Handbook on the Economics of Migrants Edward Elgar: Northhampton, MA.

Head, K. and Ries, J. (1998) "Immigration and trade creation: Econometric evidence from Canada" Canadian Journal of Economics 31, no. 1: 47-62.

Kapur, D. (2010) Diaspora Development and Democracy: The Domestic Impact of International Migration from India

Kerr, W. R. (2008) "Ethnic Scientific Communities and International Technology Diffusion" The Review of Economics and Statistics 90, no. 3: 518-537

Kerr, W. R. (2018) The Gift of Global Talent: How Migration Shapes Business, Economy & Society Stanford Business Press, Palo Alto, CA

Leblang, D. (2010) "Familiarity Breeds Investment: Diaspora Networks and International Investment" The American Political Science Review 104, no. 3: 584-600

LeBlang, D. (2011) "Another Link in the Chain: Migrant Networks and International Investment" in Plaza, S. and Ratha, D., eds. Diaspora for Development in Africa World Bank, Washington, DC

Nedelkoska, L., Assumpcao A., Grisanti, A., Hartog, M., Hinz, J., Muhaj, D., Protzer, Hausmann, R.E., and Saxenian, A. (2021) “The Role of the Diaspora in the Internationalization of the Colombian Economy.” Growth Lab, Center for International Development at Harvard University.

Newland, K. and Plaza, S. (2013) “What we Know about Diasporas and Economic Development.” Policy Brief No. 5, Migration Policy Institute, Washington, D.C.

Saxenian, A. (2002) “Brain Circulation: How High-Skill Immigration Makes Everyone Better Off” The Brookings Review, Winter 2002 Vol.20 No.1: 28-31

Saxenian, A. (2006) The New Argonauts: Regional Advantage in a Global Economy Harvard University Press, Cambridge, MA

Yu, S. G. (2002) “The Link between Immigration and Trade: Evidence from the United Kingdom” Review of World Economics 138, no. 1: 115-30

## II. Firms and Global Value Chains (GVC) as a channel for technological advancement

**Multinational production, encompassing firms that participate in GVCs, foreign firms investing in Colombia or Colombian firms investing abroad, can contribute to productivity growth in Colombia.**[11] Productivity technology spillovers will allow domestic firms already operating in the market to increase their productivity through upgrades in their products or production processes.[12] Multinational production can also lead to tougher competition in product and factor markets, which can result in a reallocation of resources away from less productive firms towards more productive ones. These resource reallocations force the least efficient domestic firms to exit the market, increase the market share of the most productive firms and motivate domestic firms to specialize in core advantage goods.[13]

**Colombia's low productivity reflects its specialization in low value-added commodities.** Growth in Colombia has been mainly driven by increases in commodity prices that attracted capital into the mining sector, rather than by total factor productivity.14 In 2019, 70 percent of the revenue of the top-50 companies[15] was generated from natural resources, banking and finance, followed by retail (10 percent) and manufacturing (3.6 percent) (figure 1). For other countries of the Pacific Alliance such as Mexico, almost 40 percent of the revenue was generated by manufacturing, followed by natural resources (21.9 percent), banking and finance (14.6 percent), and retail (12 percent). The share of revenues generated by the top-50 non-financial companies in manufacturing has decreased from 49 percent in 1995 to 12 percent in 2019.16

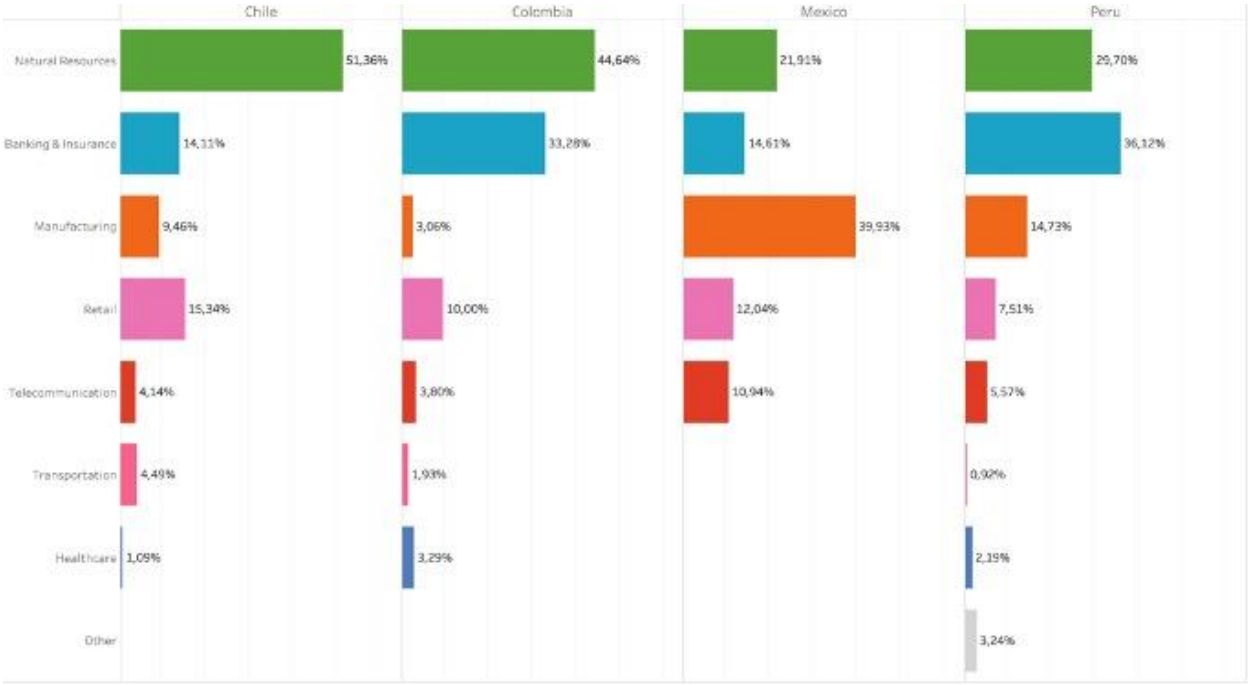


**Low productivity is explained by high prevalence and concentration of low productivity firms within and across sectors.** Firm-level productivity in the manufacturing sector remains far from the global productivity frontier: the average firm is only 5.5 percent as productive as the global productivity frontier (defined as the top 25 percent of firms in the United States).17 Firm level evidence suggests that productivity in Colombia is correlated with firm size and age.18 Data from the last manufacturing census suggest that micro firms or firms employing between 1 and 10 employees represent 87 percent of firms in Colombia compared to 50 percent in the United States. The employment share of Colombian micro firms is 32 percent, which is 8 times larger than in the U.S., where micro-firms represent 4 percent of total employment. These figures suggest a significant concentration of resources in micro firms in Colombia, which more frequently represent informal businesses that are not tied to the merchant registry. In terms of the cross size-age distribution (which due to data availability can be characterize only for non-micro plants), Colombian small firms are more likely to survive to old ages without becoming more productive:

11 Alfaro and Chen (2018).
12 Insert literature from Alfaro
13 Banerjee and Duflo (2005), Restuccia and Rogerson (2008) and Hsieh and Klenow (2009), Eslava et al. (2004). Barstelman, Haltiwanger, and Scarpetta, 2004; Foster, Haltiwanger and Syverson, 2008; and Syverson, 2004 and 2008.
14 Olaberria (2017).
15 Top-50 companies are defined as the 50 companies with the highest operating revenues on a fiscal year.
16 Source: Companies financial statements from Super Intendencia de Sociedades
17 Olaberria (2017).
18 Camacho and Conover, 2010; Eslava and Haltiwanger, 2012.

65 percent of firms employing 10-49 employees are aged at least 16 years, compared to less than 50 percent in the United States.19

**Figure 1: Distribution of operating revenues, top-50 companies**




*Source: EMIS Company Database*

**Within sectors, high dispersion of productivity across firms suggests inefficient allocation of resources.** Highly productive firms in Colombia (firms in the 90$^{th}$ percentile of the distribution) are 500 percent more productive than low productivity firms (firms in the 10th percentile of the distribution). This differential is higher than in other Latin America countries and the U.S., for which the differential is around 300 and 200 percent respectively.20 This disparity may be due to differences in the processes and technologies used by firms to produce and compete in the same industry, or to differences in the human capital or managerial skills. Most worrisome, high growth manufacturers in Colombia grow at a much slower pace than their peers in the U.S. 21

This chapter highlights how deepening the international links of both local and foreign firms could enable Colombia to breach the technological gap with the world's technological frontier. It emphasizes how Colombia could take more advantage of firms that participate in GVCs, FDI and OFDI, as channels to

19 Eslava, Haltiwanger and Pinzon (2019).
20 Busso, Madrigal and Pages (2012).
21 Eslava, Haltiwanger and Pinzon (2019)

increase productivity via technology transfers and efficient allocation of resources. It also highlights the importance of assessing the efficiency of State-Owned Enterprises (SOEs) to better understand their potential role in decreasing the technological gap and disciplining them to ensure that the benefits from competition are accrued.

## A. Participation in technology enhancing GVCs

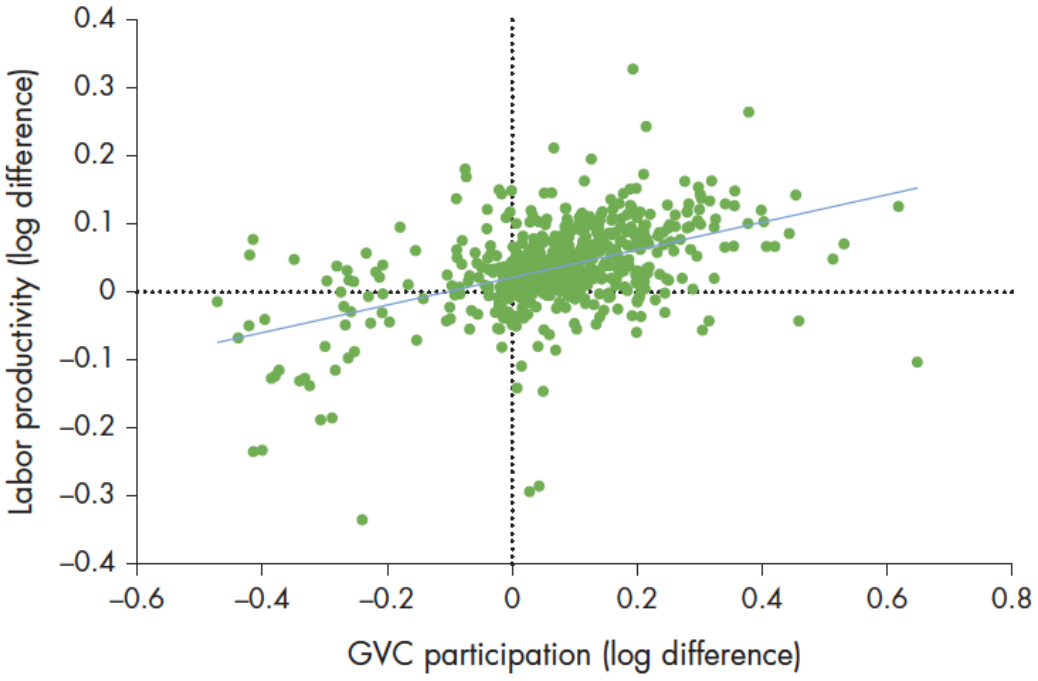
**Firms participating in GVCs contribute to better productivity gains and economic performance.** GVC participation represents the engagement of firms in at least one stage of a global value chain. The positive linkage between GVC participation and economic performance goes in both directions. The rise of GVCs is associated with income gains stemming from effects in productivity. These gains are higher than those generated by the expansion of traditional trade (



**Figure 2**).[22] Backward participation in GVCs, which measures the extent to which firms import inputs to produce goods or services that are exported, has a significant role in increasing productivity: a 10 percent increase in the level of GVC participation increases in turn average productivity by close to 1.6 percent.[23] Because GVCs are a firm-level phenomenon, the greater productivity gains are attributable to firms becoming more productive.[24] GVC firms, also called two-way traders, are firms that import intermediate inputs to export. In Colombia they represent on average 23 percent of non-coke-manufacturing firms. Their share of imported inputs on total inputs is on average 26 percent. Colombian GVC manufacturing firms were 38 percent more productive than non-GVC manufacturing firms in 2018. [25] The higher contribution of GVC firms to exports can be attributed to their higher labor productivity.

[22] Antrás and de Gortari 2017; Caliendo and Parro 2013.
[23] WDR analysis based on Constastinescu, Mattoo and Ruta (2019).
[24] World Bank (2019)
[25] Winkler, Arenas, and Espitia (2021).

**Figure 2: GVC participation is associated with growth in productivity**




*Source: Constantinescu, Mattoo, and Ruta (2019). Note: Each dot represents a country-year combination for 1995–2009. GVC participation is measured as the sum of the foreign value added, embodied in a country's gross exports (backward linkages) and the country's domestic value added, embodied in other countries' gross exports (forward linkages). Labor productivity is computed as the real value added divided by the total number of persons employed in manufacturing.*

**Hyper specialization and durable firm-to-firm relationships are two features that make GVC firms a powerful vehicle for technology transfer and increases in productivity.** GVCs allow countries to exploit their comparative advantage at different stages of production within sectors, escaping domestic supply and demand constraints.[26] They also allow better access to a greater variety of higher-quality or less costly intermediate inputs.[27] Unlike traditional trade, in which firms in different countries compete, GVCs are networks of firms with a common goal of minimizing costs of production, enhancing product quality, attracting demand or maximizing the profits of the entire production chain where they belong. In this context, the diffusion of technology, as a result of trade liberalization, is higher for trade within firms that are part of a GVC, as they have a shared interest in specializing in specific tasks, in exchanging technology, and in learning from each other.

One example of the positive impact of relational GVCs in Colombia comes from a program led by a multinational firm that induced suppliers to upgrade their coffee farms while planting trees and incorporating more efficient and sustainable practices. About 80,000 farmers and 1,000 villages benefited from the program: the quality of coffee improved, while farmers' profits increased by 15 percent.[28] Interdependent firms may share know-how and technology with suppliers, because such sharing boosts their own productivity and sales, leading to faster catch-up growth across countries. In addition, the long-term nature of the relationship between buyers and suppliers within GVCs makes firms particularly prone to benefit from learning-by-importing and learning-by-exporting through repeated interactions with highly productive firms at the global frontier of knowledge.

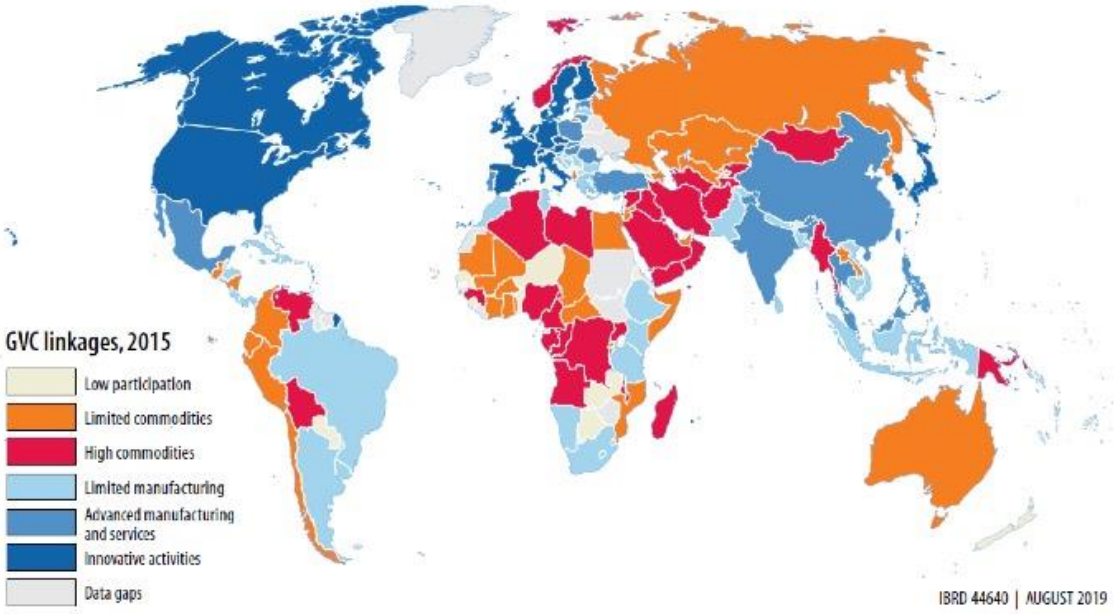


**The way Colombia participates in GVCs has prevented firms from fully benefitting from technology transfer and productivity spillovers.** The potential benefits from hyper-specialization and relational GVCs are not automatic and depend on factors such as the complexity of the product and the value chain where the firm participates, and the technical and managerial competence of firm suppliers, amongst others.[29] Evidence suggests that firms that produce knowledge-intensive inputs and exports that are high in domestic manufacturing content, have the strongest associations with growth in productivity. In contrast, trade in unprocessed agricultural goods and commodities has no systematic and statistically significant relationship with growth in per capita GDP. Benefits from relational GVCs are also related to the sensitivity and value of the intellectual property embedded in a lead firm's relationship with its suppliers. Lead firms can use relational dependence to prevent technologies from spilling over from their supplier network into potential competitors. Recent research from the mining industry has shown that the hierarchical form of governance typically prevailing in the mining sector has often served as an obstacle to learning and innovation.[30] Colombia still belongs to the group of countries that specialize in commodities GVCs and has been unable to substantially integrate itself into manufacturing global value chains (GVCs) over the past decades (Figure 3). The sectoral specialization in oil and other low value commodities, which are manly

[26] Doane 2015.
[27] Amiti and Konings (2007); De Loecker et al. (2016); Goldberg et al. (2010).
[28] Macchiavello and Miquel-Florensa 2019.
[29] Gereffi, Humphrey, and Sturgeon (2005).
[30] Pietrobelli, Marin, and Olivari (2018).

used in a variety of downstream production, explains Colombia's pattern of low backward (and forward[31]) participation in GVCs, which suggests limited benefits from GVC integration.[32]

**Figure 3: Colombia is specialized in commodity GVCs**




*Source: GVC taxonomy for 2015. See World Bank (2019, p. 21).*



**Objectives of higher integration into technology and productivity enhancing GVCs involves rethinking trade policy in Colombia, which has usually treated imports and exports as two independent activities.** Firms that participate in GVCs not only export but also import intermediate inputs used in their production and exports. In this context, trade policy should aim at eliminating import barriers such as unjustified tariffs and non-tariff measures, as well as costs associated to subpar trade logistics, which decrease access

[31] While Colombia's forward GVC participation is high, it is still lower than in most of its comparator countries. The share of Colombia's domestic added value, embodied in the exports of third countries as a percentage of Colombia's total exports, was 22 percent in 2015, substantially lower than in Chile and Peru. A closer look at the sectoral contribution to forward participation reveals that coke and chemicals contribute a larger portion to Colombia's forward participation, while the contribution of electronics, machinery, transport, and metals is substantially lower.

[32] Backward participation in manufacturing expanded by over 6 percentage points to 22.3 percent between 2011 and 2015, driven by chemicals, textiles, electronics, and mining. Despite this expansion, backward GVC participation in several sectors still lags behind comparator countries such as Peru and Chile, in particular in textiles and machinery, but also in food and chemicals.

to high quality inputs at competitive prices. By increasing the costs of production, these import barriers are preventing Colombian firms from competing in international markets and from taking advantage of the technologies embedded in imported inputs. The negative impact of import barriers is often magnified by trade through GVCs, where goods cross borders multiple times as part of a production chain. Trade policy recommendations aiming at reducing import barriers or ensuring effectiveness of existing schemes such as Plan Vallejo and Special Economic Zones, which allow exporters duty free access to inputs, are discussed in chapter 3 of this report.

**Higher integration into technology enhancing GVCs also involves building capabilities and skills and diversifying the basket of exported products towards more sophisticated goods and services**. Lower barriers in foreign direct investments and in the movement of people, services and capital will be key to achieve this. Recommendations in these areas will be discussed in chapters 1 and 3 of the report.

**Firms with GVC participation, upgrading and the magnitude of spillover effects towards local players also depend on a stable and open investment climate.** Relatively high effective corporate taxation rates in Colombia cohabit with a diversity of tax exemption mechanisms (i.e. special economic zones and reduced rates for specific activities) as well as burdensome and time-consuming procedures for paying taxes. This situation deviates entrepreneurs' time from productive strategic decision-making and distorts investment choices tied to specific tax exemptions. Enforcing contracts is also critical to maximize GVC spillovers into domestic firms in Colombia. Indeed, the substantial time and cost needed for resolving a commercial dispute, related to the quality of supplied goods through a local first-instance court (relative to the average in the region and in high-income OECD countries), may disincentivize Colombian firms from participating in GVCs that need to meet stringent quality requirements under hard deadlines, in order to buy intermediary inputs from local suppliers. As will be further discussed in chapter 3, trade facilitation performance becomes increasingly critical as firms upgrade into more complex GVCs requiring just-in-time cross-border trade transactions. Likewise, regulatory quality to avoid unnecessary non-tariff barriers is also needed for firms to gain access to the most efficient inputs, as well as to gain economies of scale in production, by allowing them to meet both local and international production requirements at a lower cost.33



**International institutions such as "Deep" Trade Agreements —preferential trade arrangements that go beyond simple market access are key for GVC integration and upgrading.** The expansion of GVCs is related with the deepening of trade agreements going beyond traditional market access issues.34 Relative to a situation where goods are produced in a single location and final products are traded internationally, GVCs imply an increase in trade flows involving the exchange of customized inputs, incomplete contracts and costs associated with the search for suitable foreign input suppliers. Compared to traditional trade, GVC trade creates new forms of cross-border external effects as governments' actions spill over through the value chain in more complex ways, which requires new forms of policy cooperation. Deep trade

33 GVC analysis for specific sectors/products will be key to understand main constraints for GVC integration and to design policy recommendations on how to address constraints. this type of analysis could be undertaken (as well as its recommendations implemented) by local level agendas such as those being worked through cluster initiatives.
34 Laget, Osnago, Rocha, & Ruta (2018), Rocha & Orefice (2014), Mattoo, Mulabdic, Ruta (2017).

agreements are an instrument to promote international cooperation in areas such as regulation, investment, competition, trade facilitation or subsidies, therefore allowing cross-border production to operate efficiently.[35] In addition, recent empirical evidence suggests that these provisions tend to be nondiscriminatory in nature and may reduce trade costs and discrimination also vis-à-vis outsiders, creating a positive spillover effect rather than diverting trade with non-members.36

**By reducing trade costs, deep trade agreements represent a vehicle for Colombia to promote domestic reforms that will allow further integration into GVCs.** The potential positive linkage between DTAs and GVC integration is also confirmed for Colombia. Colombia currently participates to 16 trade agreements with 81 trading partners which cover a set of border and behind the border policy areas, which regulate customs procedures, services trade, technical barriers to trade (TBT), sanitary and phytosanitary (SPS) measures, rules on investment, and competition policy, amongst others. Analysis across countries using a dataset on the content of specific policy areas included in preferential trade agreements suggests that deepening or further implementing provisions included in existing Preferential Trade Agreements (PTAs) signed by Colombia, would increase GDP and trade by 1 percent and 8.9 percent respectively.37 In addition, acceding into new agreements such as the CPTPP or signing new bilateral trade agreements with China or Japan would also be beneficial for trade diversification as a result of reductions in tariffs and non-tariff measures.38 The government should design a plan to implement and take advantage of existing and potential trade agreements. The plan should promote reforms in areas such as regulation, trade facilitation, competition, services, investment, and state aid, which can help Colombia overcome structural disadvantages in GVC participation and upgrading, such as its geographical distance from major trading partners, average domestic market size, low-skilled labor and capital endowments, and relatively less efficient institutions.39 For each area there should be an analysis on the current domestic regulation and on the steps that are requested to implement the commitments included in the agreements. The plan should also envisage a communication channel with the private sector on the potential impact and implications of the reforms that result from the agreements. Further description of the recommendations on how Colombia could further take advantage of deepening its agreements will be discussed in Chapter 4 (institutions for internationalization).



**Special Economic Zones, thought potentially useful for attracting investment, have been implemented in ways that introduce excessive distortions and costs that need to be addressed.** Special Economic Zones (SEZs) are structures that provide infrastructure support and favorable customs and tax treatment in a geographically delimited area (e.g. UNCTAD 2019). They are widespread across the world, and as such have become an investment attraction tool necessary for competitiveness. SEZs have the potential to solve market and policy failures within the delimited area, attracting investment that would be otherwise inhibited by those failures. They may also foster productive clusters, to the extent that there may be economies of scale and spillovers from the joint location of complementary businesses in the same area,

35 Antrás & Staiger (2012), Lawrence (1996).
36 Mattoo, Mulabdic and Ruta (2017).
37 Fontagne et al. 2021.
38 See general equilibrium analysis provided by Estrades and Osorio-Rodarte (2020).
39 World Development Report 2020 and Rocha and Ruta (2021).

and infrastructure support within its borders. Internationalization may result from streamlined customs procedures, and from a potential for exporting from having attracted new investment (World Bank, 2020).

However, SEZs also imply differential treatments with respect to firms outside the zone, creating productivity-decreasing distortions in the form of relative disadvantages for domestic producers who are outsiders to the SEZ (UNCTAD, 2019). Therefore, SEZs, whose purpose is to solve policy failures, are not substitutes for the reforms that do solve those failures across the economy, but are rather shortcuts to speed up those reforms in specific areas, while they can be implemented at a general level, given the constraints of political economy (World Bank, 2020). Their use must therefore be concurrent with an agenda to address costly regulations and economy-wide policies.

The international evidence about positive effects of SEZs on investment, job creation and internationalization are mixed. Though there are many examples of SEZs that have been successful in attracting investment, on average SEZs do not display exceptional performance relative to the rest of the economy, and examples also abound of SEZs that did not attract the expected investment influx or otherwise failed to exhibit extraordinary growth (World Bank, 2017, 2020; UNCTAD, 2019). In the end, the success or failure of SEZs as tools for growth, technological advancement and internationalization depends highly on their design and implementation. SEZs that are successful in attracting large investments, job creation and internationalization require a series of conditions: they should address specific market or policy failures and do so effectively; they should be large and closely connected to well developed markets for inputs and outputs, as well as to ports, and have clear strategic goals, aligned with fostering spillovers, clusters and value chains.



Colombia has an extensive regime of SEZs ("Zonas Francas"), where companies face a reduced corporate income tax rate of 20% rather than 35% or more, no VAT or custom duties for imports, and simplified customs procedures. Colombian SEZs have displayed mixed results (Rodríguez et al. 2021). Though exporters and large job creators are disproportionately located in SEZs, there is no clear causal relationship between the creation of the SEZ and the higher probability of exporting or creating jobs. 50% of SEZ investors, for instance, report that they would have undertaken the same project in absence of the SEZ benefits. And, although exporters have disproportionate presence in SEZs, most activity in these zones is aimed at the local market. The regulation of SEZs is not aligned with clearly established strategic goals or cluster-generation purposes. The country recognizes "free points", i.e. single-company SEZs that need not respond to specific locations. In Colombia free points double in number multi-company SEZs. Free points exacerbate concerns about a lack of regional strategic focus and potential for manipulation in the granting of SEZ status, which also imply greater potential for productivity-decreasing distortions relative to the general regime. Since they are allocated to individual companies, free points also fail to take advantage of potential economies of scale in infrastructure and streamlined procedures.

**Review, adjust, and focus Free Trade Zones (FTZs) and "Plan Vallejo" as key instruments for insertion into GVCs:**

- Establish strategic, clear, specific, ambitious, and transformative objectives for FTZs. Set and monitor clear internationalization goals, even if export requirements cannot be imposed (WTO).

- Reduce transaction costs for the use of the Plan Vallejo.
- Monitor the performance of Free Zones and Plan Vallejo, including the evaluation of support policies and complementary actions, to ensure that the strategic objectives are achieved.
- Review the institutional design, based on best international practices, to guarantee that all future FTZs are designed in a way that is conducive to positive spillover effects on the region, the value chain or the sector in which FTZ firms operate. As stated beforehand, the figure of single-company FTZs should be particularly reconsidered.
- Finally, SEZs should also be aimed at solving policy and market failures that limit the international mobility of human talent, thus impeding the spillovers that should result from it. That is, simplification of migratory procedures should also be an added value of SEZs (concurrent with the strategy recommended in this report, in order to reduce those barriers at the overall level of the economy).



## B. Attracting firms with needed technologies and knowhow

**Foreign Direct Investment (FDI) in sectors and firms that are catalysts for innovation, can help countries overcome technological and managerial skills limitations.** FDI has favorable effects on innovation practices and productivity of domestic firms due to greater market competition, spill-over effects of technological adoption, and superior managerial practices.[40] Other positive effects of FDI are increased job creation and tax revenues. Efficiency seeking investment in particular, an FDI that comes into a country to benefit from factors that enable it to compete in international markets, is also a complement for trade and a catalyst for GVC participation and upgrading, through the promotion of new exporting platforms through which the country could deepen its learning and technological catch-up.[41] Recent evidence suggests that investment generated from subsidiary firms that invest on new products and processes directly in the host country may generate positive effects on the overall innovation capabilities and productivity of domestic firms, rather than investment from subsidiary firms that look to adapt headquarters' processes and products into the host market.[42]

**In Colombia, multinational manufacturing firms outperform local firms on all fronts.** Analysis over 2007-2018, pulling data from the Annual Manufacturing Survey, shows that multinationals invested nine times more in fixed assets, hired nearly three times more labor, produced ten times the output and tripled labor productivity, compared to Colombian manufacturing firms. In addition, analysis on matched firm and custom data shows that multinationals have a 22% higher probability of participating in GVCs than domestic manufacturing firms.[43] In addition, their entrance is followed by more job creation, larger

40 Alfaro and Chen (2018).
41 Antras and Helpman 2004; Aitken et al. 1997; Fernandes et al. 2020; Freund and Moran 2017; Javorcik 2004; Keller 2010; World Bank 2019.
42 Giroud, Jindra, & Marek, (2012) and Crespo & Fontoura, (2007).
43 See Aranda and Li (2021) for more details on the analysis.

