Trade and Industrial Policy of Ecuador : Proposal of Improvement for the Insertion of Ecuador into the 21st Century Economy

By

ZARATE DIAZ, Paul Marcelo

CAPSTONE PROJECT

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

For the Degree of

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Acknowledgment

When I started my career as a public officer in 2017, I knew that strengthening my academic knowledge was a must if I wanted to come up with ideas for solving the issues harming the path to development in Ecuador. After four years of working with passion and curiosity, I could come to Korea to study at the highest level. There are no words to explain my journey in KDI School, in Sejong, and Korea overall. I just want to extend my deep appreciation to KOICA, KDI School of Public Policy, my professors, school staff, friends, and the wonderful people I have met during this adventure.

Indeed, due to the knowledge shared by my beloved professors and amazing classmates from Africa, Asia, Latin America, Europe. In addition, because of the experiences I had outside the classroom, living in this beautiful and vibrant country, I became a better friend, better professional, and moreover, a better human being. 감사합니다!!

Finally, I would like to extend my deep gratitude to all my colleagues in Ecuador, my friends, and of course my family, especially my parents, who showed me the power of education, adaptation, and hard work to succeed in any context, and my sisters who always believed in me.

This research reflects hard work, imagination, innovation, and of course, science, factors combined in one document for helping Ecuador and other countries to become prosperous societies.

Executive Summary

Ecuador has executed various industrial policies during the XX century with different focuses and results. Still, none of them could achieve the primary purpose, “creating a prosperous and developed nation.” Currently, Ecuador has in force the “Industrial Policy 2016- 2025.” However, it is not under execution since there is a disconnection between the projects, goals, and strategies with Ecuador's competitive advantages and future global demands and trends. Besides, Ecuador does not have a formal trade policy; instead, the Ministry of Production, Foreign Trade, Investments, and Fisheries are executing trade agendas trying to sign free trade agreements with key commercial partners. Still, those agreements aim to take advantage of the current economic structure of Ecuador, which is characterized for promoting agriculture products, low-skill jobs, and no innovation.

In this regard, this research describes a new approach of trade and industrial-innovation policy, outlining factors that determine its success or failure. Moreover, the study revised up-to-date bibliography to identify characteristics for increasing the odds for designing and executing trade and industrial-innovation policies. Besides, it describes the actors and roles that must develop the design and execution of the policy. Finally, a logical framework matrix is presented with general activities that will guide the update of the current industrial policy, to build a new approach for the insertion of Ecuador to the 21st century.

The principal findings of the research show that the current industrial policy of Ecuador is not efficient and must be updated. The trade agenda should be transformed into a policy integrated into the industrial one. Moreover, for the updating, the Government should consider factors such as climate change, COVID-19, political issues like the trade war between China and the United States, the structure of a new global economy by 2050, and the rise of the African Free Trade Agreement. All those situations bring about opportunities and threats that must be tackled with a long-term, adequately financed innovation policy, structured after discussions with the private sector, academia, and civil society. Indeed, the new trade and industrial policy should be the outcome from communication with different actors instead of being a set of top-down actions proposed by the public sector. Finally, the trade policy must be built in concordance with the industrial policy and focused not only on the current supply but also on the future international demands and needs.

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Introduction

There are several phenomena that have shaped the history of humankind, from the rise and fall of empires, States, companies, political leaders, as well as the outbreak of technologies, social and political movements, world wars, etc. However, among those events, there are outstanding situations that have impacted in deep how humans interact with each other. Those moments are the industrial revolutions in 1760, 1890, and 1960. Indeed, each industrial revolution has brought about scientific innovations reflected in products and services for boosting social welfare.

Classic literature shows that there is a direct relationship between industrial activities, open markets, and well-being. Likewise, history manifests that those countries where industrial

revolutions started have been better off among the time, such as England, the United States, and most currently Asian countries like China, Japan, and Korea. Thus, it is understandable the motivation behind developing nations trying to build up policies to promote industrial activities and trade. Still, it is not an easy task.

Through the years, there have been dozens of industrial and trade policies wrongly proposed and executed, especially in Latin America and Southeast Asia, regions characterized by having vast quantities of natural resources and fair human capital and infrastructure, that in theory should be enough to start the path for development, but in real life, such resources had not been enough to settle a robust industry (Etzkowitza & Brisolla, 1999; Salazar et al., 2014).

So, what are the factors behind a successful trade, innovation, and industrial policy? A simple question that does not have a fixed answer but can be addressed from the academic point of view to give policymakers tools and information for designing and executing policies with a high probability of generating positive outcomes for society.

In this sense, it is imperative to understand that a combination of factors plus competent policy design and implementation lead to prosperity and development. There are real examples of countries that, after boosting their industries, had been involved positively in terms of social welfare, economic prosperity, and safety, shifting from underdeveloped nations to becoming leading nations shaping the present and future of the world. The Republic of Korea -hereafter Korea- is one of those countries.

Korea is a unique example in history for transiting the path into development in a relatively short period of time. A country that once reports a life expectancy of 42 years (1955), a per capita income of $80(1960) -that in current prices equals the poorest countries in Asia and Africa-, and a literacy rate of 67% among the population older than 15 years (1976). But

currently, a country reporting a life expectancy of 85.7 for females and 19.6 for males (one of the highest in Asia), a per capita income of $43.319 (current prices), a literacy rate of 97.9%, and considered in the top 5 of the most innovative countries in the world (United Nations, 2021; UNESCO, 2014; Asia Society, 2021).

How could the Korean evolution be explained, better known as the Miracle of the Han River, from 1950 to 1990? In simple words, the bibliography exposes that the early development stage, market-oriented industrial promotion, market liberalization, and strong coordination between government and private sector under a clear plan or policy were crucial. But deeper research argues that the "miracle" can be explained by a combination of factors that involve democratic institutions, efficient public policies, and especially an international context that allowed Korea to promote the internal industry and conquer international markets (Park, Kim, & Park, 2021).

Likewise, China, Singapore, and Taiwan are considered case studies for being countries and States who reported high-speed evolution between the 60s and 90s due to a transition from their economies to industrial activities. In summary, governments from developing countries, such as Ecuador, have designed and executed public policies to promote their industrial sector following the abovementioned examples. However, the outcomes have not been as expected even though the country had counted with important financial sources and human capital.

In this regard, Aiginger & Rodrik (2020) states in their publication "Rebirth of Industrial Policy and an Agenda for the Twenty-First Century" that the current context of the world is favorable for promoting a new approach of industrial policy, different from those ones who were successful in North America, Europe, and Asia in the past. Likewise, some authors and publications from international organizations promote that the world is living in the era of the 4th

Industrial Revolution, and even some research mentions that the COVID-19 is opening the doors for the 5th Industrial revolution.

All considered, the present paper digs into the latest bibliography about industrial, trade, and innovation policies to highlight the characteristics, structure, and process to design and undertake a policy in the context of the 21st century considering phenomena as deindustrialization, climate change, trade wars, etc. Besides, the research considers secondary data for proposing an update of the current Ecuadorian industrial policy with the aim of setting the basics for transforming the economy in the medium and long run.

i. Statement of policy problem

Outdated industrial policy and lack of formal trade policy

Ecuador is a medium-income country, historically relying its economic structure on exploiting natural resources and producing agricultural, aquacultural, and fisheries goods (see figure 2). In this regard, the country follows the structure of a typical Latin American country and some African countries, with vast natural resources, fair human capital, and infrastructure but low levels of knowledge and innovation. Moreover, Ecuador saw an increase in their GDP of 58.8% from 2009 (62.520 millions USD in current prices) to 2015 (99.291), a higher growth rate than countries with similar economic structures like Peru (57%), Colombia (26%), and even the major economies of South America Brazil (8%), Chile (41.5%) (The World Bank, 2021).

Endogenous and exogenous factors explain the outstanding performance of the Ecuadorian economy from 2009 to 2015. Considering external factors, the increase of the international oil prices brought about a vast amount of income to the government and opened credit lines with global financial institutions. Besides, the spread of the Chinese influence in Latin America allowed Ecuador to receive funds without complex operations.

Similarly, the internal factors were the increase of the public spending to build public infrastructure for transportation, health, and energy; the application of a mix of functional, vertical, hard and selective, horizontal, and soft industrial policy, since the government invested in basic infrastructure for promoting economic activities was Ecuador had a competitive advantage, and at the same time the government decided to close the market to the world, applying protectionism instruments such as higher tariff, import quotas, and standards (Noriega, 2015).

