

Divergent development experiences: a general outlook of China and Latin America's development trends*

Experiencias de desarrollo divergentes: una perspectiva general de las tendencias de desarrollo de China y América Latina

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ABSTRACT

Following a definition of development that brings back the role of productive capabilities and endorses structural change, this paper examines two key elements and their trends: industrialization and trade patterns. Through the analysis of economic factors covering the period 1980-2019, this paper aims to offer insights into the elements that have led to divergent development outcomes in China and Latin America, paying particular attention to the cases of Chile and Mexico. Indicators including yearly GDP growth, the share of the world GDP, and per-capita GDP will be used to show that China has outpaced Latin America in terms of growth. Moreover, it will also be demonstrated that while Latin America is experiencing a deindustrialization trend, evidenced by a decline in the manufacturing sector and low levels of high-technology exports, China has experienced

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rapid industrialization. Moreover, China's exports serve as an illustration of a country that transitioned from producing and exporting low-value manufactured items to more complex goods with higher added value, while Chile has not been able to leave behind its reliance on natural resources. In the case of Mexico, although its exports are not concentrated in primary commodities, they are built on a maquiladora model that relegates it to the bottom of industrial value chains.

Keywords: China – Latin America – Development – Industrialization – Trade Patterns – Structuralism.

RESUMEN

Adhiriéndose a una definición de desarrollo que recupera el papel de las capacidades productivas y que respalda el cambio estructural, este artículo examina dos elementos clave y sus tendencias: industrialización y patrones comerciales. A través del análisis de factores económicos durante el período 1980-2019, el objetivo es presentar ideas sobre los elementos que han generado resultados de desarrollo divergentes en China y América Latina, prestando especial atención a los casos de Chile y México. Utilizando el crecimiento anual del PIB, la participación en el PIB mundial y el PIB per cápita se demostrará que China ha superado a América Latina en términos de crecimiento. También se demostrará que mientras América Latina está experimentando una tendencia a la desindustrialización, evidenciada por una caída en el sector manufacturero y bajos niveles de exportaciones de alta tecnología, China ha experimentado una rápida industrialización. Además, las exportaciones de China sirven como ejemplo de un país que pasó de producir y exportar artículos manufacturados de bajo valor añadido a bienes más complejos, mientras que Chile no ha podido dejar atrás su dependencia de los recursos

naturales. En el caso de México, si bien sus exportaciones no se concentran en productos primarios, se construyen sobre un modelo basado en las maquiladoras que relega al país a las posiciones más bajas de las cadenas de valor industriales.

Palabras clave: China – América Latina – Desarrollo – Industrialización – Patrones Comerciales – Estructuralismo.

INTRODUCTION

This paper will analyze general economic factors to shed light on the elements that might engender different development outcomes in China and Latin America. The period of study encompasses the four decades from 1980 to 2019. The aim is to understand why China and Latin America have evidenced a dissimilar evolution. Both cases have shown contrasting outcomes, not just pertaining to economic and social indicators such as GDP growth, poverty reduction, or inequality, but also in relation to the increment of productive capabilities.

For the purpose of this article, it is relevant to underscore the definition of economic development adopted by the developmentalist tradition. From this outlook, economic development only occurs when the productive organization of the economy undergoes a fundamental structural change, as well as the underpinning capabilities that enable such productive transformation (Chang, 2017). Even though there are multiple possible explanations to address contrasting development trajectories, this investigation will focus on two elements frequently highlighted by the literature and their trends: industrialization and trade patterns.

As Hausmann, Hwang, and Rodrik (2007) examined, what countries produce and export matters. Latin America's

trade pattern is specialized in raw materials with low value-added and there has been little upgrading or modification of this pattern over the last decades. On the other hand, China's export basket has been diversified over the last decades and the country has successfully managed to transit from the exportation of low-cost products to high-value-added manufacturing such as cellphones, computers, and vehicles. According to the Observatory of Economic Complexity (OEC), in 2020, machines made up 41% of all Chinese exports; including electrical devices led by telephones (7.13%) and computers (6.17%). Economic historians, as well as development economists, have underlined a set of core structural changes and patterns that are seen to be distinctive of any thriving development process. Among the five major changes analyzed by Cypher and Dietz (2009)¹ are changing trade patterns and an increase in industrialization, both of them are the key elements to be examined in this article.

Deeply connected to the changing trade pattern, industrialization is a crucial explanatory element to take into account. On one hand, China's growth has been substantially centered on industrial advancement. As the literature mentions, in the cases of China, Japan, and South Korea "economic development primarily meant industrialization" (Stallings & Kim, 2017, p. 230). On the other hand, deindustrialization is one of the major and still contingent difficulties in Latin America. Therefore, as will be underlined during the literature review, it is of vital importance for developing countries to seek structural change and to emphasize the role that industrial policy might play in gradually moving forward on the country's development.

1 The five also includes: A decrease in agriculture, increased application of human capital and knowledge to production and fundamental institutional change (Cypher & Dietz, 2009).

Presently, the Latin American region has insufficient productive diversity, poor investment, and low technology, as well as a disadvantaged specialization in terms of exports. The region's current export system is mostly focused on primary goods in the south and maquila exports in the north, or both situations in some cases (Bielschowsky & Torres, 2018). Specifically, within this region, the cases of Chile and Mexico will be highlighted. Chile, situated in the south of the region, illustrates the reprimarization phenomenon, and Mexico, located in the north, is a demonstrative model of the maquiladorization of the economy.

The structure of this article consists of six sections. After this introduction, the second section will explore the theoretical foundation of this article's two key factors—trade patterns and industrialization— and the discussion on their impacts on development. The third section constructs an overview of China and Latin America's economic and social outcomes including indicators such as gross domestic product (GDP), Shares of World GDP, per-capita GDP, GDP per person employed, and inequality. These indicators help to draw an overall picture of the different and contrasting development results of the two regions. The fourth section weighs the importance of exports to improve development. This section will provide more details about what China, Mexico, and Chile export and import, breaking down the different types of products that compound their export basket. The fifth section will dig deeper into industrialization trends contrasting China's experience with Latin American deindustrialization. The indicators that will be examined in this subdivision are Industry (including construction), Value added (% of GDP); Manufacturing, value added (% of GDP); High-technology exports (% of manufactured exports); Manufactures exports and imports (% of merchandise exports)

and Gross capital formation (current US\$). The final section will present a conclusion of the analysis.

Concerning the methodology, this article will employ secondary data, predominantly gathered from the World Development Indicators. Nonetheless, other sources such as the World Inequality Database (WID), the Observatory of Economic Complexity (OEC), and the Atlas of Economic Complexity will also be employed.

II.- THE RELEVANCE OF STRUCTURAL CHANGE TO BOOST DEVELOPMENT: CHANGING TRADE PATTERNS AND PROMOTING INDUSTRIALIZATION.

Guiding the theoretical foundation of this article is the Latin American structuralist and neo-structuralist thought. The structuralist and neo-structuralist thoughts identify three features that define the underdevelopment of Latin America's socio-economic structures. One of these characteristics is related to the productive and export diversity of its economies, which are considered scarce, lacking internal production chains, and with few dynamic sectors with respect to demand and innovation. To this, it is necessary to add the existence of reduced vertical integration and limited complementarity among sectors. The second element mentioned is structural heterogeneity, which refers to the large dissimilarities in productivity between and within sectors, and amongst territories. According to the ECLAC², this structural heterogeneity is translated into high levels of social inequality. Furthermore, the final characteristic is about institutions, which are regarded as ineffective in the promotion of development (Bielschowsky & Torres, 2018).

² Economic Commission for Latin America and the Caribbean.

In both visions, structuralist and neo-structuralist, one of the characteristics of underdevelopment is the presence of an institutional framework—including the State—unfavorable to technical progress and investment. During the classic structuralist phase, it was defended that the institutional lag creates limited fiscal capacity, wasting a share of the surplus on unproductive investments. During the neo-structuralist period, several issues were included, for instance, it was added the lack of a solid national innovation system, low-complexity financing systems, and more contingent issues, such as environmental sustainability, among others (Bielschowsky and Torres, 2018).

Returning to the issue of trade patterns and structural change, as Hausmann, Hwang, and Rodrik (2007) analyzed, what countries produce and export matters. As explained by the authors, the conventional perspective highlights the “fundamentals” of a country, that is, “its endowments of physical and human capital, labor, and natural resources along with the overall quality of its institutions” (Hausmann et al., 2007, p. 1). For this conventional view, these “fundamentals” define relative costs together with the specialization patterns, and trying to restructure the models of production outside the limits determined by these “fundamentals” is destined to fail or might even hinder economic growth. Considering this perspective, the scholars argue that whilst “fundamentals” possess an essential role, they do not exclusively determine which goods will be produced and exported by a country. A crucial aspect of their argumentation is that not all products “are alike in terms of their consequences for economic performance. Specializing in some products will bring higher growth than specializing in others” (Hausmann et al., 2007,

p. 1). The authors also mention that government policy might perform a relevant role in defining the structure of production.