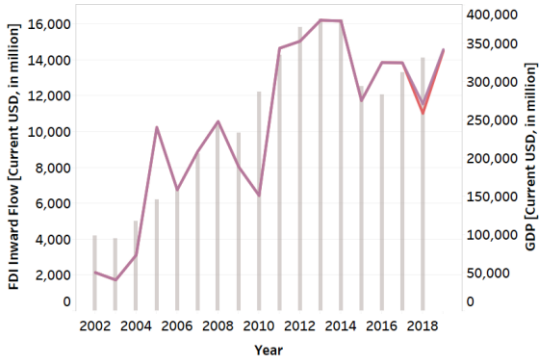
efficiency gains and greater international trade at the industry's regional level. They also generate positive spillovers to Colombian firms in the same industry and through forward linkage. These spillovers are mainly driven by investment in capital and skill-intensive industries.

**Colombia's FDI patterns and sectoral composition suggests the untapped potential for FDI to decrease the technology gap**

- Inward FDI flow to Colombia has been on a plateau of around USD 14 billion between 2015 and 2019[44] (Figure 4) due to the slow (and sometimes negative) growth of foreign investments in non-primary sectors, which failed to fill-in the gap left by mining industries.[45] Inward FDI stock accounts for a meager 14 percent of GDP, compared to Mexico and Peru, where this ratio is over 25 percent of GDP, or Thailand and Vietnam where it is nearly 30 percent. Between 2007 and 2018, exits of foreign firms more than offset the gains in investment and job creation from new entrants and led to 15 percent decline in the production of foreign firms (Figure 5).[46] Since 2013 the number of greenfield investment projects has increased annually, on average, but their average value has decreased.

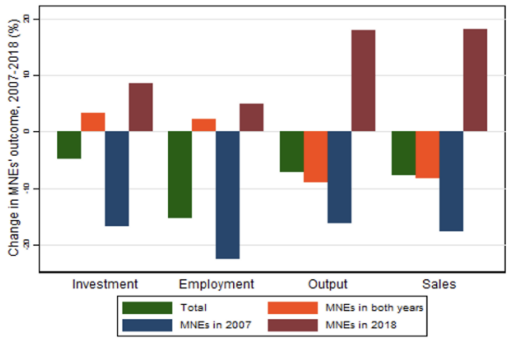


**Figure 4: Inward FDI flow to Colombia has been stagnant since 2015**




Source: Aranda and Li (2021) based on data from Banco de la República, UNCTAD, World Development Indictors.

**Figure 5: Multinationals' performance 2007-18**




Source: Aranda and Li (2021) based on data from EAM.

44 Banco de la República.

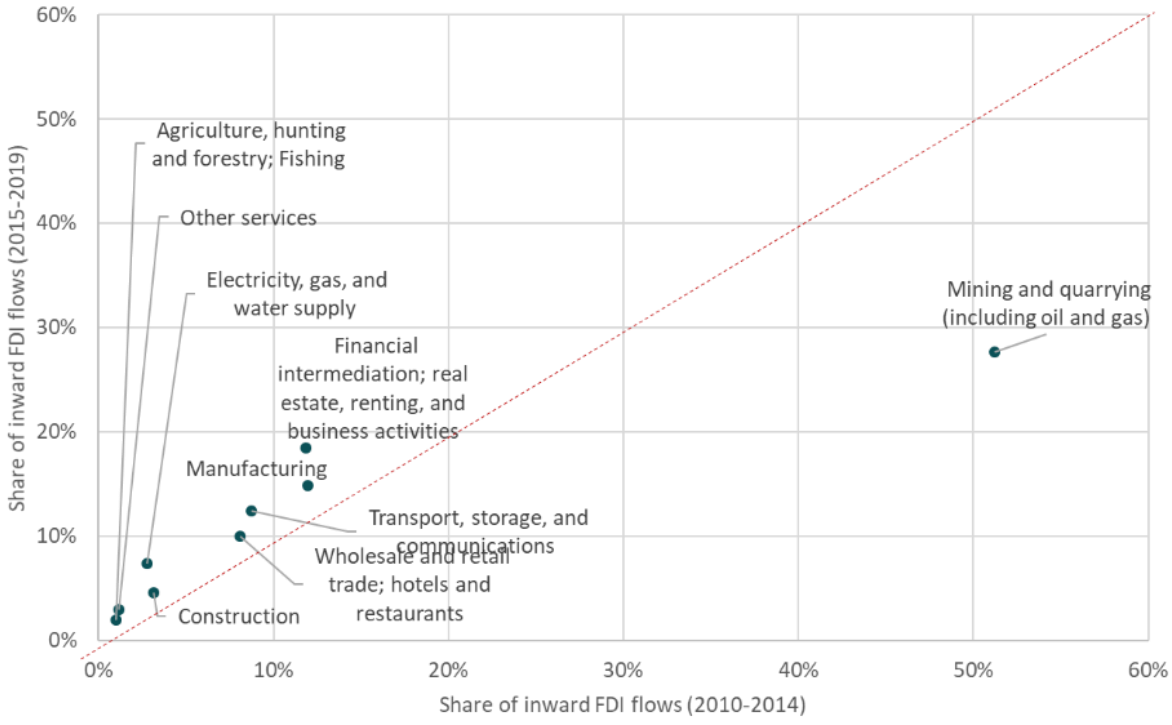
[45] In 2019 Colombia recorded USD 2,125 million FDI in the commerce, hotels and restaurants industry, with a growth rate of 85.7% compared with 2018. This represented 21.6% of non-mining-energy investment in the country and placed the sector in third place, after financial services and oil activities. The potential benefits of these investment flows have been jeopardized by the current pandemic, which has placed this sector in great difficulty given the lockdowns and social distancing measures that have been implemented by countries.

46 Part of this pattern could potentially be explained by competition, and by the fact that multinationals may substitute away from labor, introducing more capital- and knowledge-intensive production process.

- Extractive industries remain dominant in Colombia's inward FDI. The share of mining and quarrying industries in total inward FDI flow remained around 30 percent in 2015-2018, despite dropping from 50 percent in 2010-2014 (
- 
- Figure **6**). For countries with similar levels of income per capita, it is estimated that investments in search of natural resources fluctuate between 10 percent and 25 percent of total announced investments during the same period. It is known that the overgrowth of extractive industries can contribute to currency appreciation and loss of competitiveness of other sectors. Analysis also suggests that foreign investment in extractive industries is not as productive as Colombian firms, once capital intensity differences are accounted for.[47]



**Figure 6: Extractive industries remain dominant in Colombia's inward FDI, despite the diversification since the 2014 commodity price crisis**




Source: Aranda and Li (2021) based on data from Banco de la República and International Trade Center.

47 Aranda and Li 2021.

**Colombia has not sought FDI with a technology transfer perspective**

- Only 15 percent of the value of FDI activities not destinated to the local market are efficiency-seeking FDI, which is low compared with similar income per capita countries, where the expected value lies between 20 and 40 percent of total investments.[48] Even though FDI in the services sector has been increasing its participation since 2010, it was concentrated in consumer direct services, which accumulated 38 percent of FDI in 2019; while sectors related with professional and financial services represented 20 percent and manufactures only represented 11 percent. Between 2003 and 2012, 32.5 percent of subsidiary firms operating in the country can be classified as firms investing directly in new products and in the host country.
- Within manufacturing, FDI concentrates in a handful of industries, with a rising importance of labor-intensive sectors such as foods and beverages. The typical GVC industries with the most complex up and down steam linkages, such as automobiles and electronics, account for less than 5 percent of investments.



**The manufacturing sector could further benefit from spillover effects through backward linkages.**

- For the average Colombian manufacturer, a 10 percent increase in the market share of multinationals in the same industry is associated with an increase of labor productivity by 2 percent. Most notably, a 10 percent increase in the market share of multinationals in the upstream industries leads to an increase of labor productivity by 12 percent, suggesting that Colombia manufacturers obtain substantial efficiency gains from the higher quality intermediate inputs produced by multinationals. Evidence on the existence of backward linkages is mixed. Analysis at the sectoral level finds that spillovers through backward linkages are insignificant.49 However, recent research using more granular data shows that backward intra-industry linkages could increase the productivity of purchasing firms by 20 percent.50 These results suggest that in order to further benefit from FDI attraction, the government could target those manufacturing sectors that could act as generators of productivity and encourage the improvement of production processes and firm organizational environment through the transfer of knowledge. Efforts aiming at increasing absorptive capacity of Colombian suppliers to leverage foreign technology transfers and improving contract enforcement, to ensure that foreign providers source from local supplies, are also key to fully benefit from the spillover effects from backward linkages.

48 World Bank, 2017.
49 This result contrasts the experiences of other countries where local manufacturers benefit by supplying to multinationals (e.g. Javorcik 2004).
50 Perez Otavo (2021).

**The current institutional framework for the attraction and promotion of efficiency seeking FDI suffers from weaknesses related to low capacity and resources, poor coordination and definition of roles across institutions and lack of performance evaluation of key agencies.**

- The Ministry of Trade, Industry and Tourism has direct responsibility, among others, to formulate, adopt and coordinate policies related to the attraction and promotion of foreign investment, foreign trade of goods and services, and tourism (Decree 210, 2003). Policy making in investment attraction, promotion and retention is weak, given the lack of capacity and resources of the institution and the lack of coordination among the multiple agencies involved in the implementation of the FDI strategy.

- ProColombia is responsible for the promotion of non-traditional exports, investment, and tourism in Colombia, as well as for country branding. Its vision is to become the country promotion agency of reference in the world by 2022 (ProColombia, 2020). From an institutional perspective, ProColombia builds from important strong points, such as policy and priority alignment with MCIT, good connection with the private sector[51] and a professional and committed staff. However, ProColombia could further improve its promotional functions through a more efficient structure[52], increased coordination with other national and regional agencies working on investment promotion and with strengthened measurement and assessment tools, which could further inform and drive performance improvements and help maximize impact.



For Colombia's economy to further internationalize, create jobs and benefit from technology transfer, strategic efforts53 to attract more FDI and stimulate its growth need to:

**Diversify towards technology enhancing sectors and industries promoting backward and forward linkages.** Incentive regimes and FDI attraction instruments should be designed according to Colombia's level of development and the type of investment it wants to boost and should be evaluated periodically.[54] In the current environment of Covid-19, high competition and intense uncertainty, the government needs to identify niche sectors with high growth potential to attract investors interested in its near-shoring value proposition. Identification of such sectors should consider existing regional sector and/or cluster bets as a starting point and should also entail a detailed sector assessment, benchmarking against relevant competitors with similar value propositions, in the priority sectors to clearly demonstrate Colombia's higher long term attractiveness.

**Adapt its investment regulatory frameworks to international conditions and reduce regulatory uncertainty.** Given the strong competition among developing countries to attract efficiency seeking

[51] Volpe Martincus, C. and M. Sztajerowska, 2019.

52 Analysis from Volpe Martincus, C. and M. Sztajerowska, 2019 suggests that the internal basic operations of an IPA should respond to the areas of facilitation, promotion, intelligence and post investment. In contrast, the Investment Vice presidency of ProColombia is currently structured around world geographies.

53 The Government of Colombia has undertaken positive efforts in elaborating a comprehensive National Economic Development Plan for the period 2018-2022, with high-level FDI objectives such as attracting six mega investments and 15 anchor companies and promoting high-impact investments.

54 Incentives should envisage the possibility of tailoring specific offers on factors that are key for productivity enhancing investors such as human capital and infrastructure. These offers will require coordination with other agencies and ministries (e.g. SENA, Ministry of Education, Ministry of Transport, etc).

investment, Colombia needs to simplify excessive FDI regulations, reduce complexity of processes, mainly in the tax regime and reduce corruption.55 Improving regulatory predictability is also key. Multinationals are especially sensitive to costs related to policy inconsistency, which could generate dynamic inconsistency problems in the relationship between foreign investors and local subsidiaries. According to the private sector operating in Colombia, frequent changes in the tax law, resulting in lack of predictability of public agencies, have partially eroded investors' confidence in the recent past.56 Improving regulatory predictability requires close coordination between authorities, consultation with key stakeholders and strong adherence to good regulatory practices. Transparency, meaningful notice, comment procedures, evidence-based rulemaking, monitoring and evaluation will be required to sustain these actions.

**Dedicate efforts toward greater domestic competition and stronger linkages**. Evidence suggests that multinationals do not seem to benefit Colombian firms through backward linkages (even in the extractive sector). Nurturing spillovers through the domestic conditions of backward linkages, such as competitive markets and financial sector development, is as important as sufficient firm capability, in order to build supplier linkages with multinationals and benefit from economies of scale and technology spillovers.57 In Colombia, there is scope to strengthen multinational-domestic supplier linkages that could set the stage for more transfers of technology. There is also potential for Colombian companies to further integrate into GVCs through supplying to multinationals.58 59



### *Policy Recommendations*

**Strengthen a comprehensive FDI policy, incorporate dimensions of attraction, promotion, facilitation, retention, expansion, and productive links.**

- Strengthen the planning, coordination, responsibilities, and roles of those involved in FDI policy, such as ProColombia, local investment promotion agencies and other institutions.
- Improve information related to FDI and work towards the simplification and streamlining of procedures that investors need to follow in order to invest in Colombia.
- Ongoing review and evaluation of investment incentives to ensure that they strengthen efficiency and productivity.

55 Garavito A, Iregui, & Ramirez G., 2012

56 The recent Ley de Crecimiento Económico (Ley 2010 de 2019) implied a fiscal reform modifying a law enacted only a year before, in 2018. In addition, and according to the Government, there might be further changes in the very short term.

57 Alfaro (2015) and Rojec and Knell (2018).

58 Well-designed linkages programs broadly comprise of four related strands of action: (1) creating an enabling policy environment; (2) strategic attraction of FDI; (3) backward linkages promotion services; and (4) upgrading of local firm capabilities. As a first step, Colombia should conduct a demand-supply assessment of existing linkages between domestic and multinational firms, to identify the needs and potential for increasing local inputs and services of key players in strategic sectors. Based on the assessment, ProColombia in collaboration with Colombia Productiva could develop a program to strengthen multinational-local supplier linkages and could also design and implement a comprehensive database with accurate and updated information on existing suppliers to satisfy investors' needs.

59 In 2019 and 2020 the government implemented pilot programs to help domestic firms to supply to GVCs involved in the production aircrafts and shipyards (https://www.colombiaproductiva.com/ptp-servicios/ptp-convocatorias/para-proveedores?f1=&f2=Fondo%20Abu%20Dabi&f3=&f4=&f5=&f6=). The success of these programs will be key to allow upscaling.

- Implement a systemic response mechanism to retain investment, mitigate risks, and improve the investment climate.
- Create and improve economic link programs connecting FDI with local companies, promoting opportunities and improving local supply capacity. These programs should include matching strategies.
- Continue working towards an improved, predictable, and stable business environment.

**Colombia could design an integral FDI policy that tackles each phase of the investment cycle to leverage FDI benefits.** The country must work towards an integral FDI policy that combines pillars and features of attraction, promotion, facilitation, retention, expansion, and productive linkages to increase efficiency-seeking FDI, and attract firms that create new competences by investing in new processes and products in the host country. The key elements of such policy should **(i)** improve the legal and regulatory frameworks to reduce barriers to the entry and operation of private investments in the country; **(ii)** design incentive programs based on cost-benefit studies; **(iii)** strengthen institutions and authorities governing FDI policy to guide and monitor FDI development; and **(iv)** implement mechanisms that protect investors from arbitrary government behavior or adverse changes in regulations.60 The main recommendations in each investment phase are:



1. **Vision and Strategy: i.** Take a clear cascading approach for the strategic planning of investment policy, which is aligned with a national level economic plan and details the role of FDI in the economic development plan, including the objectives for FDI attraction and retention and how they should be achieved **ii.** Strengthen the existing authority (Comité Técnico Mixto de Inversión Extranjera Directa y del Sistema de Facilitación de Inversiones- SIFAII) to ensure that it prioritizes FDI policy within its agenda, and follows through the implementation, revision and update of the FDI strategy. **iii.** At the regional level, ensure that FDI priorities are aligned with local sectoral bets (ie. cluster initiatives) and missing or weak linkages in local value chains.[61]
2. **Strategy implementation: i.** Define clear, time-bound objectives and key performance indicators (KPIs) for FDI, in order to assess the progress of the strategy implementation, as well as to evaluate its effectiveness. **ii.** Define clear, time-bound implementation plans, together with the realistic identification of the specific human and financial resources that will be needed for execution. **iii.** Strengthen the Ministry of Trade's capacity to better articulate export promotion and FDI attraction policies, as well as the institutional capacity and personnel of the investment and services directorate of the Viceministry of Trade. **iv.** Strengthen ProColombia's structure62 and improve its

60 World Bank 2017.

61 Among others, broad-based improvements in infrastructure, human capital, institutional efficiency and regulatory quality, are crucial for regional investment climate, and transiting roles of different intensity levels between the national IPA (Procolombia) and regional IPAs at the various stages of investment, is also key to ensure coordination with regions in each stage of the investment process (World Bank, 2021)

62 To improve performance, regular benchmarking exercises with competitor and comparable countries should be implemented to assess basic profile and structure, mandate, key services provided, sectoral prioritization, budget, personnel, offices abroad, key performance indicators and monitoring and evaluation.

performance.63 **iv.** Strengthen the monitoring and evaluation of implemented FDI incentives to correct course and consolidate strengths. ProColombia has a centralized inventory of the incentives available for investors at a national level, which provides transparency, and is aligned with international best practices. However, there is little evidence of systematic assessments of the cost-effectiveness of these incentives in achieving targeted policy objectives. **v.** At the regional level, increase coordination between national and sub-national institutions and networks. Strong national IPAs in larger countries tend to have a more systematic working relationship with regional IPAs. The national IPA is usually best placed to coordinate and interact with investors during the attraction stages, but could decrease its role and dedicate itself more towards regional IPA once investors get established in a location. While ProColombia should dedicate resources to nation branding and overall marketing efforts, day-to-day problem solving for an established investor is better dealt with at the subnational level. Regional Competitiveness Commissions as well as cluster initiatives could be used to support this coordination. **vi.** Implement more training programs that promote knowledge transfer for regional actors to foster FDI attraction and retention at the local level.



3. **Attraction and Promotion: i.** Reduce the number of sectors that Procolombia actively promotes to attract FDI. The number of prioritized sectors the agency works with is above that of countries that promote both investment in search of domestic markets and in search of efficiency. Sector prioritization should be based on competitive benchmarking and should consider the post-COVID economic landscape. The definition, scope and value proposition of the prioritized sectors and industries should be the result of an interactive process between ProColombia and regional IPAs, and should take into account local diagnostics and sector/sub-sector bets (ie. cluster initiatives). **ii.** Strengthen ProColombia's strategy of attraction of capital to finance local projects.64 **iii.** Re-evaluate65 free trade zones and their different schemes according to international practices to understand whether they are an effective instrument to foster efficient FDI.66 Incentive regimes should be aligned with the type of investments the country wants to attract and should consider stability and predictability as basic pillars. iv. Revise incentive tools to assure they emphasize productivity-seeking interventions, such as human capital interventions, training (including SENA) and infrastructure, which will require interagency coordination.

63 For ProColombia increased transparency of operations and results, is critical starting by making public relevant key performance indicators and results of annual evaluations. Accurate metrics are required to assess progress in achieving the goal but current reporting presents shortcomings. For example, information on foreign investment in ProColombia's biannual report includes equity funds, which are not direct investment. It also includes foreign investment in infrastructure projects whereas most investment promotion agencies report productive FDI or, in the alternative, disaggregate FDI flows to avoid distorting the FDI picture. Also, results are not presented annually but aggregated from August 2018 to July 2020. While information on impact evaluation, such as returns on export or investment promotion is obtainable on demand, it is not publicly available. Finally, no systemic benchmarking with competitor or comparable peers is available.

64 As an investment promotion agency, Procolombia not only executes a lead generation strategy based on the attraction of greenfield or brownfield investment, but also promotes existing or structured projects looking for foreign capital. In this regard, Procolombia has to work closely with public entities that structure public projects such as concessions, public-private partnerships initiatives, and private actors such as associations and local investment banks, that also have the information regarding the inventory of private projects in search for capital. Although Procolombia doesn't have the mandate and capacity to provide assistance in project-structuring, it should work closely with the national government to strengthen a "bank of projects" that fuels constantly with private and public data.

65 Evaluation should include regulatory impact analysis to incorporate external (presumably negative) effects on competitors.

66 Beyond FTZ other instruments such as Megainversiones should be evaluated to assess their impact.

4. **Facilitation: i.** Facilitate the provision of information and assistance services to the investor, during the whole investment cycle. Procolombia and the Ministry of Trade have to generate efficient channels to execute procedures and consultations with the different public agencies that an investor has to deal with. **ii.** Continue the efforts to design and implement a Single Window for FDI that centralizes, simplifies, and rationalize the establishment and operational investment procedures.
5. **Entrance and Establishment**: **i.** Analyze the relevance of regulations that limit economic competition in services sectors such as banking, insurance, telecommunications, and logistics. FDI liberalization in these sectors can increase competitive pressure in established businesses, which can in turn deter excessive concentration, reduce uncertainty, and lower knowledge and technology transfer costs. **ii.** Review the procedures on the movement of people involved in businesses and the validation/accreditation of professional degrees in Colombia to facilitate the hiring process of qualified foreign professionals to meet investors' needs when local human capital is limited (see chapter 1).
6. **Protection and Retention: i.** Implement a systemic investment response mechanism to foster confidence to retain investment, mitigate political risks, and improve the investment climate. The Colombian government has to build the institutional framework to react in a coordinated way, to respond effectively to an investment claim or issue that is raised by a government conduct, before the conflict intensifies and transforms into a legal dispute. The institutional infrastructure must be able to identify, evaluate, determine, and implement the best course of action to respond to a specific claim efficiently, according to the laws, regulations, and international investment agreements of the country.[67]
7. **Local Economic Linkages:** The development of linkages between foreign investors and local businesses is a key element that different governments look for when designing FDI policies. In this area, Colombia should create and improve economic linkage programs that connect FDI with local businesses, fostering immediate opportunities and improving local supply capacity. These programs should include matchmaking and supplier development strategies.



**As in the case of GVCs, FDI enhancement also requires interventions aiming at improving business climate and development conditions.** These conditions include: deepening trade and investment agreements; improvement in quality infrastructure; availability of skilled labor; technological capacity (technological capacity of local firms and capacity to absorb the technology and skills of foreign investors), improvement of business climate (macroeconomic and political stability, institutional and tax quality); promotion of linkages between FDI and the local economy. Similarly, modernization of the national workforce, invest in infrastructure, and elimination of entry restrictions to the financial system are key for FDI enhancement.68

**Focus and enhance efforts to attract efficiency-seeking FDI, maximizing linkages, improving competition, and diffusion of technology to the country and the connection to GVCs.** In addition, focus

[67] Echandi and Gomez (2021) provide a series of policy options on how Colombia could customize good practices for setting up an investor-State Conflict Management Mechanism in the form of an Ombuds unit within the existing structure of the government. The Government is advancing in the diagnostic and governance design of the Ombuds figure.
68 Vallejo Almeida (2017).

investment attraction efforts on national priorities (e.g., green growth) as well as local ones (e.g., cluster initiatives).

## C. The other side of the coin: exploiting Colombia's business presence abroad

**Colombia can deepen its business presence abroad as a vehicle for technological and productivity catch-up.** Business presence abroad, or Outward Foreign Direct Investment (OFDI), is a source to increase technology, increase domestic capacity, upgrade production processes, boost competitiveness, augment managerial skills and access distribution networks.69 The process of internationalization of firms through increased business presence abroad not only benefits the firms that are internationalizing their production processes but also brings positive benefits to the home countries both directly through enhanced knowledge, capacity, and behavior of the firms investing abroad, and indirectly through spillover effects on other firms that supplying or buying from those investing abroad and the rest of the economy (e.g. input providers). Other potential impacts on the home economy include increases in domestic employment and salaries, and the reallocation of resources towards R&D.70



**OFDI increases innovation and exports in the home economy.** First, OFDI allows the firm investing abroad to exploit economies of scale and scope and to grow larger than it would have if limited to operating in its home market and therefore lower its unit costs of production and operation. Competition with firms in foreign markets, where the firms invest, may force them to improve efficiency and upgrade production processes. Both scale and competition effects may increase productivity by pushing uncompetitive firms to exit the home market. OFDI also enables firms to acquire knowledge directly, through mergers and acquisitions, joint ventures, or other forms of partnership. Knowledge can take the form of technology, production techniques, or management skills, and can be transferred directly to the parent firm through personnel exchanges, production shifting, or management rotation. Indirect knowledge transfer may occur through knowledge spillovers into other firms in the home economy, and may only accrue to those firms with the capacity to integrate such knowledge. Outward investment increases home country exports by opening new markets, creating opportunities for increased export-oriented production of either intermediate or finished goods as well as services. It may also be used to plug into GVCs through backward and forward supply-chain integration, stimulating exports of intermediate inputs and services.71

**Large firms and conglomerates in developing countries have often played a key role in breaching the gap with the world's technological frontier and, therefore, in transforming these countries' economies and their exports.** Everywhere in the world, exporters tend to be very large. Beyond the fact that export success causes these firms to grow, larger firms have the capacity to pay for the fixed costs of entering more markets and solving regulatory and accreditation rules. Moreover, these firms have financial,

69 Amann and Virmani 2014; Driffield and Love 2003, 2007.
70 Globerman and Shapiro, 2008.
71 Negative effects may arise if relocating production abroad lowers exports of final goods and services since foreign markets are now being served by local production. However, empirical evidence overwhelmingly confirms that outward investment and home exports are complements and not substitutes, and that OFDI increases home exports.

managerial, technological, and relational capital that makes it easier for them to invest in new products and processes, acquire firms abroad with needed missing capabilities, partner with global players and structure domestic value chains. In many countries, they have had outsized effects on the technological and export transformation of their host countries. Much of the diversification and upgrading of countries like Japan, Korea and Turkey happened within existing conglomerates rather than through the appearance of new ones. Samsung, for instance, started as a trading company, moved to food processing, textiles, insurance, and retail, and then on to electronics, shipbuilding, engineering, construction, and aerospace, just to name a few activities. South Korea's transformation was reflected in the transformation of its leading companies.72

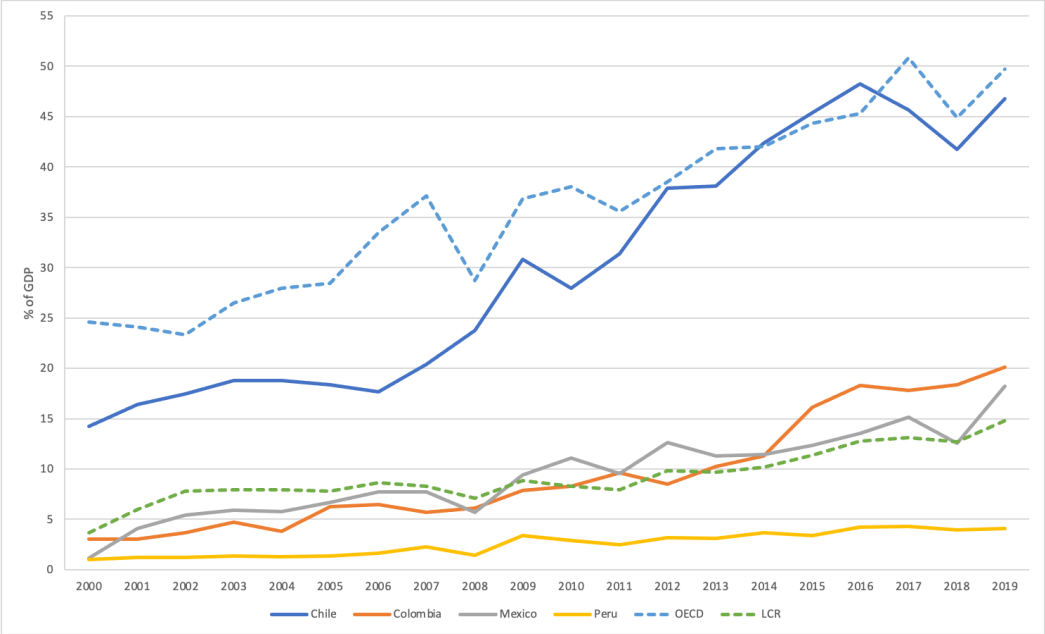
**Appropriate policies are needed to maximize the benefits of outward investment while minimizing its costs.73** Rigid factor markets for labor and capital may exacerbate adjustment costs. On the other hand, undeveloped factor markets, such as unskilled labor unable to integrate OFDI-generated knowledge and innovation or capital market imperfections (which causes OFDI to crowd out domestic investment in the home economy), may limit the potential benefits of outward investment for the home economy. Limitations on firm-level and economy-wide absorptive capacity may also limit OFDI home effects. Lastly, restrictive regulatory frameworks74 regarding OFDI stemming from concerns that capital outflows can worsen the balance of payments and capital availability in the home economy prevent countries to fully benefit from OFDI.75



**Although Colombia's investment abroad has significantly increased in the last decade, it still lags compared to OECD countries and is concentrated in very few sectors.** In the last 20 years, Colombia has increased its flow of outward Foreign Direct Investment (FDI), from USD 325mn in 2000 to USD 3,219mn in 2019. In the same period, the share of OFDI over GDP has increased from 3 percent in 2000 to 20.1 percent by 2019, overtaking the average share of the Latin American region (14.8 percent) and other Pacific Alliance members like Peru (4.1 percent) and Mexico (18.2 percent). Compared to the OECD countries (49.7 percent) and Chile (46.8 percent), however, Colombia still lags behind (Figure 7). At the sectoral level, the main sectors recipients of Colombia's OFDI are financial and business services, mining and quarrying, and manufacturing, with average shares of 33.5 percent, 21.1 percent, and 18.9 percent respectively. Compared to 2000-2009, the share of OFDI represented by the mining and manufacturing industries decreased by more than 30 percent, while the financial and business services increased by 10.6 percent (figure 8).

