Revue Interventions économiques
Papers in Political Economy

59 | 2017
La nature sociale de la monnaie. Enjeux théoriques et portée institutionnelle

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La politique industrielle en Argentine, au Brésil, au Chili et au Mexique : une approche comparative

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Electronic version
URL: http://journals.openedition.org/interventionseconomiques/3852
ISSN: 1710-7377

Publisher
Association d'Économie Politique

Electronic reference
Juan E. Santarcángelo, Daniel Schteingart and Fernando Porta, « Industrial Policy in Argentina, Brazil, Chile and Mexico: a Comparative Approach », *Revue Interventions économiques* [Online], 59 | 2017, Online since 20 December 2017, connection on 21 December 2017. URL : http://journals.openedition.org/interventionseconomiques/3852

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1. Introduction

1 Latin America has experienced a significant transformation in recent years. Despite some of the countries had major economic and social crisis at the end of the twentieth century, between 2003 and 2008 the region has experienced its most remarkable expansionary period since the 1970s (Abeles et. al. 2013). This path to a large extent was possible due to high commodity prices and extraordinary international financing conditions. Although this process was not homogeneous, in recent years a reversal of some international trends and the lower efficiency or lack of appropriate economic policies have recently caused slowing growth processes (and in some cases even stagnation).

2 One of the new features registered during the period was the increase in the manufacturing sector where industrial policy (IPs) combined traditional instruments to promote investment with other tools directed towards fostering innovation and technological modernization. At the same time, still using instruments and horizontal programs, in many countries there was a greater emphasis on the implementation of targeted and selective policies and to articulate the various instruments into a more general framework of productive development planning. Thus, in some countries predominant IPs of recent years has tended to differ from the definitions that prevailed during the 1990s.

3 The aim of this paper is to analyse the evolution of recent industrial policies and their outcomes in four Latin American countries: Argentina, Brazil, Chile and Mexico. To do

this, we will focus on the objectives and tools of IPs since 2003, their differences vis-à-vis those followed in the 1990s, and their changes throughout the period 2003-2015. We will also study the similarities and differences in national approaches depending on the macroeconomic cycles and the dynamic of the balance of payments, the specialization profiles and the strategies of development.

4 The paper is structured in four more sections. Section 2 reviews the main development trajectories of Argentina, Brazil, Chile and Mexico in the long-run, emphasizing on the dynamics of the national industrial policies. Section 3 analyses the macroeconomic and external features of these economies, their specialization profiles, their main approaches to industrial policy and their strategies of development. Section 4 studies how these countries performed in productive and social terms. Section 5 presents the main conclusions and learnings that can be extracted from these experiences. Finally, the methodological and data sources used are fully detailed and contained in the Annex.

2. Country trajectories

5 This section describes the main trends of the development models of Argentina, Brazil, Chile and Mexico from industrialization by import substitution (ISI) to the present. It will highlight the more outstanding features of national industrial policies and, particularly, their transformations in the beginning of the new century.

2.1 Argentina

6 The sudden closure of export markets that caused the crisis of the 1930s resulted in a rather forced stimulus to develop Argentina's manufacturing industry, especially its light industries. Trade policy, through the strong rise in tariffs, was the main instrument to promote industrialization by import substitution, although the State did not implement any systematic and coherent program of industrial development. Such planning would only gradually appear during Peronism (1946-1955) when a real set of more systematic policies began to be implemented (Basualdo, 2006). During those years the economy was crossed by recurrent crises of the balance of payments due to the *stop and go* dynamics. Economic growth was too depending on imports, while exports (mainly agro-industrial) remained stagnant. This was mainly due to agricultural producers' lack of incentives to increase production in a world where global demand for such goods was sluggish (Diamand, 1972).

7 Beyond strong institutional breakdowns which were manifested by different military coups, between the late 1950s and the mid-1970s there was a political consensus about the prominent role the manufacturing sector should have within the economy. As a result, different sets of mainly vertical industrial policy instruments were applied (such as tariffs and quotas on imports, subsidies to heavy industry, public manufacturing companies, subsidized loans, schemes of regional promotion, public procurement, and, since the '60s, also subsidies to manufacturing exports), although sometimes in a rather uncoordinated and disorganized way. Moreover, during these years public institutions seeking to increase the country's scientific and technological capabilities were developed, such as: the National Council of Scientific and Technical Research (CONICET), founded in 1958; the National Agricultural Technology Institute (INTA), created in 1956 with the aim of modernizing the Argentinean agricultural sector and improve its technological

capabilities, and the National Institute of Industrial Technology (INTI), established in 1957 with the aim of providing technical support to the manufacturing sector, researching and developing new technologies, and discovering how to apply the existing ones (Belini and Korol, 2012). While Argentina's economy was far from been the most dynamic in the world (and in Latin America), between 1945 and 1975 its GDP per capita grew by 2.1% a year, according to Maddison (2009). This rate is identical to Australia and slightly lower than Canada (2.3%), two countries that are often compared to analyse the Argentinean performance.

8 In 1976 a new military coup, which lasted until 1983, marked a breaking point in the economic history of Argentina. The dictatorship that took power imposed a new economic model aimed to eradicate the existence of the organized labour movement which had its structural roots in manufacturing. Therefore, during the eight years of dictatorship, Argentina's manufacturing sector suffered sudden and uncompensated trade liberalization with a very strong appreciation of the exchange rate. This was aggravated by a sharp increase in interest rates and the fall of domestic demand, as a result of a deep adjustment in the purchasing power of the working class. Moreover, during this period Argentina borrowed heavily in order to finance capital flight and imports which severely harmed the manufacturing sector (Canitrot, 1981; Rapoport, 2007; Azpiazu and Schorr, 2010).

9 The democratic government of Raul Alfonsin (1983-1989) inherited a highly indebted economy with a much more fragile productive matrix than in the early 1970s and could not reverse this. Foreign exchange shortages hit an all-time high in 1989 and 1990, triggering a series of hyperinflationary episodes. By then, the prevailing ideological discourse in Argentina, as in other developing countries, was the Washington Consensus. Thus, the decade of the 90s was marked by a new wave of liberalization and pro-market reforms, which would leave deep scars in the productive structure. In 1991 Menem's administration established the Convertibility Plan with the main objective to lower the level of inflation with a set of policies which included trade opening (that went much further than the one experienced in the late 1970s), deregulation, privatization of the most important State enterprises (Brenta, 2002).

10 The results were not that bad at the beginning in terms of economic growth: in fact, the country had positive growth rates between 1991 and 1998 (except 1995), as the foreign shortages were alleviated by capital inflows from privatizations and external debt. However, the economic growth brought with it many particularities, such as: a) unlike the ISI period, the manufacturing sector grew below the average of the economy; b) the economic growth occurred with an increase in unemployment, which was explained in part by the layoffs in privatized public enterprises; c) many SMEs failed to adapt to the new macroeconomic environment in a context of absolute lack of significant compensatory measures; and d) a small group of firms and companies - which operate usually in sectors linked to the ones benefited from regulatory frameworks since the mid-70s- did manage to take advantage of the new environment and obtained extraordinary levels of profitability (Coatz et al., 2015).

11 By 1998 the vulnerabilities of the macroeconomic model were evident, as the current account had chronic deficits which had to be balanced with external loans (Brenta, 2002). The Convertibility Plan finally collapsed in late 2001 when Argentina declared the default of its external debt. The breakdown of the economy was dramatic and more than half of the population was living under the national poverty line. In the early days of 2002 the

Convertibility regime was abandoned, and only in a few months the real exchange rate depreciated by 120% in real terms while 11% of total companies ceased to exist[1]. In 2002 the Argentinean GDP per capita was 22% lower than in 1998 and 16% lower than in 1974, according to Maddison (2009). If in 1974 the GDP per capita was half the US, in 2002 it was only one quarter, reflecting one of the most dramatic experiences of divergence worldwide in those years.

12 The abandonment of the Convertibility Plan and the very strong nominal devaluation of the peso opened a new era in Argentina's economic history, which practically overlapped in political terms with the re-born of Peronism under a new form: *Kirchnerismo*, who was in power from 2003 to 2015. The period opened in 2002 is usually termed as the *Postconvertibility regime* and it is possible to recognize three sub-stages. First, the period from mid-2002 to 2007 was characterized by an incipient reindustrialization and significant job creation. Second, the period from 2007 to mid-2011 was crossed by the international crisis and the fall and subsequent recovery of local economy. Finally, since the middle of 2011, the economy and specially the manufacturing sector stagnated, as external imbalances reappeared again.

13 The first sub-stage (2002-2007) was characterized by high economic and manufacturing growth rates (around 8% and 9%, respectively) and a significant dynamism in the creation of new companies (which increased by 42% in the manufacturing sector, according to OEDE-MTEySS). In addition, real incomes of the population substantially recovered, due to job creation, wage increases induced by the government and rises in social transfers. In a favorable international context (especially since 2006), the economic policy intended to achieve re-industrialization of the economy through a boost to domestic demand combined with a depreciated real exchange rate, taxes on agricultural products and subsidies on energy (to low inflationary pressures caused by the sub-valuation of the *peso*). These instruments created a variety of effective exchange rates, being the manufacturing sector the most favoured[2] (Lavarello and Sarabia, 2015). Also, the foreign trade policy took on a more proactive role, prioritizing relations with countries of similar relative development tending to protect local production sectors. Despite of not having a clear program and agenda for economic development, during this period the economy and particularly the manufacturing sector had a very positive performance (Porta and Fernandez Bugna, 2008; Coatz et al., 2015).

14 In this sub-stage (2002-2007), the main tool to stimulate the tradable sectors (and manufacturing in particular) was the new macroeconomic environment, where demand was increasing at the same time that relative prices were very favourable (Lavarello and Sarabia, 2015). Regarding production policies, these years were characterized more by continuity than a structural break with the 1990s. During the last quarter of the twentieth century (and particularly during Menem's administration) the pillars of the industrial policy of the ISI were not completely dismantled: many policies were eliminated (such as the use of tariffs and import quotas, the presence of State companies in strategic sectors, sectorial subsidies or the State purchasing system) but new policies were created. This situation gave rise to an overlap of "geological layers" of industrial policy instruments (Baruj and Porta, 2006). The concept of "geological layers" clearly illustrates the state of affairs of Argentina's industrial policy in the early years of the Posconvertibility regime, by denoting an overlap of usually inconsistent regulations and incentives to the productive sector, implemented by a wide range of heterogeneous agencies in terms of resources, capabilities and methods of intervention. The industrial policy of the 1990s

was mostly horizontal but there were some vertical *niches*. For example, the automotive sector enjoyed higher tariff protection than the rest of the manufacturing sector, in the context of a growing regionalization of production due to the beginning of MERCOSUR (Azpiazu and Schorr, 2010). In addition, natural resources sectors such as forestry, fishing and mining were benefited by special fiscal incentives, and succeeded to take-off in the 1990s.

15 Among the innovations introduced in the early years of Kirchner's administration, we can point out a strong effort to re-prioritize the national scientific and technological system. This was reflected in the exponential increase in funding to institutions such as the CONICET. Moreover, although the regulatory framework was still mainly horizontal, the government created new fiscal incentives to sectors such as capital goods and software, while those benefited in the '90s, such as the automotive sector, were kept (Lavarello and Sarabia, 2015). However, the industrial policy of the early years of the Posconvertibility regime was characterized by deficiencies in monitoring and disciplining benefited companies. Thus, existing (and new) industrial instruments remained rather weak in practice.

16 In the second sub-stage (2007 to mid-2011), some macroeconomic, social and even political tensions began to appear. The expansive dynamics of the previous years had set the economy closer to its potential activity level and the sharp decline on unemployment reinstalled certain disputes regarding income distribution. The outbreak of the international financial crisis got Argentina discussing how to deepen development and the reindustrialization strategy (Coatz et al, 2015, Santarcángelo et al., 2015). In 2009 the GDP had negative rates for the first time since 2003 and, in order to reduce the negative effects of the crisis, the government implemented a set of expansive policies which led to a rapid recovery of the economy and the industrial sector in 2010 and 2011.

17 Industrial policy during the second phase of the Posconvertibility regime was marked by a transition to the use of more vertical instruments. The following elements can be identified. First, on the scientific and technological level, in late 2007 the Secretary of Science and Technology was transformed into the Ministry of Science and Technology, gaining powers, attributions and resources. Second, after the international crisis, trade policy began to be even more proactive, especially by applying instruments such as non-automatic licensing (Soltz et al, 2015; Coatz et al, 2015; Lavarello and Sarabia, 2015). This increased use of mechanisms to prevent the rise in imports distinguishes Argentina from Brazil, Chile and Mexico. Third, selective instruments were applied in order to support transversal technologies such as software, nanotechnology and biotechnology. This gradual increase in the degree of intervention occurred simultaneously with a gradual deterioration of some macroeconomics indicators (rising inflation and stagnation of international reserves) and a gradual appreciation of the real exchange rate.

18 The third stage of the Postconvertibility regime started in mid-2011. The government was claiming for the need for "fine tuning" in many areas of the economy in order to consolidate the development process and to minimize the increasing challenges in the balance of payments. Two development plans were formulated in collaboration with the private sector: the Plan Estratégico Industrial 2020 (Industrial Strategic Plan 2020) and the Plan Argentina Innovadora 2020 (Innovative Argentina Plan 2020), revealing that different topics of economic development such as sectorial and regional development, technological capabilities, import substitution or export promotion were being incorporated as part of the government's agenda.

19 However, as stated previously, between the late 2011 and 2015, Argentina's economy stagnated as a result of the resurgence of deep external constraints. The balance of payments became negative due to several factors. First, there was a very profound portfolios dollarization, which was caused by excessively low interest rates (Amico, 2013). Second, an erratic management of the energy policy led to a loss of fuel self-sufficiency. Third, the international context became increasingly difficult, as Argentina's main trade partner (Brazil) significantly slower its growth path, thus affecting the demand for Argentine products. Finally, real exchange rate continued to appreciate, which impacted on tradable goods competitiveness.

20 One of the new characteristics of the industrial policy since 2010/2011 was that financial resources were privileging the State's role as both producer and user (Lavarello and Sarabia, 2015). Many examples can be pointed out. First, in 2012 the government partially renationalized the main petroleum company of the country, YPF, taking control of the exploration and extraction of oil and gas. Second, the State began to prioritize (through strong financial support) public enterprises, such as Fabricaciones Militares (FM) which had played an important role in the ISI model and had been severely deteriorated during the 1990s. Third, the State gradually increased funding possibilities to public companies which aimed to develop high-technology projects (Lavarello and Sarabia, 2015). The main example of this is the Company of Applied Research (INVAP). INVAP was created in 1976 as a spin-off of a public R&D institute (Instituto Balseiro), which had strong technological and institutional capabilities. Since the late 2000s, INVAP has become the technology supplier of public companies such as ARSAT (founded in 2006), which in 2014 managed to send into orbit a geostationary communications satellite. This satellite is the first of its kind built by a Latin American country, and was designed, developed, assembled and tested using technical and Argentine scientists.