Nevertheless, after the rapid economic and social growth, Ecuador entered a stage of stagnation since their GDP went from 99.977 (millions of USD in current prices) in 2016 to 98.808 in 2020. Although internal riots in 2019 the COVID-19 pandemic in 2020 affected Ecuadorian performance, since 2016, the economic model that used to be efficient did not generate expected outcomes. The described data and the current situation show that Ecuador is suffering from what is called "The Middle-Income Trap" or an up-to-date term "Middle-Income Stagnation case."

According to Ekanayake (2021), who cited Gill and Kharas (2007), the Middle-Income Stagnation is a situation where a faster-growing country, boosted by labor-intensity activities, cannot compete with low-income countries and with developed countries, hence, there is a situation of being trapped. Moreover, the country is not making any advance to involve its economy to skill and capital-insensitive, hence, there is the sense of being in stagnation.

A strategy for going out of such a situation is not simple. In the publication titled Escaping the Middle-Income Trap: Innovate or Perish, Paus (2017) states that the only way to escape from the trap is to raise a "comprehensive innovation-focused strategy" accompanied by active policies. Furthermore, in the paper Does Trade Cause Growth?, Frankel & Romer (1999)

developed a study to identify the effect of trade on welfare. For this, the authors use a geographic factor as a natural experiment to identify trade's impact on income. The conclusions suggest that there is a direct relationship to the variables, therefore, trade-promotion policies are important for boosting an economy.

Likewise, in the paper Does International Trade Cause Economic Growth? A Survey, Singh (2010) surveyed the literature available at that time concerned to the role of the World Trade Organization -hereafter WTO- in foresting trade for promoting economic development. The author examines the productivity effects derived from trade, stating the argument that a country who open their borders to international trade in a proper way (considering its strengths and weakness) tends to increase their productivity due to flows on labor and capital. In summary, the study concludes that there is a positive relationship between trade and economic growth explained by productivity, however, this latest is not caused uniquely by openness to trade, but for the outcome of reforms in almost all real sectors of an economy, including the financial sectors.

Indeed, there is empirical evidence stating that developing countries can boost their economy and social welfare after applying policies in sectors that generate medium to high skilled labor and produces goods with high demand in international markets, goods characterized for being inelastic or with no substantial changes in the demand when prices vary. In this regard, industrial and trade policies have been considered tools for promoting products with the aforementioned features, and they have been considered inefficient for fixing market failures and promoting growth (Chang & Andreoni, 2020; (Pack & Saggi, 2006)).

What are the factors behind the acceptance or denial of the efficiency of industrial policies? For Aiginger & Rodrik (2020), the main factor is the context of the world. In other

words, the tendencies shaping global markets generate the scenario where industrial policies can be designed and executed expecting a positive outcome. In this sense, the authors state that they currently it can be seen different situations that prospect the Re-birth of Industrial Policy. Factors such as deindustrialization, political conflicts – that derive in trade wars-, climate change, deterioration of social welfare, the emergence of new technologies -especially artificial intelligence, automatization, and more recently, the COVID-19 pandemic outbreak combines together to open the doors to a new era, considered as the 5th Industrial Revolution (Javaid et al., 2020).

All things considered, when analyzing the Ecuador context, as a country suffering from economic stagnation, it must consider the design and execution of an industrial-innovation trade policy considering the current and future context of the international market and following the recommendations of recognized scholars and researchers. In this sense, the country has in force the "Industrial Policy 2016-2025" born with the aim to promote the shift from an agricultural-based economy to a manufacturing-oriented one. It is characterized as a vertical, selective, and hard policy since it selected "key industries" for promotion, such as petrochemical, agro-industry, shipyards, plastics and manufactures, and home appliances (Ministry of Industries and Productivity, 2016).

Likewise, the country received technical assistance from the European Union and the German Agency for International Cooperation through the project Support on the Definition of a Long-Term Industrial Policy in Ecuador. The plan presents concrete short and medium-term initiatives for redirecting the services provided by the Ministry of Production, Foreign Trade,

Investments, and Fisheries[1] -hereafter MPFTIF- to promote clear actions and take advantage of the international markets adapting the local production to international trends and demands.

Regarding the trade policy, Ecuador does not have a formal document showing specific actions, indicators, or goals. Instead, the MPFTIF, thought the Vice Ministry of Foreign Trade -see annex 1-promotes a general agenda for integrating Ecuador into the international markets with their principal trade partners. For instance, up to date of development of the present study, Ecuador is negotiating with the United States of America a free trade agreement, as well as with Mexico, so the country can be part of the Pacific Alliance -see figure 5 for details of current FTA signed by Ecuador-.

Besides, Ecuador is receiving support from the Knowledge Sharing Program -KSP- promoted by the Korean Development Institute to develop a trade agenda. The project is titled Policy Consultation for Strengthening Export Capability and Promoting Exports to Asia. The main purpose is to develop strategies for positioning Ecuadorian goods (mostly agricultural) into the Asian market. However, the program´s outcome will serve to promote an agenda at a ministry-level instead of a national plan. The trade agenda is not formally matching with an updated industrial policy, thus there is not a clear and efficient strategy to promote the local industry regarding the market present and future demands. In other words, the argument behind generating trade agreements with certain countries responds uniquely to the desire to take advantage of the current productive structure instead of considering new industries with future high demand.

[1] The MPFTIF is an entity under the executive power (presidency), in charge of the policy design and execution related to industrial development and trade promotion.

Moreover, until 2021 the expected results from the industrial policy have not been reached. Even more, the policy stopped being executed after political changes in the executive power and a disconnection between the industries selected for received government support and the industries where Ecuador has a competitive advantage.

For this reason, the main problem to be addressed in the present capstone project is, on the one hand, the inefficient industrial policy that is disconnected from the internal economic structure and the external present and future trends. But, on the other hand, the lack of a formal trade policy matched with the industrial policy and the future global structure.

ii. Background of the problem:

Failed industrial and trade policies

The Ecuadorian history of industrial development during the XX century can be resumed in a simple term, failure. Different books and papers analyze the policies and strategies applied since 1900 to promote industrial development in the country. Still, there is no conclusion that any policy was successful -in terms of reaching the proposed goals-. It is important to point out the factors that determined the failure of the policies, so the proposal of a new approach will not repeat the same mistakes. Thus, the following analyzes will consider the negative aspects of each policy, rather than the positive ones, since in the results part of this research it will be exposed recommendations for undertaking a new approach of industrial and trade policies.

1900 – 1960

According to Luna (2013), there was not a formal industrial policy at the time. However, the government applied several measures to boost the early stage of industry development or, better explained, productivity activities with low skill labor and labor intensity. For instance, protectionism measures were highly promoted and implemented to benefit a small portion of the

private sector, especially the textile industry. Moreover, at this time, one of the issues harming industrial development was the “regionalism”. The latest term refers to the disputes between the industrial companies from the coastal and sierra regions -see annex 2-. The argument behind the criticism for the protectionism measures was that they benefited more the industry from the Sierra region, generally focused on satisfying internal demand, and harmed business in the Coast region, general commercial business. This situation caused that each region develops its own agenda without following national goals.

On the other hand, the analysis shows that the products targeted with tariff were raw materials required for the main industries that were supposed to be protected. Thus, for example, the textile industry was beneficed by increasing the tariff for imported textiles, but at the same time, it was punished by the rise of the cotton tariff. Thus, a disconnection between policies can be observed, leading to inefficient policies.

Furthermore, by 1950 the Ecuadorian textile industry lost competitiveness due to the inefficient policies described before, the lack of coalition between the companies of different regions, plus the boom of the Colombian industry, among other factors. Thus, the government shifted their interest to the agricultural sector, once the main generator of income for the country (1770-1840 / 1895-1913 Cacao boom[2]). In this sense, the public sector saw cacao, banana, and wood production as an opportunity to generate sources of income for the rural families, tax to the government, and increase monetary flow due to exportations.