Another crucial point stressed by the scholars is that nations turn into what they produce, as they argued, “countries that specialize in the types of goods that rich countries export are likely to grow faster than countries that specialize in other goods. Rich countries are those that have latched on to “rich-country products,” while countries that continue to produce “poor-country” goods remain poor” (Hausmann et al., 2007, p. 2). To support their statements, the scholars refer to the “cost discovery” mechanism. For them, when an enterpriser tries to manufacture a product in a developing country and this is occurring for the first time, then, it will encounter significant cost uncertainty, moreover, local factor endowment will need adaptation. Under this scenario, the entrepreneur will require to effectively investigate the elemental cost structure of the country’s economy. If the entrepreneur succeeds, then others will emulate him and the returns to the cost discovery of the first investor will be socialized. On the contrary, the losses stay private if the plan fails. Furthermore, the “knowledge externality implies that investment levels in cost discovery are sub-optimal unless the industry or the government find some way in which the externality can be internalized” (Hausmann et al., 2007, p. 2).

For this research, what is relevant to extract from the information mentioned above is that Latin American countries are not going to break their historical specialization in the exports of raw materials and dependency patterns if they do not innovate, explore and attempt to produce “rich-country products”. As the academic defends, “some traded goods are associated with higher productivity levels than others and that countries that latch on to higher productivity goods (through

the cost discovery process just described) will perform better” (Hausmann et al., 2007, p. 3). Therefore, the region should seek alternative paths to boost its economic performance. On the other hand, as will be explored in one of the following sections, China has been able to start manufacturing and exporting “rich-country products”, achieving also improved economic and social results.

As the literature points out: “Successful development is almost always marked by a maturation in the structure of trade, as a limited range of primary exports [...] is replaced by both a greater diversity of export products and by an evolving export mix toward manufactured goods and services” (Cypher & Dietz, 2009, p. 20). Effective developers move away from a dependency on the export of primary goods such as unprocessed mining, forestry, agriculture, and fishing products—that is, traditional goods that defined their colonial past— toward, initially, less complicated manufactured and non-traditional commodity exports, and then to more complex items, “from motor cars to computers to biotechnology products to information technology and other types of high value-added production” (Cypher & Dietz, 2009, p. 20). Equally important is the increase in industrialization as, at least at the beginning, economic upswing and development are tightly linked to a growing fraction of a country’s output as well as its labor force engaged in industrial operations, particularly manufacturing. As a country’s economy evolves further, services grow increasingly vital too (Cypher & Dietz, 2009).

It is relevant to also ponder that “the role of industrial policy in the successful developers is underplayed” (Khan & Blankenburg, 2009, p. 3). Likewise, as the scholarship indicates, what genuinely characterized thriving East Asian countries “was that the particular variant of industrial

policy that each tried was compatible with internal power balances that allowed the state to create incentives and compulsions in critical areas” (Khan and Blankenburg, 2009, p.3). Consequently, it is crucial to put back in the center of the discussion the relevance of industrialization and its connection to successful development experiences together with the appropriate industrial policies, as this might be a crucial piece to understanding why two regions present so dissimilar development outcomes.

Another point that it is necessary to clarify is the definition of economic development. Up to “the 1970s, there was a general consensus that economic development is essentially about the transformation of the abilities to produce – that is, productive capabilities” (Chang, 2018, p. 136). As exemplified by the academic, by declining to refer to high-income oil-abundant nations as “economically developed”, it is implied that gaining high-level income out of a resource windfall is not equivalent to “economic development”. Nonetheless, this perception that economic development has more to do with production capability instead of having control of resources has been drastically changed due to three academic tendencies: the neo-liberal stance, the humanist perspective, and the post-industrial service discourse (Chang, 2018). For the scholar these three views have caused production to be overlooked in the current development discussions, therefore, he critically evaluated its core principles.

With reference to the rise of neoliberalism, the academic highlights that “there is ample historical evidence showing not only that industrialisation is necessary for economic development but also that it does not happen automatically through market forces” (Chang, 2018, p. 138). In the past 30 years, neo-liberal programs have not succeeded in fostering

economic development in regions such as Latin America and Sub-Saharan Africa (SSA), where these policies have been implemented thoroughly. According to the academic, the growth rate of the per capita income decreased “from 3.1% in Latin America and 1.6% in SSA during the ‘bad old days’ of state interventionism in the 1960s and 1970s to 0.8% and 0.2% in the next 30 years of neo-liberalism (1980–2010)” (Chang, 2018, p. 138).

During the 2000s, both regions have seen growth accelerate, although this was primarily because of a boom in commodities rather than advancements in productive capabilities. Besides, nearly all of the nations that are wealthy nowadays, including the United States and Britain, -which are credited with establishing free market together with free trade-, developed through state intervention in the form of industrial subsidies, state-owned firms, protectionism in trade, and restrictions on foreign direct investment (Chang, 2002, 2018).

Concerning humanists, for Chang (2018), their main issue is that even though they are involved in improving productive capabilities, they are focused on investing in people's education and health. Nevertheless, in today's world, developments in this regard primarily take place at the business companies scale instead of at the individual level. Besides firms' development, it is required to mature a whole set “of collective institutions that encourage and help different economic actors work together capital-labour collaboration within firms, cooperation among firms within and across sectors, government–business interaction (including, but not just, industrial policy), industry-academia partnership, and so on” (Chang, 2018, p. 139).

Finally, in relation to the post-industrial economy debate, the author underlines that although services now account for a larger portion of the output, material manufacturing still plays a crucial role. Numerous recent increases in productivity in service areas such as finance as well as retail have been fictitious. Founded on practices such as market rigging and questionable asset valuation, the financial sector has had increased productivity growth at great cost to the overall economy, as demonstrated by the global financial crisis of 2008 (Chang, 2018). Likewise, “most high-value services – finance, engineering, IT services, consulting, etc. – mainly sell to the manufacturing sector, so they cannot prosper without a strong manufacturing base” (Chang, 2018, p. 140). Regarding the alleged success cases of service-based economies, countries like Singapore and Switzerland are often cited as examples of service-based wealth, however, they are actually the two most industrialized nations on the globe (Chang, 2018).

The aforementioned discussion supports the argument that it is necessary to bring back productive capabilities to the development discussions, as what nations produce to gain their incomes certainly matters (Chang, 2018; Hausmann et al., 2007). Moreover, central to the understanding of economic development is the structural transformation of the country’s economy, including modifications that support evolving trade patterns. Likewise, the support of industrialization processes is also relevant to economic development. To simplify, this article will consider industrialization as comparable to any advancement toward industrial progress, that is, any improvements toward a more manufacturing-centered and less commodity-dependent economy, including, for instance, industrial upgrading and the role of industrial policy.

Finally, it is important to mention that to define China's development pathway the literature frequently stresses that the role of the state was vital to encouraging industrialization. Multiple outlooks analyze the Chinese state-economy relations including state socialism/capitalism, developmental state, socialism with Chinese characteristics, authoritarian capitalism, and the regulatory state, among others. This research considers that the developmental state outlook is the one that best describes the state-economy dynamics in China. This term helps understand the Chinese trajectory inserted within its own regional context, avoiding the skews of examining this country through a western lens.

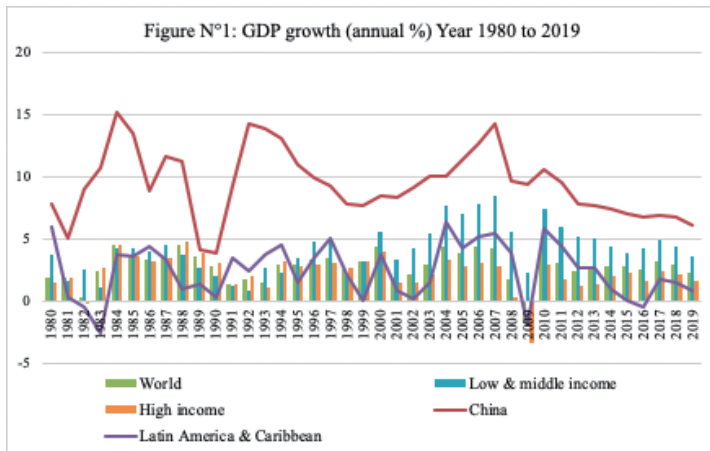
The notion of developmental state was created by Chalmers (Johnson, 1982) as an attempt to explain the Japanese case. According to the author "Japan's road to capitalism differed from that of the West, with the central role played by a state elite subordinating market forces to a strategic plan to force-march the country to industrialization" (Johnson in Bello, 2009, p.181). Even though the private sector has a relevant role, it is the State-planning bodies that guide and predominate. Subsequently to Johnson's explanations of the Japanese case, several academics explored similar experiences in Asia, examining cases such as South Korea (Amsden, 1992), Taiwan (Wade, 1990), and afterward, China (Beeson, 2009; Knight, 2014; Meier, 2009). This outlook underscores the significance of active governmental involvement in the economy, together with other features such as long-term commitment and the role of central planning (Ricz, 2019).