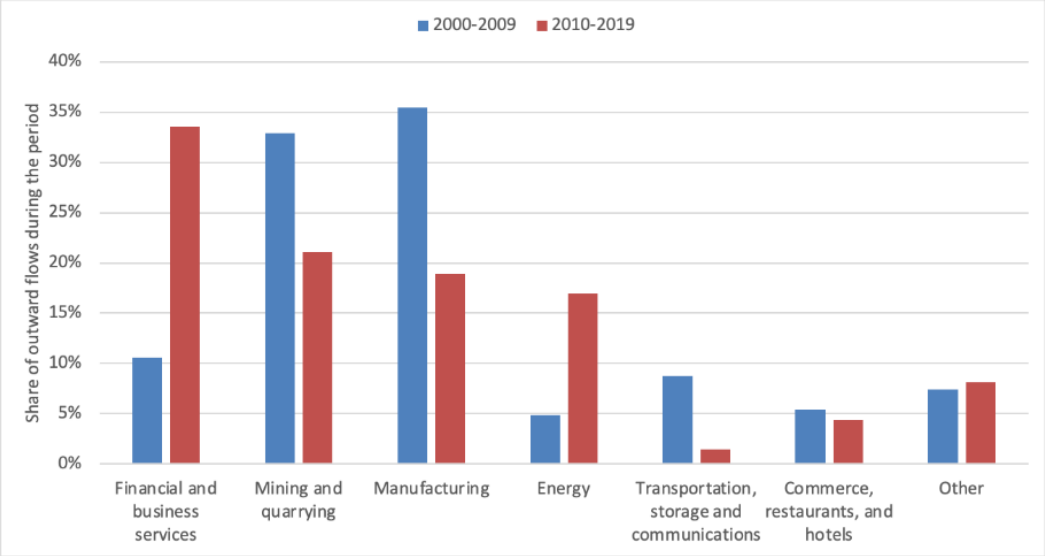
**Figure 7: Stock of outward Foreign Direct Investment as % of GDP, 2000-2019**

72 Hausmann, R. (2013).
73 World Bank Global Investment Competitiveness Report (2017/2018).
74 They can take the form of approval requirements, reporting requirements, foreign exchange controls, ceilings on investment amounts, or limits on destination sectors or destination economies.
75 Kuzminska Haberla 2012.




Source. Own elaboration based on (UNCTAD, 2020)

**Figure 8: Accumulated outflows of Colombia's FDI by sector**

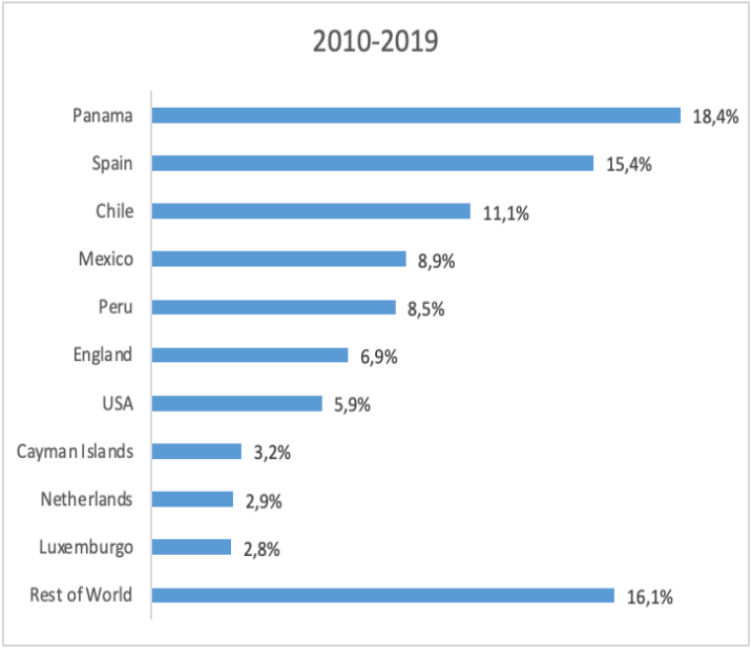



*Source. Own elaboration based on (Central Bank of Colombia, 2021).*
*Note: Other includes agriculture, hunting, forestry, and fishing; construction; communal services and other not classified.*

**Colombia's investment abroad is mainly destined toward countries with whom there is a Preferential Trade Agreement or a Bilateral Investment Treaty in Place.** Top 5 destinations of Colombian OFDI are Panama, Spain, Chile, Mexico, and Peru, respectively representing 18.4, 15.4, 11.1, 8.0 and 8.5 percent of total OFDI (Figure 9). Information from ProColombia confirms that firms prefer to invest in countries where they already export, so as to position themselves in the market, and prefer markets where there is a current trade agreement. Currently, there are 56 projects in USA, with ProColombia accompaniment, followed by 47 projects in Perú 37 in México, 19 in the north triangle (Guatemala, Honduras and El Salvador), and 8 in the European community. The business models in which these firms have invested are commercial offices, distribution centers, franchises, strategic alliances, and production plants.



**Figure 9: Accumulated outward flows of Colombia's FDI, by country.**




*Source. Own elaboration based on (Central Bank of Colombia, 2021).*

**The importance of Colombian SOEs in the domestic and international markets highlights the need to evaluate their current and potential role in fostering growth in productivity, by promoting the adoption of technology in public firms, which subsequently diffuse into private ones, and by improving the allocation of resources.** In 2019, Colombian national and subnational governments had ownership links to over 900 companies incorporated in Colombia, with revenues representing 14 percent of GDP.76 Several of these SOEs participate in contestable and commercial sectors that are otherwise commercially viable for the private sector (e.g. financial and insurance activities and mobile retail services).[77] Colombian SOEs also play an important role in international markets. Ecopetrol was classified among the global top 25 SOEs in 2020-2011 (Kowalski et al., 2013). Foreign companies with direct or indirect state participation from the Colombian government are located mostly in Brazil, Mexico, Peru, and Chile, and operate in the electricity sector (39 percent) and financial and insurance activities (21 percent).[78] The prevalence of SOEs in Colombia suggests that the government should asses their efficiency compared to their private counterparts, analyze their fiscal implications and design, based on these diagnostics, and plan to improve their role in reducing the technological gap, without crowding out the private sector. The proposed reforms should aim at reaching SOEs objectives of innovation through the adoption of technology that diffuses into private companies, while ensuring a level playing field in markets where the private sector is also able to produce the related goods and services.[79]



## Box 1: Competitive neutrality principles for Colombian SOEs

**Although State involvement can be sometimes justified in the domestic market, in the absence of competitive neutrality, advantages granted to SOEs by governments can affect competition.** State involvement can be sometimes justified in the provision of public goods that cannot be supplied by the private sector, in avoiding underproduction of goods with positive externalities or in efficiently managing some network sectors with high capital requirements and subadditivity costs (e.g. electricity transmission; transport infrastructure). Such involvement can take the form of direct subsidies, concessionary financing, state-backed guarantees, preferential regulatory treatment, exemptions from antitrust enforcement or bankruptcy rules, among others.80

**Ensuring that Colombian SOEs are subject to the same market discipline as private firms, and that there is separation between state ownership, policy making and regulation functions, remains a priority.** In

76 So far, 989 companies were identified using information from ORBIS, the Colombian Ministry of Finance (MHCP), and the Administrative Department of Public Service (DAFP). The methodology captures any entity with at least 10% participation of the government at any ownership layer. This diagnostic builds on preliminary information of the EFI SOE global database currently under validation.

77 Commercial sectors refer to competitive sectors characterized by small entry barriers; contestable sectors are characterized by moderate entry barriers, public goods, or externalities; and natural monopoly sectors are those that exhibit high entry barriers, economies of scale, or sub-additivity cost structures.

78 For instance, the ISA Group with a state participation of 60 percent is the largest energy transmission company in Latin America with networks and operations in Peru, Bolivia, Brazil, Ecuador, and Chile.

79 The discussion in Box 1 highlights the potential role of competitive neutrality in disciplining SOEs and therefore ensuring a level playing field.

80 In the absence of competitive neutrality principles, such advantages can hinder market access in importing countries or affect export competition (Kowalski et al., 2013; Hoekman and Nelson, 2020).

2016, the Colombian Competition Authority filed charges against an alleged cartel agreement among providers of petroleum-based construction materials, among which is found Ecopetrol.81 Regulations in Colombia enable SOEs to have preferential access to finance and other favorable treatments in some sectors (OECD Product Market Regulation).[82] Furthermore, there is no mandatory unbundling of competitive and non-competitive activities and no separation of the exercise of ownership rights from regulatory functions.

**The Government of Colombia is making progress towards improving SOEs accountability and management.** 83 Progress has been made in the removal of ministers and vice ministers from boards of directors to increase the presence of independent members and the adoption of a first self-evaluation process for board members. Mechanisms for continuous monitoring and evaluation of company performance have been developed and implemented. The "Annual Report of State-Owned Enterprises" has been prepared and published since 2016. In August 2017, the Intersectoral Commission for the Use of Public Assets was created, which aims at coordinating and recommending strategies to the National Government that harmonize the functions and exercise of state property. This allows for a progressive raising of corporate governance standards, propose, guide and coordination of mechanisms for the use of public resources, and for the coordinated move forward towards the consolidation of a centralized state property model and a regulatory framework that allows SOEs to compete on equal terms with private companies.

**Policy Recommendation**

Rotate and rebalance the government's portfolio of public companies, so as to promote the adoption and adaptation of technology in activities that involve discovery costs, network externalities or other market failures, which would ensure the principle of neutral competition in public sector projects or investments.



### *Policy Recommendations*

**Colombia needs to strengthen policy and institutions to fully benefit from the productivity and technology spillovers of OFDI.** In 2013 the government launched the strategy for the promotion of OFDI which defined ProColombia as the main promotion agency for OFDI, which included a set of actions to solve the main barriers that were encountered by firms investing abroad. Among others, these included visas and temporary entry of people, legal stability in the country of destination, costs of capital movements, and costs associated with the establishment and creation of a company.84 The strategy also highlighted the importance of having the necessary channels in place for the transmission of information between public and private actors on how they can take advantage of the benefits and guarantees of the different instruments and instances designed to promote investment abroad. An assessment of the state

81 This investigation is ongoing.
82 Additional cases are discussed in Carreras N., Galan C, and G. Pop, G. "Competition Policy Inputs for Colombia CPSD".
83 Quinones, Adriana, "Strengthening the role of the national government as owner of companies and improving corporate governance of state-owned enterpises", DNP, 2020.
84See Conpes 3731 de 2013.

of implementation of such strategy and of the success of programs implemented by Procolombia would be key to define the way forward, in terms of policy instruments and institutions that promote and facilitate OFDI.

**A revised/updated OFDI strategy should build on a diagnostic that identifies the obstacles toward OFDI, and on the role of the government in addressing them; it should also highlight the complementarities with FDI and trade strategies, so as to approach internationalization in an integrated manner.** International experience suggests that an OFDI strategy should also **i.** refrain from taking outward investment decisions or decisions on investment modalities on behalf of firms and instead identify the barriers that are preventing them from internationalizing: **ii.** encompass both public and private sector OFDI, with precise support measures within competitive neutrality principles given their different dynamics and specific needs; **iii.** structure the division of labor and responsibilities for promoting agencies based on firm size, given that large and smaller firms may have very different needs in terms of OFDI support; **iv.** include mechanisms such as public-private dialogue platforms, sector level working groups, advocacy groups for coordination on internationalization/OFDI within the government, and between government and the private sector; **v.** adopt market-based financial support measures for OFDI through grants, loans, tax incentives, insurance, and equity investment85; **vi.** revise these measures over time with new information and changing market conditions.



**Colombia should also support firms that engage in OFDI and conglomerates, for them to play a much more significant role in its internationalization strategy and, more generally, for these to become agents of change in the transformation of the Colombian economy.** Colombia has a large number of "multilatinas" - i.e. multinational corporations whose home base is Colombia. They could play a bigger role in the internationalization of the country. They should be encouraged, through moral suasion, to take on the challenge and report their achievements back to society. Many of the multilatinas are in non-tradable activities and they invest abroad as a way of accessing foreign markets with their products and capabilities. The spillovers into Colombia are related to their impact on technology adoption and adaptation, domestic employment with its impact on skill acquisition, foreign exchange earnings and taxes, not only in their own firms but through their value chains. These organizations could have a leadership role to play in internationalization strategies, as they first-hand experience the barriers in destination markets. This may lead to a positive feedback loop of increased collaboration, coordination capacity and growth.

**Call to action to Colombian firms to develop internationalization plans, including foreign trade and investments.** For the largest firms, including conglomerates and multilatinas, internationalization plans should include productive diversification programs (which may include the acquisition of companies) and the use of their networks and capacities to link other Colombian companies to the world.

85 Countries such as France, Germany, Spain, USA, Poland have specialized agencies providing these services. A case study in Poland suggest that for this financing to avoid subsidizing firms inefficiently or wastefully countries should establish guidelines to manage these measures which ensure that they (1) Only provide financial support in market segments in which private sector banks do not enter; (2) Only provide financial support as a minority shareholder, not as a majority shareholder; (3) allow the firm to buyout the state investor at any time; (4) Only provide financial support when there is risk sharing with the firm.

**The Colombian Government should consider developing a plan to improve the way it engages with large firms and conglomerates, as well as the terms with which it interacts with them.** In order to succeed, conglomerates need the government support and the acceptance of society. They must earn it through their contribution to the growth of employment, exports, and tax revenues, and to the country's technological transformation. The request for a plan focused on large firms and conglomerates should be coupled with policies that nudge (or even shove) conglomerates toward export industries that can grow beyond the limits of domestic markets. Its design and implementation should build on best international practices and should consider the successes and failures of plans implemented in other countries and regions. Moreover, the Government should be ready to help these companies along by solving coordination and public goods problems. However, any additional support on behalf of the Government should be conditioned by strict commitments in terms of investment and exports growth. In other words, the Government's support should be given as long as the private sector complies with very concrete and ambitious predefined goals that ensure that social returns are higher than private returns. This was the way in which the South Korean Government, for instance, collaborated with chaebols under Korea's industrial policy efforts.



**Increase the access of Colombian companies, especially MSMEs, to technological extension services, including preparation of the offer for international markets, suppliers' development, insertion into global value chains, digitalization, and development of managerial capacities**.

Expand the scope and scale of existing extension services:

- Develop a short, basic module focused on managerial skills86 designed to be implemented on a large scale. Most or even the entire program could be delivered online.
- Develop and implement sector-specific extension services programs for firms at the other extreme of the technological spectrum, focused on helping these companies adopt frontier technologies. These programs should involve universities, applied research and innovation centers with specialized knowhow. They will also need to be coupled with innovation vouchers, special credit lines for firms and incentives for universities and research centers to kickstart the market of technology (see chapter 4-Technology upgrading).
- Conduct an impact evaluation of *Fábricas de Productividad*87 to keep improving and scaling them.

**Review the business environment considering the internationalization plans of the companies to efficiently facilitate their execution. Reduce regulation that hinders competition.**

86 Interventions in this type of programs have been found to have the similar impacts as individual firm interventions, with a higher value-for-money.

87 *Fábricas de Productividad* is a technology-extension program, which is jointly executed by the Ministry through Colombia Productiva, the country´s network of chambers of commerce and a regional network of extensionists. The program´s objective is to improve intra-firm productivity to produce more goods and services with higher standards, through different interventions on operational productivity; energy efficiency; commercial management; quality management; labor productivity; product development and sophistication; digital transformation; sustainability; and logistics. The program was launched in 2019 after several pilots and its annual goal is to intervene 1,000 firms.

**Strengthen programs linked to the preparation and promotion of exports**:

Since technological advancement is both the goal of internationalization and a boost to internationalization, the strengthening of technological capabilities should be a priority of export promotion efforts. In addition to the current focus on helping firms connect with foreign costumers and adjust their processes to be fit for exporting, Procolombia's efforts should focus on supporting firms to: 1) attract international talent and/or foster internal talent for internationalization; 2) continuously monitor existing and potential demand, and conduct demand-driven quality improvements. Support programs for long term visits and tours to countries with high demand potential, which would be carried out by firms' agents, are examples of programs that would help fulfil those goals.

The following actions are of particular importance:

- Strengthen the quality of infrastructure in line with national policies of productive development and laboratories.
- Promote export productivity, sophistication and diversification programs based on evidence of their effectiveness.
- Create an online catalog with the foreign technical regulations for strategic sectors that must be complied by exporters.



**References**

Aitken, Brian, Gordon H. Hanson, and Ann E. Harrison. (1997). "Spillovers, foreign investment, and export behavior." Journal of International economics 43, no. 1-2: 103-132.

Alfaro, L., & Chen, M. X. (2018). Selection and market reallocation: Productivity gains from multinational production. American Economic Journal: Economic Policy, 10(2), 1-38.

Amann, E., & Virmani, S. (2015). Foreign direct investment and reverse technology spillovers: The effect on total factor productivity. OECD Journal: Economic Studies, 2014(1), 129-153.

Amiti, Mary, and Jozef Konings. 2007. "Trade Liberalization, Intermediate Inputs, and Productivity: Evidence from Indonesia." American Economic Review 97 (5): 1611–38.

Antr.s, Pol, and Alonso de Gortari. 2017. "On the Geography of Global Value Chains." NBER Working Paper 23456 (May), National Bureau of Economic Research, Cambridge, MA.

Antras, Pol, and Elhanan Helpman. (2004). "Global sourcing." Journal of political Economy 112, no. 3: 552-580.

Aranda, Y & Li, Y. (2021). *"Foreign Direct Investment and Investment Promotion: An Analysis for Colombia to Support the Internationalization Mission."* Background paper prepared under Colombia "*Mision de Internacionalizacion".* Washington, DC. World Bank.

Banerjee, A., and E. Duflo. 2005. “Growth Theory through the Lens of Development Economics.” In: P. Aghion and P. Durlauf, editors. Handbook of Economic Growth. Volume 1a. Amsterdam, The Netherlands: Elsevier.

Barstelman, E., J. Haltiwanger, and S. Scarpetta, 2004. “Microeconomic Evidence of Creative Destruction in Industrial and Developing Countries.” IZA Discussion Paper 1374. Bonn, Germany: Institute for the Study of Labor (IZA).

Brown, Drusilla, Rajeev Dehejia, Raymond Robertson, George Domat, and Selven Veeraragoo. 2015. “Are Sweatshops Profit-Maximizing? Answer: No; Evidence from Better Work Vietnam.” Better Work Discussion Paper 17 (March), International Labour Office, Geneva.

Busso M., L. Madrigal and C. Pagés. 2010. “Reported Tax Evasion and Resource Misallocation in Chile.” Washington, DC, United States: Inter-American Development Bank, Research Department. Unpublished document.



Caliendo, Lorenzo, and Fernando Parro. 2015. “Estimates of the Trade and Welfare Effects of NAFTA.” Review of Economic Studies 82 (1): 1–44.

Camacho, Adriana and Conover, Emily, Misallocation and Productivity in Colombia’S Manufacturing Industries (February 2010). IDB Working Paper No. 34, Available at SSRN: https://ssrn.com/abstract=1817206 or http://dx.doi.org/10.2139/ssrn.1817206

Carreras N., Borja C., & Pop, G. (2021). “Competition Policy Inputs for Colombia CPSD”. Background paper prepared under Colombia “Mision de Internacionalizacion”. Washington, DC. World Bank.

Central Bank of Colombia, 2021

Conpes 3731 de 2013.

CONPES. (2015). Política General de Propiedad de Empresas Estatales del Orden Nacional. Bogotá.

CONPES. (2018). Estrategia de Gestión del Portafolio de Empresas y Participaciones Accionarias de la Nación. Bogotá.

Constantinescu, Ileana Cristina Neagu, Aaditya Mattoo, and Michele Ruta. (2018). “The Global Trade Slowdown: Cyclical or Structural?” World Bank Economic Review.

De Loecker, Jan K., Pinelopi Koujianou Goldberg, Amit Kumar Khandelwal, and Nina Pavcnik. 2016. “Prices, Markups, and Trade Reform.” Econometrica 84 (2): 445–510.

Doane, Seth. 2015. “A Look at China’s ‘Button Town.” CBS Evening News, October 8. https://www.cbsnews.com/news /welcome-to-button-town-china/

Driffield, N., & Love, J. H. (2003). Foreign direct investment, technology sourcing and reverse spillovers. The Manchester School, 71(6), 659-672.

Driffield, N., & Love, J. H. (2007). Linking FDI motivation and host economy productivity effects: conceptual and empirical analysis. Journal of international business studies, 38(3), 460-473.

Echandi. R, & Gomez, D. (2021). *"Promoting Greater Investment Permanence and Expansion in Colombia: Considerations to Establish an Investment Ombuds Unit".* Background paper prepared under Colombia "*Mision de Internacionalizacion".* Washington, DC. World Bank.

Eslava M. and Haltiwanger J. (2012), "Young businesses, entrepreneurship, and the dynamics of employment and ouput in Colombia´s manufacturing industry", CAF Working Papers No 2012/08.

Eslava, M., Haltiwanger, J. C., & Pinzón, A. (2019). Job creation in Colombia vs the US:"up or out dynamics" meets "the life cycle of plants" (No. w25550). National Bureau of Economic Research.

Eslava, Marcela, John Haltiwanger, Adriana Kugler, and Maurice Kugler. (2004). "The effects of structural reforms on productivity and profitability enhancing reallocation: evidence from Colombia." Journal of development Economics 75, no. 2: 333-371.



Fernandes, Ana, Hiau Looi Kee, and Deborah Winkler (2020). Determinants of Global Value Chain Participation: Cross-Country Evidence," World Bank Working Paper No. 9197, March 2020.

Fontagne, Lionel; Rocha, Nadia; Ruta, Michele; Santoni, Gianluca. (2021). A General Equilibrium Assessment of the Economic Impact of Deep Trade Agreements. Policy Research Working Paper No. 9630. World Bank, Washington, DC.

Foster L., J. Haltiwanger and C. Syverson. 2008. "Reallocation, Firm Turnover, and Efficiency: Selection on Productivity or Profitability?" American Economic Review 98(1): 394-425.

Freund, Caroline, and Theodore Moran. (2017). "Multinational investors as export superstars: How emerging-market governments can reshape comparative advantage." Peterson Institute for International Economics Working Paper 17-1.

Garavito, A., Iregui, A. M., & Ramírez, M. T. (2012). Determinantes de la inversión extranjera directa en Colombia: Un estudio a nivel de firma. Borradores de ECONOMÍA, 714.

Gereffi, Gary, John Humphrey, and Timothy J. Sturgeon. 2005. "The Governance of Global Value Chains." Review of International Political Economy 12 (1): 78–104.

Giroud, A., Jindra, B., & Marek, P. (2012). Heterogeneous FDI in transition economies–A novel approach to assess the developmental impact of backward linkages. World Development, 40(11), 2206-2220.

Globerman Steven and Shapiro, Daniel 2008. "Outward FDI and the Economic Performance of Emerging Markets," Chapters, in: Karl P. Sauvant (ed.), The Rise of Transnational Corporations from Emerging Markets, chapter 12, Edward Elgar Publishing.

Goldberg, Pinelopi Koujianou, Amit Kumar Khandelwal, Nina Pavcnik, and Petia Topalova. 2010. “Imported Intermediate Inputs and Domestic Product Growth: Evidence from India.” Quarterly Journal of Economics 125 (4): 1727–67.

Hausmann, R. (2013) The Conglomerate Way to Growth, Project Syndicate. *https://www.project-syndicate.org/commentary/big-companies-and-economic-growth-in-developing-countries-by-ricardo-hausmann?barrier=accesspaylog*

Hsieh, C., and P. Klenow. 2009. “Misallocation and Manufacturing TFP in China and India.” Quarterly Journal of Economics 124(4): 1403-1448.

Javorcik, S. (2004). "Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages." *American economic review* 94, no. 3 (2004): 605-627.

Keller, Wolfgang, (2010). “International Trade, Foreign Direct Investment, and Technology Spillovers” Chapter 19, p. 793-829, Elsevier.



Kowalski, P. et al. (2013-04-24), “State-Owned Enterprises: Trade Effects and Policy Implications”, OECD Trade Policy Papers, No. 147, OECD Publishing, Paris. http://dx.doi.org/10.1787/5k4869ckqk7l-en

Kuźmińska-Haberla, Aleksandra (2012) “The Promotion of Outward Foreign Direct Investment - Solutions from Emerging Economies.” Prace I Materiały Instytutu Handlu Zagranicznego Uniwersytetu Gdańskiego, Prace i Materiały Instytutu Handlu Zagranicznego Uniwersytetu Gdańskiego, no. 31: 659–72.

Laget, Edith, Alberto Osnago, Nadia Rocha, and Michele Ruta. 2018. “Deep Agreements and Global Value Chains.” Policy Research Working Paper 8491, World Bank, Washington, DC.

Macchiavello and Miquel-Florensa (2019). “Buyer-Driven Upgrading in GVCs: The Sustainable Quality Program in Colombia,” CEPR Discussion Papers 13935, Centre for Economic Policy Research, London.

Mattoo, Aaditya, Alen Mulabdic, and Michele Ruta. 2017. “Trade Creation and Trade Diversion in Deep Agreements.” Policy Research Working Paper 8206, World Bank, Washington, DC.

Ministerio de Hacienda y Crédito Público (2020), Reporte Anual de Empresas de la Nación 2019, Dirección General de Participaciones Estatales.

OECD 2015, Colombia Policy Priorities for Inclusive Development, Better Policies Series.

OECD, 2018. Ownership and Governance of State-Owned Enterprises: A Compendium of National Practices. Available at: *http://www.oecd.org/corporate/Ownership-and-Governance-of-State-Owned-Enterprises-A-Compendium-of-National-Practices.pdf*

OECD, 2020: OECD review of the corporate governance of State-Owned Enterprises in Colombia. Available at: *https://www.oecd.org/colombia/oecd-review-corporate-governance-soe-colombia.htm*.

OECD, Roundtable on Competition Neutrality, Issues paper by the Secretariat, 2015, p. 4.

Olaberría, E. (2017), "Reigniting growth through productivity-enhancing reforms in Colombia", OECD Economics Department Working Papers, No. 1424, OECD Publishing, Paris, *https://doi.org/10.1787/dac4e274-en*

Perez Otavo, Daniela (2021). "Analysis of the relationship between foreign direct investment flows and productivity on manufacturing firms in Colombia for the period 2015 – 2018". Thesis Mater in Economics. Javeriana University. Bogota, Colombia.

Pietrobelli, Carlo, Anabel Marin, and Jocelyn Olivari. 2018. "Innovation in Mining Value Chains: New Evidence from Latin America." Resources Policy 58 (October): 1–10.

Quinones, Adriana, "Strengthening the role of the national government as owner of companies and improving corporate governance of state-owned enterpises", DNP, 2020.

Restuccia, D., and R. Rogerson. 2008. "Policy Distortions and Aggregate Productivity with Heterogeneous Establishments." Review of Economic Dynamics 11(4): 707-720.



Orefice, Gianluca, and Nadia Rocha. 2014. "Deep Integration and Production Networks: An Empirical Analysis." World Economy 37 (1): 106–36.

Rocha and Ruta (2021) Deep Trade Agreements and Global Value Chains in Latin America and the Caribbean. World Bank. Forthcoming

Rojec, Matija and Knell, Mark (2018). Why is There a Lack of Evidence on Knowledge Spillovers from Foreign Direct Investment? Journal of Economic Surveys, Vol. 32, Issue 3, pp. 579-612.

Syverson, C. 2004. "Market Structure and Productivity: A Concrete Example." Journal of Political Economy 112(6): 1181–1222.

Syverson, C. 2008. "Markets: Ready-Mixed Concrete." Journal of Economic Perspectives 22(1): 217–33.

Vallejo Almeida, G. (2017). "La Inversión Extranjera Directa: estudio de casos y lecciones aprendidas para su aplicación en Colombia". Bogotá. Universidad Católica de Colombia.

Martincus, C. V., & Sztajerowska, M. (2019). How to Solve the Investment Promotion Puzzle: A Mapping of Investment Promotion Agencies in Latin America and the Caribbean and OECD Countries (Vol. 735). Inter-American Development Bank.

Winkler, D., Arenas, G., & Espitia, A. (2021). *"Global Value Chain Participation and Upgrading: Opportunities and Challenges for Colombia"* Background paper prepared under Colombia "*Mision de Internacionalizacion".*Washington, DC. World Bank.

World Bank. (2014). "Corporate Governance of State-Owned Enterprises in Latin America: Current Trends and Country Cases". Available at: *https://openknowledge.worldbank.org/handle/10986/19983*

World Bank. (2017). Global investment competitiveness report 2017/2018: Foreign investor perspectives and policy implications.

World Bank. (2019). World Development Report 2020: Trading for Development in the Age of Global Value Chains, Washington, DC: The World Bank.