In 1957 the first formal Industrial Development Policy was undertaken. Furthermore, the government passed a law called the Law of Industrial Development, allowing fiscal incentives

[2] Cacao boom refers to an scenario -from 1770 to 1840 and from 1985 to 1923 where Ecuador relied its economy in the production and exportation of raw cacao beans.

such as the elimination of tariffs for the importation of capital goods and raw materials, the exoneration of rent payments for economic activities, the right to deduct taxes from investments. The law created the first formal entity -General Direction of Industries- in charge of monitoring the industrial policy and taking decisions according to the need of the industry and the local context. Finally, by 1962 the Ecuadorian government founded the National Financing Corporation, and by 1965, the private sector founded the Ecuadorian Financial Cooperative of Development, both financial institutions aimed to facilitate financial funds in soft conditions to industrial companies (Lefeber, 1985).

For the OECD (1966) the industrial agenda at the time followed a liberalization focus (not restrictive nor protectionism), allowing foreign direct investment flows to arrive at key industries. Indeed, the combination of efficient policies for promoting the local economy and a favorable manufacturing international market allowed Ecuador to boost its industrial capabilities. As a result, statistics show that between 1963 and 1971, the number of industrial companies operating increased 300%, from 126 to 493.

1970 - 2000

In the early 70s, the country was working efficiently in the industrial field, starting with activities to cover the local demand and attracting interesting flows of FDI. For instance, manufactures of beverages, foods, and tobacco received the 33.75% of total incoming FDI flow, followed by chemical substances, oil derivates, rubber, and plastics (27.58%) ,machinery, and equipment (11.92%), and non-metallic mineral products (12.64%). Thus, it can be seen that Ecuador was promoting basic industries that would serve other industrial with higher add value.

Nevertheless, the government and the private sector shifted their interest from the industrial sector to the oil industry. In 1972 Ecuador discovered oil deposits in the Amazon

Forest and started to apply an extractive policy. Although the economy grew at historical levels, from a GDP of 2.98 US billion in 1970 to 17.88 US billion in 1980, there was not a real economy and social transformation. The local industry grew in disorder, with no long-term goal, or innovation process, mostly focusing on agricultural transformation with no real value-added. Moreover, applying a liberalism trade policy mostly based on the liberalization of tariff luxury products led to the increase of familiar debt, inflation, and other phenomena that affected the private expending.

In this sense, Fiess & Verner (2003) developed a multivariate cointegration analysis of the rapid growth of the oil industry and its impact on the economy, considering different intersectoral components. The authors concluded that the increase of the manufactured goods exportations in the 70s were not linked to industrialization, instead, it was linked to agriculture and trade liberalization in the early 70s.

In the 80s, the Ecuadorian industry lacked competitiveness compared to emerging markets like China, Korea, and Taiwan. This resulted from a decade of not applying any plan for supporting the industry and just focusing on oil exploitation. In words, Oleas (2017) Ecuador suffered from the Dutch Disease in the 80s, since the economy boosted the public spending without control in the 70s due to important flows of income for the international prices of oil, however, when the prices went down, the Ecuadorian economy could not maintain same levels of spending, and the private sector, specifically the industrial sector, could not support the economy.

In the 90s the industry succumbed due to structural, financial, and political problems. Ecuador lost the capability of applying monetary policies, like, for example, depreciation of the exchange for promoting exportations during international shocks, thus, the prices of exported

goods rose relatively to main competitors. Since the political situation was characterized by instability, it was not any efficient strategy for promoting the manufacturing sector and taking advantage of the international market demands and trends.

2000 - 2015

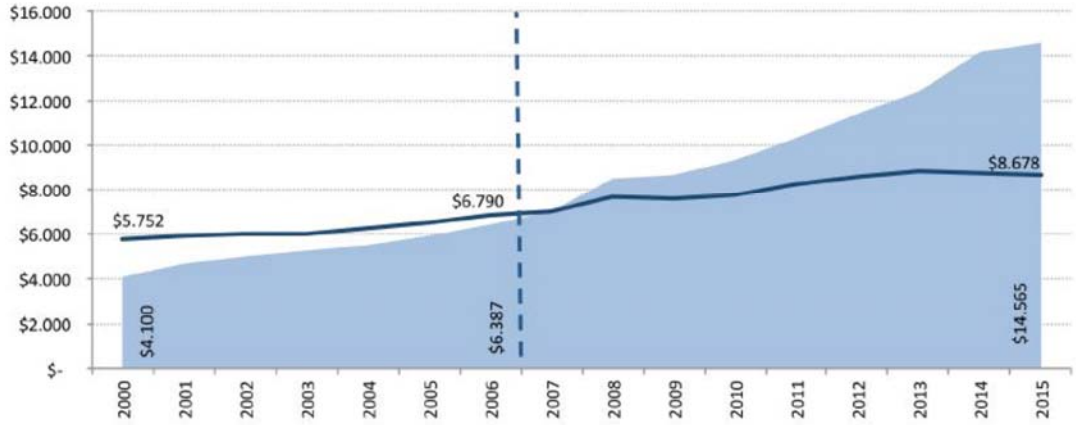
In early 2000, the Ecuadorian economy adopted the US dollar as an exchange monetary system for local transactions and international trade. In the words of Beckerman & Solimano stabilized the internal prices of raw materials and the imported prices of materials in the production process and machinery were stabilized. Likewise, the dollarization reduced the risk for the international buyers who can negotiate prices in better conditions and avoid transaction costs (for exchange rate). On the contrary, the dollarization, without any plan to straighten the manufacturing, agricultural, and key sectors, will be at a disadvantage compared to the main competitor, Colombia, and Perú, and some Southeast and African countries.

In this regard, in 2006 the Ecuadorian government designed the Industrial Policy of Ecuador 2008 – 2012 aiming to concrete "a historical industry transformation" through the so called "conversion of the productive matrix". This industrial policy followed the characteristics of a traditional policy from the 70s, with key features such as industrialization and structural transformation, protection of infant industries, boost of local production-demand through increasing public spending in strategic infrastructure. Furthermore, the policy matched the main planning document setting up medium-term goals for the country, The National Development Plan[3], showing coordination between policies, the main feature for successful policies.

[3] Accordingly, to the Ecuador Constitution, the National Development Plant set ups goals, strategies, and indicators for each presidential term. All the public and private efforts should match the planning expressed in that document.

The policy was successful since it promoted the development of the industrial sector. However, as observed in figure 1 the industrial GDP had an inflection point after 2006 when the industrial policy 2008 – 2012 was first designed and then applied.

Figure 1. Evolution of the Industrial GDP



Notes. Millions of $US. Light blue represents GDP in current $US. Dark blue line represents GDP in constants $US. From Industrial Policy 2016 – 2025 by Ministry of Production, Foreign Trade, Investments, and Fisheries (2015). Taken from http://servicios.produccion.gob.ec/siipro/downloads/temporales/1_Pol%C3%ADtica%20Industrial_MIPRO%202016-2025.pdf

One of the key factors explaining the success of the policy execution is that the international markets allowed the government to count vast financial flows. For example, the international prices of oil[4] (the government's main source of income) constantly grew from 2007 (US $72.76) to 2014 (US $93.14), with few drops in 2009. Besides, strengthening diplomatic

[4] Prices from West Texas Intermediate (WTI) that serves as reference for the Ecuadorian oil

relations with China, Venezuela, and Brazil (left side governments) opened sources of loans for Ecuador. As a result, the national debt increased from 13.591 millions of US$ or 29.9 % of the GDP in 2007 to 38.136 millions of US$ or 39.6% of the GDP. However, the situation changed drastically in 2016 when the international oil prices dropped to a historic low of 43.29, restricting the financial flows needed to keep executing the industrial policy (Gomez, 2021).

Table 1. Comparative analysis of past Ecuadorian Industrial Policies

Factors	Law of Industrial Development 1957 - 1970	Industrial Policy 1980 - 2000	Industrial Policy 2008 – 2015
Key features	Structural transformation	Liberalization	Import substitution
Goals	Set up of the rules of industrial development Increase in the number of industrial companies Growth of GDP by historical highs	Increase of the exportation of manufactured products from industries with a competitive advantage Creation of medium-skilled jobs	Build of basic infrastructure for the industry Strengthening of the agroindustry for reaching food security
Strategies	Creation of protectionism laws Establishment of financial institutions for industrial companies Satisfaction of local demand	Promotion of FDI with laws	Public spending as promotor of the economy Protectionism of local basic and intermediate industries
Fails	Contradiction with trade agenda Lack of investment in new industries rather than agroindustry	Extreme focus in the oil industry Lack of investment in innovation Disorganized growth of the industry	Growth strategy relied on public spending (with no resources, no development)

iii. Research questions

The research questions shaping the present study were built considering up-to-date literature review analyzing the factors for blooming innovation, industrial, and trade policies. This approach aims to describe a holistic process for constructing an organic policy that adapts through time and considers factors not usually considered in the former processes for building policies. Table 1 exposes the research questions and the elements to be studied in each one.