It is relevant to highlight that a developmental state is basically defined as a state-led model where the active participation of authorities has directed to successful development experiences. The selection and encouragement of particular

industries have represented an essential part of this success. These boosted industries were always fields where technology and innovation stand out, taking distance from low-end manufacturing and export baskets focused on commodities. In the case of China, it is possible to see the emergence of telecommunications giants such as Huawei, and even the rise of indigenous automobile brands such as Chery and Geely. These are examples of domestic Chinese companies exporting cellphones and vehicles, products at the highest end of the manufacturing chain.

III.- EXPLORING GROSS DOMESTIC PRODUCT AND SOCIAL INDICATORS

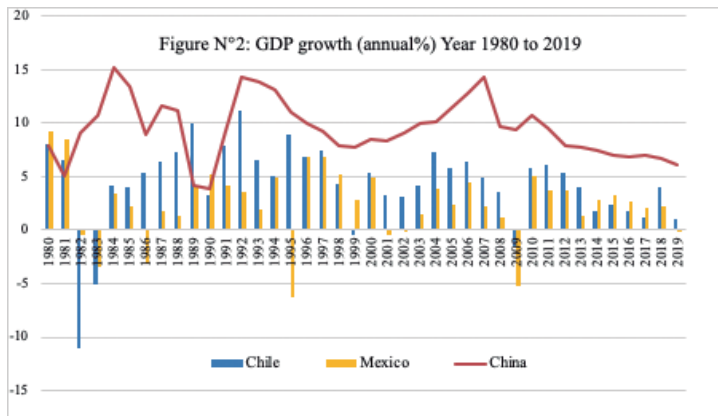
China's economic performance has been generally highlighted by the literature because of its outstanding fast growth over the past decades. The following graph demonstrates this evolution, which is more noticeable if its high growth rates are seen against other cases. China's GDP growth reached a two-digit level on multiple occasions, which was not accomplished by any of the countries or regions specified below. For the period 1980-2019, the average yearly GDP growth of China was 9.44%. These numbers far exceed the world's average annual GDP growth of 2.87% in the same period. China's performance also surpassed the outcome of low and middle-income countries whose average reached 4.2%, along with high-income nations, as their performance totaled 2.35%. It is relevant to indicate that the reforms that allowed China's economic liberalization started during the late seventies and early eighties, therefore, this analysis will consider 1980 as a starting research period. These years also encompass the era of globalization.



Source: Own elaboration based on World Bank, *World Development Indicators*, accessed on 24 February 2021.

Generally speaking, it is noteworthy to stress some milestones that help understand the performance of Latin American countries. During the first two decades of the era of globalization, that is, between 1980 and the year 2000, the region's economy experienced very poor performance. One of the main reasons behind this fact was the Latin American debt crisis, which forced the majority of the policies to focus on stabilization, austerity and structural adjustment. Subsequently —the following two decades after the year 2000— decision-making shifted and gave its way toward growth aims. Moreover, during the early 2000s, Latin America experienced a China-driven commodity boom, which had a relevant impact on the region's economic growth. As the literature highlights: “The commodity boom between 2002 and 2008 played an important role in increasing export earnings from Latin America. Growing demand from China for primary products was one factor stimulating the boom” (Jenkins, 2011, p. 73).

Figure N°1 also displays the GDP growth of the Latin America region, whose average annual growth was 2.47%. This amount is very similar to the world average mentioned above. Figure N°2 provides a closer look at the specific two Latin American countries: Chile and Mexico. In contrast with China's trend, there are a few years where the performance of these countries seems to converge with it. This happened up to 1981 and then during the early nineties, however, in the subsequent years the gap between these two nations and China gets wider and there is no more convergence. Chile's average annual GDP growth was 4.3% during 1980-2019, representing a slightly better performance in comparison with Mexico. Regarding Mexico, its average yearly GDP growth for the same period was 2.5%.

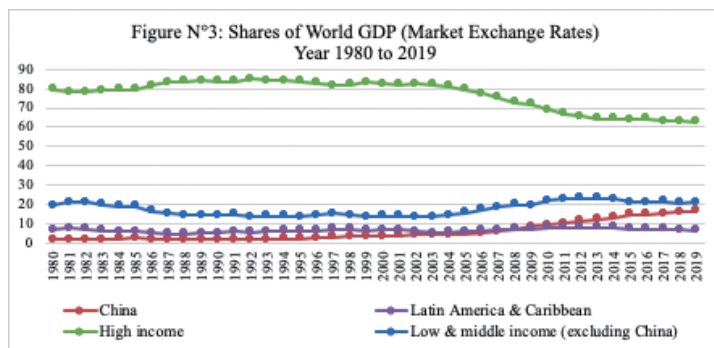


Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 February 2021.

As countries' GDP is reported in terms of their local currencies, for international comparative purposes it is required to convert domestic currencies to the US dollar, which represents the international currency of reference. Figure N°3 displays the shares of world GDP employing the market

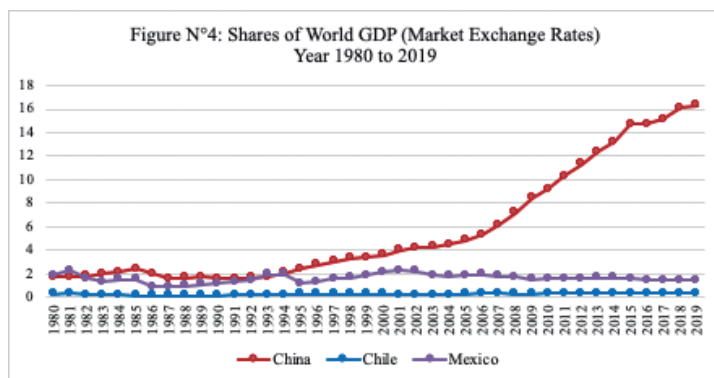
exchange rate. In the case of China, in 1980 its economy was 1.7% of the world total and, during the following decade, China's evolution maintained a flat line. At first sight, this curve might be interpreted as a continued and prolonged stagnation period, however, during this period the exchange rate suffered considerable depreciation. According to the information provided by the World Bank, during the first years of China's reform, that is, during the late seventies, the exchange rate was 1 US dollar equivalent to 1.68 renminbi (RMB) in 1978 and approximately 1.5 RMB in 1980. On the contrary, one decade later, it was closer to 5 RMB—more precisely, 4.78 RMB in 1990, 5.32 RMB in 1991, and 8.62 RMB in 1994. This big exchange gap illustrates the high levels of depreciation of China's currency until the early nineties, which coincides with the flat line mentioned above. The Chinese industry increasingly changed to be more competitive internationally and this was reflected in its currency exchange rate.

Subsequently, from 1994 up to nowadays, there is a very fast increasing course of action. In 2019, China accounted for a 16.34% share of the world GDP, nearly ten times its share throughout the early 1990s. This increase happened to a certain extent due to the acceleration of its economic growth, but also helped by the moderate appreciation of the RMB. In contrast, Latin America has continuously maintained a low share of the world GDP accounting for 6.53% in 2019. On the opposite side, high-income countries reached 62.8%, a substantially big portion of the worldwide GDP, nonetheless, it is possible to see a declining trend since their 79.7% in 1980. It is also possible to identify a converging curve between China's rising evolution and the high-income countries' decline, and between China and the trajectory of low and middle-income economies (when China is excluded).



Source: Own elaboration based on World Bank, World Development Indicators, accessed on 25 February 2021.

Figure N°4 also illustrates the shares of world GDP using the market exchange rate, however, in this case, the graph compares China with Chile and Mexico. In contrast with China, and very similar to the trend of the Latin American region in general —shown in Figure N°3— the last two countries account for a very small portion of the world GDP during the past four decades. Chile presents the lowest trend, as it does not even reach 0.5%. Mexico's portion is slightly higher, accounting for 1.44% in 2019.



Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 February 2021.

Table N°1 provides information about the economic performance in terms of per-capita GDP growth, which takes into account the total income of a country divided by its population. This indicator is more representative than merely considering the GDP growth as it separates the economic results from the population dynamics. Furthermore, as the following data considers the average annual growth rate, it keeps out the impact of inflation. From the table, it is visible the contrast between China's performance before and after its reform process. During the two decades before the reform, its annual growth rate was 2.52%, thereafter, the acceleration of China's growth is evident as its rate tripled, to an average of 8.43% in the following twenty years since the transformation began. In contrast with Latin American & Caribbean countries, low & middle-income countries, and even high-income economies, it is clear that China demonstrates a much faster rate of GDP per-capita growth.

These dissimilarities between Latin America and China, also reflect the results of different developmental approaches. China's reform period from the early 1980s coincides with the globalization era and the subsequent years, particularly in the 1990's decade, represent the period where the Washington Consensus policies were implemented in several Latin American countries. The shock therapy prescriptions applied in countries like Chile are very different from China's gradualist approach.