World Bank. (2021). Catalyzing Investment for Green Growth. EFI Insight-Trade, Investment and Competitiveness. Washington, DC: World Bank



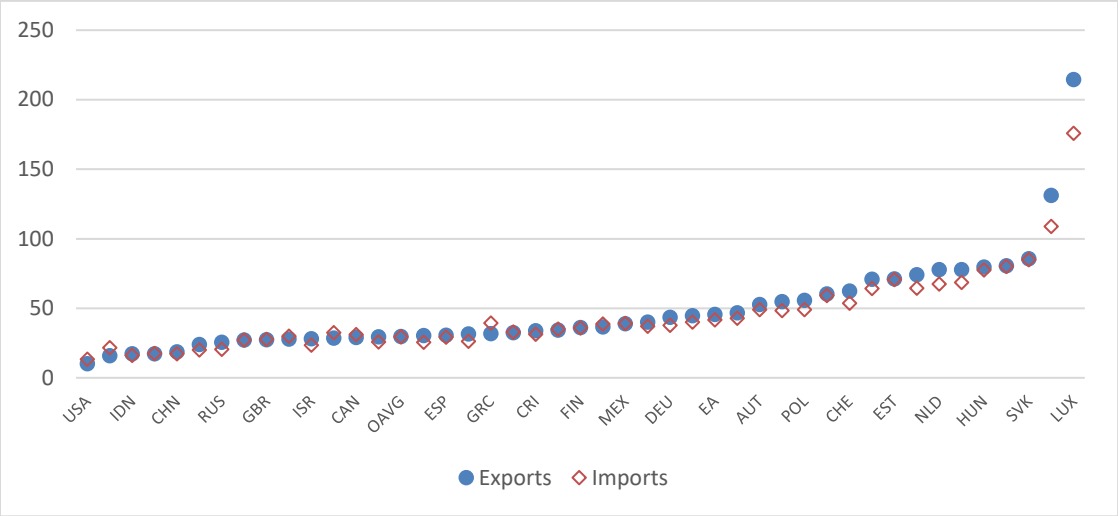
## III. Accessing embodied knowledge through goods and services, as well as "learning by trading"

**While there are many ways to boost growth in the medium run, a long-run boost to income growth can come from only one source - high and sustained growth in productivity, especially labor productivity** (Romer, 1990)**.** But what promotes productivity growth? As the introduction pointed out, productivity growth is tied to the adoption of better knowledge since the other key productivity enhancers – human and physical capital accumulation – eventually face diminishing returns (Solow, 1956). In short, technology – or knowledge, being it embodied, codified or tacit – is the key ingredient when it comes to permanently raising the growth of Colombians' productivity.

**Internationalization, in its various forms, is a critical channel through which Colombian firms can access the large supply of knowledge abroad**. Since Colombia is far from the global technological frontier, connecting the domestic and international economies more deeply is one way to boost the productivity of Colombian workers and firms. In short, deeper internationalization is critical to sustainably raising Colombians' material standard of living.

**Trade in goods and services is one of the most important vehicles for tapping into and leveraging foreign embodied knowledge** (World Bank, 2011). This chapter considers the economic mechanisms involved, the barriers in the operation of these economic mechanisms and the policy adjustments that could speed up productivity advancements. The mechanism by which trade in goods and services promotes growth-enhancing productivity gains varies between goods and services and between imports and exports.

**Figure 1. Trade in goods and services Exports/imports, % of GDP, 2020 or latest available**





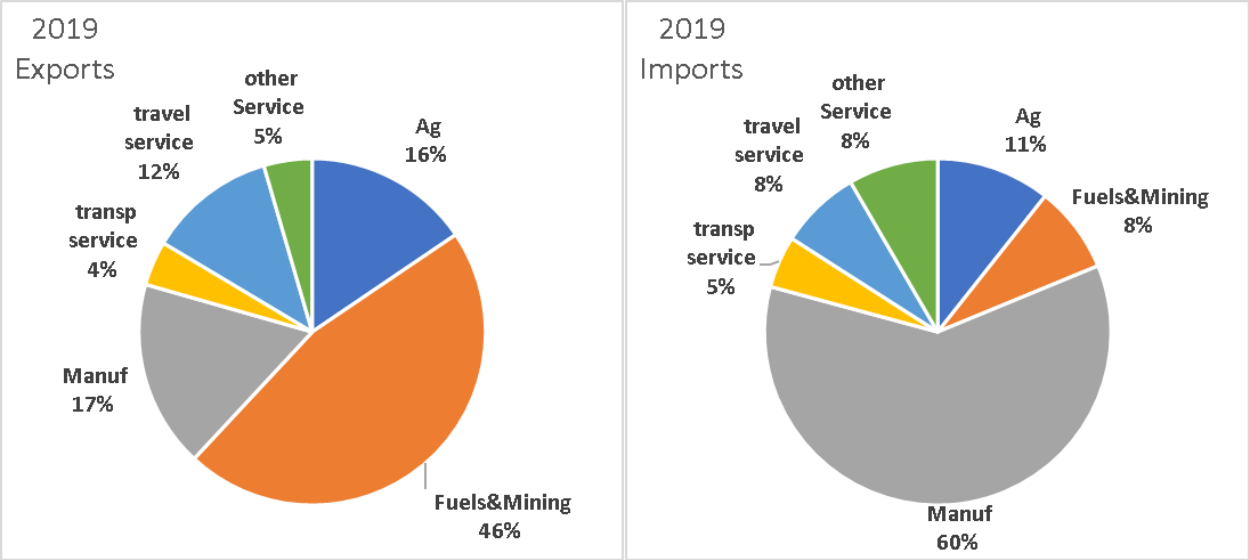

Source: OECD (2021), Trade in goods and services (indicator). doi: 10.1787/0fe445d9-en

**However, Colombia is weakly inserted in international trade.** On average over 2015-2019, trade represented around 38% of GDP for 201988, exports represented 15,8% of GDP, slightly below the level of 50 years ago, and imports increased relative to GDP but remain relatively low around 21,9% in 2019. The evolution of trade in Colombia contrasts with dynamics seen in more advanced and emerging economies, where the role of trade has increased significantly over the last 50 years (OECD, 2019).

Trade diversification is also relatively limited; Colombia depended on coffee exports in the 1970s, now relies on Oil and other minerals, and the 10 top destinations for exports of goods accounted for 70% of exported goods in 2019 (García G., Rivera P., & Robledo B., 2020). Arguello (2017) decomposed Colombian exports into its intensive and extensive margins during the period 1991-2011; extensive margin contributed only 37% to export growth, while the intensive margin accounted for 63%.

**Figure 2: Colombia's exports and imports of goods and services, 2019**

88 Data from WDI -World Bank.

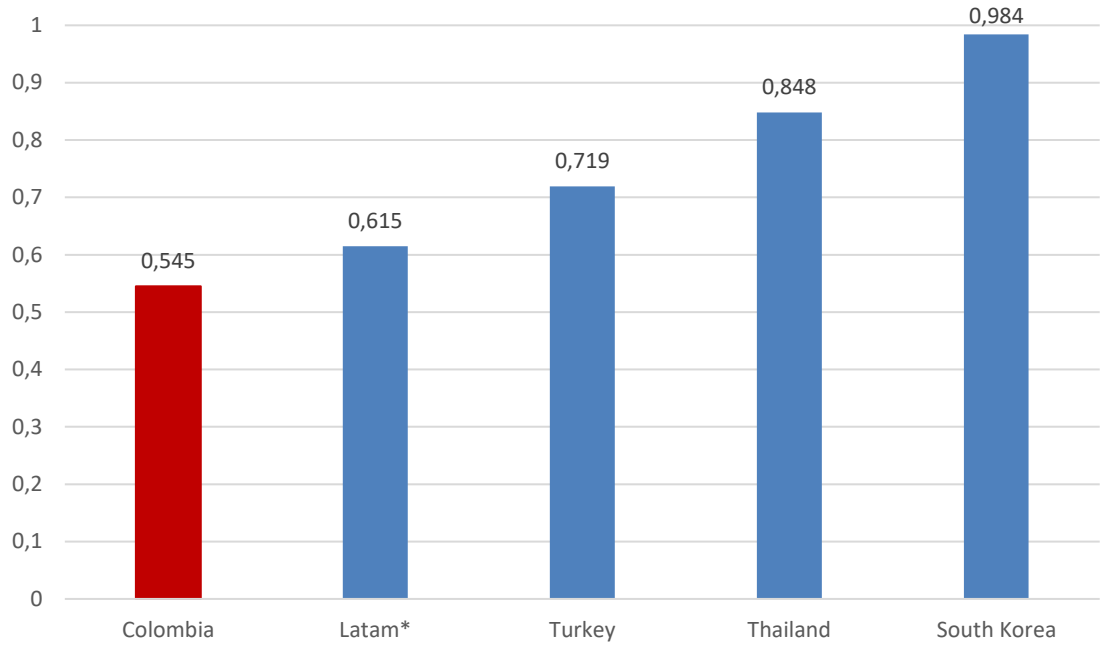





Source: WTO online data

**Colombia's exports are dominated by low complex primary goods while its imports are dominated by manufactured goods, as Figure 3 shows.** Fuels, mining products, and agriculture account for 62% of exports. Manufacturing goods accounts for only about 17% of the total. Service exports are important. The sum of exported travel and transport services (much of which is related to tourism) is not much smaller than that of all manufactured exports and equal to the share of agricultural goods. The import of agricultural and fuels & mining goods amounts to 19%, which is about equal to the share of service imports. Moreover, the complexity of Colombian exports remains low even among Latin-American countries. For 2018 the country occupied the 56th position of 133 countries in the Economic Complexity Index (ECI) ranking, which is calculated using the goods and services exported by countries.

**Figure 3: Economic Complexity Index (0-1) 2018**




Source: The Growth Lab at Harvard University. The Atlas of Economic Complexity. http://www.atlas.cid.harvard.edu. *For Latam Colombia was excluded, average calculated using a weighted average based on GDP in USD for 2018, DNP calculations.



**Trade in goods and services is fundamental for technological adoption and advancement in several dimensions**. Imported goods and services frequently embody new or improved technologies, and more generally, they are vehicles for productivity growth. Exporting also triggers technological advancement.

**Imported manufactured goods used by local producers often embody new or improved technologies.** Trade enables the access of local producers to imported inputs in the technological frontier. Their technological advancement may manifest in the form of lower prices or improved quality, and thus results in productivity gains for the local producer. The Colombian trade liberalization of the 1990s, for instance, led to improvements in the quality of local goods that used imported inputs.89 This is one of the key channels by which the import of goods boosts the productivity of the Colombian economy (Mogro, Pinzón, & Carrillo, 2020). Some of the imports of primary goods similarly boost productivity by providing access to competitive prices inputs. Imported consumer goods boost Colombian's well-being by lowering prices and expanding the variety of choices. They are thus important, but not directly linked to productivity growth.

**The import of services can boost the competitiveness of Colombian exporters of goods and services**. Exporting means 'doing business abroad'. Whether firms export goods or services by finding clients, sending them products, and getting paid, it involves 'connective' services: cloud computing services, legal services, telecoms, commercial banking, insurance, air transport, maritime transport, courier, cargo handling, storage and warehouse, freight-forwarding, and customs brokerage services. Given the complex

89 (Fieler, Eslava, & Yi Xu, 2018)

nature of such services, foreign service providers who sell to the whole world can often offer Colombian exporters far more competitive price/quality packages (OECD, 2020).

**Exporting is also a vehicle for technological advancement.** Firms and workers in export sectors typically have higher productivity (Cáceres, 2013). To some extent, this reflects a selection effect (only the most competitive manage to export), but exporting does boost productivity directly in two ways. First, exporters are forced to respond to a demanding international market (WEF, 2015). They are driven to keep up with best practices, international production standards, the latest technology, and to use world-class intermediate goods and capital equipment. They are faced with customers of refined tastes and requirements. The pressures of exporting also drive them to learn about advanced marketing practices and international production standards. Second, exporting provides access to much larger customer bases and thus allows economies of scale that could not be realized when selling only to the local market.

**Imports are also a crucial source of market competition.** Competition has a disciplining effect and represents a strong incentive in the process of adoption and adaptation of technology. Without competition, incumbents have scant incentives to upgrade their production. Not only is competition crucial to protect those incentives, but import competition frequently also teaches new technologies. Moreover, the survival of incumbents with inferior technologies is enabled by the lack of competition, to the detriment of final consumers and to those further down the value chain, causing negative technological effects and an anti-export bias in those activities. In fact, low productivity producers are able to survive and grow in Colombia, which is in itself a sign of weak competition90. Inferior technologies also mean low salaries, implying that workers may also end up trapped in low-paying jobs. There is evidence that the trade liberalization episodes of the early 1990s led to increased innovation and technological improvement in Colombia and other Latin American economies.9192 93949596 97



**The positive effects of competition, and import competition in particular, have limits.** First, the effects of competition are heterogeneous across firms with different productivity levels. It is the firms in the middle and upper part of the productivity distribution that tend to engage in technological improvement as a result of increased competition. Relative to those whose technology lags the most, intermediate, and high productivity firms are better equipped to escape competition via innovation. Low productivity producers are more likely to have to contract or exit the market as a result of competition. Although this has a net positive effect for the economy, by permitting the reallocation of the productive resources from those uses with poor returns for the producer and the workers, to higher productivity ones, it also creates short run losses for those who find themselves in a period of transition between those two uses. For some, the transition may be extended, or never even get to see a closure. Second, while competition creates

90 (Eslava, Haltiwanger, & Pinzón, 2019) and (Eslava & Haltiwanger, 2020).
91 (Fieler, Eslava, & Yi Xu, 2018) and (Eslava, Haltiwanger, Kugler, & Kugler, 2013)
92 (Bustos, 2011).
93 (Iootty, Pop, Pena, & Stinshoff, 2020)
94 (Eslava, Haltiwanger, Kugler, & Kugler, 2013)
95 (Eslava, Haltiwanger, & Pinzón, 2019)
96 (Eslava & Haltiwanger, 2020)
97 (Levy, 2020)

pressures to innovate, it also erodes the profits born from innovations, thus moderating the benefits that come from innovating.

**These limits to the benefits of competition, however, do not imply that protection from international competition yields positive returns for the economy.** Protection provides a benefit to one industry but hurts consumers and other industries down the production and value-added chain, by increasing the prices of imported goods, and thus allowing local producers to raise internal prices; protection hurts the final consumer and forces producers downstream to face higher input costs. Rather than imposing these costs, policy must deal directly with the specific undesired consequences of international competition. Retraining opportunities and services that help workers effectively transition to better jobs are crucial to ensure that those workers of firms unable to compete are indeed able to take advantage of new and better opportunities, rather than be left unemployed (IMF, 2017). Unemployment benefits or other forms of compensation, while in the transition period, which must also be considered crucial are public capabilities to aid firms upgrade their technologies98, based on direct and transparent support policies instead of barriers to trade99, such as public procurement and publicly funded research initiatives; examples of these are the Defense Advanced Research Projects Agency (DARPA) in the US or, more recently, the Operation Warp Speed (OWS) initiative launched to accelerate the development, production and distribution of vaccines and therapeutics to fight COVID-19 pandemics. Effective sunset clauses are a must for support policies intended to enable the emergence of new firms and activities.



**While legal competition is good for innovation and technology adoption, illegal and unfair competition must be fought against**. Practices as smuggling, dumping or underinvoicing imports erode the efforts of firms to invest in new technologies and increase productivity. Thus, efforts to increase legal and formal competition should be accompanied by effective efforts to fight smuggling and unfair trade practices.

**The ability of the economy to take advantage of trade in goods and services as a tool for technological improvement is impacted by transportation, logistics, and transaction costs that may make importing and exporting expensive, as well as non-technical non-tariff barriers to imports**. **High tariffs in specific goods not fully justified on corresponding practices in commercial partners also generate higher costs than benefits.** These restrictions limit competition in the segments under protection and increase costs for those working downstream from these activities. This chapter presents recommendations to reduce these barriers to trade.

98 Pilot programs of technological extension implemented in Colombia have showed positive effects on management practices. The pilot's impact evaluation implemented in the automobile parts sector in 2012 showed that both individual and group-consulting lead to improvements in management practices of a similar magnitude (8 to 10 percentage points), in which the group-based approach dominates on a cost-benefit basis (Iacovone, Maloney, & McKenzie, 2018).

99 Eslava, Laajaj and Kinda (2019), for instance, find that the computerization of imports in the 2000s led to significant reductions in import underreporting. Comparing computerized ports to those not yet computerized, they find that computerization led to an increase of 2.4 percentage points in the ratio of value of imports as declared in origin to their value declared in Colombia. This would imply an increase from an average 81.4% previous to the reform to an average 83.8%.

## A. Tariffs and non-tariff barriers to trade (NTBs)

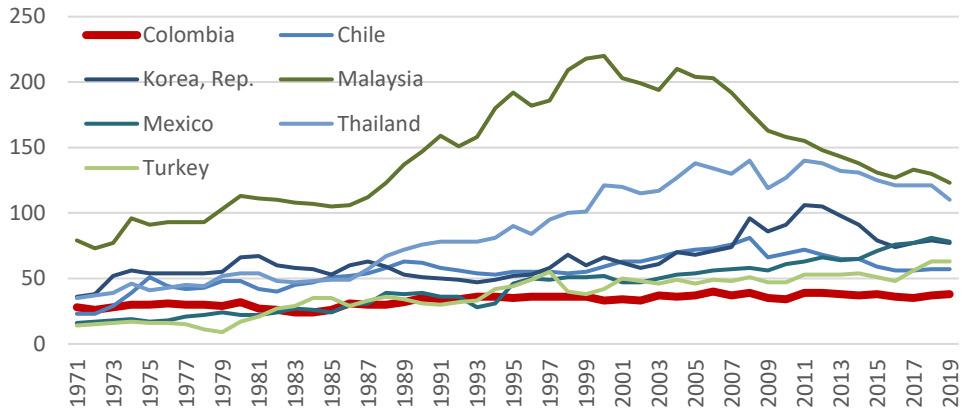
**The last three decades have witnessed important reductions of trade protection**, first through the 1991 unilateral trade reform that significantly reduced the level and dispersion of tariffs, and then through the signature of a series of Free Trade Agreements and a reform in 2010, which further reduced tariffs. After the 1990s' reform reduced Most Favorite Nation (MFN) average tariff from 26.6% in 1990 to around 12% by the mid-nineties, average tariffs further fell from 12.4% in 2000 to 6.2% in 2019.

**Access to cheaper imported inputs and final products has implied gains in production100, productivity and innovation that consumers see reflected in a much wider access to goods in the technological frontier than they used to see decades ago**. This has enabled Colombia to increase the share of activity represented by imports and exports from 27% in the 1970s to around 37% in 2019 (Figure 1). However, the import and export share of GDP remains low by international standards, and the progress in internationalization is also poor in comparative terms (Figure 4).101 Colombia displays a combination of high logistic costs, increasing non-technical non-tariff barriers and sustained high tariffs for a specific set of goods which undoubtedly plays an important role in explaining the country's limited insertion in international trade.



**Figure 4. Trade (goods and services) as % of GDP**

100 Carranza, et al (2018), show a positive relation between aggregate production for manufacturing sector, and also for the dynamics of industrial firms sales and production with the access to imported inputs and the reduction of tariffs for those inputs.
101 Eslava, Haltiwanger, Kugler and Kugler (2013), Fieler, Eslava and Xu (2018)

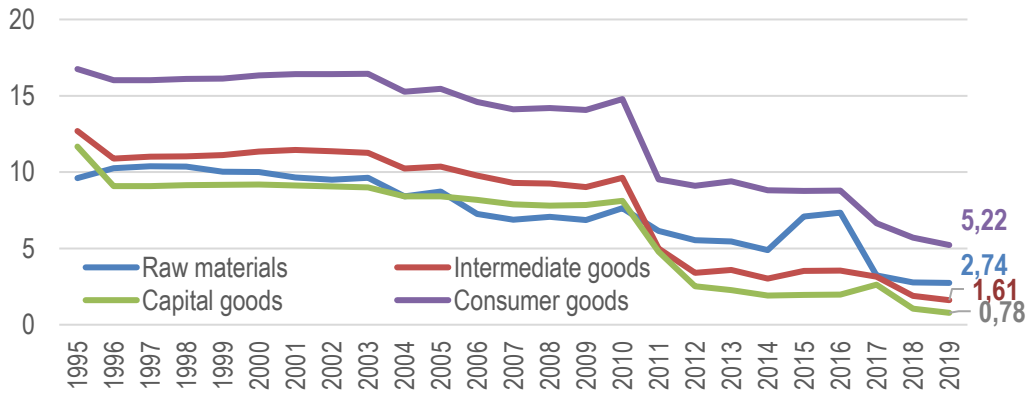



Source: WDI-World Bank.



**Tariffs remain higher than in regional peers.** Colombia holds the fourth highest average tariff in Latin America, after Venezuela, Argentina, and Brazil, and average tariffs are five times higher than in Chile. (Rivera, et al., 2020)**.** Using Trade Restrictiveness Indexes -TRIs-, which measure "*the uniform tariff which is equivalent (in welfare sense) to a given protective structure*"102, as a better way to measure the level of protection than average tariffs, Colombia shows a tariff protection level (MFN based) of 13,3% similar to Brazil, more than twice the level of Chile (5,5%) and Mexico (5,3%), and with a recent upsurge since 2015, explained by the increase in dispersion of tariffs instead of average levels (Rivera, et al., 2020)(Figure 5).

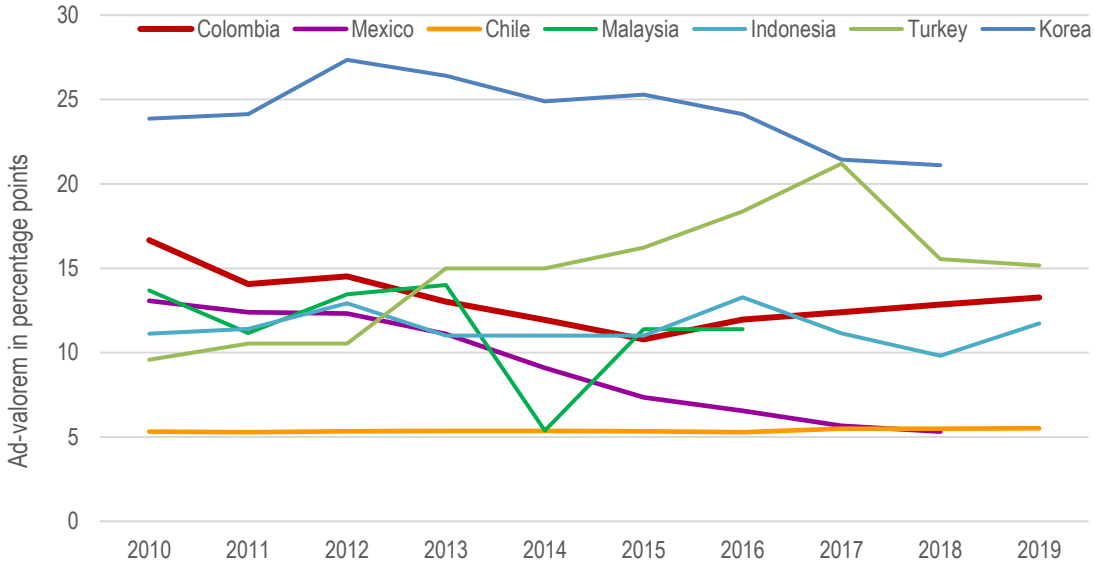
**Figure 5. Applied tariffs by main products**




Source: Taken from Rivera, et al (2020) based on UNCTAD-TRAINS data (the tariffs of the SAFP are not considered)

102 Definition based on Anderson & Neary (1996). TRIs calculated using MFN tariffs at 6 digits of the HS 1988-92 nomenclature, using simple averages from national tariff lines using UNCTAD-TRAINS data. See Kee, Nicita, & Olarreaga (2008) equations 28 to 33 on how to calculate TRIs.

**Figure 6. Trade Restrictiveness Indexes for selected Latin-American countries - MFN tariffs**



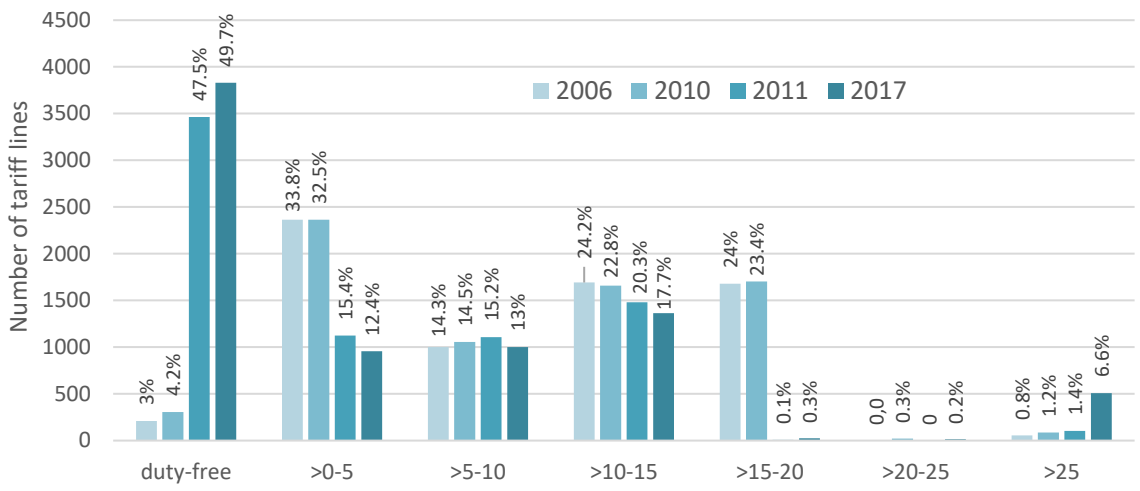

Source: Rivera, et al (2020) elaboration based on TRAINS, COMTRADE, using the elasticities and methodology by (Kee, Nicita, & Olarreaga, Import Demand Elasticities and Trade Distrotions, 2008).
Note: The TRI represents the uniform tariff that would maintain welfare at its current level given the existing tariff structure (Anderson & Neary, 1996), using the methodology proposed by (Feenstra, 1995) and elasticities estimated by Kee, Nicita, & Olarreaga (2008). When data for a year is missing or could not be calculated, last year data available is used.



**Moreover, significant tariff dispersion remained after the trade liberalization period of the 90s, and worsened over the last two decades.** Some products and product groups, especially in agriculture, textiles and apparel, and vehicles, are subject to high tariffs of up to 98%, imposing costs and negative protection for downstream industries and final consumers.103 High dispersion of tariffs is exacerbated by the APBS (Andean Community's Price Band System) variable tariffs, which imply higher MFN tariffs when international prices of these products fall, and a reduction in tariffs otherwise (Rivera, et al., 2020). That is, while the general policy stance has been that of moving towards tariff reduction and trade liberalization, actions on individual products have implied significant increases in protection for specific tariff lines. This likely reflects the difficult political economy that arises from openness to differential tariffs.

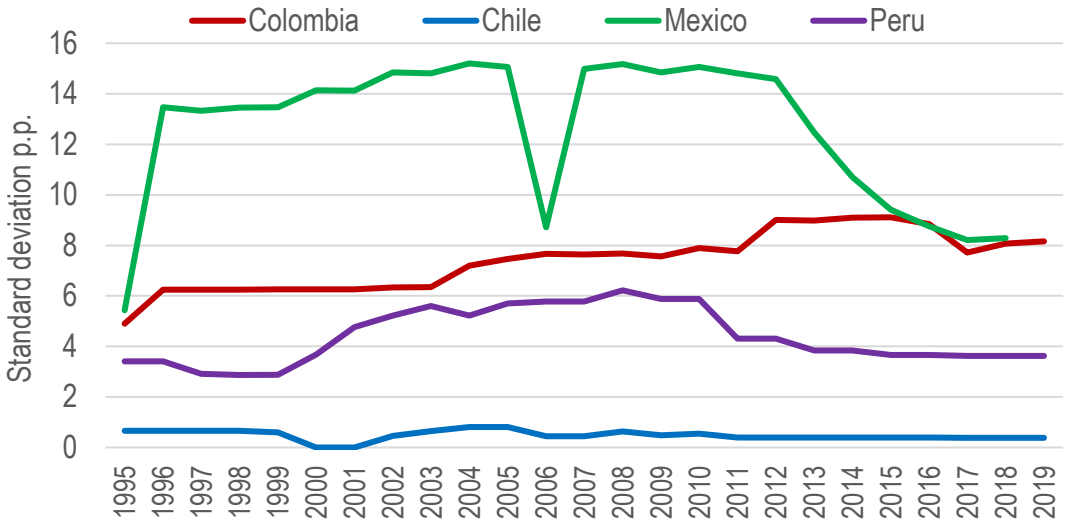
103 See, e.g. the international trade chapter in the Informe Nacional de Competitividad 2020.

**Figure 7. Frequency distribution of most favored nation (MFN) tariff rates 2006, 2010, 2011, and 2017**




Total number of tariff lines: 6993 in 2006; 7.273 in 2010; 7.292 in 2011 and 7708 in 2017.
Note Figures indicate the percentage of the number of tariff lines
Source: Taken from Rivera, et al (2020). WTO's Secretariat calculations, based on data provided by the Colombian authorities.