Table 2. Research questions and elements to be studied

Research questions	Focus of research

What are the factors to be considered to design and execute a successful trade and industrial policy?	Endogenous and exogenous factors
What characteristics define the quality and increase the odds for designing a thriving trade and industrial policy?	Analysis of failed industrial policies Structure and content of new approach of industrial and trade policies Follow-up process
What are the roles to be taken by the government, private sector, academia, and society to correctly execute a trade and industrial policy?	Responsibilities and roles of actors

iv. Objective of the research

The purpose of this research is to set up practical recommendations for the update of the current Industrial Policy of Ecuador and the undertake of a trade policy that fits the national competitive advantages and the international trends and demands. In this sense, the recommendations will cover a typical weakness constantly repeated by the Ecuadorian government when designing industrial policies, the disconnection between the strategies, projects, and actions drawn with the up-to-date scientific theory and prospective research.

The research outcomes with serve as a foundation for the Ministry of Production, Foreign Trade, Investments, and Fisheries (as a promotor), the private sector, the academy, and the social movements (as actors) to identify the strategies for creating a formal Industrial and Trade Policy for the insertion of Ecuador into the 21st Economy.

Methodology

The present capstone project takes a descriptive methodological approach, considering secondary data from up-to-date literature reviews about trade, innovation, and trade policies. Besides, the study uses primary and secondary data from documents, policies, projects from the Ministry of Production, Foreign Trade, Investments, and Fisheries of Ecuador under the authorization of the Head of the Strategic Planning General Coordination Among those

documents, there are current and past industrial policies, the trade agenda 2021- 2025, consultancy reports with competitive studies, internal studies and forecast of the economic performance, etc.

The primary references include publications from recognized researchers such as Aiginger and Rodrik. Besides, this paper digs into recognized papers such as Does Trade Cause Growth? By Frankel & Romer (1999) and Does International Trade Cause Economic Growth? A Survey, Singh (2010). Finally, the study relies on up-to-date statistics, reports, policy briefs, and papers for international organizations such as the World Bank, the Organisation for Economic Co-operation and Development OECD, The World Trade Organization WTO, and other related.

Analysis and findings

Analysis of the current situation of the Ecuadorian Industry

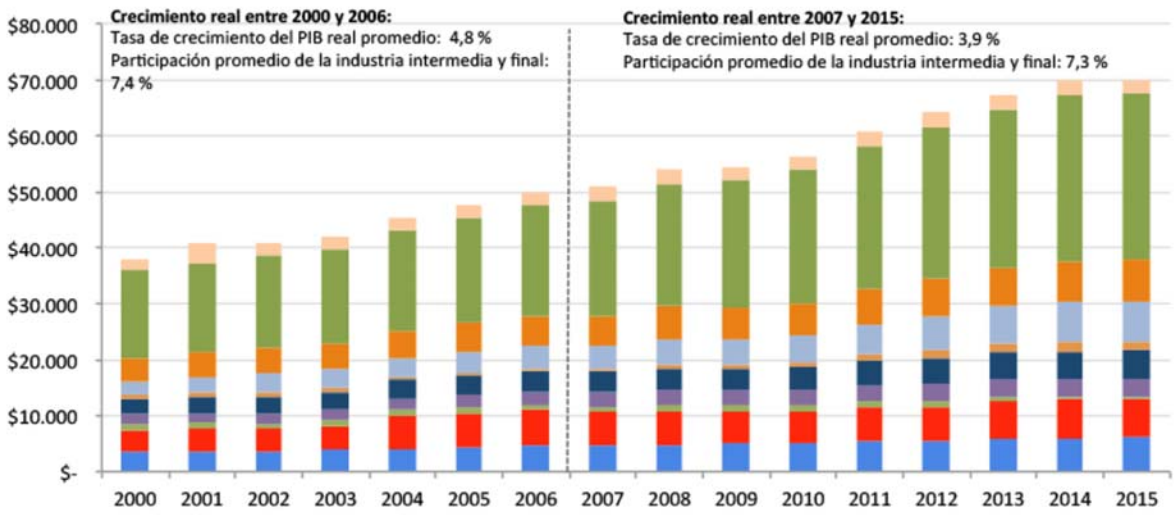
Industrial Policy 2016 – 2025

By 2017 the Ecuadorian national debt grew by 46.3% of the GDP or 46.536 millions of US$, making it inefficient to continue to promote an industrial policy through public spending and internal growth. Thus, the government promoted the current Ecuadorian Industrial Policy 2016-2025, giving the private sector mote protagonist, but missing the tools for promoting a knowledge-based, market-focused manufacturing sector. In other words, the policy was

disconnected between the goals, the country's internal situations with the international markets, and the financial weakness.

The current policy is characterized as a hard, vertical, and mixed import-substitution and export-oriented policy, where the government selected five main sectors to receive special benefits and direct incentives from the State without deep discussions with the private sector, academia, and civil society. Those activities are agroindustry, intermediate and final industries (includes machinery, equipment, textiles, etc.), and basic industries (includes glass, concrete, petrochemicals, metallurgic, etc.) Figure 2 shows the Ecuadorian GDP structure before the establishment of the current Industrial Policy. The main purpose wanted to increase the participation into de GPD (in percentage and US$) of the agroindustry (purple) and final, and intermediate industries (dark blue).

Figure 2. Structure of the Ecuadorian Economy: Added Value per Industry



Notes. Value in millions of US$ of 2007. Medium blue, Agriculture, cattle, and fisheries; red, oil and mining; light green, oil refining; purple, agroindustry; dark blue, final, and intermediate industries; dark yellow, water and electricity supply; light blue, construction; orange, commerce; dark green, public services; light pink, other elements of GDP. From Industrial Policy 2016 – 2025 by Ministry of Production, Foreign Trade, Investments, and Fisheries (2015). Taken from http://servicios.produccion.gob.ec/siipro/downloads/temporales/1_Pol%C3%ADtica%20Industrial_MIPRO%202016-2025.pdf

Moreover, the policy aims to create productive chains for specific products in each category preselected (mentioned in the previous paragraph). Besides, indices and goals are presented to measure and highlight the impact of the policy. However, several problems are affecting the accomplishment of the main goals, issues that were not considered when designing the policy, thus there are no strategies to tackle them. Table summarizes the main goals and their weakness up to 2021.

Table 3. Setbacks for the current Industrial Policy goals

Industry	Goals by 2025	Main weakness by 2021
Agroindustry	Increase 200% (baseline 2014) exportations of coffee (ready for consumption)	Lack of investment for local producers. Less competitiveness than leading global producers
	Increase of exportation of cocoa (ready for consumption as chocolate bars) from 171 to 690 US$ million	Lack of investments to improve the quality of products and process of production to reach green demand
	Increase of local production of dairy products (milk-based) between 50 and up to 80%	Lack of machinery, equipment, and knowledge of production processes
	Increase of exportations of manufacture fisheries products by 620 US$	Lack of control of illegal fisheries led to sanctions of international markets
	Increase of derivates of palm oil exportations by 500 US$	Decrease of the international demand for palm oil due to environmental issues.
	Increase the exportation of processed fruits and vegetables by US$200	Lack of investments to improve the quality of products and process of production to reach green demand
	Reach a 100% use of the industrial capability of local slaughter centers	Lack of local investments
Metalworking	Increase exportations of boilers by 70 US$	Lack of local investments Less competitiveness than main global producers
	Increase exportations of industrial machines by 30 US$	
	Increase exportations of pumps and valves by 810 US$	
	Increase exportations of electrics transformers by 40 US$	
	Increase exportations of electrics cables conductors by 100 US$	
	Substitute the importations of pipes by 360 US$	
Final industries	Increase the exportation of home appliances	Less competitiveness than main global producers

The strategies for promoting key industries and reaching the goals are called “services for production,” which include new sources of financing, reduction of guarantee requirements for financing, training campaigns, creation of virtual spaces for trading services and goods,

reduction of transportation costs, among other related. Still, the policy does not present clear actions to promote innovation, research, and development, even creativity for promoting new industries with high demand in the international markets such as green technologies, digital and media content, internet of things.