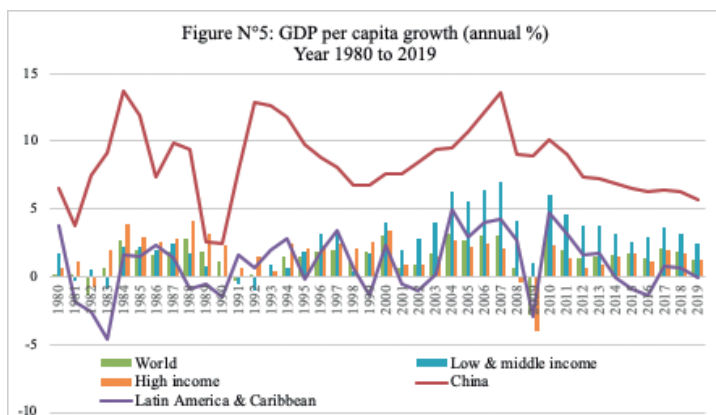
Table N°1: Economic Growth: per-capita GDP, average annual growth rate (%)

| | 1961-1979 | 1980-2000 | 2001-2019 |
|---------------------------|-----------|-----------|-----------|
| China | 2.52 | 8.43 | 8.47 |
| Latin America & Caribbean | 3.18 | 0.59 | 1.31 |

| | | | |
|---------------------|------|------|------|
| -Chile | 1.72 | 3.32 | 2.54 |
| -Mexico | 3.53 | 1.06 | 0.57 |
| Low & middle income | 3.12 | 1.28 | 3.97 |
| High income | 3.38 | 2.11 | 1.20 |
| World | 2.62 | 1.26 | 1.62 |

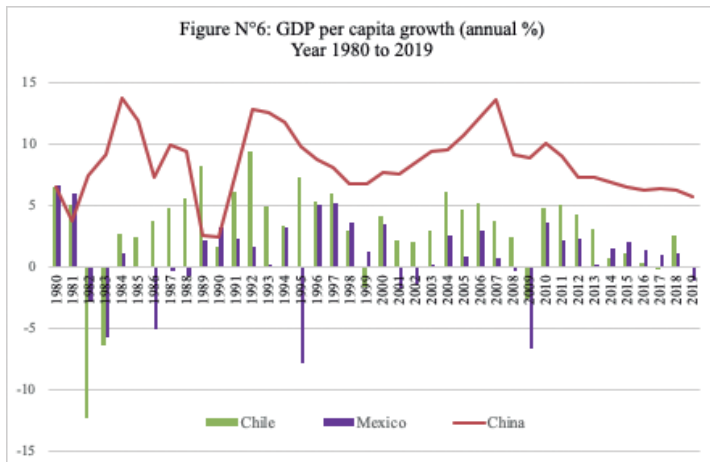
Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 February 2021.

Also focused on GDP per capita growth, the following figure gives more information regarding the evolution during the period 1980-2019. From the graph, it is very clear that China outperformed other countries and regions. China's average GDP growth for the whole period reached 8.45%. On the other hand, Latin American and Caribbean economies present an average of 0.93%, a very low amount in comparison with China. The performance of the region is even lower than the outcomes of low and middle-income nations (2.56%), high-income countries (1.68%), and even the world's trend (1.43%).



Source: Own elaboration based on World Bank, World Development Indicators, accessed on 26 February 2021.

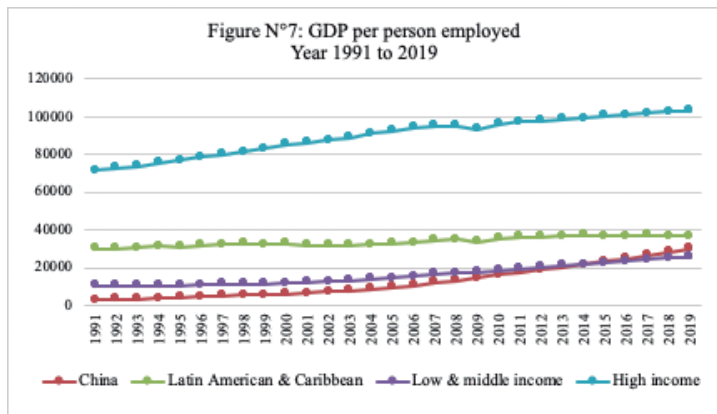
Figure N°6 provides more details regarding the GDP per-capita growth, now giving more information about Chile and Mexico. These two countries have a similar evolution to the region's general performance. Of these Latin American economies, Chile is the one that presents higher rates, obtaining an average of 2.95%, in contrast with the 0.83% of Mexico.



Source: Own elaboration based on World Bank, World Development Indicators, accessed on 26 February 2021.

Per-capita GDP helps display the progress in living standards or levels of income, nonetheless, to have a better picture of the development trajectory it is also necessary to consider the GDP per person employed. This type of data provides a valuable approximation of labor productivity and excludes the impact of unemployment. Figure N°7 delivers the evolution of GDP per person employed (constant 2017 PPP \$), data is only available from the year 1991 onwards. During this period there is an overall upward trend in all the cases, where China's curve converged and finally surpassed the trajectory

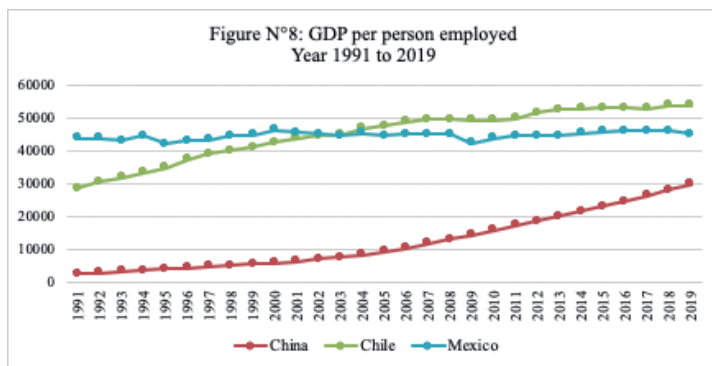
of low and middle-income nations. From the graph it is also visible that the performance of Latin American countries is higher than China's evolution, nonetheless, this gap has been progressively reduced over time. In 1991 the GDP per worker in China was \$2,784 (USD) versus \$30,016 (USD) in Latin American and Caribbean countries, an amount more than ten times greater. However, the latest numbers reached \$30,119 (USD) in China versus \$36,560 (USD) in Latin America & the Caribbean. On the other hand, high-income economies outperformed by far all the other regions and countries, reaching \$103,094 (USD) in 2019.



Source: Own elaboration based on World Bank, World Development Indicators, accessed on 28 February 2021.

Figure N°8 compares China's GDP per person employed with Chile and Mexico. During the early 1990s, both Latin American countries presented a higher performance. However Mexico maintained a relatively flat line over these years and China's trend started increasing, this rise is rapidly moving toward convergence with the Mexican and Chilean levels.

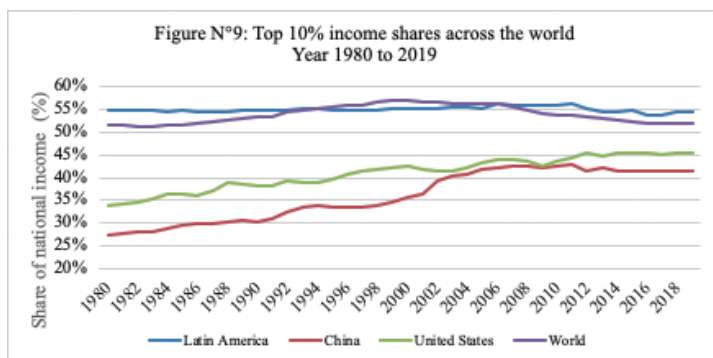
Of the two countries in the region, Chile is the only one that recorded an upward curve obtaining \$53,999 (USD) in 2019.



Source: Own elaboration based on World Bank, World Development Indicators, accessed on 28 February 2021.

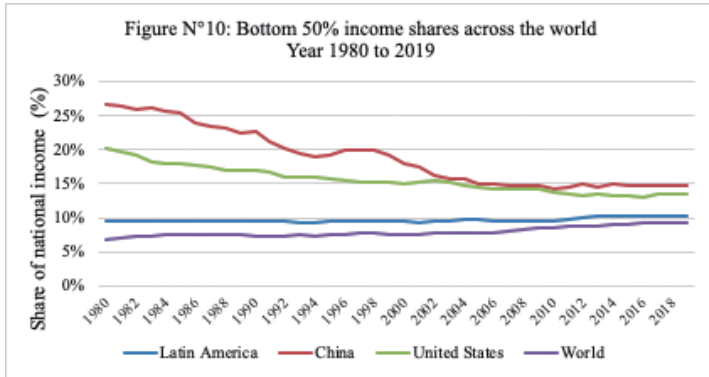
The economic performance of China in contrast with Latin American countries has been discussed, however, economic indicators such as GDP are not enough to evaluate development. Therefore, it is required to also explore social development indicators. Using the information from the World Inequality Database, Figure N°9 displays the share of the national income accumulated by the top 10% of its population. In Latin America the top 10% consistently accounted for more than 50% of the national income, reaching frequently around 55%, which represents a very large portion of the income of a country in the hands of a relatively reduced group. The world's trend shows a similar unequal distribution. On the other hand, both the United States and China manifest escalating inequality, where it is possible to see a slight convergence toward the direction of the world and Latin America's trends. In 1980, around 27% of national

income was hoarded by the top 10% earners in China, in contrast to 41% in 2019.