**Figure 8. Tariff dispersion: evolution over time**




Source: Taken from Rivera, et al (2020). Data from UNCTAD-TRAINS (the tariffs of the APBS104 are not considered)

104 APBS: Andean Price Band System

## Box 2: Agriculture

Agriculture is one of the most promising sectors for the internationalization process of the Colombian economy. The world market shows a growing demand for food and agriculture intermediate goods, given the growth of world population and the increase of per capita income in a number of emerging economies (particularly Asian emerging economies like China). At the same time, Colombia has a comparative advantage in the production of agricultural goods, given its endowment of two factors, which are becoming increasingly scarce in the world: land and water. Colombia has around 20 million hectares of harvestable land (around 20% of the total area of the country), of which only 5 million hectares are currently cultivated, and is one of the top ten water-abundant countries in the world. 105

However, Colombia has not taken advantage of those favorable conditions, and its agriculture exports have shown very little dynamism in the last decades. While in the last three (1992-2019) agriculture exports multiplied by 20 in the case of Perú, 7.4 in the case of Chile, and 6.8 in the case of Brazil, in Colombia they have only grown 2.9 times, and still represent only around 18% of total exports. This stagnation is the result in part of a very low diversification of the exportable goods basket. Colombia's main agricultural exports today are basically the same as 50 years ago (coffee, flowers, and bananas), and since then only few products have become new exporting bets for the country (some of them with promising business' models, like avocado, but some others with productivity problems, like palm oil).



This missed opportunity for internationalization of the Colombian agricultural sector has been the result of a mindset of both public and private sectors, which tend to see more problems than opportunities in the world market. It is evident that a segment of the world market is distorted by the agricultural policies of big producers (like the United States and the European Union), but it is also true that those subsidies cover only a number of products, mainly crops from temperate zones, which implies large opportunities for tropical zone countries.

Colombian authorities should take into account the successful cases of neighbor countries that have become dynamic agriculture exporters. That, for instance, is the case of Perú (whose producers share some of the conditions with the Colombian middle and small size producers) and Brazil (whose producers share some of the conditions with large Colombian producers, especially with the potential producers of 'Altillanura').

These cases and some other successful experiences reveal several policies necessary to address the main existing bottlenecks for the modernization and internationalization of the agriculture sector. First, the government should increase its investment in the sector, but not through direct transfers to the producers (which currently represent the larger portion of public investment in the sector) but via the provision of public goods, such as roads, irrigation facilities and improved phytosanitary services.106 Second, it is key to strengthen legal security about land property, one of the most challenging dimensions in rural

105 Colombia has 22 million hectares of harvestable, 4 million are agroforestry and 15 million are livestock. However, only 5 million hectares are used for agriculture and more than 34 million hectares are used for livestock. (IGAC, 2012). More info: *http://www.siac.gov.co/sueloscolombia#:~:text=El%20IGAC%20(2012)%20reporta%20que,y%2015%20millones%20vocaci%C3%B3n%20ganadera*.

106 See Perfetti J.J. (Ed), 2018.

Colombia. In order to achieve this objective, it is essential to have a coordinated work of Government, Congress and the Judiciary system. Particular attention should be devoted to solving the limitation imposed by Ley 160 to the establishment of large production facilities that can exploit economies of scale, given the restriction represented by the legal concept of Agriculture Family Unit (UAF). Likewise, special attention should be paid to strengthening physical security conditions by state forces, given the vacuum of power that the peace agreement between the Colombian government and the FARC left in several rural areas.

However, not all the opportunities for Colombian agriculture are related to large scale production units. Products like tropical fruits, vegetables and herbs have significant opportunities in the world market, face an increasing demand and are not affected by the subsidies of developed countries (Reina & Zuluaga, 2003). These products are often cultivated in small and middle-size properties, which require special effort to improve productivity via technical extension, as well as the building of producer associations that move toward a homogenous and large enough production that meets world demand. It is worth recalling that Colombia has had a long and fruitful experience in technical extension and the building of association mechanisms, as the Federación Nacional de Cafeteros shows.



As it has been stated throughout this document, technological change is a key condition to foster and increase in the productivity of a specific sector. The adoption and diffusion of new technologies should be a priority goal for both public and private agents, in order to take advantage of the opportunities of the internationalization of the agriculture and agroindustry sectors. The lessons from successful agriculture exporting countries show the importance of technology, not only in improving productivity, quality, and phytosanitary compliance, but also in other dimensions such as the adaptation to local environment and the effective technological extension.

A public policy aimed at fostering technological change should take into account the research and technology experiences of the few successful agricultural export cases of Colombia but should also acknowledge that an important portion of that new technology will have to come from the rest of the world. In both cases, it will be necessary to develop effective mechanisms to guarantee the diffusion of technological solutions for productive units of different scales. In that sense, public policy should support both the research and development centers of large-scale private producers, providing the financial means to reduce the private sector risks of testing new technologies, buy should also aim at the effective diffusion of successful technological solutions among medium and small-scale producers, through extension mechanisms.

Colombia already has the general framework for these public policies to be developed. A National System for Agriculture Innovation (SNIA) was created in 2017 (Law 1876), comprising three subsystems: (i) innovation and technological development, (ii) technological extension, and (iii) human capital development. However, more than three years later, SNIA shows very few developments. Besides the selection and appointment of the main officials and representatives to the SNIA, very few effective actions

have been taken.107 The government should accelerate the implementation of the SNIA and reorient its priorities aiming at the effective development and acquisition of new technologies that allow the effective internationalization of the agriculture sector.

Special attention deserves the objective of attracting foreign direct investment to the Colombian agriculture sector. With very few exceptions, productive practices are outdated, and technological change is needed. Recent experiences show that, given the right policies, foreign and local investment may make a huge difference in productive terms. The case of the 'altillanura', an area of 2,8 million hectares located in the eastern planes of the country, is a good example. Ten years ago, the government issued the CONPES document 3797 of 2014, a "Policy for the integral development of the Orinoquía: Altillanura" (DNP, 2014), which establishes the policies required to develop agriculture and cattle raising in the region. Although some of the recommendations have not been implemented yet, some others have, and provided the signal of public interest for the private sector to invest. In the last ten years the area harvested in the 'altillanura' multiplied by five, from 50.000 to 250.000 hectares, and could grow ten times more. At the same time, production has multiplied by 32, showing a huge increase in productivity. Notwithstanding these improvements, the 'altillanura' case currently faces some of the same needs than the rest of the Colombian agriculture sector to reach an adequate internationalization, i.e. legal and physical security, and transportation infrastructure to reach the world market.

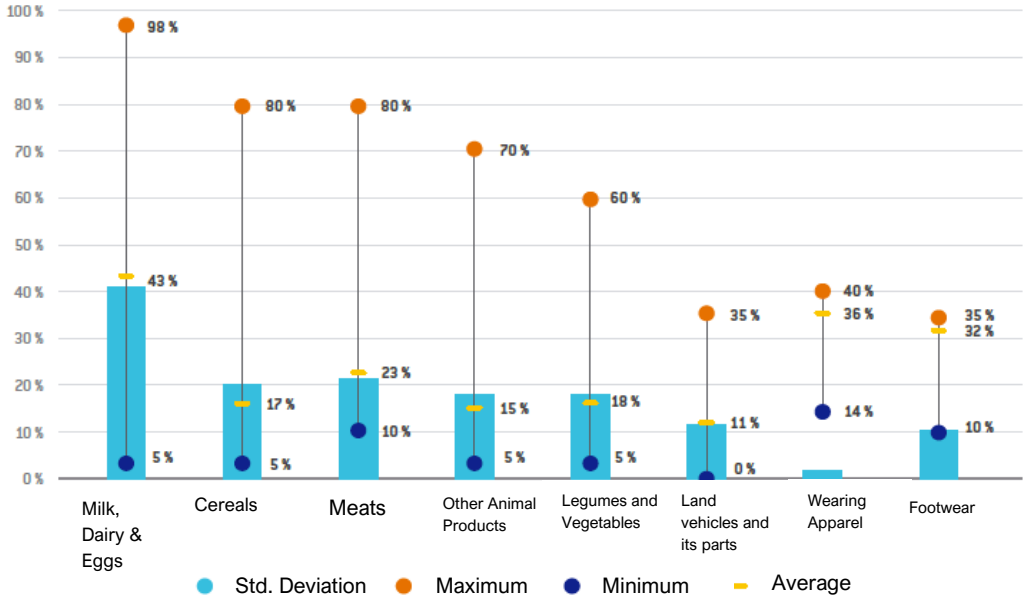


Most of Colombian current agriculture policies, public institutions and entrepreneurial attitudes reflect a protectionist position, consistent with a view that sees more threats than opportunities in the world market. As explained in this document, although tariff barriers have decreased in Colombia since the early 1990s, there's still a large dispersion, and it is the agricultural sector which has the highest tariffs108. This is the result, in part, of a special tariff system (Sistema Andino de Franjas de Precios-SAFP), which was originally designed to isolate the domestic market prices from international market volatility, but which eventually proved to have a protectionist bias. Additionally, some other mechanisms designed to 'stabilize' domestic prices (fondos de estabilización de precios), also imply a protectionist bias since they generate a subsidy to exports financed with rents captured via the high domestic prices of the protected market (Meléndez, 2014; Reina & Zuluaga, Elementos para modificar el Fondo de Estabilización de Precios para el, 2011). Likewise, a big number of Colombia's NTBs is concentrated in the agricultural sector.

**Figure 1. Nominal Tariffs by chapter; average, maximum and minimum. Colombia, 2019.**

**107 Parra-Peña R., Puyana R. y Reyes F. "ANÁLISIS DE LA PRODUCTIVIDAD DEL SECTOR AGROPECUARIO EN COLOMBIA Y SU IMPACTO EN TEMAS COMO: ENCADENAMIENTOS PRODUCTIVOS, SOSTENIBILIDAD E INTERNACIONALIZACIÓN, EN EL MARCO DEL PROGRAMA COLOMBIA MÁS COMPETITIVA", Fedesarrollo, 2021.**

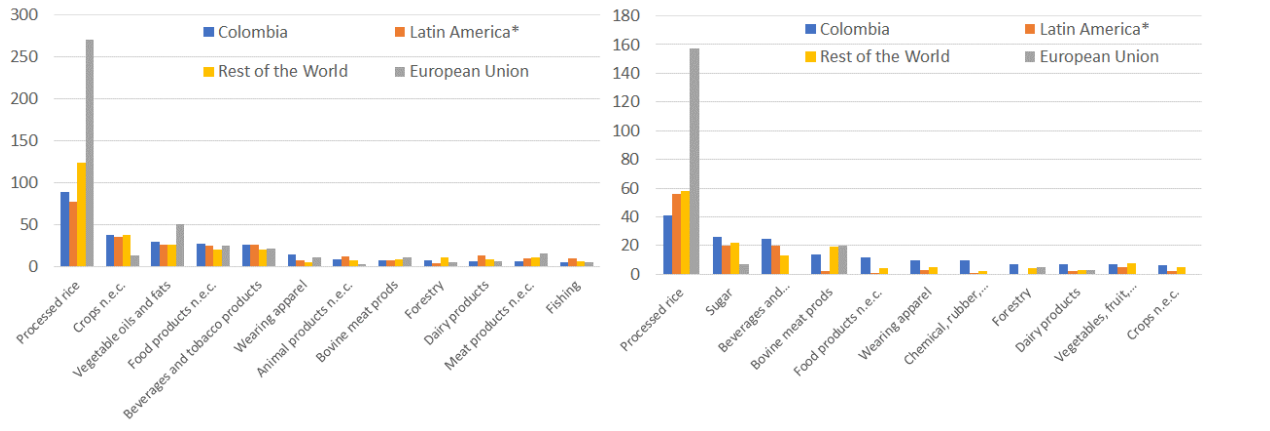
**108 Rivera, et al (2020), show in graph 4 of the paper, that average tariffs and dispersion measures by SITC 4 sections, with and without the effect of the SAFP.**




Other animal products not elsewhere expressed. Note: It does not include the effect of the APBS.

Source: Taken from CPC (2020), based on DNP's data

**Figure 2. AVE of MNAs estimates by GTAP sector 2012-2016**




Source: DNP based on Kee & Nicita (2017). Zero values 0 (cero) indicate a nule effect, or not estimated. *Latin America: Argentina; Bolivia; Brasil; Chile; Costa Rica; Ecuador; México; Perú; Paraguay; Uruguay; Venezuela; Honduras.

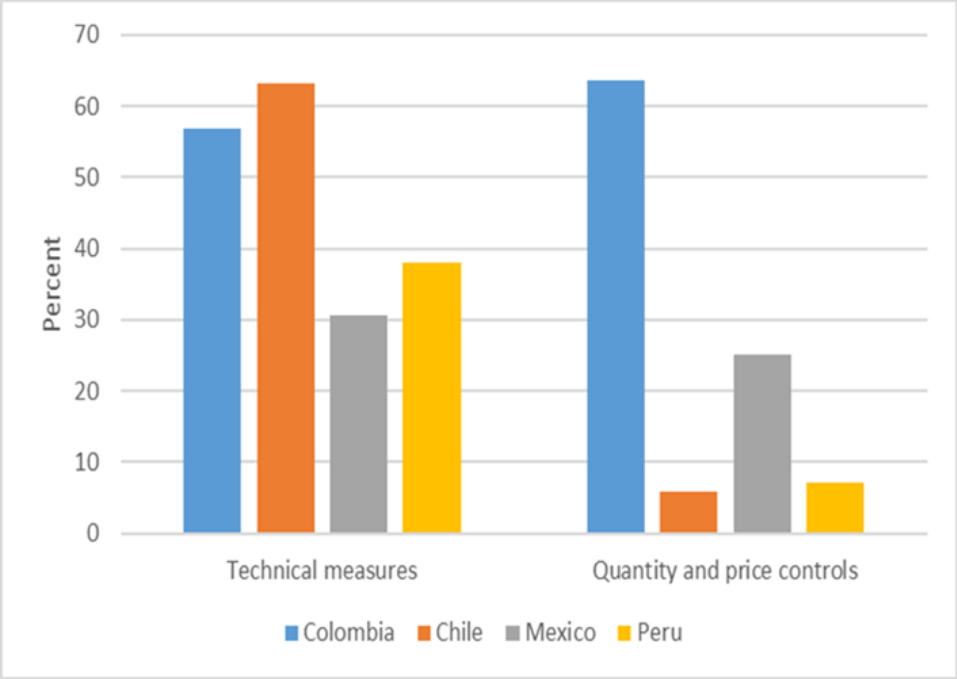
The excessive protection of the Colombian agriculture not only represents an anti-export bias for domestic producers, who often prefer to sell their products in the protected domestic market than abroad, but it

also implies additional costs for other producers down the value chain and for the final consumers. In this sense, the excessive protection of the agricultural sector seriously limits the ability of the agroindustry value chain, one of the most promising of the country, to compete and export internationally.

**At the same time, non-tariff measures limiting trade (NTMs) have proliferated,** implying levels of equivalent tariff protection that reached a peak of 123% in 2000 and remained close to that level since (García J., 2014; Botero, García, & Correa, 2018). While NTMs have in fact increased around the world, and Colombia is similar to peers in the share of products covered by technical non-tariff measures (similar also to its peers in sanitary and phytosanitary), Colombia stands out in the extremely extended use of the so-called non-technical NTMs, in particular quantity and price controls (Figure 9). Also, in the level of tariff equivalent protection that NTBs represent; based on the ad-valorem tariff equivalent of NTMs estimations of Kee & Nicita (2017), Colombia presents a relatively high effect of these measures in agriculture, food and beverages, textiles, and apparel, compared to Latin America, especially in non-technical ones.



**Figure 9. Share of products subject to NTMs in Pacific Alliance countries, 2016**




Source: (Signoret & Tovar, 2020), authors calculations based on UNCTAD data.

**Many NTMs, especially those known as technical barriers, are well grounded on the need to protect consumer health and safety, or on the intention to level the playing field vis-à-vis trade partners who have themselves imposed such measures. But many others are difficult to justify on these grounds. In these cases, they constitute a particularly dangerous form of trade protection, becoming**

**unjustified barriers to trade, which we call Non-Tariff Barriers, NTBs.** By contrast to tariffs, NTBs do not generate fiscal income, so their effects may become pure deadweight losses. Many NTBs are difficult to characterize as such, and therefore escape regulatory analysis on the basis of their impact on trade. This is the case of multiple measures and procedures conceived and approved outside the realm of trade policy, but whose direct effect is to restrict trade. One example is regulations on cargo weight stations, ports among them. Another are the regulations to fight drug trafficking, which restrict those ports through which certain merchandise - used as inputs in the production of narcotics but also in many other processes - can be imported.

**Cost increasing non-tariff measures conceived as pure protection are never justified since they waste real resources and are an opaque way of achieving their objectives.** These attributes make them clearly inferior to tariffs. Restrictions to ports of entry are sometimes imposed with the sole intention of increasing transportation costs. These, as well as quantitative restrictions to exports to force their producers to sell to local upstream industries, to give just two examples, are hard to understand on grounds other than unjustified protection against international competition and the rent preservation of influential economic private agents.



**Restrictions to ports of entry are also imposed sometimes with the intention to reduce smuggling** (Kee & Forero, 2020)**.** Such is the case, for instance, of textiles and apparel. Increasing customs capabilities at these ports and other ports, so they can become authorized ports of entry, is a clearly superior alternative to these restrictions. Entry port restrictions increase the local price of goods from certain origins and in certain regions of the country, generating distortions that affect aggregate efficiency.

**NTBs and high tariffs protecting individual products or sets of products affect the competitiveness of downstream producers and are frequently adopted ignoring those costs.** Though downstream exporters have access to Plan Vallejo109 and can therefore circumvent tariffs for their imported inputs, the same is not true of NTBs that increase the cost of those inputs. Moreover, producers that sell exclusively to the local market (many to subsequent exporters), and even some exporters that do not fulfil technical requirements, do not have access to Plan Vallejo. Finally, there are administrative costs and barriers to enjoying the benefits of Plan Vallejo, though important progress has been made, by allowing Plan Vallejo import authorizations to be processed through the International Trade Single Window110.

**Increasing tariffs dispersion and increasing NTBs may be partially responsible for the apparent fact that market power has been increasing in Colombia and, therefore, competition might be faltering**. Across the manufacturing sector, the (sales-weighted) average markup increased by around 37% during 2008-2018, while in services, the (sales-weighted) average markup increased by about 27% in

109 The especial import-export program "Vallejo Plan", grants tariff and VAT exemption for imports of raw materials, intermediate inputs, and capital goods and its parts, used in the production of goods and services for export. It requires the exporter to be certified, on the basis that a percentage of the value of imported goods ends up being exported as finals products or services.

110 Trade Single Window is an electronic platform for registered users to lodge import and export trade documents for the customs and other agencies act on their mandated activities of regulation and supervision.

the same period111. Evidence indicates that firms in the top decile in markup and operational profitability distributions are over-represented in sectors that are among those with the highest average ad-valorem equivalent of tariffs and non-tariff measures (i.e., clothing, beverage, furniture, manufacture of other non-metallic mineral products, and textiles) 112.

**It is clear that a thorough revision to the long list of current NTBs is necessary, leading to a removal of those not justified on technical grounds.** But this is a daunting task not only because of the number of NTBs in place but also because, by contrast to tariffs, NTBs are not systematically recorded, and many are not easily identified as NTBs.

**We thus recommend implementing a strategy to: 1) identify and evaluate the convenience of existing tariffs and non-tariff measures and keep those that enhance welfare; 2) adopt a mechanism such that the future adoption of measures that restrict trade, which is subject to a comprehensive ex-ante cost-benefit analysis, with consequences over the adoption of the measures and their design. In particular, we recommend the following action:**



- Creation of a high-level commission with technical support from the National Planning Department and the Ministry of Commerce, Industry, and Tourism to undertake that evaluation and make decisions regarding which measures should be sustained. The mandate for this commission should be to work by request. All new regulations, non-tariff barriers, and tariff increases must be subject to Regulatory Impact Analysis. This would not include changes to trade remedies procedures and outcomes.

**Logistics and trade facilitation**

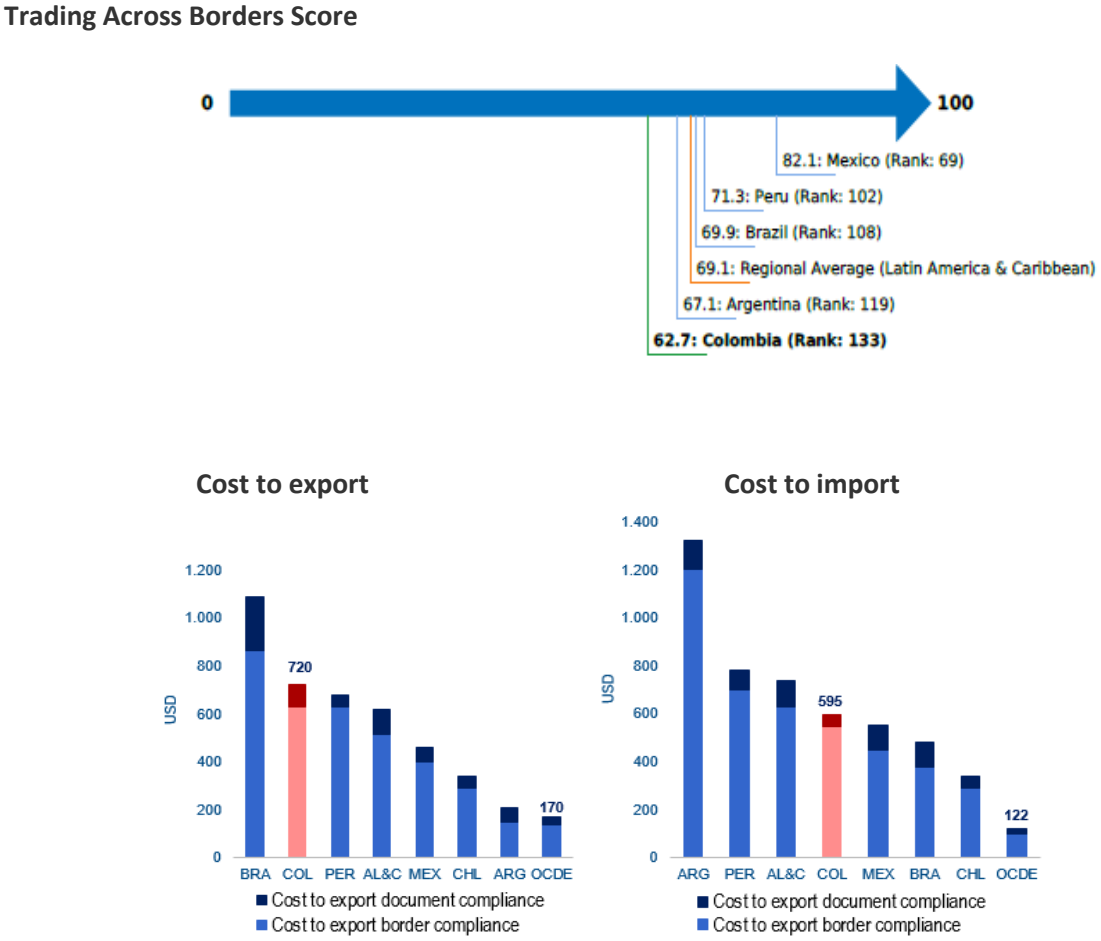
**Beyond tariffs and non-tariff measures, there are barriers to the international trade of goods and services that stem from the procedures and regulations that apply to the processes of importing and exporting. Those barriers can limit trade considerably.** There is evidence, for instance, that the manual processing of imports that was usual at customs in previous decades, depressed imports and induced import under-reporting, negatively impacting value generation at firms that rely on imported inputs and tariff collections by the government. The computerization of imports in Colombia in the 2000s was associated with a significant increase in imports and tariff collections at reformed ports, 40% of which is attributable to reduced under-reporting and the remaining 60% to real increases in transactions, which led to sales, productivity and exports increases at medium-sized firms that use inputs imported through those ports.113 Obviously, this is just an example of how much procedures, logistics and, ultimately, technological advancement influence actual trade.

**Despite the computerization of some procedures at customs, however, procedures are still excessively costly for the international transit of goods. As of 2020, Colombia ranks 133 of 190 economies among the countries with the highest export costs** in terms of obtaining, preparing, and sending documents needed for transport, inspection, and clearing of products, both for the country of origin and the country

111 (Iootty, Pop, Pena, & Stinshoff, 2020)
112 (Iootty, Pop, Pena, & Stinshoff, 2020)
113 (Eslava, Laajaj, & Kinda, 2019)

of destination. (Trading Across Borders index). The cost of exporting in the country is 324% higher than the average for the Organization for Economic Cooperation and Development (OECD), while the corresponding figure for the cost of importing is 388% (Figure X) (World Bank Group 2020). An exports operation takes an average of 112 hours in Colombia compared to an average of 13 hours in the OECD114. This adds to high transit costs in a country with intricate geography and subpar infrastructure. Sanitary inspections and inspections for narcotics interdictions are among the reasons for delayed procedures. Many of these inspections still require the handling of physical paperwork or manual operations.

**Figure 10. Doing Business 2020 Trading Across Borders Results**




Source: World Bank Group, Doing Business Study, 2020.

**Large established exporters and importers are able to circumvent these costs by becoming "Operador Económico Autorizado**" (OEA), a status that facilitates and speeds up procedures, especially inspections and the filling of paperwork, in front of both Colombian authorities and those in partner countries. The

114 Doing Business Report 2020 (World Bank, 2020)

OEA mechanism essentially coordinates Customs and other border agencies (ICA, INVIMA, and Antinarcotics Police). Mutual Recognition Agreements for OEAs exist with the Pacific Alliance (Mexico, Peru, Chile), Andean Community (Peru, Ecuador, Bolivia) and Costa Rica. There are plans to extend the OEA status to agents such as port terminals and operators115. However, by August 2020 only 188 firms enjoyed that status (CPC, 2020). Since the status is aimed at firms that have a history of established exporting or importing activity, by definition it targets those that have effectively overcome costs to transacting with the rest of the world.

**A roadmap is necessary to effectively expand the reach of the OEA status.** CONPES 3993 (2020) depicts some such measures. Others include the more effective dissemination of information about the existence of the OEA status alternative and about requirements to become an OEA, as well as those aimed at increasing the recognition of OEA by partner countries.



**The targeting of the OEA status to experienced importers and exporters places the burden of the cost of trading with the world precisely on the businesses that face the most difficulties in dealing with them: smaller producers attempting to enter the export and import markets.** Although the OEA mechanism is useful and must be supported and scaled up, finding ways to simplify those procedures and reduce those costs for all firms involved in international trade is clearly necessary as a crucial (and superior) complement to ways in which a few can circumvent them. Priority should thus be given to improvements in logistics, accessible to all exporters and importers, both established and upcoming. Improving the capacities of Customs and other border agencies is a priority. As pointed in Chapter 3 the goal of such improvements must be a truly disruptive modernization of customs. In particular, the country needs a customs process model fully supported on electronic information systems, an integrated system of simultaneous inspection by all supervising agencies, and needs to be driven by optimal risk profiling and management, and a modern system of fight against illegal trade.

**The following specific actions are recommended:**

**Implement a customs processing model fully supported by electronic information systems; an integrated system of simultaneous inspection by all supervisory bodies**, driven by optimal risk management and profiling; and a modern system to combat illegal trade. This includes interconnecting customs and tax systems. The whole includes:

- Effectively implementing the recently adopted National Policy on Logistics, which aims at improving Colombia's logistics performance and complement improvements in infrastructure development and trade facilitation (CONPES 3982/2020).
- **Fully implementing DIAN's modernization plan**. This modernization includes, among other things, a new model for internal processes based on electronic information with large investments in hardware and software. In addition, a comprehensive simultaneous inspection system must be

115 The extension of the Authorized Economic Operator program to port installations and operators was implemented by the DIAN Resolution 48 of May 15, 2020.

put in place in coordination with agencies such as ICA, INVIMA, and the anti-narcotics police. A better risk management system that better leverages the large quantities of data that DIAN has, must also be designed and implemented. This entire strategy starts with enacting necessary reforms to the Customs Statute, which should be done as soon as possible (CONPES 3892, 2020).

- **Reengineering processes of the trade single window to transform it into a comprehensive trade facilitation hub**. There is a continuous need to review and upgrade single windows, with phased implementation of improvements, to adjust them to the latest technologies, implementation of trade facilitation measures, and continuous efforts to simplify process and documentation. Korea, Japan, and Singapore follow this approach, looking at single windows more like ecosystems than self-standing platforms (UNESCAP, 2018). MCIT could conduct an exercise of process reengineering and reform of the VUCE to reduce processing times, expedite approval, improve coordination, lower costs, etc. This exercise could also lead to developing a phased plan to transform VUCE into a comprehensive trade facilitation hub, with additional services for users, such as cross-border exchange of electronic trade documentation, certification of export or import trader record, among others (UNESCAP, 2018). Among other benefits, it would eliminate duplicities and reduce the regulatory burden for users (OECD, 2019 2). If interests are convergent, coordination with Pacific Alliance partners could result in additional gains in interoperability (Gonzales, 2020).



**Deepening the reach of Prior to Arrival Import Declaration (PAID)116.** This mechanism, aimed at speeding up processes, remains underutilized: only 14% of air cargo declarations and 13% for maritime mode are processed using PAID procedures, although its use cuts imports clearance times by around a half (DIAN, 2020). One reason behind the underutilization of PAID is lack of knowledge about its existence and procedures (CPC 2020). Another is the fact that the use of PAID is mandatory for specific sectors, and there are strong sanctions for lack of compliance and errors, which are assimilated into smuggling, leading to the perception by many operators that PAID is a mechanism for sanctioning rather than one for trade facilitation (CPC, 2020). Moreover, the pre-clearance procedure is de facto not applied to air cargo, as declarations are only processed after the shipment has physically arrived, even though advanced reception of data occurs.117

**Accelerating the design and implementation of a best practices guide for the operation of ports and airports related to export and import operations.** The Colombian government has already diagnosed the urgent need to improve the coordinated operation of, and information exchange among foreign trade control agencies, port operators, transport operators, exporters and importers. Specific recommendations stated in the CONPES 3982 document of 2020 should be accelerated and implemented. The need to accelerate implementation is especially critical among public agencies in charge of supervising security in foreign trade operations.