Regarding the services sector, a key aspect of an economy since they promote high-skilled jobs, knowledge-based, following the global tendency of deindustrialization, the industrial policy recognizes the need to promote them. However, the policy insists on promoting current services, with low levels of innovations and no odds to exports. Figure 3 shows the structure of the services industry in Ecuador in 2015, and still in force since they have not been deep changes.

In other words, there is no efficient strategy to boost services such as digital media, artificial intelligence, or technological-related even services to improve the quality of the production of goods that Ecuador has a competitive advantage. For example, Ecuador is a leading country exporting bananas, however, there are no intentions to promote innovations like the establishment of organic productions, circular or ecologic processes, increase the productivity per hectares, etc. Indeed, public services and bureaucracy are the principal service sector, following prioritized services (for strategies industries and national security) and traditional services of commerce and food supply.

Figure 3. Structure of services sector in Ecuador

Notes. From Industrial Policy 2016 – 2025 by Ministry of Production, Foreign Trade, Investments, and Fisheries (2015). Taken from http://servicios.produccion.gob.ec/siipro/downloads/temporales/1_Pol%C3%ADtica%20Industrial_MIPRO%202016-2025.pdf

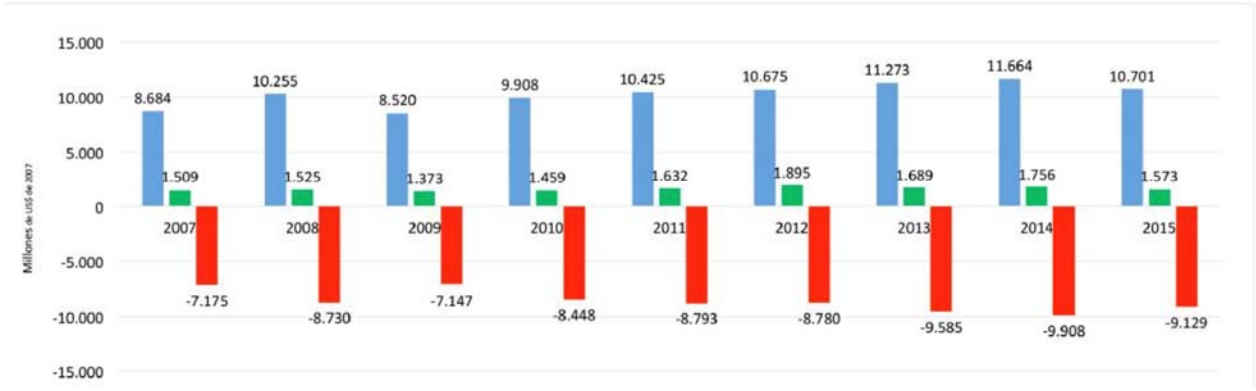
Consequently, after five years since the police came into force, several mistakes have been made, thus proposed objectives have not been reached. First, new energy, labor, environmental, and fiscal policies were proposed, with strategies in contradiction with the industrial policy. Second, no tools for tackling the devaluation of the dollar were introduced. Third, the vision of the government was to close the market to the entrance of foreign products.

Trade Agenda

Concerning the trade agenda, the policy does not represent a clear guideline about strategies to open a relatively closed market. Instead, the policy describes the balance of payments from 2007 to 2015 and set the great goal to get a surplus of 10.200 million US$ 2025 or 7 times the results of 2015. Figure 4 shows the relationship between income and outcome

flows of payments for international trade. Although the Ecuadorian economy has been reported a surplus, that is explained by the dependence on oil exportation.

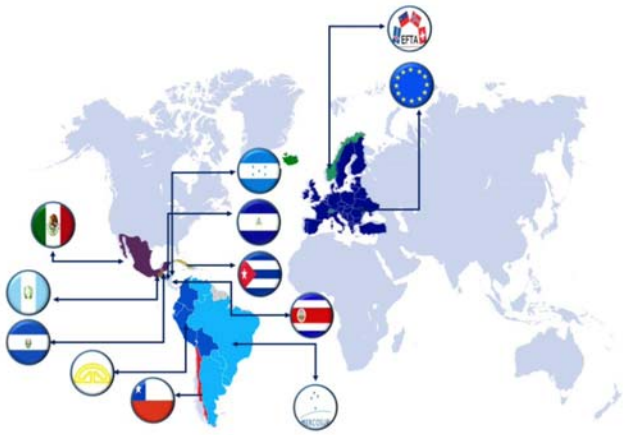
Figure 4. Evolution of the balance of payments of Ecuador



Notes. Values in millions of US$. From Industrial Policy 2016 – 2025 by Ministry of Production, Foreign Trade, Investments, and Fisheries (2015). Taken from http://servicios.produccion.gob.ec/siipro/downloads/temporales/1_Pol%C3%ADtica%20Industrial_MIPRO%202016-2025.pdf

Finally, Ecuador is relatively a closed economy since it does not have the same level of free trade agreements (5 plus 6 partial agreements) as its main competitors and neighbors like Colombia (16) and Peru (21). Likewise, Ecuador is behind some competitors' countries in Asia, like Thailand (9 and 6 under negotiations) and Malaysia (16). As shown in figure 5, the main FTA is with the European Union, Chile, Andean Community (Peru and Colombia), United Kingdom.

Figure 5. Commercial Agreements between Ecuador and partners



Notes. From Commercial Agreements by the Ministry of Production, Foreign Trade, Investments, and Fisheries (2021). Taken from https://www.produccion.gob.ec/acuerdos-comerciales/

Projects for improving the Industrial Policies of Ecuador

The Republic of Korea has helped Ecuador with several projects to raise strategies for promoting the manufacturing and service sectors and setting a competitive and robust internal market that supplies growing international markets such as the Asian one. In this sense, the Knowledge Sharing Program -KSP- promoted by the Korean Development Institute -KDI- has become a strategic partner for Ecuador.

The KSP projects database shows seven projects related to Ecuador. One of those regarding policy consultation for the industrial sector "Ecuador's Production Matrix Transformation 2012/2013" and two regarding policy consultation for trade policy "Policy Recommendations for Ecuador: Export Promotion, Industrialization, and Capacity Building 2011/2012" and "Policy Consultation for Strengthening Export Capability and Promoting Exports to Asia, Ecuador 2019/2020". Another project researched a holistic topic that serves both industrial and trade policies, that is, the quality system for production, the project is titled

“Policy Consultation for Strengthening the National Quality System in Ecuador 2014/2015” (Knowledge Shared Program, 2021)

The project's outcomes have not been applied in totally as recommended by the consultants. The reasons are several, but they can be resumed as follow. Firstly, for changes in the political visions between the head of the MPFTIF, the entity receiving the projects. Secondly, for lack of a follow-up strategy for measuring the implementation process of the recommendations. Thirdly, for lack of budget for implementing the strategies and generating the changes needed.

Currently, the KSP program is helping Ecuador with the project Policy Consultation for Strengthening Export Capability and Promoting Exports to Asia. Still, since there is not a clear industrial policy and trade policy behind it, it can be said that the application of the recommendations might not be that efficient in the long term. Still, the conclusions could be part of a macro trade agenda to be constructed as an outcome of the present research.

Update of the current industrial policy

As mentioned in the introduction, Ecuador received technical assistance from the European Union and the German Agency for International Cooperation to concrete short and medium-term initiatives for the up-date of Industrial Policy and redirected the services provided by the MPFTIF for the Ecuadorian economy to take advantage of the international markets adapting the local production to current and new trends and demands. Therefore, the document presents up-to-date strategies that partially match the recommendations from scholars and international organizations. However, the proposal considers wide industries and actions that might be difficult to execute.

Besides, the policy recommends specific actions without considering possible phenomena in the future that might affect the current planning. In this regard, that is a common weakness in the history of Ecuador, since former industrial policies had stuck in the development of some strategies even if, through the time, those ones lost effectiveness. Therefore, the idea is to propose an organic policy that proposes clear actions and goals, but with the freedom to adapt and adopt new programs based on the evolution of the internal situation or international markets.

Policy Recommendations

New approach of industrial and trade policy

There is not a consensus on the definition of industrial policy. However, various scholars affirm that industrial policies are the government's intervention into the economy, following the principle of non-neutrality. In this regard, when it comes to analyzing the justification and actions for such intervention, several different concepts arise. The classic approach states that industrial policies serve as a tool for the government to identify and promote key industries, better known as anchor industries, since they will serve other industries, creating value chains. The strategies used by governments generally are related with the exception of tax, a decrease of tariff for machinery and raw materials, or special sources of financing (Ortega, 1999). Those kinds of policies are known as selective, hard, or vertical.