21 During the Postconvertibility regime, the electronics sector, set in Tierra del Fuego (an island in the far south of Argentina) received an increasing amount of industrial policy resources (from 21% in 2004 to 37% in 2011-13) (Lavarello and Sarabia, 2015). Beyond the enormous fiscal efforts, production of electronics has been characterized by a very low degree of integration with the rest of the production network and inputs are virtually 100% from abroad. Thus, foreign exchange savings have been minimal. There are many similarities between the Tierra del Fuego's regime and the Mexican maquila, but a major difference: Tierra del Fuego's production is destined for the domestic market, while the Mexican maquila production is exported.

22 Finally, between 2011 and 2015, the regulation of the external trade became deeper, due to both foreign exchange shortages and aims to substitute imports. In 2012, the government created a more comprehensive system (the Affidavits Advance Import Declaration, DJAI) to manage external trade through non-automatic licenses and import permits. Lastly, in 2012 the Charter of the Central Bank was reformed, enabling the State to force private banks to lend to the productive sector the 5% of their deposits, at a rate also set by the State (15%, which given Argentina's inflation is a negative real interest rate). It is worth noting that, unlike Brazil, Argentina does not have an institution like the BNDES (Banco Nacional de Desenvolvimento Econômico e Social).

2.2 Brazil

23 Industrialization by Import substitution in Brazil was implemented between the 1930s and the 1980s, and the government played a central role conducting this process. As a result, GDP per capita rose at an average annual rate of 3% between 1930 and 1980, thus being one of the most dynamic economies worldwide. After the oil's shocks of 1973 and 1979, the Brazilian administration decided to finance its growing current account deficit (as Brazil was a net importer of fuel) with high debt, in order to sustain high growth (Herold, 1994). The high indebtedness collapsed the economy when the USA rose its interest rates between 1979-1981 and subsequently after Mexico's default on its external debt in 1982. As international banks almost cut off all lending to developing nations, Brazil's foreign reserves began to run down. Foreign currency shortages blocked economic growth and caused repeated devaluations of the national currency, fostering hiperinflations. Thus, industrial policy, which had been rather vertical and proactive, was relaxed and progressively abandoned due to macro difficulties.

24 In the '90s, following the path already taken by most of the rest of the Latin American countries, Brazil abandoned the ISI strategy and replaced it by the Washington consensus doctrine. With the approval of the IMF and the World Bank, Brazil applied a vast set of liberalization and austerity policies, privatization and deregulation of the markets. During the '80s and '90s, economic activity grew at a reduced pace: if between 1950 and 1980 GDP increased at an annual average rate of 7.6%, between 1980 and 2000 GDP per capita barely grew at an annual rate of 0.4%, according to Maddison (2009). The performance of the industrial sector was even worse; it increased at an annual average rate of 1.2% (being rather null in per capita terms), while during the period 1950-1980 the annual average rate was 8.7% (Medialdea, 2012).

25 After various attempts to stabilize the economy using both heterodox (such as the Cruzado Plan in 1986) or orthodox policies (as in the early '90s), in 1993 Fernando Cardoso became the Ministry of Finance and successfully implemented the Real Plan, which was able to reduce annual inflation to the one-digit zone. Cardoso was president of Brazil during the period 1995-2002 and the economic policies of his administration were aimed to consolidate keep inflation low and stable (by trade opening and real exchange rate appreciation), to bring public accounts under control and to finance current account deficits with capital account surpluses (Brenta, 2002). His first presidency was marked by the fallout of the Mexican financial crisis (1995) and the application of ambitious programmes of reforms of the public sector, the civil service and of the social security system. Immediately after Cardoso's re-election in 1998, the country suffered a major balance of payments crisis which led to significant transformations in the governorship of the Central Bank and the application of new conservative measures.

26 At the end of 2002, Luiz Ignacio Lula da Silva, one of the principal founders of the Partido dos Trabalhadores (PT), became elected president. At the beginning of his presidency, Lula was surprisingly orthodox for someone who had been elected with a leftist platform, but increasingly since 2004 he was able to significantly transform the Brazilian economy. Among the most notable changes were the successful performance of the main economic indicators (relatively high economic growth, low inflation, job creation, trade balance surplus and reduction of the external debt), the creation of the social welfare program Bolsa Família (Family Stipend)[3] and a sharp increase in the real minimum wage. The latter

two contributed to the decrease of Brazil's structurally high rates of inequality and poverty.

27 Industrial policy reappeared once again after Lula assumed its presidency in 2003. In 2004, the government launched the Industrial, Technological and Trade Policy (PITCE) plan. PITCE aimed to promote exports of value added goods and services, increase the technological content of domestic production, and to stimulate Brazilian companies' activities on international markets. Following Kupfer (2012) three main rationales in the PITCE can be identified. First, regarding the macroeconomic dimension, it attempted to overcome challenges like the vulnerability of the external accounts, high sovereign risk, and volatility in the exchange rate. Second, it sought to overcome Brazil's lack of competitiveness in some manufacturing sectors such as semiconductors, software and capital goods where the technology was clearly out-dated. Third, regarding innovation, the intention was to open a window of opportunity to affordable developments in scientific and technological systems by focusing on sectors like oil and gas, agriculture and pharmaceuticals.

28 PITCE contributed to arranging a structural support system for industrial development. As a result of its application, important regulations were approved such as the Innovation Act (Law 10.973), the *Lei do Bem* (Law 11.196), the Biosecurity Act (Law 8.974) and the Biotechnology Development Policy (Decree 6.041) (Kupfer, 2012). New government institutions were also founded to promote industrial development, such as the Council for National Industrial Development (CNDI) and the Brazilian Industrial Development Agency (ABDI), which are in charge of the coordination and implementation of industrial policies (Ninomiya, 2015). Finally, the PITCE also helped the manufacturing sector by developing new financial instruments and institutions. A case in point is the financial program for the pharmaceutical industry (Profarma) and for software (Prosoft) created by the Brazilian Development Bank (BNDES) as a financing program for these sectors.

29 A few years later in 2008, a second stage of the new industrial plan was launched under the Productive Development Policy (PDP). The PDP took a step forward from PITCE by broadening its scope and activities in order to sustain cycles of economic expansion. It posed four general challenges: to expand supply capacity, improve the balance of payments dynamics, increase innovation, and to strengthen small and medium size enterprises (SMEs) (Kupfer, 2012, 17). To meet these challenges, quantitative targets were fixed. The macro-targets contemplated an increase in gross fixed capital formation, a rise in private spending on R&D, an increase in Brazil's share of international exports, and a higher number of exporting SMEs (Ninomiya, 2015, 67).

30 The PDP designed three different types of programs. The first one was centred in strengthening competitiveness in sectors where Brazil has many enterprises and productive capabilities but with problems to sustain productivity and exports growth (f. i., automotive, capital goods, textiles and clothing, wood and furniture, personal care, perfume and cosmetics, civil engineering, services, shipping, hides, leather and handcrafts, agroindustry, biodiesel, plastics, wheat, consumer electrical goods and toys). The second program was focused to those *leading* sectors of Brazil's productive structure, attempting to consolidate and expand their leadership. Branches such as the aeronautics industry, petroleum and gas, bioethanol, meat processing, mining, iron and steel, and cellulose and paper were the main targets of this second program. The third program was directed to strategic areas, such as the health industry, IT, nuclear energy, defence industry, nanotechnology and biotechnology (Kupfer, 2012, 18). The outbreak of the

international crisis made the implementation of the PDP much more defensive than its original design.

31 Despite many significant socioeconomic achievements as the drop in poverty and inequality, the emergence of several macroeconomic challenges conditioned the end of Lula´s administration. Among them, we can highlight a relatively moderate inflation, the strong appreciation of the real, an uncertain international context and the slowdown of different manufacturing branches. The new president Dilma Rousseff tried to solve these problems by applying a vast set of measures which materialized under the "Greater Brazil Plan" (Plano Brasil Maior, PBM) in 2011. The objective of the plan was to build and strengthen different competencies in the national economy, enhance productivity and technological density within value chains, to expand the domestic and external markets of Brazilian companies, and to ensure socially inclusive and environmentally sustainable growth (Kupfer 2012, 23).

32 The first stage of the PBM was launched in August 2011 and compromised almost 40 measures including financial and fiscal incentives, new regulations, and a group of new institutions created to favour its implementation. Its ultimate goal was to enhance competitiveness and defend local industry; this latter element distinguishes PBM from Brazil's previous two industrial policies (Ninomiya, 2015, 71).

33 Kupfer (2012) states that the PBM can be organized under three main actions. The first is the incentive to generate investments and innovation which have been implemented by tax relief, financing for investment and innovation and a new legal framework of innovation. The second action is centred on improving the foreign trade and includes a battery of tax relief on exports, trade remedies, financing and guarantee for exports, and trade promotion. Finally, the last action aims at industry and domestic market defence and compromises a new special automotive regime, tax exemptions on payrolls, government procurement and harmonization of funding policies (Governo Federal do Brasil 2011, 9). These actions has been translated into targets, such as increases in gross capital formation, private R&D expenditures, human resource qualifications, manufacturing value added, energy efficiency, SMEs competitiveness and diversification of exports.

34 In April 2012 the second stage of the PBM was launched after the recognition of the worsening of the competitiveness gap of Brazilian industry and the need to change the target for the industrial policy from productive chains to productive systems. As a result, new instruments to strengthen the effects of the IP were applied. An example of this was the new Automotive Regime Innovar- Auto which imposed a Tax on Industrialized Products (IPI) by 30% for all light vehicles and light commercial vehicles which can be deducted if automakers use local manufacture production and inputs and carry out in Brazil a certain number of manufacturing processes (i.e. investment in R&D, engineering, industrial technology and supplier capabilities, and participation in the Vehicle Labeling Scheme, which is required to ensure a vehicle's efficiency). One of the unique points of this program is that it is not limited to manufacturers. Importers and companies that have plans to invest in manufacturing can also join the program (Ninomiya, 2015, 73).

35 Despite the application of these programs, the performance of the industrial sector, especially manufacturing, fell short of expectations during the application of the PBM. One of the reasons was the poor performance of GDP growth (as demand started to decelerate and fiscal policy did not offset this) and the appreciation of the real, which negatively impacted in the manufacturing competitiveness. As a result, the

manufacturing's share to GDP had followed its long run tendency to decline in contrast to services' increasing share.

2.3 Chile

36 Following the path of many Latin American countries at the beginning of the 1930s, Chile followed a development strategy based on industrialization by import substitution. As a result, the government played a key role in the economy applying a vast set of protectionist measures, such as high tariffs, subsidies, cheap credit, especial access to foreign exchange, multiple exchange rates and public investment in infrastructure (Meller, 1998). During this period, State enterprises became the most important entrepreneurs and whole swaths of the industrial sector sprung up under government protection: steel, petroleum, sugar, electricity and telecommunications. Contrary to conventional thinking, many of these proved profitable (Agosin et. al., 2010).

37 By the 1950s the ISI strategy was widely accepted in Chile, but locally those years were marked by the emergence of various problems related to the development strategy. On the one hand, prices of exports (by then dominated by copper), strongly affected the economic cycle (Ffrench Davis, 2010). At the same time, the size of the domestic market limited the success of an "inward" development strategy. In addition, there were strong inflationary problems, as annual prices rarely came down from double digits.

38 During the 1960s some changes in the Chilean ISI began to take place, especially under the Christian Democrats administration of 1964, which included the development of new sectors such as telecommunications and petrochemicals, incipient promotion of non-traditional exports (in sectors such as forestry, fishing or fruit), a significant land and fiscal reform, and the first steps towards the nationalization of larger copper mines (Ahumada, 1966; Molina, 1972). With the complete nationalization of copper mines in the early 1970s, the State became the main producer of the Chilean economy.

39 An institution that played a crucial role in those years in the Chilean industrialization process was the Corporación de Fomento de la Producción (CORFO), created in 1939. Many of the instruments of industrial policy of the industrialization by import substitution period were in the hands of CORFO, and together with the "Banco del Estado de Chile" were responsible for providing funds for the development of the industrial sector. Over the years CORFO developed institutional capacities, which would have a big impact on the diversification of Chilean exports especially since the end of the 1970 (Meller, 1998).

40 The industrialization by import substitution came to an end with the overthrow of the socialist government of Salvador Allende on September 11, 1973, when a military coup led by General Augusto Pinochet, and backed by the United States, ended 43 years of uninterrupted democracy in Chile. Pinochet's government remained in power until 1990 and introduced drastic reforms in the Chilean economy. Between 1973 and 1981, these reforms were based on a highly orthodox version of neoliberalism and the economic policies included a deep trade and financial liberalization privatization of most State companies except the copper, the elimination of price controls, a strong fiscal adjustment, an intense rise in interest rates, a much more permissive legislation towards FDI, the liberalization of the capital account, the disappearance of many of the working class achievements, and the almost total cancellation of the agrarian reform initiated in 1960s (Ffrench Davis, 2010; Silva, 2010). As a result of these policies, Pinochet's administration managed to reduce the high levels of inflation and the fiscal deficit, but at

the expense of debilitating the external balance and the investment ratio. The consequences were the economic and social collapse in 1982, with a decline on GDP of 14%, unemployment rates above 30%, a significant increase in the poverty levels and a worsening in income distribution (Ffrench Davis, 2010, 3).

41 Industrial policy, which until the military coup had a distinctly vertical approach, became to be dominated by a much more "neutralist" vision, where the market was going to be considered as the best allocator of resources. For example, in 1973 the average tariff was 94% and there was a strong disparity between products (being the consumer goods produced locally the most protected), and six years later, the average tariff had fallen to 10 % for 99.5% of goods. However, there were some vertical *niches* in Pinochet's industrial policy, which succeeded in fostering natural resources sectors such as forestry or fishing, among others. Although CORFO lost many of its institutional capabilities, it was not completely dismantled during this period. A special mention deserves the Chile Foundation, a public-private entity created in 1976 and whose most important role was to experiment with technologies and products with export potential, and to facilitate the establishment of new private companies with State support.