*Source: Own elaboration based on World Inequality Database (WID),
accessed on 06 February 2021.*

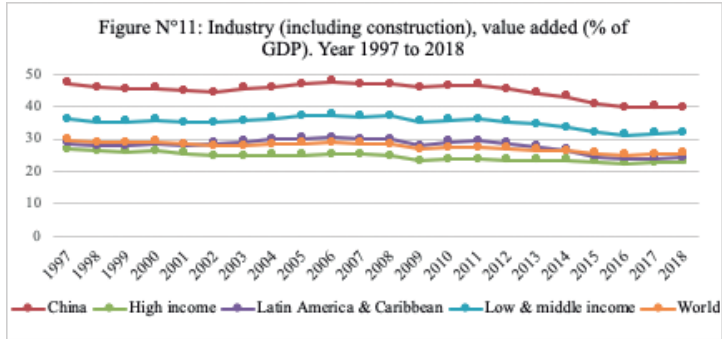
Figure N°10 shows the share of the national income held by the bottom 50%, which illustrates from another perspective the same pattern that was described in figure N°9. From the graph, it is possible to identify that there has been a general decrease in the share of the bottom 50% earners in China and the United States. Furthermore, it also highlights that there is a convergence toward worsening levels of inequality in countries with very dissimilar backgrounds and development paths, that is the case of an advanced capitalist nation like the United States and a rapidly growing economy such as China. On the other hand, Latin America again reveals a historically serious level of inequality, as its almost horizontal line is located at the lowest section of the graph along with the world trend. This situation shows that the bottom 50% income earners have an increasingly small share of the national income.



Source: Own elaboration based on World Inequality Database (WID), accessed on 06 February 2021.

IV.- CHINA'S INDUSTRIALIZATION VERSUS LATIN AMERICAN DEINDUSTRIALIZATION

This section will analyze some indicators concerning the trend of industrial progress. In general terms, the contribution of the industry (including construction) to the GDP is higher in China than in other regions, as Figure N°11 shows, for the period 1997 to 2018 China's industrial growth was close to 50% for several years, slightly declining since 2011 until reaching 39.69% in 2018. In contrast, low and middle-income economies fluctuated between 37.4% and 31.2%. Latin America and the Caribbean experimented a lower performance, almost identical to the world's trend, recording 24.27% in 2018. High-income countries followed closely the Latin American performance, reaching 22.94%, the lowest industry participation in 2018.



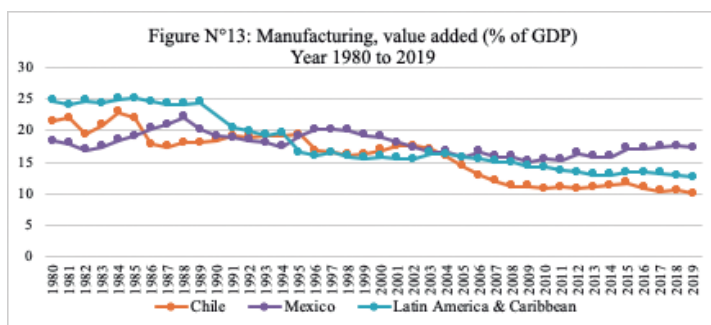
Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 March 2021.

Figure N°12 illustrates the industrial growth of Chile and Mexico in contrast with China. Both Latin American countries present a very similar performance, with frequent and small fluctuations over the period 1980-2019. China’s industrial growth is always higher than the experience of these Latin American economies. In 2019 Chile recorded 29.33% and in Mexico, the industry accounted for 30.88%.



Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 March 2021.

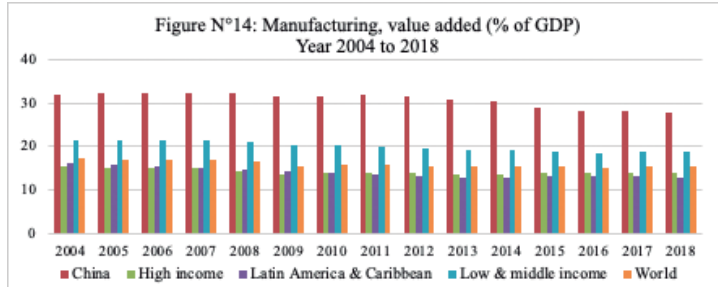
Specifically taking into account the manufacturing value added (% of GDP), a general decline in the manufacturing sector in Latin America is clear. As there is no data available for China from 1980, just from 2004, Figure N°13 only gives the trajectory of the Latin American and Caribbean countries, including the detail of Chile and Mexico. Within the region, Mexico is the only economy that despite experiencing the same declining curve, it has been recovering during the last years until this sector accounted for 17.33% in 2019, approaching its starting percentage in 1980. The manufacturing value-added in Chile had a participation of 21.43% in 1980 and this amount progressively diminished until it reached 10% in 2019.



Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 March 2021.

During the period 2004-2018, the contribution to the GDP of the manufacturing sector in China surpassed the experience in all the economies specified in Figure N°14. This out-performance happened despite a slight decrease from 31.98% in 2004 to 27.84% in 2018. Considering the latest data available, the manufacturing area contributed 14% in high-income economies, 12.86% in the Latin America and the Caribbean region, 18.75% in low and middle-income

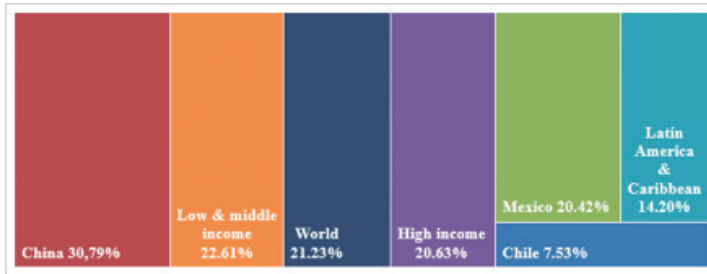
nations, and 15.39% in the whole world. All these countries maintained a very stable, almost flat trend, with practically no significant fluctuations.



Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 March 2021.

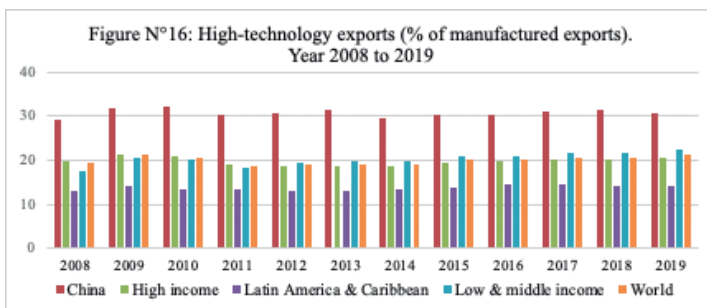
The exports of high technology are also a good indicator to evaluate the industrialization of a country. Figure N°15 reflects the current picture on this matter, where China accounts for the higher percentage of high-technology exports (30.79%), followed by low and middle-income countries (22.61%). The volume of high-tech shipments in Latin America and the Caribbean region is 14.20%, almost half of what China exports in the same field. On the other hand, Mexico stands out as an exception within its region, as its high-technology exports (% of manufactured exports) recorded 20.42%. Contrarily, countries such as Chile and Colombia possess a low number of high-tech deliveries, accounting for 7.53%.

Figure N°15: High-technology exports in 2019
(% of manufactured exports)



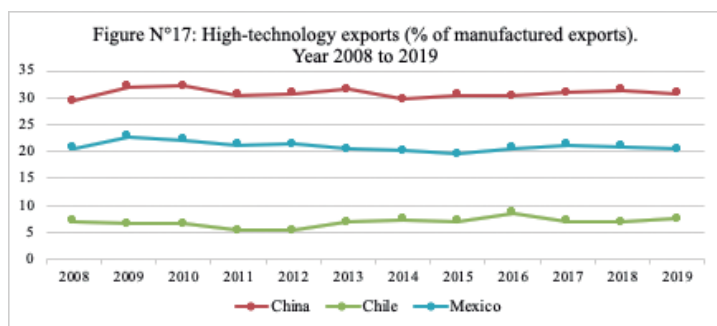
Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 March 2021.

Figure N°16 offers data that represents the trajectory of high-technology exports (% of manufactured exports). Considering the information available from 2008, the evolution in this area seems to maintain a stagnant trend, as there is very little variation during these years and the scenario in 2008 is very similar to the percentages in 2019 explained above. For example, the Chinese exports of high-technology goods continuously maintained amounts close to 30%, starting from 29.37% in 2008.