Contemporary concepts go away from the figure of interventionism and mention that an industrial policy is a plan for dynamic coordination, following a variable process, measured by indicators, combining tools and advantages to promote manufacturing activities (Zainutdinova, 2018). Similarly, Goya (2014) states that industrial policies are interventions for tackling market failures, mostly inefficiency in the manufacturing sector, however, those interventions must be

done not directly into privileged sectors but in generating a proper internal context for executing industrial activities. Functional, horizontal, or soft policies promote roads, energy supply, improvement of the legal framework, incentives, etc.

Aiginger & Rodrik (2020) present a new industrial policy concept that fits factors shaping the present and outlining the future. The authors highlight that the current context reflects political and technological disruption, where society demands better products and services, narrowing the inequality gap. Furthermore, those new goods and services are changing the way humans interact. Therefore, countries need to adapt their economic structure to what the market wants and needs, for that industry might not be enough. For that reason, the authors state that industrial policies must be called productive development, structural transformation, or innovation policies.

Additionally, the new industrial policies approach is far away from targeting pre-selecting industries and assigning a list of incentives and government support. In the contrary, industrial policies should be the outcome of the results from direct discussions between the government, the private sector, the academia, and civil society. In other words, the industrial policy should contain what the government can do, what the private sector wants and must do, what the academia can help with, and what the civil society would accept.

Regarding trade policies, the traditional approach mentions two terms, absolute and relative comparative advantage, which determine that a country should export a good produced with less cost than other countries and should import cheaper goods in other countries. This situation explains the comparative advantage of a country regarding factors like capital, land, context, even weather. In summary, the classic concept of trade explains that countries trade regarding their competitive advantage, thus countries are better off with trade (Hibbert, 1997).

Contemporary concepts include market failures, such as monopolies, the market power of multinationals, the increase of protectionism and government intervention to influence trade, and the emergence of nation blocks to increase negotiation powers. In conclusion, the current concept accepts there is not a perfect market, thus, the strategies to benefit from trade should be implemented in a different way than just producing what you can and important what you cannot. In this regard, for the OECD (2012) a trade policy is an instrument that sets the size of the market so local private companies can plan their output. Thus, trade policy determines factors for development such as level of investments, number of companies, numbers, and quality of jobs, among other factors.

Some research points out that there has been a disconnection between trade and industrial policies, mostly because it is understood that they are correlated. Still, policymakers suggest that each one develops on their own when they both should be developed as a consequence. For example, Helleiner (1995) describes those countries that have experienced rapid growth started to boost their economics through import substitution strategies, and after they consolidate a robust internal market, they develop openness market trade policies.

However, in the present context, where economies are more intercorrelates with value chains, close and economies waiting for developing internal markets it is not efficient. Even more when the country is relatively a small country in population. Thus, the new approach of trade politics suggests that it should be linked to industrial policy and consider the international factors, the principal buyers, and the possible new competitors.

Diagnosis before prescription

To correctly apply the new approach for industrial policy, it is necessary to point out a critical factor that is often forgotten: the worldwide context. When policymakers around the

world analyze successful industrial policies like the one applied in the United States in early 1900, The Republic of Korea, Japan, and Taiwan from 1950 or Brazil in 2003, the main error they made is to focus on the structure or the policy, the actions applied, or the programs and strategies developed rather than in the factors explaining the economy, culture, and society in the world at that time.

In the paper Diagnostics before Prescription, Rodrik (2010) mentions the value of pluralism, referring to different models of development rather than one fixed way to execute public policy. Although it is important to analyze internal factors explaining successful cases of industrial policies, the focus of the research must start by identifying the context on which the policy was developed. Therefore, the author recommends that policymakers focus on diagnosis first, analyzing from a prospective perception the present and future of the economic, societal, cultural, and political context of the world, among the situation of possible trade partners and competitors.

Once policymakers have identified present and future factors that might affect the country's manufacture, innovation, and or service sectors, they can design and propose adaptative strategies and countermeasures to reduce the risk of failure and inefficient spending efforts. Typically, failed industrial policies were stuck with pre-selected programs when endogenous and or exogenous factors affected the planned scenario. With no reaction, any policy will fail.

The following lines will describe the factors shaping Ecuador and the global context in the 21st century. Those elements must be considered when updating the industrial policy and setting up the trade policy.

External factors:

COVID-19

In a market where the COVID-19 has impacted deeply, consumers from high-income countries raised their expectations regarding quality and safety. Thus "competitivity is no longer related uniquely with quality and price, but also security". Even more, if factors as climate change and deforestation are added, that means that the future of the international markets will demand safer agricultural products, and growth with techniques and technologies without harming the environment (Deutsche Gesellschaft für Internationale Zusammenarbeit , 2020). Since the production of agricultural products is key in Ecuador, the country must invest in research and development for new techniques of production, treatment, and logistics to satisfy international demands.

Some international organizations argue that COVID-19 will remind us of a traditional illness, thus, countries and governments should consider this fact into their planning. In the scenario of industrialization, innovation, and technologies, the world has seen how new technologies have emerged. For example, in Korea, Internet Communication Technologies ICTs are considered a key industry for the future. Even the government proposed the Korean New Deal and highlighted that ICTs are the industry for the future. For example, Korea has created a completed system for tackling the COVID-19, which can be adapted to other contexts, creating quality and high-skilled jobs. Ecuador must invest in developing basic ICTs to develop applications adapted to Ecuadorian and Latin American society.

Climate change

The environmental issue is a key factor that is currently shaping the global economy. The IPCC 2021 Report declared that humans are the only ones responsible for global warming due to

the current level of emissions of greenhouse gases. In this regard, the report outlines three scenarios regarding the odds of reaching zero emissions by 2050 (the goal is to stop the increase of the global temperature above 2 grade centigrade compared to the pre-industrial era). In the best scenario, the world needs to reverse 100 years tendency in consumption and production in 7 years (IPCC, 2021; The Climate Clock, 2021). In this sense, the use of new technologies to promote a faster way for energy transition and, at the same time, tackle climate change are a must.

International organizations and funding companies are allocating an interesting amount of investment in easy conditions to promote the creation of new technologies, for example, there are investment companies as Tembusu partners, Enlight Ventures, Pegasus Tech Venture, Usako Group, Blissvine Ventures, US Angel Investor, 541 Venture aiming to fund start-ups presenting some kind of innovation for fighting against climate change. In this scenario, since Ecuador is suffering from ramping debt, and the private sector lacks funding options with favorable conditions, this source of funds would promote the companies for the future.

Besides, countries must shift their traditional production and industrial systems to reach the Paris Agreement Goal to reduce greenhouse gases until zero emissions by 2050. Indeed, international demand will prioritize and give more value to products and services manufactured and developed using cleaner energies and processes. In this regard, a circular economy is traditionally mentioned as a way to reduce emissions and waste by reusing and recycling. However, there a new approach that not only considers the manufacturing system but the complete ecosystem for generating a sustainable economy. This new approach is called the New Climate Economy. Therefore, Ecuador must join the initiative and establish it as part of the updated industrial policy.