42 As a result of the economic crash of 1982, the second stage of the military coup government (1982-1989) involved the adoption of more pragmatic policies, but always within a pro-market framework. The economic crisis of 1982 led the State to temporarily take charge of most companies of the financial system which had collapsed with the crisis, in order to help them recover and then reprivatize them. In practice, this meant a significant transfer of income to banks and debtors. By mid-80s, the economy began a phase of strong growth, although only in 1988 it managed to finally exceed the peak of 1971 in per capita terms. Moreover, income distribution was markedly more unequal in the late 1980s than in the early 1970s, while investment rates during the Pinochet were well below the levels of the 1960s (Ffrench Davis, 2010).

43 The economic policy of the Pinochet dictatorship brought with it considerable changes in the Chilean structure of production. On the one hand, the industries of lower comparative advantages contracted or disappeared as a result of the long depression of the domestic market (due to the wage decline), trade liberalization, appreciation of the exchange rate (between 1979 and 1982), and the high level of real interest rates. On the other hand, exports had a big take off from the hand of non-traditional products such as fruit, forestry and fish. Selective and effective interventions to these sectors within a mainly horizontal approach are key to understand why they prospered. However, such modernization and external orientation in these sectors was not registered in the vast majority of Chilean companies, which limited the linkages and spillovers effects to the rest of the productive sector (Ffrench Davis, 2010). As a result, the productive heterogeneity of the country was deepened during these years.

44 The return to democracy came from the hand of the *Concertación de Partidos por la Democracia* [Agreement of Parties for Democracy]. The *Concertación*, a coalition of leftist, centre-left and centre political parties, ruled Chile from 1990 to 2010, when the centre-rightist Sebastian Piñera was elected president. During this period, industrial policy was a reflection of what the *Concertación* was: the State had to have a limited role on the economy and the market was the rule of law (Goya, 2014). The *Concertación* attempted to manage the model led by the dictatorship but never achieved the development of the "second export phase", in which exports of higher value added would gain importance.

45 Despite this, during these years and with support of the Inter-American Development Bank, a series of programs to promote science, technology and innovation were created. One of them was Innova Chile, created in 2005 and oriented towards the "demands" of knowledge of the companies (Goya, 2014), mainly those in branches such as forestry, aquaculture or pork production. As said, many of them had been gestated in the 1960s and had developed during Pinochet's administration.

46 In 2004 the National Innovation Council for Competitiveness (CNIC) was created aiming to plan long term development and two years later the regional development agencies (ARDPs) were developed (Moguillansky et al, 2013). It was supposed that the private sector would interact with the State in order to define three priority sectors per region to be developed. In 2007 the *Libro Blanco* (White Book) of the development strategy of the Chilean economy was presented and defined the main priorities of economic development of the country in the near future. This document was commissioned to an international consultant: US Boston Consulting Group, which developed a report aiming to promote applied science that could have a direct impact on economic growth (Benavente and Price, 2014). The goal was to correct the existing market distortions and for that it proposed the development of clusters such as aquaculture, fruit growing, forests, copper mining, financial services, tourism, pig production and processed foods (Cleary, 2007, 9-10; Devlin and Moguillansky, 2012). Since the White Book was drawn up without the participation of the national scientific community, the Council of Deans of Chilean Universities called up for a national debate on the scientific, technological and innovation research agenda in order to include national actors in the debate. The result was the development of a new document aiming to include forgotten dimensions in the White Book.

47 The arrival to the presidency of a centre-right political coalition in 2010 under the guidance of Sebastian Piñera implied a significant shift in the public policies towards the productive sectors. The new government decided to abandon the clusters policy and the regional development agencies (ARDPs) which, as we said, had been incipiently developed in the previous period. The reforms applied aimed to develop an economic model that relied on the initiative and strength of the private sector, boosted entrepreneurship, and tried to keep stable macroeconomic equilibriums and a responsible management of public spending in order to control inflation. The new development strategy preferred a still more horizontal approach to industrial policy, as the State was considered a distorter of the market (Goya, 2014).

48 The return to the presidency of the centre-leftist Michelle Bachelet in 2014 (she had been president between 2006 and 2010) reinstalled the need to recover the programs of the National Innovation Council for Competitiveness and the need to consider regional problems through the regional development agencies prioritizing the interaction between the public and private sector (Goya, 2014). With an active social agenda, the government approved a tax reform, a change to the electoral system and the first steps towards a complex educational reform during the first year of her administration. Despite the new role assigned to the State by Bachelet's government, economic policy still depends centrally on exports of primary goods with little value added and time will tell if the debates regarding how to apply a successful industrial development program, that have emerged due to the modest performance of the Chilean economy since 2012, would give some result.

2.4 Mexico

49 As other Latin American countries, Mexico followed, from 1940s until the second half of the 1970s, an economic development strategy based on industrialization by import substitution with a strong State intervention. Tariffs, trade protection, export promotion and financial support were common policies, and even FDI was heavily regulated and accepted as a minority partner only in non-strategic areas of manufacturing. Industrial policy operated through sector-specific programs, with the aim of building up a manufacturing sector capable of producing capital goods and somewhat complex intermediate inputs (Ros, 1994). The most successful sectorial programs included those of the auto, computer and pharmaceutical industries (CEPAL, 1979); and the key institution that helped with the funding and gave flexibility and liquidity to the banks was the Nacional Financiera, the Mexican development bank version created in 1934.

50 During the import substitution phase, Mexico's manufacturing sector thus received government support through four different channels: 1) artificially high wholesale prices of final products sold in the domestic market, due to trade protection; 2) low costs of key inputs, energy and other utilities due to subsidies and tax incentives; 3) subsidized credit from development banks, certain public entities, and the private banking sector; and 4) tax exemptions on certain imports of machinery and equipment (Moreno-Brid and Ros, 2004). The State had a leading role and different state-owned companies were developed (some came from the purchase or expropriation of private firms) in order to undertake investment projects such as the supply of strategic or basic intermediate inputs (Moreno Brid et al., 2005). By 1982, the 1,155 state-owned companies (not counting the recently nationalized commercial banks) had intervened in 41 of the 49 branches of industrial activity. In some of these, they exercised significant market power (SHCP, 1994).

51 A key element in order to understand Mexican manufacturing idiosyncrasy is the maquiladora program which started in 1966 in Ciudad Juarez, Chihuahua, as a replacement for the "bracero" program[4]. Its objective was to stimulate the establishment of labour-intensive, in-bond export processing plants (known as maquiladoras) along the northern border region, by offering them tax-free access to imported inputs and machinery, as well as exemption from sales tax (now VAT) and income taxes (Moreno Brid et. al., 2005, 10). With the program, the maquiladoras were (and they still are) responsible for creating employment and strengthening the country's trade balance providing net foreign exchange. Also, they should contribute to greater local manufacturing integration and help to increase the international competitiveness of the domestic industry by promoting the development and transfer of technology in the country.

52 As in other Latin American countries, in Mexico the growth dynamics registered during the ISI period ended at the beginning of the 1980s due to the debt crisis. As Brazil and Argentina, Mexico also multiplied its external debt in the '70s. In 1982 Mexico defaulted on its sovereign debt, thus generating a Domino effect among other Latin American countries, as big international financial players restricted loans. Thus, during the 1980s, the Mexican economy - as Argentina and Brazil - suffered from acute foreign exchange shortages, which led to recurrent devaluations. As a consequence, annual inflation averaged 88% between 1982 and 1988. Mexico's attempts to renegotiate its external debt implied adopting neoliberal economic reforms (such as fiscal austerity, privatization of

state-owned companies, industrial deregulation, trade openness and foreign investment liberalization), a requisite imposed by the IMF and the World Bank.

53 As a result, industrial policy was transformed: it went away from instruments applied to target specific sectors towards horizontal policies, as for example financial support and technical assistance to SMEs, without taking into account the enormous heterogeneity among them (Sánchez Juárez and García, 2014; Calderón and Sánchez, 2012; López, 2015; Palacios, 2013). Moreover, most, if not all, the subsidies and fiscal incentives that the manufacturing sector had traditionally received were eliminated. However, it has to be said that, under a mainly sectorial-neutral framework, there were certain selected industrial policy programs that were not completely dismantled. For example, the Maquiladora regime consolidated its place in the Mexican economy, fostering manufacturing exports in the North of the country.

54 In 1994, Mexico, the United States and Canada launched the North American Free Trade Agreement (NAFTA) which, if not exactly a free trade initiative, was a path-breaking compromise to drastically reduce barriers to intra-regional trade. For the Mexican government, the signing of NAFTA represented the final step to abandon import substitution and state-led industrialization, and the agreement helped to consolidate the pro-market economic policies that had already been implemented in the prior decade, enshrining them in an international treaty (Weisbrot, 2014, 3)[5]. The maquiladora program consolidated since then, but it continued to be not capable to create significant linkages with the rest of the productive structure.

55 In 1995 President Zedillo, who a few days after taking office had faced the Tequila crisis[6], presented its development program for its period as president following the tradition inaugurated in 1983 by President Lamadrid Hurtado. The main goals of its National Development Plan (NDP) - to strengthen the sovereignty and rule of law of democracy and to achieve economic growth with social improvements - proved to be very generic. Despite some minor differences in emphasis, the main goals of president Zedillo's NDP have been present in the administrations that followed it. Thus, the NDP presented by Presidents Fox and Calderón essentially relied on the principles of Washington Consensus and rejected the key objective of industrialization as a foundation of economic development (Calderón and Sánchez, 2012; Moreno-Brid, 2013). In 2011 Mexico signed up its membership to the Alianza para el Pacífico, a regional integration initiative formed by Chile, Colombia, Mexico and Peru. Its main objectives are: to build an area of deep integration to move progressively towards the free movement of goods, services, capital, and people; promote higher growth, economic development and the economic competitiveness of its members, and also to become a platform for political, economic and commercial integration and projection to the world, with special emphasis on the Asia-Pacific region.

56 In 2012, after taking office, the new President Peña Nieto unveiled the *Pacto por Mexico*. This fundamental agreement signed by the heads of three main political parties identified a series of commitments and policy actions aimed at transforming Mexico's economic, social, and political structure and setting as a priority the insertion of the economy onto a path of high growth (Moreno Brid, 2013, 217). The Pacto aims at laying down the foundations of a new political agreement to boost economic growth and create the quality jobs that Mexicans demand (Pacto por México, 2012, 2); however, in its full text the Pacto does not mention industrial policy except in the context of creating industrial poles of development for the poorer region in the south of Mexico.

57 In line with this vision, the National Development Plan (NDP) 2013–2018 argues against the application of a type of industrial policy that relies on State intervention by tariffs and subsidies since this interventions tend to create unnecessary distortions in competitive markets. It advocates instead for the implementation of a set of policies when State's role in promoting strategic sectors - among which it specifically includes the industrial one - is less intrusive and restricted to removing obstacles and correcting market failures, to orienting production to key sectors and markets, to deregulating, and to coordinating actions between the main actors of the private sector and the public sector's relevant instances (Moreno Brid, 2013, 218). In this new paradigm, as it is called in the National Development Plan, the government's activity in the economy is limited to the provision of the whole gamut of public goods required to coordinate the productive sectors and align them in trajectories of strong expansion of productivity and output, but the Plan also stresses the urgent need to create stronger forward and backward linkages between exports and the rest of productive activities to boost Mexico's economic growth and internal markets. This version of industrial policy is in line with a standard perspective of the State's intervention in the economy strictly oriented to remove obstacles to the free interaction of market forces (see Esquivel, 2010; Moreno-Brid and Ros, 2004).

58 In sum, Mexico abandoned the industrial strategy of industrialization through import substitution in the early 1980s and since then has based its State intervention to be very limited, in tone with a market-friendly framework. The economic policies implemented since the 80s were mainly liberalization, privatization of public companies, deregulation and openness of the economy. Since 1994 Mexico is part with Canada and the United States of America of NAFTA, one of the world's largest free trade zones of the world which restricts the country's capacity to take protective measures. During the 1990s Mexican exports had a great performance but the impact on GDP was small due to the lack of linkages of the maquila program. With regard to industrial policy, its horizontal and mainly passive approach "relies more on strengthening the already existing, static comparative advantages of the Mexican economy than on the discovery of new activities or capacities oriented toward the creation or build-up of more dynamic comparative advantages" (Moreno-Brid, 2013, 220).

3. Comparative analysis of IPs experiences

59 In this section we focus on comparing the experiences of industrial policy in the four countries under study over the past 25 years, specially emphasising on the period that opens in 2003. The analysis will not only compare the industrial policies applied, but also will take into account other contextual variables that will help us to enrich the analysis. In order to do this, four dimensions are studied: a) the characteristics of the economic cycle and the balance of payments dynamics; b) the main characteristics of the countries' specialization profiles; c) the industrial policies implemented; and d) the economic development strategies chosen by each country. In addition, the analysis will be segmented temporarily in two periods: first, from the 1990s to the early 2000s (which roughly goes from 1990 to 2002); second, from 2003 to 2015. This latter period has been subdivided into three sub-periods: 2003-2007, 2008-2011 and 2012-2015.

60 The reason for this periodization is the following: first, the "long" decade of the 90s (1990-2002) has been framed at the regional level by implementing pro-market and

structural adjustment policies in an international context of strong trade and financial liberalization. By then, the ideological context was absolutely hostile to the use of industrial policy in the more traditional (selective) sense. At the global and regional level, the disappointing results of the neoliberal economic model implied a growing criticism of some of its principles, even by institutions and academics who not long ago had been enthusiastic supporters of such ideas. As a result, the State lost the demonization it had received between mid-80s and the 1990s. In countries where pro-market reforms left a particularly traumatic balance of unemployment and poverty, such as Argentina and Brazil (to a lesser extent), the anti-neoliberal discourse regained political legitimacy.

61 By 2003 the global economy significantly increased its dynamism, mostly driven by Asia and China in particular. This had enormous consequences for Latin America, from the point of view of external demand and terms of trade. Exporters of raw materials such as the three South American countries were highly benefited, while the maquiladoras of Mexico did not have a significant boost from foreign markets (Amico, 2016; Bacha and Bonelli, 2015). This change in the external context overlapped with the transformations at the level of ideas. Without this juxtaposition of records, it is extremely difficult to understand the path of economic and industrial policy of the countries under analysis.

62 However, the period 2003-2015 was far from homogeneous, neither globally, regionally nor nationally. It is for this reason that we have divided this period into three stages. First, the period 2003-2007 is characterized by an acceleration of world's growth and the sharp rise in prices of raw materials, which allowed commodity exporting countries a substantial improvement in their balance of payments, due to the rapid increase in the value of exports (both in quantities and prices). Second, the years between 2008 and 2011 are marked by two main processes: i) the international financial crisis (late 2008 to late 2009) and its recessionary impacts throughout Latin America; ii) the region's rapid recovery of 2010-2011, in a context of still high international prices for raw materials and sustained Asian demand. Finally, the period 2012-2015 is characterized by a slowdown in the global economy, falling prices of raw materials and the appearance, at the regional level, of strong signs of economic concern regarding the development agenda. This has being particularly serious in the cases of Brazil and Argentina.