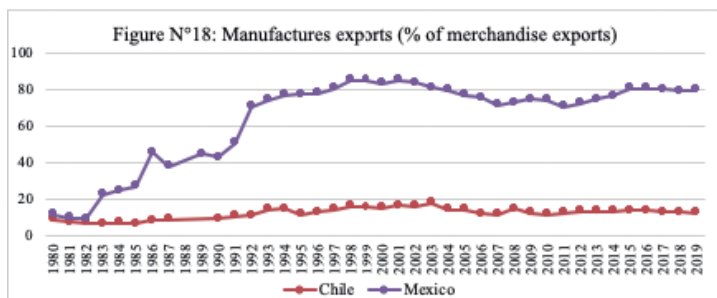
Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 March 2021.

On the same line, Figure N°17 displays a relatively invariable curve in the cases of Chile and Mexico. From the data, it is visible that Chile constantly maintains low percentages of high-technology exports, in contrast with Mexico which keeps numbers around 20% during the whole period. The Chinese evolution presents a clearly higher performance regarding high-tech products exported since 2008.



Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 March 2021.

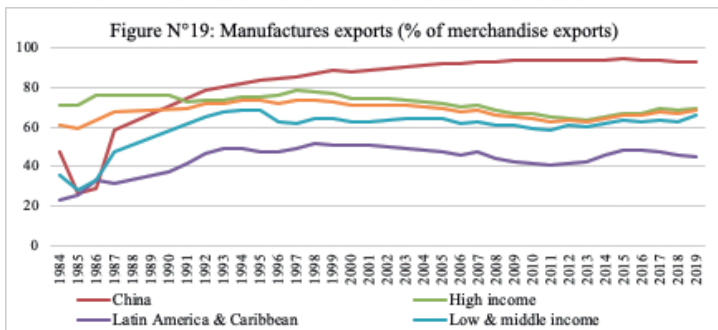
Regarding manufactures exports (% of merchandise exports), Figure N°18 displays the corresponding percentages for the cases of Chile and Mexico. This figure is very illustrative of the gap between Mexico and Chile. Since 1980 Mexico has had a remarkable increase in its manufactures exports, starting at 11.91% up to 79.96% in 2019. This contrasts with the curves of Chile, which do not present an ascendant trend. Chile is the country with lower manufactures exports, in 1980 the country recorded 9.09%, maintaining percentages between 6.73% and 18.29% in the following decades. However, the growth in the case of Mexico is mainly explained by the maquiladora export model, where the country operates as an assembly station for the United States' products.



Source: Own elaboration based on World Bank, *World Development Indicators*, accessed on 04 March 2021.

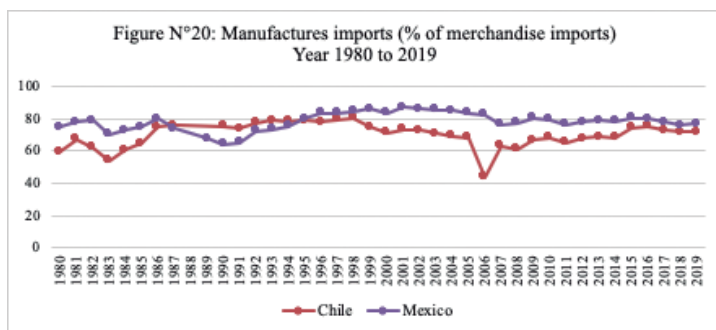
Likewise related to manufactures exports, Figure N°19 contrasts China's experience with Latin America and the Caribbean, the world, low & middle-income economies, and high-income nations. In comparison with all these cases, China's trajectory experimented a noteworthy increment since 1984, reaching 93.07% in 2019, a number very high in comparison with the 69.06% in high-income economies or the 65.78% accounted in low and middle-income countries on the same year. The trend of the world followed a close curve to the one experimented by the two aforementioned groups, oscillating between 58.93% and 73.54%.

On the other hand, Latin American and Caribbean nations possess the lowest percent of manufactures exports. This region recorded 22.93% in 1984 and increased slightly up to 45.16% in 2019.



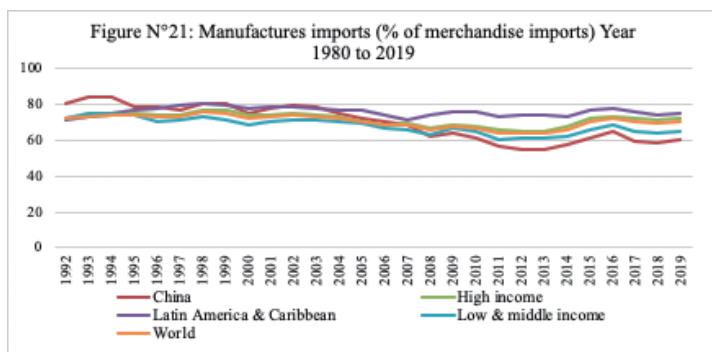
Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 March 2021.

Regarding the imports of manufactures, since 1980 Chile and Mexico have presented similar trajectories. Mexico displays very small fluctuations, in 1980 importations in this sector represented 74.87%. Almost four decades later its imports in manufactures recorded 75.45%. In the case of Chile, imports in this area recorded 59.55% in 1980 and they increased up to 71.71% in 2019, reaching similar percentages to their Latin American counterparts.



Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 March 2021.

As there is no complete information on China's manufactures imports since 1980, Figure N°21 shows this since 1992, in comparison with the rest of the world's trends. From the graph it is possible to identify a declining curve for the case of China, which decreased from 80.27% in 1992 to 59.95% in 2019. On the contrary, Latin American and Caribbean countries experimented a very small increase in manufacturing imports, from 71.18% in 1992 to 74.79% in 2019, above the percentages of imports of both low- & middle-income countries and high-income economies.

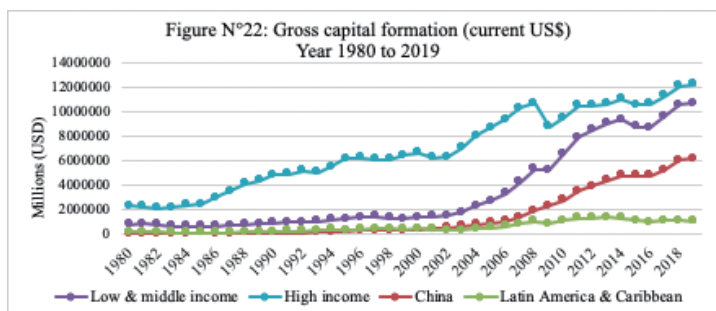


Source: Own elaboration based on World Bank, World Development Indicators, accessed on 04 March 2021.

Bluestone and Harrison (1982) define deindustrialization as systematic and extensive disinvestment in the fundamental productive capacity of the country. Even though their research is focused on the American experience, their definition has been considered a precedent to characterize modern cases of deindustrialization (Barros, 2019; Strangleman, 2017). For the authors, the key difficulty with the economy of the United States can be attributed to the form in which capital was redirected from productive investment in “basic national industries into unproductive speculation, mergers and acqui-

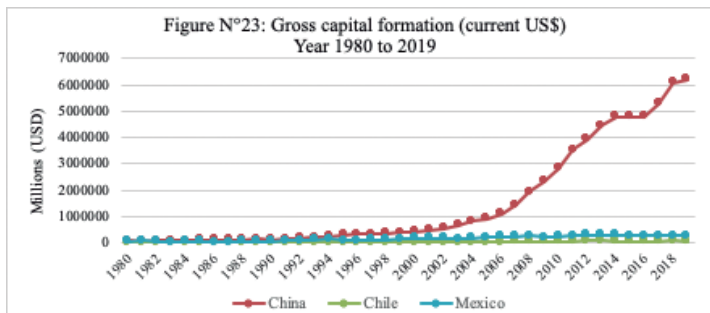
sitions, and foreign investment” (Bluestone & Harrison, 1982, p. 6). In the following data, it is identifiable a slowdown in productive investment in the Latin American region, therefore, this matter might be considered as a tentative cause for the deindustrialization process in the region. On the other hand, the Chinese case presents an opposite trend, as its gross capital formation has been increasing steadily, especially during the last two decades.

Figure N°22 shows data of productive investment in the form of gross capital formation (current US\$) for the period 1980-2019. China’s gross capital formation tended to increase significantly from the early 2000s onwards, ending at \$6,204 billion (USD) in 2019. Low and middle-income countries along with high-income economies also presented the same upsurge as China but reaching much higher amounts: \$10,725 billion (USD) in the case of low and middle-income economies and \$12,275 billion (USD) in high-income nations. Contrarily, Latin America and Caribbean countries did not grow in the same way as the other cases. The latest value for gross capital formation in the region was \$1,075 billion (USD) as of 2019, amount six times smaller than the number in China during the same year.



Source: Own elaboration based on World Bank, World Development Indicators, accessed on 28 February 2021.