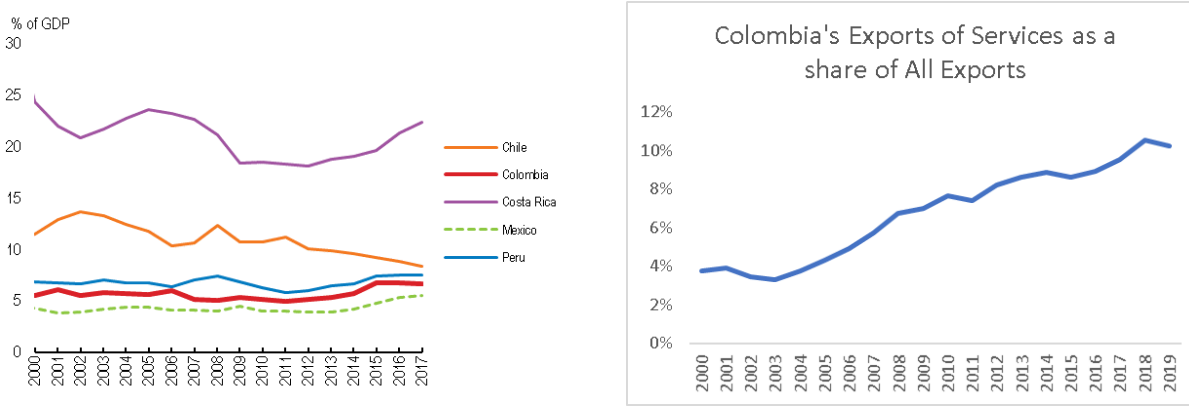
## B. Trade in services

**Services account for a very large shares of jobs and incomes in Colombia, but a very modest share of its international commerce**. Services' share of jobs and GDP is about 70%118 and 73%119, respectively, but services' share of international commerce is only about 14% as measured by national statistics. This mismatch between the importance of services in the economy and its importance in trade accounts is common in many nations, but more so in Colombia.

**Colombia's participation in trade of services is quite low today compared to its neighbors but growing in importance**. Using OECD service trade statistics, calculated on a slightly difference basis, the value of Colombia's service exports as a share of national GDP is lower than Chile's and Peru's – and far below that of Costa Rica. Nevertheless, Colombia's service exports have been growing faster than its export of goods over the last two decades (right panel). The share of services in Colombia's exports is now 2.5 times higher than it was in the year 2000 (right panel).



**Figure 1. Colombia's service exports compared to neighbors and growth as a share of all exports, 2000-2019**




Source: Authors' elaboration of OECD data.

**Expanding service exports will be an important avenue for the internationalization of Colombia's economy**. Digital technology, which facilitates many types of trade in services, is advancing at an explosive pace.120 This means that the global opportunities for exporting digitally-enabled services are expanding

118 Information for the year 2019, based on National Accounts of Statistics Office (DANE in Spanish).
119 Information for the year 2019, based on the annual average of the Large Integrated Household Survey of Statistics Office (DANE in Spanish).
120 (Duque G. , Rodriguez, Zuluaga, Guayacán, & Díaz, 2020)

more rapidly in service than they are in goods. This is a trend observed worldwide. Trade of global services has grown faster than trade in goods all across the world. The WTO reports that while trade in goods grew at an average annual rate of 4.6% between 2005 and 2019, trade in services grew 5.4%.

**Many Colombians have jobs in export-related services; this is likely to grow**. Colombia's exports are dominated by minerals and oil, but these sectors are not very job-intensive. Even the manufacturing sector, which accounts for about a third of exports, is not highly labor intensive. In fact, only 0,54% and 1,79%[121] of the workforce is employed in minerals and oil, and manufacturing sectors respectively. By contrast, approximately 1,16%[122] of Colombians work in export-linked services. This means that growth in trade of services has the potential to create far more jobs than growth in exports of goods.

**Imports of modern services act as infrastructure boosters.** Trade in services is different than trade in goods in many ways. An important one is the asymmetric role of imports and exports. When it comes to services, many service imports act more like 'infrastructure' in that they tend to boost the productivity of firms across a very wide range of goods and service sectors. Given the complex nature of such services, foreign service providers who sell to the whole world can often offer Colombian exporters far more competitive services. When Colombian firms do not have access, or inhibited access, to these service imports, their competitiveness in foreign markets suffers (OECD, 2019).



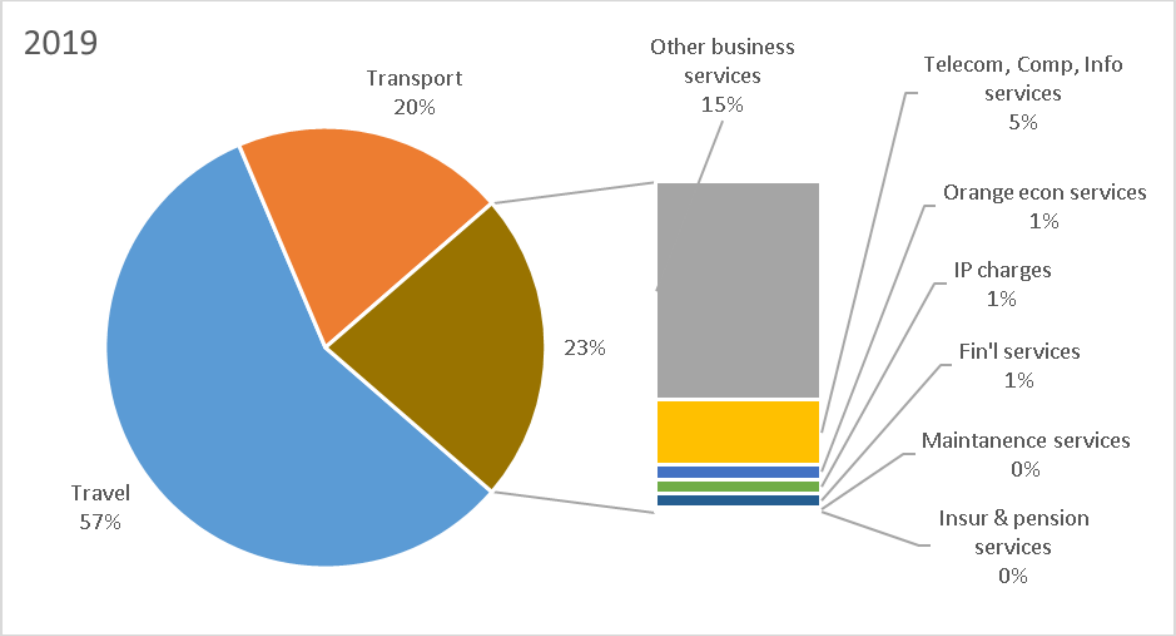
**Colombia is fairly open to service imports compared to other OECD nations (OECD, 2019)**. Using the OECD's Services Trade Restriction Index (STRI), Colombia is less restrictive than the average in 16 of the 22 sectors. As Figure 3 bellow shows, three of the four most restricted sectors in Colombia are sectors where imported services would enhance the country's export competitiveness. Namely, logistics, freight forwarding and cargo-handling services are the three sectors with the highest scores relative to the STRI average.

**Trade in services is too broad a concept for policy making.** For historical reasons, services trade numbers include a great mixture of activities. They encompass things as diverse as the processing of manufactured goods (which might best be thought as belonging to the manufacturing sector) and payments for using oil pipelines (which might best be thought of as relating to infrastructure). These are all considered trade in services, since they do not involve goods and yet generate or use foreign exchange. This is why it is critical to distinguish among categories.

121 Estimation of labor participation of extractive industries, manufacturing, and service sectors were determined as follows: Labor employed by each sector in export activities was calculated using total labor in the sector for 2019 (from the Great Integrated Household Survey -GEIH- source DANE) and using the share of exports to production in each sector, labor in exporting activities was imputed. Export participation for each sector in 2019 was obtained taking the information on both production and exports, at constant prices (2015), from the input-output matrix of the National Accounts source DANE. Finally, the participation of employed persons by sector is obtained with respect to the Economically Active Population. The Economically Active Population information is also obtained from the GEIH.

122 To calculate this percentage, the same procedure was followed with which the percentage of employed persons in the extractive and manufacturing industries was calculated.

**Figure 2. Services export in Colombia, Million USD, 2019**




Source: Duque et al (2021, Table 3).

**The two largest categories - travel and transportation - are best treated separately**. As Figure 2 above shows, **Travel is Colombia's number one services export and is dominated by tourism**. While tourism has a key role in Colombia's internationalization, its promotion involves a bundle of issues and policies that are quite distinct from the standard policies related to trade. Moreover, Colombia's privileged natural endowment implies an absolute and comparative advantage. The sheer expansion of tourism, together with the specificities of tourism promotion and the natural, yet unexploited Colombian advantage in tourism, are the reasons why we treat tourism separately (see Box 3).

## Box 3: Tourism as a service exporter

Travel, dominated by tourism, represents almost 60% of Colombian exports. Between 2012 and 2013 the most dynamic branches*123*[1] in the tourist sector were food and beverage supply services, land transport services, real estate services, and housing rental services. The contribution of the tourist sector to economic growth has shown significant strides. Between 1991 and 2005, the contribution of tourism to economic growth was always below 0.16%, while between 2012 and 2013, the contribution of tourism was 1.386%*124*. Colombia currently ranks 55th out of 140 economies in the World Economic Forum's Travel & Tourism Competitiveness Index (TTCI). It climbed seven places from the 2017 ranking. Colombian tourism improved or remained in the same position in 10 of the 14 pillars of the index: price competitiveness, environment and sustainability, infrastructure and air transport, land and port infrastructure, availability of ICTs, safety, health and hygiene, labor market, prioritization of tourism and international openness. This score translates into a growing supply of tourism services and a more sustainable development of the sector*125*.



Yet, **Colombia has great untapped potential in high spending adventure, nature and culture tourism looking forward**. Recognized as a biodiversity paradise, Colombia is home to the greatest bird diversity and the second greatest overall species diversity in the world. Colombia's geography covers coastal lines, mountain heights to over 3,000 meters above sea level, dry and wet tropical jungles, deserts, and a vast network of river basins. The country has a national parks system with 58 protected areas that cover around 14 million hectares with an immense potential for nature-based tourism. This is particularly valuable in the COVID context, where nature travel has become attractive even for the less adventure-driven travelers.

**However, Colombia lags behind other Latin American countries in the development of the industry with these focuses**. Tourism overall, but particularly nature-based travel, generates far less income and employment than regional tourism leaders do. To give just one example, the number of visitors to protected areas in Costa Rica is 132.4 per square kilometer of protected area and 35 per 100 inhabitants, while in Colombia the same figures are just 6.4 and 2. And among experienced North American bird watchers, only 6% know that Colombia is the most bird-diverse country in the world, while 14% believe it is Costa Rica (Maldonado et al 2018a).

**Colombia also has much to offer in terms of cultural experiences whose potential, stand-alone and in combination with nature-based travel, is not yet taken advantage of**. To give just one example, compared to a similar 10-day bird-watching package in Costa Rica with $250 per day cost, Maldonado et al (2018b) estimate a willingness to pay an additional $60 per day (a total of $310 per day) for a package that combines the greater bird diversity in Colombia along with a cultural experience through the involvement of local communities. They estimate an untapped potential of $45 million in annual revenue

123 It refers to the different branches of the tourism sector according to the Tourism Satellite Account (CST for its Spanish acronym) of Colombia.
124 (Brida, Rodriguez Brindis, Mejia Alzate, & Zapata Aguirre, 2017)
125 (WEF, 2019)

generation, and over 7,000 jobs from birdwatching alone, if it is designed with the participation of local communities.

**Colombia's tourism industry, especially for nature and adventure tourism, is currently dominated by informal providers who thrive in a void of enforcement and effective information for tourists.** For Colombia, this means relatively low-income generation and high green impact, while for potential tourists it implies difficulties in trip planning, safety risks, and as a consequence low competitiveness vis-à-vis Costa Rica for instance.

**An ambitious and effective green-tourism national strategy must be launched and implemented in the short run.** The strategy, aimed at developing a competitive high-value nature and culture travel industry, must not only be consistent with green growth but have it as one of its objectives, in line with the National Sustainable Tourism Policy. It must include: 1) Mechanisms to certify providers on the adequate use of environmentally friendly and safety friendly practices, and effective information dissemination about these certifications for travelers. 2) Centralized provision of effective information about the attractiveness and practical dimensions of activity-destination pairs in the country, as well as development of local capabilities for on-site provision of information. Particular emphasis must be put on listing authorized operators, and making them directly accessible from official platforms, as well as on safety rules and requirements. 3) Adequate provision of infrastructure and organization in natural parks, as well as a facilitated formal access for them, together with a strategy for the development of adequate formal tourist services close to these areas, but in accordance with environmental sustainability. 4) Effective enforcement of safety and environmental rules, starting with the most popular natural destinations. 5) Connecting local indigenous, afro-Colombian and other rural communities who can add value via the provision of traditional cultural experiences, guidance, hostel and food provision, providing them with training in the provision of high-value tourism and a second language, and establishing a system for the monitoring and certification of quality standards in the services provided by them.



**Transport represents the second largest export earnings, but these services are mainly the side-effect of other export or import activities**. The category is thus best viewed as a facilitator of trade in goods and other services.

**Modern business services are different**. The rest of Colombian service exporting is accounted mostly by "Other Business Services", and "Telecommunication, Computer and Information services". "Other Business Services" includes call centers, back-office processing for foreign firms, and other classic professional services such as accounting, graphic design, and translation. Another currently is very small category, which holds the potential for growth is the "Personal, cultural, and recreational services" (often called Orange Economy services).

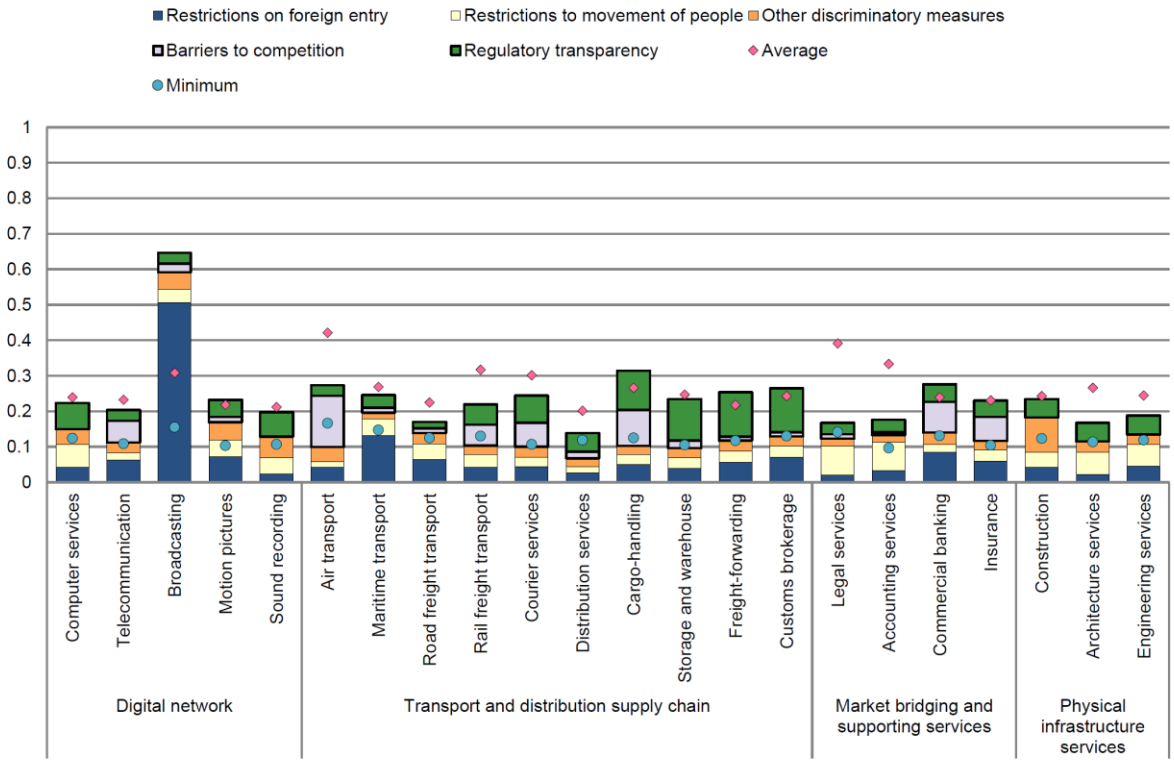
**Modern services show the most dynamic growth**. As Table 1 shows, Other Business Services have expanded very rapidly over the last decade.

**Table 1. Colombia's services exports 2019.**

| | 2019 | | | |
|---|---|---|---|---|
| | $ mil | Share | Growth 2000 - 2010 | Growth 2010 - 2019 |
| **TRAVEL** | 5,652 | 55% | 171% | 102% |
| **TRANSPORT** | 1,982 | 19% | 91% | 73% |
| **OTHER BUSINESS SERVICES** | 1,481 | 14% | 677% | 146% |
| **TELECOMMUNICATIONS, COMPUTER, AND INFORMATION SERVICES** | 436 | 4% | 54% | 61% |
| **PERSONAL, CULTURAL, AND RECREATIONAL SERVICES** | 105 | 1% | 261% | 25% |
| **ALL OTHER SERVICES** | 407 | 4% | 43% | 83% |

Source: Duque et al (2020), "Modern services dynamics: Global and the Colombian context"

**Figure 3. OECD Services Trade Restrictiveness Index (STRI): Colombia 2019 (0 to 1.0 with 1.0 as most restrictive)**




*Note*: The STRI indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the STRI regulatory database which contains information on regulation for the 36 OECD Members, Brazil, China, Colombia, Costa Rica, India, Indonesia, Malaysia, Russia, South Africa and Thailand. The STRI database records measures on a Most Favoured Nations basis. Preferential trade agreements are not taken into account. Air transport and road freight cover only commercial establishment (with accompanying movement of people). The indices are based on laws and regulations in force on 31 October 2019.

Source: OECD (2019) "*OECD Services Trade Restrictiveness Index (STRI): Colombia 2019*".



**The future growth prospects for Colombia's service exports partly lies in "modern services"**. Colombia has comparative advantage in several modern services sectors (Duque G. , Rodriguez, Zuluaga, Guayacán, & Díaz, 2020) , but still lags in these sectors. The share of modern service exports in the trade accounts of Argentina and Chile are far larger than Colombia's share (OECD 2019, OECD Economic Survey: Colombia 2019). One way of thinking about exports of modern services is view them as telework that is done across borders – what Baldwin (2019) calls "telemigration". Box XYZ2 discusses the opportunities.

## Box 4: Telemigration: Opportunities for Colombia

Telemigrants is one way to describe people who sit in one nation but do work for offices located in another nation. Technically it is classified at an export of “Other Business Services". Will this form of service export be an important aspect of Colombia’s internationalisation in coming years? This Box suggests the answer is ‘yes’. This is a three-part argument.

First, there are very few formal barriers to the export of office tasks (as opposed to final service provided to consumers, like legal or medical advice). The barriers are mainly technical, especially the high cost of face-to-face interactions that have traditionally keep most services classified as non-tradable. The explosive pace of digital technology, however, is lowering those costs rapidly. They are, in a sense, making remote workers seem less remote. The traditional difficulty of remote service work acted like a prohibitive non-tariff barrier to service exports. Digital technology is lowering these barriers at an explosive pace (*Baldwin 2019*), since digital capacities are doubling every two years or so.

The Covid-19 pandemic has radically accelerated this trend in three ways. First, an epic number of people have been let go by rich-nation service firms (the potential employers of Colombian telemigrants). The figures in the US are in the tens of millions. Firms are rehiring but since the cost of letting people go has already been paid, the trade-off for firms between local hiring and offshoring is very different now than it was 18 months ago. This is an opportunity for Colombia. Second, a large share of service firms in Europe and America have learned to work with remote teams (Kilic and Marin 2020). Estimates are that from 40-70% of workers in the US and Europe worked from home due to the pandemic (Berg et al 2020, Dingel and Nieman 2020). This is a critical point since anything that makes it easier to telework domestically tends to facilitate telemigration. Colombians working from thousands of kilometers away may not be as productive or easy to integrate as in-person Americans, but they will be a whole lot cheaper, given wage differences. Office space in Europe and America got more expensive due to social distancing and other anti-contagion requirements. This won’t last forever, but it is likely to be true during much of the recovery phase. This also shifts the trade-off between local employment and offshoring in the direction of more telemigration. Finally, corporates piled on debt, which means they’ll be under intense cost-cutting pressure going forwards.

Second, there is clear evidence that digital technology is already allowing the competitiveness of Colombian office workers to shine. Indirect evidence for the competitiveness of Colombian telemigrants is found in the rapid growth of exports from Colombia over the last five years (Table XYZ). The largest category in the ‘modern service’ grouping is that of Call Centers. The foreign sales of these firms have been growing at almost 15% per year over the last five years. The exports of other fast-growing categories started from a low base but are expanding at an impressive rate.

**Table 1: Fast Growing Service Exports, Colombia, 2014-2019**

| | 2019 share of Modern Services | Annual growth rate, 2014-2019 |
|---|---|---|
| **Call centers** | 29% | 14.6% |
| **Business consulting in business administration and public relations** | 8% | 9.4% |
| **Audiovisual and related services** | 3% | 13.3% |
| **Health services** | 3% | 14.1% |
| **Other information services** | 2% | 36.5% |



Source: Duque et al (2020).

Colombia's competitiveness is also supported by the findings of A.T. Kearney's Global Service Location Index, which ranks Colombia as the 13th most attractive location for offshored services in the world, and number three (behind Brazil and Mexico) in Latin America (*A.T.Kearney 2019*).

Third, there is a large potential for exported telework to expand. Recent research has found that about 21% of Colombians have "teleworkable" jobs, and thus potentially tradeable given digital technology (Baldwin, Cardenas and Fernandez 2021). Moreover, the wages of Colombians in these teleworkable occupations were found to be about a tenth (or less) of that of U.S. workers in similar occupations. To be fully comparable, the wage cost difference should be adjusted by the differences in productivity (U.S. workers are likely to be more productive per hour), however, direct evidence on the relative productivity of U.S. and Colombia service-sector workers is not available. Nevertheless, the very large wage gap suggests that there are potentially large cost savings for U.S. firms to outsource service tasks to Colombians.

**What sort of jobs?**

What sorts of jobs and workers fall into this teleworkable category? As the figures in Baldwin, Cardenas, and Fernandez (2021) show, occupations that require higher levels of education are associated with higher levels of teleworkability. For instance, 45% of jobs that require tertiary education are teleworkable, but even at high school level, about one out of six jobs is teleworkable. The age profile of these jobs is fairly evenly distributed. 20% or more of the jobs held by Colombians in the 20 to 60 years old range are teleworkable. Given the world's Covid19-linked experience with telework, the types of occupations that are most susceptible to telework are not unexpected. The shares of teleworkable jobs in the occupations listed under Professionals, Clerks, Technicians and associate professionals are all over 50%.

These demographics suggest that telemigration is not a panacea for income or regional inequality, but enhanced exports of service could give a powerful boost to the middle class.

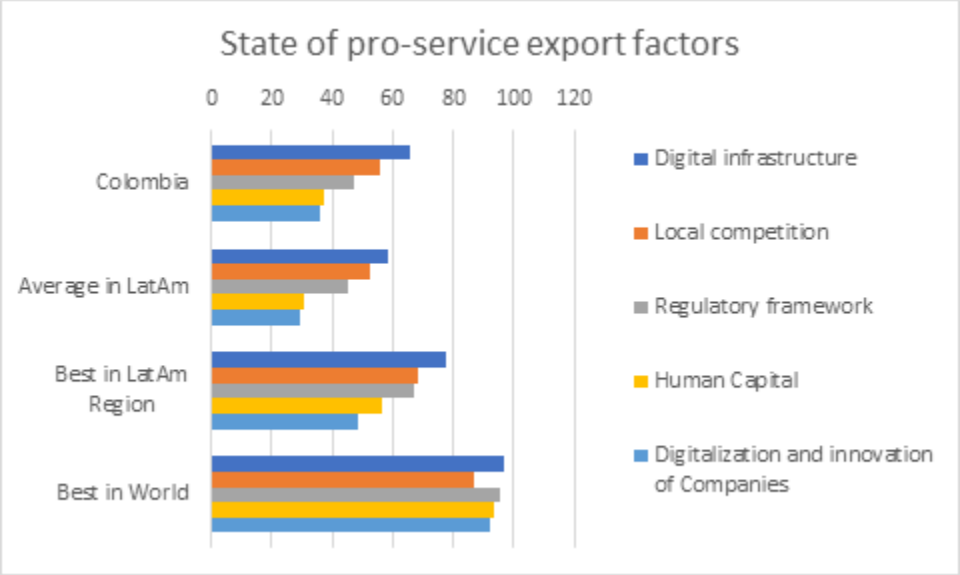
**What are the barriers to internationalization?**

Colombia is an attractive place for telemigration, according to the ranking by A.T. Kearney, a ranking that has risen quickly. The consulting firm ranked the country in 20th place in 2016, up 23 places from 2014. In 2017, its rank was numbered 10 places higher. The firm changed the criteria in their 2019 ranking (to allow more weight on digital preparation) and Colombia slipped back three places.

While this progress on the GSLI ranking is impressive, and shows that the policy trajectory is strongly positive, there is room for improvement as the extensive study by Duque et al (2010) shows. The study highlights bottlenecks to cross-border trade in services, by applying a methodology development by the World Trade Organisation (WTO) in their 2018 World Trade Report that focused on trade in services.



**Figure 1: Colombia's relative position in service export attractiveness**




Source: Duque et al (2020).

As Figure.1 shows, Colombia compares well with its regional neighbours on all five criteria that were identified as important by WTO (2018), but lags the best in the region and best in the world. Each of the five competitiveness indicators has many subcomponents. One that is worth pointing out is Colombia's poor ranking when it comes to English proficiency. While machine translation is making important strides, so language will be less of a barrier, a great deal of the online office work is done in English.

**Focus on freelancing**

One form of telemigration involves the hiring of Colombian freelancers on digital platforms such as Upwork.com or Workana.com.[1] These platforms – which are very much like eBay but for services rather than goods – have created new ways of offshoring service tasks by making it easy for firms to find, hire, manage, and pay foreign-based freelancers.

From the hiring-firms' perspective (the "importers"), these platforms have dramatically lowered the fixed cost of hiring foreign service-workers, while at the same time dramatically raising the flexibility of such contracts (MGI 2016). Specifically, they radically lower the international transaction costs related to things such as search, employment contracting, foreign exchange issues and risks, international payments, and non-payment and non-delivery issues. From a freelancers' perspective (the "exporters"), these platforms have opened markets that were previously almost completely closed to them (Kuek et al 2015). Online freelancing is creating many new opportunities for sufficiently skilled service workers in emerging markets (ADB 2018, Kuek et al 2015).



This "online offshoring" is quite different from the traditional cross-border trade in services – so-called Mode 1 trade, and traditional service offshoring. Much cross-border trade in services is dominated by multinational firms that specialise in high-skilled services (Mann 2017), and the same holds for service offshoring (InfoSys, Wipro, etc). Moreover, firms that outsource jobs also tend to be large, due to the fixed costs of organising and managing offshored back-office operations, call centers, etc. The radical reduction in the cost of hiring foreign freelancers that comes with these new platforms seems to have changed this. While the evidence is anecdotal, platforms seem to have expanded the range of tasks that can be economically offshored while making offshoring profitable even for micro-firms.

To date, the jobs available via these online platforms are concentrated in just six occupations, namely Web and multimedia developers, Applications programmers, Advertising and marketing professionals, Graphic and multimedia design, Translation, and Data scientist. Using original data that was scrapped from three online freelancing platforms, Baldwin et al (2021) found that the uptake to date by Colombians was very limited – even if it seems that Colombian freelancers are on average well regarded, as evidenced by platform-specific scores (these are like TripAdvisor ratings).

To dig into why the uptake was so limited, the paper presents the results of a small number of structured interviews that teased out a wide range of problems. Key barriers for labour service buyers and sellers were the practices private platforms used to keep service buyers and sellers transacting on the platform itself, rather than forming stable longer-term relationships off the platform. One way to mitigate this would be to have the government create its own platform that could serve to smooth the entry of Colombians into the commercial world of freelancing. The platform could be part of a package of assistance that could include training and a coordinated assistance in obtaining the necessary qualification and certificates, as well as in improving English fluency, coaching newcomers in how best to craft a profile on commercial sites and gain the experience of the importance of deadlines and communication. Again, most of this is really just packaging together standard active labour market policies, but with the specific aim of promoting online work. The government-run site would act as an apprenticeship of sorts.

[1] This section draws heavily on Baldwin et al (2021).

**The strategic nature of modern service exports is recognized in current government policy such as “"Colombia Exports Services"**. Likewise, ProColombia promotes services exports by promoting Foreign Direct Investment in service export activities such as Business Processing Outsourcing (BPO) and Knowledge Processing Outsourcing (KPO) companies, as well as the so-called ‘shared services center’, where particular foreign firms set up back-office service centers in Colombia. Services exports in sectors such as software and Information Technology (IT), and healthcare are also a focus.

Additional policies along these lines are the ‘Program to Support the Diversification and Internationalization of the Colombian Economy’ (2019). One of its pillars promotes the exports of knowledge-based services including development of software and mobile applications, production of animation and video games, audiovisual services, BPOs, services related to the publishing and graphic industry, advertising and marketing, and architectural design and engineering.