3.1 Economic cycle and external balance

63 We have used seven indicators to study the countries' economic cycles and their balance of payments dynamics: GDP growth per capita, the level (and trend) of the real exchange rate, the economic growth of trading partners, the level of the terms of trade, the situation of the current and capital accounts and the evolution of international reserves.

Table 1. Economic cycles and balance of payments characteristics

Country	Variable	1990-2002	2003-2007	2008-2011	2012-2015
Argentina	GDP per capita growth	0,9%	7,7%	2,4%	-0,7%
	Real exchange rate	Appreciated (stable)	Depreciated (stable)	Intermediate (appreciating)	Appreciated (appreciating)
	Economic partners growth	3,2%	5,0%	3,3%	2,1%
	Terms of trade[a]	105	109	134	142
	Current account (% of X and GDP)	To X: -27.0%; To GDP: -2.0%	To X: 13.6%; To GDP: 2.9%	To X: 5.5%; To GDP: 0.9%	To X: -1.0%; To GDP: -0.6% *
	Capital account (% of GDP)	4.1% **	-2,4%	-0,9%	0,2%
	Foreign reserves (% of Z and GDP)[b]	To Z: 64.0%; To GDP: 7.9%	To Z: 79.9%; To GDP: 16.3%	To Z: 67.8%; To GDP: 12.4%	To Z: 35.9%; To GDP: 5.9%
Brazil	GDP per capita growth	0,9%	2,8%	3,1%	-0,5%
	Real exchange rate	Appreciated until 1998, depreciated 1999-2002)	Depreciated (appreciating)	Appreciated (appreciating)	Appreciated (depreciating)
	Economic partners growth	3,1%	4,9%	3,2%	3,2%
	Terms of trade[a]	108	110	135	136
	Current account (% of X and GDP)	To X: -24.5%; To GDP: -2.3%	To X: 7.1%; To GDP: 1.1%	To X: -16.0%; To GDP: -1.9%	To X: -23.8%; To GDP: -3.6% *
	Capital account (% of GDP)	2.8% **	1,7%	4,2%	3,7%
	Foreign reserves (% of Z and GDP)[b]	To Z: 69.0%; To GDP: 8.0%	To Z: 88.1%; To GDP: 12.9%	To Z: 99.7%; To GDP: 14.7%	To Z: 97.9%; To GDP: 15.1%
Chile	GDP per capita growth	4,2%	4,5%	2,4%	2,5%
	Real exchange rate	Intermediate (appreciating until 1997, depreciating 1997-2002)	Depreciated (appreciating)	Intermediate (stable)	Intermediate (depreciating)
	Economic partners growth	3,1%	4,5%	3,5%	3,4%
	Terms of trade[a]	109	159	194	197
	Current account (% of X and GDP)	To X: -8.9%; To GDP: -2.3%	To X: 5.2%; To GDP: 2.2%	To X: 0.3%; To GDP: 0.2%	To X: -11.4%; To GDP: -2.8% *
	Capital account (% of GDP)	4,4%	-1,7%	2,2%	3,0%
	Foreign reserves (% of Z and GDP)[b]	To Z: 89.4%; To GDP: 27.5%	To Z: 51.5%; To GDP: 21.1%	To Z: 36.9%; To GDP: 16.2%	To Z: 38.8%; To GDP: 15.5%
Mexico	GDP per capita growth	1,1%	2,1%	-0,2%	1,1%
	Real exchange rate	Depreciated (appreciating except 1995)	Intermediate (stable)	Intermediate (stable)	Intermediate (stable until 2015)
	Economic partners growth	3,1%	3,1%	0,7%	2,3%
	Terms of trade[a]	121	137	137	134
	Current account (% of X and GDP)	To X: -17.6%; To GDP: -3.1%	To X: -3.3%; To GDP: -1.0%	To X: -2.7%; To GDP: -1.1%	To X: -3.0%; To GDP: -1.9% *
	Capital account (% of GDP)	3,9%	2,1%	3,5%	4,8%
	Foreign reserves (% of Z and GDP)[b]	To Z: 26.2%; To GDP: 7.1%	To Z: 39.3%; To GDP: 12.1%	To Z: 35.9%; To GDP: 12.0%	To Z: 38.8%; To GDP: 14.3%

Source: Own elaboration using information from UNCTAD, ECLAC, World Bank, IMF, national accounts and Kidyba & Suárez (2017).
References: a) "1990s & early 2000s" ranges from 1990 to 2002; b) 100 is the 1985-1990 terms of trade index; c) Z is the sum of imports of goods and services, utilities and interests; *: data available for 2012-2014; **: data is from 1990-2001

64 As can be seen in Table 1, between 1990 and 2002 the growth of the GDP per capita of Argentina, Brazil and Mexico was weak (0.9% annually in the first two and 1.1% in the latter), but very significant in Chile (4.2%). In some sense, the economic program of Argentina, Brazil and Mexico of those years was not so different from Chile in the late 1970s and early 1980s, focused on appreciating the national currency with trade liberalization with the aim of stabilizing prices, using the capital account (via debt and interest rate differentials) in order to increase its level of reserves. In Mexico (1995), Brazil (1999) and Argentina (2001-2002), this scheme led to acute economic and financial crisis.

65 While during the 1990s Chile also had a positive capital account, this was primarily due to FDI and long-term capital investments, rather than the inflow of speculative short-term capital or indebtedness, as stronger regulations to capital inflows were implemented (Ffrench Davis, 2010; Agosín and Montecinos, 2011). In fact, despite the significant higher rates of growth registered by Chile in relation to the other three countries (and the import bias that this implies for peripheral countries), the average current account deficit of its economy between 1990 and 2002 was the lowest of the four if we measured it in terms of exports (-8.9% against -27% in Argentina, -24.5% in Brazil and -17.6% in Mexico) and similar to that of Argentina and Brazil if we measure it against GDP (around 2%). This higher external solvency of Chile can also be reflected in high levels of currency liquidity: the ratio of reserves to the sum of imports, profits and dividends, and interest payments (called "Z" in Table 1) was substantially greater than the other countries, as well as the ratio between reserves and GDP.

66 During the 1990s, the four countries tended to appreciate their real exchange rates as long as capital flows permitted, although in Chile this trend was more moderate. Despite suffering the aftershocks of the Asian, Russian, Brazilian and Argentinean crises which led to stagnation between 1999 and 2003, Chile had greater solidity of the balance of payments than the rest of the countries under analysis. Also, the growth of the trading partners of the four countries was almost identical in the period (around 3%). Finally, during this period the terms of trade were better for the four countries than the period

1985-1990 (taken as base 100). However, while in Argentina, Brazil and Chile they improved 5%, 8% and 9% respectively, in Mexico the term of trade improved by 21%.

67 Between 2003 and 2007, Argentina's macroeconomic and external variables deeply improved if compared with the "long" 1990s. After an acute economic crisis between 1998 and 2002, GDP per capita grew annually at 7.7% between 2003 and 2007, exceeding in 2006 the level of 1998. These figures were much higher than those of Chile (whose GDP per capita grew 4.5%), Brazil (2.8%) and especially Mexico (2.1%). The external environment for Argentina, Brazil and Chile was extremely favourable in those years, as it is seen in the growth rates of their trading partners (5% for the case of Argentina, 4.9% for Brazil and 4.5% for Chile). However, this was not the case of Mexico, highly dependent on the US economic cycle. Despite that the average terms of trade of Argentina and Brazil were just above the mean for the 1990-2002 period, it is important to note the upward trend, especially since 2006. In Chile, the improvement occurs before (2004) and more intensely, with the sharp rise in copper prices. Mexico also presents a significant improvement in their terms of trade in those years (13%), associated with the evolution of oil prices.

68 In Argentina and Brazil, the external bonanza not only served to boost aggregate demand, but above all to provide foreign currency to expand domestic demand (through public investment, wage increases, social transfers and, for Brazil, through the rapid expansion of consumer credit) without facing balance of payments problems. It is important to bear in mind that in both countries the ratio of exports to GDP has been (and still is) much lower than in Mexico and especially Chile, showing that the engines of growth are different. In Chile, foreign demand pulled GDP more strongly, also providing new genuine reserves. As a corollary of this, Argentina, Brazil and Chile experienced significant current account surpluses of the balance of payments together with growth rates between moderate (Brazil) and high (Argentina). This combination of external surpluses and fast growth represented a novelty from the historical point of view of these three countries. In contrast, the most important weakness of Mexican exports relative to the other three countries resulted in the persistence of a negative current account, which is remarkable given its relative low economic growth path. If the dynamism of Mexican exports was relatively low in those years, this was due to two factors: first, its specialization profile (centred on the assembly of manufactured products) competes more than complements with China; second, the moderate US growth, a country that absorbed 86% of Mexican exports in those years[7].

69 Despite the four countries accumulated absolute reserves between 2003 and 2007, it is important to point out several peculiarities. On the one hand, Argentina accumulated reserves because the current account surplus more than offset the deficit in the capital account. Net capital inflows to Argentina had turned negative as a consequence of the default of 2001-2002, and due to the political will of the government to maintain the real exchange rate depreciated, which was considered one of the key elements to the strong economic and industrial recovery (Bastian and Soihet, 2012; Santarcángelo, 2013). Argentina's concern to simultaneously achieve economic growth and employment meant that inflation targeting policies were not implemented and that the State kept low interest rates. The latter partially explains why Argentina did not attract short-term capital as it happened in other Latin American countries. On the other hand, Brazil conjugated current and capital account surpluses (although the foreign debt was reduced, FDI and portfolio investment greatly increased due to a high interest rates policy in a context of high global liquidity and "emerging countries appetite").

70 The very strong foreign exchange inflows coming from both exports and by capital inflows resulted in an intense appreciation of the real exchange rate, which served to meet the scheme of inflation targeting, followed there since 1999 (Abeles and Borzel, 2010). Chile accumulated reserves in absolute terms, while in relative terms it reduced its level (measured from the ratio of reserves to GDP or reserves to Z). It is important to point out that despite this the ratio of reserves to GDP remained the highest of all countries under study. As in Argentina, Chile offset a positive current account with a negative capital account. This was due to the placement outside the country of large fiscal surpluses resulting from the use of the structural fiscal rule, reducing the effects of exchange rate appreciation. Also, while Chile also adopted an inflation targeting regime in 1999, its differential interest rate policy was much more moderate than in Brazil, which resulted in a lower inflow of portfolio investment[8]. Anyway, like in Brazil, strong FDI inflows counterbalanced this trend. In Mexico, accumulation of reserves was due to surpluses in the capital account (investment portfolio thanks to differential positive rates and FDI), which more than offset the current account deficit.

71 The period 2008-2011 was marked by the impact of the international crisis in the four countries. However, this impact was particularly acute in Mexico, whose GDP fell 4.8% in 2009, due partially to its commercial tights with the United States (where GDP contracted 2.8% in that year). Argentina, Brazil and Chile also experienced recessions but they were milder, and by 2010 the three countries exhibited very high growth rates, which lasted until 2011 in the cases of Argentina and Chile[9]. It is for this reason that between 2008 and 2011 per capita GDP increased at an annual average of 2.4% in Argentina, 3.2% in Brazil, 2.4% in Chile and -0.2% in Mexico (Table 1). Note that the growth of trading partners of the first three countries for the period was similar (between 3.2% and 3.5%), while in Mexico it was only 0.7% (explained almost entirely by the United States).

72 Despite these elements, explaining the growth performances between 2008 and 2011 only by their external demand leaves aside the picture the other components of aggregate demand. In the cases of Argentina and Brazil, fiscal policy, together with further improvements in real wages and social transfers, explain the strong post-crisis rebound (in Brazil this occurred mainly in 2010 and the boost lost momentum in 2011 due to the moderation of fiscal policy). In Chile, although domestic demand has been structurally less relevant than in Argentina and Brazil, countercyclical fiscal policy managed to reduce the effect of the crisis. Even in Mexico fiscal policy was used, despite it was applied more lightly. Thus, Mexico failed to make the domestic market a key lever of recovery, although potentially it has a very large size. As Abeles et al. (2013) point out, the ability to make countercyclical fiscal policy to overcome the crisis was due to the fiscal situation of governments, which had been seriously improved in previous years due to the accumulation of reserves.

73 However, some warning signs were appearing in these countries. On the one hand, Argentina, Chile and Brazil had a particularly important trend towards current account deficit, even though the terms of trade continued to grow until at least 2011/2012. Argentina's specificity lay in the persistence of net capital outflows, which meant the end of the accumulation of international reserves and its sharp decline since 2011. The policy of differential negative rates and the government's willingness to avoid external borrowing mainly explain this particularity (Amico, 2013; Kulfas, 2016). The government tried to offset the growing external imbalances by putting exchange rate controls in late 2011, which ended up generating a parallel currency market. In contrast, Brazil, Chile and

Mexico maintained high amounts of international reserves, by attracting capital flows (largely due to positive differential rates) which more than compensated the current account deficits. Despite having large amounts of foreign reserves, Brazil also entered an economic stagnation since 2011. One possible explanation is that fiscal policy became contractionary to avoid an acceleration of the inflation rate (Serrano and Summa, 2015). Among the four countries, Chile had the best economic performance between 2012 and 2015, with a growth rate that was moderate (2.5% in per capita terms). Finally, Mexico increased its GDP per capita at a rate of 1.1% per year between 2012 and 2015, which is mainly explained by its dependence on the U.S. economic cycle, and the government's inability to apply policies that boosted internal demand.

3.2 Specialization profiles

74 There is a second variable which is essential to understand the environment where industrial policies were carried out: the specialization profile. Table 2 shows seven variables for each country: a) orientation to the international economy; b) type of exports; c) export partners diversification; d) trade openness (exports plus imports over GDP); e) *relative* diversification of exports, as percentage of the same measure in the USA; f) *absolute* diversification of exports, also as percentage of USA, and g) share of medium and high technology manufactures in total exports of goods.