Figure N°23 illustrates the huge difference regarding gross capital formation between China and the cases of Chile and Mexico. Of the two Latin American countries, Mexico presents slightly higher figures, still, the performance of both cases is very low. The latest amount for gross capital formation in Chile was \$64 billion (USD) and in Mexico, it reached \$268 billion (USD) in 2019. These numbers represent a very small productive investment in these economies, especially in contrast not just with China, but also with the rest of the world.



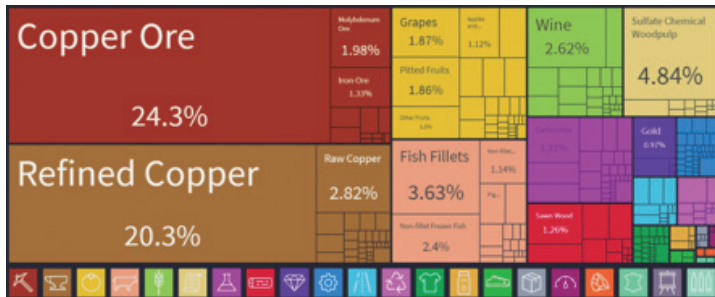
Source: Own elaboration based on World Bank, World Development Indicators, accessed on 28 February 2021.

V.- THE RELEVANCE OF EXPORTS TO IMPROVE DEVELOPMENT

What Latin American countries export to the world is highly concentrated in natural resources and primary commodities. The asymmetry regarding the type of products traded between Latin American countries and the rest of the economies is what generally generates concerns. The following figures deliver detailed information in this regard. Chilean exports are heavily concentrated in two areas: mineral products (28.86%) and metals (25.22%). Within these two sectors, approximately 48% are copper-related

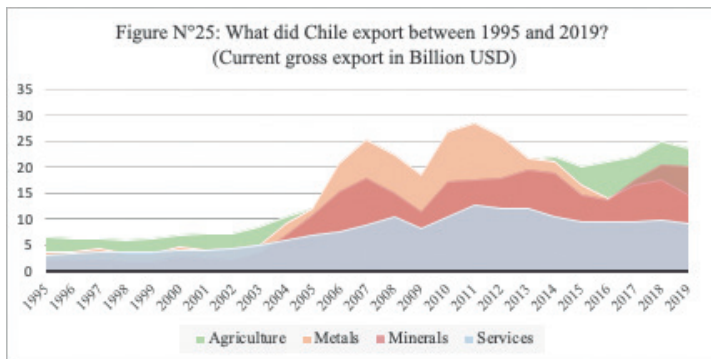
products. Finally, the other key areas are related to vegetable products (9.84%), animal products (9.26%), and foodstuffs (5.83%). The most prominent vegetable products correspond to fruits and nuts (8.56%) and regarding animal products, fish, crustaceans and other aquatic invertebrates account for the majority (7.69%).

Figure N°24: What does Chile export? (2018)
Total: \$76.7B



Source: The Observatory of Economic Complexity

The focus of Chile’s exports on minerals and metals, particularly copper, has been a long-term tendency, this situation has been increasing enormously during the last two decades, as Figure N°25 demonstrates. In the case of metals, the imports rose from \$3.98B in 1995 to \$14.8B in 2019. Minerals imports grew ten times from \$2.35B to \$20.4B during the same period. Agriculture also has a significant upsurge, reaching \$23.9B in 2019. The graph captures the Commodities Boom years, as the rise grows exponentially after 2002. Before that date, especially during the nineties, there is very little increase in the export of these goods. Services also experienced a smaller yet still notable increase, rising from \$3.33B to \$9.26B.



Source: Own elaboration based on *Atlas of Economic Complexity*, accessed on 15 June 2022.

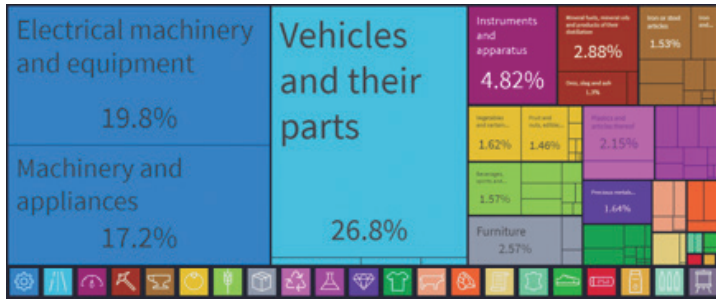
It is also noteworthy to indicate what happens in the opposite direction, that is, what Chile imports. Chilean imports are mainly focused on high-value-added products, as Chile predominantly imports machines (21.74%). Other relevant imported goods include mineral products (16.59%) mainly oil and derivatives, transportation-related goods (15.52%), chemical products (8.69%) led by packaged medicaments; and textiles (6.29%). Within these areas the top 5 imported products were cars (6.77%), refined petroleum (6.59%), crude petroleum (5.39%), delivery trucks (3.73%), and broadcasting equipment, that is, transmit-receive apparatuses for radio, TV, etc. (3.31%).

Additionally, it is also necessary to highlight that, on average, approximately 70% of Mexican exports along with 50% of imports are generated by firms that run under this program (Morales, 2020).

For example, most of the shipped vehicles recorded as Mexican exports are not totally fabricated in the country, indeed, most of the sophisticated and complex components, with higher value-added, are imported from advanced economies to be assembled. According to information provided by the National Institute of Statistics and Geography (INEGI) and the Mexican Association of Automotive Industry (AMIA) of the total required inputs for the automotive sector in Mexico, 58.5% are imported and 41.5% are national, that is, the majority of inputs are brought from abroad (INEGI & AMIA, 2018).

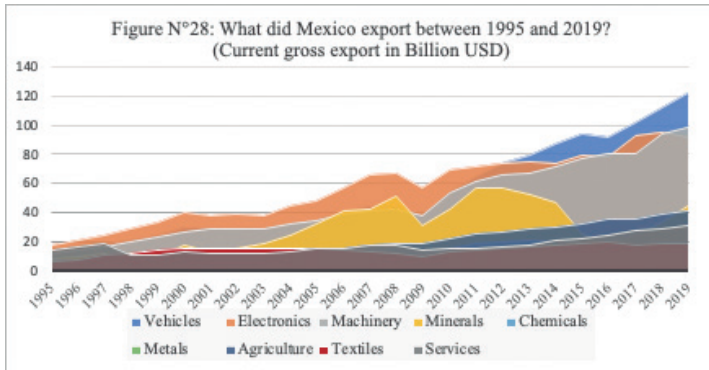
According to the same source, the elements that present the highest percentage of foreign contributions are internal combustion engines, turbines, and transmissions, as 100% of them come from abroad. On the contrary, the elements that present the highest percentage of national origin are the less complex parts necessary for the manufacture of car bodies (85.1%), as well as iron and steel products (85%). This situation relegates Mexico to one of the lowest steps within the automotive industry's Global Value Chain (GVC) and has been indicated by some scholars as detrimental to the country's innovation system (Crossa, 2017). The example of the automotive industry illustrates the consequences of the maquiladora model for the Mexican economy from the perspective of a specific industry.

Figure N°27: What does Mexico export? (2018)
Total: \$441B



Source: The Observatory of Economic Complexity

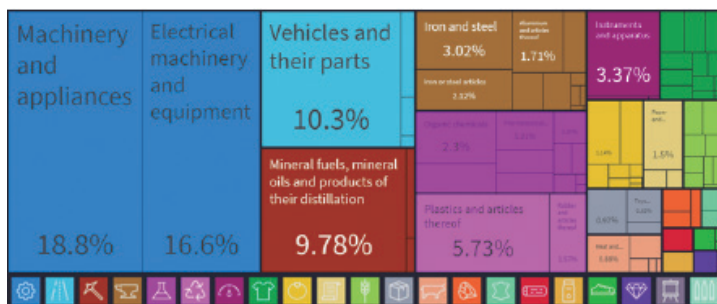
Figure N°28 gives more information about the Mexican exports between 1995 and 2019, where it is visible the massive rise of products such as vehicles, electronics, and machinery. In 1995 Mexico exported an amount worth \$13.3B in vehicles, this amount immensely expanded during the following year, reaching \$123B in 2019. The exportation of goods belonging to the electronics category also evidences a remarkable growth, from \$18.3B to \$92.4B throughout 1995-2019. Similar numbers recorded the export of machinery rising from \$11.9B in 1995 to \$99.7B in 2019. The shipment of minerals (mainly crude oil) from Mexico also maintained a large proportion, upsurging from \$8.89B in 1995 to \$44.6B in 2019. This rising trend is more visible since the turn of the century, dates that coincide with the Commodity Boom years. Agriculture, services, and textiles also presented a rising yet significantly smaller trend. Generally speaking, exports from Mexico are more diversified than other countries in the region, which are more similar to the scenario described in the case of Chile.