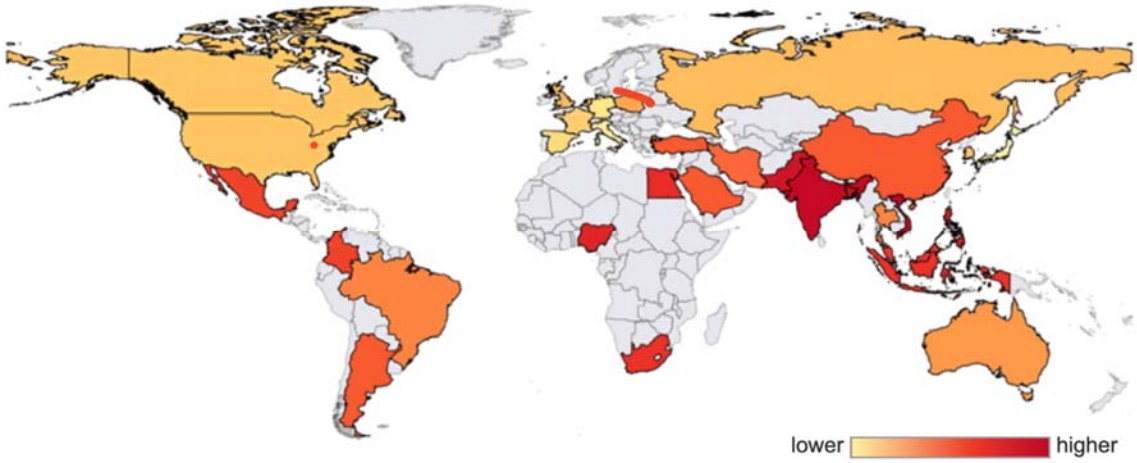
Political conflicts

The current conflict between China and the United States, China and Taiwan, Korea and Japan, issues in the Middle East, among other situations affect international markets since the value chains are strongly connected. Although Ecuador has not felt the effects since the economy is based on agricultural products, their main trade partners feel the effects of their consumption and production levels. Ecuador might struggle for the effects of political conflicts that will be in force through time. For this reason, the updated industrial and trade policy should convert uncertainty from a threat to an opportunity. This can be achieved by constantly analyzing the international diplomacy situation and updating mitigation strategies. Also, by negotiating FTAs with non-traditional partners, Ecuador will reduce the dependence of exportations to markets.

Future structure of the economy

According to PwC (2017), the world's economic structure will change by the following decades since countries that are currently considered as developing countries will become leaders. For example, China will become the first economy, India will be the second one with a forecast of growth of 5% annually. Mexico and Brazil will lead the economy in Latin America. In this regard, this forecast was made without considering the COVID-19 impact, however, it’s a valid reference since the economies are applying the measure to recover their growth levels to before the pandemic. Figure 6 shows an overview of the possible changes in GDP in main countries.

Figure 6. Average annual growth rate 2016 – 2050



Notes. The forecast includes the economies with a major impact on the current economic structure. From The Long View How will the global economic order change by 2050? By PwC (2017) Taken from https://www.pwc.com/gx/en/world-2050/assets/pwc-the-world-in-2050-full-report-feb-2017.pdf

Moreover, it is necessary to analyze the African Free Trade Agreement, which is currently in force with the support of the WTO and the Chinese Government. The plan aims to create the most important free trade zone of history, promoting investments and development in deteriorated zones. In this regard, if the plan accomplishes the goals, it will negatively affect the Ecuadorian economy if the country does not involve its economic structure. For example, African countries like Ghana, Cote De Ivory, Nigeria, and Ethiopia could develop their economies that are similar to the Ecuadorian, but they can develop economies of scale and be more productive than Ecuador in key industries like cocoa beans, chocolate industry, bananas, even fisheries.

Ecuador should include this threat in their trade and industrial policy improvement because African countries could receive important flows of FDA, arising as a new competitor for

products where Ecuador has a competitive advantage. The innovation is key for Ecuador, for generating products that are different than African. In the same way, Ecuador could take advantage of the African Free Trade Zone since it can be a market for Ecuadorian medium and high technology-intensive goods, such for example energy cables, industrial pumps, ceramics, etc.

Internal factors:

Social polarization

This is a characteristic phenomenon for Ecuadorian culture at the current moment. Due to former political influences and considering the historical background, there is a clear social polarization considering economic and social status. This is a factor that should be considered in the trade and industrial policy, especially when it comes to commutating the policy to society. Past industrial policies failed to adapt the communication message to show all the social classes that are included in the policy. When some part of the society feel that it is not included, they raise their voice in a manner that affects the policy's credibility.

Internal and external debt

Even though the new approach of industrial and trade policy recommends less intervention of the government, still to design, promote, and establish the first stage of implementation it is needed financial funds. Since the Ecuadorian government is currently facing debt issues, it should find the funding sources for the long run, avoiding facing moments of insolvency that can affect the planning actions and timing. In this scenario, it has become common that the government does not make payments to suppliers on time. This is a situation that should not happen with the execution of the updated policy.

Weak institutions

Finally, institutions are a milestone for the implementation of trade and industrial innovation policies. In the present global context of uncertainty, at least a country's legal framework should give clear rules for the development of new investments, totally needed to change the economic structure. Although Ecuador is facing democracy, there are some criticisms of the current Constitution regarding a socialist point of view that harms innovation. Therefore, the government must develop actions to eliminate the criticism of the national law framework, before designing and presenting the updated industrial and trade policy and keep doing actions to avoid any reproval with political intentions. This would be the hardest action that the Ecuadorian government should achieve.

Factors to avoid in the design of industrial and trade policies

Generally, the literature review researching industrial, innovation, and competitive development focuses on presenting recommendations on what policymakers and decision-makers should do to increase the odds for design and applying efficient policies. However, that approach could influence policymakers to uniquely rely on key factors recommended by scholars, forgetting about other factors that should be avoided.

In the specific case of Ecuador, after briefly analyzing the history of failed industrial policies, it can be seen that some mistakes are repeating over time, meanwhile, the focus and strategies are different. This reality suggests that it is necessary to avoid the factors when undertaking governmental plans, so the person in charge would be aware of not repeating past mistakes. For that reason, the present research enlists the following factors to be avoided when outlining the industrial and trade policy for the future.

Incoherence with other laws

A typical mistake applied in countries with weak institutions and highly reactive to politics. In this scenario, since the new industrial policy approach recommends planning long-term strategies even longer than the typical period of time of governments, all related laws such taxation, labor, educational, security, etc. should match in content and time the industrial and trade policies. In this sense, Rodrik (1995) states that success increases when coherence and autonomy are present. Coherence refers to the alignment of all policies and laws to reach a national development goal through innovation, manufacture, services, and trade. Autonomy for the entity in charge of the execution of the policy to develop the changes needed to apply the planned strategies.

Rigid strategies

Since the new approach of trade and industrial policies firmly states the need to develop prospective analyses of the future local and international scenario and then decide the policy's strategies, there appears to be uncertain. It is not possible to predict with a hundred percent of accuracy what is going to happen, for that reason, the policy should consider flexible strategies. For example, the current industrial policy of Ecuador is not in force for this specific reason: the key industries to be developed are not competitive, and it is more costly to develop those industries reaching economic scales than investing the same resources to promote new industries.

One example is the plan for promoting the home appliances manufacturing sector, an industry currently in a red ocean with Asian companies leading in factors or production and research and innovation. Thus, to catch up to the same levels of competitiveness, Ecuador must invest a high amount of resources and change labor and tax laws, causing internal commotion. Still, there is no guarantee for the national industry to compete with Asian companies. Moreover,

since the industrial policy does not have flexible strategies, the government is not following the plans, and long-term planning is lacking.

Lack of follow-up

One basic step for any governmental intervention is to measure the level of execution of the planned activities and the quality of the flows spending, to identify if the intervention has been successful in achieving the proposed goals. The real outcome from this action is not only to identify failures in the administrative planning but also to identify the actions' deep derailment. In this sense, the 2021 Nobel Prize winners in economy presented a new approach of methodology to identify the real factors explaining society and economic phenomena in real life. The new approach detail is necessary to dig into the real factors and use primary data and comparative groups of study, counterfactual groups, to see the difference between that part of the population that is receiving any benefit from the government vs. those who are not receiving. As a result, it can be identified inefficiencies of any intersection, fixed and corrected to achieve better results.

However, in the case of Ecuador, a follow-up process has become a simple administrative action, leaving behind a real follow-up and impact evaluation system. Historically, the efficiency of any government intervention is measured by indicators such as the impact of GDP, the value of exportations with technological intensity flows of foreign direct investments, and other related. Indeed, analyzing the national goals of the industry for 2021 to 2025, the same weakness is identified. However, there are no proper indicators, goals, or deep follow-up or impact evaluation strategy to measure the efforts.

Lack of promotion at the higher level

Successful industrial and trade policies such as the Korean case, described that at the early stage of development of the policy, the main representative of the government promoted the policy and "put the face" when negotiating measures with the private sectors- This is an interesting approach since industrial policies sometimes make shocks in an economy relaying in commerce and services, generating a relatively negative impact in the short term, For that reason, the figure of the maximum authority serves as amortization and promoting engagement into the society. Even more, the active participation of the leader generates a positive image for the international markets since it shows compromised for the evolution of the manufacturing sector.

In Ecuador, the MPFTIF is the executive organization in charge of designing and executing the industrial and trade policy. As can be seen in appendix 1, the main representative of the Ministry, however, when it comes to developing any policy of strategy, the departments below work just reaching the sign of authorization of the maximum authority. This reality is far away from the success cases, where the president of a nation with the ministries works together with the private sector to design the policy, propose concrete actions, and measure the impact.