75 Some issues should be clarified. First, quantitative indicators related to the export basket composition and export partners diversification only take into account exports of goods (services are excluded here). Second, the *relative* diversification of exports attempts to measure if there are only few products which *proportionally* dominate the export basket. Thus, we used the Herfindahl-Hirschman index, and we compared it to the average of USA in the period 1995-2014. 100% implies that the *relative* diversification of a country is the same one than USA; a lower value means that the export basket is more concentrated (proportionally) than USA, and vice versa. Third, the *absolute* diversification of exports is a complementary indicator, which attempts to avoid some biases that the *relative* diversification of exports can generate. For example, a certain country could have an export basket which is dominated by only one product, but at the same time could export many products whose share in the export basket is low (Norway is the typical case of this situation, as 70% of its exports are oil and gas, but at the same time it exports a wide variety of products). Thus, the absolute diversification of exports is calculated as the number of products (at 6 digit level) that a country exported in a given year. Again, we compare this number for a certain country with USA. A value of 100% implies that a certain country exports the same quantity of products than USA, regardless their shares in the export basket. A value of 50% means that a certain country only exports half of the products than USA does, and so on. Fourth, we used UNCTAD's classification to identify which goods have medium or high technological intensity.

76 Finally, the first three variables were defined "qualitatively", as shown in Table 2. While "orientation to the international economy" is quite correlative to "trade openness", "type of exports" is based on the *relative* and *absolute* diversification of exports, and their technological content. In addition, "export partners' diversification" is based on the Herfindahl-Hirschman (HH) index. The classification is: high, if the HH index is below 0.08; medium-high, if it is between 0.08 and 0.15; medium, if it is between 0.15 and 0.25; medium-low, if it is between 0.25 and 0.40, and low if it is above 0.40.

77 In the 1990s, Argentina and Brazil were shifting towards a more *external-led* mode of integration in the international economy. In other words, their specialization profiles in those years were based on more trade openness, which would gradually replace the domestic demand as a lever for economic development. Despite this trend, both countries differed from Chile and Mexico, whose economic performances were much more determined by the global context. Although in the '90s these four countries were financially integrated with the rest of the world, Chile and Mexico were characterised by their higher levels of trade openness (respectively, 58% and 43% against 21% of Argentina and 20% of Brazil).

78 Argentina's export basket was quite diversified in the 1990s, not only in products but also in destinations. Despite being dominated by primary products, there was a significant diversification among them, as Argentina exported oilseeds, cereals, meat, fish, fruit, minerals, oil and gas, for example. In addition, 21% of Argentina's exports were medium and high technology manufactures, mainly due to the automotive sector, agricultural machinery, chemicals and sophisticated steel products.

79 In the 1990s, Brazil's specialization profile was a bit more complex than the Argentinean one: its export partners' diversification was "high" instead of "medium-high", at the same time that its export diversification (both *relative* and *absolute*) was higher. The same applies to the share of medium and high technology goods in the export basket (32% against 21%). In a few words, Brazil's export basket in the '90s proportionally combined primary products (such as coffee, soy, iron ore, tobacco, sugar or fruits, among others), low-tech manufactures (such as footwear, textiles, garments or non-sophisticated steel products) and medium and high-tech manufactures (such as cars and auto-parts, machinery, chemicals and even aircrafts). Brazil's specialization profile was partly a reflection of the degree of industrialization achieved within the ISI.

80 In the same period (and in the following ones), the Chilean specialization profile significantly differed from those of Argentina and Brazil. Despite the three countries have had in common a high export partners diversification, Chile's export basket has been much more centred in commodities, and its level of diversification (both *relative* and *absolute*) is lower. In the early '70s, the Chilean export basket was even more concentrated, as copper explained more than 75% of its exports. Despite a noticeable diversification of its external sales in the '70s and the '80s - due to the take-off of non-traditional sectors (such as forestry, fishing, fruit and wine, among others) -, Chile's export basket is still quite concentrated.

81 Mexico's specialization profile in the *long* '90s was also very particular. First, unlike the other three countries, Mexico had (and still has) a very acute export partners concentration, as the United States accounted for more than 80% of its exports in the period 1995-2014. Second, the Mexican export basket is mainly dominated by manufactures, due to the *maquila* regime. Many of them are in branches that UNCTAD classifies as medium or high technology, such as automotive, electronics or machinery. This is why in the whole period 1990-2015 the share of these goods in the Mexican export basket was above 60%. This figure is strongly higher than Brazil's one. It is worth mentioning that Mexico has also been a net exporter of crude petroleum. Export diversification (both *relative* and *absolute*) is rather high in Mexico. This implies that the assembly of manufactured products is spread through different sectors.

82 Most of the trends described for the long 1990s continued throughout the period 2003-2015. However, it is worth mentioning the following changes: a) both Argentina and Brazil registered a tendency in which domestic demand became reinforced its role as the main engine of development; b) the share of manufactures in Brazil's export basket has noticeably fallen since 2006 due to the rise of international prices of its primary products and also by increasing difficulties to compete internationally; c) Brazil's *relative* diversification of exports also declined while its *absolute* diversification level remain fairly the same during the period 2003-2015; d) Argentina has had a clear trend towards less *relative* diversification of exports, and this also happened with the *absolute* diversification during the period 2012-2015; and e) Chile and Mexico did not experience significant changes, except that trade openness has become higher.

Table 2. Specialization profiles

Country	Variable	1990-2002	2003-2007	2008-2011	2012-2015
Argentina	Orientation to the international economy	Shifting to external-led	Shifting to internal-led	Mainly internal-led	Internal-led
	Type of exports	Mainly commodities, but also manufactures	Mainly commodities, but also manufactures	Mainly commodities, but also manufactures	Mainly commodities, but also manufactures
	Export partners diversification	Medium-high	High	High	High
	Trade openness	21%**	37%	33%	29%*
	Export diversification 1 (HH)	61%**	59%	55%	49%*
	Export diversification 2 (nº products)	81%**	83%	82%	77%*
	Mid and high-tech exports (% of X)	21%**	20%	25%	26%*
Brazil	Orientation to the international economy	Shifting to external-led	Shifting to internal-led	Mainly internal-led	Mainly internal-led
	Type of exports	Commodities and manufactures	Commodities and manufactures	Mainly commodities, but also manufactures	Mainly commodities, but also manufactures
	Export partners diversification	High	High	High	High
	Trade openness	20%**	27%	24%	26%*
	Export diversification 1 (HH)	94%**	96%	60%	56%*
	Export diversification 2 (nº products)	86%**	91%	89%	89%*
	Mid and high-tech exports (% of X)	32%**	32%	25%	22%*
Chile	Orientation to the international economy	External-led	External-led	External-led	External-led
	Type of exports	Commodities	Commodities	Commodities	Commodities
	Export partners diversification	High	High	Medium-high	Medium-high
	Trade openness	58%**	70%	73%	67%*
	Export diversification 1 (HH)	29%**	25%	22%	24%*
	Export diversification 2 (nº products)	68%**	71%	71%	69%*
	Mid and high-tech exports (% of X)	9%**	9%	8%	9%*
Mexico	Orientation to the international economy	External-led	External-led	External-led	External-led
	Type of exports	Mainly manufactures, but also commodities (oil)	Mainly manufactures, but also commodities (oil)	Mainly manufactures, but also commodities (oil)	Mainly manufactures, but also commodities (oil)
	Export partners diversification	Low	Low	Low	Low
	Trade openness	43%**	55%	60%	66%*
	Export diversification 1 (HH)	65%**	58%	55%	60%*
	Export diversification 2 (nº products)	91%**	91%	92%	93%*
	Mid and high-tech exports (% of X)	66%**	64%	63%	65%*

Source: Own elaboration using data from UNCTAD and COMTRADE. (a): 1990-2002; *: data for 2012-2014; **: data for 1995-2002.

3.3 Approaches to industrial policy

83 This section will focus on a comparative view of the industrial policies applied by the four case studies since the 1990s. With this aim we focus our attention on seven variables, which are shown in Table 3. The first variable is the main type of the industrial policy: horizontal, vertical or mixed. The second one emphasises on the main objective of the country's industrial policy. Here we have three categories: i) industrial policy was mainly directed towards sectors with existing static comparative advantages, in order to strengthen them; ii) industrial policy focused on sectors with low static comparative advantages; iii) industrial policy attempted to create new sectors. The third variable under analysis points to visualize if sectorial policies were applied and which sectors were their main targets. Although there is a clear correlation between this variable and the first one (if industrial policy was horizontal, vertical or mixed), there are some degrees of freedom. For example, in the 1990s Argentina had a global horizontal approach to industrial policy, but at the same time a few sectorial regimes were created, in branches such as automotive, forestry, fishing and mining. The fourth dimension measures if there were explicit plans of productive development, while the fifth analyses if the country used defensive instruments to protect domestic production and

employment, such as limitation to imports, programs to avoid layoffs or tax reliefs to improve business profitability, among others. The sixth dimension was labelled "Industrial Policy Power", and aims to figure out if industrial policy has had capabilities to effectively promote the sectors which were attempting to foster. In other terms, this variable procures to analyse if the resources directed to industrial policy could have generated significant changes in the competitiveness of the productive structure. Thus, the degree of "Industrial Policy Power" mostly depends on how large those resources were and the institutional capabilities of the public agencies to implement them. Finally, the seventh variable analyses the importance of public credit towards the productive sector.

84 As can be observed, Brazil seems to be the country with the deepest industrial policy of the four. This is reflected in that it has not only relied in vertical approaches to industrial policy (Argentina and, to a much lesser extent, Chile also increased their vertical instruments since the mid-2000s), but also in its relatively high industrial policy's "firepower". The latter can be explained by three factors: a) there were significant financial resources from the State to selected sectors, for which the BNDES occupied a central role; b) the existence of explicit development plans, with a relatively solid design (with objectives, goals and even instruments), as the PITCE, the PDP and the Plan Maior, and c) relatively high institutional capabilities, being the BNDES the best proof of that. As it will be shown later, this has not necessarily implied that Brazil has had a sound performance regarding structural change, as industrial policy alone is not always enough.

85 The Argentinean case is also interesting. While in the 1990s the approach to industrial policy was mainly horizontal, since 2003 it has become increasingly vertical. The interest of the government shifted from strengthening sectors where Argentina had static comparative advantages (such as mining, forestry or fishing), as it happened in the 1990s, to foster competitiveness in sectors where comparative advantages were low (such as auto parts, electronics or capital goods, among others) or even to create new sectors (such as aerospace, biotechnology or nanotechnology, among others). However, Argentina's industrial policy firepower has been low during the 2000s[10]. This is mainly due to three factors. First, Argentina has had greater institutional disorders than Brazil, partly because the dismantling of the State during the last quarter of the twentieth century was significantly higher. Second, financial resources to industrial policy have been much lower, despite a significant increase in recent years. One of the main reasons for that is that Argentina has not had a development bank as the Brazilian one (Bizberg, 2014). Finally, although the Argentinean State devised two development plans in 2011 (such as the Strategic Industrial Plan 2020 and the Innovative Argentina Plan), they were more wishful thinking than a realistic option.

86 The industrial policy implemented in Chile has been mostly horizontal throughout the whole period, due to the prominence of instruments such as a relatively competitive real exchange rate, the development of infrastructure (ports, airports, roads, electricity or telecommunications), the signature of multiple free-trade agreements (with the aim of opening new export markets) and the availability of credit for SMEs (Moguillansky et al., 2013). Despite having a clear continuity between the 1990s and the 2000s - which is a contrast with Argentina and Brazil -, Chile created two institutions which in an incipient form aimed to generate some selective "niches". First, the National Innovation Council for Competitiveness was founded emphasizing that Chile needed to develop productive clusters in sectors where the economy was already quite competitive (for example,

processed food, fruit, financial services, construction, aquaculture, mining or tourism, among others). Second, the government created the Regional Productive Development Agencies (ARDPs), with the aim of minimizing the large territorial inequalities (Moguillansky et al., 2013; Benavente and Price, 2014).

87 Despite these incipient progresses, Piñera's government (2010-2014) returned to a mainly horizontal industrial policy (Goya, 2014). Two more issues about Chile should be remarked: first, the role of public credit on the funding of the productive sector was rather limited, being CORFO the most important public lender. In fact, Chile's policy makers aimed to deepen the private capital market, which was considered the main tool to improve the enterprises' access to credit. Second, throughout the period Chile's industrial policy firepower was intermediate, achieving many goals but leaving much to do. For example, progress was made in infrastructure, but that was not quite enough to satisfy the current needs of the country. In sum, the Chilean State intervened less than in Argentina or Brazil, but its intervention had positive impacts since the goals were clearer and its institutional capabilities were quite sound.

88 Compared to Argentina, Brazil and even Chile, Mexico has experienced little changes in its industrial policy since the 1980s. In fact, despite the fact that the term "industrial policy" has regained some importance in the public agenda, the continuities with the period opened in the 1980s are much more pronounced than its ruptures. Actually, the Mexican industrial policy has continued rejecting the use of vertical instruments, and it has preferred the market failures approach, where the State has a very limited role in the economy. Moreover, resources to fund industrial policy have continued to be weak, and the same happened with Mexico's institutional capabilities. That is why the firepower of the (restricted) industrial policy has been very low. It should be noted that there were many national development plans, but they have been rather generic and limited to a few objectives related to social welfare. This is in sharp contrast with the Brazilian development plans (such as the PITCE, the PDP and the PM), and even more with those of the ISI.

89 Finally, it should be remarked that only Argentina and Brazil used defensive instruments to protect national production and employment from imports. Their governments started to implement those policies after the outbreak of the international crisis of 2008/2009. On the one hand, Argentina utilized trade policies to restrict imports. These instruments have brought problems with the World Trade Organization (WTO), but at the same time limited the effects of the currency appreciation on certain manufacturing branches. Furthermore, in the worst moment of the international crisis (2009), the Argentinean government implemented the Productive Recovery Program (REPRO), by which the State assumed part of the enterprises' labor costs with the aim of preventing layoffs. On the other hand, Brazil - whose currency was strongly appreciated until 2012 - did not use trade policy to restrict imports. Instead, it relied on tax reliefs to the manufacturing sector, to improve its profitability.