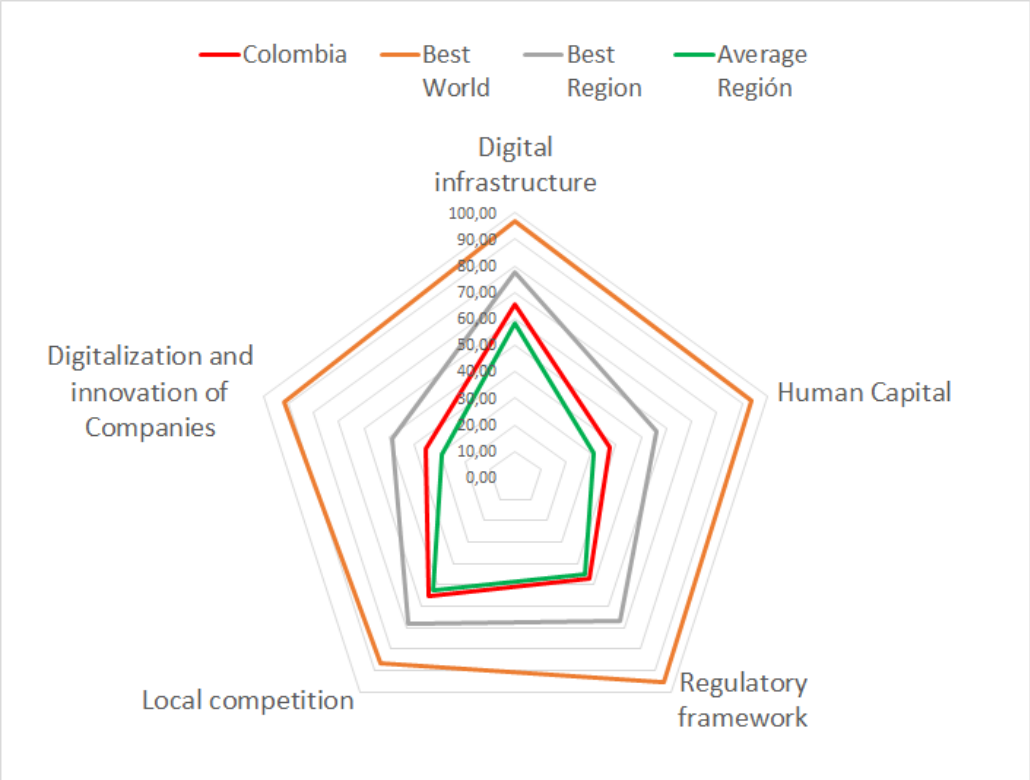
Another strand of service export enhancement is found in the Pacts for Growth (“Pactos por el Crecimiento”), where four service categories are highlighted (BPO, Orange Economy, Software and IT, and Tourism). Among the most relevant bottlenecks identified, are the need to identify and measure the human capital gap in terms of IT, define an agenda to avoid double taxation in BPO and Software companies, and promote enabling conditions for industry, trade, and the attraction of FDI towards the Orange Economy’s main subsectors (i.e., Audiovisual, Artisan Drinks, Cultural Tourism, ADNs) (Vicepresidencia de la República, 2019). There are also useful policy initiatives promoting services-related cluster initiatives in Bogota. These include Software & IT, Creative and content industries, Finance, Health, Transport and Logistics, Business and Events Tourism, and Music.

**Colombia faces steep competition as location for offshored services**. The international consulting firm A.T. Kearney produces a Global Services Location Index that ranks several dozen nations according to their appeal based on financial attractiveness, people skills and availability, business environment, and ‘digital resonance’. After having gained substantially in the 2017 rankings – breaking into the top ten for the first time – Colombia slipped back three places in the 2019 rankings. In Latin America, only Mexico and Brazil rank higher.

**Recent ‘win’ in the offshoring race**. The exact ranking is less important than the attention it draws to the continuous struggle the country faces in competing for new offshored office jobs. There have been some notable wins. Amazon opened a customer service center, Accenture has established a new technology center in Medellín, which they expect will employ up to 500 people in the next year; over the next three years, it may expand to more than 1,000 employees. Employees will include software developers, data scientists, and artificial intelligence specialists. This follows the opening of one of the largest nearshoring sites in 2016, when the Luxembourg BPO giant Atento created 2,000 jobs in Bogotá (AT Kearney 2017, 2019).

**Room for improvement**. An analysis of the shortcoming in Colombia's appeal as a location for modern service exports is presented in Figure 4. Based on a recent study, the lion's share of Colombia's barriers to modern services exports is concentrated in just three categories: Regulatory Framework (in particular bottlenecks related to tax treatment and double taxation agreements), Human Capital (e.g., gaps in education and bilingualism), and Local Competition. In terms of exporting, the lack of labor flexibility is an issue in services such as Professional and Management Consulting Services, and Personal, Cultural, and Recreational services.

**Figure 4. Colombia's competitive shortcomings.**




Source: Duque et al (2020).

**Insufficient digital infrastructure**. Colombia's appeal is hindered by lagging digital infrastructure and ICT compared with the best in Latin America. Critical elements of the problem are the lack of ICT access for many citizens, the availability of highly trained personnel in the use of ICT, and the entry of smaller companies into online markets. Part of this concerns access to mobile and fixed broadband, subscriptions to cellular mobile phones and, access to the internet and online resources, more broadly speaking (Duque G. , Rodriguez, Zuluaga, Guayacán, & Díaz, 2020).

**Skills are another important bottleneck**. The main bottlenecks identified in this dimension are, on the one hand, the training of researchers, the percentage of graduates in careers related to mathematics and the low level of adoption of digital skills in the workforce, which limits the use of the potential benefits of digital commerce. An important part of skill shortage concerns are poor English language skills.

**The regulatory framework needs improvement**. Key constraints limiting the country's export of modern services concern cybersecurity, the rule of law and the adaptability of the legal framework to new digital models, and the protection of intellectual property rights. The discussions should also include standards for payment systems and their importance in the face of the barriers they may represent for the growth of border trade; this considering the greater record of electronic transactions and the entry of new actors in the payment systems they seek to facilitate access to, to a growing number of users who prefer to buy via digital channels (Duque G. , Rodriguez, Zuluaga, Guayacán, & Díaz, 2020).

**Lack of precise information inhibits policy making efforts**. The design of effective policies requires clear and timely information. This is lacking in Colombia (as in many nations). There are biases related to the high aggregation of sectors, the lack of consensus in sectoral definitions, and problems with the business of service companies (Duque G. , Rodriguez, Zuluaga, Guayacán, & Díaz, 2020). The efforts by DANE are useful but could be improved.



### *Policy Recommendations*

The following actions are of particular importance:

**Improve the ecosystem to take advantage of the opportunities of trade in services, in particular modern services (regulatory conditions).**

- Identify barriers for business digitization and digital infrastructure, so as to establish a policy agenda to solve them. There should be an ongoing evaluation of current programs.
- Implement policy measures that promote learning of tools such as programming, software, digital marketing, and bilingualism, allowing for the improvement of education and training programs.
- Ensure that VAT does not tax the export of services.
- Adapt business environment, including the integration of international regulatory standards in digital commerce, including measures against fraud and cyber-crime, protecting intellectual property and consumer rights, modernizing financial system that provide technological tools, in line with new business models, facilitating interoperability of payment systems, and reducing the costs of electronic transactions.
- Improve collection of information and data on modern trade in services, via inter-institutional efforts.

**Design a strategy to promote the opportunities of trade in services.**

- Prioritize tourism and modern services in FDI and internationalization strategies for Colombian companies.

- Create a program to improve participation of Colombians in international freelance platforms and identify barriers to this activity derived from labor, tax regulations, or other sources.
- Encourage Colombian companies to explore their participation in the growing market of trade in tasks within the framework of Global Value Chains.
- Use local sector-specific agendas and institutional arrangements, such as those provided by cluster initiatives, to identify and address bottlenecks that may be hindering the internationalization of modern services.

**References**


Baldwin, R. (2021). *Telemigration and digitally enabled service exports. Opportunities for Colombia.*

Brida, J., Rodriguez Brindis, M., Mejia Alzate, M., & Zapata Aguirre, S. (2017). La contribución directa del turismo al crecimiento económico de Colombia: Análisis por ramas características del sector utilizando la Cuenta Satélite de Turismo. *Revista de Estudios Regionales*, 121-138.

Bustos, P. (2011). Trade Liberalization, Exports, and Technology Upgrading: Evidence on the Impact of MERCOSUR on Argentinian Firms. *The American Economic Review, 101*, 304-340.

Cáceres, W. (2013). *Las exportaciones y el crecimiento económico en Colombia 1994-2010.* Revistas UPTC.

Carranza Romero, J. E., Arias Rodríguez, F., Bejarano Rojas, J. A., Casas Lozano, C., González Ramírez, A. X., Moreno Burbano, S. A., & Vélez Velásquez, J. S. (2018). La industria colombiana en el siglo XXI. *Ensayos Sobre Política Económica*(87), 1-69. doi:10.32468/espe.87

Checcucci E. and Saslavsky D., . (2021). *Enhancing Trade Facilitation, Logistics and Connectivity: challenges and recommendations.*

Consejo Privado de Competitividad . (2021). *Informe nacional de competitividad 2020-2021.*

CPC. (2020). *Informe Nacional de Competitividad 2020-2021.* Bogotá D.C.: Consejo Privado de Competitividad (CPC).

DANE. (2018). *Encuesta de desarrollo e innovación tecnológica (EDIT).*

DIAN. (2020, Jun 26). *Estudio de Tiempos de Despacho de Mercancías 2019.* Retrieved from https://www.dian.gov.co/aduanas/Paginas/Estudio-de-tiempos-de-despacho-de-mercancias-.aspx

DNP. (2014). *CONPES 3797: Policy for the integral development of the Orinoquía: Altillanura.*

Duque, G., Rodriguez, J. S., & Zuluaga, J. (2020). *Barriers to international trade in modern.* Bogotá: DNP.

Duque, G., Rodriguez, J., Zuluaga, J., Guayacán, M., & Díaz, J. (2020). *Mission Study: Modern Services as an Opportunity for Colombia's Internationalization.* Bogotá: DNP.

Echavarría S., J. J., Giraldo S., I., & Jaramillo M., F. (2019). Equivalente arancelario de las barreras no arancelarias y la protección total en Colombia. En J. García-García, E. Montes-Uribe, & I. Giraldo-

Salazar, *Comercio exterior en Colombia: política, instituciones, costos y resultados* (págs. 258-289). Bogotá: Banco de la República-Biblioteca.

Eslava, M., & Haltiwanger, J. (2020). The Size and Life-cycle Growth of Plants: The Role of Productivity, Demand and Wedges. *NBER Working Paper*(27184).

Eslava, M., Haltiwanger, J., & Pinzón, A. (2019). Job creation in Colombia vs. the US: "up or out dynamics" meets "the life cycle of plants". *NBER Working Paper*(25550).

Eslava, M., Haltiwanger, J., Kugler, A., & Kugler, M. (2013). Trade and market selection: Evidence from manufacturing plants in Colombia. *Review of Economics Dynamics*, 135-158.

Eslava, M., Laajaj, R., & Kinda, T. (2019). The Costs of Bureaucracy and Corruption at Customs: Evidence from the Computerization of Imports in Colombia. . *Documentos CEDE*.

FAO. (2015). *AQUASTAT Perfil de País - Colombia.*

FAO. (2019). *Las zonas de reserva campesina. Retos y experiencias significativas en su implementación.* Bogotá .

Feenstra, R. (1995). Estimating the Effects of Trade Policy. In G. Gene, & K. Rogoff (Eds.), *Handbook of International Economics.* Amsterdam: Elsevier.

Fieler, A., Eslava, M., & Yi Xu, D. (2018). Trade, Quality Upgrading, and Input Linkages: Theory and Evidence from Colombia. *American Economic Review*, 109-46.

García, J. P., Patiño, M. C., Salazar, O., & Ramírez, E. (2019, Julio 10). *Lineamientos y recomendaciones para el escalamiento de los servicios de extensión tecnológica en Colombia.* Retrieved from Archivos de Economía. Documento 494: https://colaboracion.dnp.gov.co/CDT/Estudios%20Econmicos/494.pdf

Gilbert, R. J. (2020). *Innovation Matters: Competition Policy for the High-Technology Economy.* Massachusetts: Massachusetts Institute of Technology.

Iacovone, L., Maloney, W., & McKenzie, D. (2018). *Improving Management with Individual and Group-Based Consulting: Results from a Randomized Experiment in Colombia.* Washington, D.C: World Bank Group. Retrieved from http://documents.worldbank.org/curated/en/121371546237097316/Improving-Management-with-Individual-and-Group-Based-Consulting-Results-from-a-Randomized-Experiment-in-Colombia

IGAC. (2012). *Suelos en Colombia*. Retrieved from http://www.siac.gov.co/sueloscolombia#:~:text=El%20IGAC%20(2012)%20reporta%20que,y%2015%20millones%20vocaci%C3%B3n%20ganadera.

IMF. (2017). Making Trade an Engine of Growth for All: The Case for Trade and for Policies to Facilitate Adjustment. *Policy Papers, 17*(054), 64. doi:https://doi.org/10.5089/9781498347013.007

Iootty, M., Pop, G., Pena, J., & Stinshoff, C. (2020). *Competition, productivity and exports: a quick assessment of underlying trends and policy drivers for Colombia.* The World Bank.

Kee, H. L., & Forero, A. (2020). *Non-Tariff Measures of Colombia.* The World Bank.

Kee, H. L., Nicita, A., & Olarreaga, M. (2008, November). Import Demand Elasticities and Trade Distrotions. *The Review of Economics and Statistics, 90*(4), 666-682.

Kee, H., & Nicita, A. (2017). Trade Frauds, Trade Elasticities and Non'Tariff Measures. *http://pubdocs.worldbank.org/en/315201480958601753/3-KEE-paper.pdf*. Retrieved from http://pubdocs.worldbank.org/en/315201480958601753/3-KEE-paper.pdf

Levy, S. (2020). *Productividad y Protección Social en Colombia.* Bogotá: presentation at the launching of the National Competitiveness Report 2020-2021.

Meléndez, M. (2014). *Fondo para la Estabilización de Precios del Azúcar (FEPA).* Bogotá: Ministerio de Comercio.

Mogro, S., Pinzón, K., & Carrillo, P. (2020). *Do imports of intermediate inputs generate higher productivity? : evidence from Ecuadorian manufacturing firms .* IDB WORKING PAPER SERIES N o IDB - WP - 1129 .



OECD. (2015). *Revisión de la OCDE de las Políticas Agrícolas: Colombia 2015.*

OECD. (2019). *OECD Economic Surveys: Colombia.* Paris: OECD Publishing.

OECD. (2020). *Boosting exports and integration into the world economy.* OECD Economic Survey: Colombia 2019.

Reina, M., & Zuluaga, S. (2003). *Bases para un modelo agroexportador para Colombia.* Bogotá D.C.: Fedesarrollo.

Reina, M., & Zuluaga, S. (2011). *Elementos para modificar el Fondo de Estabilización de Precios para el.* Bogotá: FEDESARROLLO.

Rivera, C., García, J., Oyuela, L., Quintero, L., & Robledo, J. (2020). *Trade Facilitation in Colombia.* Bogotá D.C.: Departamento Nacional de Planeación.

Rivera, C., García, J., Oyuela, L., Quintero, L., Vargas, F., & Zuluaga, J. (2020). *Analysis of tariff structure in Colombia.* Bogotá D.C.: Departamento Nacional de Planeación.

Romer, P. (1990). *Endogenous Technological Change.* Journal of Political Economy.

Serrano Amado, A., Montoya Restrepo, L., & Cazares, I. (2018). Análisis de la sostenibilidad y competitividad turística en Colombia. *Gestión y Ambiente*.

Signoret, J., & Tovar, J. (2020). *A Diagnostic of Trade Competitiveness in Colombia.* World Bank.

Solow, R. (1956). *Economic Growth and Capital Accumulation.* Economic Record.

UPME. (2017). *PLAN NACIONAL DE DESARROLLO MINERO CON HORIZONTE 2025.*

WEF. (2015). *How firms that start exporting improve productivity.* World Economic Forum.

WEF. (2017). *The Global Competitiveness Report 2017–2018.* World Economic Forum. Retrieved from https://www.weforum.org/reports/the-global-competitiveness-report-2017-2018

WEF. (2019). *The Global Competitiveness Report 2019.* World Economic Forum. Retrieved from http://reports.weforum.org/global-competitiveness-report-2019/

Winkler, D., Arenas, G., & Espitia, A. (2020). *Global Value Chain Participation And Upgrading: Opportunities and Challenges for Colombia.* Banco Mundial.

World Bank. (2011). *Leveraging Trade for Development.* World Bank Documents.

World Bank. (2020). *Doing Business 2020.* Washington, D.C.: The World Bank Group.

WTO. (2012). *Trade Policy Review Colombia. Report by the Secretariat.*

WTO. (2018). Trade Policy Review Colombia. Report by the Secretariat.

# IV. Institutions for internationalization

**Institutions define the rules of the game faced by the private sector in Colombia with regards to internationalizing.** If the Colombian government wants the private sector to upgrade and close the existing technological gaps with the world, it must modernize the institutions and rules of the game, for that process to take place.

This chapter focuses on the institutional framework around two main policy objectives. First, it looks at the technological gap and institutions involved with the technological upgrading of Colombia's productive sector. Second, it looks at the institutions around Colombia's international trade of goods and services. Related to the latter, it analyses the international rules of the game that the Colombian economy faces in its goal to internationalize.



## A. Technology upgrading

**Colombia needs to be able to identify, adopt and adapt the technology that is out in the world as efficiently and effectively as possible** if it wants to close the income gap with the developed world. This is because even if Colombia were to produce technology and knowledge that is completely new to the world at a rate proportional to its population, it would still only produce less than 0.7% of the world's new technology and knowledge every year.

**However, few firms in Colombia adopt and adapt technology or even innovate.** Between 2007 and 2018, only around 20% of manufacturing companies adopted technologies that were new to the firm and less than 1% innovated (i.e., developed novel products or processes for the international market). Percentages are similar in service sectors (DANE, 2018). Only 2.5% of the country's R&D personnel works for enterprises, compared to 24.9% in LAC ( Global Innovation Policy Center, 2020), 58.5% in medium-high technology products (RICYT, 2018; OCDE, 2018). Furthermore, 1.0% of the country's exports are high-tech (Cornell, INSEAD, & WIPO, 2020).

**There is little collaboration between firms and universities or R&D, technology, and innovation centers**. Colombia is ranked 61$^{st}$ among 126 countries on University-Industry research collaboration, worsening in recent years (Cornell, INSEAD, & WIPO, 2020). Only around 3% of firms that adopted technology and innovation in Colombia collaborate with universities or research centres in their innovation efforts, compared to an average of 18% in Latin America and the Caribbean (CPC, 2021).

From the demand side of technology, this might be related to various factors.

**Firms are not aware of their managerial and technological gaps**. Managerial practices are closely associated with a firms' degree of innovation, productivity and export activity (DNP, 2020). Unfortunately,

in 2018 the average Colombian company had a managerial capability index126 score of 0.37, little over half the score of an average company in the United States (0.615). Critically, the gap between a Colombian manager's objective score and their self-evaluation score is one of the largest in the world (WMS, 2014). This may lead to difficulty in identifying problems, organizing timely responses to changes in market conditions, identifying new technological opportunities, developing plans to exploit these opportunities and cultivate the human resources necessary to adopt technology or innovate (Cirera & Maloney, 2017; Rogers, 2013).

**There is a lack of access to appropriate financing.** Colombia scores unfavorably in entrepreneurship financing (3.39/10) compared to regional peers such as Brazil (4.78), Mexico (4.14) and Chile (3.75) (Global Entrepreneurship Monitor, 2019). Limited resources and lack of access to financing are the first and third biggest obstacles to innovate as reported by SMEs (EDIT, 2020). Regarding credit, Bancoldex has some rediscount lines focused on firm modernization but their grace periods range between 6 to 12 months, while an STI project can take around 3 years to be developed (DNP, 2019). Financial vetting and accounting standards have trouble valuating intangible assets such as intellectual property to leverage credit for technology-intensive firms. Finally, Colombia invests in Venture capital and Private Equity only 0.16% of its GDP, below regional peers such as Brazil (0.26%), Peru (0.25%) and Uruguay (0.23%), and bellow leading countries like Israel (1,54%) (Latin American Venture Capital Association [LAVCA].



**Incentives from competition seem to be weak**. In sectors with the greatest tariff protection, firms with the highest markups are less productive and efficient, less likely to invest in technology and innovation and less likely to export (Iootty, Pop, Pena, & Stinshoff, 2020). This suggest that the ability of manufacturing plants to charge high markups might have more to do with strategic behavior than with efficiency rewards. Moreover, Colombia's product market regulation is more restrictive to competition when compared to regional peers and the OECD average (OECD, 2018).

**Tax benefits schemes for a firms' investment on STI have grown and improved, but there is still no evidence of their impact.** Since 2013, yearly total STI tax benefits have increased fivefold to reach USD 550 million and operate with little administrative costs. Also, analyses for Colombia have found that for each dollar of tax expenditure, private firms invest four dollars in R&D&I projects (World Bank, 2018). Additionally, recent design improvements have made tax incentives attractive to early-stage technology-intensive companies and start-ups, increasing the number of firms that benefit. However, the application process remains cumbersome and costly for firms at a median cost of USD 6,100 (World Bank, 2018). More importantly, no peer-reviewed impact evaluations or cost-benefit analyses have been made, so it is uncertain to what extent are tax incentives generating a greater level of innovation than what would occur in their absence.

**Some technological extension programs have been implemented but remain limited in scale and scope.** An initial pilot in 2012 proved successful in improving managerial practices and revenues by 8 to 10% (Iacovone, Maloney, & McKenzie, 2018). This led to a larger pilot in 2018, and later to the launch of

126 Managerial index is generated and constructed with the methodology of bloom et al, 2019. the questions defined in the business management module correspond to the questions of the MOPS survey. This index defines the best practices close to 1 and the worst practices close to 0.

*Fábricas de Productividad*, which has provided technology extension services in areas such as digital transformation, logistics and energy efficiency to around 1,000 firms per year since 2019. Early analyses have praised the program's design and implementation, and pointed out that it has contributed to improving Colombia's limited supply of extension agents (Fedesarrollo 2021). Nonetheless, it's scope could be widened to include both smaller firms with very poor managerial and technological capabilities, as well as more advanced firms that require more specialized support, which leads them to adopt very specific or frontier technologies.

**Innovation voucher programs are rare and small.** With iNNpulsa and DNP's help, four regional governments have used royalties to fund innovation voucher programs with which firms can pay for services related to intellectual property management, technological monitoring, technological extension, new product development and prototyping. Vouchers have amounts of up to USD 13.000 and finance up to 75% of the contracted services (firms must pay the other 25%). Service providers include STI centers and corporations, universities and private firms (some specialized on innovation management but also in law and consulting companies). However, the programs' scale remains marginal, with each program delivering around 100 vouchers127 so far. Additionally, programs have usually had less than a handful of service providers for each type of service and companies have reported difficulties in getting clear information on the different services they can buy.



**Public Procurement for Innovation (PPI) could do much more to boost demand for firms that dare adopt new technology and innovate.** Several OECD countries have allocated more than 2% of their national public procurement budget to PPI (OCDE, 2017; OCDE, 2020; CAF, 2019). Among other benefits in quality and cost of acquired products, this gives innovative firms sure buyers of innovative products that are nearly market ready. Colombia introduced PPI instruments in its legal framework and some agencies have carried out interesting pilots, for instance, the testing of alternative technologies in the construction of tertiary roads. However, PPI is seldom used, mainly due to the risk aversion of public servants that is related to fear of disciplinary action by control agencies, such as *contralorías* and the *Procuraduría*, low negotiation skills and bad practices in tendering and contract design (CAF, 2019). As a result, sectors with large public budgets direct no resources to innovative solutions, or marginal ones at best, including the sectors of Housing (0% of total budget), Education (0.2%), Transportation (0.1%) and Social Inclusion (0%). Given public procurement accounts for 12% of GDP, allocating 1% of public procurement to PPI would be equivalent to a fifth of Colombia's total investment in STI activities (OCDE, 2019; DNP, 2021).

**Regarding the supply of technology, universities have little incentive to play an active role in channeling technology and knowledge that is out in the world into Colombia**. Salary schemes and national university rankings favor research production, even in local journals with little recognition, rather than research quality and pertinence for the private sector. As a result, although scientific production128 has increased at an average annual rate of 12.2%, citations per study have fallen dramatically in the last decade (OCyT, 2019). Colombia now ranks 187 among 240 countries, last in Latin America, in terms of citations per document (Scimago, 2021). Among 307 HEIs that offer programs nationwide, only 77 (25%) provide

127 Eligible voucher services: i). Intellectual Property and knowledge transfer, ii) technological surveillance and competitive intelligence, iii) prototypes, iv) development of new products, v) technological extension

128 Scientific articles and documents.

master or PhD programs in applied sciences such as engineering, industry, and ICT. In total, 450 programs of this kind are offered in Colombia, representing just 15% of the national offer of masters and PhDs.

**In addition, Colombian universities have limited links with the world.** Recent research on patenting in emerging countries suggests that it tends to be triggered by international collaboration with multinational corporations and other foreign entities (Crescenzi et al). Unfortunately, as of 2020, only 699 recognized researchers (8.4%) have participated in specialized knowledge networks located abroad (MinCiencias, 2020). Only around 47% of Colombian articles in SCOPUS involved international collaboration, lower than peer countries like Chile (61.3%) or Costa Rica (71.3%) (RICYT, 2018). Colombia ranks only 72$^{nd}$ among 141 countries in the number of patents with co-inventors located abroad (WEF, 2019). Furthermore, in 2018 less than 6,000 of the 2.8 million students enrolled in Colombian universities were foreigners (0.04%) and there isn't even reliable data on the number of international faculty.

**The Royalties' STI fund, the biggest source of public funds directed towards STI, leverages little private investment, and is invested in small projects**. At around USD 200 million, the annual budget of the Royalties fund doubles that of the entire STI Ministry. The operation of the fund has greatly improved thanks to open and competitive tendering implemented since 2020. However, in most cases proponents put little of their own money, and thus each public dollar invested by the Royalties Fund in STI projects has only managed to leverage an average of 0.18 dollars of private investment between 2012 and 2020. This is a fraction of what is accomplished with other STI policy instruments. In addition, the fund has historically been divided into separate accounts for each of Colombia's 32 departamentos plus Bogotá. As a result, the fund has supported mostly small projects, as only 6% of approved projects have had budgets of over USD 5.5 million.



**Patent registration is low and most intellectual property is produced by universities and rarely commercialized**. Although patent applications by residents in Colombia (8 per million population) have increased recently, they are still lower than peer countries like Mexico (10), Chile (23), Brazil (26) and a fraction of those in advanced economies such as the UK (272) or the US (869). The same occurs with the number of trademark applications, industrial designs, and utility models (WIPO, 2021). In addition, 9 of the top 10 patent applicants in Colombia between 2009-2018 were universities (SIC, 2020). Partly due to this high concentration of IP generation in academia, commercialization of IP assets is comparatively low. Colombia receives only 0.02% of GDP in royalties for the use of intellectual property, 30 times less than developed OECD countries (Global Innovation Policy Center, (2020).

**Weak demand and supply means there is a small market for applied research, technology and innovation centers to build financially sustainable business models**. Although the STI Ministry has recognized around 70 research, technology and innovation centres, only 28% of these entities obtain significant income from the sale of services, and less than 5% of their personnel are engaged in commercial activities. Additionally, most centres provide little services focused on transfer of technology and intellectual property management (MinCIT, 2020).

**Finally, it must be noted that there is little alignment between national and local policy actions.** According to the PND 2018-2022, Colombia has multiple agendas in science, technology, and innovation

(STI), creating difficulties for the consistency and strategic alignment of policy actions (DNP, 2019). At the national level, there is an institutional framework for competitiveness and innovation and another for science, technology, and innovation, which results in an overlap in their areas of competence and absence of a shared strategic vision, which in turn affects the government's ability to promote collaboration between the private sector and academia. At the territorial level, there are difficulties in aligning priorities. For example, between 2015 and 2016, 33 STI Departmental Strategic Plans and Agreements (PAED) were set in place, which identified 208 thematic focuses (sectors, themes, productive chains) to prioritize investments at the territorial level. However, this prioritization is not consistent with other planning instruments such as territorial development plans or departmental agendas for competitiveness and innovation, among others (DNP, 2019).

### *Policy Recommendations*



Focus on demand-side policies to let private firms drive resource allocation towards different technologies. In addition, some nudging is required for universities and research & innovation centers to offer more and better technology services to the private sector.

**Develop benchmarking tools for different types of firms and sectors:**

- Carry out periodic productive and technological benchmarking exercises per sector, where companies are measured and given feedback on how they measure with respect to national and international frontiers. This should include information on product characteristics, labor productivity, cost and energy efficiency, equipment and technologies, and markets served, among other metrics. This requires constant technological monitoring for key sectors, which could be done either by the government, through agencies like ProColombia or universities and applied research centers (see below).
- Ideally, these efforts should ultimately derive in a systematic process of technological benchmarking and online self-diagnostic tools for firms in key sectors.
- Also, an online self-diagnostic tool on basic managerial practices could be developed and made available right away, designed for micro and small firms of any sector.

**Create the position of "Chief National Technology Officer", as a high-level position, to guide the implementation of this strategy, with the capacity to monitor and evaluate global technological trends and identify gaps and opportunities for Colombia.**

**Increase incentives for firms to invest in innovation, especially tax benefits, innovation vouchers, and matching grants.**

- This should include reducing transaction costs and the uncertainty associated with the use of these instruments.
- Increase resources by redirecting royalties from science, technology, and innovation into this type of instruments.