Source: Own elaboration based on Atlas of Economic Complexity, accessed on 15 June 2022

Mexico mainly imports machines (35.4%) and goods from the transportation sector (11.32%), followed by mineral products (10.36%), metals (9.16%), and chemical products (7.56%). The predominantly imported machines are office machine parts (4.05%), computers (1.8%), insulated wire (1.7%), integrated circuits (1.68%), combustion engines (1.3%), low-voltage protection equipment (1.27%), broadcasting equipment (1.05%), among several others. Concerning transportation, vehicle parts represent 6.57%, followed by cars (2.53%).

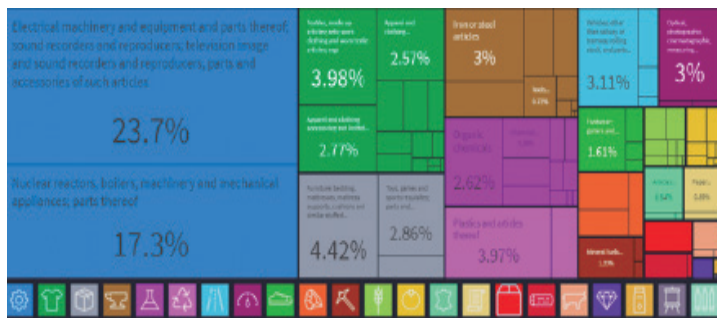
Figure N°29: What does Mexico import? (2018)
Total: \$416B



Source: The Observatory of Economic Complexity

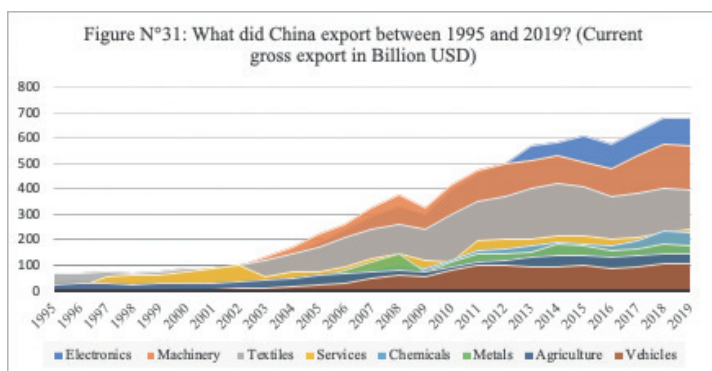
Concerning China, during 2020, as reported by the Observatory of Economic Complexity (OEC), 41% of the exported products correspond to machines, which include, for instance, electrical devices led by telephones (7.13%) and computers (6.17%), equipment and mechanical appliances, and machinery. The following relevant areas include textiles (12.58%), miscellaneous manufactured articles (8.04%)—such as furniture, mattresses, lamps, and toys—metals (7.49%), chemical products (6.03%), plastics, and rubbers (4.93%).

Figure N°30: What does China export? (2020). Total: \$1.52T



Source: The Observatory of Economic Complexity

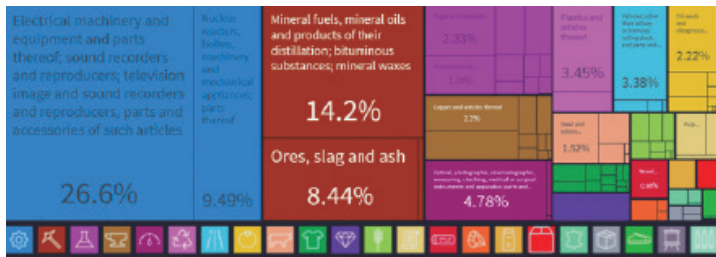
The evolution of China's export basket is a clear example of a country that was able to transit from the production and exportation of lower value-added items to higher value-added manufactures. The exportation of electronics and machinery represents the most prominent growth over the last decades. The amount of electronic goods exported in 1995 reached \$31.1B, this number grew considerably during the following years, amounting to \$680B in 2019. Similarly, the export of machinery strengthened, growing from \$35B to \$570B. Furthermore, the exportation of textiles also followed a positive trend, reaching in 2019 an amount almost six times higher than the sum of 1995.



Source: Own elaboration based on *Atlas of Economic Complexity*, accessed on 15 June 2022

The goods that China imports are mainly machines (36.09%)—from which around 16.71% are parts and goods related to electronic integrated circuits—, mineral products (22.97%) including, for example, petroleum, iron ore, natural gas, copper ore, among several others. The following relevant sectors are chemical products (7.45%), metals (5.43%), and instruments (5.01%).

Figure N°32: *What does China import? (2020).*
Total: \$1.42T



Source: *The Observatory of Economic Complexity*

VI.- CONCLUSION

From the data analysis, it is possible to conclude that China has outperformed the Latin American region in growth, as indicators such as yearly GDP growth, share of the world GDP, and per-capita GDP demonstrate. For the period 1980-2019, China's yearly average GDP growth was 9.44%, an amount almost 4 times higher than the average of the Latin American region. Furthermore, Latin America has constantly maintained a small share of the world GDP during the same period. In 2009 China's share surpassed the Latin American and Caribbean countries and has continued increasing since then. In 2019, the former recorded 16.34% of the world GDP, whereas the latter accounted for 6.53%. Regarding per-capita GDP growth, Latin America and the Caribbean show an average of 0.93% for the period 1980-2019, a number very low in contrast with China's 8.45%.

Another relevant concluding point is related to industrialization. China has undergone fast industrialization while the scenario in Latin America is more complex. There is a deindustrialization trend in this region, substantiated

by a deterioration of the manufacturing sector and small percentages of high-technology exports. This deindustrialization is more noticeable from 1980 to the year 2000. In the following two decades, there was a slight improvement in industrial progress, especially through the early 2000s, but this was not sustained during a prolonged period, and during the last decade, the trend started to decline again. In 1980, the manufacturing sector (Figure N°13), in Latin American and Caribbean economies represented 24.7% of the GDP, nonetheless, these shares gradually diminished until they accounted for 12.63% in 2019. Similarly, the volume of high-tech products exported by the whole region is 14.20%, half the amount of what China exports in this area.

Concerning industrialization, what remains to be tested, —especially in relation to Bluestone and Harrison's (1982) definition of deindustrialization— is the relation between the slowdown in productive investment in Latin America, and the role of the Washington Consensus policies, particularly regarding the financialization of the economy. Conversely, the Chinese experience faced a different scenario regarding productive investment, since its gross capital formation escalated considerably, and the country went through a rapid industrialization phase while Latin American countries were undergoing the opposite.

Another important conclusion is regarding the possible role of China in the region. When doing a comparative study between China and Latin America there are two ways in which this matter can be approached. One path is in relation to China's interaction with Latin American economies. This issue is paradoxical and complex, and it also presents two differentiated sides. On one hand, trade relations with the region are highly asymmetrical and concentrated in a limited

number of natural resources. On the other hand, the massive importations made by China generated a Commodity Boom that encouraged a shift of the region's Terms of Trade (ToT), a transition from a worsening trend toward an upward curve since the turn of the century. The second path is related to the lessons that can be extracted from the Chinese experience, as was demonstrated during the data analysis. Regarding economic performance, industrialization, and transformation of its export basket, China can be labeled as a successful case, in contrast with the poor outcomes of the Latin American region. Even though the first approach is relevant, it deserves a whole investigation on its own. Notwithstanding, the second approach is more pertinent to this investigation.

Many issues underlined by the Latin American structuralist and neo-structuralist thought remain present in the structure of Latin American economies nowadays. Decades of economic liberalization in countries like Chile have not encouraged diversification and this has fueled a vicious circle of dependency on natural resources such as copper. Finding a solution to break down this dependency pattern is one of the most complex challenges in the region. It would be premature to just point out as responsible the neoliberal reforms or other external factors such as the increasing presence of China. There are also relevant domestic features and Latin American countries should first identify their internal glitches and then focus their effort on solving their structural problems. Latin America needs to strengthen, develop, and diversify its own economies, encouraging industrialization, and shattering the pattern of commodity-only exporters. These last points are precisely where the experience of China might provide some examples.

Even though China's development evolution is far from perfect—for instance, in Figure N°9 it is possible to evidence escalating levels of inequality—there are positive outcomes concerning economic development. To close this examination, it is useful to return to the economic development concept emphasized at the beginning of the article, that is, economic advance only takes place when the productive structure of the economy endures a profound structural shift, along with the supporting capacities that permit such productive change (Chang, 2017). Moreover, it has been underlined that a successful development path is predominantly characterized by an evolution in the trading structure, this materializes when a small number of commodity exports are replaced by a wider variety of goods and as the export mix shifts toward manufactured items as well as services (Cypher & Dietz, 2009). In this regard, China's exports are a good illustration of a nation that moved from producing and exporting goods with low added value to more complex manufactured products. As Figure N°31 depicts, the most noticeable rise over the past few decades has been in the shipping of machinery and electronics. How has China been able to accomplish this structural transformation in a relatively short period of time? That analysis deserves further investigation, and it is clear that Latin American countries can also extract some valuable examples from these processes as well.

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