Table 3. Industrial Policy Schemes

Country	Variable	1990-2002	2003-2007	2008-2011	2012-2015
Argentina	Horizontal / Vertical / Mixed	Mainly horizontal	Mainly horizontal	Mixed	Mixed, increasingly vertical
	Aim of industrial policy	Mainly towards static advantages	Both static and dynamic adv'ges	Both static and dynamic adv'ges	Mainly towards dynamic adv'ges
	Sectorial policy	Automotive, mining, forestry, fishing	Automotive, mining, forestry, software, capital goods	Automotive, mining, forestry, software, capital goods, electronics, aerospace, health, biotech, nanotech, ICTs, filmmaking	Automotive, mining, forestry, software, capital goods, electronics, aerospace, health, biotech, nanotech, ICTs, filmmaking, petroleum
	Planning	None	None	Objectives and goals (Plan Estratégico Industrial 2020, Plan Argentina Innovadora)	Objectives and goals (Plan Estratégico Industrial 2020, Plan Argentina Innovadora)
	Use of defensive instruments	Low	Low	High: trade policy (import limitation) and employment policy (REPRO)	High: trade policy (import limitation)
	IP Power	High	Low	Low	Low
	Public credit importance	Low	Low, increasing	Medium	Medium
Brazil	Horizontal / Vertical / Mixed	Mainly horizontal	Mixed, increasingly vertical	Mixed, increasingly vertical	Mixed
	Aim of industrial policy	Both static and dynamic adv'ges	Both static and dynamic adv'ges	Both static and dynamic adv'ges	Both static and dynamic adv'ges
	Sectorial policy	Automotive, Petroleum and gas, capital goods	Automotive, Semiconductors, software, capital goods	Automotive, Aeronautics, petroleum and gas, iron and steel, nano and biotech, capital goods	Automotive, Petroleun and gas, software, capital goods, electronics, aerospace, health, biotech, nanotech
	Planning	None	PITCE	PDP	PBM
	IP Power	High	High	High	High
	Use of defensive instruments	Low	Low	Low, increasing	Medium (tax reliefs)
	Public credit importance	High (BNDES)	High (BNDES)	High (BNDES)	High (BNDES)
Chile	Horizontal / Vertical / Mixed	Mainly horizontal	Mainly horizontal, vertical niches	Mainly horizontal, vertical niches	Mainly horizontal
	Aim of industrial policy	Mainly towards static advantages	Mainly towards static advantages	Mainly towards static advantages	Mainly towards static advantages
	Sectorial policy	Low	Low	Processed food, fruit, poultry, tourism, construction, mining, outsourcing, aquaculture, financial services, logistics and transportation	Low
	Planning	None	CNIC y ARDP	CNIC y ARDP (2008-2009) / None (2010-2011)	None (2012-2014) / CNIC y ARDP (2014-2015)
	Use of defensive instruments	Low	Low	Low	Low
	IP Power	Medium	Medium	Medium	Medium
	Public credit importance	Low	Low	Low	Low
Mexico	Horizontal / Vertical / Mixed	Mainly horizontal	Mainly horizontal	Mainly horizontal	Mainly horizontal
	Aim of industrial policy	Mainly towards static advantages	Mainly towards static advantages	Mainly towards static advantages	Mainly towards static advantages
	Sectorial policy	Low	Low	Low	Low
	Planning	Only objectives	Only objectives	Only objectives	Only objectives
	Use of defensive instruments	Low	Low	Low	Low
	IP Power	Low	Low	Low	Low
	Public credit importance	Low	Low	Low	Low

Source: Own elaboration

3.4 Development strategies

90 Industrial policy regimes implemented in these countries were partly determined by the macro development strategies pursued by local governments. This section examines this latter dimension. In order to do this, and using as inspiration the work of Bizberg (2014), we will analyse the evolution of three variables: a) the growth regime; b) the role of the State regarding development; and c) the labour market regulation. The information is presented in Table 4.

91 As we can observe, Argentina and Brazil exhibited relatively similar growth regime trajectories between them, which contrasts with the paths followed by Chile and Mexico. On the one hand, during the long 1990s Argentina and Brazil had a growth regime that can be characterized as debt-led regime. In a context of regressive functional income distribution, debt was a crucial in order to finance demand. Moreover, the dynamics of the external front of the two economies required a heavy dependence on capital account by mainly foreign borrowing. This growth dynamic was also experienced by Mexico up to the Tequila crisis. Since then, the growth regime of the Mexican economy seems to have been an export-led regime, despite the poor economic results. Finally, Chile clearly had an export-led scheme, consolidating the legacy of the Pinochet's dictatorship.

92 Only Argentina and Brazil showed strong changes in their growth regimes in the 2000s, which were accompanied by strong political transformations. In both cases the growth rationale became wage-led which put the salary as a key driver of domestic demand and therefore of growth. It is no coincidence that this has involved, in both cases, a radical change in the way State intervened in the development process, which went from passive to active as its participation in social and economic variables became much higher, as well as its intervention in the distributive conflict between capital and labour. In fact, relations between capital and labour came to be much more regulated, especially in

Argentina. This was partially possible because these countries (and mainly Argentina) had higher union densities compared to Latin American standards (Bizberg, 2014).

93 On the contrary, in Chile and Mexico the growth regime has remained unaltered throughout the period. In both cases, labour markets had been deregulated when neoliberalism was imposed and State's intervention has been rather passive. Unlike Argentina and Brazil, Chile and Mexico have had a low union density and the labour movement is rather weak. In part, this is because in both countries the union bargaining occurs at the company level, while in Argentina and Brazil the negotiations are at the branch level. Thus, the centralization of the labour movement is much higher in the latter countries.

94 Despite these similarities it is worth to introduce a difference between Chile and Mexico: the Chilean State, in spite of being more passive, has managed to intervene more effectively in some social and economic variables and was able to reduce some of the more regressive elements inherited from Pinochet's administration (e.g., extending in a very moderate way some labour rights, increasing public health coverage -Plan AUGE-, urbanizing poor neighbours or even integrating the homeless to the network of State's social assistance - through for instance the "Chile Barrio" or "Chile Solidario" programmes). In Mexico, although since the mid-90s there were some plans to improve the living conditions of the most vulnerable sectors (such as "Opportunities" or "Seguro Popular"), its welfare impacts were very limited.

95 The Brazilian wage-led regime was based primarily on a large increase in the real minimum wage, which, given the Brazilian system, also had a positive impact on part of the public sector wages and on pension benefits (Serrano and Summa, 2012). This was complemented by increases in social transfers (e.g. via programs such as Bolsa Familia), and with a significant rise in consumer credit, although real interest rates were highly positive.

96 However, the Brazilian growth regime began to mutate in 2011: the rise in wages participation in income distribution decelerated, as well as the real minimum wages. The government of Rousseff believed that growth could be based on a *private investment-led* strategy where the businessmen had a central role, so it proposed a rise in profit margins by depreciating the exchange rate and through tax exemptions. However, despite these changes, private investment remained stagnant. According to Serrano and Summa (2015), the failure in this strategy is due to the fact that, once a minimum level of profitability is satisfied, the only thing that makes private investment to increase is the prospect of a growing demand. However, Brazil's effective demand did not increase during this period.

Table 4. Fundamentals of development strategies

Country	Variable	1990-2002	2003-2007	2008-2011	2012-2015
Argentina	Growth regime	Debt-led	Wage-led	Wage-led	Wage-led
	Global role of the State	Liberal - minimal	Active	Active	Active
	Labor market regulation	Deregulated	Regulated	Regulated	Regulated
Brazil	Growth regime	Debt-led	Wage-led	Wage-led	Investment-led
	Global role of the State	Mainly liberal	Active	Active	Active (decreasing)
	Labor market regulation	Deregulated	Intermediate	Intermediate	Intermediate
Chile	Growth regime	Export-led	Export-led	Export-led	Export-led
	Global role of the State	Liberal - subsidiary	Liberal - subsidiary	Liberal - subsidiary	Liberal - subsidiary
	Labor market regulation	Deregulated	Deregulated	Deregulated	Deregulated
Mexico	Growth regime	Export-led	Export-led	Export-led	Export-led
	Global role of the State	Liberal - minimal	Liberal - minimal	Liberal - minimal	Liberal - minimal
	Labor market regulation	Deregulated	Deregulated	Deregulated	Deregulated

Source: Own elaboration, based on Bizberg (2014).

4. Productive and social performances

97 This section focuses on the achievements and limitations of the economic policies implemented since 2003 in our four case studies. We have distinguished two groups of indicators in order to grasp the performance of the transformations registered: a set of indicators related to the productive structure and other group related to social welfare. Two indicators related to the productive structure are used: first, we study growth trends of the four countries, including their manufacturing sectors, and the evolution of the gaps with USA. Second, we examine the role of innovation and structural change in the countries performances.

4.1 Growth and gaps

98 Four indicators are used to analyse the growth performance of Argentina, Brazil, Chile and Mexico: a) GDP per capita; b) GDP per capita as a percentage of the USA; c) Manufacturing value added per capita and d) Manufacturing value added per capita as a percentage of the USA. The results are shown in Table 5[11].

99 There are contrasting trajectories regarding the evolution of these four indicators. Chile performed better if we compare 1998 with 2015 in both GDP per capita (+61.1%) and manufacturing value added per capita (+25.0%). Brazil's GDP per capita grew 31% in the same period, although its manufacturing value added per capita remained stagnant. Argentina and Mexico grew less than Brazil (+21.8% and +16.6%); however, their manufacturing sectors performed better (+11% and +9.6% per capita, respectively). However, the performances were very heterogeneous among the sub-periods. Between 1998 and 2002, the Argentinean GDP per capita fell 21.4%, and its manufacturing value added per capita did it by 29.1%. In contrast, although their performances were rather static, Brazil, Chile and Mexico did not experience such decline. Argentina's recovery between 2002 and 2007 was really outstanding: its GDP per capita grew 45% and its manufacturing value added per capita did it by 58%. Thus, their levels were respectively 14.1% and 12.3% higher than in 1998. Chile's GDP per capita increased 25% between 2002 and 2007, followed by Brazil (+15%) and Mexico (+10%). Their manufacturing value added per capita rose respectively 18%, 14% and 4%.

100 Between 2007 and 2011, Brazil performed better than the other three countries in terms of GDP per capita, which rose 13%, followed by Chile and Argentina with 10%. In contrast, the Mexican GDP per capita fell 0.8%. However, Argentina's manufacturing value added per capita expanded by 10.3% between those years, while in the other countries virtually stagnated: in Chile it increased only 3.7%, while in Brazil grew just 0.2% and in Mexico fell 1.6%. As it can be seen, in these three countries between 2007 and 2011 the manufacturing sector performed worse than the whole economy, in contrast with Argentina.

101 If we compare 2011 with 1998, we can see that Chile and Brazil performed better than Argentina and, especially, Mexico. In 2011, the Chilean GDP per capita was 46.6% higher than in 1998, the Brazilian 33.7%, the Argentinean 25.4% and the Mexican 11.4%. Regarding the manufacturing value added per capita, Chile and Argentina performed much better than Brazil and Mexico (respectively, 24.6%, 23.8%, 15.4% and 3.9%). As said before, since 2011 Argentina and Brazil have stagnated. Argentina's GDP per capita fell 2.9% between 2011 and 2015, while Brazil's did it by 2.1%. Despite that Brazil's contraction

is mainly explained by 2015, when it's GDP per capita decreased 4.8%; there is a significant growing literature debating the existence or not of a de-industrialization process in Brazil (Frenkel y Rapetti, 2011; Gaulard, 2011; Mattos et al., 2014; Nassif, 2008; Oreiro y Feijó, 2010; Salama, 2012 among others). The Brazilian case is particular because there are several sectors of industrial activity that are feeling the effects of competition from cheaper imports, the country has lost participation in foreign markets, and job losses have been registered in various segments of industrial activity in different regions. However, other authors believed that this process could not be described as deindustrialization since there was no evidence of either generalized reallocation of resources towards industries based on natural resources or a pattern of export specialization in goods technologically based on natural resources or even on labor (Nassif, 2008, 72).

102 What we can observe is that during the period 2012-2015, Argentina and Brazil's manufacturing sectors performed worse than the rest of the economy: the manufacturing value added per capita dropped 10.3% in Argentina and 13.1% in Brazil. On the other hand, Chile and Mexico performed better between 2011 and 2015, although far from being spectacular. The Chilean GDP per capita grew 10.3%, while the Mexican did it by 4.7%. Regarding their manufacturing value added per capita, the Mexican expanded 5.5%, while the Chilean did it only 0.3%.

103 There are clear trends regarding the gaps with USA. Both four countries, and especially Argentina, diverged with USA between 1998 and 2002. This applies both to the GDP per capita and to the manufacturing value added per capita. In contrast, between 2002 and 2011 the four countries converged with USA in terms of the GDP per capita. However, while Argentina's, Brazil's and Chile's convergence was quite fast, the Mexican was very modest. Only Chile continued to converge with USA between 2011 and 2015, albeit at a slower pace.

104 The trajectories of the manufacturing value added per capita (as percentage of USA) are somewhat different from those of the GDP per capita. Argentina's manufacturing GDP per capita strongly diverged with the United States between 1998 and 2002 (from 40.6% to 27.6%). The accelerated recovery of the period 2003-2011 made that in 2011, the Argentinean manufacturing GDP per capita was 44.7% of the United States. However, the economic stagnation that began in the late 2011 - which has damaged the manufacturing sector more than the rest of the economy – has made that figure to fall to 40.2% in 2015. In sum, in 2015 Argentina's manufacturing value added per capita relative to the United States was slightly lower than 1998 (the peak of the '90s). Brazil's trend exhibits a moderate divergence, as its manufacturing value added per capita was 34.8% of that of the United States in 1998 and 31.1% in 2015. However, between 2007 and 2011 Brazil experienced a soft convergence (from 32.5% to 35.7%). Thus, Brazil's divergence in the period 1998-2015 is mainly due to the subperiod 2011-2015. In Chile, the GDP per capita convergence with the United States is reflected more moderately in the manufacturing sector. In 2015, the Chilean manufacturing value added per capita as a percentage of the USA was higher than in 1998 (41.7% versus 37.4%). This is due to the fact that the manufacturing share of GDP has fallen more sharply in Chile than in the United States. Finally, Mexico exhibits a little divergence in its manufacturing GDP per capita compared with the United States (from 45.3% in 1998 to 44.4% in 2015). This is mainly due to what happened between 1998 and 2007.

105 If we compare 1998 with 2015 we can conclude that none of the countries has been able to experience a significant and sustainable manufacturing catch-up with the United States. However, this should not hide the fact that there were some promising performances for the manufacturing sectors of these countries during this period, such as for example, Brazil in 2004-2010, and Chile and Argentina in 2003-2011.

Table 5. Growth and GDP gaps with USA

Country	Variable	1998	2002	2007	2011	2015
Argentina	GDP per capita (1998 = 100)	100.0	78.6	114.1	125.4	121.8
	GDP per capita (% of USA)	36.8%	26.9%	35.6%	40.0%	36.7%
	Manufacturing VA per capita (1998 = 100)	100.0	70.9	112.3	123.8	111.0
	Manufacturing VA per capita (% of USA)	40.6%	27.6%	37.0%	44.7%	40.2%
Brazil	GDP per capita (1998 = 100)	100.0	103.2	118.5	133.7	131.0
	GDP per capita (% of USA)	25.9%	24.9%	26.0%	30.1%	27.8%
	Manufacturing VA per capita (1998 = 100)	100.0	101.0	115.0	115.4	100.3
	Manufacturing VA per capita (% of USA)	34.8%	33.7%	32.5%	35.7%	31.1%
Chile	GDP per capita (1998 = 100)	100.0	106.5	132.7	146.1	161.1
	GDP per capita (% of USA)	32.4%	32.1%	36.4%	41.0%	42.7%
	Manufacturing VA per capita (1998 = 100)	100.0	102.1	120.5	124.6	125.0
	Manufacturing VA per capita (% of USA)	37.4%	36.6%	36.6%	41.5%	41.7%
Mexico	GDP per capita (1998 = 100)	100.0	101.9	112.2	111.4	116.6
	GDP per capita (% of USA)	33.1%	31.4%	31.5%	32.0%	31.6%
	Manufacturing VA per capita (1998 = 100)	100.0	101.1	105.6	103.9	109.6
	Manufacturing VA per capita (% of USA)	45.3%	44.0%	38.9%	42.0%	44.4%

Source: Own elaboration with data from national accounts, Kidyba & Suárez (2017) and World Bank.