- Create a national innovation vouchers program led by iNNpulsa, taking into account the lessons learned from the small regional programs that have been implemented. Vouchers could finance 60-75% of the innovations services and firms would pay the rest. The program could operate through invitations to tender, in which firms submit proposals, detailing their specific technological needs and how an innovation service would help solve it. Once a firm's proposal has been accepted, the firm can select the service provider. It is key for there to be many tech and innovation services providers involved in the program. Additionally, clear and complete information of all providers should be available on an online platform where firms can inform themselves, compare scopes and prices of different services and even review providers after they have contracted them.
- Improve access to finance for upgrading of technology, among others, by scaling up rediscount lines from Bancoldex (a second-floor government bank) designed with the help of iNNpulsa. These lines must be adjusted to the needs of technology-based SMEs, with much longer grace periods aligned with the times required for the development of technology projects. Special effort should also be made to familiarize private banks with these credit lines so the access to firms is made easy. It is also key to have a clear definition of technology upgrading for an effective implementation.



Strengthen demand for innovative solutions from the public sector:

- Set minimum percentages of sector budgets that must be allocated through innovative goods and services. These should be done very carefully, providing clear definitions of what exactly is an innovative good or service. Minimums can initially be very low and increase with time to let public agencies become more familiar with PPI.
- Support willing agencies in conducting pilot implementations of PPI, keeping constant communication with oversight agencies such as *Procuraduría* and *Contraloría* to familiarize their officials with PPI.
- Increase visibility of success stories and use lessons from them to streamline regulations and produce handbooks, online courses, and other tools on PPI for public servants.
- In addition, best practices should be applied in ordinary public procurement tendering to allow or even incentivize private contractors to propose innovative solutions.
- INNpulsa's MiLAB, which organizes specific public policy challenges for firms to propose innovative solutions, should not only be expanded, but it should also transfer its methodology to procurement-intensive agencies.

Evaluate STI tax benefits to maximize their impact on investment and technology

- Streamline the application process.
- Carry out a peer-reviewed impact evaluation of the program and a cost-benefit analysis to better understand the program's impact at the intensive and extensive margins. Adjust the program's design accordingly.

**Encourage universities and research centers to become suppliers of innovation services aimed at solving problems in the productive sector.**

- Adjust their governance and incentive schemes including, but not limited to, salary schemes and current rankings to reward commitment to internationalization, as well as the quality, applicability, and commercialization of research.
- Facilitate the hiring of international faculty and attraction of foreign students (see the "individuals" chapter).

**Establish and strengthen centers for applied research and innovation focused on either technologies or industries.** Resources should be directed to help set up technology and innovation centers for applied research and innovation focused on specific technologies (Artificial Intelligence, Internet of things, etc.) or broad businesses (agroindustry, bioeconomy, clean energy sources, etc.). These centers should be projects of a national or event international scale, hopefully anchored within top universities with a proven record of effective technology transfer and in collaboration with the private sector.

Adjust selection criteria for STI Royalties Fund:



- Reward collaboration with both international actors and private firms
- Require applicants to invest at least one dollar of their own resources for each dollar received from the STI Royalties Fund. This will i) promote greater skin in the game, ii) generate greater focus on STI projects that generate enough returns down the road and iii) incentivize universities to look for private firms interested in funding the project, increasing the likelihood project results ultimately translate into marketable solutions.
- Thanks to the recent Royalties Law, from 2022 onwards the STI fund will no longer be divided into 33 different accounts. Take advantage of this to direct funding towards larger, more ambitious projects of national scope and impact.

**Increase the effort for post-graduate studies abroad and reduce incentives for immediate return after graduation and create opportunities for Colombian post-graduate students to work abroad**. To internationalize an economy, it is not sufficient to have the youth study abroad and return immediately. Some of the most valuable skills, such as managing, teamwork and customer relations, that are learned at the job and university education are no substitutes for these. Internships and jobs abroad should therefore be an integral part of the international experience. Several of the transnational Colombian entrepreneurs interviewed refer to the benefits from internships and entry-level jobs outside Colombia. Yet the most popular programs for student loans (COLFUTURO and those given by the STI Ministry) make it costly to work abroad after graduation. Up to 80% of the loan can be forgiven to those that return to Colombia for at least three years after graduation. The loans, however, must be paid back in full and with high interest rates (up to 15%) for those who choose employment abroad. This means that Colombia is not making good use of the 1 to 3 years of Optional Practical Training extension that the U.S. offers foreign students. A similar situation occurs with MinCiencias' loans, as 80% of the loan is forgiven to students who return within 36 months of graduation.

## B. Institutions for technology upgrading.

**Colombia's two different national systems around technology and innovation generate institutional duplicities and hinder coordination.** On the one hand, the National System for Competitiveness and Innovation (SNCI) is focused mainly on the demand side of technology upgrading, including entrepreneurship, productive diversification towards more value-added products and firm innovation. On the other hand, the National System of Science, Technology, and Innovation (SNCTI) focuses on the supply side of technology, usually prioritizing research and development over technology adoption and adaptation. This division reflects itself at the regional level, with each sub-national government having a separate regional committee within each of the two national systems. Namely, the Regional Commissions for Competitiveness and Innovation (CRCI) are part of the SNCI, and the Regional Committees for STI (CODECTI) are part of the SNCTI. Both systems were created to promote coordination among different ministries and agencies and facilitate their interaction with the private sector. Yet, despite efforts to merge or improve the coordination between the two systems, they remain largely independent from each other.



**Thus, responsibilities to support technology upgrading is dispersed among many institutions, which is generating duplicities**. To mention some examples, *iNNpulsa*, *MinCiencias* and *MinTIC* have different programs to support technology-based firms. Also, while *MinCiencias* implements programs for universities to provide technology services to firms, *iNNpulsa* has spearheaded the implementation of innovation vouchers, and *Colombia Productiva* implements Colombia's technology extension program. Both *iNNpulsa* and *MinCiencias* are each collaborating with *Bancoldex* to set up credit lines for innovation projects. Efforts to unify both initiatives have failed.

**In addition, the institutional division of policymaking and implementation has deteriorated to the detriment of structural policies.** In theory, Ministries should design policies based on which their related agencies would establish and implement programs. However, this separation of roles has been eroding, with ministries frequently implementing programs directly, drawing time away from structuring long-term policies and debilitating implementing agencies.

**Moreover, the institutional framework for private sector development is fragmented into sectoral silos**. MCIT, MinAgricultura, MinTIC, MinEnergía, MinCiencias, among others, all have private sector development responsibilities within specific sectors of the economy. They each design and implement policies directed to the firms in their respective industries with different and sometimes contradictory objectives and rationales. The division between the ministries of industry and agriculture is particularly worrisome, especially given the large potential of agroindustry in Colombia. In addition, the sectoral emphasis of Colombia's institutional framework is reflected in budget allocation. The more sector-oriented ministries have the biggest budgets, while MCIT and MinCiencias jointly receive less than 0.5% of the central government’s annual budget. This phenomenon occurs even within MCIT, where the

tourism deputy ministry receives around 55% of the total budget while the trade and private sector development deputy ministries receive 14 and 28%, respectively.

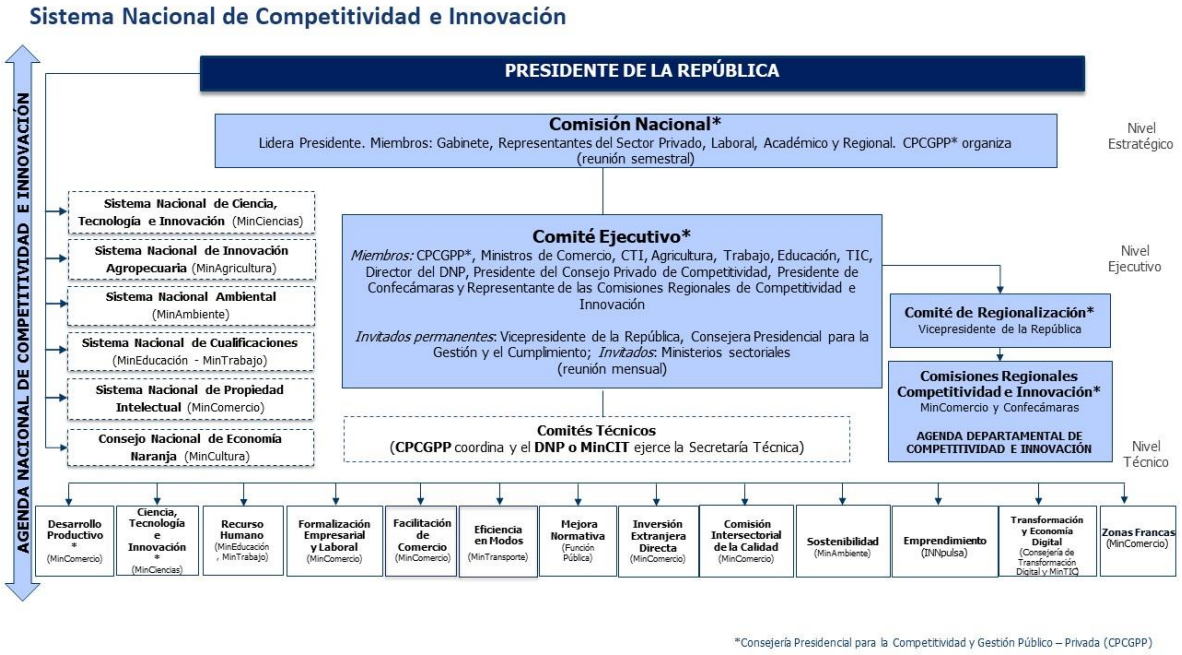
**Finally, the government's policy mix is dispersed among many programs and policy instruments, many of which have a marginal scale.** For 2021, DNP has mapped more than 600 policy instruments to raise Colombia's competitiveness, implemented by 78 different government agencies. Around 50% of these programs have a budget under USD 300.000, and, given how many programs there are, very few of them have been subject to impact evaluations. The DNP has issued more than 370 recommendations to improve the policy mix, including eliminating and merging programs or changing the agency in charge of implementing them. So far, around 50 of these have been entirely or partially implemented.

**Even under a perfectly designed institutional framework for private sector development, technology adoption and diffusion require complementary private and public goods needing intensive coordination**. Arrangements like the SNCI or the SNCTI could be helpful to achieve that public-private coordination, but they have yet to prove their effectiveness fully.



**At the national level, the SNCI has public-private committees that discuss and coordinate the implementation of cross-cutting policies (figure 1)**. These include, for instance, the Intersectoral Committee on Quality (CIC). This body promotes the national quality infrastructure, which involves metrology, accreditation, and conformity assessment services. These services are essential for firms to demonstrate their compliance with quality standards associated with research, adoption of technology, innovation activities, and access to international markets. In addition, the Executive Committee of the SNCI, composed of the Vice-president, various ministers, presidential advisors and private sector representatives, is a dynamic forum able to build consensus and make decisions of the highest order. For instance, the Executive Committee has overseen the implementation of the ArCo Methodology, which maps all policy instruments to support the private sector, evaluates them ex-ante and recommends improvements to raise the quality of public investment.

**Figure 1. Structure of the National System for Competitiveness and Innovation (SNCI)**






**Nonetheless, the SNCI has little influence over budget decisions and has yet to prove the ability to address the most structural challenges to boost Colombia's internationalization.** The Ministry of Finance does not participate in the SNCI, significantly reducing the ability to turn policies into practice. Moreover, discussions within the SNCI tend to focus on issues where consensus is relatively easy to achieve. The SNCI committees have yet to prove their ability to tackle truly contentious matters or draw up transformational policy agendas.

**Finally, considerable challenges remain in aligning incentives between the national government and regional authorities.** Few key national-level agencies have regional branches for policy implementation on the territory. There are also few policy instruments or resource allocation that generate incentives for national-regional alignment. As a result, national-regional coordination tends to depend on various committees such as the CRCIs and CODECTIs. Because these committees do not make budget decisions, discussions rarely turn into actions.

## *Policy Recommendations*

**The institutional framework for private sector development needs a profound reengineering to:**

- Unify the national and regional instances of the National System of Competitiveness and Innovation and the National System of Science, Technology, and Innovation (STI) and their articulation with relevant actors of the public and private sector, academia, STI, and civil society.
- Boost cohesive policymaking under a single institutional coordination system.

- Strengthen the institutional framework for private sector development, moving away from sectoral silos—the enormous need for coordination and the duplication of efforts signal that the current framework can be improved.
- Consolidate the policy mix towards programs of a larger scale with the biggest proven impact.
- Institutional re-design must go together with decisions about budget reallocation and a revision of budget processes to ensure that a programmatic approach prevails over a sectoral one. If done well, budgetary reform can help inter-institutional coordination and optimize resource allocation across initiatives and programs.
- Explore replacing inter-institutional committees at the level of sub-national governments with the physical presence of national-level agencies on the territory.



## C. Institutions for international trade

**A solid and comprehensive institutional setup is vital to develop an effective internationalization policy framework** (OECD, 2001). As Colombia embarks on promoting greater integration into the world economy, leveraging its competitive advantage, and maximizing trade's economic and social benefits, adequate institutional arrangements are essential. They are key to formulate and implement trade policies, promote international trade, and attract foreign direct investment (Gonzales, 2020).

**Existing institutional bodies have defined policies primarily oriented to trade, tariffs and FDI, but internationalization requires a broader approach.** Colombia has a High Council on Foreign Trade, led by the President and composed of various ministers and heads of national agencies, with a mandate that includes defining policies on the trade of goods and services and FDI. However, this council has not met in the last three years.

**The Ministry of Commerce, Industry and Tourism's (MCIT) centrality in trade policymaking and implementation has diminished.** MCIT has a broad trade policymaking mandate but is also responsible for a set of policymaking, promotion, regulatory and supervisory functions across a vast number of areas. In addition, the increased intervention of other institutions and weak coordination mechanisms results in a diffusion of influence and the fragmentation of decision-making prerogatives (Gonzales, 2020). In its decision-making, for instance, the MCIT highly depends on the Ministry of Finance, with roles that go from setting tariff levels to implementing customs processes through DIAN, the tax and customs agency attached to it. Weak coordination has also resulted in a proliferation of non-tariff measures (see Chapter x) and complex and cumbersome processes and procedures in import and export (see below). Limited institutional prioritization of trade in services hampers MCIT's ability to reduce barriers in key sectors for effective participation in global value chains (Gonzales, 2020).

**Moreover, advisory committees on trade, customs, and tariffs operate on a demand basis that favors more established sectors and companies and results in piecemeal policy decisions.** The Committee for

Tariffs, Customs, and Trade works as an advisory body of the executive government for general trade policy and requests from the private sector and other government agencies (Rivera et al., 2020). As this committee continually decides upon private-sector requests, it may be subject to capture. Its activity generates constant changes over tariffs and customs measures, not necessarily consistent over time or reflecting general policies129. Similar issues occur in the Trade Practices Committee and the Commission on Free-Trade zones.

**Although Colombian exports of services have increased over time130, the institutional framework does not correspond to its dynamic**. Service sectors and trade in services occupy a growing place in national economies and international trade (OECD, 2017). The MCIT does not have a specific vice-ministry or unit devoted to services exports. The only exception within that is the Vice Ministry of Tourism. There is also an Orange Economy Vice Ministry at the Ministry of Culture. Other Ministries oversee other service sectors (like energy and communications). But there is no single authority ruling over service exports, not even a specific committee within the National System for Competitiveness and Innovation, that would be there to improve and coordinate the internationalization of these sectors.



**Regarding customs and logistics, ports in Colombia are less efficient than in Latin-American peer countries.** Although port capacity increased by 52% between 2010 and 2018 (reaching 401 million tons), port and border handling remain a significant bottleneck for international trade of goods (DNP, 2019) (OECD, 2019). Colombia's exports spend nearly twice as much time (112 hours) in customs, inspections, and port handling as do exports from Chile and six times more than Mexico. Most delays in processing exports are explained by port handling, clearance and inspections required by agencies other than customs (World Bank Group, 2019).

**The customs agency (DIAN) requires a comprehensive modernization and must shift its focus from control to facilitation of trade operations**. Two things reduce the efficacy of DIAN customs and tax operations. First, the low use of the great amount of information the agency gathers from taxpayers and customs procedures. Second, the lack of automation and traceability of customs operations (CONPES, 2020). These features imply multiple requirements of forms and documents from users that could be eliminated or rationalized. They also prevent a comprehensive risk assessment of operations, reducing the agency's control on operations efficiency and generating delays and operational costs for firms engaged in international trade operations. DIAN has launched an ambitious modernization plan, but implementation is only beginning.

**In addition, there is limited coordination among customs and other border authorities such as ICA, INVIMA, and the anti-narcotics police. OECD Trade Facilitation Indicators show that one of the worst-performing areas in Colombia is the internal border agency cooperation (Score of 1.18/2).131** Colombia should increase efforts to perform joint inspection processes by all control agencies in a single time and

129 See (Rivera et al, 2020), for a description of the Structural Tariff Reform –REA- design, implementation, and guidelines.
130 As shown in the chapter of Trade in Goods and Services, for the period of 2000-2019, the services exports have tripled their participation.
131 The average score for Colombia is 1.53; and among the 11 categories measured internal and external border agency cooperation get the lowest scores, 1,18 and 1 respectively. However, they have not the largest distance to best practice. See: https://www.oecd.org/trade/topics/trade-facilitation/

place. Cooperation and exchange of information between trade control agencies could be improved. For instance, the customs system is not integrated with the single window for foreign trade (VUCE). Among other benefits, it would eliminate duplicities and reduce the regulatory burden for users. Improving risk profiling mechanisms and moving to an integrated risk management system can help reduce long delays in inspections (OECD, 2019 2).

**Logistics, both inland and at the border, remain a significant drag on Colombia's competitiveness.** Logistics play a crucial role in facilitating the movement of goods (OECD, 2019). Colombia's performance in logistics is also well behind OECD standards and most countries in the region, in part due to the country's infrastructure. First, there are high land transportation costs. Domestic transportation costs represent around 5% of the total export price, while international transportation represents 4.5% of the price (García, Collazos, López, & Montes, 2017). Second, the quality of port infrastructure is poor. On a scale of 1 to 7, where 7 is the best, Colombia stands at 3.8 according to calculations made by the OECD based on WEF Global Competitiveness Index data for 2007-2017. Additionally, there are weak clearance processes, uncompetitive shipment prices, low-quality logistics services, and poor ability to track and trace consignments.



**Regarding export promotion, ProColombia's budget is relatively small and dispersed among many activities with little evaluation.** Most of Pro-Colombia's programs have not been evaluated, so there is little evidence to decide where to focus efforts and resources. Additionally, inaccurate metrics and a lack of systemic benchmarking hinder a thorough assessment of ProColombia's achievements. Accurate metrics are required to assess progress in achieving the goal, but current reporting presents shortcomings. For example, information on foreign investment in ProColombia's biannual report includes equity funds, which are not direct investments. It also includes foreign investment in infrastructure projects. In contrast, most investment promotion agencies report productive FDI (including efficiency-seeking, market-seeking, and natural resource-seeking) or disaggregate FDI flows to avoid distorting the FDI picture. The same occurs with export promotion programs, as many agencies have very specialized personnel in foreign markets in charge of monitoring and understanding the dynamics of international demand, periodically reporting on its findings. For ProColombia to unleash its full potential, increased transparency of operations and results are critical, starting by making public relevant key performance indicators and results of annual evaluations. In addition, a thorough assessment and revision of metrics to improve clarity, strengthen rigorousness, and provide comparable yearly information is important (Gonzales, 2020).

### *Policy Recommendations*

Leadership of the President in the internationalization policy and its implementation.

Encourage all actors working on sectoral productivity agendas, particularly those within the framework of the Regional Commissions of Competitiveness and Innovation, cluster initiatives, and Pacts for Growth and Employment, to work on internationalization efforts in line with the recommendations of this mission.

Strengthen the different institutional arrangements the government has at its disposal that would allow these coordination efforts to take place:

- The Higher Council for Foreign Trade must regain its role as the highest authority of trade policy (return to the origin of this instance). It should be the key instance in decision-making and expand its scope to all issues related to internationalization.
- Consolidate the leadership of the Ministry of Commerce, Industry and Tourism in trade policy and its articulation with a more proactive Foreign Ministry on economic integration issues.

**Restore and strengthen the MCIT's leadership role in trade policymaking through improved inter-agency coordination mechanisms.** The objective of more effective cooperation mechanisms under MCIT should be to align the strategic trade vision and functional actions across the Colombian government to increase policy coherence and maximize impact. Priority institutions for improved coordination include DIAN, INVIMA, ICA, and Anti-narcotics Police; others should follow. These coordination instances must be evaluated to assess the clarity of their mandates, the required levels of coordination, individual and collective responsibilities of the entities involved, the evidence to support consultations, the availability of secretariat support, improved performance management, the existence of follow-up and monitoring systems, the level of stakeholder engagement and the effectiveness of communications. Based on this assessment, MCIT could identify appropriate reforms, discuss them with counterparts and implement them (Gonzales, 2020).



**Raise the institutional profile of trade in services and strengthen inter-agency governance mechanisms to support increased policy focus on services.** MCIT's trade policymaking institutional framework and governance mechanisms concentrate on merchandise trade, with relatively less attention placed on trade in services. Increased focus on service sectors would require more than strengthening the institutional setup (Gonzales, 2020). A Vice Ministry focused on trade in services should be created. This Vice Ministry would absorb the current Vice Ministry of Tourism and define policy guidelines to promote all internationalization of services, including the reduction of barriers that erode export competitiveness, such as discriminatory treatment of foreign suppliers or poor domestic regulations (Gonzales, 2020).

**Streamline MCIT's institutional structure in the medium term to release it from supervisory and regulatory roles and increase its focus on trade policymaking**. MCIT's institutional and governance framework for trade policymaking, which resulted from the fusion of the ministries of economic development and foreign trade in 2002 (Ley 790, 2002), is similar to that of other countries. However, its overall mandate is broader as MCIT leads industrial, domestic commerce, and tourism policies, in addition to trade. There are synergies from housing these areas under one institutional framework, but it also risks diluted leadership and attention to each topic. In the case of MCIT, the risk is exacerbated by additional responsibilities over several superintendencies and entities that perform supervisory and regulatory functions, which distract from policymaking and may even generate conflict with it. MCIT's overall institutional structure could be streamlined to release it from supervisory and regulatory roles, such as those exercised in relationship with corporate governance, industrial design, or business administration, and increase its focus on its core functions of policymaking (Gonzales, 2020).

**MCIT should not be directly in charge of implementing programs**, except during the pilot stage of new instruments, which, if adopted, and once fine-tuned, should be placed in the hands of an executing entity. Policy instruments and programs, currently implemented directly by MCIT, should be transferred to

implementing agencies. Implementing units such as *Colombia Productiva* and *iNNpulsa* should not be part of MCIT and instead should be set up as implementing agencies attached to the MCIT administrative sector. Finally, policies and programs should be subject to external impact evaluations and their results used to adjust them or, where appropriate, eliminate them (Meléndez, 2015). This process should start with those programs with the biggest budget allocation, such as free trade zones.

**Regarding export promotion, ProColombia needs to be strengthened, focusing its efforts on programs with proven impact.** Benchmarking exercises show that the best export promotion agencies focus on specific sectors and firms that have already exported at some point. In addition, they have very specialized personnel in foreign markets in charge of monitoring and understanding the dynamics of international demand, by periodically informing exporting firms on how these dynamics are evolving. Finally, they support firms from their initial contact with a potential customer until they establish a permanent commercial relationship, which, although costly, can be more cost-effective. ProColombia already does some of these activities to some extent. They must be evaluated so that the agency starts to pinpoint which of them have the greatest impact and double down on them.



**Strengthen metrics and evaluation, and implement systemic benchmarking of ProColombia's performance**. A highly effective trade and investment promotion agency can play a significant role in Colombia's internationalization. For ProColombia to unleash its full potential, increased transparency of operations and results is critical, starting by making public relevant key performance indicators and results of annual evaluations. In addition, a thorough assessment and revision of metrics to improve clarity, strengthen rigorousness and provide comparable annual information is essential. In the same venue, key ProColombia's export services and investment promotion programs could benefit from an impact evaluation to correct course and consolidate strengths. Regular benchmarking exercises with competitors and comparable countries could be implemented, among others, to assess basic profile and structure, mandate, critical services provided, sectoral prioritization, budget, personnel, offices abroad, key performance indicators, and monitoring and evaluation. Finally, an annual survey of stakeholder perceptions could provide additional input to improve performance (Gonzales, 2020).

## D. The global rules of the game for Colombian internationalization

**The nationalist and protectionist tendencies of some major players in the international economy pose a significant challenge for Colombia.** Trends towards the construction of walls, barriers, and border protection, as well as the potential division of the world into blocs of standards and technological models, impose increasing costs for everyone; these costs are usually compensated by larger countries either with force (to obtain concessions from their rivals) or by disbursing money (to compensate the affected productive sectors).

**The erosion of compliance with international trade rules is particularly worrying.** The global trading system's proper functioning depends on robust dispute settlement mechanisms, both at the multilateral and bilateral levels. The blockage of the WTO Appellate Body and the increasing recourse to unilateral

retaliation measures undermine confidence in the international rule of law and make global integration more vulnerable.

**Nonetheless, the progressive and permanent growth in flows of goods, services, capital, and people worldwide reflects an unabated global integration**. This trend is combined with continued population growth in general and an increase in the middle-class' share of it, especially in Asia and Africa. This integration process will continue despite an important slowdown in global trade in recent years and especially during the exceptional year of 2020. The fundamental variables of population growth and trade interdependence are far from reversing the integration process; on the contrary, it can be anticipated that the fundamental trends will continue for the next years and decades.

**The WTO remains the gravitational center of trade.** The best way to deepen the internationalization of the economy would be deepening WTO multilateral rules. The Doha Round's exhaustion has led to the negotiation of bilateral trade agreements (second best). It has led to the negotiation of mega-trade agreements, which "plurilateralise" tariff preferences and rules of origin, and gain weight in the geopolitical order. However, these multiple trade agreements tend to divert trade and complicate rules and predictability. Pushing for reinforcement of WTO at the core center of multilateralism is thus fundamental.



**The future lies in Asia and Africa.** By the end of the century, the UN expects the population to remain relatively unchanged in the Americas and Europe. Still, there will be three billion people more in Africa and one billion more in Asia. More than 80% of the world's population will live in Africa and Asia, regions where per capita income has been growing at higher rates. The Atlantic Ocean will progressively lose its current prominence to the Indian Ocean.

**Colombia should avoid the protectionist policies** that have recently been prominent among some countries. Protectionism makes domestic production inputs more expensive, increases prices for final consumers, lowers the real wage, demands greater fiscal compensation, and increases political interference in economic and trade discussions. In other words, aggressive compensation mechanisms are not sustainable for Colombia in the medium run.

**Colombia must actively take advantage of the existing international institutional architecture - formal and informal - as part of the defense and promotion of its interests.** In the context of nationalist drift in some major countries, coupled with growing trade tensions between large blocs, Colombia must promote the defense of rules-based multilateralism and design its trade strategies, policies, and measures accordingly. Small and medium-sized countries are dependent on the protection and stability offered by international rules. In addition, Colombia should participate with special attention in schemes aimed at addressing the crisis of the Appellate Body, the crisis of the investor-state dispute settlement system, and the weaknesses of the dispute models of some regional mechanisms.

**Monitoring and participating in the mega-blocs being created (TTIP/ RCEP) is crucial.** Non-participation entails risk of exclusion, especially as other countries decide to engage in these blocs. Indeed, trade diversion is predictable towards countries that do belong to the large blocs, by creating communities of standards, rules and trust that influence private actors and their business decisions. Organizing production

into global value chains raises costs and risks for those not institutionally associated with them. Colombia is a member of the Pacific Alliance but is not part of the CPTPP or APEC, of which its partner members in AP are. This situation forces Colombia to look for alternatives to approach countries in the Pacific rim.

**Colombia must negotiate for the future.** Focus should be placed on trade agreements with countries and regions that are particularly promising for the future, and with which there are no particularly close relations at present. Because of population growth and economic dynamism, it is key to focus efforts on creating markets for Colombian goods, services, and capital in Africa and Asia. Prospective analyses towards risks and opportunities for trade are also crucial to identify trends, opportunities, and new patterns in Global Value Chains.

**Deepening regional integration should also be a priority**. While the engagement with multilateral institutions enables access to knowledge, standards, and best policy practices, regional integration can bring new market access opportunities faster and effectively integrate the country into Global Value Chains. Therefore, it is essential to establish a comprehensive strategy to boost regional integration, taking advantage of the existing framework, seeking new opportunities, and aligning it with national initiatives, such as sanitary diplomacy, quality certification, and the promotion of the accumulation of rules of origin.



**The standards bout will force alignments.** On the other hand, Colombia must assess its role in the international trading system, being aware that its strategic decisions, especially in the selection of international standards in ICT, the acquisition of technology, investment in R&D, financial movements, and investment in infrastructure, will necessarily force alignment with international economic powers, with the benefits and consequences that this entails.

### *Policy Recommendations*

Internationalization requires proactive participation in the definition of the global rules of the game, as well as the relationship with new markets.

- Promote a proactive government participation in global, regional, and bilateral institutions related to the formal and informal rules of the game of economic integration (WTO; OECD; ITU; WIPO; among others). The importance and priority of multilateralism.
- Develop initiatives and instruments for relations with new markets in Asia and Africa, in response to global growth trends.

El futuro es de todos

Gobierno de Colombia

# INTERNATIONALIZATION MISSION