Lack of communication with the private sector, academia, and civil society

Last but not less, the new approach of industrial and trade policies states that the policy itself should not be built from the government's perspective, or what the current government thinks the economy should be. Although the State could identify possible industries or activities that will benefit the country, any action, strategy, or project should be discussed with the private sector and the academia before being written in a national policy. This is because in the end, the actions should be implemented for the companies, which will promote the creation of products and services, develop business strategies, invest in labor and capital factors, etc.

First, it is necessary to communicate with the private sector to identify their boundaries, their fairs, and reach feasible agreements. For example, in the Ecuadorian Industrial Policy the government wanted to promote the building of pipes manufacture lines, however part of the investments must be done by the private sector. The goals and benefits for the project were attached to the construction of a megaproject called "Pacific Refining Industry," an industry for refining oil to produce fuels. But the private sector lacked trust since the megaproject was disputed due to the lack of feasibility in the long run. In the end, the government considered the pipe industry in the industrial policy, but the mega project Pacific Refining Industry failed, thus no interested in the private sector arose.

Table 4. Summary of the roles for key actors

Actor		**Role**
Government	Presidency	Main coordinator of the meetings
	Ministry of Production, Foreign Trade, Investment and Fisheries	Proposal of guidelines, ideas of policies, and receptors of recommendations
	Other Ministries	Proposal of ideas
	Secretariat of Higher Education, Science, Technology, and Innovation	Proposal of ideas
Private Sector	Association of Industrials	Proposal of ideas Expression of needs and concerns
	Association of exporters	
	Association of micro smalls, and medium-size enterprise	
	Other associations	
Academia	Directors of Universities and high academic institutions	Proposal of ideas based on the need of the private sector
	Directors of technical institutions	
	Directors and representatives of training companies	Adaptation of the needs of the private and public sector
Civil Society	Environmentalist	Proposal of feasible ideas in conjunction with the proposed policy
	Representants of Indigenous population	Proposal of ideas Expression of needs and concerns

	Other representatives such as women rights activist	Proposal of feasible ideas in conjunction with the proposed policy

Note. This proposal does not limit the participation of other actors.

Logical Framework Matrix

Following the analysis developed in the present research, different actions have been recommended. In this regard, the following logical framework presents in simple terms the macro activities to be executed to update the current industrial and trade policy. However, in every activity, a deep process of coordination and analysis should be developed considering the factors described throughout the document.

Table 5. Logical Framework Matrix for the update of the Ecuadorian Trade and Industrial Policy

Activity	Verification	Assumptions
Identification and alignment of the laws, policies, projects promoting trade and industrial development	List of laws, policies, and projects promoting trade and industry in all levels of government Laws, policies, and projects eliminated or reformed to set the base for the development of the policy	The legislative accepts the modification and or elimination of laws Ministries accept the modification and or elimination of strategies, projects
Identification of the financial sources	National or international funds for the long term	There is interest for local and or international investors for investment in the long run
Establishment of the high-level team for designing the policy	Number (and positions) of high-level public officers' part of the team	The team accept the responsibilities
Diagnosis of the external context, present and future	Report	The analysis is done carefully, considering different scenarios, and the following science
Diagnosis of the internal context, present, and future	Report	The analysis is done carefully, considering different scenarios and following science
Analysis of the current and proposed industrial policy	Report	The analysis is done carefully, considering different scenarios and following science

Meetings with representants of the private sector	Report	There is interest from the sector to communicate effectively and to accept recommendations
Meetings with representants of the academic sector	Report	There is interest from the sector to communicate effectively and to accept recommendations
Meetings with representants of the civil society sector	Report	There is interest from the sector to communicate effectively and to accept recommendations
Frist draft of updated industrial and trade policy	Draft of Updated Trade and Industrial Policy	

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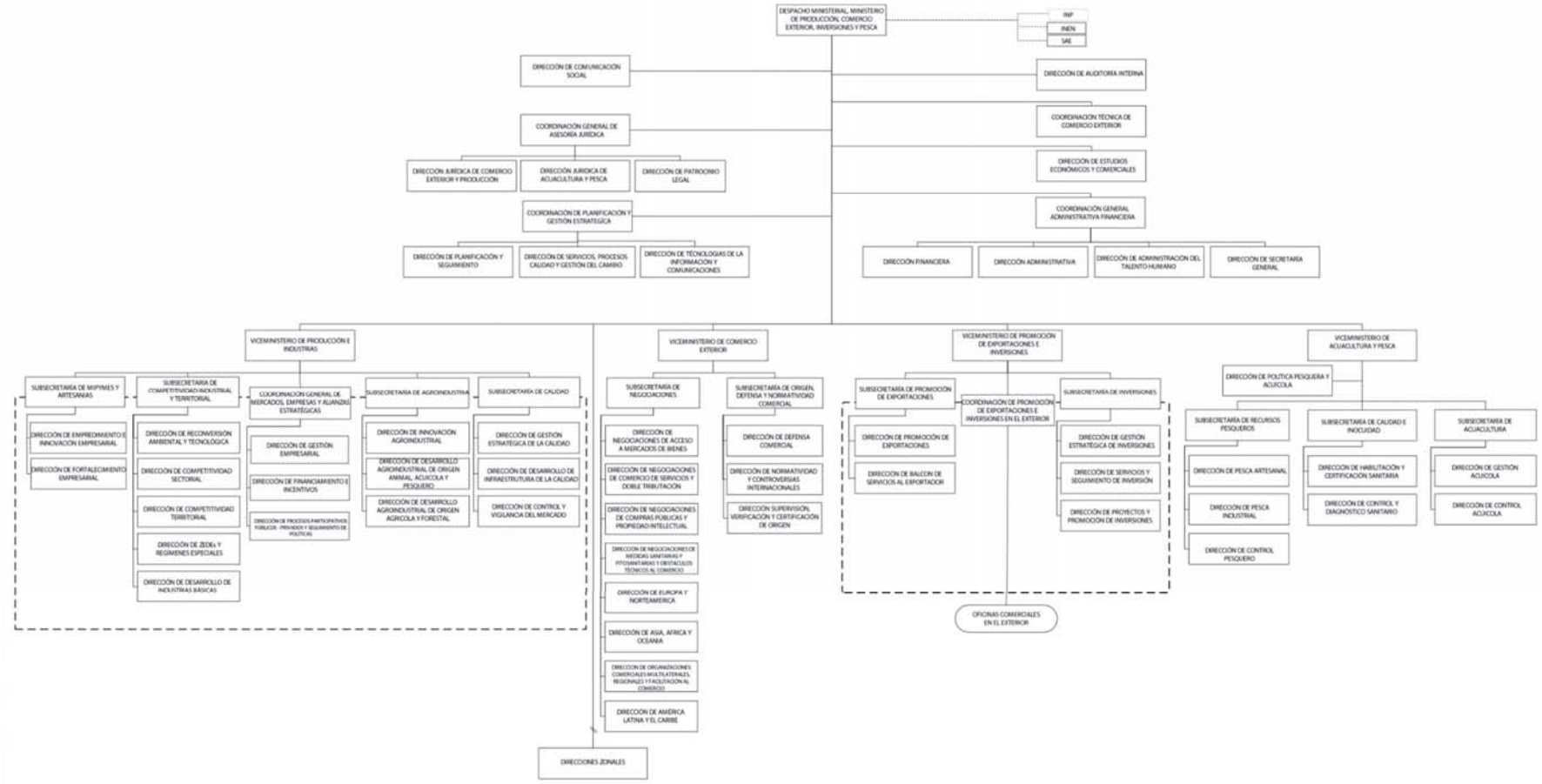
Appendix

Appendix 1. Structure of the Ministry of Production, Foreign Trade, Investments, and Fisheries



Note. The structure is written in Spanish. From Organigram by the Ministry of Production, Foreign Trade, Investments, and Fisheries (2020). Taken from https://www.produccion.gob.ec/wp-content/uploads/2021/06/Estructura_mpceip-Mz-2021-01-scaled.jpg

Appendix 2. Regions of Ecuador

Note. From Brief Information of Ecuador by Natural Regions of Ecuador (2021). Taken from https://briefinformationofecuadorec.wordpress.com/natural-regions-of-ecuador/