4.2 Innovation and complexity gaps

106 This subsection focuses on the evolution of innovation and complexity indicators relative to the USA. We used three variables for the analysis: a) R&D expenditure per capita, as a percentage of the USA; b) the Economic Complexity Index (absolute distance with the United States), and c) Patents per capita registered at the United States Patents and Trademark Office (USPTO), as a percentage of the USA. Data is shown in Table 6.

107 Looking at the R&D expenditures per capita as a share of the United States, the four countries experienced some improvements during the period under analysis. However, those improvements were very limited, and the gaps between them are still enormous. For example, despite the strong efforts of the Argentinean government to foster science and technology, in 2012-2015 its R&D expenditure per capita was only 8.5% of what the United States spends in science and technology. Brazil performs a little better than the rest of the countries under analysis, but its differences with the United States are still huge (in 2012-2015, Brazil's R&D expenditure per capita was 12.2% of the USA). Finally, in the cases of Chile and Mexico the R&D expenditure per capita is even weaker, in the order of 4% to 5% of the expenditures made by the United States throughout the whole period.

108 If we analyse the trends in patents per capita using the USPTO data, we can see a similar scene. On the one hand, Argentina raised its divergence with the United States, except for the period 2008-2011. Brazil, Chile and Mexico show certain trends towards convergence in this indicator throughout the series, but the changes are really moderate. In fact, the gaps with the United States are still phenomenal: no country of these four under study has managed to have patents per capita that reach 1% of the United States.

109 The last indicator studied in this section is the Economic Complexity Index (ECI), which is a measured developed by Haussmann et al. (2011) aiming to analyse the export basket of a certain country in terms of its complexity. The dimensions used to calculate this index

are basically two: diversity and ubiquity. Diversity measures the variety of products that a country exports. In other words, a certain country will have a high score if its export basket is diversified. On the other hand, ubiquity measures the degree of specialization that each exported product requires. If a product is highly sophisticated and exported by few countries, those countries will have a higher score. It should be mentioned that the ECI does not distinguish if a certain product was fabricated with high local contents (as it occurs in countries with integrated productive structures) nor if it was assembled (as it occurs in *maquiladoras* in Mexico).

110 Throughout the whole period, the four countries showed lower ECIs than the United States. However, there are heterogeneities among the different countries. Mexico has had the shortest distance with the United States (-0.86 points in the 1990s and -0.42 in 2012-2015), because of its relatively diversified export basket and because it exports products that few countries export (such as medium and high technology manufactures), although without much domestic integration. Since the 1990s, Brazil's ECI widened its distance with the United States (from -1.08 to -1.39 in 2012-2015), due to a higher relative exports concentration (mainly explained by the commodity boom) and because the more sophisticated manufactures (which have higher ubiquity) lost importance in the export basket. Finally, Argentina and Chile did not experience significant changes if we compare 2012-2015 with the 1990s: their ECIs have been strongly lower than that of the United States throughout the whole period.

111 To sum up, the study of the productive structure indicators for the four economies under analysis shows that the period under analysis exhibited important transformations of their absolute values. However, when we compare the outcome with the United States as a benchmark we can appreciate that the only variable that shows some progresses is GDP per capita (mainly in Chile and, to a lesser extent, in Argentina and Brazil between 2003/2004 and 2011). The other indicators suggest that the gaps with the United States are still significant and that, at best, they had marginally narrowed.

Table 6. Innovation and complexity performances

Country	Variable	1990-2002	2003-2007	2008-2011	2012-2015
Argentina	R&D per capita (% of USA)	5.7%	5.0%	6.8%	8.5%
	Economic complexity index (distance to USA)	-1.45	-1.78	-1.65	-1.68
	USPTO patents per capita (% of USA)	0.51%	0.42%	0.45%	0.38%
Brazil	R&D per capita (% of USA)	9.7%	10.0%	11.9%	12.2%
	Economic complexity index (distance to USA)	-1.08	-1.29	-1.46	-1.39
	USPTO patents per capita (% of USA)	0.20%	0.23%	0.34%	0.41%
Chile	R&D per capita (% of USA)	n/d	4.3%	5.0%	5.5%
	Economic complexity index (distance to USA)	-1.70	-1.97	-1.94	-1.85
	USPTO patents per capita (% of USA)	0.26%	0.49%	0.65%	0.88%
Mexico	R&D per capita (% of USA)	4.1%	4.8%	5.0%	5.2%
	Economic complexity index (distance to USA)	-0.86	-0.52	-0.51	-0.42
	USPTO patents per capita (% of USA)	0.28%	0.26%	0.31%	0.38%

Source: Own elaboration with data from UNESCO, USPTO, World Bank and MIT.

4.3 Social welfare

112 Once the productive impacts of the economic policies applied by each country are clear, we focus our attention on the performances regarding social welfare. With that aim, we analyzed five indicators: a) the Gini index (household income per capita); b) the unemployment rate; c) the evolution of informality[12]; d) the minimum real wage and e) the percentage of population living below the poverty line[13]. All the relevant information is presented in Table 7.

113 As we can observe, the improvements regarding social welfare were much more noticeable than the performance of the sphere of production for the vast majority of the countries under analysis. Nevertheless, there are important heterogeneities among the four countries. While Argentina, Brazil and Chile improved significantly, Mexico lagged behind, with practically non-existent social upgrades.

114 One of the most important social transformations registered in Argentina was that income inequality dropped sharply since 2003 (when the Gini coefficient had reached 0.541). This was achieved due to several factors. First, the unemployment rate dramatically decreased, because of the economic expansion and the creation of more than 4 million jobs. In 2002, 22% of the labour force was unemployed and by 2008 that figure had fallen to 8%. Since 2011, the rate virtually stabilized around 7%[14]. Second, within the working class there was higher equality, since minimum wages raised well above average wages. Third, there were several programs that intensified social transfers to Argentina's low-income population. For example, the *Asignación Universal Por Hijo* (Universal Child Allowance, AUH) was created in 2009 and benefited 1.65 million households (17% of total). Originally, it granted 53 dollars a month for each child under 18, up to a maximum of five, to parents who were unemployed or worked in the informal sector of the economy. As a result of these changes, real incomes of the poorest 40% increased by 187% between 2002 and 2015 (50% if we compare 2015 with 1998, prior to the economic crisis which led to the collapse of the Convertibility Plan). Therefore, poverty significantly fell from 57.5% in 2002 to 19.7% in 2015[15]. However, it should be mentioned that in recent years the downward trend of the poverty rates was much weaker: in fact, in 2011 the poverty rates were practically the same to those of 2015 (20.1%), but quite lower than 1998 (25.9%). Finally, informality rates also fell, but a much moderate pace (from 41.6% in 1998 to 39.4% in 2013). In 2012-2015, informality rates were practically the same than those of 2008 (39.8%).

115 Brazil experienced a similar trend regarding income inequality, but starting from inequality levels that were even worse than in Argentina (0.582 in 2002). A remarkable dynamic of job creation in the formal sector and strong rises of both real minimum wages (which doubled) and social transfers - as for example *Bolsa Familia* and the *Beneficio de Prestaçao Continuada* (Continuous Cash Benefit programme) - have greatly contributed to the reduction of Brazil's inequality. The latter program covers about 2.7 million old or incapacitated individuals over 65 years which live in a home where income is lower than one fourth of a minimum salary (Lohmann, 2007, 60). As a consequence, the Gini coefficient fell to 0.511 in 2015 and poverty rates decreased from 36% in 2003 to 18% in 2013. This implied that 35 million Brazilians were able to abandon poverty. Unemployment fell from 12.3% in 2003 to 4.8% in 2014. However, the deep economic recession of 2015-2016 has reversed this trend (unemployment rose to 13.6% in 2017). Finally, informality rates also contracted, from 57.1% in the *long* '90s to 45.6% in 2012-2015. Despite this significant improvement, these rates are still very high.

116 In contrast with Argentina and Brazil, in Chile income inequality dropped slightly throughout the period (in 2012-2015 it averaged 0.504). Several reasons can be point out to explain this trend. First, there were not policies to really strengthen the minimum salary. According to ECLAC, between 2000 and 2014, real minimum wages increased by 45% in Chile, while average wages did it by 37% (both rises followed the productivity trend)[16]. Second, there were no social programmes as ambitious as the AUH or Bolsa Familia applied in Chile during this period. Although some programmes were created in

order to fight the extreme poverty (Chile Solidario), to extend health coverage and to establish safeguards for workers who did not accumulate enough to get a decent pension (Bizberg, 2014), social transfers to the poor were rather modest. The significant growth of the Chilean economy in the 2000s contributed to job creation, and unemployment fell from around 10% in the period 1999-2004 (which coincided with an economic slowdown) to 6.3% in 2012-2015. Poverty rates continued to decrease throughout the period. In 2000, 20% of the Chileans were below the national poverty line while in 2012-2015 only 7.8% of the population was poor. Finally, informality also decreased from 39% in the *long* 1990s to 34.4% in 2013, with a minimum of 33.1% in 2011. Although these rates are still very high, Chile performs better than Argentina, Brazil and Mexico, with significant higher figures.

117 Among these four countries, Mexico has had the worst performance regarding social welfare. The Mexican Gini coefficient had increased during the 1990s (from 0.512 in 1989 to 0.536 in 2000), according to SEDLAC's data. Between 2000 and 2010 it experienced an irregular but rather downward trend. In the latter year, the Gini coefficient was 0.472. However, since then it raised again and in 2014 was 0.489. There are other estimates that show that in the '90s income distribution worsened in Mexico and since then it remained stable, adjusting household surveys to national accounts[17].

118 Both Mexican real minimum and average wages fell during the 2000s, in sharp contrast with the other countries. Between 2000 and 2012, the real minimum wage dropped 4%, while average wages fell 8%. The unemployment rate experienced an upward trend, from 2.2% in 2000 to 5.1% in 2015, with a peak of 6.1% in the recessive 2009. Despite some social transfers to the extreme poor such as the *Oportunidades* program (originally created in 1997 and reformulated in 2002), poverty rates have been growing since 2006 and they still affect near one half of the population if we take the national poverty line.

Table 7. Social welfare indicators

Country	Variable	1990-2002	2003-2007	2008-2011	2012-2015
Argentina	Gini index	0.488	0.497	0.447	0.419
	Unemployment rate	13.9%	11.9%	7.9%	7.0%
	Informality (productive definition)	43.8%	42.4%	39.3%	39.0%
	Real minimum wages (2000=100)	90.4	159.5	210.5	200.5
	Population with less than 4 USD/day (PPP 2005)	22.6%	28.4%	15.1%	11.6%
	Population below national poverty line	27.6%	36.4%	23.2%	19.3%
Brazil	Gini index	0.591	0.558	0.533	0.516
	Unemployment rate	6.3%	10.5%	7.2%	5.7%
	Informality (productive definition)	57.1%	53.2%	49.1%	45.8%
	Real minimum wages (2000=100)	92.9	133.5	174.4	200.8
	Population with less than 4 USD/day (PPP 2005)	45.9%	37.4%	26.4%	19.7%
	Population below national poverty line	40.0%	35.3%	23.9%	17.7%
Chile	Gini index	0.556	0.517	0.513	0.504
	Unemployment rate	8.0%	8.6%	8.2%	6.3%
	Informality (productive definition)	39.0%	36.1%	33.7%	34.4%
	Real minimum wages (2000=100)	82.8	113.6	125.1	139.6
	Population with less than 4 USD/day (PPP 2005)	30.1%	18.1%	10.7%	7.3%
	Population below national poverty line	27.4%	16.2%	11.2%	7.8%
Mexico	Gini index	0.533	0.504	0.487	0.490
	Unemployment rate	3.7%	4.3%	6.0%	5.6%
	Informality (productive definition)	51.7%	50.7%	44.5%	46.2%
	Real minimum wages (2000=100)	112.5	99.2	95.6	96.1
	Population with less than 4 USD/day (PPP 2005)	39.7%	29.2%	28.3%	27.6%
	Population below national poverty line	57.0%	45.7%	49.5%	53.0%

Source: Own elaboration with data from SEDLAC, ECLAC, CIFRA-CTA and National Accounts

5. Main conclusions

119 This paper has reviewed industrial policy experiences in four emerging countries of the American continent in the last twenty-five years, taking into account both contextual variables (such as the macroeconomic cycles and balance of payments dynamics, the specialization profiles and the strategies of development) and industrial policy itself. A first conclusion that we can draw is that the development path registered by Argentina, Brazil, Chile and Mexico since the beginning of the XX century shows a roughly similar

trend throughout the period (industrialization, neoliberalism and reindustrialization) and also the existence of regular systemic patterns that, in the best case scenario, only conditions the national development plan. In this sense, the comparative analysis allows us to examine the particularities of each country and the effectiveness of the policies applied without forgetting the possibilities and limitations that the transformations registered by the system at the regional level impose on these countries.

120 As we saw, Argentina, Brazil and Chile since the early 2000s had relatively similar external conditions: favorable terms of trade and high demand during most of the period, and instability and slowdown of the global economy and their main trading partners in recent years. These changing conditions initially facilitated a relatively long growth cycle and explain, at least in part, the stagnation or actual crisis (much less acute in Chile than in Argentina and Brazil). In contrast, external conditions were less favorable in Mexico, where there is a huge dependence on the US economic cycle and where China is more a competitor than a source of external demand. In a long run comparative perspective, some differences among the four countries are obvious: while the general direction of the development strategy in Chile and Mexico has been the same during the 1990s and 2000s - market friendly -, Argentina and Brazil during the last decade broke apart from this paradigm and can be characterized by the dominance of practices and "developmental" institutions with active State intervention. Subsequently, the design and implementation of industrial policy exhibit greater continuity and only relatively minor adjustments in the first two cases while, for the case of Argentina and Brazil, the changes are strong between one stage and another. The comparison also included another dimensions to the analysis, such as the structural characteristics of each economy, in terms of size, degree of openness and specialization.

121 Anyway, the long-term results in terms of productive development are relatively disappointing in all cases. Beyond different cycles of economic growth during the reported period, productivity and relative income gaps to developed economies have not been significantly reduced (Chile is, after all, the best performer) and there is no evidence of structural change or a significant quality leap in the productive apparatus, nor improvements on the profile of international integration of these economies. Therefore, none of the countries under study has been able to substantially avoid the harmful effects of international volatility. This fact is reflected in the modest economic performance during the last years in all countries. However, it is remarkable that Argentina, Brazil and Chile could significantly improve their levels of social indicators, an improvement that was not registered in Mexico.

122 Industrial policy aims to help improve economic performance and the living conditions of population. On the evidence of different approaches and impacts which in appearance can be classified as poor performance, can it be concluded that industrial policy does not matter? The answer requires a closer look at the peculiarities of each country and the different moments or stages of the period under consideration.

123 Both Chile and Mexico have followed a predominantly export-led strategy, with different results in terms of aggregate growth and poverty levels, and the performance was clearly better for the former. In fact, Mexico turns out to be the country with the worst economic and social performance among the countries analyzed. In this sense, within institutions and an open economy framework relatively similar throughout the entire period, the strategy of export specialization in dynamic "niches" followed by Chile seems to have been much more effective and, above all, better adapted to its own structural conditions

than the "maquila" strategy followed by Mexico. Despite this, Chile still has relatively high income inequality levels.

124 On the other hand, in Argentina and Brazil, which show lower degrees of openness and a different development strategy than the other two countries, the main source of dynamism both in the 1990s and 2000s has been centered in the expansion of the domestic market (although in the '90s both countries were attempting to shift to an external-led strategy). However, while in the first period the locomotive was predominantly based on foreign debt, the second period was based on a wage-led strategy and the horizontal expansion of consumption. Industrial policy accompanied this change in strategy, proposing more active guidance and funding allocation mechanisms. The result was in both cases a progressive improvement on the distributive profile and, especially in the case of Argentina, the recovery of some sectors and periods of strong output and industrial employment growth which stopped and partially reversed a long cycle of relative de-industrialization. In parallel with these conditions and relatively similar orientations in both countries, there were strong differences in the management of exchange rate policy and capital account (negative in Argentina and positive in Brazil) during the 2000s, which impacted on the design and effectiveness of the industrial policy.

125 Given this complexity and diversity, a first conclusion is that the evaluation of the effectiveness and importance of industrial policy, in addition to considering the approach and instrumentalities that defines it, requires the analysis of the specific macroeconomic conditions - at domestic and international level -, as well as the structural and institutional framework in which it interacts. These elements can be decisive for the scope, achievement or frustration of the explicit objectives of industrial policy. A second conclusion is that, in the cases reviewed, these conditions were not adequately addressed in the design and implementation of industrial policy and probably this explains much of the weakness observed while assessing their impacts. Even if the effects of restructuring that would have reduced the productivity gap and ensure greater international competitiveness of the industrial structure of these countries have been poor or directly null, further research would study whether there were less visible positive impacts[18].

126 In the case of Mexico, certainly the most hands-off case under comparison, the *maquila* contributed to a moderate net creation of jobs, in many cases of low quality. Moreover, the *maquila* regime has proved so far to be ineffective to generate linkages with the rest of the productive sector, and the indirect creation of new jobs has been very low.

127 In Chile, also a case of pro-market predominance, the main merit of industrial policy throughout the period has been the focus, appropriate coordination of efforts and public resources utilization in some segments based on natural advantages. This strategy allowed to support such productive "niches" over time and to remove some of the pressures on the external accounts. Brazil's experience during the PT's governments, with a stronger emphasis on the use of vertical policies, constitutes the case of highest industrial policy power among the four countries, given its level of planning and relative magnitude of the incentives involved. Despite that originally the IP tried to support the modernization and internationalization of industrial structure, after the global financial crisis it took a relatively defensive bias which proved to be quite effective. In Argentina, this bias was also present in recent years, particularly to sustain the employment level reached (at the beginning of the 2000s, industrial policy had been part of a larger device that facilitated the recovery and sustained growth of the productive apparatus after the economic collapse of the Convertibility regime).

128 Finally, some lessons can be advantageously generalized from the cases under study. The review of the Argentine case warns about the insufficiency of the use of policies to stimulate aggregate demand as the main instrument to guide the transformations in the productive structure, and has shown that the lack of coordination and resources among the state agencies related to industrial policy may significantly reduce its firepower. The Brazilian case shows how the firepower of a generous promotion system defined at the meso and micro level can be sterilized when incentives and macroeconomic prices are not aligned in the same direction. The Chilean experience raises questions about the effectiveness and possible limitations of a strategy of focusing on niches based on dynamic comparative advantages in the case of medium or large economies. Last, the Mexican case shows clearly the inconvenience of an international integration scheme based on predatory labor market conditions and the failure to take advantage of a large domestic market.

Methodological Annex

129 The Methodological Annex details sources and clarifications on the numeric variables used in this paper.

Variable	Source	Period	Observations
GDP per capita and GDP per capita growth	World Bank	1990-2015	Data for Argentina includes data from Kidyba and Suárez (2017).
Real exchange rate	ECLAC	1990-2014	Argentine data was recalculed using alternative (provincial statistics) inflation figures, as official data has been disacredited.
Economic partners growth	UNCTAD	1990-2014	Data for 2015 was estimated using TradingEconomics database.
Terms of trade	ECLAC	1990-2014	Data for 2015 was estimated using National Accounts.
Current account (% of X and GDP)	ECLAC	1990-2014	"X" is the abbreviation of "exports".
Capital account (% of GDP)	ECLAC	1990-2014	
Foreign reserves (% of Z and GDP)	ECLAC	1990-2014	Z is the sum of imports, utilities and interests.
Trade openness	World Bank	1990-2014	
Export diversification 1 (HH)	UNCTAD	1995-2014	Herfindahl-Hirschman index (3 digit level), compared with USA (=100). A higher value means more diversification.
Export diversification 2 (nº products)	COMTRADE	1995-2014	Number of products exported (6 digit level), compared with USA (=100). A higher value means more diversification.
Mid and high-tech exports (% of X)	UNCTAD	1995-2014	Share of medium and high technology manufactures in total exports of goods (UNCTAD's classification)
GDP per capita (% of USA)	IMF	1990-2015	Data is at current international prices, PPP. Since 2008, Argentina's data is the simple average of INDEC and ARKLEMS.
Manufacturing VA per capita (1998 = 100)	National Accounts	1990-2015	United Nations National Accounts Database and national statistics offices.
Manufacturing VA per capita (% of USA)	National Accounts	1990-2015	Data is at average prices of 2010-2014, PPP.
R&D per capita (% of USA)	UNESCO / RICYT	1996-2013	
Economic complexity index (distance to USA)	MIT	1990-2015	
USPTO patents per capita (% of USA)	USPTO / WB	1990-2014	Data for patents is from USPTO; data for population is from World Bank.
Gini index	SEDLAC	1990-2015	
Unemployment rate	National statistics	1990-2015	Argentina's official unemployment figures should be taken with some caution for the period 2007-2015.
Informality (productive definition)	SEDLAC	1990-2013	A worker is considered informal if (s)he is a salaried worker in a small firm (less than 5 workers), a non-professional self-employed, or a zero-income worker.
Real minimum wages (2000=100)	ECLAC	1990-2014	Argentina's data was recalculated since 2007 using alternative (provincial statistics) inflation figures
Population below national poverty line	SEDLAC and CEPAL	1990-2015	Argentina's data for the period 2007-2015 is recalculated using alternative inflation data.
Population with less than 4 USD / day (PPP 2005)	SEDLAC	1990-2015	Argentina's data for the period 2007-2015 is recalculated using alternative inflation data.

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NOTES

1. Data from Observatorio de Empleo y Dinámica Empresarial of the Ministerio de Trabajo, Empleo y Seguridad Social (OEDE-MTEySS) [Observatory of Employment and Business Dynamics of the Ministry of Labor, Employment and Social Security].

2. The benefits to the agricultural sector were milder, because the gains of a depreciated currency were partially offset with export duties on agricultural goods.

3. The Bolsa Família was created in 2003 and awards families in absolute poverty (per capita income of less than 70 reais or about 35 dollars a month) a small amount of money. For families with children that have a per capita income of less than 140 reais or 70 dollars a month, the program grants a small sum of money per child (up to three children) as long as they are vaccinated, stay in school, and do not engage in illegal child labour.

4. The Bracero Program (named for the Spanish term bracero, meaning "manual laborer") was a series of laws and diplomatic agreements, initiated in 1942, between the United States and Mexico. The agreement enabled the importation of temporary contract laborers from Mexico to the United States as a momentary war-related clause to supply workers during the World War II.

5. For a comprehensive review of NAFTA's impact in Mexico's economy between 1994 and 2013, see Blecker (2014).

6. The Tequila crisis started in December 1994 in Mexico and quickly spread around the globe. Its main cause was the financial bubble created in the previous years, as a part of the neoliberal strategy to stabilize prices with a strong currency appreciation sustained with capital inflows. As a consequence, the Mexican GDP fell by 6.5% in 1995. For more information see Calvo y Mendoza (1996) and López (2015).

7. While according to UNCTAD the Argentinean, Brazilian and Chilean exports to China rose 373%, 326% and 758% respectively between 2002 and 2007, Mexican exports to China "only" increased by 190%.

8. In 2001 Chile adopted a strict countercyclical fiscal policy. Under the rule of "structural balance" the level of public expenditure emerges as a difference between structural or tax revenues and a theoretical inflation targeting (which until 2008 was around 1% of GDP). Structural or permanent tax revenues are projected based on the estimated potential output and the medium-term trend in the international price of copper. When copper income exceeds the reference value, countercyclical mechanisms are activated to increase fiscal savings. As for the subsequent management of the funds, the Fiscal Responsibility Act of September 2006 established that they would have to be compulsorily deposited abroad (Abeles and Borzel, 2010).

9. Argentina's GDP fell by 5.9% in 2009, but by the end of the year it was growing at a quick pace. Argentina's recession had also internal causes, as the worst agricultural draught in 50 years.

10. This contrasts with what happened in the 1990s, where there were just a few sectorial regimes (automotive, fishing, mining and forestry), which have succeeded in fostering these sectors.

11. In contrast to the other tables, where data is an average of the period, here we will show values for 1998, 2002, 2007, 2011 and 2015. We selected 1998 because is a peak year both in Argentina, Brazil and Chile. The other four years are the last years of each of the four sub-periods used throughout this paper.

12. We define informality as the share of workers in "informal" jobs. Here we take the productive definition, by which a worker is considered informal if she is a salaried worker in a small firm (less than 5 workers), a non-professional self-employed, or a zero-income worker.

13. We take two poverty lines, which in general have the same trend: i) an international poverty line (4 USD per day, PPP 2005), which can be useful to compare poverty levels between countries, and ii) national poverty lines, which are not comparable between countries because methodologies are different.

14. Argentina's unemployment figures are taken from the national statistical office (INDEC). They should be taken with some caution for the period 2007-2015, as the institute was intervened.

15. National poverty line.

16. Instead, Argentina and Brazil doubled their real minimum wages in the same period, but their real mean wages increased by 46% and 25% respectively (data was calculated on the base of SEDLAC, INDEC, IBGE and Argentina's provincial statistical offices).

17. See Campos Vázquez et al (2016).

18. The recognition of the existence of lights and shadows in these different industrial policy experiences is part of a debate regarding development options and the different ways of achieving it which has gained strength in the region in the last years. Due to its regional performance and influence capacity, it is worth mention a recent proposal of the IADB regarding productive development (see Crespi et al, 2014), which states that only under a clear market failure State intervention can be justified and prioritized horizontal over vertical polices as well as public goods over market interventions. According to this institution, this approach minimizes the potential risk of promoting rent-seeking activities. Despite in the document the difficult of

establishing a unique better practice is recognized, these recommendations seems to overlook the differences of productive structures among countries, and, especially, the heterogeneity conditions that characterized the Latin American economies in which, more than market failures, we found systemic failures.

ABSTRACTS

L'Amérique latine a connu une transformation importante ces dernières années. En dépit de la crise économique et sociale majeure qui a eu lieu à la fin du XX^{e} siècle, entre 2003 et 2008, la région connaît une période expansionniste remarquable depuis les années 1970. L'une des nouvelles caractéristiques enregistrées au cours de la période était l'augmentation du secteur manufacturier où la politique industrielle combinait les instruments traditionnels pour promouvoir l'investissement avec d'autres outils visant à favoriser l'innovation et la modernisation technologique. Dans le même temps, en utilisant toujours des instruments et des programmes horizontaux, dans de nombreux pays, l'accent a été mis sur la mise en œuvre de politiques ciblées et sélectives et pour articuler les différents instruments dans un cadre plus général de planification du développement productif. L'objectif de cet article est d'analyser l'évolution des politiques industrielles récentes (IPs) et leurs résultats dans quatre pays d'Amérique latine: l'Argentine, le Brésil, le Chili et le Mexique. Pour ce faire, nous nous concentrerons sur les objectifs et les outils des IP depuis 2003, leurs différences par rapport à celles suivies dans les années 1990 et leurs changements tout au long de la période 2003-2015. Nous étudierons également les similitudes et les différences dans les approches nationales en fonction des cycles macroéconomiques et de la dynamique de la balance des paiements, des profils de spécialisation et des stratégies de développement.

Latin America has experienced a significant transformation in recent years. Despite some of the countries had major economic and social crisis at the end of the twentieth century, between 2003 and 2008 the region has experienced its most remarkable expansionary period since the 1970s. One of the new features registered during the period was the increase in the manufacturing sector where industrial policy combined traditional instruments to promote investment with other tools directed towards fostering innovation and technological modernization. At the same time, still using instruments and horizontal programs, in many countries there was a greater emphasis on the implementation of targeted and selective policies and to articulate the various instruments into a more general framework of productive development planning. The aim of this paper is to analyse the evolution of recent industrial policies (IPs) and their outcomes in four Latin American countries: Argentina, Brazil, Chile and Mexico. To do this, we will focus on the objectives and tools of IPs since 2003, their differences vis-à-vis those followed in the 1990s, and their changes throughout the period 2003-2015. We will also study the similarities and differences in national approaches depending on the macroeconomic cycles and the dynamic of the balance of payments, the specialization profiles and the strategies of development.

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Mots-clés: politique industrielle, Amérique latine, développement économique
Keywords: industrial policy, Latin America, economic development

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